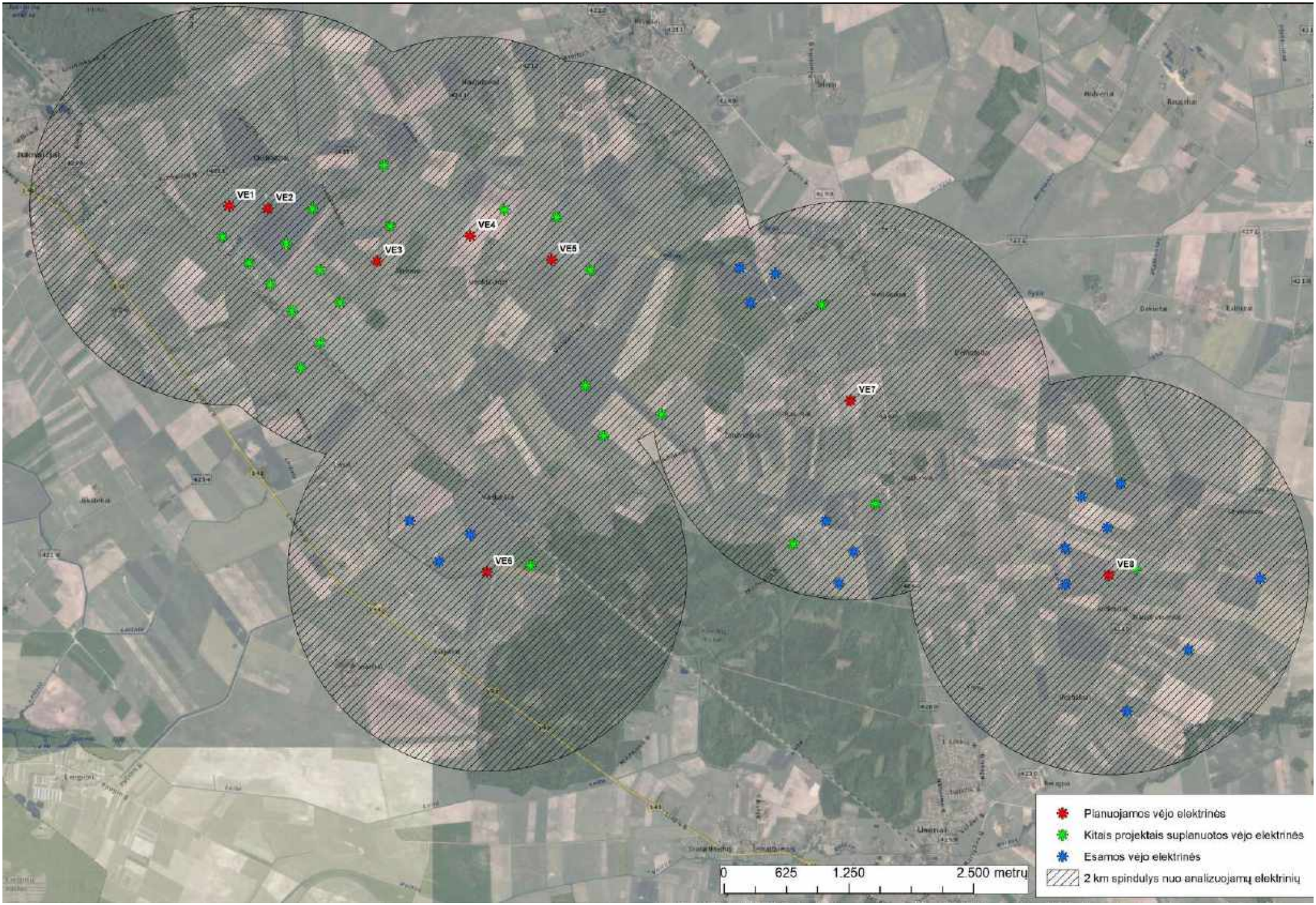
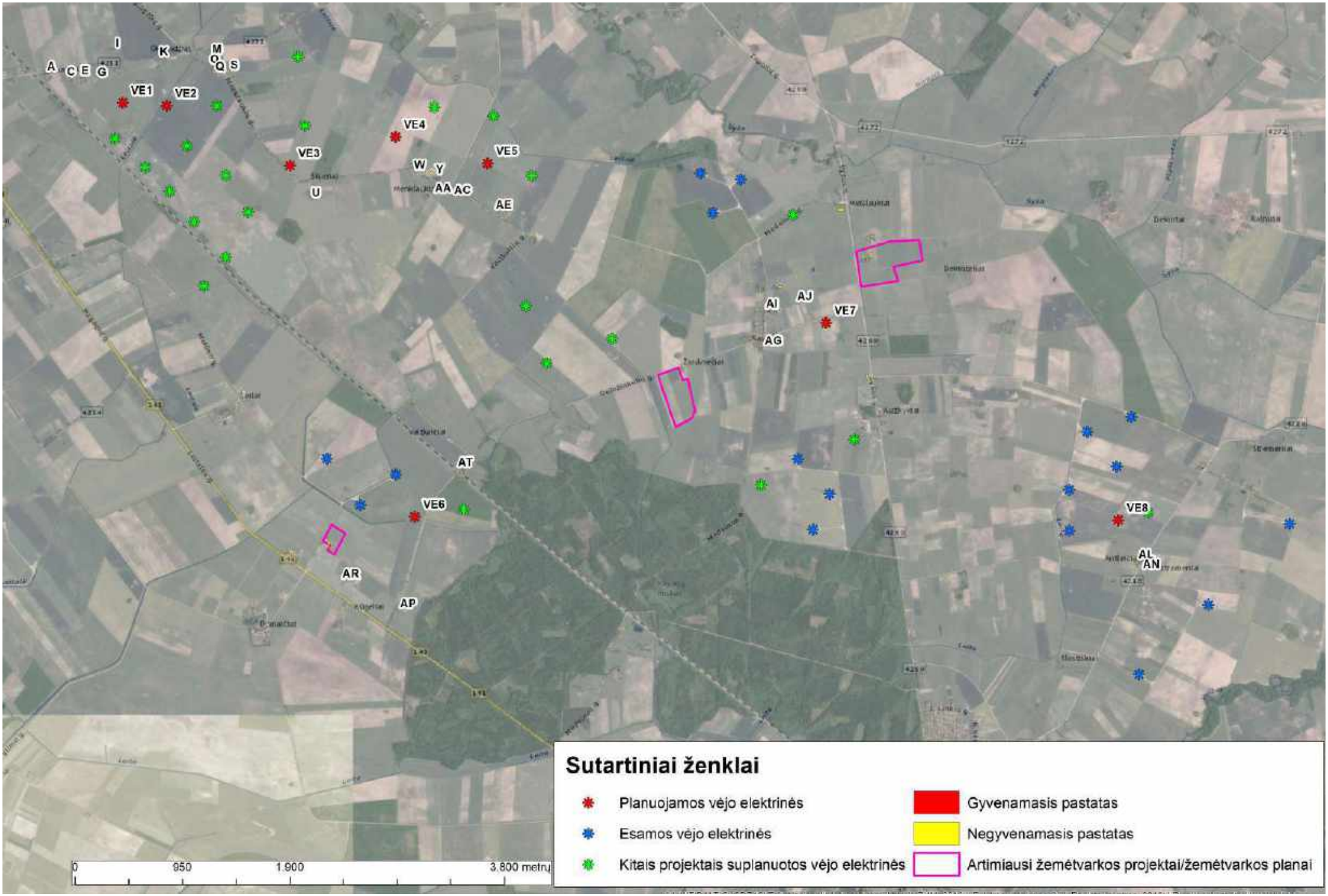
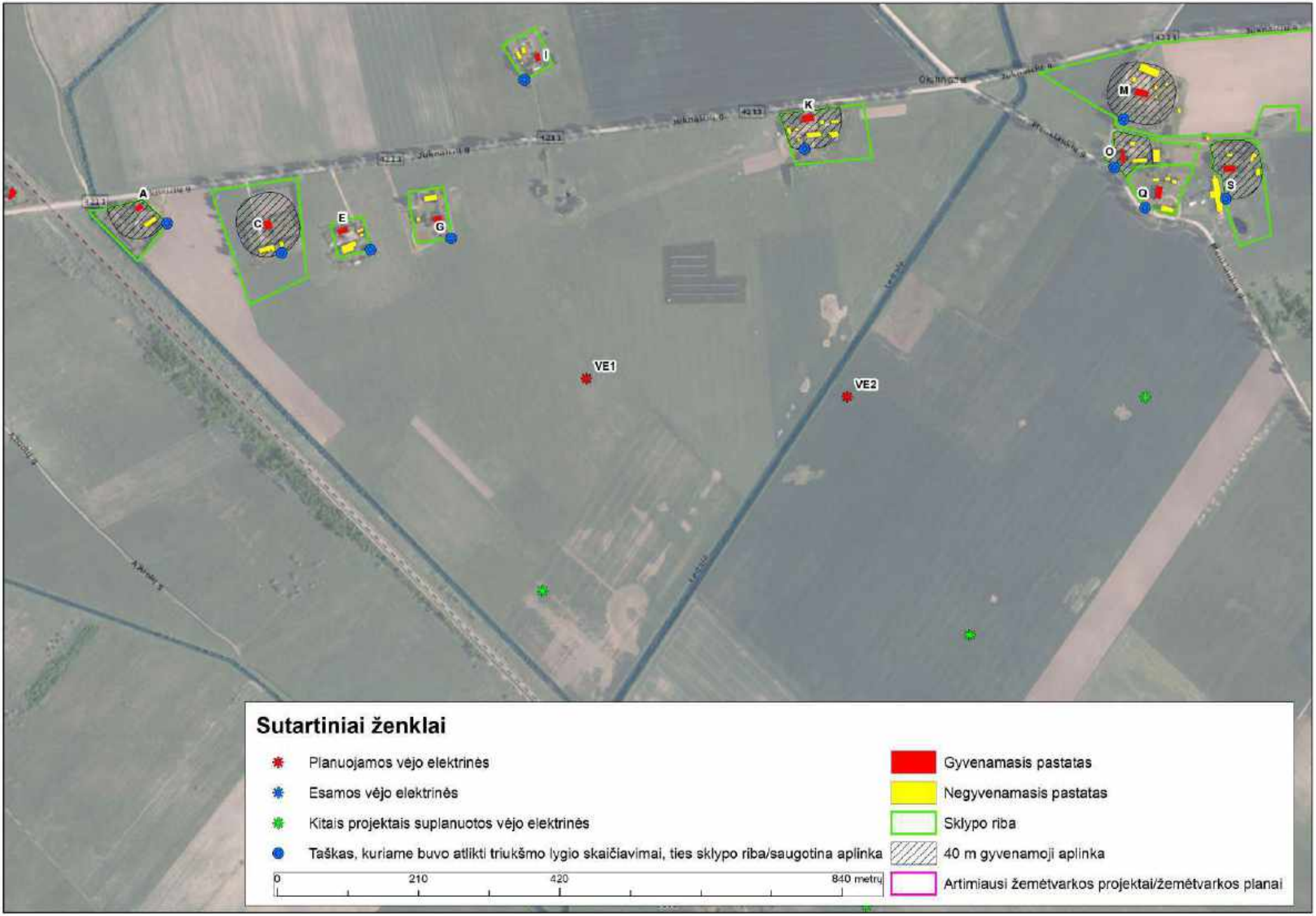
# 1 Priedas. Grafinė informacija

# 1.1 Priedėlis. Bendra situacija

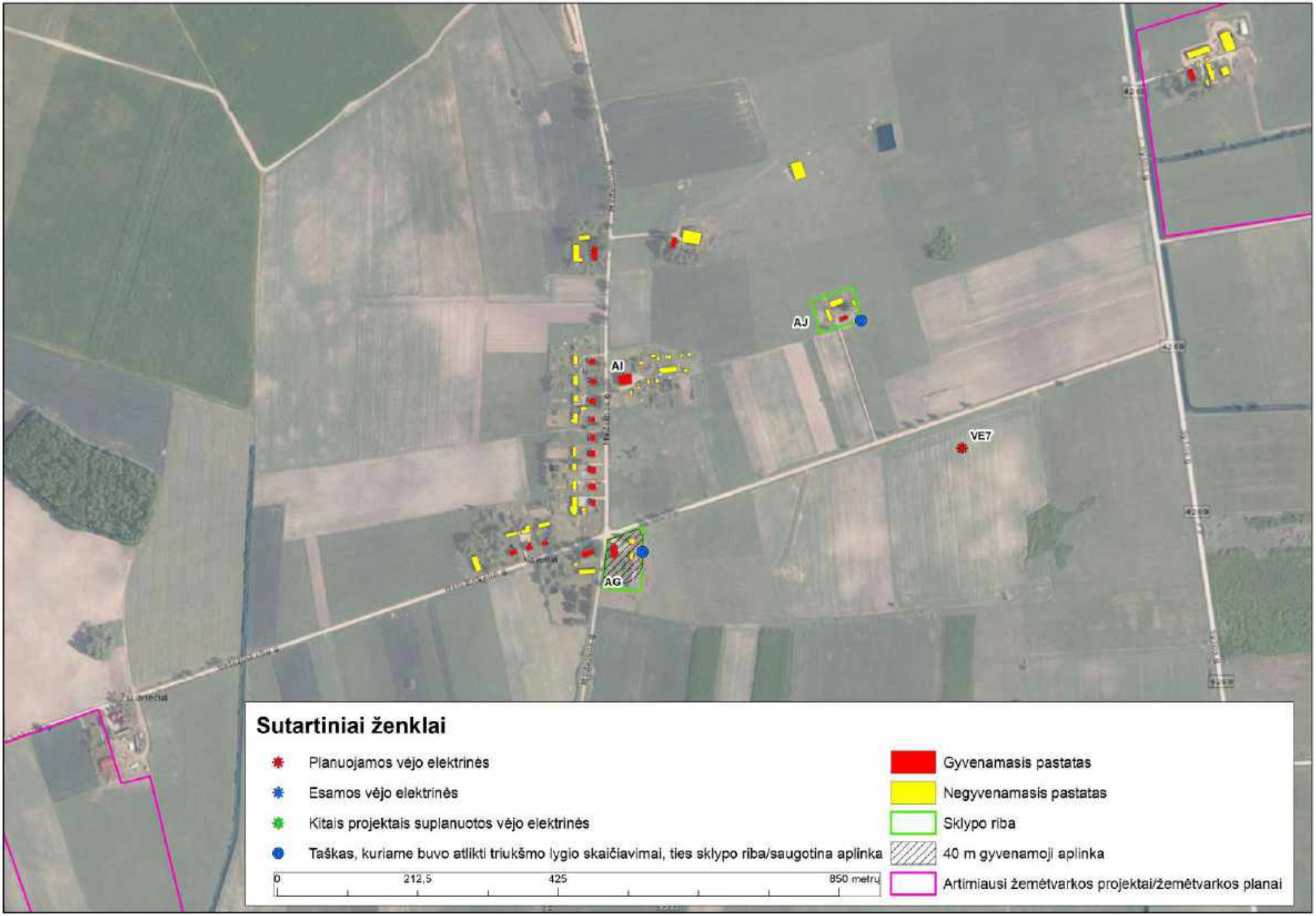

VE1
VE2
VE3
VE4
VE5
VE6
VE7
VE8
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
2 km spindulys nuo analizuojamų elektrinių
0
625
1.250
2.500 metrų

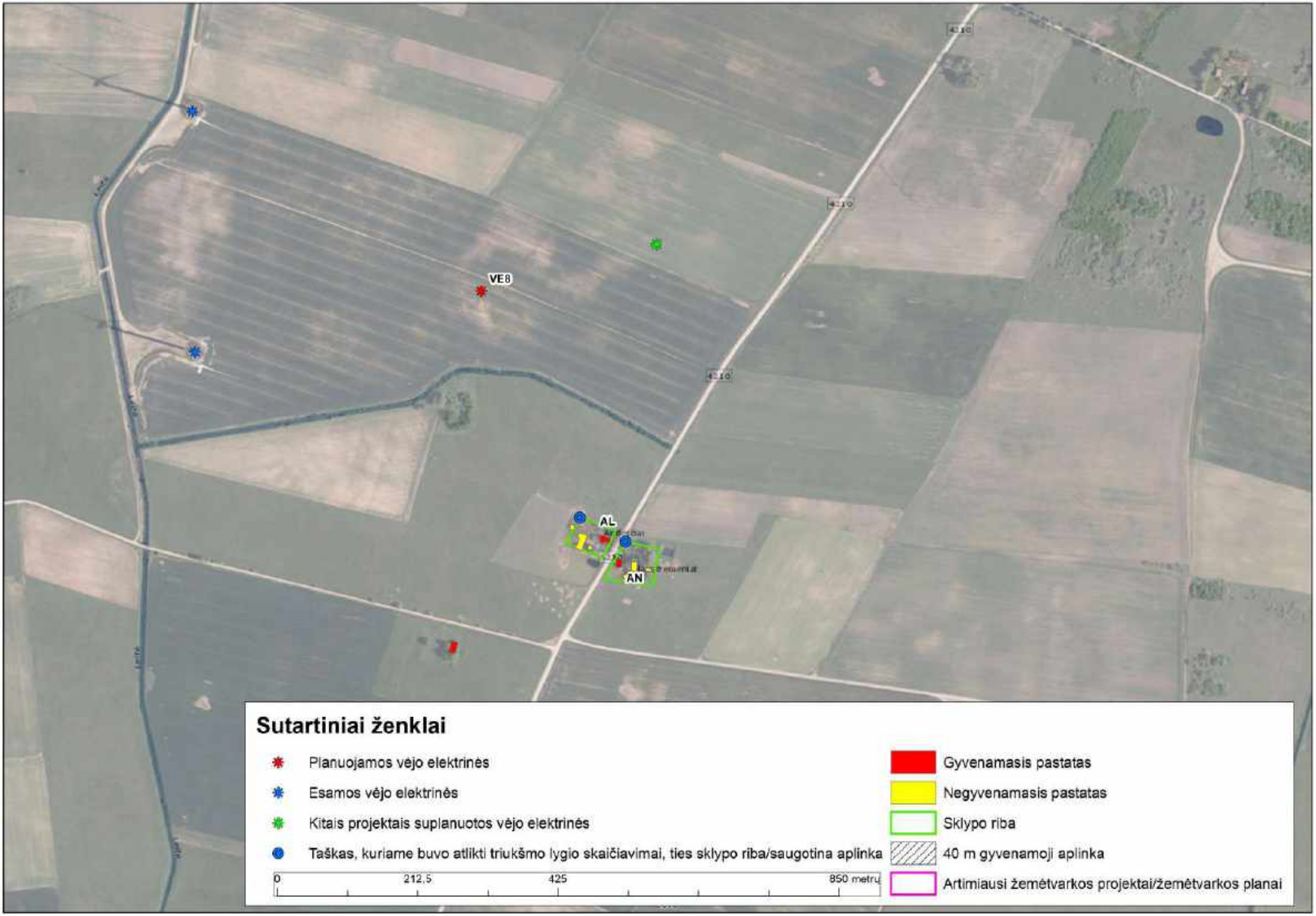

I
K
M
O
Q
S
A
C
E
G
VE1
VE2
VE3
VE4
VE5
VE6
VE7
VE8
U
W
Y
AA
AC
AE
AG
AI
AJ
AL
AN
AP
AR
AT
0
950
1.900
3.800 metrų
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Gyvenamasis pastatas
Negyvenamasis pastatas
Artimiausi žemėtvarkos projektai/žemėtvarkos planai

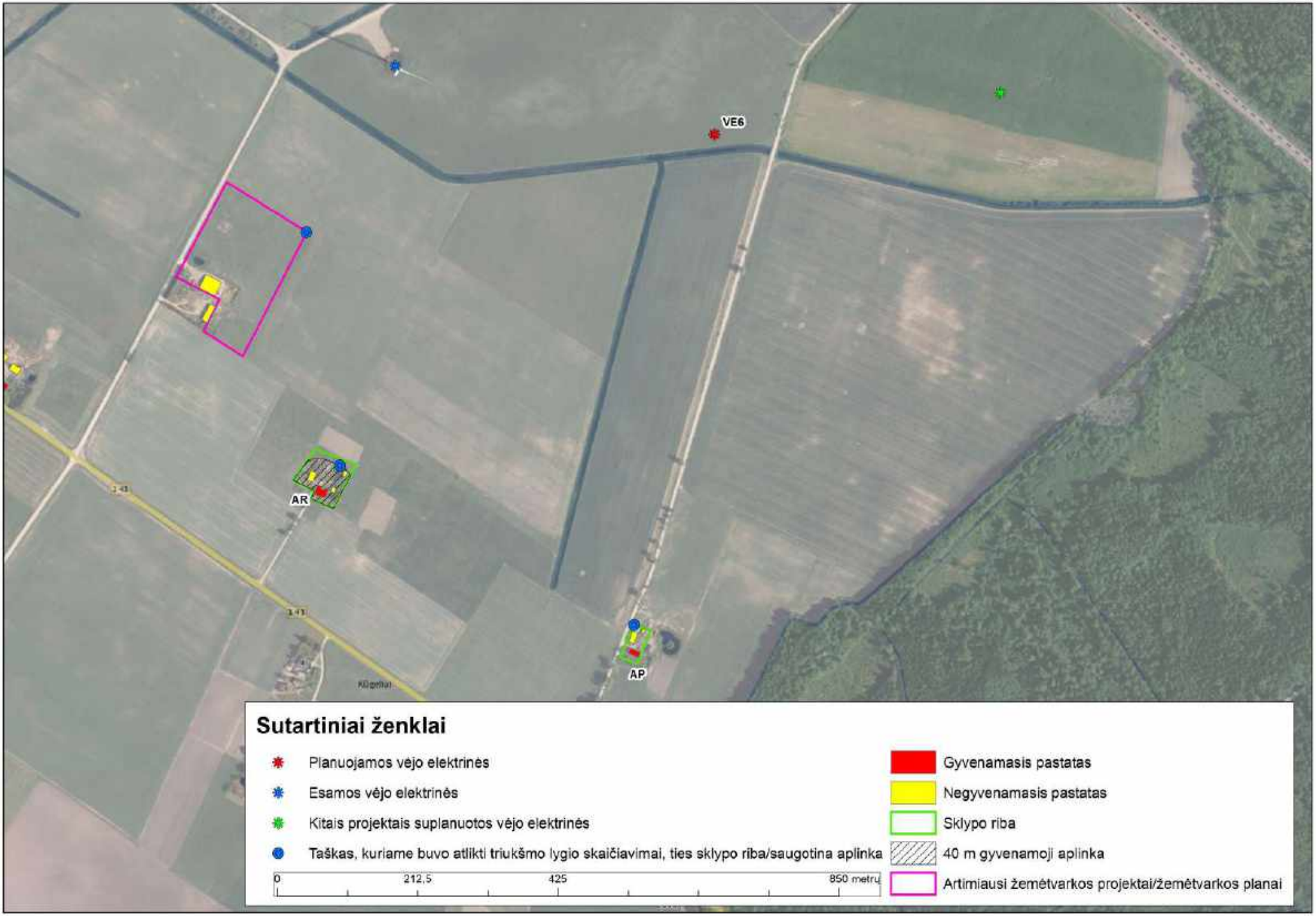

I
K
M
O
Q
S
A
C
E
G
VE1
VE2
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Taškas, kuriame buvo atlikti triukšmo lygio skaičiavimai, ties sklypo riba/saugotina aplinka
0
210
420
840 metrų
Gyvenamasis pastatas
Negyvenamasis pastatas
Sklypo riba
40 m gyvenamoji aplinka
Artimiausi žemėtvarkos projektai/žemėtvarkos planai

VE4
VE3
VE5
W
Y
U
AA
AC
AE
Sklypo riba
Sklypo riba
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Taškas, kuriame buvo atlikti triukšmo lygio skaičiavimai, ties sklypo riba/saugotina aplinka
0
212,5
425
850 metrų
Gyvenamasis pastatas
Negyvenamasis pastatas
Sklypo riba
40 m gyvenamoji aplinka
Artimiausi žemėtvarkos projektai/žemėtvarkos planai

VE5
AE
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
0
115
230
460 metrų
Gyvenamasis pastatas
Negyvenamasis pastatas
Sklypo riba
40 m gyvenamoji aplinka


AJ
AI
VE7
AG
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Taškas, kuriame buvo atlikti triukšmo lygio skaičiavimai, ties sklypo riba/saugotina aplinka
0
212,5
425
850 metrų
Gyvenamasis pastatas
Negyvenamasis pastatas
Sklypo riba
40 m gyvenamoji aplinka
Artimiausi žemėtvarkos projektai/žemėtvarkos planai


VE8
AL
AN
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Taškas, kuriame buvo atlikti triukšmo lygio skaičiavimai, ties sklypo riba/saugotina aplinka
0
212,5
425
850 metrų
Gyvenamasis pastatas
Negyvenamasis pastatas
Sklypo riba
40 m gyvenamoji aplinka
Artimiausi žemėtvarkos projektai/žemėtvarkos planai


VE6
AR
AP
Sutartiniai ženklai
Planuojamos vėjo elektrinės
Esamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Taškas, kuriame buvo atlikti triukšmo lygio skaičiavimai, ties sklypo riba/saugotina aplinka
0
212,5
425
850 metrų
Gyvenamasis pastatas
Negyvenamasis pastatas
Sklypo riba
40 m gyvenamoji aplinka
Artimiausi žemėtvarkos projektai/žemėtvarkos planai

# 1.2 Priedėlis. Privažiavimo keliai

4211
Juknaičių g.
4211
Juknaičių g.
4211
VE1
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Privažiavimo keliai
0
90
180
360 metrų

4213
Leitalė
VE2
0
90
180
360 metrų
Planuojamos vėjo elektrinės
Privažiavimo keliai

VE3
0
90
180
360 metrų
Planuojamos vėjo elektrinės
Privažiavimo keliai

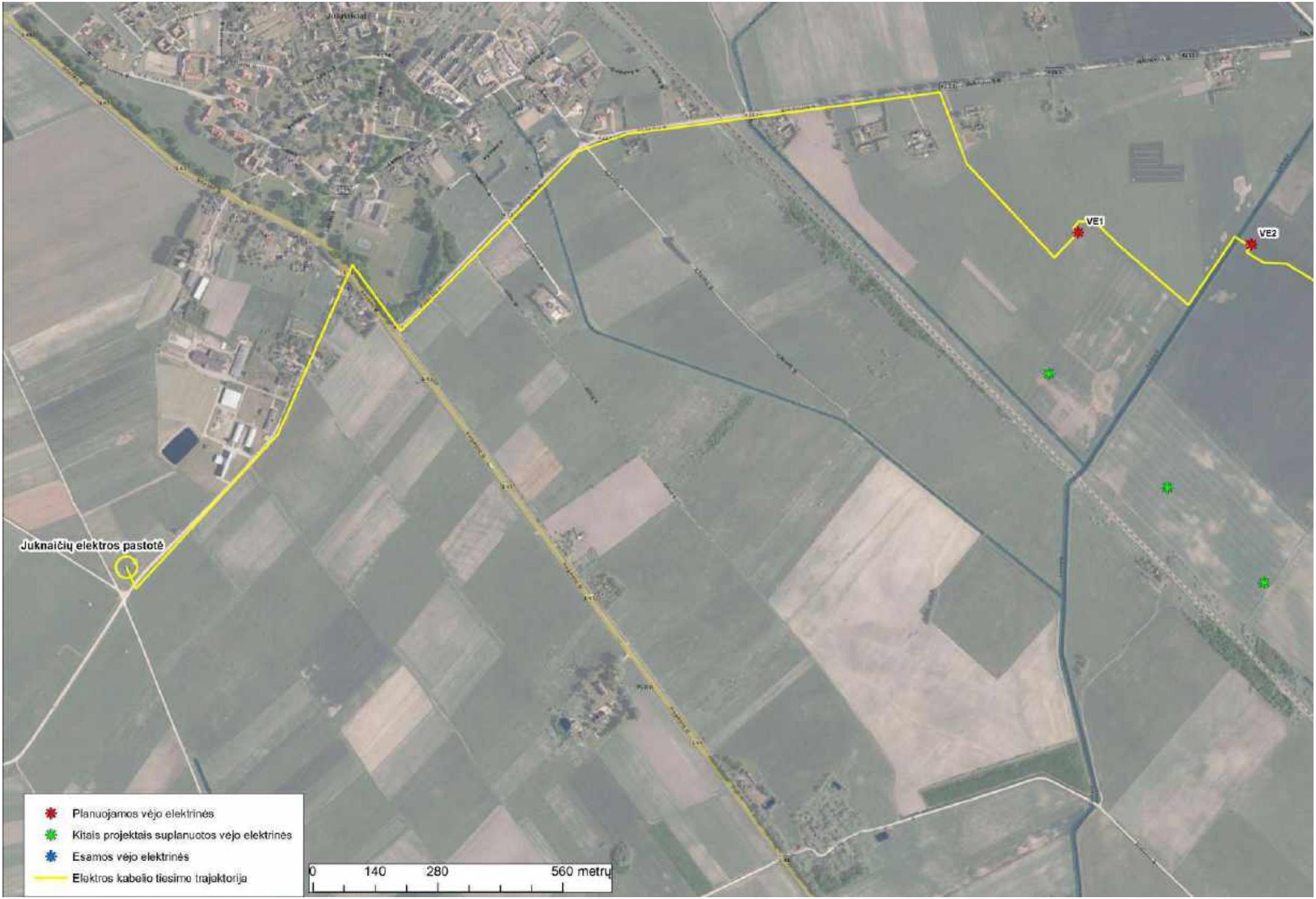
VE4
VE5
Valtkaičių g.
Menklaukiai
Valtkaičių g.
Valtkaičių g
0
90
180
360 metrų
Planuojamos vėjo elektrinės
Privažiavimo keliai

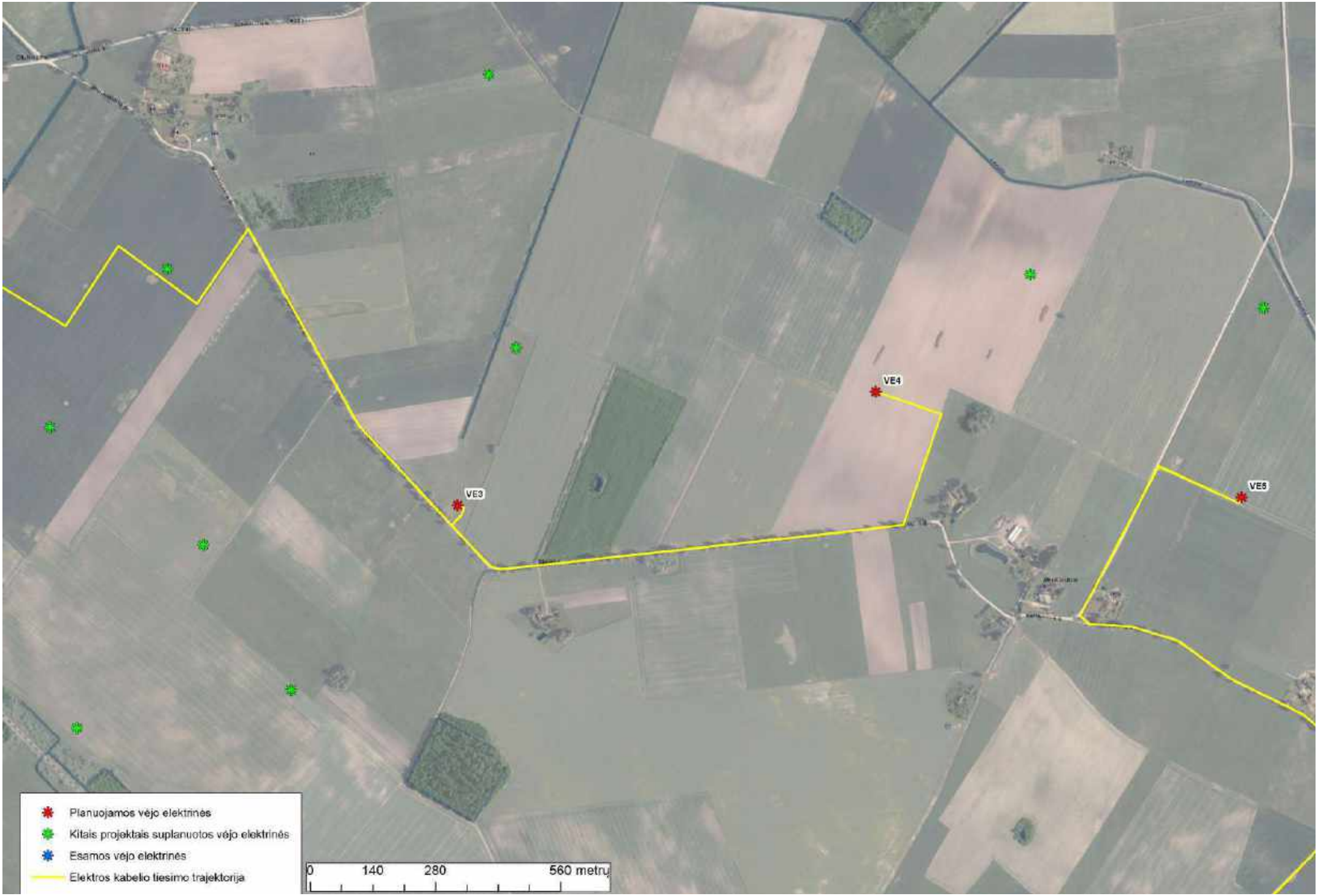
VE6
0
90
180
360 metrų
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Privažiavimo keliai

VE7
4269
4269
4269
Kavoliai
Medelinos g
Medelinos g
0
90
180
360 metrų
Planuojamos vėjo elektrinės
Privažiavimo keliai

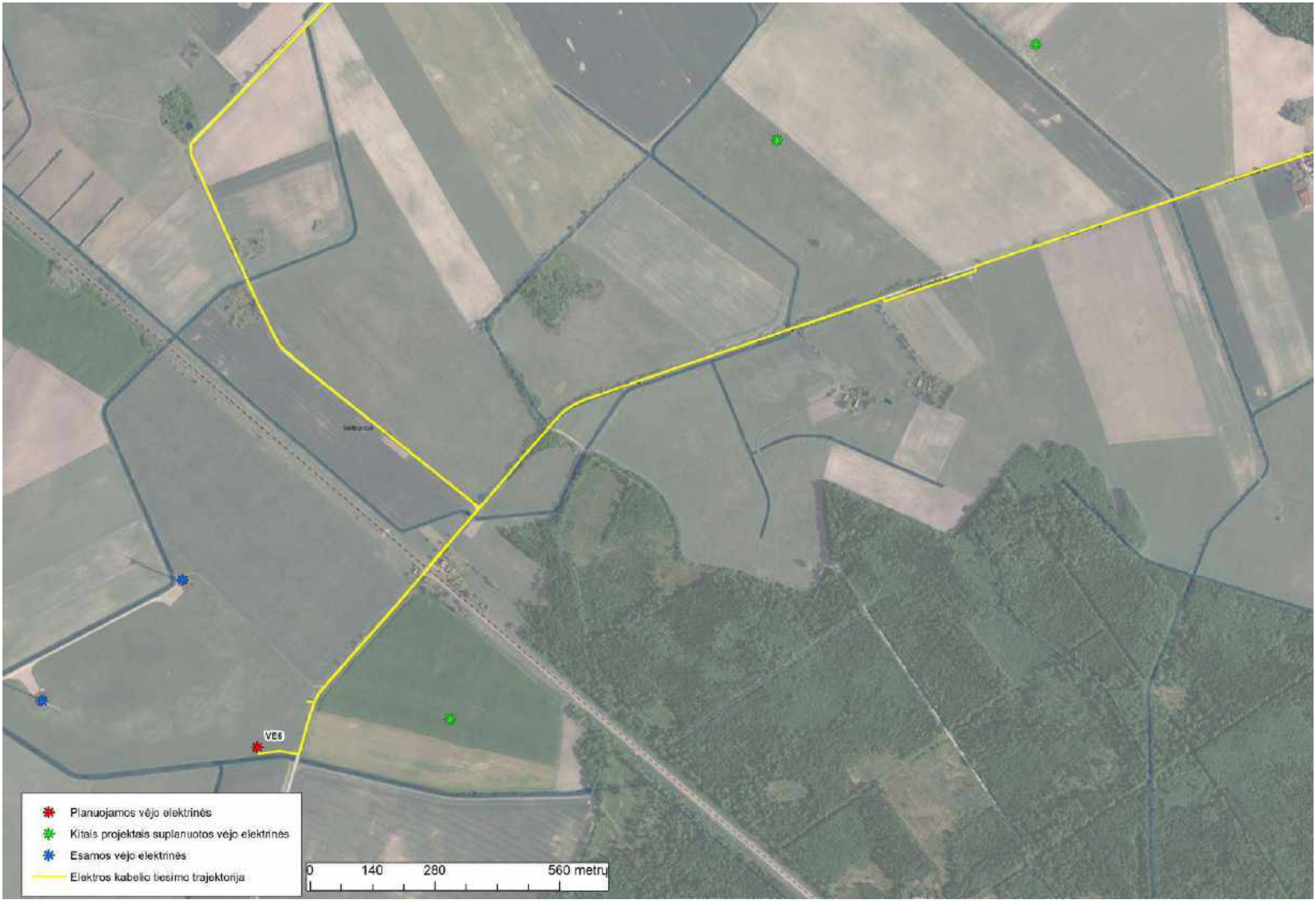
VE8
4210
4210
Leitis
Leitis
0
90
180
360 metrų
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Privažiavimo keliai

## 1.3 Priedėlis. Kabelio tiesimo trajektorija

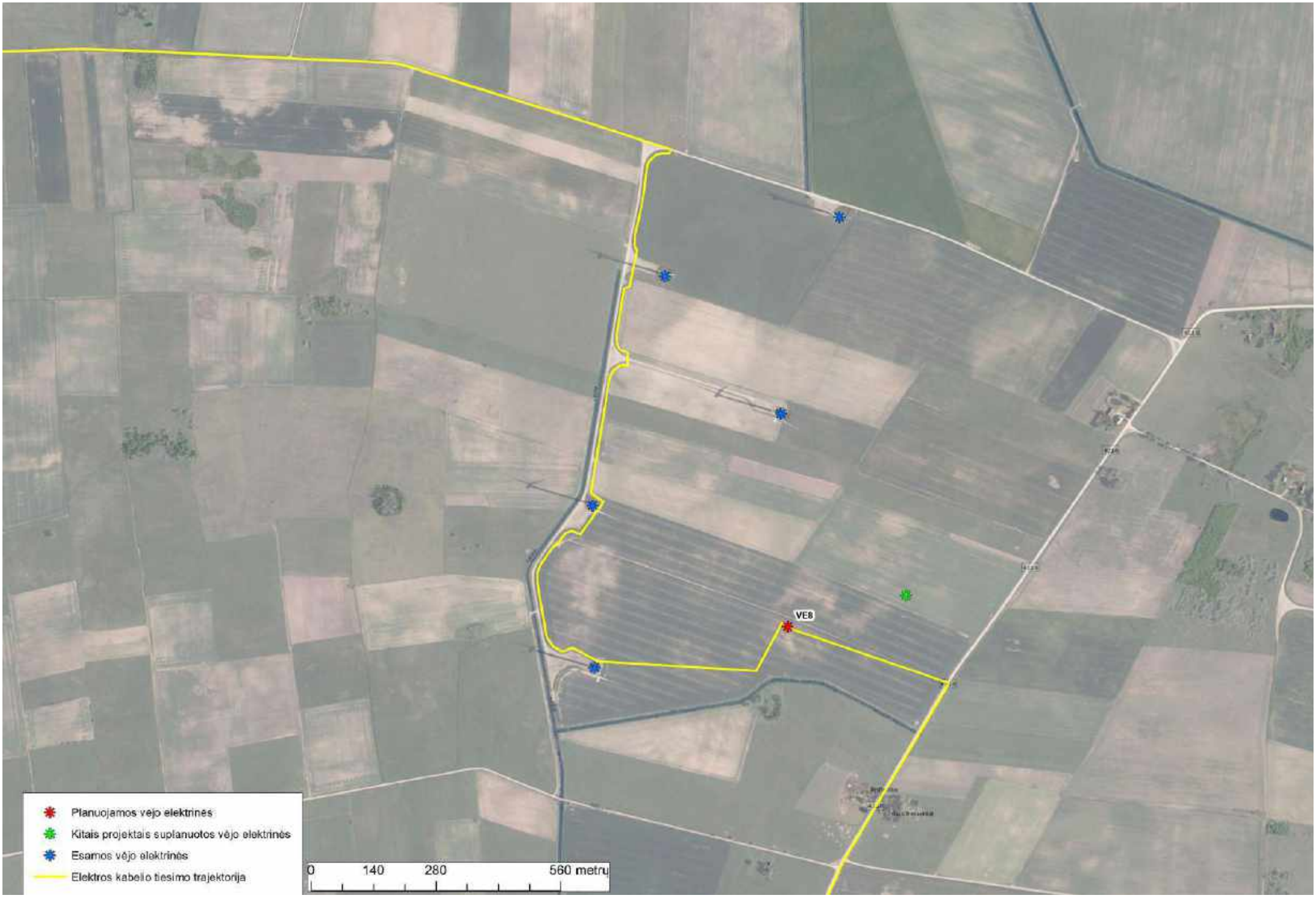

VE1
VE2
Juknaičių elektros pastotė
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų


VE3
VE4
VE5
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų

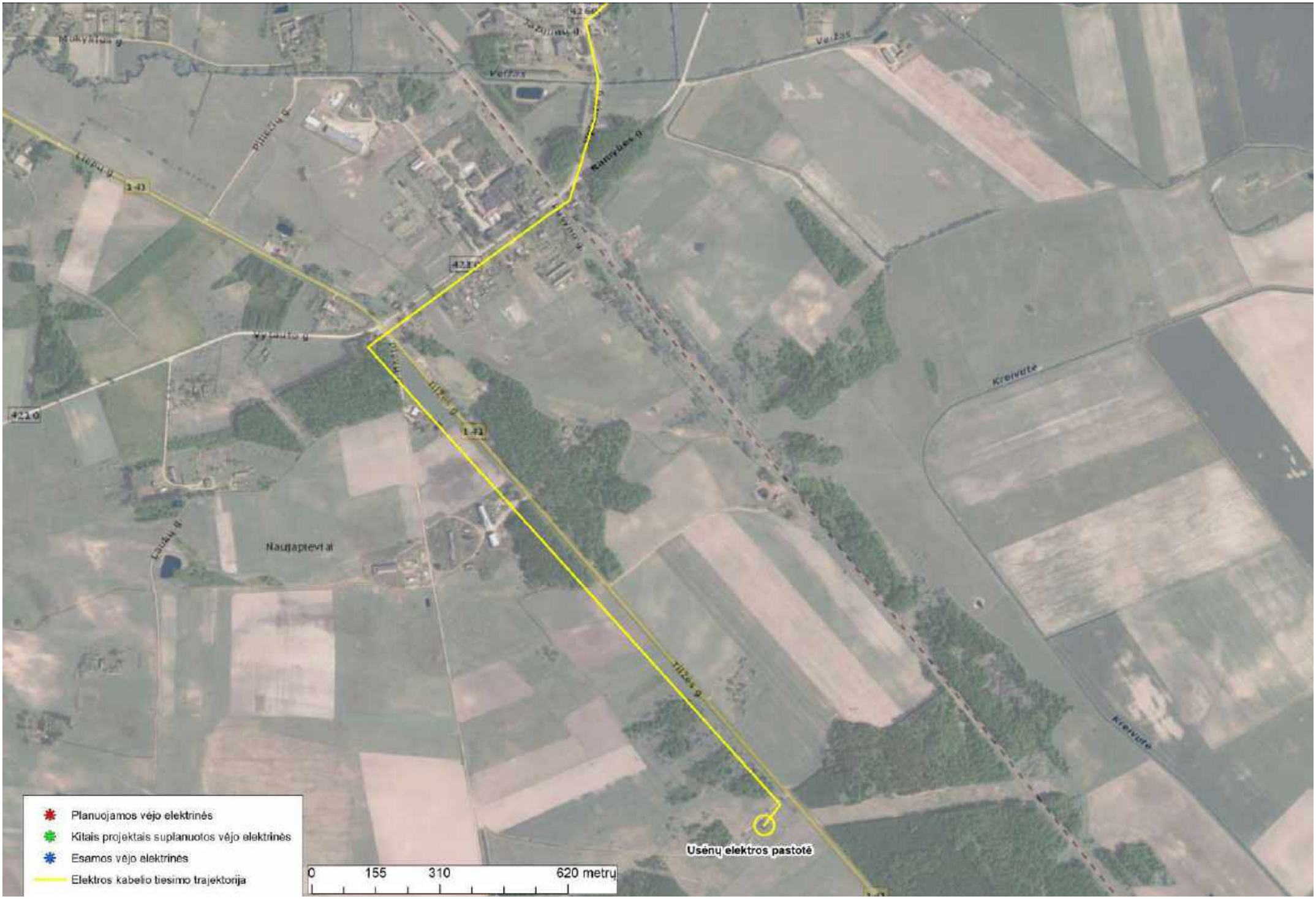
VE4
VE5
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų


VE6
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų

VE7
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų


VE8
Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų

Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
140
280
560 metrų


Planuojamos vėjo elektrinės
Kitais projektais suplanuotos vėjo elektrinės
Esamos vėjo elektrinės
Elektros kabelio tiesimo trajektorija
0
155
310
620 metrų
Usėnų elektros pastotė
Naujapievai
Kreivutė
Kreivutė

## 1.4 Priedėlis. Triukšmas

Project:
8 VE Ðilutës r.triukðmas

Description:
Aðtuoniø vëjo elektriniø (Ðilutës raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija

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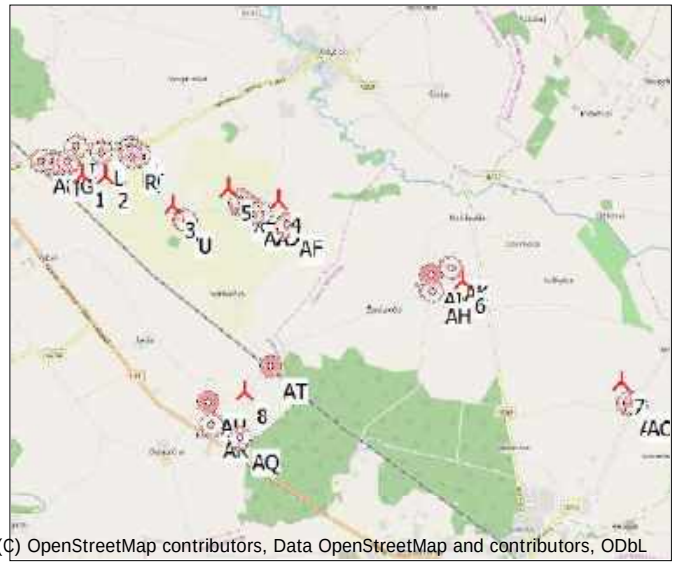
Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Main Result

## Calculation: Enercon E138, stiebas 130, galia 4.2

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
10,0 m/s
Ground attenuation:
General, Ground factor: 0,8
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in NSA has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:125.000
New WTG
Noise sensitive area

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Noise data Creator | Name | Wind speed | LwA,ref |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | | | [m/s] | [dB(A)] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 8 | 350.546 | 6.126.757 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |

# Calculation Results

## Sound level

Noise sensitive area

| No. | Name | Y | X | Z | Immission height | Demands Noise | Sound level From WTGs | Distance to noise demand | Demands fulfilled ? Noise |
|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| A | Noise sensitive point: User defined (1) | 347.290 | 6.130.678 | 10,0 | 1,5 | 45,0 | 34,4 | 489 | Yes |
| B | Noise sensitive point: User defined (2) | 347.334 | 6.130.657 | 10,0 | 1,5 | 45,0 | 35,2 | 440 | Yes |
| C | Noise sensitive point: User defined (4) | 347.483 | 6.130.653 | 10,7 | 1,5 | 45,0 | 37,6 | 303 | Yes |
| D | Noise sensitive point: User defined (5) | 347.505 | 6.130.613 | 10,4 | 1,5 | 45,0 | 38,3 | 266 | Yes |
| E | Noise sensitive point: User defined (6) | 347.592 | 6.130.646 | 10,8 | 1,5 | 45,0 | 39,6 | 202 | Yes |
| F | Noise sensitive point: User defined (7) | 347.637 | 6.130.618 | 10,6 | 1,5 | 45,0 | 40,8 | 149 | Yes |
| G | Noise sensitive point: User defined (8) | 347.734 | 6.130.663 | 11,0 | 1,5 | 45,0 | 42,1 | 98 | Yes |
| H | Noise sensitive point: User defined (9) | 347.757 | 6.130.635 | 10,8 | 1,5 | 45,0 | 43,1 | 63 | Yes |
| I | Noise sensitive point: User defined (11) | 347.883 | 6.130.901 | 13,1 | 1,5 | 45,0 | 39,1 | 243 | Yes |
| J | Noise sensitive point: User defined (12) | 347.866 | 6.130.871 | 12,8 | 1,5 | 45,0 | 39,6 | 219 | Yes |
| K | Noise sensitive point: User defined (13) | 348.287 | 6.130.811 | 10,0 | 1,5 | 45,0 | 41,2 | 161 | Yes |
| L | Noise sensitive point: User defined (14) | 348.284 | 6.130.768 | 10,0 | 1,5 | 45,0 | 42,2 | 118 | Yes |
| M | Noise sensitive point: User defined (15) | 348.782 | 6.130.851 | 10,0 | 1,5 | 45,0 | 36,6 | 396 | Yes |
| N | Noise sensitive point: User defined (16) | 348.759 | 6.130.812 | 10,0 | 1,5 | 45,0 | 37,3 | 352 | Yes |
| O | Noise sensitive point: User defined (17) | 348.756 | 6.130.753 | 10,0 | 1,5 | 45,0 | 37,9 | 310 | Yes |
| P | Noise sensitive point: User defined (18) | 348.753 | 6.130.737 | 10,0 | 1,5 | 45,0 | 38,2 | 298 | Yes |
| Q | Noise sensitive point: User defined (19) | 348.810 | 6.130.701 | 10,0 | 1,5 | 45,0 | 37,8 | 325 | Yes |
| R | Noise sensitive point: User defined (20) | 348.790 | 6.130.676 | 10,0 | 1,5 | 45,0 | 38,3 | 295 | Yes |
| S | Noise sensitive point: User defined (21) | 348.913 | 6.130.737 | 10,0 | 1,5 | 45,0 | 36,4 | 431 | Yes |
| T | Noise sensitive point: User defined (22) | 348.911 | 6.130.694 | 10,0 | 1,5 | 45,0 | 36,8 | 407 | Yes |
| U | Noise sensitive point: User defined (23) | 349.644 | 6.129.613 | 10,0 | 1,5 | 45,0 | 41,9 | 108 | Yes |
| V | Noise sensitive point: User defined (24) | 349.607 | 6.129.632 | 10,0 | 1,5 | 45,0 | 42,8 | 71 | Yes |

To be continued on next page...

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Main Result

## Calculation: Enercon E138, stiebas 130, galia 4.2

...continued from previous page

Noise sensitive area

| No. | Name | Y | X | Z | Immission height | Demands Noise | Sound level From WTGs | Distance to noise demand | Demands fulfilled ? Noise |
|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| W | Noise sensitive point: User defined (25) | 350.562 | 6.129.862 | 10,9 | 1,5 | 45,0 | 42,5 | 97 | Yes |
| X | Noise sensitive point: User defined (26) | 350.576 | 6.129.919 | 10,8 | 1,5 | 45,0 | 43,4 | 61 | Yes |
| Y | Noise sensitive point: User defined (27) | 350.707 | 6.129.756 | 12,0 | 1,5 | 45,0 | 40,3 | 269 | Yes |
| Z | Noise sensitive point: User defined (28) | 350.748 | 6.129.803 | 12,1 | 1,5 | 45,0 | 40,9 | 230 | Yes |
| AA | Noise sensitive point: User defined (29) | 350.753 | 6.129.689 | 12,4 | 1,5 | 45,0 | 39,8 | 259 | Yes |
| AB | Noise sensitive point: User defined (30) | 350.767 | 6.129.705 | 12,4 | 1,5 | 45,0 | 40,1 | 240 | Yes |
| AC | Noise sensitive point: User defined (31) | 350.909 | 6.129.675 | 13,3 | 1,5 | 45,0 | 41,4 | 135 | Yes |
| AD | Noise sensitive point: User defined (32) | 350.909 | 6.129.692 | 13,3 | 1,5 | 45,0 | 41,7 | 125 | Yes |
| AE | Noise sensitive point: User defined (33) | 351.332 | 6.129.441 | 16,3 | 1,5 | 45,0 | 38,3 | 251 | Yes |
| AF | Noise sensitive point: User defined (34) | 351.339 | 6.129.512 | 16,2 | 1,5 | 45,0 | 39,7 | 185 | Yes |
| AG | Noise sensitive point: User defined (35) | 353.662 | 6.128.322 | 20,0 | 1,5 | 45,0 | 36,2 | 338 | Yes |
| AH | Noise sensitive point: User defined (36) | 353.705 | 6.128.318 | 20,0 | 1,5 | 45,0 | 37,0 | 298 | Yes |
| AI | Noise sensitive point: User defined (37) | 353.678 | 6.128.582 | 20,0 | 1,5 | 45,0 | 36,7 | 308 | Yes |
| AJ | Noise sensitive point: User defined (38) | 353.996 | 6.128.697 | 20,0 | 1,5 | 45,0 | 42,4 | 83 | Yes |
| AK | Noise sensitive point: User defined (39) | 354.036 | 6.128.668 | 20,0 | 1,5 | 45,0 | 43,9 | 34 | Yes |
| AL | Noise sensitive point: User defined (40) | 356.862 | 6.126.349 | 19,7 | 1,5 | 45,0 | 39,8 | 172 | Yes |
| AM | Noise sensitive point: User defined (41) | 356.927 | 6.126.381 | 20,0 | 1,5 | 45,0 | 40,1 | 161 | Yes |
| AN | Noise sensitive point: User defined (42) | 356.986 | 6.126.313 | 20,0 | 1,5 | 45,0 | 38,0 | 249 | Yes |
| AO | Noise sensitive point: User defined (43) | 356.996 | 6.126.345 | 20,0 | 1,5 | 45,0 | 38,5 | 226 | Yes |
| AP | Noise sensitive point: User defined (48) | 350.424 | 6.125.973 | 10,0 | 1,5 | 45,0 | 32,0 | 580 | Yes |
| AQ | Noise sensitive point: User defined (49) | 350.424 | 6.126.015 | 10,0 | 1,5 | 45,0 | 32,6 | 539 | Yes |
| AR | Noise sensitive point: User defined (50) | 349.947 | 6.126.215 | 10,0 | 1,5 | 45,0 | 31,9 | 594 | Yes |
| AS | Noise sensitive point: User defined (51) | 349.979 | 6.126.256 | 10,0 | 1,5 | 45,0 | 32,6 | 543 | Yes |
| AT | Noise sensitive point: User defined (52) | 350.962 | 6.127.173 | 10,0 | 1,5 | 45,0 | 35,5 | 377 | Yes |
| AU | Noise sensitive point: User defined (53) | 349.928 | 6.126.609 | 10,0 | 1,5 | 45,0 | 34,6 | 423 | Yes |

## Distances (m)

| | WTG | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| A | 715 | 1093 | 2297 | 3980 | 3133 | 7239 | 10274 | 5094 |
| B | 666 | 1044 | 2248 | 3933 | 3086 | 7190 | 10225 | 5050 |
| C | 527 | 900 | 2108 | 3786 | 2939 | 7048 | 10087 | 4954 |
| D | 491 | 868 | 2073 | 3757 | 2910 | 7014 | 10051 | 4909 |
| E | 428 | 794 | 2004 | 3678 | 2830 | 6942 | 9984 | 4881 |
| F | 375 | 743 | 1952 | 3628 | 2781 | 6890 | 9931 | 4832 |
| G | 327 | 667 | 1881 | 3543 | 2694 | 6813 | 9860 | 4811 |
| H | 291 | 635 | 1849 | 3515 | 2666 | 6782 | 9828 | 4775 |
| I | 481 | 683 | 1868 | 3460 | 2609 | 6754 | 9823 | 4924 |
| J | 454 | 674 | 1865 | 3468 | 2617 | 6759 | 9825 | 4908 |
| K | 506 | 416 | 1488 | 3048 | 2197 | 6345 | 9419 | 4639 |
| L | 472 | 374 | 1464 | 3038 | 2187 | 6332 | 9403 | 4603 |
| M | 926 | 627 | 1181 | 2595 | 1750 | 5903 | 8994 | 4456 |
| N | 888 | 583 | 1162 | 2602 | 1756 | 5909 | 8997 | 4429 |
| O | 861 | 541 | 1117 | 2585 | 1736 | 5889 | 8973 | 4377 |
| P | 852 | 528 | 1106 | 2582 | 1733 | 5885 | 8968 | 4363 |
| Q | 894 | 552 | 1043 | 2517 | 1668 | 5819 | 8902 | 4308 |
| R | 867 | 522 | 1036 | 2528 | 1678 | 5828 | 8908 | 4292 |
| S | 1003 | 659 | 1015 | 2432 | 1584 | 5738 | 8826 | 4300 |
| T | 989 | 636 | 979 | 2419 | 1570 | 5723 | 8808 | 4261 |
| U | 1870 | 1516 | 327 | 1573 | 891 | 4683 | 7693 | 2994 |
| V | 1828 | 1474 | 290 | 1606 | 912 | 4724 | 7735 | 3023 |
| W | 2662 | 2278 | 1121 | 631 | 322 | 3881 | 6960 | 3104 |
| X | 2664 | 2279 | 1136 | 617 | 287 | 3889 | 6974 | 3161 |
| Y | 2827 | 2445 | 1271 | 503 | 495 | 3709 | 6783 | 3002 |
| Z | 2856 | 2473 | 1308 | 453 | 492 | 3687 | 6768 | 3051 |
| AA | 2888 | 2507 | 1324 | 483 | 576 | 3643 | 6712 | 2938 |
| AB | 2898 | 2516 | 1336 | 463 | 574 | 3635 | 6707 | 2955 |
| AC | 3043 | 2661 | 1480 | 355 | 697 | 3491 | 6566 | 2939 |
| AD | 3039 | 2657 | 1478 | 345 | 687 | 3497 | 6574 | 2956 |
| AE | 3512 | 3134 | 1938 | 468 | 1175 | 3015 | 6083 | 2795 |
| AF | 3500 | 3119 | 1931 | 403 | 1141 | 3031 | 6109 | 2866 |

To be continued on next page...

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## DECIBEL - Main Result

### Calculation: Enercon E138, stiebas 130, galia 4.2

...continued from previous page

| | WTG | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| AG | 6076 | 5704 | 4494 | 2922 | 3747 | 549 | 3500 | 3485 |
| AH | 6118 | 5745 | 4536 | 2961 | 3787 | 509 | 3460 | 3522 |
| AI | 6006 | 5630 | 4426 | 2806 | 3644 | 522 | 3613 | 3623 |
| AJ | 6277 | 5897 | 4702 | 3044 | 3890 | 294 | 3409 | 3956 |
| AK | 6323 | 5944 | 4747 | 3092 | 3938 | 246 | 3360 | 3977 |
| AL | 9788 | 9425 | 8210 | 6680 | 7502 | 3414 | 384 | 6326 |
| AM | 9834 | 9470 | 8255 | 6719 | 7542 | 3445 | 374 | 6389 |
| AN | 9915 | 9552 | 8338 | 6804 | 7627 | 3534 | 460 | 6452 |
| AO | 9911 | 9548 | 8333 | 6796 | 7620 | 3522 | 437 | 6460 |
| AP | 5087 | 4887 | 4017 | 3988 | 4149 | 4519 | 6395 | 793 |
| AQ | 5051 | 4849 | 3977 | 3947 | 4107 | 4495 | 6391 | 752 |
| AR | 4655 | 4477 | 3688 | 3877 | 3931 | 4804 | 6847 | 807 |
| AS | 4631 | 4451 | 3652 | 3828 | 3886 | 4757 | 6812 | 756 |
| AT | 4425 | 4151 | 3095 | 2724 | 3007 | 3478 | 5831 | 588 |
| AU | 4293 | 4105 | 3296 | 3513 | 3542 | 4650 | 6848 | 635 |

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

## Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

| | |
|---|---|
| LWA,ref: | Sound pressure level at WTG |
| K: | Pure tone |
| Dc: | Directivity correction |
| Adiv: | the attenuation due to geometrical divergence |
| Aatm: | the attenuation due to atmospheric absorption |
| Agr: | the attenuation due to ground effect |
| Abar: | the attenuation due to a barrier |
| Amisc: | the attenuation due to miscellaneous other effects |
| Cmet: | Meteorological correction |

## Calculation Results

### Noise sensitive area: A Noise sensitive point: User defined (1)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 715 | 726 | 33,08 | 106,0 | 0,00 | 68,22 | - | - | 0,00 | 0,00 | - |
| 2 | 1.093 | 1.100 | 27,95 | 106,0 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 3 | 2.297 | 2.300 | 18,36 | 106,0 | 0,00 | 78,24 | - | - | 0,00 | 0,00 | - |
| 4 | 3.980 | 3.983 | 11,10 | 106,0 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 5 | 3.133 | 3.136 | 14,25 | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 6 | 7.239 | 7.240 | 4,47 | 106,0 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 7 | 10.274 | 10.275 | 0,82 | 106,0 | 0,00 | 91,24 | - | - | 0,00 | 0,00 | - |
| 8 | 5.094 | 5.096 | 8,28 | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| Sum | | | 34,43 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: B Noise sensitive point: User defined (2)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 666 | 678 | 33,90 | 106,0 | 0,00 | 67,62 | - | - | 0,00 | 0,00 | - |
| 2 | 1.044 | 1.052 | 28,51 | 106,0 | 0,00 | 71,44 | - | - | 0,00 | 0,00 | - |
| 3 | 2.248 | 2.251 | 18,65 | 106,0 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 4 | 3.933 | 3.935 | 11,25 | 106,0 | 0,00 | 82,90 | - | - | 0,00 | 0,00 | - |
| 5 | 3.086 | 3.088 | 14,45 | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 6 | 7.190 | 7.192 | 4,54 | 106,0 | 0,00 | 88,14 | - | - | 0,00 | 0,00 | - |
| 7 | 10.225 | 10.226 | 0,87 | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| 8 | 5.050 | 5.051 | 8,38 | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,17 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: C Noise sensitive point: User defined (4)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 527 | 542 | 36,51 | 106,0 | 0,00 | 65,69 | - | - | 0,00 | 0,00 | - |
| 2 | 900 | 909 | 30,33 | 106,0 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 3 | 2.108 | 2.112 | 19,50 | 106,0 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 4 | 3.786 | 3.789 | 11,74 | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 5 | 2.939 | 2.941 | 15,10 | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 6 | 7.048 | 7.049 | 4,75 | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 7 | 10.087 | 10.088 | 1,01 | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.954 | 4.955 | 8,59 | 106,0 | 0,00 | 84,90 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,57 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
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# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: D Noise sensitive point: User defined (5)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 491 | 507 | 37,28 | 106,0 | 0,00 | 65,11 | - | - | 0,00 | 0,00 | - |
| 2 | 868 | 878 | 30,77 | 106,0 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 3 | 2.073 | 2.077 | 19,72 | 106,0 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 4 | 3.757 | 3.759 | 11,85 | 106,0 | 0,00 | 82,50 | - | - | 0,00 | 0,00 | - |
| 5 | 2.910 | 2.913 | 15,23 | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 6 | 7.014 | 7.016 | 4,80 | 106,0 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 7 | 10.051 | 10.052 | 1,05 | 106,0 | 0,00 | 91,05 | - | - | 0,00 | 0,00 | - |
| 8 | 4.909 | 4.910 | 8,70 | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,26 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: E Noise sensitive point: User defined (6)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 428 | 446 | 38,73 | 106,0 | 0,00 | 64,00 | - | - | 0,00 | 0,00 | - |
| 2 | 794 | 804 | 31,84 | 106,0 | 0,00 | 69,11 | - | - | 0,00 | 0,00 | - |
| 3 | 2.004 | 2.008 | 20,16 | 106,0 | 0,00 | 77,06 | - | - | 0,00 | 0,00 | - |
| 4 | 3.678 | 3.681 | 12,13 | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| 5 | 2.830 | 2.833 | 15,60 | 106,0 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 6 | 6.942 | 6.943 | 4,91 | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| 7 | 9.984 | 9.985 | 1,12 | 106,0 | 0,00 | 90,99 | - | - | 0,00 | 0,00 | - |
| 8 | 4.881 | 4.883 | 8,76 | 106,0 | 0,00 | 84,77 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,62 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: F Noise sensitive point: User defined (7)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 375 | 396 | 40,05 | 106,0 | 0,00 | 62,96 | - | - | 0,00 | 0,00 | - |
| 2 | 743 | 754 | 32,63 | 106,0 | 0,00 | 68,54 | - | - | 0,00 | 0,00 | - |
| 3 | 1.952 | 1.956 | 20,51 | 106,0 | 0,00 | 76,83 | - | - | 0,00 | 0,00 | - |
| 4 | 3.628 | 3.631 | 12,30 | 106,0 | 0,00 | 82,20 | - | - | 0,00 | 0,00 | - |
| 5 | 2.781 | 2.784 | 15,83 | 106,0 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 6 | 6.890 | 6.892 | 4,99 | 106,0 | 0,00 | 87,77 | - | - | 0,00 | 0,00 | - |
| 7 | 9.931 | 9.932 | 1,17 | 106,0 | 0,00 | 90,94 | - | - | 0,00 | 0,00 | - |
| 8 | 4.832 | 4.834 | 8,87 | 106,0 | 0,00 | 84,69 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,84 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: G Noise sensitive point: User defined (8)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 327 | 351 | 41,38 | 106,0 | 0,00 | 61,90 | - | - | 0,00 | 0,00 | - |
| 2 | 667 | 679 | 33,88 | 106,0 | 0,00 | 67,64 | - | - | 0,00 | 0,00 | - |
| 3 | 1.881 | 1.886 | 20,99 | 106,0 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 4 | 3.543 | 3.546 | 12,62 | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 5 | 2.694 | 2.697 | 16,25 | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 6 | 6.813 | 6.814 | 5,11 | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 7 | 9.860 | 9.861 | 1,25 | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 8 | 4.811 | 4.812 | 8,92 | 106,0 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,14 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: H Noise sensitive point: User defined (9)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 291 | 317 | 42,45 | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 2 | 635 | 648 | 34,44 | 106,0 | 0,00 | 67,23 | - | - | 0,00 | 0,00 | - |
| 3 | 1.849 | 1.853 | 21,22 | 106,0 | 0,00 | 76,36 | - | - | 0,00 | 0,00 | - |
| 4 | 3.515 | 3.517 | 12,72 | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 5 | 2.666 | 2.669 | 16,39 | 106,0 | 0,00 | 79,53 | - | - | 0,00 | 0,00 | - |
| 6 | 6.782 | 6.783 | 5,16 | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 7 | 9.828 | 9.829 | 1,28 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.775 | 4.776 | 9,01 | 106,0 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,13 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: I Noise sensitive point: User defined (11)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 481 | 497 | 37,52 | 106,0 | 0,00 | 64,93 | - | - | 0,00 | 0,00 | - |
| 2 | 683 | 695 | 33,61 | 106,0 | 0,00 | 67,84 | - | - | 0,00 | 0,00 | - |
| 3 | 1.868 | 1.872 | 21,09 | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 4 | 3.460 | 3.463 | 12,93 | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 5 | 2.609 | 2.612 | 16,67 | 106,0 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 6 | 6.754 | 6.755 | 5,21 | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 7 | 9.823 | 9.824 | 1,29 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.924 | 4.925 | 8,66 | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,11 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: J Noise sensitive point: User defined (12)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 454 | 472 | 38,11 | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 2 | 674 | 685 | 33,77 | 106,0 | 0,00 | 67,72 | - | - | 0,00 | 0,00 | - |
| 3 | 1.865 | 1.870 | 21,10 | 106,0 | 0,00 | 76,43 | - | - | 0,00 | 0,00 | - |
| 4 | 3.468 | 3.470 | 12,90 | 106,0 | 0,00 | 81,81 | - | - | 0,00 | 0,00 | - |
| 5 | 2.617 | 2.620 | 16,64 | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 6 | 6.759 | 6.760 | 5,20 | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| 7 | 9.825 | 9.826 | 1,28 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.908 | 4.909 | 8,70 | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,57 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: K Noise sensitive point: User defined (13)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 506 | 522 | 36,96 | 106,0 | 0,00 | 65,35 | - | - | 0,00 | 0,00 | - |
| 2 | 416 | 436 | 39,00 | 106,0 | 0,00 | 63,78 | - | - | 0,00 | 0,00 | - |
| 3 | 1.488 | 1.494 | 24,03 | 106,0 | 0,00 | 74,49 | - | - | 0,00 | 0,00 | - |
| 4 | 3.048 | 3.051 | 14,61 | 106,0 | 0,00 | 80,69 | - | - | 0,00 | 0,00 | - |
| 5 | 2.197 | 2.201 | 18,95 | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 6 | 6.345 | 6.346 | 5,87 | 106,0 | 0,00 | 87,05 | - | - | 0,00 | 0,00 | - |
| 7 | 9.419 | 9.420 | 1,72 | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| 8 | 4.639 | 4.641 | 9,34 | 106,0 | 0,00 | 84,33 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,23 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: L Noise sensitive point: User defined (14)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 472 | 489 | 37,70 | 106,0 | 0,00 | 64,78 | - | - | 0,00 | 0,00 | - |
| 2 | 374 | 396 | 40,06 | 106,0 | 0,00 | 62,95 | - | - | 0,00 | 0,00 | - |
| 3 | 1.464 | 1.470 | 24,24 | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 4 | 3.038 | 3.041 | 14,65 | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 5 | 2.187 | 2.191 | 19,01 | 106,0 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 6 | 6.332 | 6.333 | 5,90 | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 7 | 9.403 | 9.404 | 1,74 | 106,0 | 0,00 | 90,47 | - | - | 0,00 | 0,00 | - |
| 8 | 4.603 | 4.605 | 9,42 | 106,0 | 0,00 | 84,26 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,16 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: M Noise sensitive point: User defined (15)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 926 | 935 | 29,99 | 106,0 | 0,00 | 70,41 | - | - | 0,00 | 0,00 | - |
| 2 | 627 | 640 | 34,58 | 106,0 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 3 | 1.181 | 1.188 | 26,97 | 106,0 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 4 | 2.595 | 2.598 | 16,75 | 106,0 | 0,00 | 79,29 | - | - | 0,00 | 0,00 | - |
| 5 | 1.750 | 1.755 | 21,93 | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 6 | 5.903 | 5.905 | 6,65 | 106,0 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 7 | 8.994 | 8.995 | 2,20 | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.456 | 4.458 | 9,79 | 106,0 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,62 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: N Noise sensitive point: User defined (16)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 888 | 897 | 30,50 | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 2 | 583 | 597 | 35,40 | 106,0 | 0,00 | 66,52 | - | - | 0,00 | 0,00 | - |
| 3 | 1.162 | 1.170 | 27,17 | 106,0 | 0,00 | 72,36 | - | - | 0,00 | 0,00 | - |
| 4 | 2.602 | 2.606 | 16,71 | 106,0 | 0,00 | 79,32 | - | - | 0,00 | 0,00 | - |
| 5 | 1.756 | 1.760 | 21,89 | 106,0 | 0,00 | 75,91 | - | - | 0,00 | 0,00 | - |
| 6 | 5.909 | 5.911 | 6,64 | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 7 | 8.997 | 8.998 | 2,20 | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.429 | 4.431 | 9,86 | 106,0 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,27 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: O Noise sensitive point: User defined (17)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 861 | 871 | 30,87 | 106,0 | 0,00 | 69,80 | - | - | 0,00 | 0,00 | - |
| 2 | 541 | 556 | 36,23 | 106,0 | 0,00 | 65,90 | - | - | 0,00 | 0,00 | - |
| 3 | 1.117 | 1.124 | 27,67 | 106,0 | 0,00 | 72,02 | - | - | 0,00 | 0,00 | - |
| 4 | 2.585 | 2.588 | 16,80 | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 5 | 1.736 | 1.741 | 22,04 | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 6 | 5.889 | 5.890 | 6,68 | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.973 | 8.974 | 2,22 | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| 8 | 4.377 | 4.378 | 10,00 | 106,0 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,95 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: P Noise sensitive point: User defined (18)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 852 | 862 | 30,99 | 106,0 | 0,00 | 69,71 | - | - | 0,00 | 0,00 | - |
| 2 | 528 | 544 | 36,49 | 106,0 | 0,00 | 65,70 | - | - | 0,00 | 0,00 | - |
| 3 | 1.106 | 1.114 | 27,79 | 106,0 | 0,00 | 71,94 | - | - | 0,00 | 0,00 | - |
| 4 | 2.582 | 2.586 | 16,81 | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 5 | 1.733 | 1.738 | 22,06 | 106,0 | 0,00 | 75,80 | - | - | 0,00 | 0,00 | - |
| 6 | 5.885 | 5.887 | 6,69 | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.968 | 8.970 | 2,23 | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| 8 | 4.363 | 4.365 | 10,04 | 106,0 | 0,00 | 83,80 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,16 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: Q Noise sensitive point: User defined (19)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 894 | 903 | 30,42 | 106,0 | 0,00 | 70,11 | - | - | 0,00 | 0,00 | - |
| 2 | 552 | 567 | 36,00 | 106,0 | 0,00 | 66,08 | - | - | 0,00 | 0,00 | - |
| 3 | 1.043 | 1.051 | 28,52 | 106,0 | 0,00 | 71,43 | - | - | 0,00 | 0,00 | - |
| 4 | 2.517 | 2.521 | 17,15 | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 5 | 1.668 | 1.673 | 22,56 | 106,0 | 0,00 | 75,47 | - | - | 0,00 | 0,00 | - |
| 6 | 5.819 | 5.821 | 6,81 | 106,0 | 0,00 | 86,30 | - | - | 0,00 | 0,00 | - |
| 7 | 8.902 | 8.903 | 2,31 | 106,0 | 0,00 | 89,99 | - | - | 0,00 | 0,00 | - |
| 8 | 4.308 | 4.310 | 10,18 | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,81 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: R Noise sensitive point: User defined (20)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 867 | 877 | 30,78 | 106,0 | 0,00 | 69,86 | - | - | 0,00 | 0,00 | - |
| 2 | 522 | 538 | 36,61 | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 3 | 1.036 | 1.044 | 28,61 | 106,0 | 0,00 | 71,37 | - | - | 0,00 | 0,00 | - |
| 4 | 2.528 | 2.531 | 17,09 | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 5 | 1.678 | 1.683 | 22,48 | 106,0 | 0,00 | 75,52 | - | - | 0,00 | 0,00 | - |
| 6 | 5.828 | 5.829 | 6,79 | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 7 | 8.908 | 8.909 | 2,30 | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| 8 | 4.292 | 4.294 | 10,22 | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,30 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: S Noise sensitive point: User defined (21)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.003 | 1.011 | 29,01 | 106,0 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 2 | 659 | 672 | 34,01 | 106,0 | 0,00 | 67,54 | - | - | 0,00 | 0,00 | - |
| 3 | 1.015 | 1.023 | 28,87 | 106,0 | 0,00 | 71,20 | - | - | 0,00 | 0,00 | - |
| 4 | 2.432 | 2.435 | 17,61 | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 5 | 1.584 | 1.590 | 23,22 | 106,0 | 0,00 | 75,03 | - | - | 0,00 | 0,00 | - |
| 6 | 5.738 | 5.739 | 6,96 | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 7 | 8.826 | 8.827 | 2,40 | 106,0 | 0,00 | 89,92 | - | - | 0,00 | 0,00 | - |
| 8 | 4.300 | 4.302 | 10,20 | 106,0 | 0,00 | 83,67 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,41 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: T Noise sensitive point: User defined (22)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 989 | 997 | 29,19 | 106,0 | 0,00 | 70,97 | - | - | 0,00 | 0,00 | - |
| 2 | 636 | 649 | 34,42 | 106,0 | 0,00 | 67,25 | - | - | 0,00 | 0,00 | - |
| 3 | 979 | 988 | 29,30 | 106,0 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 4 | 2.419 | 2.423 | 17,68 | 106,0 | 0,00 | 78,69 | - | - | 0,00 | 0,00 | - |
| 5 | 1.570 | 1.576 | 23,34 | 106,0 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 6 | 5.723 | 5.725 | 6,99 | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 7 | 8.808 | 8.809 | 2,42 | 106,0 | 0,00 | 89,90 | - | - | 0,00 | 0,00 | - |
| 8 | 4.261 | 4.263 | 10,31 | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,76 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: U Noise sensitive point: User defined (23)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.870 | 1.874 | 21,07 | 106,0 | 0,00 | 76,46 | - | - | 0,00 | 0,00 | - |
| 2 | 1.516 | 1.521 | 23,79 | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 3 | 327 | 352 | 41,35 | 106,0 | 0,00 | 61,93 | - | - | 0,00 | 0,00 | - |
| 4 | 1.573 | 1.578 | 23,32 | 106,0 | 0,00 | 74,96 | - | - | 0,00 | 0,00 | - |
| 5 | 891 | 901 | 30,45 | 106,0 | 0,00 | 70,09 | - | - | 0,00 | 0,00 | - |
| 6 | 4.683 | 4.685 | 9,23 | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 7 | 7.693 | 7.695 | 3,83 | 106,0 | 0,00 | 88,72 | - | - | 0,00 | 0,00 | - |
| 8 | 2.994 | 2.996 | 14,85 | 106,0 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,87 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: V Noise sensitive point: User defined (24)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.828 | 1.833 | 21,36 | 106,0 | 0,00 | 76,26 | - | - | 0,00 | 0,00 | - |
| 2 | 1.474 | 1.480 | 24,15 | 106,0 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 3 | 290 | 317 | 42,45 | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 4 | 1.606 | 1.611 | 23,05 | 106,0 | 0,00 | 75,14 | - | - | 0,00 | 0,00 | - |
| 5 | 912 | 921 | 30,18 | 106,0 | 0,00 | 70,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.724 | 4.726 | 9,13 | 106,0 | 0,00 | 84,49 | - | - | 0,00 | 0,00 | - |
| 7 | 7.735 | 7.736 | 3,77 | 106,0 | 0,00 | 88,77 | - | - | 0,00 | 0,00 | - |
| 8 | 3.023 | 3.026 | 14,72 | 106,0 | 0,00 | 80,62 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,85 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: W Noise sensitive point: User defined (25)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.662 | 2.665 | 16,41 | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 2 | 2.278 | 2.282 | 18,47 | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 3 | 1.121 | 1.128 | 27,63 | 106,0 | 0,00 | 72,04 | - | - | 0,00 | 0,00 | - |
| 4 | 631 | 645 | 34,49 | 106,0 | 0,00 | 67,19 | - | - | 0,00 | 0,00 | - |
| 5 | 322 | 346 | 41,52 | 106,0 | 0,00 | 61,79 | - | - | 0,00 | 0,00 | - |
| 6 | 3.881 | 3.884 | 11,42 | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 7 | 6.960 | 6.961 | 4,88 | 106,0 | 0,00 | 87,85 | - | - | 0,00 | 0,00 | - |
| 8 | 3.104 | 3.106 | 14,37 | 106,0 | 0,00 | 80,84 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,49 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: X Noise sensitive point: User defined (26)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.664 | 2.668 | 16,40 | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 2 | 2.279 | 2.283 | 18,47 | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 3 | 1.136 | 1.143 | 27,47 | 106,0 | 0,00 | 72,16 | - | - | 0,00 | 0,00 | - |
| 4 | 617 | 632 | 34,74 | 106,0 | 0,00 | 67,01 | - | - | 0,00 | 0,00 | - |
| 5 | 287 | 314 | 42,56 | 106,0 | 0,00 | 60,94 | - | - | 0,00 | 0,00 | - |
| 6 | 3.889 | 3.892 | 11,39 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 7 | 6.974 | 6.975 | 4,86 | 106,0 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| 8 | 3.161 | 3.163 | 14,13 | 106,0 | 0,00 | 81,00 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,37 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: Y Noise sensitive point: User defined (27)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.827 | 2.830 | 15,61 | 106,0 | 0,00 | 80,04 | - | - | 0,00 | 0,00 | - |
| 2 | 2.445 | 2.448 | 17,54 | 106,0 | 0,00 | 78,78 | - | - | 0,00 | 0,00 | - |
| 3 | 1.271 | 1.277 | 26,05 | 106,0 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 4 | 503 | 520 | 37,00 | 106,0 | 0,00 | 65,32 | - | - | 0,00 | 0,00 | - |
| 5 | 495 | 511 | 37,19 | 106,0 | 0,00 | 65,17 | - | - | 0,00 | 0,00 | - |
| 6 | 3.709 | 3.711 | 12,02 | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 7 | 6.783 | 6.784 | 5,16 | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 8 | 3.002 | 3.005 | 14,81 | 106,0 | 0,00 | 80,56 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,33 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: Z Noise sensitive point: User defined (28)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.856 | 2.859 | 15,47 | 106,0 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 2 | 2.473 | 2.476 | 17,39 | 106,0 | 0,00 | 78,87 | - | - | 0,00 | 0,00 | - |
| 3 | 1.308 | 1.314 | 25,68 | 106,0 | 0,00 | 73,37 | - | - | 0,00 | 0,00 | - |
| 4 | 453 | 471 | 38,11 | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 5 | 492 | 508 | 37,27 | 106,0 | 0,00 | 65,12 | - | - | 0,00 | 0,00 | - |
| 6 | 3.687 | 3.689 | 12,09 | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 7 | 6.768 | 6.769 | 5,18 | 106,0 | 0,00 | 87,61 | - | - | 0,00 | 0,00 | - |
| 8 | 3.051 | 3.054 | 14,60 | 106,0 | 0,00 | 80,70 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,91 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AA Noise sensitive point: User defined (29)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.888 | 2.891 | 15,33 | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 2 | 2.507 | 2.511 | 17,20 | 106,0 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 3 | 1.324 | 1.330 | 25,53 | 106,0 | 0,00 | 73,48 | - | - | 0,00 | 0,00 | - |
| 4 | 483 | 500 | 37,45 | 106,0 | 0,00 | 64,98 | - | - | 0,00 | 0,00 | - |
| 5 | 576 | 590 | 35,55 | 106,0 | 0,00 | 66,41 | - | - | 0,00 | 0,00 | - |
| 6 | 3.643 | 3.645 | 12,25 | 106,0 | 0,00 | 82,23 | - | - | 0,00 | 0,00 | - |
| 7 | 6.712 | 6.713 | 5,27 | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 8 | 2.938 | 2.941 | 15,10 | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,84 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AB Noise sensitive point: User defined (30)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.898 | 2.901 | 15,28 | 106,0 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 2 | 2.516 | 2.520 | 17,15 | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 3 | 1.336 | 1.342 | 25,42 | 106,0 | 0,00 | 73,55 | - | - | 0,00 | 0,00 | - |
| 4 | 463 | 482 | 37,87 | 106,0 | 0,00 | 64,65 | - | - | 0,00 | 0,00 | - |
| 5 | 574 | 587 | 35,59 | 106,0 | 0,00 | 66,38 | - | - | 0,00 | 0,00 | - |
| 6 | 3.635 | 3.637 | 12,28 | 106,0 | 0,00 | 82,22 | - | - | 0,00 | 0,00 | - |
| 7 | 6.707 | 6.708 | 5,28 | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| 8 | 2.955 | 2.958 | 15,02 | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,10 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AC Noise sensitive point: User defined (31)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.043 | 3.045 | 14,63 | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 2 | 2.661 | 2.664 | 16,41 | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 3 | 1.480 | 1.486 | 24,10 | 106,0 | 0,00 | 74,44 | - | - | 0,00 | 0,00 | - |
| 4 | 355 | 378 | 40,57 | 106,0 | 0,00 | 62,55 | - | - | 0,00 | 0,00 | - |
| 5 | 697 | 709 | 33,37 | 106,0 | 0,00 | 68,01 | - | - | 0,00 | 0,00 | - |
| 6 | 3.491 | 3.494 | 12,81 | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 7 | 6.566 | 6.568 | 5,51 | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 8 | 2.939 | 2.942 | 15,09 | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,45 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AD Noise sensitive point: User defined (32)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.039 | 3.041 | 14,65 | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 2 | 2.657 | 2.660 | 16,44 | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| 3 | 1.478 | 1.483 | 24,12 | 106,0 | 0,00 | 74,43 | - | - | 0,00 | 0,00 | - |
| 4 | 345 | 369 | 40,84 | 106,0 | 0,00 | 62,33 | - | - | 0,00 | 0,00 | - |
| 5 | 687 | 698 | 33,55 | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 6 | 3.497 | 3.500 | 12,79 | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 7 | 6.574 | 6.575 | 5,49 | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 8 | 2.956 | 2.959 | 15,02 | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,70 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AE Noise sensitive point: User defined (33)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.512 | 3.514 | 12,73 | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 2 | 3.134 | 3.136 | 14,25 | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 3 | 1.938 | 1.942 | 20,60 | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 4 | 468 | 485 | 37,80 | 106,0 | 0,00 | 64,71 | - | - | 0,00 | 0,00 | - |
| 5 | 1.175 | 1.182 | 27,04 | 106,0 | 0,00 | 72,45 | - | - | 0,00 | 0,00 | - |
| 6 | 3.015 | 3.017 | 14,76 | 106,0 | 0,00 | 80,59 | - | - | 0,00 | 0,00 | - |
| 7 | 6.083 | 6.085 | 6,33 | 106,0 | 0,00 | 86,69 | - | - | 0,00 | 0,00 | - |
| 8 | 2.795 | 2.798 | 15,76 | 106,0 | 0,00 | 79,94 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,30 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AF Noise sensitive point: User defined (34)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.500 | 3.502 | 12,78 | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 2 | 3.119 | 3.122 | 14,31 | 106,0 | 0,00 | 80,89 | - | - | 0,00 | 0,00 | - |
| 3 | 1.931 | 1.934 | 20,65 | 106,0 | 0,00 | 76,73 | - | - | 0,00 | 0,00 | - |
| 4 | 403 | 423 | 39,33 | 106,0 | 0,00 | 63,52 | - | - | 0,00 | 0,00 | - |
| 5 | 1.141 | 1.148 | 27,41 | 106,0 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 6 | 3.031 | 3.034 | 14,68 | 106,0 | 0,00 | 80,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.109 | 6.111 | 6,28 | 106,0 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| 8 | 2.866 | 2.868 | 15,43 | 106,0 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,71 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AG Noise sensitive point: User defined (35)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.076 | 6.077 | 6,34 | 106,0 | 0,00 | 86,67 | - | - | 0,00 | 0,00 | - |
| 2 | 5.704 | 5.705 | 7,03 | 106,0 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 3 | 4.494 | 4.495 | 9,70 | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 4 | 2.922 | 2.925 | 15,17 | 106,0 | 0,00 | 80,32 | - | - | 0,00 | 0,00 | - |
| 5 | 3.747 | 3.749 | 11,88 | 106,0 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 6 | 549 | 563 | 36,08 | 106,0 | 0,00 | 66,02 | - | - | 0,00 | 0,00 | - |
| 7 | 3.500 | 3.503 | 12,78 | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 8 | 3.485 | 3.487 | 12,84 | 106,0 | 0,00 | 81,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,19 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AH Noise sensitive point: User defined (36)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.118 | 6.119 | 6,27 | 106,0 | 0,00 | 86,73 | - | - | 0,00 | 0,00 | - |
| 2 | 5.745 | 5.747 | 6,95 | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 3 | 4.536 | 4.537 | 9,59 | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| 4 | 2.961 | 2.964 | 15,00 | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 5 | 3.787 | 3.788 | 11,75 | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 6 | 509 | 525 | 36,90 | 106,0 | 0,00 | 65,40 | - | - | 0,00 | 0,00 | - |
| 7 | 3.460 | 3.463 | 12,93 | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 8 | 3.522 | 3.524 | 12,70 | 106,0 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,99 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AI Noise sensitive point: User defined (37)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.006 | 6.007 | 6,47 | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 2 | 5.630 | 5.631 | 7,17 | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 3 | 4.426 | 4.428 | 9,87 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 4 | 2.806 | 2.809 | 15,71 | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| 5 | 3.644 | 3.646 | 12,25 | 106,0 | 0,00 | 82,24 | - | - | 0,00 | 0,00 | - |
| 6 | 522 | 538 | 36,62 | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 7 | 3.613 | 3.615 | 12,36 | 106,0 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| 8 | 3.623 | 3.625 | 12,32 | 106,0 | 0,00 | 82,19 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,72 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AJ Noise sensitive point: User defined (38)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.277 | 6.278 | 5,99 | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 2 | 5.897 | 5.898 | 6,67 | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 3 | 4.702 | 4.703 | 9,18 | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 4 | 3.044 | 3.047 | 14,63 | 106,0 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 5 | 3.890 | 3.892 | 11,39 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 294 | 321 | 42,33 | 106,0 | 0,00 | 61,13 | - | - | 0,00 | 0,00 | - |
| 7 | 3.409 | 3.412 | 13,13 | 106,0 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| 8 | 3.956 | 3.958 | 11,17 | 106,0 | 0,00 | 82,95 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,35 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AK Noise sensitive point: User defined (39)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.323 | 6.324 | 5,91 | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 2 | 5.944 | 5.945 | 6,58 | 106,0 | 0,00 | 86,48 | - | - | 0,00 | 0,00 | - |
| 3 | 4.747 | 4.749 | 9,07 | 106,0 | 0,00 | 84,53 | - | - | 0,00 | 0,00 | - |
| 4 | 3.092 | 3.095 | 14,42 | 106,0 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 5 | 3.938 | 3.940 | 11,23 | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 6 | 246 | 278 | 43,86 | 106,0 | 0,00 | 59,88 | - | - | 0,00 | 0,00 | - |
| 7 | 3.360 | 3.362 | 13,32 | 106,0 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 8 | 3.977 | 3.979 | 11,11 | 106,0 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,88 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AL Noise sensitive point: User defined (40)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.788 | 9.788 | 1,32 | 106,0 | 0,00 | 90,81 | - | - | 0,00 | 0,00 | - |
| 2 | 9.425 | 9.426 | 1,72 | 106,0 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 3 | 8.210 | 8.211 | 3,15 | 106,0 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |
| 4 | 6.680 | 6.681 | 5,32 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 5 | 7.502 | 7.503 | 4,09 | 106,0 | 0,00 | 88,50 | - | - | 0,00 | 0,00 | - |
| 6 | 3.414 | 3.416 | 13,11 | 106,0 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 7 | 384 | 405 | 39,81 | 106,0 | 0,00 | 63,15 | - | - | 0,00 | 0,00 | - |
| 8 | 6.326 | 6.328 | 5,91 | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,83 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AM Noise sensitive point: User defined (41)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.834 | 9.834 | 1,28 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 2 | 9.470 | 9.471 | 1,67 | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 3 | 8.255 | 8.256 | 3,09 | 106,0 | 0,00 | 89,34 | - | - | 0,00 | 0,00 | - |
| 4 | 6.719 | 6.720 | 5,26 | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 5 | 7.542 | 7.543 | 4,04 | 106,0 | 0,00 | 88,55 | - | - | 0,00 | 0,00 | - |
| 6 | 3.445 | 3.448 | 12,99 | 106,0 | 0,00 | 81,75 | - | - | 0,00 | 0,00 | - |
| 7 | 374 | 395 | 40,08 | 106,0 | 0,00 | 62,93 | - | - | 0,00 | 0,00 | - |
| 8 | 6.389 | 6.390 | 5,80 | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,10 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AN Noise sensitive point: User defined (42)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.915 | 9.916 | 1,19 | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 2 | 9.552 | 9.553 | 1,58 | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 3 | 8.338 | 8.339 | 2,99 | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 4 | 6.804 | 6.805 | 5,13 | 106,0 | 0,00 | 87,66 | - | - | 0,00 | 0,00 | - |
| 5 | 7.627 | 7.628 | 3,92 | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 6 | 3.534 | 3.536 | 12,65 | 106,0 | 0,00 | 81,97 | - | - | 0,00 | 0,00 | - |
| 7 | 460 | 478 | 37,96 | 106,0 | 0,00 | 64,59 | - | - | 0,00 | 0,00 | - |
| 8 | 6.452 | 6.454 | 5,69 | 106,0 | 0,00 | 87,20 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,98 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AO Noise sensitive point: User defined (43)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.911 | 9.912 | 1,19 | 106,0 | 0,00 | 90,92 | - | - | 0,00 | 0,00 | - |
| 2 | 9.548 | 9.548 | 1,58 | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 3 | 8.333 | 8.334 | 2,99 | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 4 | 6.796 | 6.797 | 5,14 | 106,0 | 0,00 | 87,65 | - | - | 0,00 | 0,00 | - |
| 5 | 7.620 | 7.621 | 3,93 | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 6 | 3.522 | 3.524 | 12,70 | 106,0 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 7 | 437 | 455 | 38,50 | 106,0 | 0,00 | 64,17 | - | - | 0,00 | 0,00 | - |
| 8 | 6.460 | 6.461 | 5,68 | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,52 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AP Noise sensitive point: User defined (48)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.087 | 5.089 | 8,29 | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 2 | 4.887 | 4.889 | 8,75 | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 3 | 4.017 | 4.019 | 10,99 | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 4 | 3.988 | 3.990 | 11,08 | 106,0 | 0,00 | 83,02 | - | - | 0,00 | 0,00 | - |
| 5 | 4.149 | 4.151 | 10,62 | 106,0 | 0,00 | 83,36 | - | - | 0,00 | 0,00 | - |
| 6 | 4.519 | 4.521 | 9,63 | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 7 | 6.395 | 6.397 | 5,79 | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| 8 | 793 | 803 | 31,85 | 106,0 | 0,00 | 69,10 | - | - | 0,00 | 0,00 | - |
| Sum | | | 32,03 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AQ Noise sensitive point: User defined (49)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.051 | 5.052 | 8,38 | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 2 | 4.849 | 4.851 | 8,83 | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 3 | 3.977 | 3.979 | 11,11 | 106,0 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 4 | 3.947 | 3.949 | 11,20 | 106,0 | 0,00 | 82,93 | - | - | 0,00 | 0,00 | - |
| 5 | 4.107 | 4.109 | 10,73 | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.495 | 4.498 | 9,69 | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 7 | 6.391 | 6.392 | 5,80 | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 8 | 752 | 763 | 32,49 | 106,0 | 0,00 | 68,65 | - | - | 0,00 | 0,00 | - |
| Sum | | | 32,65 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AR Noise sensitive point: User defined (50)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.655 | 4.656 | 9,30 | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 2 | 4.477 | 4.479 | 9,74 | 106,0 | 0,00 | 84,02 | - | - | 0,00 | 0,00 | - |
| 3 | 3.688 | 3.690 | 12,09 | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 4 | 3.877 | 3.879 | 11,43 | 106,0 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 5 | 3.931 | 3.933 | 11,25 | 106,0 | 0,00 | 82,89 | - | - | 0,00 | 0,00 | - |
| 6 | 4.804 | 4.806 | 8,94 | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.847 | 6.848 | 5,06 | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 8 | 807 | 818 | 31,64 | 106,0 | 0,00 | 69,25 | - | - | 0,00 | 0,00 | - |
| Sum | | | 31,85 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AS Noise sensitive point: User defined (51)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.631 | 4.633 | 9,35 | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 2 | 4.451 | 4.453 | 9,81 | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 3 | 3.652 | 3.654 | 12,22 | 106,0 | 0,00 | 82,26 | - | - | 0,00 | 0,00 | - |
| 4 | 3.828 | 3.830 | 11,60 | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 5 | 3.886 | 3.889 | 11,40 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 4.757 | 4.759 | 9,05 | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 7 | 6.812 | 6.813 | 5,11 | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 8 | 756 | 767 | 32,42 | 106,0 | 0,00 | 68,70 | - | - | 0,00 | 0,00 | - |
| Sum | | | 32,60 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AT Noise sensitive point: User defined (52)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.425 | 4.427 | 9,87 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 2 | 4.151 | 4.153 | 10,61 | 106,0 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 3 | 3.095 | 3.098 | 14,41 | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 4 | 2.724 | 2.727 | 16,10 | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 5 | 3.007 | 3.010 | 14,79 | 106,0 | 0,00 | 80,57 | - | - | 0,00 | 0,00 | - |
| 6 | 3.478 | 3.481 | 12,86 | 106,0 | 0,00 | 81,83 | - | - | 0,00 | 0,00 | - |
| 7 | 5.831 | 5.832 | 6,79 | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| 8 | 588 | 602 | 35,31 | 106,0 | 0,00 | 66,59 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,49 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AU Noise sensitive point: User defined (53)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.293 | 4.295 | 10,22 | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 2 | 4.105 | 4.107 | 10,74 | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| 3 | 3.296 | 3.298 | 13,58 | 106,0 | 0,00 | 81,37 | - | - | 0,00 | 0,00 | - |
| 4 | 3.513 | 3.515 | 12,73 | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 5 | 3.542 | 3.544 | 12,62 | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 6 | 4.650 | 4.652 | 9,31 | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 7 | 6.848 | 6.849 | 5,06 | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 8 | 635 | 648 | 34,44 | 106,0 | 0,00 | 67,23 | - | - | 0,00 | 0,00 | - |
| Sum | | | 34,58 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
10,0 m/s
Ground attenuation:
General, Ground factor: 0,8
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in NSA has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)
Octave data required
Frequency dependent air absorption

| 63 | 125 | 250 | 500 | 1.000 | 2.000 | 4.000 | 8.000 |
|---|---|---|---|---|---|---|---|
| [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] |
| 0,10 | 0,40 | 1,00 | 1,90 | 3,70 | 9,70 | 32,80 | 117,00 |

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

WTG: ENERCON E-138 EP3 E2 4200 138.3 !O!
Noise: Level 0 - OM 0s - 4200 kW

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Enercon GmbH | 2019.11.08 | EMD | 2020.01.21 11:45 |

The sound power levels do not include uncertainties.
According to manufacturer specification document (D0748822-6/D0748941-3).
Enercon reserves the right to change the above specifications without prior notice.

| | | | | | Octave data | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| From Windcat | 130,3 | 10,0 | 106,0 | No | 86,9 | 92,3 | 94,8 | 97,4 | 100,1 | 101,7 | 95,9 | 78,2 |

WTG: ENERCON E-138 EP3 E2 4200 138.3 !O!
Noise: Level 0 - OM 0s - 4200 kW

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Enercon GmbH | 2019.11.08 | EMD | 2020.01.21 11:45 |

The sound power levels do not include uncertainties.
According to manufacturer specification document (D0748822-6/D0748941-3).
Enercon reserves the right to change the above specifications without prior notice.

| | | | | | Octave data | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| From Windcat | 130,3 | 10,0 | 106,0 | No | 86,9 | 92,3 | 94,8 | 97,4 | 100,1 | 101,7 | 95,9 | 78,2 |

## Noise sensitive area: A Noise sensitive point: User defined (1)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

Calculation: Enercon E138, stiebas 130, galia 4.2

## Noise sensitive area: B Noise sensitive point: User defined (2)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: C Noise sensitive point: User defined (4)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: D Noise sensitive point: User defined (5)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: E Noise sensitive point: User defined (6)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: F Noise sensitive point: User defined (7)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: G Noise sensitive point: User defined (8)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: H Noise sensitive point: User defined (9)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: I Noise sensitive point: User defined (11)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: J Noise sensitive point: User defined (12)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: K Noise sensitive point: User defined (13)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: L Noise sensitive point: User defined (14)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: M Noise sensitive point: User defined (15)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: N Noise sensitive point: User defined (16)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: O Noise sensitive point: User defined (17)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: P Noise sensitive point: User defined (18)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: Q Noise sensitive point: User defined (19)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: R Noise sensitive point: User defined (20)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

Calculation: Enercon E138, stiebas 130, galia 4.2

## Noise sensitive area: S Noise sensitive point: User defined (21)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: T Noise sensitive point: User defined (22)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: U Noise sensitive point: User defined (23)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: V Noise sensitive point: User defined (24)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: W Noise sensitive point: User defined (25)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: X Noise sensitive point: User defined (26)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: Y Noise sensitive point: User defined (27)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: Z Noise sensitive point: User defined (28)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AA Noise sensitive point: User defined (29)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AB Noise sensitive point: User defined (30)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AC Noise sensitive point: User defined (31)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AD Noise sensitive point: User defined (32)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AE Noise sensitive point: User defined (33)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AF Noise sensitive point: User defined (34)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AG Noise sensitive point: User defined (35)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AH Noise sensitive point: User defined (36)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AI Noise sensitive point: User defined (37)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

Calculation: Enercon E138, stiebas 130, galia 4.2

## Noise sensitive area: AJ Noise sensitive point: User defined (38)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AK Noise sensitive point: User defined (39)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AL Noise sensitive point: User defined (40)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AM Noise sensitive point: User defined (41)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AN Noise sensitive point: User defined (42)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AO Noise sensitive point: User defined (43)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AP Noise sensitive point: User defined (48)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AQ Noise sensitive point: User defined (49)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AR Noise sensitive point: User defined (50)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AS Noise sensitive point: User defined (51)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AT Noise sensitive point: User defined (52)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AU Noise sensitive point: User defined (53)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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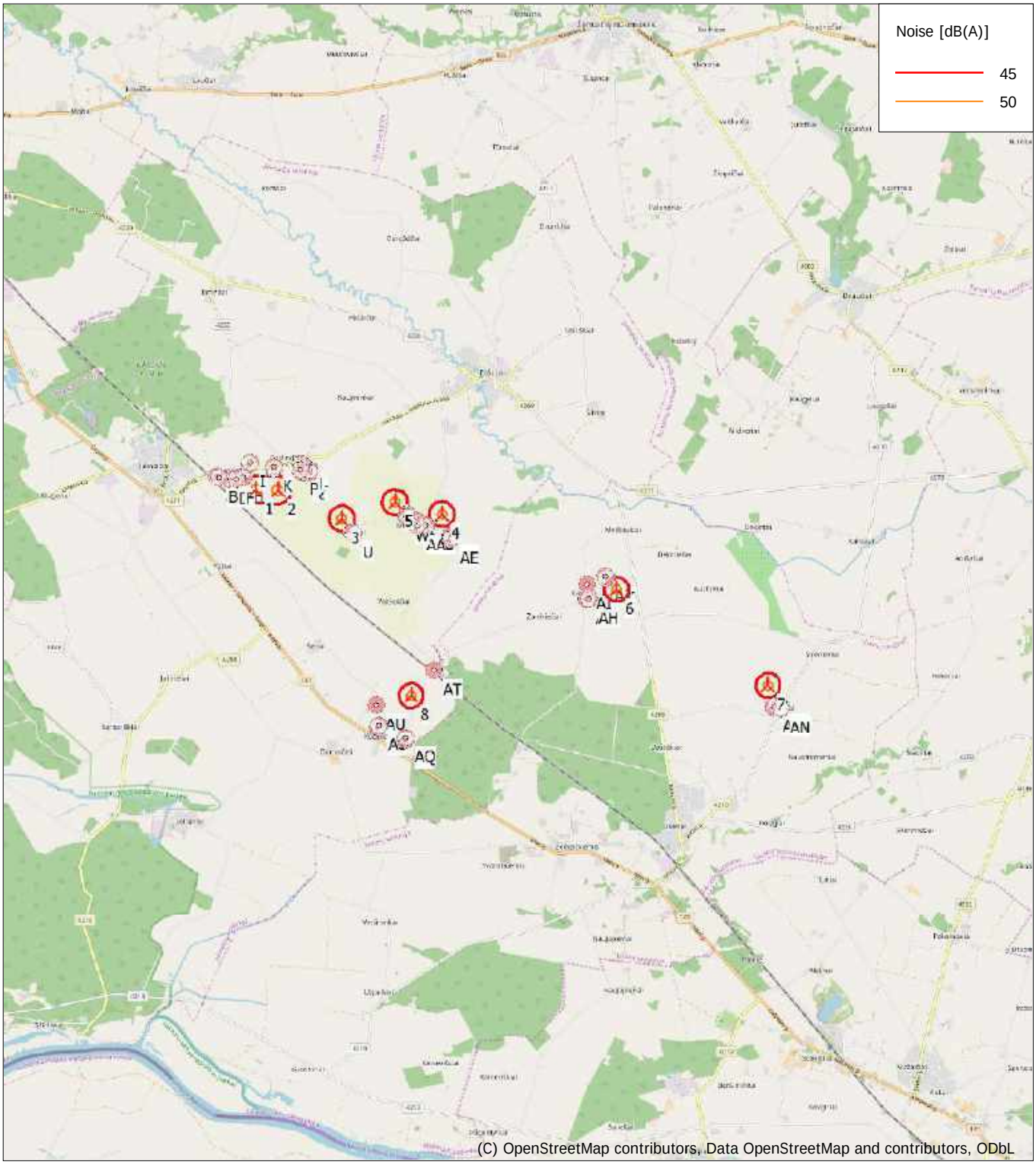
Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Map 10,0 m/s

## Calculation: Enercon E138, stiebas 130, galia 4.2




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.368 North: 6.128.575

New WTG  Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

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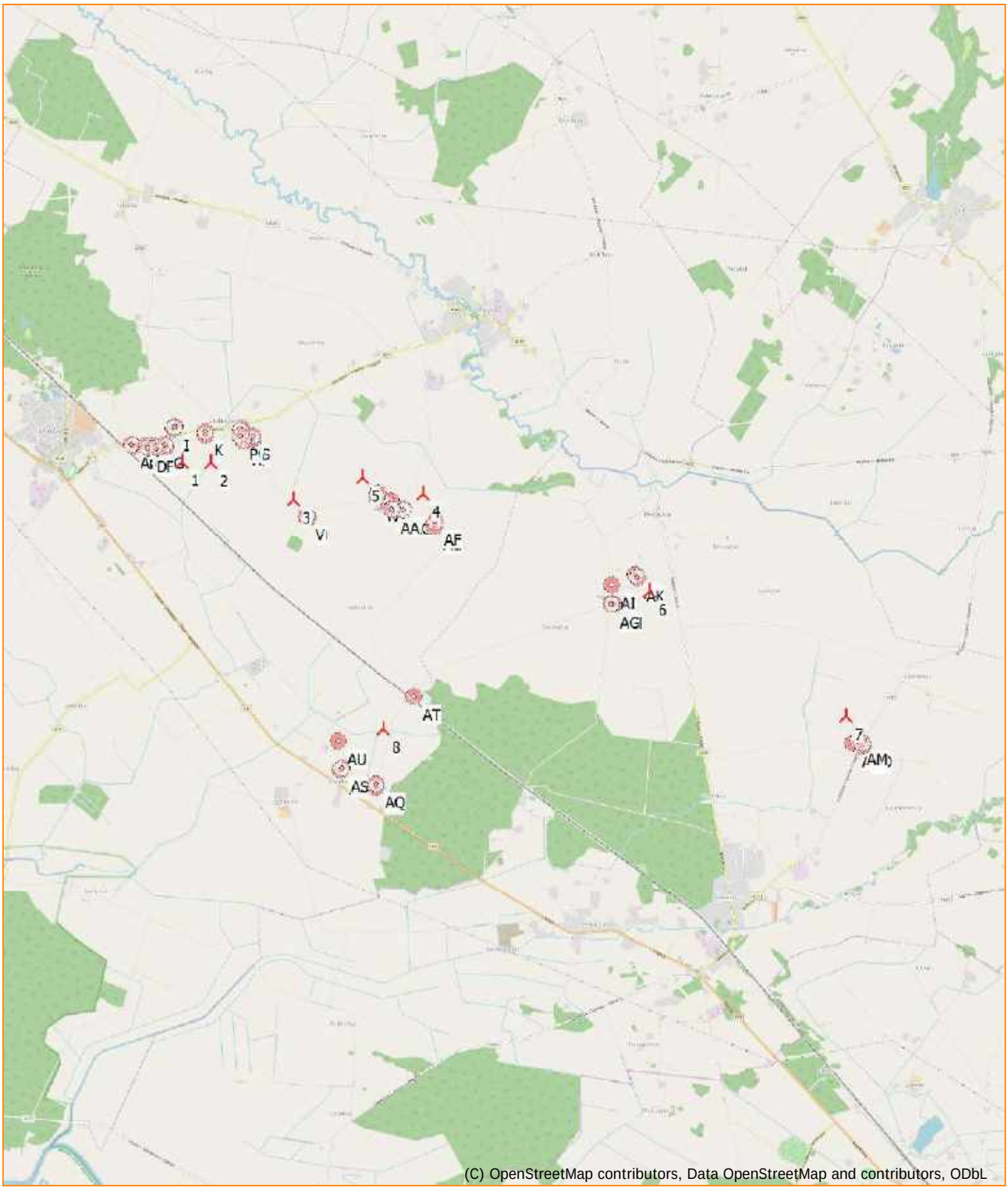
Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Map 10,0 m/s

## Calculation: Enercon E138, stiebas 130, galia 4.2




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.143 North: 6.128.437

New WTG  Noise sensitive area

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Calculated:
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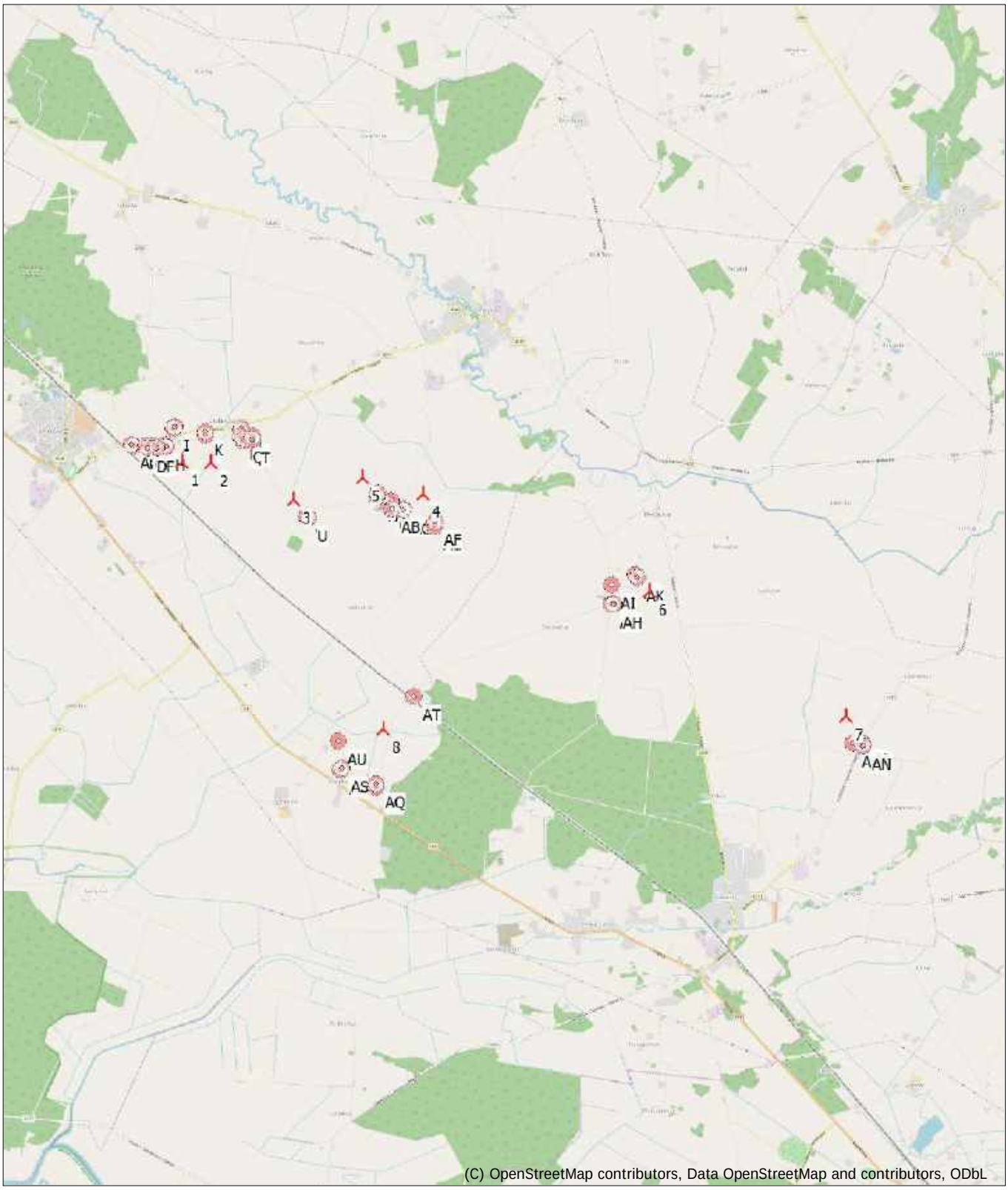
# DECIBEL - Map 10,0 m/s

Calculation: Enercon E138, stiebas 130, galia 4.2




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.143 North: 6.128.437

New WTG  Noise sensitive area

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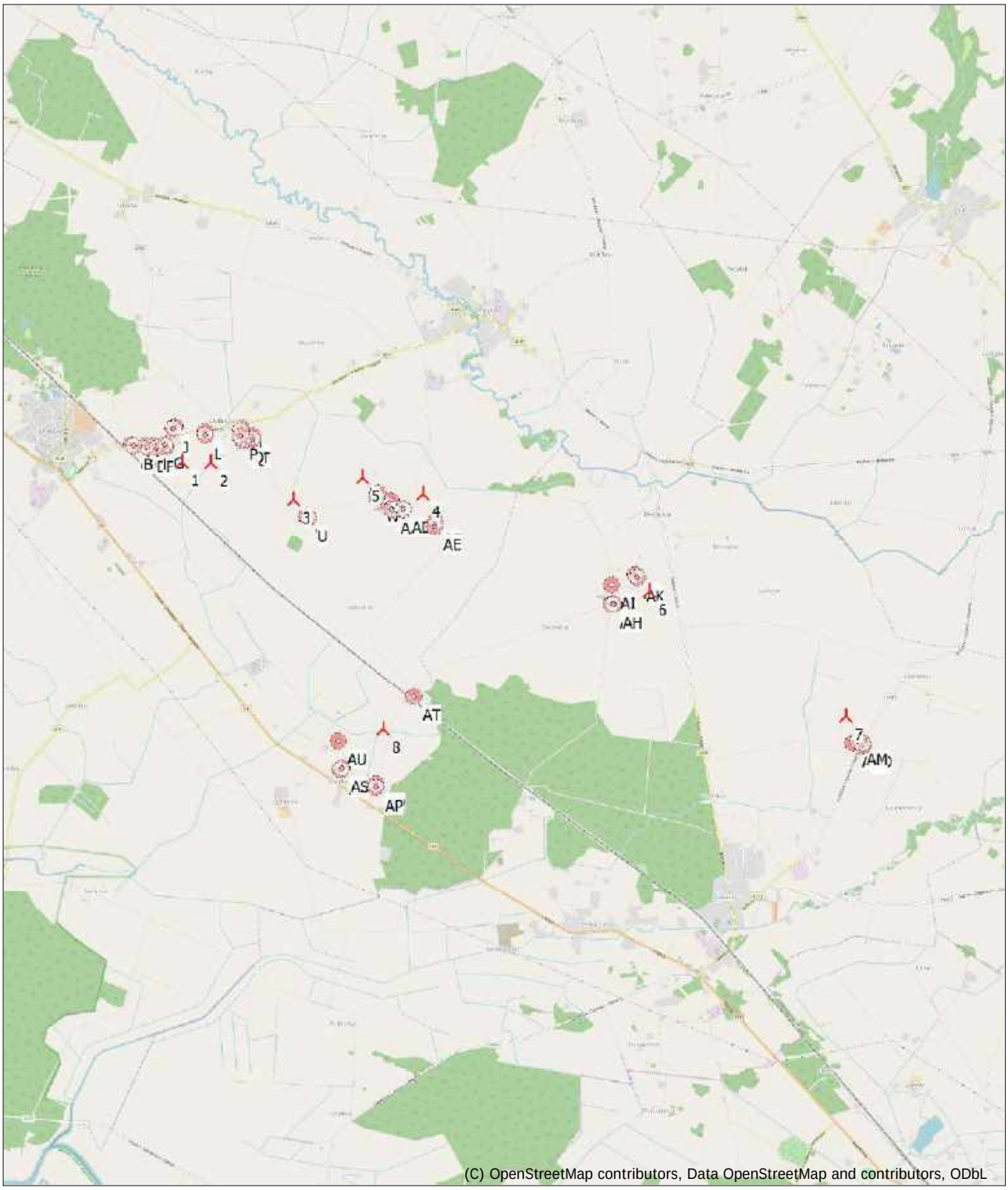
Calculated:
2021.11.30 11:33/3.5.552

# DECIBEL - Map 10,0 m/s

## Calculation: Enercon E138, stiebas 130, galia 4.2




0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.143 North: 6.128.437

New WTG  Noise sensitive area

Project:
8 VE Ðilutës r.triukðmas

Description:
Aðtuoniø vëjo elektriniø (Ðilutës raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija

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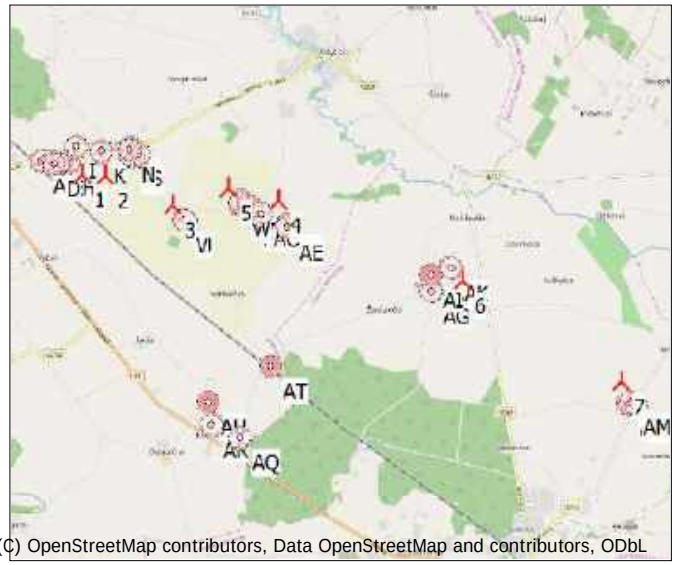
Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Main Result

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
10,0 m/s
Ground attenuation:
General, Ground factor: 0,8
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in NSA has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:125.000
New WTG
Noise sensitive area

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Noise data Creator | Name | Wind speed | LwA,ref |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | | | [m/s] | [dB(A)] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | 106,0 |

# Calculation Results

## Sound level

| Noise sensitive area No. | Name | Y | X | Z | Immission height | Demands Noise | Sound level From WTGs | Distance to noise demand | Demands fulfilled ? Noise |
|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| A | Noise sensitive point: User defined (1) | 347.290 | 6.130.678 | 10,0 | 1,5 | 45,0 | 34,4 | 489 | Yes |
| B | Noise sensitive point: User defined (2) | 347.334 | 6.130.657 | 10,0 | 1,5 | 45,0 | 35,2 | 440 | Yes |
| C | Noise sensitive point: User defined (4) | 347.483 | 6.130.653 | 10,7 | 1,5 | 45,0 | 37,6 | 303 | Yes |
| D | Noise sensitive point: User defined (5) | 347.505 | 6.130.613 | 10,4 | 1,5 | 45,0 | 38,3 | 266 | Yes |
| E | Noise sensitive point: User defined (6) | 347.592 | 6.130.646 | 10,8 | 1,5 | 45,0 | 39,6 | 202 | Yes |
| F | Noise sensitive point: User defined (7) | 347.637 | 6.130.618 | 10,6 | 1,5 | 45,0 | 40,8 | 149 | Yes |
| G | Noise sensitive point: User defined (8) | 347.734 | 6.130.663 | 11,0 | 1,5 | 45,0 | 42,1 | 98 | Yes |
| H | Noise sensitive point: User defined (9) | 347.757 | 6.130.635 | 10,8 | 1,5 | 45,0 | 43,1 | 63 | Yes |
| I | Noise sensitive point: User defined (11) | 347.883 | 6.130.901 | 13,1 | 1,5 | 45,0 | 39,1 | 243 | Yes |
| J | Noise sensitive point: User defined (12) | 347.866 | 6.130.871 | 12,8 | 1,5 | 45,0 | 39,6 | 219 | Yes |
| K | Noise sensitive point: User defined (13) | 348.287 | 6.130.811 | 10,0 | 1,5 | 45,0 | 41,2 | 161 | Yes |
| L | Noise sensitive point: User defined (14) | 348.284 | 6.130.768 | 10,0 | 1,5 | 45,0 | 42,2 | 118 | Yes |
| M | Noise sensitive point: User defined (15) | 348.782 | 6.130.851 | 10,0 | 1,5 | 45,0 | 36,6 | 396 | Yes |
| N | Noise sensitive point: User defined (16) | 348.759 | 6.130.812 | 10,0 | 1,5 | 45,0 | 37,3 | 352 | Yes |
| O | Noise sensitive point: User defined (17) | 348.756 | 6.130.753 | 10,0 | 1,5 | 45,0 | 37,9 | 310 | Yes |
| P | Noise sensitive point: User defined (18) | 348.753 | 6.130.737 | 10,0 | 1,5 | 45,0 | 38,2 | 298 | Yes |
| Q | Noise sensitive point: User defined (19) | 348.810 | 6.130.701 | 10,0 | 1,5 | 45,0 | 37,8 | 325 | Yes |
| R | Noise sensitive point: User defined (20) | 348.790 | 6.130.676 | 10,0 | 1,5 | 45,0 | 38,3 | 295 | Yes |
| S | Noise sensitive point: User defined (21) | 348.913 | 6.130.737 | 10,0 | 1,5 | 45,0 | 36,4 | 432 | Yes |
| T | Noise sensitive point: User defined (22) | 348.911 | 6.130.694 | 10,0 | 1,5 | 45,0 | 36,7 | 407 | Yes |
| U | Noise sensitive point: User defined (23) | 349.644 | 6.129.613 | 10,0 | 1,5 | 45,0 | 41,9 | 108 | Yes |
| V | Noise sensitive point: User defined (24) | 349.607 | 6.129.632 | 10,0 | 1,5 | 45,0 | 42,8 | 71 | Yes |
| W | Noise sensitive point: User defined (25) | 350.562 | 6.129.862 | 10,9 | 1,5 | 45,0 | 42,5 | 97 | Yes |

To be continued on next page...

# DECIBEL - Main Result

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

...continued from previous page

| Noise sensitive area No. | Name | Y | X | Z | Immission height | Demands Noise | Sound level From WTGs | Distance to noise demand | Demands fulfilled ? Noise |
|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| X | Noise sensitive point: User defined (26) | 350.576 | 6.129.919 | 10,8 | 1,5 | 45,0 | 43,4 | 61 | Yes |
| Y | Noise sensitive point: User defined (27) | 350.707 | 6.129.756 | 12,0 | 1,5 | 45,0 | 40,3 | 269 | Yes |
| Z | Noise sensitive point: User defined (28) | 350.748 | 6.129.803 | 12,1 | 1,5 | 45,0 | 40,9 | 230 | Yes |
| AA | Noise sensitive point: User defined (29) | 350.753 | 6.129.689 | 12,4 | 1,5 | 45,0 | 39,8 | 259 | Yes |
| AB | Noise sensitive point: User defined (30) | 350.767 | 6.129.705 | 12,4 | 1,5 | 45,0 | 40,1 | 240 | Yes |
| AC | Noise sensitive point: User defined (31) | 350.909 | 6.129.675 | 13,3 | 1,5 | 45,0 | 41,4 | 135 | Yes |
| AD | Noise sensitive point: User defined (32) | 350.909 | 6.129.692 | 13,3 | 1,5 | 45,0 | 41,7 | 125 | Yes |
| AE | Noise sensitive point: User defined (33) | 351.332 | 6.129.441 | 16,3 | 1,5 | 45,0 | 38,3 | 252 | Yes |
| AF | Noise sensitive point: User defined (34) | 351.339 | 6.129.512 | 16,2 | 1,5 | 45,0 | 39,7 | 185 | Yes |
| AG | Noise sensitive point: User defined (35) | 353.662 | 6.128.322 | 20,0 | 1,5 | 45,0 | 36,2 | 338 | Yes |
| AH | Noise sensitive point: User defined (36) | 353.705 | 6.128.318 | 20,0 | 1,5 | 45,0 | 37,0 | 298 | Yes |
| AI | Noise sensitive point: User defined (37) | 353.678 | 6.128.582 | 20,0 | 1,5 | 45,0 | 36,7 | 308 | Yes |
| AJ | Noise sensitive point: User defined (38) | 353.996 | 6.128.697 | 20,0 | 1,5 | 45,0 | 42,4 | 83 | Yes |
| AK | Noise sensitive point: User defined (39) | 354.036 | 6.128.668 | 20,0 | 1,5 | 45,0 | 43,9 | 34 | Yes |
| AL | Noise sensitive point: User defined (40) | 356.862 | 6.126.349 | 19,7 | 1,5 | 45,0 | 39,8 | 172 | Yes |
| AM | Noise sensitive point: User defined (41) | 356.927 | 6.126.381 | 20,0 | 1,5 | 45,0 | 40,1 | 161 | Yes |
| AN | Noise sensitive point: User defined (42) | 356.986 | 6.126.313 | 20,0 | 1,5 | 45,0 | 38,0 | 249 | Yes |
| AO | Noise sensitive point: User defined (43) | 356.996 | 6.126.345 | 20,0 | 1,5 | 45,0 | 38,5 | 226 | Yes |
| AP | Noise sensitive point: User defined (48) | 350.424 | 6.125.973 | 10,0 | 1,5 | 45,0 | 18,1 | 3.771 | Yes |
| AQ | Noise sensitive point: User defined (49) | 350.424 | 6.126.015 | 10,0 | 1,5 | 45,0 | 18,2 | 3.730 | Yes |
| AR | Noise sensitive point: User defined (50) | 349.947 | 6.126.215 | 10,0 | 1,5 | 45,0 | 18,6 | 3.472 | Yes |
| AS | Noise sensitive point: User defined (51) | 349.979 | 6.126.256 | 10,0 | 1,5 | 45,0 | 18,7 | 3.437 | Yes |
| AT | Noise sensitive point: User defined (52) | 350.962 | 6.127.173 | 10,0 | 1,5 | 45,0 | 21,6 | 2.509 | Yes |
| AU | Noise sensitive point: User defined (53) | 349.928 | 6.126.609 | 10,0 | 1,5 | 45,0 | 19,7 | 3.080 | Yes |

## Distances (m)

| | WTG | | | | | | |
|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A | 715 | 1093 | 2297 | 3980 | 3133 | 7239 | 10274 |
| B | 666 | 1044 | 2248 | 3933 | 3086 | 7190 | 10225 |
| C | 527 | 900 | 2108 | 3786 | 2939 | 7048 | 10087 |
| D | 491 | 868 | 2073 | 3757 | 2910 | 7014 | 10051 |
| E | 428 | 794 | 2004 | 3678 | 2830 | 6942 | 9984 |
| F | 375 | 743 | 1952 | 3628 | 2781 | 6890 | 9931 |
| G | 327 | 667 | 1881 | 3543 | 2694 | 6813 | 9860 |
| H | 291 | 635 | 1849 | 3515 | 2666 | 6782 | 9828 |
| I | 481 | 683 | 1868 | 3460 | 2609 | 6754 | 9823 |
| J | 454 | 674 | 1865 | 3468 | 2617 | 6759 | 9825 |
| K | 506 | 416 | 1488 | 3048 | 2197 | 6345 | 9419 |
| L | 472 | 374 | 1464 | 3038 | 2187 | 6332 | 9403 |
| M | 926 | 627 | 1181 | 2595 | 1750 | 5903 | 8994 |
| N | 888 | 583 | 1162 | 2602 | 1756 | 5909 | 8997 |
| O | 861 | 541 | 1117 | 2585 | 1736 | 5889 | 8973 |
| P | 852 | 528 | 1106 | 2582 | 1733 | 5885 | 8968 |
| Q | 894 | 552 | 1043 | 2517 | 1668 | 5819 | 8902 |
| R | 867 | 522 | 1036 | 2528 | 1678 | 5828 | 8908 |
| S | 1003 | 659 | 1015 | 2432 | 1584 | 5738 | 8826 |
| T | 989 | 636 | 979 | 2419 | 1570 | 5723 | 8808 |
| U | 1870 | 1516 | 327 | 1573 | 891 | 4683 | 7693 |
| V | 1828 | 1474 | 290 | 1606 | 912 | 4724 | 7735 |
| W | 2662 | 2278 | 1121 | 631 | 322 | 3881 | 6960 |
| X | 2664 | 2279 | 1136 | 617 | 287 | 3889 | 6974 |
| Y | 2827 | 2445 | 1271 | 503 | 495 | 3709 | 6783 |
| Z | 2856 | 2473 | 1308 | 453 | 492 | 3687 | 6768 |
| AA | 2888 | 2507 | 1324 | 483 | 576 | 3643 | 6712 |
| AB | 2898 | 2516 | 1336 | 463 | 574 | 3635 | 6707 |
| AC | 3043 | 2661 | 1480 | 355 | 697 | 3491 | 6566 |
| AD | 3039 | 2657 | 1478 | 345 | 687 | 3497 | 6574 |
| AE | 3512 | 3134 | 1938 | 468 | 1175 | 3015 | 6083 |
| AF | 3500 | 3119 | 1931 | 403 | 1141 | 3031 | 6109 |
| AG | 6076 | 5704 | 4494 | 2922 | 3747 | 549 | 3500 |

To be continued on next page...

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## DECIBEL - Main Result

### Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

...continued from previous page

| | WTG | | | | | | |
|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| AH | 6118 | 5745 | 4536 | 2961 | 3787 | 509 | 3460 |
| AI | 6006 | 5630 | 4426 | 2806 | 3644 | 522 | 3613 |
| AJ | 6277 | 5897 | 4702 | 3044 | 3890 | 294 | 3409 |
| AK | 6323 | 5944 | 4747 | 3092 | 3938 | 246 | 3360 |
| AL | 9788 | 9425 | 8210 | 6680 | 7502 | 3414 | 384 |
| AM | 9834 | 9470 | 8255 | 6719 | 7542 | 3445 | 374 |
| AN | 9915 | 9552 | 8338 | 6804 | 7627 | 3534 | 460 |
| AO | 9911 | 9548 | 8333 | 6796 | 7620 | 3522 | 437 |
| AP | 5087 | 4887 | 4017 | 3988 | 4149 | 4519 | 6395 |
| AQ | 5051 | 4849 | 3977 | 3947 | 4107 | 4495 | 6391 |
| AR | 4655 | 4477 | 3688 | 3877 | 3931 | 4804 | 6847 |
| AS | 4631 | 4451 | 3652 | 3828 | 3886 | 4757 | 6812 |
| AT | 4425 | 4151 | 3095 | 2724 | 3007 | 3478 | 5831 |
| AU | 4293 | 4105 | 3296 | 3513 | 3542 | 4650 | 6848 |

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Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Detailed results

Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

## Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

| | |
|---|---|
| LWA,ref: | Sound pressure level at WTG |
| K: | Pure tone |
| Dc: | Directivity correction |
| Adiv: | the attenuation due to geometrical divergence |
| Aatm: | the attenuation due to atmospheric absorption |
| Agr: | the attenuation due to ground effect |
| Abar: | the attenuation due to a barrier |
| Amisc: | the attenuation due to miscellaneous other effects |
| Cmet: | Meteorological correction |

## Calculation Results

### Noise sensitive area: A Noise sensitive point: User defined (1)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 715 | 726 | 33,08 | 106,0 | 0,00 | 68,22 | - | - | 0,00 | 0,00 | - |
| 2 | 1.093 | 1.100 | 27,95 | 106,0 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 3 | 2.297 | 2.300 | 18,36 | 106,0 | 0,00 | 78,24 | - | - | 0,00 | 0,00 | - |
| 4 | 3.980 | 3.983 | 11,10 | 106,0 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 5 | 3.133 | 3.136 | 14,25 | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 6 | 7.239 | 7.240 | 4,47 | 106,0 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 7 | 10.274 | 10.275 | 0,82 | 106,0 | 0,00 | 91,24 | - | - | 0,00 | 0,00 | - |
| Sum | | | 34,42 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: B Noise sensitive point: User defined (2)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 666 | 678 | 33,90 | 106,0 | 0,00 | 67,62 | - | - | 0,00 | 0,00 | - |
| 2 | 1.044 | 1.052 | 28,51 | 106,0 | 0,00 | 71,44 | - | - | 0,00 | 0,00 | - |
| 3 | 2.248 | 2.251 | 18,65 | 106,0 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 4 | 3.933 | 3.935 | 11,25 | 106,0 | 0,00 | 82,90 | - | - | 0,00 | 0,00 | - |
| 5 | 3.086 | 3.088 | 14,45 | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 6 | 7.190 | 7.192 | 4,54 | 106,0 | 0,00 | 88,14 | - | - | 0,00 | 0,00 | - |
| 7 | 10.225 | 10.226 | 0,87 | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,16 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: C Noise sensitive point: User defined (4)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 527 | 542 | 36,51 | 106,0 | 0,00 | 65,69 | - | - | 0,00 | 0,00 | - |
| 2 | 900 | 909 | 30,33 | 106,0 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 3 | 2.108 | 2.112 | 19,50 | 106,0 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 4 | 3.786 | 3.789 | 11,74 | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 5 | 2.939 | 2.941 | 15,10 | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 6 | 7.048 | 7.049 | 4,75 | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 7 | 10.087 | 10.088 | 1,01 | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,56 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: D Noise sensitive point: User defined (5)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 491 | 507 | 37,28 | 106,0 | 0,00 | 65,11 | - | - | 0,00 | 0,00 | - |
| 2 | 868 | 878 | 30,77 | 106,0 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 3 | 2.073 | 2.077 | 19,72 | 106,0 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 4 | 3.757 | 3.759 | 11,85 | 106,0 | 0,00 | 82,50 | - | - | 0,00 | 0,00 | - |
| 5 | 2.910 | 2.913 | 15,23 | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 6 | 7.014 | 7.016 | 4,80 | 106,0 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 7 | 10.051 | 10.052 | 1,05 | 106,0 | 0,00 | 91,05 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,25 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: E Noise sensitive point: User defined (6)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 428 | 446 | 38,73 | 106,0 | 0,00 | 64,00 | - | - | 0,00 | 0,00 | - |
| 2 | 794 | 804 | 31,84 | 106,0 | 0,00 | 69,11 | - | - | 0,00 | 0,00 | - |
| 3 | 2.004 | 2.008 | 20,16 | 106,0 | 0,00 | 77,06 | - | - | 0,00 | 0,00 | - |
| 4 | 3.678 | 3.681 | 12,13 | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| 5 | 2.830 | 2.833 | 15,60 | 106,0 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 6 | 6.942 | 6.943 | 4,91 | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| 7 | 9.984 | 9.985 | 1,12 | 106,0 | 0,00 | 90,99 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,61 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: F Noise sensitive point: User defined (7)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 375 | 396 | 40,05 | 106,0 | 0,00 | 62,96 | - | - | 0,00 | 0,00 | - |
| 2 | 743 | 754 | 32,63 | 106,0 | 0,00 | 68,54 | - | - | 0,00 | 0,00 | - |
| 3 | 1.952 | 1.956 | 20,51 | 106,0 | 0,00 | 76,83 | - | - | 0,00 | 0,00 | - |
| 4 | 3.628 | 3.631 | 12,30 | 106,0 | 0,00 | 82,20 | - | - | 0,00 | 0,00 | - |
| 5 | 2.781 | 2.784 | 15,83 | 106,0 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 6 | 6.890 | 6.892 | 4,99 | 106,0 | 0,00 | 87,77 | - | - | 0,00 | 0,00 | - |
| 7 | 9.931 | 9.932 | 1,17 | 106,0 | 0,00 | 90,94 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,84 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: G Noise sensitive point: User defined (8)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 327 | 351 | 41,38 | 106,0 | 0,00 | 61,90 | - | - | 0,00 | 0,00 | - |
| 2 | 667 | 679 | 33,88 | 106,0 | 0,00 | 67,64 | - | - | 0,00 | 0,00 | - |
| 3 | 1.881 | 1.886 | 20,99 | 106,0 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 4 | 3.543 | 3.546 | 12,62 | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 5 | 2.694 | 2.697 | 16,25 | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 6 | 6.813 | 6.814 | 5,11 | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 7 | 9.860 | 9.861 | 1,25 | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,14 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: H Noise sensitive point: User defined (9)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 291 | 317 | 42,45 | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 2 | 635 | 648 | 34,44 | 106,0 | 0,00 | 67,23 | - | - | 0,00 | 0,00 | - |
| 3 | 1.849 | 1.853 | 21,22 | 106,0 | 0,00 | 76,36 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3.515 | 3.517 | 12,72 | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 5 | 2.666 | 2.669 | 16,39 | 106,0 | 0,00 | 79,53 | - | - | 0,00 | 0,00 | - |
| 6 | 6.782 | 6.783 | 5,16 | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 7 | 9.828 | 9.829 | 1,28 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,13 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: I Noise sensitive point: User defined (11)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 481 | 497 | 37,52 | 106,0 | 0,00 | 64,93 | - | - | 0,00 | 0,00 | - |
| 2 | 683 | 695 | 33,61 | 106,0 | 0,00 | 67,84 | - | - | 0,00 | 0,00 | - |
| 3 | 1.868 | 1.872 | 21,09 | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 4 | 3.460 | 3.463 | 12,93 | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 5 | 2.609 | 2.612 | 16,67 | 106,0 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 6 | 6.754 | 6.755 | 5,21 | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 7 | 9.823 | 9.824 | 1,29 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,11 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: J Noise sensitive point: User defined (12)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 454 | 472 | 38,11 | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 2 | 674 | 685 | 33,77 | 106,0 | 0,00 | 67,72 | - | - | 0,00 | 0,00 | - |
| 3 | 1.865 | 1.870 | 21,10 | 106,0 | 0,00 | 76,43 | - | - | 0,00 | 0,00 | - |
| 4 | 3.468 | 3.470 | 12,90 | 106,0 | 0,00 | 81,81 | - | - | 0,00 | 0,00 | - |
| 5 | 2.617 | 2.620 | 16,64 | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 6 | 6.759 | 6.760 | 5,20 | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| 7 | 9.825 | 9.826 | 1,28 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,57 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: K Noise sensitive point: User defined (13)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 506 | 522 | 36,96 | 106,0 | 0,00 | 65,35 | - | - | 0,00 | 0,00 | - |
| 2 | 416 | 436 | 39,00 | 106,0 | 0,00 | 63,78 | - | - | 0,00 | 0,00 | - |
| 3 | 1.488 | 1.494 | 24,03 | 106,0 | 0,00 | 74,49 | - | - | 0,00 | 0,00 | - |
| 4 | 3.048 | 3.051 | 14,61 | 106,0 | 0,00 | 80,69 | - | - | 0,00 | 0,00 | - |
| 5 | 2.197 | 2.201 | 18,95 | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 6 | 6.345 | 6.346 | 5,87 | 106,0 | 0,00 | 87,05 | - | - | 0,00 | 0,00 | - |
| 7 | 9.419 | 9.420 | 1,72 | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,23 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: L Noise sensitive point: User defined (14)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 472 | 489 | 37,70 | 106,0 | 0,00 | 64,78 | - | - | 0,00 | 0,00 | - |
| 2 | 374 | 396 | 40,06 | 106,0 | 0,00 | 62,95 | - | - | 0,00 | 0,00 | - |
| 3 | 1.464 | 1.470 | 24,24 | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 4 | 3.038 | 3.041 | 14,65 | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 5 | 2.187 | 2.191 | 19,01 | 106,0 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 6 | 6.332 | 6.333 | 5,90 | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 7 | 9.403 | 9.404 | 1,74 | 106,0 | 0,00 | 90,47 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,15 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: M Noise sensitive point: User defined (15)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 926 | 935 | 29,99 | 106,0 | 0,00 | 70,41 | - | - | 0,00 | 0,00 | - |
| 2 | 627 | 640 | 34,58 | 106,0 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 3 | 1.181 | 1.188 | 26,97 | 106,0 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 4 | 2.595 | 2.598 | 16,75 | 106,0 | 0,00 | 79,29 | - | - | 0,00 | 0,00 | - |
| 5 | 1.750 | 1.755 | 21,93 | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 6 | 5.903 | 5.905 | 6,65 | 106,0 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 7 | 8.994 | 8.995 | 2,20 | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,61 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: N Noise sensitive point: User defined (16)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 888 | 897 | 30,50 | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 2 | 583 | 597 | 35,40 | 106,0 | 0,00 | 66,52 | - | - | 0,00 | 0,00 | - |
| 3 | 1.162 | 1.170 | 27,17 | 106,0 | 0,00 | 72,36 | - | - | 0,00 | 0,00 | - |
| 4 | 2.602 | 2.606 | 16,71 | 106,0 | 0,00 | 79,32 | - | - | 0,00 | 0,00 | - |
| 5 | 1.756 | 1.760 | 21,89 | 106,0 | 0,00 | 75,91 | - | - | 0,00 | 0,00 | - |
| 6 | 5.909 | 5.911 | 6,64 | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 7 | 8.997 | 8.998 | 2,20 | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,26 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: O Noise sensitive point: User defined (17)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 861 | 871 | 30,87 | 106,0 | 0,00 | 69,80 | - | - | 0,00 | 0,00 | - |
| 2 | 541 | 556 | 36,23 | 106,0 | 0,00 | 65,90 | - | - | 0,00 | 0,00 | - |
| 3 | 1.117 | 1.124 | 27,67 | 106,0 | 0,00 | 72,02 | - | - | 0,00 | 0,00 | - |
| 4 | 2.585 | 2.588 | 16,80 | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 5 | 1.736 | 1.741 | 22,04 | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 6 | 5.889 | 5.890 | 6,68 | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.973 | 8.974 | 2,22 | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,94 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: P Noise sensitive point: User defined (18)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 852 | 862 | 30,99 | 106,0 | 0,00 | 69,71 | - | - | 0,00 | 0,00 | - |
| 2 | 528 | 544 | 36,49 | 106,0 | 0,00 | 65,70 | - | - | 0,00 | 0,00 | - |
| 3 | 1.106 | 1.114 | 27,79 | 106,0 | 0,00 | 71,94 | - | - | 0,00 | 0,00 | - |
| 4 | 2.582 | 2.586 | 16,81 | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 5 | 1.733 | 1.738 | 22,06 | 106,0 | 0,00 | 75,80 | - | - | 0,00 | 0,00 | - |
| 6 | 5.885 | 5.887 | 6,69 | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.968 | 8.970 | 2,23 | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,15 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: Q Noise sensitive point: User defined (19)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 894 | 903 | 30,42 | 106,0 | 0,00 | 70,11 | - | - | 0,00 | 0,00 | - |
| 2 | 552 | 567 | 36,00 | 106,0 | 0,00 | 66,08 | - | - | 0,00 | 0,00 | - |
| 3 | 1.043 | 1.051 | 28,52 | 106,0 | 0,00 | 71,43 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2.517 | 2.521 | 17,15 | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 5 | 1.668 | 1.673 | 22,56 | 106,0 | 0,00 | 75,47 | - | - | 0,00 | 0,00 | - |
| 6 | 5.819 | 5.821 | 6,81 | 106,0 | 0,00 | 86,30 | - | - | 0,00 | 0,00 | - |
| 7 | 8.902 | 8.903 | 2,31 | 106,0 | 0,00 | 89,99 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,80 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: R Noise sensitive point: User defined (20)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 867 | 877 | 30,78 | 106,0 | 0,00 | 69,86 | - | - | 0,00 | 0,00 | - |
| 2 | 522 | 538 | 36,61 | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 3 | 1.036 | 1.044 | 28,61 | 106,0 | 0,00 | 71,37 | - | - | 0,00 | 0,00 | - |
| 4 | 2.528 | 2.531 | 17,09 | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 5 | 1.678 | 1.683 | 22,48 | 106,0 | 0,00 | 75,52 | - | - | 0,00 | 0,00 | - |
| 6 | 5.828 | 5.829 | 6,79 | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 7 | 8.908 | 8.909 | 2,30 | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,29 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: S Noise sensitive point: User defined (21)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.003 | 1.011 | 29,01 | 106,0 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 2 | 659 | 672 | 34,01 | 106,0 | 0,00 | 67,54 | - | - | 0,00 | 0,00 | - |
| 3 | 1.015 | 1.023 | 28,87 | 106,0 | 0,00 | 71,20 | - | - | 0,00 | 0,00 | - |
| 4 | 2.432 | 2.435 | 17,61 | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 5 | 1.584 | 1.590 | 23,22 | 106,0 | 0,00 | 75,03 | - | - | 0,00 | 0,00 | - |
| 6 | 5.738 | 5.739 | 6,96 | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 7 | 8.826 | 8.827 | 2,40 | 106,0 | 0,00 | 89,92 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,40 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: T Noise sensitive point: User defined (22)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 989 | 997 | 29,19 | 106,0 | 0,00 | 70,97 | - | - | 0,00 | 0,00 | - |
| 2 | 636 | 649 | 34,42 | 106,0 | 0,00 | 67,25 | - | - | 0,00 | 0,00 | - |
| 3 | 979 | 988 | 29,30 | 106,0 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 4 | 2.419 | 2.423 | 17,68 | 106,0 | 0,00 | 78,69 | - | - | 0,00 | 0,00 | - |
| 5 | 1.570 | 1.576 | 23,34 | 106,0 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 6 | 5.723 | 5.725 | 6,99 | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 7 | 8.808 | 8.809 | 2,42 | 106,0 | 0,00 | 89,90 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,75 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: U Noise sensitive point: User defined (23)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.870 | 1.874 | 21,07 | 106,0 | 0,00 | 76,46 | - | - | 0,00 | 0,00 | - |
| 2 | 1.516 | 1.521 | 23,79 | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 3 | 327 | 352 | 41,35 | 106,0 | 0,00 | 61,93 | - | - | 0,00 | 0,00 | - |
| 4 | 1.573 | 1.578 | 23,32 | 106,0 | 0,00 | 74,96 | - | - | 0,00 | 0,00 | - |
| 5 | 891 | 901 | 30,45 | 106,0 | 0,00 | 70,09 | - | - | 0,00 | 0,00 | - |
| 6 | 4.683 | 4.685 | 9,23 | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 7 | 7.693 | 7.695 | 3,83 | 106,0 | 0,00 | 88,72 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,86 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: V Noise sensitive point: User defined (24)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.828 | 1.833 | 21,36 | 106,0 | 0,00 | 76,26 | - | - | 0,00 | 0,00 | - |
| 2 | 1.474 | 1.480 | 24,15 | 106,0 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 3 | 290 | 317 | 42,45 | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 4 | 1.606 | 1.611 | 23,05 | 106,0 | 0,00 | 75,14 | - | - | 0,00 | 0,00 | - |
| 5 | 912 | 921 | 30,18 | 106,0 | 0,00 | 70,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.724 | 4.726 | 9,13 | 106,0 | 0,00 | 84,49 | - | - | 0,00 | 0,00 | - |
| 7 | 7.735 | 7.736 | 3,77 | 106,0 | 0,00 | 88,77 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,84 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: W Noise sensitive point: User defined (25)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.662 | 2.665 | 16,41 | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 2 | 2.278 | 2.282 | 18,47 | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 3 | 1.121 | 1.128 | 27,63 | 106,0 | 0,00 | 72,04 | - | - | 0,00 | 0,00 | - |
| 4 | 631 | 645 | 34,49 | 106,0 | 0,00 | 67,19 | - | - | 0,00 | 0,00 | - |
| 5 | 322 | 346 | 41,52 | 106,0 | 0,00 | 61,79 | - | - | 0,00 | 0,00 | - |
| 6 | 3.881 | 3.884 | 11,42 | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 7 | 6.960 | 6.961 | 4,88 | 106,0 | 0,00 | 87,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,48 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: X Noise sensitive point: User defined (26)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.664 | 2.668 | 16,40 | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 2 | 2.279 | 2.283 | 18,47 | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 3 | 1.136 | 1.143 | 27,47 | 106,0 | 0,00 | 72,16 | - | - | 0,00 | 0,00 | - |
| 4 | 617 | 632 | 34,74 | 106,0 | 0,00 | 67,01 | - | - | 0,00 | 0,00 | - |
| 5 | 287 | 314 | 42,56 | 106,0 | 0,00 | 60,94 | - | - | 0,00 | 0,00 | - |
| 6 | 3.889 | 3.892 | 11,39 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 7 | 6.974 | 6.975 | 4,86 | 106,0 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,36 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: Y Noise sensitive point: User defined (27)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.827 | 2.830 | 15,61 | 106,0 | 0,00 | 80,04 | - | - | 0,00 | 0,00 | - |
| 2 | 2.445 | 2.448 | 17,54 | 106,0 | 0,00 | 78,78 | - | - | 0,00 | 0,00 | - |
| 3 | 1.271 | 1.277 | 26,05 | 106,0 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 4 | 503 | 520 | 37,00 | 106,0 | 0,00 | 65,32 | - | - | 0,00 | 0,00 | - |
| 5 | 495 | 511 | 37,19 | 106,0 | 0,00 | 65,17 | - | - | 0,00 | 0,00 | - |
| 6 | 3.709 | 3.711 | 12,02 | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 7 | 6.783 | 6.784 | 5,16 | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,32 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: Z Noise sensitive point: User defined (28)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.856 | 2.859 | 15,47 | 106,0 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 2 | 2.473 | 2.476 | 17,39 | 106,0 | 0,00 | 78,87 | - | - | 0,00 | 0,00 | - |
| 3 | 1.308 | 1.314 | 25,68 | 106,0 | 0,00 | 73,37 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 453 | 471 | 38,11 | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 5 | 492 | 508 | 37,27 | 106,0 | 0,00 | 65,12 | - | - | 0,00 | 0,00 | - |
| 6 | 3.687 | 3.689 | 12,09 | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 7 | 6.768 | 6.769 | 5,18 | 106,0 | 0,00 | 87,61 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,90 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AA Noise sensitive point: User defined (29)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.888 | 2.891 | 15,33 | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 2 | 2.507 | 2.511 | 17,20 | 106,0 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 3 | 1.324 | 1.330 | 25,53 | 106,0 | 0,00 | 73,48 | - | - | 0,00 | 0,00 | - |
| 4 | 483 | 500 | 37,45 | 106,0 | 0,00 | 64,98 | - | - | 0,00 | 0,00 | - |
| 5 | 576 | 590 | 35,55 | 106,0 | 0,00 | 66,41 | - | - | 0,00 | 0,00 | - |
| 6 | 3.643 | 3.645 | 12,25 | 106,0 | 0,00 | 82,23 | - | - | 0,00 | 0,00 | - |
| 7 | 6.712 | 6.713 | 5,27 | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,82 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AB Noise sensitive point: User defined (30)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.898 | 2.901 | 15,28 | 106,0 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 2 | 2.516 | 2.520 | 17,15 | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 3 | 1.336 | 1.342 | 25,42 | 106,0 | 0,00 | 73,55 | - | - | 0,00 | 0,00 | - |
| 4 | 463 | 482 | 37,87 | 106,0 | 0,00 | 64,65 | - | - | 0,00 | 0,00 | - |
| 5 | 574 | 587 | 35,59 | 106,0 | 0,00 | 66,38 | - | - | 0,00 | 0,00 | - |
| 6 | 3.635 | 3.637 | 12,28 | 106,0 | 0,00 | 82,22 | - | - | 0,00 | 0,00 | - |
| 7 | 6.707 | 6.708 | 5,28 | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,09 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AC Noise sensitive point: User defined (31)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.043 | 3.045 | 14,63 | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 2 | 2.661 | 2.664 | 16,41 | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 3 | 1.480 | 1.486 | 24,10 | 106,0 | 0,00 | 74,44 | - | - | 0,00 | 0,00 | - |
| 4 | 355 | 378 | 40,57 | 106,0 | 0,00 | 62,55 | - | - | 0,00 | 0,00 | - |
| 5 | 697 | 709 | 33,37 | 106,0 | 0,00 | 68,01 | - | - | 0,00 | 0,00 | - |
| 6 | 3.491 | 3.494 | 12,81 | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 7 | 6.566 | 6.568 | 5,51 | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,44 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AD Noise sensitive point: User defined (32)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.039 | 3.041 | 14,65 | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 2 | 2.657 | 2.660 | 16,44 | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| 3 | 1.478 | 1.483 | 24,12 | 106,0 | 0,00 | 74,43 | - | - | 0,00 | 0,00 | - |
| 4 | 345 | 369 | 40,84 | 106,0 | 0,00 | 62,33 | - | - | 0,00 | 0,00 | - |
| 5 | 687 | 698 | 33,55 | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 6 | 3.497 | 3.500 | 12,79 | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 7 | 6.574 | 6.575 | 5,49 | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,69 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
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# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AE Noise sensitive point: User defined (33)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.512 | 3.514 | 12,73 | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 2 | 3.134 | 3.136 | 14,25 | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 3 | 1.938 | 1.942 | 20,60 | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 4 | 468 | 485 | 37,80 | 106,0 | 0,00 | 64,71 | - | - | 0,00 | 0,00 | - |
| 5 | 1.175 | 1.182 | 27,04 | 106,0 | 0,00 | 72,45 | - | - | 0,00 | 0,00 | - |
| 6 | 3.015 | 3.017 | 14,76 | 106,0 | 0,00 | 80,59 | - | - | 0,00 | 0,00 | - |
| 7 | 6.083 | 6.085 | 6,33 | 106,0 | 0,00 | 86,69 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,28 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AF Noise sensitive point: User defined (34)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.500 | 3.502 | 12,78 | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 2 | 3.119 | 3.122 | 14,31 | 106,0 | 0,00 | 80,89 | - | - | 0,00 | 0,00 | - |
| 3 | 1.931 | 1.934 | 20,65 | 106,0 | 0,00 | 76,73 | - | - | 0,00 | 0,00 | - |
| 4 | 403 | 423 | 39,33 | 106,0 | 0,00 | 63,52 | - | - | 0,00 | 0,00 | - |
| 5 | 1.141 | 1.148 | 27,41 | 106,0 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 6 | 3.031 | 3.034 | 14,68 | 106,0 | 0,00 | 80,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.109 | 6.111 | 6,28 | 106,0 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,70 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AG Noise sensitive point: User defined (35)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.076 | 6.077 | 6,34 | 106,0 | 0,00 | 86,67 | - | - | 0,00 | 0,00 | - |
| 2 | 5.704 | 5.705 | 7,03 | 106,0 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 3 | 4.494 | 4.495 | 9,70 | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 4 | 2.922 | 2.925 | 15,17 | 106,0 | 0,00 | 80,32 | - | - | 0,00 | 0,00 | - |
| 5 | 3.747 | 3.749 | 11,88 | 106,0 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 6 | 549 | 563 | 36,08 | 106,0 | 0,00 | 66,02 | - | - | 0,00 | 0,00 | - |
| 7 | 3.500 | 3.503 | 12,78 | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,17 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AH Noise sensitive point: User defined (36)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.118 | 6.119 | 6,27 | 106,0 | 0,00 | 86,73 | - | - | 0,00 | 0,00 | - |
| 2 | 5.745 | 5.747 | 6,95 | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 3 | 4.536 | 4.537 | 9,59 | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| 4 | 2.961 | 2.964 | 15,00 | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 5 | 3.787 | 3.788 | 11,75 | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 6 | 509 | 525 | 36,90 | 106,0 | 0,00 | 65,40 | - | - | 0,00 | 0,00 | - |
| 7 | 3.460 | 3.463 | 12,93 | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,97 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AI Noise sensitive point: User defined (37)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.006 | 6.007 | 6,47 | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 2 | 5.630 | 5.631 | 7,17 | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 3 | 4.426 | 4.428 | 9,87 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2.806 | 2.809 | 15,71 | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| 5 | 3.644 | 3.646 | 12,25 | 106,0 | 0,00 | 82,24 | - | - | 0,00 | 0,00 | - |
| 6 | 522 | 538 | 36,62 | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 7 | 3.613 | 3.615 | 12,36 | 106,0 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,71 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AJ Noise sensitive point: User defined (38)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.277 | 6.278 | 5,99 | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 2 | 5.897 | 5.898 | 6,67 | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 3 | 4.702 | 4.703 | 9,18 | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 4 | 3.044 | 3.047 | 14,63 | 106,0 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 5 | 3.890 | 3.892 | 11,39 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 294 | 321 | 42,33 | 106,0 | 0,00 | 61,13 | - | - | 0,00 | 0,00 | - |
| 7 | 3.409 | 3.412 | 13,13 | 106,0 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,35 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AK Noise sensitive point: User defined (39)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.323 | 6.324 | 5,91 | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 2 | 5.944 | 5.945 | 6,58 | 106,0 | 0,00 | 86,48 | - | - | 0,00 | 0,00 | - |
| 3 | 4.747 | 4.749 | 9,07 | 106,0 | 0,00 | 84,53 | - | - | 0,00 | 0,00 | - |
| 4 | 3.092 | 3.095 | 14,42 | 106,0 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 5 | 3.938 | 3.940 | 11,23 | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 6 | 246 | 278 | 43,86 | 106,0 | 0,00 | 59,88 | - | - | 0,00 | 0,00 | - |
| 7 | 3.360 | 3.362 | 13,32 | 106,0 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,87 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AL Noise sensitive point: User defined (40)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.788 | 9.788 | 1,32 | 106,0 | 0,00 | 90,81 | - | - | 0,00 | 0,00 | - |
| 2 | 9.425 | 9.426 | 1,72 | 106,0 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 3 | 8.210 | 8.211 | 3,15 | 106,0 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |
| 4 | 6.680 | 6.681 | 5,32 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 5 | 7.502 | 7.503 | 4,09 | 106,0 | 0,00 | 88,50 | - | - | 0,00 | 0,00 | - |
| 6 | 3.414 | 3.416 | 13,11 | 106,0 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 7 | 384 | 405 | 39,81 | 106,0 | 0,00 | 63,15 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,82 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AM Noise sensitive point: User defined (41)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.834 | 9.834 | 1,28 | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 2 | 9.470 | 9.471 | 1,67 | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 3 | 8.255 | 8.256 | 3,09 | 106,0 | 0,00 | 89,34 | - | - | 0,00 | 0,00 | - |
| 4 | 6.719 | 6.720 | 5,26 | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 5 | 7.542 | 7.543 | 4,04 | 106,0 | 0,00 | 88,55 | - | - | 0,00 | 0,00 | - |
| 6 | 3.445 | 3.448 | 12,99 | 106,0 | 0,00 | 81,75 | - | - | 0,00 | 0,00 | - |
| 7 | 374 | 395 | 40,08 | 106,0 | 0,00 | 62,93 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,09 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AN Noise sensitive point: User defined (42)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.915 | 9.916 | 1,19 | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 2 | 9.552 | 9.553 | 1,58 | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 3 | 8.338 | 8.339 | 2,99 | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 4 | 6.804 | 6.805 | 5,13 | 106,0 | 0,00 | 87,66 | - | - | 0,00 | 0,00 | - |
| 5 | 7.627 | 7.628 | 3,92 | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 6 | 3.534 | 3.536 | 12,65 | 106,0 | 0,00 | 81,97 | - | - | 0,00 | 0,00 | - |
| 7 | 460 | 478 | 37,96 | 106,0 | 0,00 | 64,59 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,98 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AO Noise sensitive point: User defined (43)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.911 | 9.912 | 1,19 | 106,0 | 0,00 | 90,92 | - | - | 0,00 | 0,00 | - |
| 2 | 9.548 | 9.548 | 1,58 | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 3 | 8.333 | 8.334 | 2,99 | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 4 | 6.796 | 6.797 | 5,14 | 106,0 | 0,00 | 87,65 | - | - | 0,00 | 0,00 | - |
| 5 | 7.620 | 7.621 | 3,93 | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 6 | 3.522 | 3.524 | 12,70 | 106,0 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 7 | 437 | 455 | 38,50 | 106,0 | 0,00 | 64,17 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,52 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AP Noise sensitive point: User defined (48)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.087 | 5.089 | 8,29 | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 2 | 4.887 | 4.889 | 8,75 | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 3 | 4.017 | 4.019 | 10,99 | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 4 | 3.988 | 3.990 | 11,08 | 106,0 | 0,00 | 83,02 | - | - | 0,00 | 0,00 | - |
| 5 | 4.149 | 4.151 | 10,62 | 106,0 | 0,00 | 83,36 | - | - | 0,00 | 0,00 | - |
| 6 | 4.519 | 4.521 | 9,63 | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 7 | 6.395 | 6.397 | 5,79 | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| Sum | | | 18,07 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AQ Noise sensitive point: User defined (49)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.051 | 5.052 | 8,38 | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 2 | 4.849 | 4.851 | 8,83 | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 3 | 3.977 | 3.979 | 11,11 | 106,0 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 4 | 3.947 | 3.949 | 11,20 | 106,0 | 0,00 | 82,93 | - | - | 0,00 | 0,00 | - |
| 5 | 4.107 | 4.109 | 10,73 | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.495 | 4.498 | 9,69 | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 7 | 6.391 | 6.392 | 5,80 | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| Sum | | | 18,17 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AR Noise sensitive point: User defined (50)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.655 | 4.656 | 9,30 | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 2 | 4.477 | 4.479 | 9,74 | 106,0 | 0,00 | 84,02 | - | - | 0,00 | 0,00 | - |
| 3 | 3.688 | 3.690 | 12,09 | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Detailed results

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)Noise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3.877 | 3.879 | 11,43 | 106,0 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 5 | 3.931 | 3.933 | 11,25 | 106,0 | 0,00 | 82,89 | - | - | 0,00 | 0,00 | - |
| 6 | 4.804 | 4.806 | 8,94 | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.847 | 6.848 | 5,06 | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| Sum | | | 18,60 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AS Noise sensitive point: User defined (51)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.631 | 4.633 | 9,35 | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 2 | 4.451 | 4.453 | 9,81 | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 3 | 3.652 | 3.654 | 12,22 | 106,0 | 0,00 | 82,26 | - | - | 0,00 | 0,00 | - |
| 4 | 3.828 | 3.830 | 11,60 | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 5 | 3.886 | 3.889 | 11,40 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 4.757 | 4.759 | 9,05 | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 7 | 6.812 | 6.813 | 5,11 | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| Sum | | | 18,72 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AT Noise sensitive point: User defined (52)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.425 | 4.427 | 9,87 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 2 | 4.151 | 4.153 | 10,61 | 106,0 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 3 | 3.095 | 3.098 | 14,41 | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 4 | 2.724 | 2.727 | 16,10 | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 5 | 3.007 | 3.010 | 14,79 | 106,0 | 0,00 | 80,57 | - | - | 0,00 | 0,00 | - |
| 6 | 3.478 | 3.481 | 12,86 | 106,0 | 0,00 | 81,83 | - | - | 0,00 | 0,00 | - |
| 7 | 5.831 | 5.832 | 6,79 | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| Sum | | | 21,58 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AU Noise sensitive point: User defined (53)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.293 | 4.295 | 10,22 | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 2 | 4.105 | 4.107 | 10,74 | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| 3 | 3.296 | 3.298 | 13,58 | 106,0 | 0,00 | 81,37 | - | - | 0,00 | 0,00 | - |
| 4 | 3.513 | 3.515 | 12,73 | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 5 | 3.542 | 3.544 | 12,62 | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 6 | 4.650 | 4.652 | 9,31 | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 7 | 6.848 | 6.849 | 5,06 | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| Sum | | | 19,73 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
10,0 m/s
Ground attenuation:
General, Ground factor: 0,8
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in NSA has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)
Octave data required
Frequency dependent air absorption

| 63 | 125 | 250 | 500 | 1.000 | 2.000 | 4.000 | 8.000 |
|---|---|---|---|---|---|---|---|
| [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] |
| 0,10 | 0,40 | 1,00 | 1,90 | 3,70 | 9,70 | 32,80 | 117,00 |

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

WTG: ENERCON E-138 EP3 E2 4200 138.3 !O!
Noise: Level 0 - OM 0s - 4200 kW

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Enercon GmbH | 2019.11.08 | EMD | 2020.01.21 11:45 |

The sound power levels do not include uncertainties.
According to manufacturer specification document (D0748822-6/D0748941-3).
Enercon reserves the right to change the above specifications without prior notice.

| | | | | | Octave data | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| From Windcat | 130,3 | 10,0 | 106,0 | No | 86,9 | 92,3 | 94,8 | 97,4 | 100,1 | 101,7 | 95,9 | 78,2 |

## Noise sensitive area: A Noise sensitive point: User defined (1)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: B Noise sensitive point: User defined (2)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: C Noise sensitive point: User defined (4)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

### Noise sensitive area: D Noise sensitive point: User defined (5)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: E Noise sensitive point: User defined (6)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: F Noise sensitive point: User defined (7)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: G Noise sensitive point: User defined (8)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: H Noise sensitive point: User defined (9)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: I Noise sensitive point: User defined (11)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: J Noise sensitive point: User defined (12)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: K Noise sensitive point: User defined (13)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: L Noise sensitive point: User defined (14)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: M Noise sensitive point: User defined (15)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: N Noise sensitive point: User defined (16)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: O Noise sensitive point: User defined (17)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: P Noise sensitive point: User defined (18)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: Q Noise sensitive point: User defined (19)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: R Noise sensitive point: User defined (20)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: S Noise sensitive point: User defined (21)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: T Noise sensitive point: User defined (22)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

## Noise sensitive area: U Noise sensitive point: User defined (23)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: V Noise sensitive point: User defined (24)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: W Noise sensitive point: User defined (25)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: X Noise sensitive point: User defined (26)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: Y Noise sensitive point: User defined (27)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: Z Noise sensitive point: User defined (28)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AA Noise sensitive point: User defined (29)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AB Noise sensitive point: User defined (30)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AC Noise sensitive point: User defined (31)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AD Noise sensitive point: User defined (32)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AE Noise sensitive point: User defined (33)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AF Noise sensitive point: User defined (34)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AG Noise sensitive point: User defined (35)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AH Noise sensitive point: User defined (36)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AI Noise sensitive point: User defined (37)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AJ Noise sensitive point: User defined (38)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AK Noise sensitive point: User defined (39)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

### Noise sensitive area: AL Noise sensitive point: User defined (40)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AM Noise sensitive point: User defined (41)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AN Noise sensitive point: User defined (42)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AO Noise sensitive point: User defined (43)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AP Noise sensitive point: User defined (48)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AQ Noise sensitive point: User defined (49)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AR Noise sensitive point: User defined (50)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AS Noise sensitive point: User defined (51)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AT Noise sensitive point: User defined (52)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

Noise demand: 45,0 dB(A)
No distance demand

## Noise sensitive area: AU Noise sensitive point: User defined (53)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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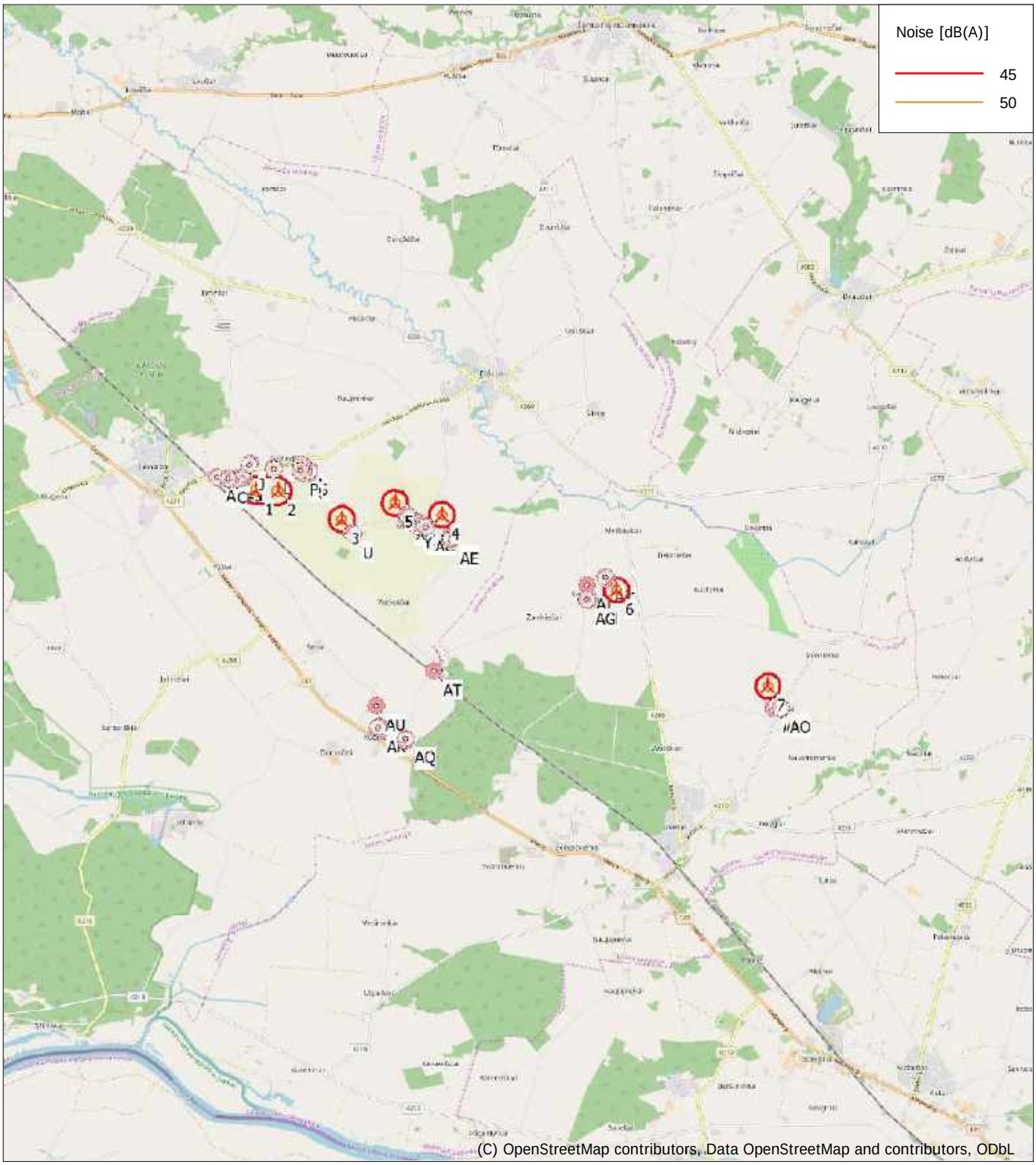
Calculated:
2021.11.30 11:10/3.5.552

## DECIBEL - Map 10,0 m/s

Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.368 North: 6.128.575

New WTG  Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

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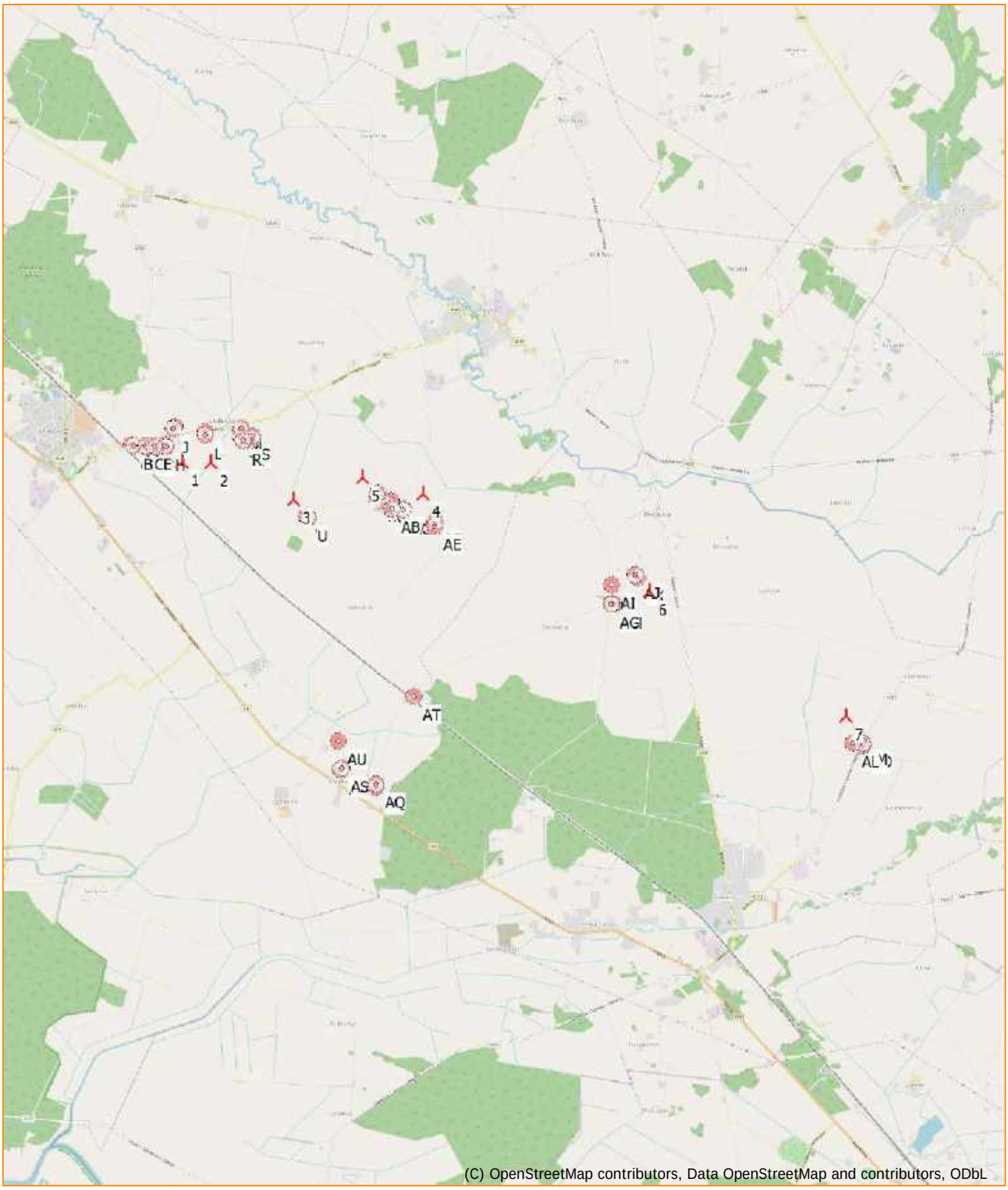
Calculated:
2021.11.30 11:10/3.5.552

# DECIBEL - Map 10,0 m/s

Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.143 North: 6.128.437

New WTG  Noise sensitive area

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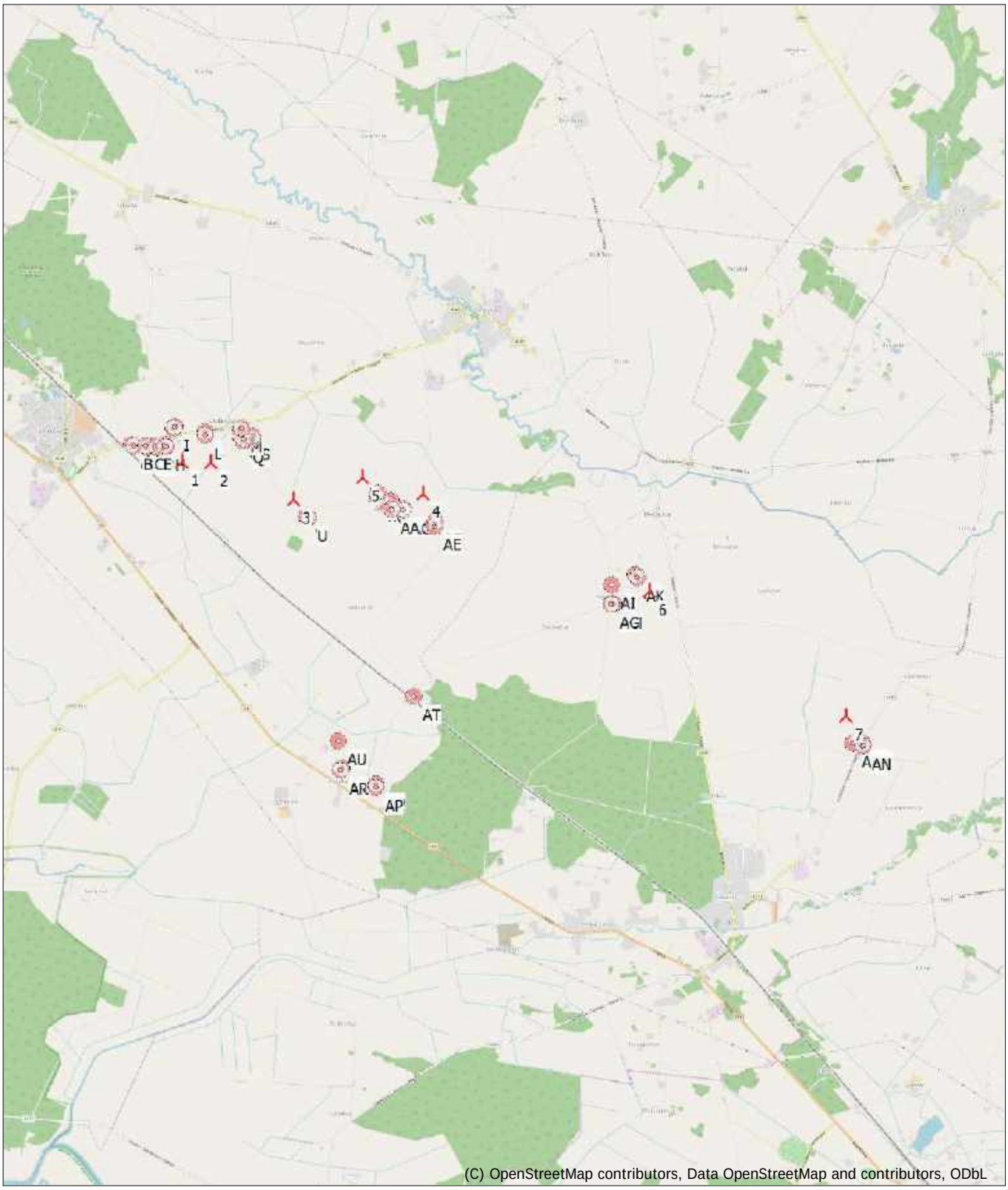
Calculated:
2021.11.30 11:10/3.5.552

## DECIBEL - Map 10,0 m/s

Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.143 North: 6.128.437

New WTG  Noise sensitive area

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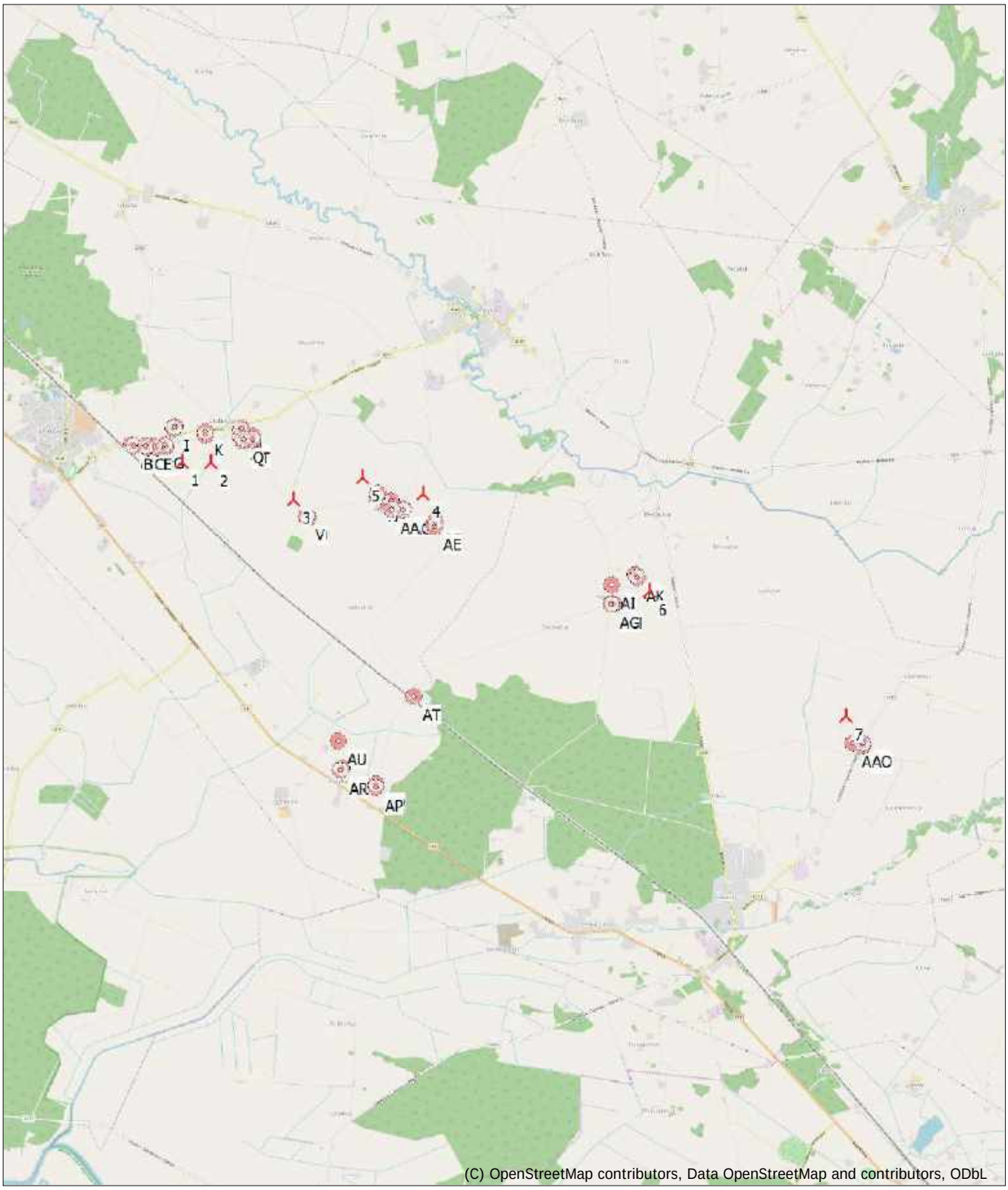
Calculated:
2021.11.30 11:10/3.5.552

## DECIBEL - Map 10,0 m/s

Calculation: Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.143 North: 6.128.437

New WTG  Noise sensitive area

Project:

8 VE Ðilutės r.triukðmas

Description:

Aðtuoniø vëjo elektriniø (Ðilutės raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija

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Calculated:

2021.12.06 11:35/3.5.552

# DECIBEL - Main Result

## Calculation: Foninës VE

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
10,0 m/s
Ground attenuation:
General, Ground factor: 0,8
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in NSA has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

Scale 1:200.000

Existing WTG  Noise sensitive area

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Noise data Creator | Name | Wind speed | Status | LwA,ref | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | | | [m/s] | | [dB(A)] | |
| 1 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 2 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 3 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 4 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 5 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 6 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 7 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 8 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 9 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 10 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 11 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 12 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 13 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 14 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 15 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 16 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 17 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 18 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 19 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 20 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 21 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 22 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 23 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 24 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 25 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 26 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 27 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 28 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 29 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 30 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 31 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 32 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 33 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 34 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 35 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 36 | 357.043 | 6.126.794 | 20,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 37 | 348.872 | 6.129.782 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 38 | 348.589 | 6.129.372 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 39 | 348.873 | 6.129.055 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 40 | 349.068 | 6.129.458 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |

h) Generic octave distribution used
g) Data calculated from data for other wind speed (uncertain)

# Calculation Results

## Sound level

| Noise sensitive area No. | Name | Y | X | Z | Immission height | Demands Noise | Sound level From WTGs | Distance to noise demand | Demands fulfilled ? Noise |
|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| A | Noise sensitive point: User defined (1) | 347.290 | 6.130.678 | 10,0 | 1,5 | 45,0 | 35,1 | 608 | Yes |
| B | Noise sensitive point: User defined (2) | 347.334 | 6.130.657 | 10,0 | 1,5 | 45,0 | 35,6 | 561 | Yes |

To be continued on next page...

# DECIBEL - Main Result

## Calculation: Foninës VE

...continued from previous page

Noise sensitive area

| No. | Name | Y | X | Z | Immission height | Demands Noise | Sound level From WTGs | Distance to noise demand | Demands fulfilled ? Noise |
|---|---|---|---|---|---|---|---|---|---|
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| C | Noise sensitive point: User defined (4) | 347.483 | 6.130.653 | 10,7 | 1,5 | 45,0 | 36,7 | 460 | Yes |
| D | Noise sensitive point: User defined (5) | 347.505 | 6.130.613 | 10,4 | 1,5 | 45,0 | 37,2 | 415 | Yes |
| E | Noise sensitive point: User defined (6) | 347.592 | 6.130.646 | 10,8 | 1,5 | 45,0 | 37,6 | 395 | Yes |
| F | Noise sensitive point: User defined (7) | 347.637 | 6.130.618 | 10,6 | 1,5 | 45,0 | 38,2 | 348 | Yes |
| G | Noise sensitive point: User defined (8) | 347.734 | 6.130.663 | 11,0 | 1,5 | 45,0 | 38,4 | 350 | Yes |
| H | Noise sensitive point: User defined (9) | 347.757 | 6.130.635 | 10,8 | 1,5 | 45,0 | 38,8 | 317 | Yes |
| I | Noise sensitive point: User defined (11) | 347.883 | 6.130.901 | 13,1 | 1,5 | 45,0 | 36,9 | 558 | Yes |
| J | Noise sensitive point: User defined (12) | 347.866 | 6.130.871 | 12,8 | 1,5 | 45,0 | 37,0 | 529 | Yes |
| K | Noise sensitive point: User defined (13) | 348.287 | 6.130.811 | 10,0 | 1,5 | 45,0 | 39,2 | 409 | Yes |
| L | Noise sensitive point: User defined (14) | 348.284 | 6.130.768 | 10,0 | 1,5 | 45,0 | 39,6 | 382 | Yes |
| M | Noise sensitive point: User defined (15) | 348.782 | 6.130.851 | 10,0 | 1,5 | 45,0 | 41,0 | 217 | Yes |
| N | Noise sensitive point: User defined (16) | 348.759 | 6.130.812 | 10,0 | 1,5 | 45,0 | 41,4 | 181 | Yes |
| O | Noise sensitive point: User defined (17) | 348.756 | 6.130.753 | 10,0 | 1,5 | 45,0 | 42,3 | 123 | Yes |
| P | Noise sensitive point: User defined (18) | 348.753 | 6.130.737 | 10,0 | 1,5 | 45,0 | 42,6 | 107 | Yes |
| Q | Noise sensitive point: User defined (19) | 348.810 | 6.130.701 | 10,0 | 1,5 | 45,0 | 43,4 | 66 | Yes |
| R | Noise sensitive point: User defined (20) | 348.790 | 6.130.676 | 10,0 | 1,5 | 45,0 | 43,9 | 42 | Yes |
| S | Noise sensitive point: User defined (21) | 348.913 | 6.130.737 | 10,0 | 1,5 | 45,0 | 42,7 | 119 | Yes |
| T | Noise sensitive point: User defined (22) | 348.911 | 6.130.694 | 10,0 | 1,5 | 45,0 | 43,4 | 77 | Yes |
| U | Noise sensitive point: User defined (23) | 349.644 | 6.129.613 | 10,0 | 1,5 | 45,0 | 40,9 | 359 | Yes |
| V | Noise sensitive point: User defined (24) | 349.607 | 6.129.632 | 10,0 | 1,5 | 45,0 | 41,2 | 328 | Yes |
| W | Noise sensitive point: User defined (25) | 350.562 | 6.129.862 | 10,9 | 1,5 | 45,0 | 38,3 | 499 | Yes |
| X | Noise sensitive point: User defined (26) | 350.576 | 6.129.919 | 10,8 | 1,5 | 45,0 | 38,5 | 469 | Yes |
| Y | Noise sensitive point: User defined (27) | 350.707 | 6.129.756 | 12,0 | 1,5 | 45,0 | 38,0 | 559 | Yes |
| Z | Noise sensitive point: User defined (28) | 350.748 | 6.129.803 | 12,1 | 1,5 | 45,0 | 38,2 | 497 | Yes |
| AA | Noise sensitive point: User defined (29) | 350.753 | 6.129.689 | 12,4 | 1,5 | 45,0 | 37,9 | 580 | Yes |
| AB | Noise sensitive point: User defined (30) | 350.767 | 6.129.705 | 12,4 | 1,5 | 45,0 | 38,0 | 558 | Yes |
| AC | Noise sensitive point: User defined (31) | 350.909 | 6.129.675 | 13,3 | 1,5 | 45,0 | 38,5 | 463 | Yes |
| AD | Noise sensitive point: User defined (32) | 350.909 | 6.129.692 | 13,3 | 1,5 | 45,0 | 38,5 | 461 | Yes |
| AE | Noise sensitive point: User defined (33) | 351.332 | 6.129.441 | 16,3 | 1,5 | 45,0 | 40,5 | 214 | Yes |
| AF | Noise sensitive point: User defined (34) | 351.339 | 6.129.512 | 16,2 | 1,5 | 45,0 | 41,4 | 150 | Yes |
| AG | Noise sensitive point: User defined (35) | 353.662 | 6.128.322 | 20,0 | 1,5 | 45,0 | 37,3 | 813 | Yes |
| AH | Noise sensitive point: User defined (36) | 353.705 | 6.128.318 | 20,0 | 1,5 | 45,0 | 37,2 | 798 | Yes |
| AI | Noise sensitive point: User defined (37) | 353.678 | 6.128.582 | 20,0 | 1,5 | 45,0 | 37,7 | 648 | Yes |
| AJ | Noise sensitive point: User defined (38) | 353.996 | 6.128.697 | 20,0 | 1,5 | 45,0 | 37,6 | 534 | Yes |
| AK | Noise sensitive point: User defined (39) | 354.036 | 6.128.668 | 20,0 | 1,5 | 45,0 | 37,4 | 572 | Yes |
| AL | Noise sensitive point: User defined (40) | 356.862 | 6.126.349 | 19,7 | 1,5 | 45,0 | 41,9 | 255 | Yes |
| AM | Noise sensitive point: User defined (41) | 356.927 | 6.126.381 | 20,0 | 1,5 | 45,0 | 42,1 | 210 | Yes |
| AN | Noise sensitive point: User defined (42) | 356.986 | 6.126.313 | 20,0 | 1,5 | 45,0 | 41,5 | 266 | Yes |
| AO | Noise sensitive point: User defined (43) | 356.996 | 6.126.345 | 20,0 | 1,5 | 45,0 | 41,8 | 234 | Yes |
| AP | Noise sensitive point: User defined (48) | 350.424 | 6.125.973 | 10,0 | 1,5 | 45,0 | 35,3 | 703 | Yes |
| AQ | Noise sensitive point: User defined (49) | 350.424 | 6.126.015 | 10,0 | 1,5 | 45,0 | 35,7 | 663 | Yes |
| AR | Noise sensitive point: User defined (50) | 349.947 | 6.126.215 | 10,0 | 1,5 | 45,0 | 37,6 | 406 | Yes |
| AS | Noise sensitive point: User defined (51) | 349.979 | 6.126.256 | 10,0 | 1,5 | 45,0 | 38,2 | 359 | Yes |
| AT | Noise sensitive point: User defined (52) | 350.962 | 6.127.173 | 10,0 | 1,5 | 45,0 | 42,1 | 136 | Yes |
| AU | Noise sensitive point: User defined (53) | 349.928 | 6.126.609 | 10,0 | 1,5 | 45,0 | 44,0 | 37 | Yes |

## Distances (m)

| | WTG | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| A | 4211 | 4716 | 4700 | 5850 | 6210 | 6021 | 7469 | 7860 | 7889 | 9737 | 9766 | 9913 | 10068 | 10086 | 11032 | 11304 | 11700 | 828 | 1196 | 1501 | 1392 | 1527 |
| B | 4168 | 4673 | 4655 | 5803 | 6163 | 5973 | 7420 | 7811 | 7840 | 9688 | 9717 | 9864 | 10019 | 10038 | 10983 | 11255 | 11651 | 781 | 1150 | 1454 | 1342 | 1480 |
| C | 4079 | 4584 | 4556 | 5656 | 6016 | 5827 | 7287 | 7679 | 7710 | 9547 | 9578 | 9727 | 9877 | 9897 | 10851 | 11118 | 11510 | 680 | 1045 | 1349 | 1210 | 1333 |
| D | 4034 | 4539 | 4511 | 5628 | 5988 | 5797 | 7249 | 7640 | 7671 | 9513 | 9542 | 9691 | 9843 | 9862 | 10813 | 11081 | 11476 | 635 | 1001 | 1305 | 1171 | 1304 |
| E | 4014 | 4518 | 4482 | 5547 | 5907 | 5719 | 7187 | 7580 | 7614 | 9442 | 9475 | 9625 | 9771 | 9792 | 10753 | 11016 | 11406 | 614 | 973 | 1274 | 1114 | 1225 |
| F | 3966 | 4470 | 4433 | 5498 | 5858 | 5669 | 7134 | 7527 | 7561 | 9390 | 9422 | 9573 | 9719 | 9740 | 10700 | 10964 | 11354 | 569 | 924 | 1224 | 1061 | 1175 |
| G | 3953 | 4457 | 4409 | 5409 | 5770 | 5584 | 7070 | 7465 | 7503 | 9314 | 9351 | 9504 | 9641 | 9666 | 10638 | 10895 | 11278 | 575 | 913 | 1206 | 1007 | 1090 |
| H | 3917 | 4421 | 4373 | 5382 | 5742 | 5555 | 7037 | 7431 | 7468 | 9282 | 9318 | 9471 | 9610 | 9634 | 10604 | 10863 | 11247 | 542 | 877 | 1170 | 972 | 1061 |
| I | 4088 | 4589 | 4518 | 5307 | 5666 | 5496 | 7059 | 7459 | 7510 | 9258 | 9311 | 9474 | 9578 | 9616 | 10631 | 10867 | 11226 | 791 | 1081 | 1352 | 1073 | 1038 |
| J | 4069 | 4570 | 4502 | 5317 | 5677 | 5505 | 7059 | 7457 | 7507 | 9263 | 9314 | 9475 | 9584 | 9620 | 10630 | 10868 | 11231 | 761 | 1057 | 1331 | 1059 | 1039 |
| K | 3835 | 4329 | 4230 | 4893 | 5252 | 5083 | 6668 | 7070 | 7127 | 8849 | 8907 | 9073 | 9168 | 9209 | 10240 | 10466 | 10818 | 804 | 964 | 1173 | 803 | 651 |
| L | 3797 | 4291 | 4194 | 4887 | 5247 | 5075 | 6648 | 7049 | 7105 | 8836 | 8891 | 9056 | 9156 | 9195 | 10220 | 10449 | 10805 | 765 | 921 | 1130 | 763 | 628 |

To be continued on next page...

# DECIBEL - Main Result

## Calculation: Foninës VE

...continued from previous page

| | WTG | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| M | 3711 | 4189 | 4045 | 4419 | 4778 | 4620 | 6277 | 6683 | 6757 | 8408 | 8481 | 8656 | 8720 | 8772 | 9847 | 10049 | 10378 | 1157 | 1174 | 1276 | 844 | 452 |
| N | 3680 | 4159 | 4019 | 4433 | 4792 | 4630 | 6274 | 6679 | 6751 | 8414 | 8483 | 8658 | 8727 | 8777 | 9845 | 10051 | 10384 | 1114 | 1129 | 1231 | 800 | 414 |
| O | 3624 | 4104 | 3966 | 4422 | 4782 | 4616 | 6243 | 6648 | 6717 | 8394 | 8460 | 8632 | 8709 | 8756 | 9815 | 10025 | 10363 | 1076 | 1078 | 1175 | 743 | 356 |
| P | 3609 | 4090 | 3953 | 4422 | 4781 | 4615 | 6237 | 6641 | 6710 | 8390 | 8455 | 8627 | 8706 | 8752 | 9808 | 10020 | 10360 | 1064 | 1063 | 1158 | 727 | 340 |
| Q | 3559 | 4038 | 3897 | 4359 | 4719 | 4550 | 6170 | 6574 | 6643 | 8324 | 8389 | 8560 | 8640 | 8686 | 9741 | 9953 | 10294 | 1090 | 1067 | 1145 | 713 | 303 |
| R | 3540 | 4020 | 3882 | 4373 | 4733 | 4562 | 6172 | 6576 | 6643 | 8333 | 8395 | 8565 | 8649 | 8694 | 9744 | 9959 | 10302 | 1060 | 1035 | 1114 | 682 | 277 |
| S | 3567 | 4041 | 3889 | 4266 | 4625 | 4461 | 6104 | 6510 | 6584 | 8243 | 8312 | 8486 | 8556 | 8606 | 9675 | 9880 | 10213 | 1197 | 1160 | 1220 | 791 | 359 |
| T | 3526 | 4001 | 3851 | 4259 | 4618 | 4451 | 6082 | 6487 | 6559 | 8228 | 8295 | 8468 | 8543 | 8590 | 9653 | 9861 | 10198 | 1173 | 1126 | 1181 | 752 | 318 |
| U | 2343 | 2782 | 2586 | 3437 | 3790 | 3545 | 4892 | 5287 | 5330 | 7170 | 7186 | 7331 | 7510 | 7513 | 8460 | 8721 | 9127 | 1819 | 1504 | 1268 | 1194 | 1159 |
| V | 2364 | 2807 | 2615 | 3473 | 3826 | 3583 | 4933 | 5328 | 5371 | 7211 | 7227 | 7372 | 7551 | 7554 | 8501 | 8763 | 9169 | 1779 | 1464 | 1230 | 1153 | 1119 |
| W | 2707 | 3041 | 2735 | 2515 | 2872 | 2656 | 4257 | 4667 | 4761 | 6386 | 6447 | 6621 | 6707 | 6745 | 7821 | 8014 | 8354 | 2679 | 2402 | 2196 | 2039 | 1849 |
| X | 2766 | 3099 | 2793 | 2503 | 2861 | 2651 | 4280 | 4691 | 4790 | 6394 | 6460 | 6637 | 6713 | 6755 | 7842 | 8030 | 8363 | 2689 | 2417 | 2216 | 2049 | 1847 |
| Y | 2654 | 2964 | 2643 | 2369 | 2725 | 2498 | 4077 | 4487 | 4583 | 6212 | 6270 | 6443 | 6535 | 6570 | 7641 | 7836 | 8180 | 2835 | 2549 | 2333 | 2195 | 2019 |
| Z | 2713 | 3019 | 2695 | 2328 | 2684 | 2463 | 4074 | 4485 | 4585 | 6191 | 6254 | 6430 | 6512 | 6551 | 7635 | 7823 | 8160 | 2870 | 2588 | 2376 | 2230 | 2044 |
| AA | 2608 | 2910 | 2583 | 2326 | 2679 | 2445 | 4000 | 4410 | 4504 | 6145 | 6199 | 6370 | 6470 | 6502 | 7565 | 7764 | 8113 | 2889 | 2598 | 2376 | 2250 | 2085 |
| AB | 2629 | 2929 | 2601 | 2311 | 2665 | 2432 | 3998 | 4409 | 4504 | 6138 | 6194 | 6366 | 6462 | 6495 | 7563 | 7759 | 8106 | 2901 | 2611 | 2391 | 2262 | 2092 |
| AC | 2658 | 2937 | 2597 | 2171 | 2524 | 2288 | 3868 | 4279 | 4380 | 5995 | 6053 | 6227 | 6318 | 6353 | 7430 | 7620 | 7963 | 3046 | 2755 | 2532 | 2407 | 2236 |
| AD | 2674 | 2953 | 2613 | 2170 | 2523 | 2290 | 3879 | 4290 | 4392 | 6001 | 6061 | 6235 | 6324 | 6359 | 7440 | 7628 | 7969 | 3043 | 2754 | 2532 | 2404 | 2231 |
| AE | 2672 | 2874 | 2497 | 1781 | 2122 | 1854 | 3392 | 3805 | 3915 | 5516 | 5571 | 5744 | 5843 | 5872 | 6950 | 7137 | 7483 | 3502 | 3198 | 2961 | 2865 | 2713 |
| AF | 2734 | 2941 | 2566 | 1761 | 2106 | 1848 | 3433 | 3846 | 3961 | 5535 | 5596 | 5773 | 5859 | 5893 | 6986 | 7166 | 7503 | 3496 | 3197 | 2964 | 2858 | 2696 |
| AG | 4030 | 3883 | 3491 | 1591 | 1443 | 1224 | 1089 | 1470 | 1729 | 2953 | 2987 | 3170 | 3301 | 3296 | 4432 | 4560 | 4910 | 6037 | 5710 | 5446 | 5411 | 5292 |
| AH | 4071 | 3921 | 3530 | 1611 | 1454 | 1245 | 1075 | 1451 | 1715 | 2910 | 2947 | 3131 | 3258 | 3254 | 4397 | 4521 | 4868 | 6079 | 5752 | 5488 | 5453 | 5333 |
| AI | 4121 | 4002 | 3603 | 1359 | 1190 | 998 | 1338 | 1708 | 1979 | 3019 | 3097 | 3302 | 3349 | 3379 | 4598 | 4686 | 4987 | 5981 | 5661 | 5404 | 5349 | 5211 |
| AJ | 4459 | 4338 | 3940 | 1437 | 1191 | 1105 | 1428 | 1750 | 2056 | 2772 | 2895 | 3126 | 3083 | 3144 | 4462 | 4494 | 4742 | 6262 | 5948 | 5696 | 5627 | 5473 |
| AK | 4488 | 4363 | 3966 | 1484 | 1236 | 1154 | 1402 | 1716 | 2025 | 2723 | 2846 | 3077 | 3035 | 3095 | 4414 | 4444 | 4694 | 6307 | 5993 | 5740 | 5673 | 5520 |
| AL | 7150 | 6815 | 6528 | 5121 | 4825 | 4807 | 3062 | 2711 | 2804 | 1215 | 831 | 589 | 1293 | 857 | 993 | 804 | 1474 | 9721 | 9378 | 9098 | 9111 | 9025 |
| AM | 7210 | 6878 | 6589 | 5148 | 4850 | 4837 | 3115 | 2767 | 2866 | 1206 | 850 | 634 | 1261 | 836 | 1020 | 764 | 1404 | 9769 | 9427 | 9147 | 9158 | 9069 |
| AN | 7277 | 6942 | 6656 | 5237 | 4939 | 4925 | 3191 | 2840 | 2931 | 1291 | 940 | 716 | 1332 | 915 | 952 | 678 | 1363 | 9850 | 9507 | 9227 | 9239 | 9152 |
| AO | 7283 | 6949 | 6662 | 5224 | 4924 | 4913 | 3191 | 2842 | 2938 | 1265 | 924 | 711 | 1300 | 887 | 984 | 686 | 1345 | 9847 | 9504 | 9225 | 9235 | 9147 |
| AP | 1454 | 958 | 1159 | 4656 | 4825 | 4440 | 3746 | 3921 | 3707 | 6267 | 6001 | 5955 | 6679 | 6454 | 6564 | 7149 | 7901 | 4848 | 4492 | 4199 | 4489 | 4715 |
| AQ | 1417 | 919 | 1117 | 4622 | 4792 | 4407 | 3731 | 3910 | 3700 | 6256 | 5994 | 5950 | 6669 | 6446 | 6568 | 7149 | 7898 | 4812 | 4456 | 4162 | 4451 | 4676 |
| AR | 1071 | 656 | 1013 | 4758 | 4960 | 4577 | 4128 | 4336 | 4145 | 6679 | 6438 | 6409 | 7089 | 6884 | 7064 | 7629 | 8359 | 4401 | 4054 | 3767 | 4082 | 4339 |
| AS | 1037 | 611 | 962 | 4707 | 4909 | 4526 | 4087 | 4297 | 4109 | 6640 | 6401 | 6374 | 7049 | 6846 | 7037 | 7599 | 8325 | 4380 | 4031 | 3744 | 4055 | 4308 |
| AT | 1197 | 951 | 585 | 3373 | 3567 | 3183 | 2978 | 3263 | 3154 | 5548 | 5379 | 5408 | 5948 | 5799 | 6265 | 6718 | 7347 | 4246 | 3878 | 3573 | 3762 | 3886 |
| AU | 681 | 286 | 690 | 4483 | 4702 | 4322 | 4064 | 4304 | 4142 | 6633 | 6421 | 6414 | 7039 | 6858 | 7141 | 7671 | 8365 | 4048 | 3695 | 3405 | 3708 | 3955 |

| | WTG | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| A | 2366 | 2797 | 3967 | 4382 | 5335 | 7292 | 7843 | 6682 | 2300 | 5509 | 5068 | 4671 | 2191 | 10493 | 1817 | 1841 | 2266 | 2155 |
| B | 2319 | 2751 | 3921 | 4334 | 5290 | 7243 | 7794 | 6634 | 2257 | 5460 | 5019 | 4622 | 2148 | 10444 | 1768 | 1795 | 2220 | 2107 |
| C | 2172 | 2602 | 3773 | 4188 | 5185 | 7113 | 7657 | 6488 | 2171 | 5325 | 4889 | 4487 | 2001 | 10305 | 1639 | 1692 | 2117 | 1984 |
| D | 2143 | 2577 | 3747 | 4158 | 5141 | 7074 | 7621 | 6459 | 2125 | 5287 | 4849 | 4449 | 1983 | 10270 | 1599 | 1647 | 2072 | 1943 |
| E | 2064 | 2493 | 3664 | 4080 | 5107 | 7016 | 7556 | 6379 | 2108 | 5224 | 4792 | 4386 | 1893 | 10201 | 1544 | 1617 | 2042 | 1894 |
| F | 2014 | 2446 | 3616 | 4030 | 5057 | 6963 | 7503 | 6330 | 2062 | 5171 | 4739 | 4334 | 1852 | 10149 | 1491 | 1567 | 1992 | 1841 |
| G | 1930 | 2354 | 3524 | 3945 | 5027 | 6903 | 7435 | 6243 | 2057 | 5105 | 4681 | 4269 | 1750 | 10077 | 1439 | 1548 | 1970 | 1797 |
| H | 1901 | 2328 | 3498 | 3917 | 4991 | 6869 | 7402 | 6215 | 2021 | 5072 | 4646 | 4235 | 1730 | 10045 | 1403 | 1512 | 1933 | 1761 |
| I | 1860 | 2249 | 3409 | 3863 | 5120 | 6907 | 7409 | 6149 | 2217 | 5089 | 4692 | 4259 | 1592 | 10034 | 1493 | 1683 | 2094 | 1866 |
| J | 1864 | 2258 | 3421 | 3870 | 5107 | 6905 | 7410 | 6159 | 2195 | 5089 | 4688 | 4258 | 1608 | 10037 | 1482 | 1663 | 2076 | 1854 |
| K | 1453 | 1835 | 2996 | 3450 | 4812 | 6524 | 7011 | 5735 | 2025 | 4697 | 4316 | 3872 | 1188 | 9629 | 1183 | 1470 | 1850 | 1562 |
| L | 1438 | 1828 | 2992 | 3440 | 4778 | 6502 | 6993 | 5728 | 1983 | 4677 | 4292 | 3850 | 1193 | 9614 | 1147 | 1428 | 1811 | 1526 |
| M | 1046 | 1371 | 2517 | 2996 | 4589 | 6152 | 6601 | 5267 | 2038 | 4309 | 3967 | 3498 | 693 | 9199 | 1072 | 1491 | 1797 | 1421 |
| N | 1042 | 1380 | 2532 | 3003 | 4566 | 6146 | 6601 | 5279 | 1997 | 4305 | 3957 | 3492 | 717 | 9203 | 1036 | 1449 | 1760 | 1388 |
| O | 1011 | 1366 | 2524 | 2987 | 4516 | 6112 | 6574 | 5267 | 1938 | 4274 | 3920 | 3458 | 725 | 9180 | 977 | 1390 | 1701 | 1331 |
| P | 1005 | 1365 | 2524 | 2984 | 4503 | 6105 | 6568 | 5266 | 1922 | 4267 | 3912 | 3450 | 730 | 9176 | 962 | 1374 | 1685 | 1317 |
| Q | 938 | 1301 | 2462 | 2919 | 4444 | 6038 | 6502 | 5202 | 1891 | 4200 | 3846 | 3384 | 681 | 9109 | 921 | 1347 | 1647 | 1269 |
| R | 943 | 1315 | 2478 | 2930 | 4432 | 6038 | 6506 | 5215 | 1864 | 4202 | 3843 | 3384 | 706 | 9116 | 897 | 1319 | 1622 | 1249 |
| S | 873 | 1211 | 2366 | 2833 | 4426 | 5978 | 6430 | 5110 | 1938 | 4136 | 3793 | 3325 | 573 | 9032 | 955 | 1402 | 1682 | 1288 |
| T | 850 | 1201 | 2361 | 2821 | 4389 | 5953 | 6410 | 5102 | 1895 | 4113 | 3766 | 3299 | 585 | 9015 | 912 | 1360 | 1639 | 1245 |
| U | 600 | 885 | 1743 | 1943 | 3094 | 4729 | 5261 | 4218 | 1278 | 2928 | 2512 | 2090 | 1247 | 7914 | 790 | 1082 | 951 | 596 |
| V | 580 | 887 | 1770 | 1979 | 3127 | 4770 | 5302 | 4256 | 1262 | 2969 | 2553 | 2132 | 1224 | 7956 | 750 | 1050 | 933 | 566 |
| W | 1013 | 717 | 814 | 1022 | 3069 | 4155 | 4568 | 3323 | 2184 | 2302 | 2054 | 1537 | 1468 | 7167 | 1691 | 2032 | 1871 | 1547 |
| X | 1008 | 687 | 772 | 1014 | 3124 | 4184 | 4587 | 3317 | 2224 | 2330 | 2095 | 1574 | 1441 | 7179 | 1709 | 2060 | 1909 | 1576 |
| Y | 1187 | 894 | 771 | 874 | 2947 | 3977 | 4389 | 3167 | 2267 | 2123 | 1888 | 1366 | 1646 | 6991 | 1834 | 2152 | 1963 | 1665 |
| Z | 1208 | 892 | 708 | 833 | 2991 | 3980 | 4379 | 3132 | 2323 | 2126 | 1908 | 1382 | 1647 | 6974 | 1875 | 2201 | 2018 | 1714 |
| AA | 1255 | 974 | 791 | 833 | 2877 | 3898 | 4315 | 3116 | 2282 | 2044 | 1807 | 1284 | 1725 | 6921 | 1882 | 2186 | 1983 | 1700 |
| AB | 1262 | 973 | 770 | 817 | 2891 | 3899 | 4311 | 3103 | 2301 | 2044 | 1813 | 1289 | 1725 | 6915 | 1896 | 2202 | 2002 | 1716 |

To be continued on next page...

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# DECIBEL - Main Result

## Calculation: Foninës VE

...continued from previous page

| | WTG | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| AC | 1404 | 1098 | 718 | 680 | 2855 | 3775 | 4175 | 2959 | 2422 | 1921 | 1720 | 1189 | 1852 | 6774 | 2039 | 2339 | 2127 | 1853 |
| AD | 1398 | 1087 | 703 | 677 | 2872 | 3787 | 4184 | 2961 | 2428 | 1933 | 1735 | 1204 | 1842 | 6781 | 2038 | 2341 | 2132 | 1855 |
| AE | 1885 | 1574 | 874 | 420 | 2643 | 3312 | 3693 | 2528 | 2759 | 1462 | 1350 | 817 | 2329 | 6292 | 2482 | 2743 | 2488 | 2263 |
| AF | 1864 | 1538 | 805 | 361 | 2715 | 3359 | 3726 | 2522 | 2783 | 1513 | 1417 | 885 | 2293 | 6316 | 2481 | 2752 | 2507 | 2271 |
| AG | 4468 | 4139 | 3131 | 2540 | 3073 | 1285 | 1174 | 1144 | 5041 | 1389 | 1994 | 2189 | 4888 | 3709 | 5005 | 5178 | 4843 | 4730 |
| AH | 4509 | 4178 | 3167 | 2577 | 3109 | 1284 | 1142 | 1141 | 5084 | 1432 | 2036 | 2232 | 4927 | 3668 | 5048 | 5221 | 4886 | 4773 |
| AI | 4380 | 4030 | 2986 | 2414 | 3222 | 1546 | 1370 | 886 | 5038 | 1430 | 2050 | 2183 | 4773 | 3809 | 4951 | 5148 | 4826 | 4690 |
| AJ | 4637 | 4270 | 3191 | 2646 | 3552 | 1703 | 1331 | 764 | 5352 | 1764 | 2386 | 2501 | 5005 | 3591 | 5235 | 5447 | 5133 | 4984 |
| AK | 4685 | 4318 | 3240 | 2694 | 3571 | 1684 | 1291 | 800 | 5393 | 1797 | 2418 | 2540 | 5053 | 3542 | 5280 | 5490 | 5175 | 5028 |
| AL | 8212 | 7896 | 6873 | 6295 | 5899 | 3321 | 2657 | 4313 | 8578 | 4993 | 5483 | 5833 | 8646 | 480 | 8692 | 8804 | 8431 | 8387 |
| AM | 8255 | 7935 | 6908 | 6332 | 5962 | 3378 | 2704 | 4336 | 8631 | 5041 | 5534 | 5880 | 8685 | 429 | 8740 | 8854 | 8483 | 8436 |
| AN | 8339 | 8021 | 6995 | 6419 | 6026 | 3449 | 2785 | 4425 | 8707 | 5121 | 5611 | 5961 | 8771 | 484 | 8821 | 8933 | 8560 | 8516 |
| AO | 8333 | 8013 | 6985 | 6410 | 6033 | 3453 | 2782 | 4410 | 8707 | 5118 | 5611 | 5958 | 8763 | 451 | 8817 | 8931 | 8559 | 8514 |
| AP | 4314 | 4426 | 4412 | 3977 | 1012 | 3359 | 4272 | 4886 | 3354 | 2986 | 2497 | 2873 | 4965 | 6667 | 4111 | 3861 | 3449 | 3738 |
| AQ | 4273 | 4384 | 4371 | 3937 | 977 | 3346 | 4258 | 4856 | 3319 | 2953 | 2461 | 2834 | 4924 | 6662 | 4072 | 3824 | 3411 | 3699 |
| AR | 4009 | 4172 | 4294 | 3920 | 1196 | 3754 | 4653 | 5075 | 2909 | 3135 | 2583 | 2876 | 4656 | 7116 | 3724 | 3435 | 3035 | 3358 |
| AS | 3971 | 4130 | 4245 | 3869 | 1148 | 3714 | 4612 | 5024 | 2887 | 3084 | 2531 | 2824 | 4618 | 7081 | 3694 | 3410 | 3008 | 3328 |
| AT | 3324 | 3333 | 3149 | 2678 | 353 | 2652 | 3485 | 3684 | 2841 | 1740 | 1197 | 1560 | 3964 | 6090 | 3341 | 3234 | 2810 | 2967 |
| AU | 3615 | 3779 | 3927 | 3574 | 1071 | 3707 | 4584 | 4849 | 2554 | 2901 | 2319 | 2564 | 4262 | 7114 | 3343 | 3069 | 2663 | 2975 |

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

## Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

| | |
|---|---|
| LWA,ref: | Sound pressure level at WTG |
| K: | Pure tone |
| Dc: | Directivity correction |
| Adiv: | the attenuation due to geometrical divergence |
| Aatm: | the attenuation due to atmospheric absorption |
| Agr: | the attenuation due to ground effect |
| Abar: | the attenuation due to a barrier |
| Amisc: | the attenuation due to miscellaneous other effects |
| Cmet: | Meteorological correction |

## Calculation Results

### Noise sensitive area: A Noise sensitive point: User defined (1)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.211 | 4.212 | 11,89 | 106,0 | 0,00 | 83,49 | - | - | 0,00 | 0,00 | - |
| 10 | 9.737 | 9.738 | 1,22 | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 11 | 9.766 | 9.767 | 1,18 | 106,0 | 0,00 | 90,79 | - | - | 0,00 | 0,00 | - |
| 12 | 9.913 | 9.914 | 1,00 | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 13 | 10.068 | 10.069 | 0,81 | 106,0 | 0,00 | 91,06 | - | - | 0,00 | 0,00 | - |
| 14 | 10.086 | 10.087 | 0,78 | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| 15 | 11.032 | 11.033 | -0,32 | 106,0 | 0,00 | 91,85 | - | - | 0,00 | 0,00 | - |
| 16 | 11.304 | 11.305 | -0,62 | 106,0 | 0,00 | 92,07 | - | - | 0,00 | 0,00 | - |
| 17 | 11.700 | 11.701 | -1,04 | 106,0 | 0,00 | 92,36 | - | - | 0,00 | 0,00 | - |
| 18 | 828 | 832 | 30,62 | 104,5 | 0,00 | 69,40 | - | - | 0,00 | 0,00 | - |
| 19 | 1.196 | 1.199 | 26,45 | 104,5 | 0,00 | 72,58 | - | - | 0,00 | 0,00 | - |
| 2 | 4.716 | 4.717 | 10,42 | 106,0 | 0,00 | 84,47 | - | - | 0,00 | 0,00 | - |
| 20 | 1.501 | 1.503 | 23,79 | 104,5 | 0,00 | 74,54 | - | - | 0,00 | 0,00 | - |
| 21 | 1.392 | 1.394 | 24,68 | 104,5 | 0,00 | 73,88 | - | - | 0,00 | 0,00 | - |
| 22 | 1.527 | 1.529 | 23,58 | 104,5 | 0,00 | 74,69 | - | - | 0,00 | 0,00 | - |
| 23 | 2.366 | 2.368 | 18,21 | 104,5 | 0,00 | 78,49 | - | - | 0,00 | 0,00 | - |
| 24 | 2.797 | 2.798 | 16,21 | 104,5 | 0,00 | 79,94 | - | - | 0,00 | 0,00 | - |
| 25 | 3.967 | 3.968 | 12,04 | 104,5 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 26 | 4.382 | 4.383 | 10,84 | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 27 | 5.335 | 5.336 | 8,50 | 104,5 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 28 | 7.292 | 7.293 | 4,84 | 104,5 | 0,00 | 88,26 | - | - | 0,00 | 0,00 | - |
| 29 | 7.843 | 7.844 | 4,01 | 104,5 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 3 | 4.700 | 4.701 | 10,47 | 106,0 | 0,00 | 84,44 | - | - | 0,00 | 0,00 | - |
| 30 | 6.682 | 6.684 | 6,82 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 31 | 2.300 | 2.305 | 20,05 | 106,0 | 0,00 | 78,25 | - | - | 0,00 | 0,00 | - |
| 32 | 5.509 | 5.511 | 9,03 | 106,0 | 0,00 | 85,83 | - | - | 0,00 | 0,00 | - |
| 33 | 5.068 | 5.070 | 10,01 | 106,0 | 0,00 | 85,10 | - | - | 0,00 | 0,00 | - |
| 34 | 4.671 | 4.673 | 10,96 | 106,0 | 0,00 | 84,39 | - | - | 0,00 | 0,00 | - |
| 35 | 2.191 | 2.196 | 20,66 | 106,0 | 0,00 | 77,83 | - | - | 0,00 | 0,00 | - |
| 36 | 10.493 | 10.494 | 0,31 | 104,5 | 0,00 | 91,42 | - | - | 0,00 | 0,00 | - |
| 37 | 1.817 | 1.823 | 21,46 | 104,5 | 0,00 | 76,22 | - | - | 0,00 | 0,00 | - |
| 38 | 1.841 | 1.847 | 21,30 | 104,5 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 39 | 2.266 | 2.271 | 18,73 | 104,5 | 0,00 | 78,12 | - | - | 0,00 | 0,00 | - |
| 4 | 5.850 | 5.851 | 7,65 | 106,0 | 0,00 | 86,35 | - | - | 0,00 | 0,00 | - |
| 40 | 2.155 | 2.160 | 19,36 | 104,5 | 0,00 | 77,69 | - | - | 0,00 | 0,00 | - |
| 5 | 6.210 | 6.211 | 6,88 | 106,0 | 0,00 | 86,86 | - | - | 0,00 | 0,00 | - |
| 6 | 6.021 | 6.022 | 7,28 | 106,0 | 0,00 | 86,59 | - | - | 0,00 | 0,00 | - |
| 7 | 7.469 | 7.470 | 4,53 | 106,0 | 0,00 | 88,47 | - | - | 0,00 | 0,00 | - |
| 8 | 7.860 | 7.861 | 3,89 | 106,0 | 0,00 | 88,91 | - | - | 0,00 | 0,00 | - |
| 9 | 7.889 | 7.889 | 3,85 | 106,0 | 0,00 | 88,94 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,14 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: B Noise sensitive point: User defined (2)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.168 | 4.169 | 12,02 | 106,0 | 0,00 | 83,40 | - | - | 0,00 | 0,00 | - |
| 10 | 9.688 | 9.689 | 1,28 | 106,0 | 0,00 | 90,73 | - | - | 0,00 | 0,00 | - |
| 11 | 9.717 | 9.718 | 1,24 | 106,0 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 12 | 9.864 | 9.865 | 1,06 | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 13 | 10.019 | 10.020 | 0,87 | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 14 | 10.038 | 10.038 | 0,84 | 106,0 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 15 | 10.983 | 10.984 | -0,26 | 106,0 | 0,00 | 91,82 | - | - | 0,00 | 0,00 | - |
| 16 | 11.255 | 11.255 | -0,56 | 106,0 | 0,00 | 92,03 | - | - | 0,00 | 0,00 | - |
| 17 | 11.651 | 11.652 | -0,99 | 106,0 | 0,00 | 92,33 | - | - | 0,00 | 0,00 | - |
| 18 | 781 | 785 | 31,25 | 104,5 | 0,00 | 68,90 | - | - | 0,00 | 0,00 | - |
| 19 | 1.150 | 1.152 | 26,91 | 104,5 | 0,00 | 72,23 | - | - | 0,00 | 0,00 | - |
| 2 | 4.673 | 4.674 | 10,54 | 106,0 | 0,00 | 84,39 | - | - | 0,00 | 0,00 | - |
| 20 | 1.454 | 1.456 | 24,16 | 104,5 | 0,00 | 74,27 | - | - | 0,00 | 0,00 | - |
| 21 | 1.342 | 1.345 | 25,11 | 104,5 | 0,00 | 73,57 | - | - | 0,00 | 0,00 | - |
| 22 | 1.480 | 1.482 | 23,96 | 104,5 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 23 | 2.319 | 2.320 | 18,46 | 104,5 | 0,00 | 78,31 | - | - | 0,00 | 0,00 | - |
| 24 | 2.751 | 2.752 | 16,41 | 104,5 | 0,00 | 79,79 | - | - | 0,00 | 0,00 | - |
| 25 | 3.921 | 3.922 | 12,18 | 104,5 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 26 | 4.334 | 4.335 | 10,97 | 104,5 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 27 | 5.290 | 5.290 | 8,60 | 104,5 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 28 | 7.243 | 7.244 | 4,92 | 104,5 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 29 | 7.794 | 7.795 | 4,08 | 104,5 | 0,00 | 88,84 | - | - | 0,00 | 0,00 | - |
| 3 | 4.655 | 4.656 | 10,59 | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 30 | 6.634 | 6.636 | 6,90 | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 31 | 2.257 | 2.262 | 20,29 | 106,0 | 0,00 | 78,09 | - | - | 0,00 | 0,00 | - |
| 32 | 5.460 | 5.462 | 9,14 | 106,0 | 0,00 | 85,75 | - | - | 0,00 | 0,00 | - |
| 33 | 5.019 | 5.021 | 10,12 | 106,0 | 0,00 | 85,02 | - | - | 0,00 | 0,00 | - |
| 34 | 4.622 | 4.624 | 11,08 | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 35 | 2.148 | 2.153 | 20,90 | 106,0 | 0,00 | 77,66 | - | - | 0,00 | 0,00 | - |
| 36 | 10.444 | 10.445 | 0,36 | 104,5 | 0,00 | 91,38 | - | - | 0,00 | 0,00 | - |
| 37 | 1.768 | 1.774 | 21,79 | 104,5 | 0,00 | 75,98 | - | - | 0,00 | 0,00 | - |
| 38 | 1.795 | 1.801 | 21,61 | 104,5 | 0,00 | 76,11 | - | - | 0,00 | 0,00 | - |
| 39 | 2.220 | 2.225 | 18,99 | 104,5 | 0,00 | 77,95 | - | - | 0,00 | 0,00 | - |
| 4 | 5.803 | 5.804 | 7,75 | 106,0 | 0,00 | 86,28 | - | - | 0,00 | 0,00 | - |
| 40 | 2.107 | 2.112 | 19,64 | 104,5 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 5 | 6.163 | 6.164 | 6,98 | 106,0 | 0,00 | 86,80 | - | - | 0,00 | 0,00 | - |
| 6 | 5.973 | 5.974 | 7,38 | 106,0 | 0,00 | 86,53 | - | - | 0,00 | 0,00 | - |
| 7 | 7.420 | 7.421 | 4,62 | 106,0 | 0,00 | 88,41 | - | - | 0,00 | 0,00 | - |
| 8 | 7.811 | 7.812 | 3,97 | 106,0 | 0,00 | 88,86 | - | - | 0,00 | 0,00 | - |
| 9 | 7.840 | 7.840 | 3,92 | 106,0 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,59 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: C Noise sensitive point: User defined (4)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.079 | 4.081 | 12,29 | 106,0 | 0,00 | 83,21 | - | - | 0,00 | 0,00 | - |
| 10 | 9.547 | 9.547 | 1,46 | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 11 | 9.578 | 9.579 | 1,42 | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 12 | 9.727 | 9.728 | 1,23 | 106,0 | 0,00 | 90,76 | - | - | 0,00 | 0,00 | - |
| 13 | 9.877 | 9.877 | 1,04 | 106,0 | 0,00 | 90,89 | - | - | 0,00 | 0,00 | - |
| 14 | 9.897 | 9.898 | 1,02 | 106,0 | 0,00 | 90,91 | - | - | 0,00 | 0,00 | - |
| 15 | 10.851 | 10.852 | -0,12 | 106,0 | 0,00 | 91,71 | - | - | 0,00 | 0,00 | - |
| 16 | 11.118 | 11.119 | -0,41 | 106,0 | 0,00 | 91,92 | - | - | 0,00 | 0,00 | - |
| 17 | 11.510 | 11.511 | -0,84 | 106,0 | 0,00 | 92,22 | - | - | 0,00 | 0,00 | - |
| 18 | 680 | 685 | 32,77 | 104,5 | 0,00 | 67,71 | - | - | 0,00 | 0,00 | - |
| 19 | 1.045 | 1.048 | 28,00 | 104,5 | 0,00 | 71,41 | - | - | 0,00 | 0,00 | - |
| 2 | 4.584 | 4.586 | 10,79 | 106,0 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 20 | 1.349 | 1.351 | 25,05 | 104,5 | 0,00 | 73,61 | - | - | 0,00 | 0,00 | - |
| 21 | 1.210 | 1.213 | 26,32 | 104,5 | 0,00 | 72,67 | - | - | 0,00 | 0,00 | - |
| 22 | 1.333 | 1.335 | 25,19 | 104,5 | 0,00 | 73,51 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 2.172 | 2.174 | 19,28 | 104,5 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 24 | 2.602 | 2.604 | 17,06 | 104,5 | 0,00 | 79,31 | - | - | 0,00 | 0,00 | - |
| 25 | 3.773 | 3.774 | 12,64 | 104,5 | 0,00 | 82,54 | - | - | 0,00 | 0,00 | - |
| 26 | 4.188 | 4.189 | 11,38 | 104,5 | 0,00 | 83,44 | - | - | 0,00 | 0,00 | - |
| 27 | 5.185 | 5.186 | 8,83 | 104,5 | 0,00 | 85,30 | - | - | 0,00 | 0,00 | - |
| 28 | 7.113 | 7.113 | 5,13 | 104,5 | 0,00 | 88,04 | - | - | 0,00 | 0,00 | - |
| 29 | 7.657 | 7.658 | 4,28 | 104,5 | 0,00 | 88,68 | - | - | 0,00 | 0,00 | - |
| 3 | 4.556 | 4.558 | 10,87 | 106,0 | 0,00 | 84,17 | - | - | 0,00 | 0,00 | - |
| 30 | 6.488 | 6.490 | 7,16 | 106,0 | 0,00 | 87,24 | - | - | 0,00 | 0,00 | - |
| 31 | 2.171 | 2.176 | 20,77 | 106,0 | 0,00 | 77,75 | - | - | 0,00 | 0,00 | - |
| 32 | 5.325 | 5.327 | 9,43 | 106,0 | 0,00 | 85,53 | - | - | 0,00 | 0,00 | - |
| 33 | 4.889 | 4.891 | 10,43 | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 34 | 4.487 | 4.489 | 11,44 | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 35 | 2.001 | 2.006 | 21,78 | 106,0 | 0,00 | 77,05 | - | - | 0,00 | 0,00 | - |
| 36 | 10.305 | 10.306 | 0,51 | 104,5 | 0,00 | 91,26 | - | - | 0,00 | 0,00 | - |
| 37 | 1.639 | 1.645 | 22,71 | 104,5 | 0,00 | 75,32 | - | - | 0,00 | 0,00 | - |
| 38 | 1.692 | 1.698 | 22,32 | 104,5 | 0,00 | 75,60 | - | - | 0,00 | 0,00 | - |
| 39 | 2.117 | 2.122 | 19,58 | 104,5 | 0,00 | 77,53 | - | - | 0,00 | 0,00 | - |
| 4 | 5.656 | 5.657 | 8,08 | 106,0 | 0,00 | 86,05 | - | - | 0,00 | 0,00 | - |
| 40 | 1.984 | 1.989 | 20,38 | 104,5 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 5 | 6.016 | 6.017 | 7,29 | 106,0 | 0,00 | 86,59 | - | - | 0,00 | 0,00 | - |
| 6 | 5.827 | 5.828 | 7,70 | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 7 | 7.287 | 7.288 | 4,85 | 106,0 | 0,00 | 88,25 | - | - | 0,00 | 0,00 | - |
| 8 | 7.679 | 7.680 | 4,18 | 106,0 | 0,00 | 88,71 | - | - | 0,00 | 0,00 | - |
| 9 | 7.710 | 7.711 | 4,13 | 106,0 | 0,00 | 88,74 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,75 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: D Noise sensitive point: User defined (5)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.034 | 4.035 | 12,44 | 106,0 | 0,00 | 83,12 | - | - | 0,00 | 0,00 | - |
| 10 | 9.513 | 9.514 | 1,51 | 106,0 | 0,00 | 90,57 | - | - | 0,00 | 0,00 | - |
| 11 | 9.542 | 9.543 | 1,47 | 106,0 | 0,00 | 90,59 | - | - | 0,00 | 0,00 | - |
| 12 | 9.691 | 9.691 | 1,28 | 106,0 | 0,00 | 90,73 | - | - | 0,00 | 0,00 | - |
| 13 | 9.843 | 9.844 | 1,08 | 106,0 | 0,00 | 90,86 | - | - | 0,00 | 0,00 | - |
| 14 | 9.862 | 9.863 | 1,06 | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 15 | 10.813 | 10.813 | -0,07 | 106,0 | 0,00 | 91,68 | - | - | 0,00 | 0,00 | - |
| 16 | 11.081 | 11.082 | -0,37 | 106,0 | 0,00 | 91,89 | - | - | 0,00 | 0,00 | - |
| 17 | 11.476 | 11.476 | -0,80 | 106,0 | 0,00 | 92,20 | - | - | 0,00 | 0,00 | - |
| 18 | 635 | 640 | 33,51 | 104,5 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 19 | 1.001 | 1.004 | 28,49 | 104,5 | 0,00 | 71,03 | - | - | 0,00 | 0,00 | - |
| 2 | 4.539 | 4.540 | 10,92 | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| 20 | 1.305 | 1.307 | 25,44 | 104,5 | 0,00 | 73,32 | - | - | 0,00 | 0,00 | - |
| 21 | 1.171 | 1.174 | 26,69 | 104,5 | 0,00 | 72,39 | - | - | 0,00 | 0,00 | - |
| 22 | 1.304 | 1.306 | 25,45 | 104,5 | 0,00 | 73,32 | - | - | 0,00 | 0,00 | - |
| 23 | 2.143 | 2.144 | 19,45 | 104,5 | 0,00 | 77,63 | - | - | 0,00 | 0,00 | - |
| 24 | 2.577 | 2.578 | 17,18 | 104,5 | 0,00 | 79,23 | - | - | 0,00 | 0,00 | - |
| 25 | 3.747 | 3.748 | 12,72 | 104,5 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 26 | 4.158 | 4.159 | 11,47 | 104,5 | 0,00 | 83,38 | - | - | 0,00 | 0,00 | - |
| 27 | 5.141 | 5.142 | 8,94 | 104,5 | 0,00 | 85,22 | - | - | 0,00 | 0,00 | - |
| 28 | 7.074 | 7.074 | 5,20 | 104,5 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 29 | 7.621 | 7.621 | 4,34 | 104,5 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 3 | 4.511 | 4.513 | 11,00 | 106,0 | 0,00 | 84,09 | - | - | 0,00 | 0,00 | - |
| 30 | 6.459 | 6.461 | 7,21 | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 31 | 2.125 | 2.130 | 21,04 | 106,0 | 0,00 | 77,57 | - | - | 0,00 | 0,00 | - |
| 32 | 5.287 | 5.290 | 9,51 | 106,0 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 33 | 4.849 | 4.852 | 10,52 | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 34 | 4.449 | 4.452 | 11,55 | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 35 | 1.983 | 1.989 | 21,89 | 106,0 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 36 | 10.270 | 10.271 | 0,55 | 104,5 | 0,00 | 91,23 | - | - | 0,00 | 0,00 | - |
| 37 | 1.599 | 1.605 | 23,00 | 104,5 | 0,00 | 75,11 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 1.647 | 1.653 | 22,64 | 104,5 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 39 | 2.072 | 2.077 | 19,84 | 104,5 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 4 | 5.628 | 5.629 | 8,14 | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 40 | 1.943 | 1.948 | 20,64 | 104,5 | 0,00 | 76,79 | - | - | 0,00 | 0,00 | - |
| 5 | 5.988 | 5.989 | 7,35 | 106,0 | 0,00 | 86,55 | - | - | 0,00 | 0,00 | - |
| 6 | 5.797 | 5.798 | 7,76 | 106,0 | 0,00 | 86,27 | - | - | 0,00 | 0,00 | - |
| 7 | 7.249 | 7.250 | 4,91 | 106,0 | 0,00 | 88,21 | - | - | 0,00 | 0,00 | - |
| 8 | 7.640 | 7.641 | 4,25 | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 9 | 7.671 | 7.672 | 4,20 | 106,0 | 0,00 | 88,70 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,24 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: E Noise sensitive point: User defined (6)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.014 | 4.015 | 12,50 | 106,0 | 0,00 | 83,07 | - | - | 0,00 | 0,00 | - |
| 10 | 9.442 | 9.442 | 1,60 | 106,0 | 0,00 | 90,50 | - | - | 0,00 | 0,00 | - |
| 11 | 9.475 | 9.475 | 1,56 | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 12 | 9.625 | 9.626 | 1,36 | 106,0 | 0,00 | 90,67 | - | - | 0,00 | 0,00 | - |
| 13 | 9.771 | 9.771 | 1,18 | 106,0 | 0,00 | 90,80 | - | - | 0,00 | 0,00 | - |
| 14 | 9.792 | 9.793 | 1,15 | 106,0 | 0,00 | 90,82 | - | - | 0,00 | 0,00 | - |
| 15 | 10.753 | 10.754 | 0,00 | 106,0 | 0,00 | 91,63 | - | - | 0,00 | 0,00 | - |
| 16 | 11.016 | 11.017 | -0,30 | 106,0 | 0,00 | 91,84 | - | - | 0,00 | 0,00 | - |
| 17 | 11.406 | 11.406 | -0,73 | 106,0 | 0,00 | 92,14 | - | - | 0,00 | 0,00 | - |
| 18 | 614 | 619 | 33,86 | 104,5 | 0,00 | 66,84 | - | - | 0,00 | 0,00 | - |
| 19 | 973 | 976 | 28,81 | 104,5 | 0,00 | 70,79 | - | - | 0,00 | 0,00 | - |
| 2 | 4.518 | 4.519 | 10,98 | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 20 | 1.274 | 1.276 | 25,72 | 104,5 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 21 | 1.114 | 1.116 | 27,28 | 104,5 | 0,00 | 71,95 | - | - | 0,00 | 0,00 | - |
| 22 | 1.225 | 1.227 | 26,18 | 104,5 | 0,00 | 72,78 | - | - | 0,00 | 0,00 | - |
| 23 | 2.064 | 2.066 | 19,91 | 104,5 | 0,00 | 77,30 | - | - | 0,00 | 0,00 | - |
| 24 | 2.493 | 2.495 | 17,56 | 104,5 | 0,00 | 78,94 | - | - | 0,00 | 0,00 | - |
| 25 | 3.664 | 3.665 | 12,99 | 104,5 | 0,00 | 82,28 | - | - | 0,00 | 0,00 | - |
| 26 | 4.080 | 4.081 | 11,70 | 104,5 | 0,00 | 83,22 | - | - | 0,00 | 0,00 | - |
| 27 | 5.107 | 5.108 | 9,01 | 104,5 | 0,00 | 85,17 | - | - | 0,00 | 0,00 | - |
| 28 | 7.016 | 7.016 | 5,29 | 104,5 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 29 | 7.556 | 7.556 | 4,44 | 104,5 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 3 | 4.482 | 4.484 | 11,08 | 106,0 | 0,00 | 84,03 | - | - | 0,00 | 0,00 | - |
| 30 | 6.379 | 6.381 | 7,35 | 106,0 | 0,00 | 87,10 | - | - | 0,00 | 0,00 | - |
| 31 | 2.108 | 2.114 | 21,13 | 106,0 | 0,00 | 77,50 | - | - | 0,00 | 0,00 | - |
| 32 | 5.224 | 5.226 | 9,65 | 106,0 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 33 | 4.792 | 4.794 | 10,66 | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 34 | 4.386 | 4.389 | 11,73 | 106,0 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 35 | 1.893 | 1.899 | 22,46 | 106,0 | 0,00 | 76,57 | - | - | 0,00 | 0,00 | - |
| 36 | 10.201 | 10.202 | 0,62 | 104,5 | 0,00 | 91,17 | - | - | 0,00 | 0,00 | - |
| 37 | 1.544 | 1.550 | 23,42 | 104,5 | 0,00 | 74,81 | - | - | 0,00 | 0,00 | - |
| 38 | 1.617 | 1.623 | 22,87 | 104,5 | 0,00 | 75,21 | - | - | 0,00 | 0,00 | - |
| 39 | 2.042 | 2.047 | 20,03 | 104,5 | 0,00 | 77,22 | - | - | 0,00 | 0,00 | - |
| 4 | 5.547 | 5.548 | 8,33 | 106,0 | 0,00 | 85,88 | - | - | 0,00 | 0,00 | - |
| 40 | 1.894 | 1.899 | 20,95 | 104,5 | 0,00 | 76,57 | - | - | 0,00 | 0,00 | - |
| 5 | 5.907 | 5.908 | 7,52 | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 6 | 5.719 | 5.720 | 7,94 | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 7 | 7.187 | 7.188 | 5,02 | 106,0 | 0,00 | 88,13 | - | - | 0,00 | 0,00 | - |
| 8 | 7.580 | 7.581 | 4,35 | 106,0 | 0,00 | 88,59 | - | - | 0,00 | 0,00 | - |
| 9 | 7.614 | 7.615 | 4,29 | 106,0 | 0,00 | 88,63 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,62 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: F Noise sensitive point: User defined (7)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.966 | 3.967 | 12,66 | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 10 | 9.390 | 9.391 | 1,67 | 106,0 | 0,00 | 90,45 | - | - | 0,00 | 0,00 | - |
| 11 | 9.422 | 9.423 | 1,63 | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| 12 | 9.573 | 9.573 | 1,43 | 106,0 | 0,00 | 90,62 | - | - | 0,00 | 0,00 | - |
| 13 | 9.719 | 9.720 | 1,24 | 106,0 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 14 | 9.740 | 9.741 | 1,21 | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 15 | 10.700 | 10.701 | 0,06 | 106,0 | 0,00 | 91,59 | - | - | 0,00 | 0,00 | - |
| 16 | 10.964 | 10.964 | -0,24 | 106,0 | 0,00 | 91,80 | - | - | 0,00 | 0,00 | - |
| 17 | 11.354 | 11.354 | -0,67 | 106,0 | 0,00 | 92,10 | - | - | 0,00 | 0,00 | - |
| 18 | 569 | 574 | 34,68 | 104,5 | 0,00 | 66,18 | - | - | 0,00 | 0,00 | - |
| 19 | 924 | 927 | 29,39 | 104,5 | 0,00 | 70,34 | - | - | 0,00 | 0,00 | - |
| 2 | 4.470 | 4.471 | 11,11 | 106,0 | 0,00 | 84,01 | - | - | 0,00 | 0,00 | - |
| 20 | 1.224 | 1.227 | 26,18 | 104,5 | 0,00 | 72,78 | - | - | 0,00 | 0,00 | - |
| 21 | 1.061 | 1.063 | 27,83 | 104,5 | 0,00 | 71,53 | - | - | 0,00 | 0,00 | - |
| 22 | 1.175 | 1.178 | 26,66 | 104,5 | 0,00 | 72,42 | - | - | 0,00 | 0,00 | - |
| 23 | 2.014 | 2.016 | 20,22 | 104,5 | 0,00 | 77,09 | - | - | 0,00 | 0,00 | - |
| 24 | 2.446 | 2.447 | 17,79 | 104,5 | 0,00 | 78,77 | - | - | 0,00 | 0,00 | - |
| 25 | 3.616 | 3.617 | 13,15 | 104,5 | 0,00 | 82,17 | - | - | 0,00 | 0,00 | - |
| 26 | 4.030 | 4.031 | 11,85 | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 27 | 5.057 | 5.057 | 9,13 | 104,5 | 0,00 | 85,08 | - | - | 0,00 | 0,00 | - |
| 28 | 6.963 | 6.963 | 5,38 | 104,5 | 0,00 | 87,86 | - | - | 0,00 | 0,00 | - |
| 29 | 7.503 | 7.504 | 4,52 | 104,5 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 3 | 4.433 | 4.434 | 11,22 | 106,0 | 0,00 | 83,94 | - | - | 0,00 | 0,00 | - |
| 30 | 6.330 | 6.332 | 7,44 | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 31 | 2.062 | 2.067 | 21,41 | 106,0 | 0,00 | 77,31 | - | - | 0,00 | 0,00 | - |
| 32 | 5.171 | 5.173 | 9,77 | 106,0 | 0,00 | 85,28 | - | - | 0,00 | 0,00 | - |
| 33 | 4.739 | 4.741 | 10,79 | 106,0 | 0,00 | 84,52 | - | - | 0,00 | 0,00 | - |
| 34 | 4.334 | 4.336 | 11,89 | 106,0 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 35 | 1.852 | 1.857 | 22,73 | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 36 | 10.149 | 10.150 | 0,68 | 104,5 | 0,00 | 91,13 | - | - | 0,00 | 0,00 | - |
| 37 | 1.491 | 1.497 | 23,83 | 104,5 | 0,00 | 74,51 | - | - | 0,00 | 0,00 | - |
| 38 | 1.567 | 1.574 | 23,24 | 104,5 | 0,00 | 74,94 | - | - | 0,00 | 0,00 | - |
| 39 | 1.992 | 1.997 | 20,34 | 104,5 | 0,00 | 77,01 | - | - | 0,00 | 0,00 | - |
| 4 | 5.498 | 5.500 | 8,44 | 106,0 | 0,00 | 85,81 | - | - | 0,00 | 0,00 | - |
| 40 | 1.841 | 1.847 | 21,30 | 104,5 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 5 | 5.858 | 5.860 | 7,63 | 106,0 | 0,00 | 86,36 | - | - | 0,00 | 0,00 | - |
| 6 | 5.669 | 5.670 | 8,05 | 106,0 | 0,00 | 86,07 | - | - | 0,00 | 0,00 | - |
| 7 | 7.134 | 7.135 | 5,11 | 106,0 | 0,00 | 88,07 | - | - | 0,00 | 0,00 | - |
| 8 | 7.527 | 7.528 | 4,44 | 106,0 | 0,00 | 88,53 | - | - | 0,00 | 0,00 | - |
| 9 | 7.561 | 7.562 | 4,38 | 106,0 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,23 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: G Noise sensitive point: User defined (8)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.953 | 3.954 | 12,70 | 106,0 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 10 | 9.314 | 9.314 | 1,77 | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 11 | 9.351 | 9.351 | 1,72 | 106,0 | 0,00 | 90,42 | - | - | 0,00 | 0,00 | - |
| 12 | 9.504 | 9.504 | 1,52 | 106,0 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 13 | 9.641 | 9.642 | 1,34 | 106,0 | 0,00 | 90,68 | - | - | 0,00 | 0,00 | - |
| 14 | 9.666 | 9.666 | 1,31 | 106,0 | 0,00 | 90,71 | - | - | 0,00 | 0,00 | - |
| 15 | 10.638 | 10.639 | 0,13 | 106,0 | 0,00 | 91,54 | - | - | 0,00 | 0,00 | - |
| 16 | 10.895 | 10.896 | -0,17 | 106,0 | 0,00 | 91,75 | - | - | 0,00 | 0,00 | - |
| 17 | 11.278 | 11.279 | -0,59 | 106,0 | 0,00 | 92,05 | - | - | 0,00 | 0,00 | - |
| 18 | 575 | 580 | 34,56 | 104,5 | 0,00 | 66,27 | - | - | 0,00 | 0,00 | - |
| 19 | 913 | 916 | 29,53 | 104,5 | 0,00 | 70,24 | - | - | 0,00 | 0,00 | - |
| 2 | 4.457 | 4.458 | 11,15 | 106,0 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| 20 | 1.206 | 1.209 | 26,35 | 104,5 | 0,00 | 72,65 | - | - | 0,00 | 0,00 | - |
| 21 | 1.007 | 1.010 | 28,42 | 104,5 | 0,00 | 71,09 | - | - | 0,00 | 0,00 | - |
| 22 | 1.090 | 1.093 | 27,52 | 104,5 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 1.930 | 1.931 | 20,75 | 104,5 | 0,00 | 76,72 | - | - | 0,00 | 0,00 | - |
| 24 | 2.354 | 2.355 | 18,27 | 104,5 | 0,00 | 78,44 | - | - | 0,00 | 0,00 | - |
| 25 | 3.524 | 3.525 | 13,46 | 104,5 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 26 | 3.945 | 3.946 | 12,10 | 104,5 | 0,00 | 82,92 | - | - | 0,00 | 0,00 | - |
| 27 | 5.027 | 5.028 | 9,20 | 104,5 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 28 | 6.903 | 6.904 | 5,48 | 104,5 | 0,00 | 87,78 | - | - | 0,00 | 0,00 | - |
| 29 | 7.435 | 7.435 | 4,62 | 104,5 | 0,00 | 88,43 | - | - | 0,00 | 0,00 | - |
| 3 | 4.409 | 4.410 | 11,29 | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 30 | 6.243 | 6.245 | 7,59 | 106,0 | 0,00 | 86,91 | - | - | 0,00 | 0,00 | - |
| 31 | 2.057 | 2.062 | 21,44 | 106,0 | 0,00 | 77,29 | - | - | 0,00 | 0,00 | - |
| 32 | 5.105 | 5.107 | 9,92 | 106,0 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 33 | 4.681 | 4.683 | 10,93 | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 34 | 4.269 | 4.271 | 12,09 | 106,0 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 35 | 1.750 | 1.756 | 23,42 | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 36 | 10.077 | 10.078 | 0,76 | 104,5 | 0,00 | 91,07 | - | - | 0,00 | 0,00 | - |
| 37 | 1.439 | 1.445 | 24,25 | 104,5 | 0,00 | 74,20 | - | - | 0,00 | 0,00 | - |
| 38 | 1.548 | 1.554 | 23,39 | 104,5 | 0,00 | 74,83 | - | - | 0,00 | 0,00 | - |
| 39 | 1.970 | 1.975 | 20,47 | 104,5 | 0,00 | 76,91 | - | - | 0,00 | 0,00 | - |
| 4 | 5.409 | 5.411 | 8,65 | 106,0 | 0,00 | 85,67 | - | - | 0,00 | 0,00 | - |
| 40 | 1.797 | 1.802 | 21,59 | 104,5 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 5 | 5.770 | 5.771 | 7,82 | 106,0 | 0,00 | 86,22 | - | - | 0,00 | 0,00 | - |
| 6 | 5.584 | 5.585 | 8,25 | 106,0 | 0,00 | 85,94 | - | - | 0,00 | 0,00 | - |
| 7 | 7.070 | 7.071 | 5,23 | 106,0 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 8 | 7.465 | 7.466 | 4,54 | 106,0 | 0,00 | 88,46 | - | - | 0,00 | 0,00 | - |
| 9 | 7.503 | 7.503 | 4,48 | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,40 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: H Noise sensitive point: User defined (9)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.917 | 3.919 | 12,82 | 106,0 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 10 | 9.282 | 9.283 | 1,81 | 106,0 | 0,00 | 90,35 | - | - | 0,00 | 0,00 | - |
| 11 | 9.318 | 9.319 | 1,76 | 106,0 | 0,00 | 90,39 | - | - | 0,00 | 0,00 | - |
| 12 | 9.471 | 9.472 | 1,56 | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 13 | 9.610 | 9.611 | 1,38 | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 14 | 9.634 | 9.635 | 1,35 | 106,0 | 0,00 | 90,68 | - | - | 0,00 | 0,00 | - |
| 15 | 10.604 | 10.605 | 0,17 | 106,0 | 0,00 | 91,51 | - | - | 0,00 | 0,00 | - |
| 16 | 10.863 | 10.863 | -0,13 | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 17 | 11.247 | 11.248 | -0,56 | 106,0 | 0,00 | 92,02 | - | - | 0,00 | 0,00 | - |
| 18 | 542 | 548 | 35,19 | 104,5 | 0,00 | 65,77 | - | - | 0,00 | 0,00 | - |
| 19 | 877 | 881 | 29,98 | 104,5 | 0,00 | 69,89 | - | - | 0,00 | 0,00 | - |
| 2 | 4.421 | 4.422 | 11,26 | 106,0 | 0,00 | 83,91 | - | - | 0,00 | 0,00 | - |
| 20 | 1.170 | 1.173 | 26,70 | 104,5 | 0,00 | 72,39 | - | - | 0,00 | 0,00 | - |
| 21 | 972 | 975 | 28,82 | 104,5 | 0,00 | 70,78 | - | - | 0,00 | 0,00 | - |
| 22 | 1.061 | 1.064 | 27,83 | 104,5 | 0,00 | 71,54 | - | - | 0,00 | 0,00 | - |
| 23 | 1.901 | 1.902 | 20,93 | 104,5 | 0,00 | 76,59 | - | - | 0,00 | 0,00 | - |
| 24 | 2.328 | 2.329 | 18,41 | 104,5 | 0,00 | 78,35 | - | - | 0,00 | 0,00 | - |
| 25 | 3.498 | 3.499 | 13,54 | 104,5 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 26 | 3.917 | 3.918 | 12,19 | 104,5 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 27 | 4.991 | 4.992 | 9,29 | 104,5 | 0,00 | 84,97 | - | - | 0,00 | 0,00 | - |
| 28 | 6.869 | 6.869 | 5,54 | 104,5 | 0,00 | 87,74 | - | - | 0,00 | 0,00 | - |
| 29 | 7.402 | 7.402 | 4,67 | 104,5 | 0,00 | 88,39 | - | - | 0,00 | 0,00 | - |
| 3 | 4.373 | 4.374 | 11,40 | 106,0 | 0,00 | 83,82 | - | - | 0,00 | 0,00 | - |
| 30 | 6.215 | 6.217 | 7,65 | 106,0 | 0,00 | 86,87 | - | - | 0,00 | 0,00 | - |
| 31 | 2.021 | 2.027 | 21,66 | 106,0 | 0,00 | 77,14 | - | - | 0,00 | 0,00 | - |
| 32 | 5.072 | 5.074 | 10,00 | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 33 | 4.646 | 4.649 | 11,02 | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 34 | 4.235 | 4.238 | 12,19 | 106,0 | 0,00 | 83,54 | - | - | 0,00 | 0,00 | - |
| 35 | 1.730 | 1.737 | 23,55 | 106,0 | 0,00 | 75,79 | - | - | 0,00 | 0,00 | - |
| 36 | 10.045 | 10.046 | 0,79 | 104,5 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 37 | 1.403 | 1.410 | 24,54 | 104,5 | 0,00 | 73,99 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 1.512 | 1.518 | 23,67 | 104,5 | 0,00 | 74,63 | - | - | 0,00 | 0,00 | - |
| 39 | 1.933 | 1.939 | 20,70 | 104,5 | 0,00 | 76,75 | - | - | 0,00 | 0,00 | - |
| 4 | 5.382 | 5.384 | 8,72 | 106,0 | 0,00 | 85,62 | - | - | 0,00 | 0,00 | - |
| 40 | 1.761 | 1.767 | 21,84 | 104,5 | 0,00 | 75,94 | - | - | 0,00 | 0,00 | - |
| 5 | 5.742 | 5.744 | 7,89 | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 6 | 5.555 | 5.556 | 8,31 | 106,0 | 0,00 | 85,90 | - | - | 0,00 | 0,00 | - |
| 7 | 7.037 | 7.038 | 5,29 | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 8 | 7.431 | 7.432 | 4,60 | 106,0 | 0,00 | 88,42 | - | - | 0,00 | 0,00 | - |
| 9 | 7.468 | 7.469 | 4,54 | 106,0 | 0,00 | 88,47 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,85 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: I Noise sensitive point: User defined (11)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.088 | 4.089 | 12,27 | 106,0 | 0,00 | 83,23 | - | - | 0,00 | 0,00 | - |
| 10 | 9.258 | 9.259 | 1,84 | 106,0 | 0,00 | 90,33 | - | - | 0,00 | 0,00 | - |
| 11 | 9.311 | 9.312 | 1,77 | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 12 | 9.474 | 9.474 | 1,56 | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 13 | 9.578 | 9.579 | 1,42 | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 14 | 9.616 | 9.617 | 1,37 | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 15 | 10.631 | 10.632 | 0,14 | 106,0 | 0,00 | 91,53 | - | - | 0,00 | 0,00 | - |
| 16 | 10.867 | 10.867 | -0,13 | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 17 | 11.226 | 11.227 | -0,53 | 106,0 | 0,00 | 92,01 | - | - | 0,00 | 0,00 | - |
| 18 | 791 | 794 | 31,13 | 104,5 | 0,00 | 69,00 | - | - | 0,00 | 0,00 | - |
| 19 | 1.081 | 1.084 | 27,61 | 104,5 | 0,00 | 71,70 | - | - | 0,00 | 0,00 | - |
| 2 | 4.589 | 4.590 | 10,78 | 106,0 | 0,00 | 84,24 | - | - | 0,00 | 0,00 | - |
| 20 | 1.352 | 1.355 | 25,02 | 104,5 | 0,00 | 73,64 | - | - | 0,00 | 0,00 | - |
| 21 | 1.073 | 1.075 | 27,71 | 104,5 | 0,00 | 71,63 | - | - | 0,00 | 0,00 | - |
| 22 | 1.038 | 1.041 | 28,08 | 104,5 | 0,00 | 71,35 | - | - | 0,00 | 0,00 | - |
| 23 | 1.860 | 1.861 | 21,20 | 104,5 | 0,00 | 76,40 | - | - | 0,00 | 0,00 | - |
| 24 | 2.249 | 2.250 | 18,85 | 104,5 | 0,00 | 78,04 | - | - | 0,00 | 0,00 | - |
| 25 | 3.409 | 3.410 | 13,85 | 104,5 | 0,00 | 81,65 | - | - | 0,00 | 0,00 | - |
| 26 | 3.863 | 3.863 | 12,36 | 104,5 | 0,00 | 82,74 | - | - | 0,00 | 0,00 | - |
| 27 | 5.120 | 5.121 | 8,98 | 104,5 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 28 | 6.907 | 6.908 | 5,47 | 104,5 | 0,00 | 87,79 | - | - | 0,00 | 0,00 | - |
| 29 | 7.409 | 7.409 | 4,66 | 104,5 | 0,00 | 88,40 | - | - | 0,00 | 0,00 | - |
| 3 | 4.518 | 4.519 | 10,98 | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 30 | 6.149 | 6.151 | 7,77 | 106,0 | 0,00 | 86,78 | - | - | 0,00 | 0,00 | - |
| 31 | 2.217 | 2.222 | 20,51 | 106,0 | 0,00 | 77,93 | - | - | 0,00 | 0,00 | - |
| 32 | 5.089 | 5.092 | 9,96 | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 33 | 4.692 | 4.695 | 10,90 | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 34 | 4.259 | 4.262 | 12,12 | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 35 | 1.592 | 1.599 | 24,55 | 106,0 | 0,00 | 75,08 | - | - | 0,00 | 0,00 | - |
| 36 | 10.034 | 10.035 | 0,80 | 104,5 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 37 | 1.493 | 1.499 | 23,82 | 104,5 | 0,00 | 74,52 | - | - | 0,00 | 0,00 | - |
| 38 | 1.683 | 1.689 | 22,38 | 104,5 | 0,00 | 75,55 | - | - | 0,00 | 0,00 | - |
| 39 | 2.094 | 2.098 | 19,72 | 104,5 | 0,00 | 77,44 | - | - | 0,00 | 0,00 | - |
| 4 | 5.307 | 5.308 | 8,90 | 106,0 | 0,00 | 85,50 | - | - | 0,00 | 0,00 | - |
| 40 | 1.866 | 1.872 | 21,13 | 104,5 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 5 | 5.666 | 5.667 | 8,06 | 106,0 | 0,00 | 86,07 | - | - | 0,00 | 0,00 | - |
| 6 | 5.496 | 5.498 | 8,45 | 106,0 | 0,00 | 85,80 | - | - | 0,00 | 0,00 | - |
| 7 | 7.059 | 7.060 | 5,25 | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 8 | 7.459 | 7.460 | 4,55 | 106,0 | 0,00 | 88,45 | - | - | 0,00 | 0,00 | - |
| 9 | 7.510 | 7.510 | 4,47 | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| Sum | | | 36,86 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: J Noise sensitive point: User defined (12)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.069 | 4.071 | 12,33 | 106,0 | 0,00 | 83,19 | - | - | 0,00 | 0,00 | - |
| 10 | 9.263 | 9.264 | 1,84 | 106,0 | 0,00 | 90,34 | - | - | 0,00 | 0,00 | - |
| 11 | 9.314 | 9.315 | 1,77 | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 12 | 9.475 | 9.476 | 1,56 | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 13 | 9.584 | 9.585 | 1,41 | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 14 | 9.620 | 9.621 | 1,37 | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 15 | 10.630 | 10.631 | 0,14 | 106,0 | 0,00 | 91,53 | - | - | 0,00 | 0,00 | - |
| 16 | 10.868 | 10.869 | -0,14 | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 17 | 11.231 | 11.231 | -0,54 | 106,0 | 0,00 | 92,01 | - | - | 0,00 | 0,00 | - |
| 18 | 761 | 765 | 31,55 | 104,5 | 0,00 | 68,67 | - | - | 0,00 | 0,00 | - |
| 19 | 1.057 | 1.060 | 27,87 | 104,5 | 0,00 | 71,50 | - | - | 0,00 | 0,00 | - |
| 2 | 4.570 | 4.572 | 10,83 | 106,0 | 0,00 | 84,20 | - | - | 0,00 | 0,00 | - |
| 20 | 1.331 | 1.333 | 25,21 | 104,5 | 0,00 | 73,50 | - | - | 0,00 | 0,00 | - |
| 21 | 1.059 | 1.062 | 27,85 | 104,5 | 0,00 | 71,52 | - | - | 0,00 | 0,00 | - |
| 22 | 1.039 | 1.042 | 28,07 | 104,5 | 0,00 | 71,35 | - | - | 0,00 | 0,00 | - |
| 23 | 1.864 | 1.866 | 21,17 | 104,5 | 0,00 | 76,42 | - | - | 0,00 | 0,00 | - |
| 24 | 2.258 | 2.260 | 18,79 | 104,5 | 0,00 | 78,08 | - | - | 0,00 | 0,00 | - |
| 25 | 3.421 | 3.421 | 13,81 | 104,5 | 0,00 | 81,68 | - | - | 0,00 | 0,00 | - |
| 26 | 3.870 | 3.871 | 12,33 | 104,5 | 0,00 | 82,76 | - | - | 0,00 | 0,00 | - |
| 27 | 5.107 | 5.107 | 9,02 | 104,5 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 28 | 6.905 | 6.905 | 5,48 | 104,5 | 0,00 | 87,78 | - | - | 0,00 | 0,00 | - |
| 29 | 7.410 | 7.410 | 4,66 | 104,5 | 0,00 | 88,40 | - | - | 0,00 | 0,00 | - |
| 3 | 4.502 | 4.504 | 11,02 | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 30 | 6.159 | 6.160 | 7,75 | 106,0 | 0,00 | 86,79 | - | - | 0,00 | 0,00 | - |
| 31 | 2.195 | 2.200 | 20,63 | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 32 | 5.089 | 5.091 | 9,96 | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 33 | 4.688 | 4.691 | 10,91 | 106,0 | 0,00 | 84,42 | - | - | 0,00 | 0,00 | - |
| 34 | 4.258 | 4.261 | 12,12 | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 35 | 1.608 | 1.615 | 24,43 | 106,0 | 0,00 | 75,16 | - | - | 0,00 | 0,00 | - |
| 36 | 10.037 | 10.039 | 0,80 | 104,5 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 37 | 1.482 | 1.488 | 23,90 | 104,5 | 0,00 | 74,45 | - | - | 0,00 | 0,00 | - |
| 38 | 1.663 | 1.669 | 22,53 | 104,5 | 0,00 | 75,45 | - | - | 0,00 | 0,00 | - |
| 39 | 2.076 | 2.080 | 19,83 | 104,5 | 0,00 | 77,36 | - | - | 0,00 | 0,00 | - |
| 4 | 5.317 | 5.318 | 8,88 | 106,0 | 0,00 | 85,52 | - | - | 0,00 | 0,00 | - |
| 40 | 1.854 | 1.859 | 21,21 | 104,5 | 0,00 | 76,39 | - | - | 0,00 | 0,00 | - |
| 5 | 5.677 | 5.678 | 8,03 | 106,0 | 0,00 | 86,08 | - | - | 0,00 | 0,00 | - |
| 6 | 5.505 | 5.506 | 8,43 | 106,0 | 0,00 | 85,82 | - | - | 0,00 | 0,00 | - |
| 7 | 7.059 | 7.059 | 5,25 | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 8 | 7.457 | 7.458 | 4,55 | 106,0 | 0,00 | 88,45 | - | - | 0,00 | 0,00 | - |
| 9 | 7.507 | 7.507 | 4,47 | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,04 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: K Noise sensitive point: User defined (13)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.835 | 3.837 | 13,09 | 106,0 | 0,00 | 82,68 | - | - | 0,00 | 0,00 | - |
| 10 | 8.849 | 8.850 | 2,41 | 106,0 | 0,00 | 89,94 | - | - | 0,00 | 0,00 | - |
| 11 | 8.907 | 8.908 | 2,32 | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| 12 | 9.073 | 9.074 | 2,09 | 106,0 | 0,00 | 90,16 | - | - | 0,00 | 0,00 | - |
| 13 | 9.168 | 9.169 | 1,97 | 106,0 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 14 | 9.209 | 9.209 | 1,91 | 106,0 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 15 | 10.240 | 10.241 | 0,60 | 106,0 | 0,00 | 91,21 | - | - | 0,00 | 0,00 | - |
| 16 | 10.466 | 10.467 | 0,33 | 106,0 | 0,00 | 91,40 | - | - | 0,00 | 0,00 | - |
| 17 | 10.818 | 10.819 | -0,08 | 106,0 | 0,00 | 91,68 | - | - | 0,00 | 0,00 | - |
| 18 | 804 | 808 | 30,94 | 104,5 | 0,00 | 69,14 | - | - | 0,00 | 0,00 | - |
| 19 | 964 | 967 | 28,91 | 104,5 | 0,00 | 70,71 | - | - | 0,00 | 0,00 | - |
| 2 | 4.329 | 4.330 | 11,53 | 106,0 | 0,00 | 83,73 | - | - | 0,00 | 0,00 | - |
| 20 | 1.173 | 1.175 | 26,68 | 104,5 | 0,00 | 72,40 | - | - | 0,00 | 0,00 | - |
| 21 | 803 | 807 | 30,95 | 104,5 | 0,00 | 69,14 | - | - | 0,00 | 0,00 | - |
| 22 | 651 | 656 | 33,23 | 104,5 | 0,00 | 67,34 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 1.453 | 1.455 | 24,18 | 104,5 | 0,00 | 74,26 | - | - | 0,00 | 0,00 | - |
| 24 | 1.835 | 1.836 | 21,37 | 104,5 | 0,00 | 76,28 | - | - | 0,00 | 0,00 | - |
| 25 | 2.996 | 2.997 | 15,40 | 104,5 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 26 | 3.450 | 3.451 | 13,71 | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 27 | 4.812 | 4.812 | 9,72 | 104,5 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 28 | 6.524 | 6.524 | 6,13 | 104,5 | 0,00 | 87,29 | - | - | 0,00 | 0,00 | - |
| 29 | 7.011 | 7.011 | 5,30 | 104,5 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 3 | 4.230 | 4.231 | 11,83 | 106,0 | 0,00 | 83,53 | - | - | 0,00 | 0,00 | - |
| 30 | 5.735 | 5.738 | 8,57 | 106,0 | 0,00 | 86,17 | - | - | 0,00 | 0,00 | - |
| 31 | 2.025 | 2.030 | 21,64 | 106,0 | 0,00 | 77,15 | - | - | 0,00 | 0,00 | - |
| 32 | 4.697 | 4.700 | 10,89 | 106,0 | 0,00 | 84,44 | - | - | 0,00 | 0,00 | - |
| 33 | 4.316 | 4.319 | 11,94 | 106,0 | 0,00 | 83,71 | - | - | 0,00 | 0,00 | - |
| 34 | 3.872 | 3.875 | 13,36 | 106,0 | 0,00 | 82,76 | - | - | 0,00 | 0,00 | - |
| 35 | 1.188 | 1.197 | 27,97 | 106,0 | 0,00 | 72,56 | - | - | 0,00 | 0,00 | - |
| 36 | 9.629 | 9.630 | 1,26 | 104,5 | 0,00 | 90,67 | - | - | 0,00 | 0,00 | - |
| 37 | 1.183 | 1.192 | 26,52 | 104,5 | 0,00 | 72,52 | - | - | 0,00 | 0,00 | - |
| 38 | 1.470 | 1.477 | 24,00 | 104,5 | 0,00 | 74,39 | - | - | 0,00 | 0,00 | - |
| 39 | 1.850 | 1.856 | 21,24 | 104,5 | 0,00 | 76,37 | - | - | 0,00 | 0,00 | - |
| 4 | 4.893 | 4.894 | 9,95 | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 40 | 1.562 | 1.568 | 23,28 | 104,5 | 0,00 | 74,91 | - | - | 0,00 | 0,00 | - |
| 5 | 5.252 | 5.254 | 9,03 | 106,0 | 0,00 | 85,41 | - | - | 0,00 | 0,00 | - |
| 6 | 5.083 | 5.084 | 9,46 | 106,0 | 0,00 | 85,12 | - | - | 0,00 | 0,00 | - |
| 7 | 6.668 | 6.669 | 5,97 | 106,0 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 8 | 7.070 | 7.070 | 5,23 | 106,0 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 9 | 7.127 | 7.128 | 5,13 | 106,0 | 0,00 | 88,06 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,18 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: L Noise sensitive point: User defined (14)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.797 | 3.798 | 13,22 | 106,0 | 0,00 | 82,59 | - | - | 0,00 | 0,00 | - |
| 10 | 8.836 | 8.837 | 2,42 | 106,0 | 0,00 | 89,93 | - | - | 0,00 | 0,00 | - |
| 11 | 8.891 | 8.892 | 2,35 | 106,0 | 0,00 | 89,98 | - | - | 0,00 | 0,00 | - |
| 12 | 9.056 | 9.057 | 2,12 | 106,0 | 0,00 | 90,14 | - | - | 0,00 | 0,00 | - |
| 13 | 9.156 | 9.157 | 1,98 | 106,0 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 14 | 9.195 | 9.195 | 1,93 | 106,0 | 0,00 | 90,27 | - | - | 0,00 | 0,00 | - |
| 15 | 10.220 | 10.221 | 0,62 | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| 16 | 10.449 | 10.450 | 0,35 | 106,0 | 0,00 | 91,38 | - | - | 0,00 | 0,00 | - |
| 17 | 10.805 | 10.805 | -0,06 | 106,0 | 0,00 | 91,67 | - | - | 0,00 | 0,00 | - |
| 18 | 765 | 769 | 31,49 | 104,5 | 0,00 | 68,72 | - | - | 0,00 | 0,00 | - |
| 19 | 921 | 924 | 29,43 | 104,5 | 0,00 | 70,32 | - | - | 0,00 | 0,00 | - |
| 2 | 4.291 | 4.292 | 11,64 | 106,0 | 0,00 | 83,65 | - | - | 0,00 | 0,00 | - |
| 20 | 1.130 | 1.133 | 27,10 | 104,5 | 0,00 | 72,08 | - | - | 0,00 | 0,00 | - |
| 21 | 763 | 767 | 31,51 | 104,5 | 0,00 | 68,70 | - | - | 0,00 | 0,00 | - |
| 22 | 628 | 632 | 33,63 | 104,5 | 0,00 | 67,02 | - | - | 0,00 | 0,00 | - |
| 23 | 1.438 | 1.440 | 24,30 | 104,5 | 0,00 | 74,17 | - | - | 0,00 | 0,00 | - |
| 24 | 1.828 | 1.830 | 21,41 | 104,5 | 0,00 | 76,25 | - | - | 0,00 | 0,00 | - |
| 25 | 2.992 | 2.993 | 15,41 | 104,5 | 0,00 | 80,52 | - | - | 0,00 | 0,00 | - |
| 26 | 3.440 | 3.441 | 13,74 | 104,5 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 27 | 4.778 | 4.779 | 9,81 | 104,5 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 28 | 6.502 | 6.502 | 6,17 | 104,5 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 29 | 6.993 | 6.993 | 5,33 | 104,5 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 3 | 4.194 | 4.195 | 11,94 | 106,0 | 0,00 | 83,46 | - | - | 0,00 | 0,00 | - |
| 30 | 5.728 | 5.730 | 8,58 | 106,0 | 0,00 | 86,16 | - | - | 0,00 | 0,00 | - |
| 31 | 1.983 | 1.988 | 21,89 | 106,0 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 32 | 4.677 | 4.680 | 10,94 | 106,0 | 0,00 | 84,40 | - | - | 0,00 | 0,00 | - |
| 33 | 4.292 | 4.295 | 12,02 | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 34 | 3.850 | 3.853 | 13,43 | 106,0 | 0,00 | 82,72 | - | - | 0,00 | 0,00 | - |
| 35 | 1.193 | 1.202 | 27,92 | 106,0 | 0,00 | 72,60 | - | - | 0,00 | 0,00 | - |
| 36 | 9.614 | 9.615 | 1,27 | 104,5 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 37 | 1.147 | 1.156 | 26,87 | 104,5 | 0,00 | 72,26 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 1.428 | 1.435 | 24,34 | 104,5 | 0,00 | 74,14 | - | - | 0,00 | 0,00 | - |
| 39 | 1.811 | 1.816 | 21,50 | 104,5 | 0,00 | 76,18 | - | - | 0,00 | 0,00 | - |
| 4 | 4.887 | 4.889 | 9,96 | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 40 | 1.526 | 1.533 | 23,55 | 104,5 | 0,00 | 74,71 | - | - | 0,00 | 0,00 | - |
| 5 | 5.247 | 5.248 | 9,05 | 106,0 | 0,00 | 85,40 | - | - | 0,00 | 0,00 | - |
| 6 | 5.075 | 5.076 | 9,48 | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 7 | 6.648 | 6.649 | 6,01 | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 8 | 7.049 | 7.050 | 5,27 | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 9 | 7.105 | 7.106 | 5,17 | 106,0 | 0,00 | 88,03 | - | - | 0,00 | 0,00 | - |
| Sum | | | 39,57 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: M Noise sensitive point: User defined (15)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.711 | 3.712 | 13,51 | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 10 | 8.408 | 8.409 | 3,04 | 106,0 | 0,00 | 89,49 | - | - | 0,00 | 0,00 | - |
| 11 | 8.481 | 8.481 | 2,94 | 106,0 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 12 | 8.656 | 8.657 | 2,68 | 106,0 | 0,00 | 89,75 | - | - | 0,00 | 0,00 | - |
| 13 | 8.720 | 8.721 | 2,59 | 106,0 | 0,00 | 89,81 | - | - | 0,00 | 0,00 | - |
| 14 | 8.772 | 8.773 | 2,51 | 106,0 | 0,00 | 89,86 | - | - | 0,00 | 0,00 | - |
| 15 | 9.847 | 9.848 | 1,08 | 106,0 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 16 | 10.049 | 10.050 | 0,83 | 106,0 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 17 | 10.378 | 10.379 | 0,43 | 106,0 | 0,00 | 91,32 | - | - | 0,00 | 0,00 | - |
| 18 | 1.157 | 1.159 | 26,84 | 104,5 | 0,00 | 72,28 | - | - | 0,00 | 0,00 | - |
| 19 | 1.174 | 1.177 | 26,66 | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 2 | 4.189 | 4.190 | 11,95 | 106,0 | 0,00 | 83,44 | - | - | 0,00 | 0,00 | - |
| 20 | 1.276 | 1.278 | 25,70 | 104,5 | 0,00 | 73,13 | - | - | 0,00 | 0,00 | - |
| 21 | 844 | 848 | 30,40 | 104,5 | 0,00 | 69,57 | - | - | 0,00 | 0,00 | - |
| 22 | 452 | 459 | 37,06 | 104,5 | 0,00 | 64,23 | - | - | 0,00 | 0,00 | - |
| 23 | 1.046 | 1.049 | 27,99 | 104,5 | 0,00 | 71,42 | - | - | 0,00 | 0,00 | - |
| 24 | 1.371 | 1.374 | 24,86 | 104,5 | 0,00 | 73,76 | - | - | 0,00 | 0,00 | - |
| 25 | 2.517 | 2.519 | 17,45 | 104,5 | 0,00 | 79,02 | - | - | 0,00 | 0,00 | - |
| 26 | 2.996 | 2.997 | 15,40 | 104,5 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 27 | 4.589 | 4.589 | 10,29 | 104,5 | 0,00 | 84,24 | - | - | 0,00 | 0,00 | - |
| 28 | 6.152 | 6.152 | 6,82 | 104,5 | 0,00 | 86,78 | - | - | 0,00 | 0,00 | - |
| 29 | 6.601 | 6.602 | 6,00 | 104,5 | 0,00 | 87,39 | - | - | 0,00 | 0,00 | - |
| 3 | 4.045 | 4.047 | 12,40 | 106,0 | 0,00 | 83,14 | - | - | 0,00 | 0,00 | - |
| 30 | 5.267 | 5.269 | 9,56 | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 31 | 2.038 | 2.043 | 21,56 | 106,0 | 0,00 | 77,21 | - | - | 0,00 | 0,00 | - |
| 32 | 4.309 | 4.312 | 11,96 | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 33 | 3.967 | 3.970 | 13,04 | 106,0 | 0,00 | 82,98 | - | - | 0,00 | 0,00 | - |
| 34 | 3.498 | 3.501 | 14,68 | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 35 | 693 | 708 | 33,91 | 106,0 | 0,00 | 68,00 | - | - | 0,00 | 0,00 | - |
| 36 | 9.199 | 9.201 | 1,76 | 104,5 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 37 | 1.072 | 1.082 | 27,64 | 104,5 | 0,00 | 71,68 | - | - | 0,00 | 0,00 | - |
| 38 | 1.491 | 1.498 | 23,83 | 104,5 | 0,00 | 74,51 | - | - | 0,00 | 0,00 | - |
| 39 | 1.797 | 1.803 | 21,59 | 104,5 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 4 | 4.419 | 4.421 | 11,26 | 106,0 | 0,00 | 83,91 | - | - | 0,00 | 0,00 | - |
| 40 | 1.421 | 1.429 | 24,39 | 104,5 | 0,00 | 74,10 | - | - | 0,00 | 0,00 | - |
| 5 | 4.778 | 4.780 | 10,25 | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 6 | 4.620 | 4.622 | 10,69 | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 7 | 6.277 | 6.278 | 6,74 | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 8 | 6.683 | 6.684 | 5,94 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 9 | 6.757 | 6.758 | 5,80 | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,00 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: N Noise sensitive point: User defined (16)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.680 | 3.681 | 13,62 | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| 10 | 8.414 | 8.415 | 3,04 | 106,0 | 0,00 | 89,50 | - | - | 0,00 | 0,00 | - |
| 11 | 8.483 | 8.484 | 2,93 | 106,0 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 12 | 8.658 | 8.658 | 2,68 | 106,0 | 0,00 | 89,75 | - | - | 0,00 | 0,00 | - |
| 13 | 8.727 | 8.728 | 2,58 | 106,0 | 0,00 | 89,82 | - | - | 0,00 | 0,00 | - |
| 14 | 8.777 | 8.778 | 2,51 | 106,0 | 0,00 | 89,87 | - | - | 0,00 | 0,00 | - |
| 15 | 9.845 | 9.845 | 1,08 | 106,0 | 0,00 | 90,86 | - | - | 0,00 | 0,00 | - |
| 16 | 10.051 | 10.051 | 0,83 | 106,0 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 17 | 10.384 | 10.385 | 0,42 | 106,0 | 0,00 | 91,33 | - | - | 0,00 | 0,00 | - |
| 18 | 1.114 | 1.117 | 27,27 | 104,5 | 0,00 | 71,96 | - | - | 0,00 | 0,00 | - |
| 19 | 1.129 | 1.132 | 27,12 | 104,5 | 0,00 | 72,07 | - | - | 0,00 | 0,00 | - |
| 2 | 4.159 | 4.160 | 12,05 | 106,0 | 0,00 | 83,38 | - | - | 0,00 | 0,00 | - |
| 20 | 1.231 | 1.234 | 26,11 | 104,5 | 0,00 | 72,83 | - | - | 0,00 | 0,00 | - |
| 21 | 800 | 804 | 30,99 | 104,5 | 0,00 | 69,10 | - | - | 0,00 | 0,00 | - |
| 22 | 414 | 421 | 37,94 | 104,5 | 0,00 | 63,50 | - | - | 0,00 | 0,00 | - |
| 23 | 1.042 | 1.045 | 28,04 | 104,5 | 0,00 | 71,38 | - | - | 0,00 | 0,00 | - |
| 24 | 1.380 | 1.383 | 24,78 | 104,5 | 0,00 | 73,81 | - | - | 0,00 | 0,00 | - |
| 25 | 2.532 | 2.533 | 17,38 | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 26 | 3.003 | 3.005 | 15,37 | 104,5 | 0,00 | 80,56 | - | - | 0,00 | 0,00 | - |
| 27 | 4.566 | 4.566 | 10,35 | 104,5 | 0,00 | 84,19 | - | - | 0,00 | 0,00 | - |
| 28 | 6.146 | 6.146 | 6,83 | 104,5 | 0,00 | 86,77 | - | - | 0,00 | 0,00 | - |
| 29 | 6.601 | 6.602 | 6,00 | 104,5 | 0,00 | 87,39 | - | - | 0,00 | 0,00 | - |
| 3 | 4.019 | 4.020 | 12,49 | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 30 | 5.279 | 5.281 | 9,53 | 106,0 | 0,00 | 85,45 | - | - | 0,00 | 0,00 | - |
| 31 | 1.997 | 2.003 | 21,80 | 106,0 | 0,00 | 77,03 | - | - | 0,00 | 0,00 | - |
| 32 | 4.305 | 4.308 | 11,98 | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 33 | 3.957 | 3.960 | 13,08 | 106,0 | 0,00 | 82,95 | - | - | 0,00 | 0,00 | - |
| 34 | 3.492 | 3.495 | 14,71 | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 35 | 717 | 732 | 33,55 | 106,0 | 0,00 | 68,29 | - | - | 0,00 | 0,00 | - |
| 36 | 9.203 | 9.204 | 1,76 | 104,5 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 37 | 1.036 | 1.045 | 28,03 | 104,5 | 0,00 | 71,39 | - | - | 0,00 | 0,00 | - |
| 38 | 1.449 | 1.456 | 24,16 | 104,5 | 0,00 | 74,27 | - | - | 0,00 | 0,00 | - |
| 39 | 1.760 | 1.766 | 21,85 | 104,5 | 0,00 | 75,94 | - | - | 0,00 | 0,00 | - |
| 4 | 4.433 | 4.434 | 11,22 | 106,0 | 0,00 | 83,94 | - | - | 0,00 | 0,00 | - |
| 40 | 1.388 | 1.395 | 24,67 | 104,5 | 0,00 | 73,89 | - | - | 0,00 | 0,00 | - |
| 5 | 4.792 | 4.793 | 10,22 | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 6 | 4.630 | 4.632 | 10,66 | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 7 | 6.274 | 6.275 | 6,75 | 106,0 | 0,00 | 86,95 | - | - | 0,00 | 0,00 | - |
| 8 | 6.679 | 6.680 | 5,95 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 9 | 6.751 | 6.752 | 5,82 | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,44 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: O Noise sensitive point: User defined (17)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.624 | 3.625 | 13,81 | 106,0 | 0,00 | 82,19 | - | - | 0,00 | 0,00 | - |
| 10 | 8.394 | 8.395 | 3,07 | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 11 | 8.460 | 8.461 | 2,97 | 106,0 | 0,00 | 89,55 | - | - | 0,00 | 0,00 | - |
| 12 | 8.632 | 8.633 | 2,72 | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 13 | 8.709 | 8.709 | 2,61 | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 14 | 8.756 | 8.756 | 2,54 | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 15 | 9.815 | 9.815 | 1,12 | 106,0 | 0,00 | 90,84 | - | - | 0,00 | 0,00 | - |
| 16 | 10.025 | 10.026 | 0,86 | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 17 | 10.363 | 10.364 | 0,45 | 106,0 | 0,00 | 91,31 | - | - | 0,00 | 0,00 | - |
| 18 | 1.076 | 1.079 | 27,67 | 104,5 | 0,00 | 71,66 | - | - | 0,00 | 0,00 | - |
| 19 | 1.078 | 1.081 | 27,65 | 104,5 | 0,00 | 71,67 | - | - | 0,00 | 0,00 | - |
| 2 | 4.104 | 4.105 | 12,22 | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| 20 | 1.175 | 1.177 | 26,66 | 104,5 | 0,00 | 72,42 | - | - | 0,00 | 0,00 | - |
| 21 | 743 | 747 | 31,81 | 104,5 | 0,00 | 68,47 | - | - | 0,00 | 0,00 | - |
| 22 | 356 | 364 | 39,44 | 104,5 | 0,00 | 62,23 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 1.011 | 1.014 | 28,37 | 104,5 | 0,00 | 71,12 | - | - | 0,00 | 0,00 | - |
| 24 | 1.366 | 1.369 | 24,90 | 104,5 | 0,00 | 73,73 | - | - | 0,00 | 0,00 | - |
| 25 | 2.524 | 2.525 | 17,42 | 104,5 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 26 | 2.987 | 2.988 | 15,43 | 104,5 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 27 | 4.516 | 4.516 | 10,48 | 104,5 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 28 | 6.112 | 6.112 | 6,90 | 104,5 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| 29 | 6.574 | 6.574 | 6,05 | 104,5 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 3 | 3.966 | 3.967 | 12,66 | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 30 | 5.267 | 5.269 | 9,56 | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 31 | 1.938 | 1.944 | 22,17 | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 32 | 4.274 | 4.276 | 12,07 | 106,0 | 0,00 | 83,62 | - | - | 0,00 | 0,00 | - |
| 33 | 3.920 | 3.923 | 13,20 | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 34 | 3.458 | 3.461 | 14,83 | 106,0 | 0,00 | 81,78 | - | - | 0,00 | 0,00 | - |
| 35 | 725 | 740 | 33,42 | 106,0 | 0,00 | 68,38 | - | - | 0,00 | 0,00 | - |
| 36 | 9.180 | 9.181 | 1,79 | 104,5 | 0,00 | 90,26 | - | - | 0,00 | 0,00 | - |
| 37 | 977 | 988 | 28,68 | 104,5 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 38 | 1.390 | 1.398 | 24,65 | 104,5 | 0,00 | 73,91 | - | - | 0,00 | 0,00 | - |
| 39 | 1.701 | 1.707 | 22,26 | 104,5 | 0,00 | 75,65 | - | - | 0,00 | 0,00 | - |
| 4 | 4.422 | 4.424 | 11,25 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 40 | 1.331 | 1.339 | 25,16 | 104,5 | 0,00 | 73,54 | - | - | 0,00 | 0,00 | - |
| 5 | 4.782 | 4.783 | 10,24 | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 6 | 4.616 | 4.618 | 10,70 | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 7 | 6.243 | 6.244 | 6,81 | 106,0 | 0,00 | 86,91 | - | - | 0,00 | 0,00 | - |
| 8 | 6.648 | 6.649 | 6,01 | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 9 | 6.717 | 6.718 | 5,88 | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,34 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: P Noise sensitive point: User defined (18)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.609 | 3.611 | 13,86 | 106,0 | 0,00 | 82,15 | - | - | 0,00 | 0,00 | - |
| 10 | 8.390 | 8.391 | 3,07 | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 11 | 8.455 | 8.456 | 2,97 | 106,0 | 0,00 | 89,54 | - | - | 0,00 | 0,00 | - |
| 12 | 8.627 | 8.628 | 2,72 | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 13 | 8.706 | 8.706 | 2,61 | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 14 | 8.752 | 8.753 | 2,54 | 106,0 | 0,00 | 89,84 | - | - | 0,00 | 0,00 | - |
| 15 | 9.808 | 9.809 | 1,13 | 106,0 | 0,00 | 90,83 | - | - | 0,00 | 0,00 | - |
| 16 | 10.020 | 10.021 | 0,86 | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 17 | 10.360 | 10.361 | 0,45 | 106,0 | 0,00 | 91,31 | - | - | 0,00 | 0,00 | - |
| 18 | 1.064 | 1.067 | 27,80 | 104,5 | 0,00 | 71,56 | - | - | 0,00 | 0,00 | - |
| 19 | 1.063 | 1.066 | 27,81 | 104,5 | 0,00 | 71,55 | - | - | 0,00 | 0,00 | - |
| 2 | 4.090 | 4.091 | 12,26 | 106,0 | 0,00 | 83,24 | - | - | 0,00 | 0,00 | - |
| 20 | 1.158 | 1.161 | 26,82 | 104,5 | 0,00 | 72,30 | - | - | 0,00 | 0,00 | - |
| 21 | 727 | 731 | 32,05 | 104,5 | 0,00 | 68,28 | - | - | 0,00 | 0,00 | - |
| 22 | 340 | 349 | 39,87 | 104,5 | 0,00 | 61,86 | - | - | 0,00 | 0,00 | - |
| 23 | 1.005 | 1.008 | 28,44 | 104,5 | 0,00 | 71,07 | - | - | 0,00 | 0,00 | - |
| 24 | 1.365 | 1.367 | 24,91 | 104,5 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 25 | 2.524 | 2.525 | 17,42 | 104,5 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 26 | 2.984 | 2.985 | 15,44 | 104,5 | 0,00 | 80,50 | - | - | 0,00 | 0,00 | - |
| 27 | 4.503 | 4.504 | 10,52 | 104,5 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 28 | 6.105 | 6.105 | 6,91 | 104,5 | 0,00 | 86,71 | - | - | 0,00 | 0,00 | - |
| 29 | 6.568 | 6.569 | 6,06 | 104,5 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 3 | 3.953 | 3.954 | 12,70 | 106,0 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 30 | 5.266 | 5.268 | 9,56 | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 31 | 1.922 | 1.928 | 22,27 | 106,0 | 0,00 | 76,70 | - | - | 0,00 | 0,00 | - |
| 32 | 4.267 | 4.270 | 12,09 | 106,0 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 33 | 3.912 | 3.914 | 13,23 | 106,0 | 0,00 | 82,85 | - | - | 0,00 | 0,00 | - |
| 34 | 3.450 | 3.454 | 14,86 | 106,0 | 0,00 | 81,77 | - | - | 0,00 | 0,00 | - |
| 35 | 730 | 745 | 33,35 | 106,0 | 0,00 | 68,44 | - | - | 0,00 | 0,00 | - |
| 36 | 9.176 | 9.177 | 1,79 | 104,5 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 37 | 962 | 972 | 28,85 | 104,5 | 0,00 | 70,76 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 1.374 | 1.382 | 24,79 | 104,5 | 0,00 | 73,81 | - | - | 0,00 | 0,00 | - |
| 39 | 1.685 | 1.692 | 22,37 | 104,5 | 0,00 | 75,57 | - | - | 0,00 | 0,00 | - |
| 4 | 4.422 | 4.424 | 11,25 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 40 | 1.317 | 1.324 | 25,29 | 104,5 | 0,00 | 73,44 | - | - | 0,00 | 0,00 | - |
| 5 | 4.781 | 4.783 | 10,24 | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 6 | 4.615 | 4.616 | 10,70 | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 7 | 6.237 | 6.238 | 6,83 | 106,0 | 0,00 | 86,90 | - | - | 0,00 | 0,00 | - |
| 8 | 6.641 | 6.642 | 6,02 | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 9 | 6.710 | 6.711 | 5,89 | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,61 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: Q Noise sensitive point: User defined (19)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.559 | 3.561 | 14,04 | 106,0 | 0,00 | 82,03 | - | - | 0,00 | 0,00 | - |
| 10 | 8.324 | 8.325 | 3,17 | 106,0 | 0,00 | 89,41 | - | - | 0,00 | 0,00 | - |
| 11 | 8.389 | 8.390 | 3,07 | 106,0 | 0,00 | 89,47 | - | - | 0,00 | 0,00 | - |
| 12 | 8.560 | 8.561 | 2,82 | 106,0 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 13 | 8.640 | 8.641 | 2,70 | 106,0 | 0,00 | 89,73 | - | - | 0,00 | 0,00 | - |
| 14 | 8.686 | 8.686 | 2,64 | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 15 | 9.741 | 9.742 | 1,21 | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 16 | 9.953 | 9.954 | 0,95 | 106,0 | 0,00 | 90,96 | - | - | 0,00 | 0,00 | - |
| 17 | 10.294 | 10.295 | 0,53 | 106,0 | 0,00 | 91,25 | - | - | 0,00 | 0,00 | - |
| 18 | 1.090 | 1.093 | 27,51 | 104,5 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 19 | 1.067 | 1.070 | 27,76 | 104,5 | 0,00 | 71,59 | - | - | 0,00 | 0,00 | - |
| 2 | 4.038 | 4.039 | 12,42 | 106,0 | 0,00 | 83,13 | - | - | 0,00 | 0,00 | - |
| 20 | 1.145 | 1.148 | 26,95 | 104,5 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 21 | 713 | 717 | 32,26 | 104,5 | 0,00 | 68,12 | - | - | 0,00 | 0,00 | - |
| 22 | 303 | 313 | 40,98 | 104,5 | 0,00 | 60,90 | - | - | 0,00 | 0,00 | - |
| 23 | 938 | 942 | 29,22 | 104,5 | 0,00 | 70,48 | - | - | 0,00 | 0,00 | - |
| 24 | 1.301 | 1.304 | 25,47 | 104,5 | 0,00 | 73,30 | - | - | 0,00 | 0,00 | - |
| 25 | 2.462 | 2.464 | 17,71 | 104,5 | 0,00 | 78,83 | - | - | 0,00 | 0,00 | - |
| 26 | 2.919 | 2.920 | 15,71 | 104,5 | 0,00 | 80,31 | - | - | 0,00 | 0,00 | - |
| 27 | 4.444 | 4.445 | 10,67 | 104,5 | 0,00 | 83,96 | - | - | 0,00 | 0,00 | - |
| 28 | 6.038 | 6.038 | 7,04 | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 29 | 6.502 | 6.502 | 6,17 | 104,5 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 3 | 3.897 | 3.898 | 12,88 | 106,0 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 30 | 5.202 | 5.204 | 9,70 | 106,0 | 0,00 | 85,33 | - | - | 0,00 | 0,00 | - |
| 31 | 1.891 | 1.897 | 22,47 | 106,0 | 0,00 | 76,56 | - | - | 0,00 | 0,00 | - |
| 32 | 4.200 | 4.203 | 12,30 | 106,0 | 0,00 | 83,47 | - | - | 0,00 | 0,00 | - |
| 33 | 3.846 | 3.848 | 13,45 | 106,0 | 0,00 | 82,71 | - | - | 0,00 | 0,00 | - |
| 34 | 3.384 | 3.387 | 15,11 | 106,0 | 0,00 | 81,60 | - | - | 0,00 | 0,00 | - |
| 35 | 681 | 697 | 34,08 | 106,0 | 0,00 | 67,86 | - | - | 0,00 | 0,00 | - |
| 36 | 9.109 | 9.111 | 1,87 | 104,5 | 0,00 | 90,19 | - | - | 0,00 | 0,00 | - |
| 37 | 921 | 932 | 29,34 | 104,5 | 0,00 | 70,39 | - | - | 0,00 | 0,00 | - |
| 38 | 1.347 | 1.354 | 25,02 | 104,5 | 0,00 | 73,64 | - | - | 0,00 | 0,00 | - |
| 39 | 1.647 | 1.653 | 22,65 | 104,5 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 4 | 4.359 | 4.361 | 11,44 | 106,0 | 0,00 | 83,79 | - | - | 0,00 | 0,00 | - |
| 40 | 1.269 | 1.277 | 25,71 | 104,5 | 0,00 | 73,13 | - | - | 0,00 | 0,00 | - |
| 5 | 4.719 | 4.720 | 10,42 | 106,0 | 0,00 | 84,48 | - | - | 0,00 | 0,00 | - |
| 6 | 4.550 | 4.552 | 10,88 | 106,0 | 0,00 | 84,16 | - | - | 0,00 | 0,00 | - |
| 7 | 6.170 | 6.171 | 6,96 | 106,0 | 0,00 | 86,81 | - | - | 0,00 | 0,00 | - |
| 8 | 6.574 | 6.575 | 6,15 | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 9 | 6.643 | 6.644 | 6,02 | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,40 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: R Noise sensitive point: User defined (20)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.540 | 3.542 | 14,11 | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 10 | 8.333 | 8.334 | 3,16 | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 11 | 8.395 | 8.396 | 3,06 | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 12 | 8.565 | 8.566 | 2,81 | 106,0 | 0,00 | 89,66 | - | - | 0,00 | 0,00 | - |
| 13 | 8.649 | 8.650 | 2,69 | 106,0 | 0,00 | 89,74 | - | - | 0,00 | 0,00 | - |
| 14 | 8.694 | 8.694 | 2,63 | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 15 | 9.744 | 9.745 | 1,21 | 106,0 | 0,00 | 90,78 | - | - | 0,00 | 0,00 | - |
| 16 | 9.959 | 9.959 | 0,94 | 106,0 | 0,00 | 90,96 | - | - | 0,00 | 0,00 | - |
| 17 | 10.302 | 10.303 | 0,52 | 106,0 | 0,00 | 91,26 | - | - | 0,00 | 0,00 | - |
| 18 | 1.060 | 1.063 | 27,84 | 104,5 | 0,00 | 71,53 | - | - | 0,00 | 0,00 | - |
| 19 | 1.035 | 1.038 | 28,11 | 104,5 | 0,00 | 71,32 | - | - | 0,00 | 0,00 | - |
| 2 | 4.020 | 4.021 | 12,48 | 106,0 | 0,00 | 83,09 | - | - | 0,00 | 0,00 | - |
| 20 | 1.114 | 1.117 | 27,27 | 104,5 | 0,00 | 71,96 | - | - | 0,00 | 0,00 | - |
| 21 | 682 | 687 | 32,74 | 104,5 | 0,00 | 67,73 | - | - | 0,00 | 0,00 | - |
| 22 | 277 | 288 | 41,81 | 104,5 | 0,00 | 60,18 | - | - | 0,00 | 0,00 | - |
| 23 | 943 | 946 | 29,17 | 104,5 | 0,00 | 70,52 | - | - | 0,00 | 0,00 | - |
| 24 | 1.315 | 1.317 | 25,35 | 104,5 | 0,00 | 73,39 | - | - | 0,00 | 0,00 | - |
| 25 | 2.478 | 2.479 | 17,64 | 104,5 | 0,00 | 78,89 | - | - | 0,00 | 0,00 | - |
| 26 | 2.930 | 2.931 | 15,66 | 104,5 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 27 | 4.432 | 4.433 | 10,71 | 104,5 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 28 | 6.038 | 6.039 | 7,04 | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 29 | 6.506 | 6.507 | 6,17 | 104,5 | 0,00 | 87,27 | - | - | 0,00 | 0,00 | - |
| 3 | 3.882 | 3.883 | 12,93 | 106,0 | 0,00 | 82,78 | - | - | 0,00 | 0,00 | - |
| 30 | 5.215 | 5.217 | 9,67 | 106,0 | 0,00 | 85,35 | - | - | 0,00 | 0,00 | - |
| 31 | 1.864 | 1.870 | 22,65 | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 32 | 4.202 | 4.205 | 12,29 | 106,0 | 0,00 | 83,48 | - | - | 0,00 | 0,00 | - |
| 33 | 3.843 | 3.846 | 13,46 | 106,0 | 0,00 | 82,70 | - | - | 0,00 | 0,00 | - |
| 34 | 3.384 | 3.387 | 15,11 | 106,0 | 0,00 | 81,60 | - | - | 0,00 | 0,00 | - |
| 35 | 706 | 721 | 33,70 | 106,0 | 0,00 | 68,16 | - | - | 0,00 | 0,00 | - |
| 36 | 9.116 | 9.118 | 1,86 | 104,5 | 0,00 | 90,20 | - | - | 0,00 | 0,00 | - |
| 37 | 897 | 909 | 29,62 | 104,5 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 38 | 1.319 | 1.326 | 25,27 | 104,5 | 0,00 | 73,45 | - | - | 0,00 | 0,00 | - |
| 39 | 1.622 | 1.629 | 22,82 | 104,5 | 0,00 | 75,24 | - | - | 0,00 | 0,00 | - |
| 4 | 4.373 | 4.375 | 11,40 | 106,0 | 0,00 | 83,82 | - | - | 0,00 | 0,00 | - |
| 40 | 1.249 | 1.257 | 25,90 | 104,5 | 0,00 | 72,99 | - | - | 0,00 | 0,00 | - |
| 5 | 4.733 | 4.734 | 10,38 | 106,0 | 0,00 | 84,51 | - | - | 0,00 | 0,00 | - |
| 6 | 4.562 | 4.564 | 10,85 | 106,0 | 0,00 | 84,19 | - | - | 0,00 | 0,00 | - |
| 7 | 6.172 | 6.173 | 6,96 | 106,0 | 0,00 | 86,81 | - | - | 0,00 | 0,00 | - |
| 8 | 6.576 | 6.577 | 6,15 | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 9 | 6.643 | 6.644 | 6,02 | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,93 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: S Noise sensitive point: User defined (21)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.567 | 3.569 | 14,01 | 106,0 | 0,00 | 82,05 | - | - | 0,00 | 0,00 | - |
| 10 | 8.243 | 8.244 | 3,29 | 106,0 | 0,00 | 89,32 | - | - | 0,00 | 0,00 | - |
| 11 | 8.312 | 8.313 | 3,19 | 106,0 | 0,00 | 89,40 | - | - | 0,00 | 0,00 | - |
| 12 | 8.486 | 8.487 | 2,93 | 106,0 | 0,00 | 89,58 | - | - | 0,00 | 0,00 | - |
| 13 | 8.556 | 8.557 | 2,83 | 106,0 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 14 | 8.606 | 8.606 | 2,75 | 106,0 | 0,00 | 89,70 | - | - | 0,00 | 0,00 | - |
| 15 | 9.675 | 9.675 | 1,30 | 106,0 | 0,00 | 90,71 | - | - | 0,00 | 0,00 | - |
| 16 | 9.880 | 9.880 | 1,04 | 106,0 | 0,00 | 90,90 | - | - | 0,00 | 0,00 | - |
| 17 | 10.213 | 10.213 | 0,63 | 106,0 | 0,00 | 91,18 | - | - | 0,00 | 0,00 | - |
| 18 | 1.197 | 1.199 | 26,44 | 104,5 | 0,00 | 72,58 | - | - | 0,00 | 0,00 | - |
| 19 | 1.160 | 1.163 | 26,80 | 104,5 | 0,00 | 72,31 | - | - | 0,00 | 0,00 | - |
| 2 | 4.041 | 4.043 | 12,41 | 106,0 | 0,00 | 83,13 | - | - | 0,00 | 0,00 | - |
| 20 | 1.220 | 1.223 | 26,22 | 104,5 | 0,00 | 72,75 | - | - | 0,00 | 0,00 | - |
| 21 | 791 | 795 | 31,13 | 104,5 | 0,00 | 69,00 | - | - | 0,00 | 0,00 | - |
| 22 | 359 | 367 | 39,35 | 104,5 | 0,00 | 62,30 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 873 | 876 | 30,03 | 104,5 | 0,00 | 69,85 | - | - | 0,00 | 0,00 | - |
| 24 | 1.211 | 1.213 | 26,31 | 104,5 | 0,00 | 72,68 | - | - | 0,00 | 0,00 | - |
| 25 | 2.366 | 2.368 | 18,20 | 104,5 | 0,00 | 78,49 | - | - | 0,00 | 0,00 | - |
| 26 | 2.833 | 2.834 | 16,06 | 104,5 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 27 | 4.426 | 4.427 | 10,72 | 104,5 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 28 | 5.978 | 5.979 | 7,16 | 104,5 | 0,00 | 86,53 | - | - | 0,00 | 0,00 | - |
| 29 | 6.430 | 6.431 | 6,30 | 104,5 | 0,00 | 87,17 | - | - | 0,00 | 0,00 | - |
| 3 | 3.889 | 3.891 | 12,91 | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 30 | 5.110 | 5.113 | 9,91 | 106,0 | 0,00 | 85,17 | - | - | 0,00 | 0,00 | - |
| 31 | 1.938 | 1.944 | 22,17 | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 32 | 4.136 | 4.139 | 12,50 | 106,0 | 0,00 | 83,34 | - | - | 0,00 | 0,00 | - |
| 33 | 3.793 | 3.796 | 13,63 | 106,0 | 0,00 | 82,59 | - | - | 0,00 | 0,00 | - |
| 34 | 3.325 | 3.328 | 15,34 | 106,0 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 35 | 573 | 591 | 35,87 | 106,0 | 0,00 | 66,44 | - | - | 0,00 | 0,00 | - |
| 36 | 9.032 | 9.033 | 1,97 | 104,5 | 0,00 | 90,12 | - | - | 0,00 | 0,00 | - |
| 37 | 955 | 966 | 28,93 | 104,5 | 0,00 | 70,70 | - | - | 0,00 | 0,00 | - |
| 38 | 1.402 | 1.410 | 24,55 | 104,5 | 0,00 | 73,98 | - | - | 0,00 | 0,00 | - |
| 39 | 1.682 | 1.688 | 22,39 | 104,5 | 0,00 | 75,55 | - | - | 0,00 | 0,00 | - |
| 4 | 4.266 | 4.267 | 11,72 | 106,0 | 0,00 | 83,60 | - | - | 0,00 | 0,00 | - |
| 40 | 1.288 | 1.296 | 25,54 | 104,5 | 0,00 | 73,25 | - | - | 0,00 | 0,00 | - |
| 5 | 4.625 | 4.626 | 10,67 | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 6 | 4.461 | 4.463 | 11,14 | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 7 | 6.104 | 6.105 | 7,10 | 106,0 | 0,00 | 86,71 | - | - | 0,00 | 0,00 | - |
| 8 | 6.510 | 6.511 | 6,28 | 106,0 | 0,00 | 87,27 | - | - | 0,00 | 0,00 | - |
| 9 | 6.584 | 6.584 | 6,14 | 106,0 | 0,00 | 87,37 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,71 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: T Noise sensitive point: User defined (22)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.526 | 3.528 | 14,16 | 106,0 | 0,00 | 81,95 | - | - | 0,00 | 0,00 | - |
| 10 | 8.228 | 8.229 | 3,32 | 106,0 | 0,00 | 89,31 | - | - | 0,00 | 0,00 | - |
| 11 | 8.295 | 8.296 | 3,21 | 106,0 | 0,00 | 89,38 | - | - | 0,00 | 0,00 | - |
| 12 | 8.468 | 8.468 | 2,96 | 106,0 | 0,00 | 89,56 | - | - | 0,00 | 0,00 | - |
| 13 | 8.543 | 8.544 | 2,85 | 106,0 | 0,00 | 89,63 | - | - | 0,00 | 0,00 | - |
| 14 | 8.590 | 8.591 | 2,78 | 106,0 | 0,00 | 89,68 | - | - | 0,00 | 0,00 | - |
| 15 | 9.653 | 9.653 | 1,33 | 106,0 | 0,00 | 90,69 | - | - | 0,00 | 0,00 | - |
| 16 | 9.861 | 9.862 | 1,06 | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 17 | 10.198 | 10.198 | 0,65 | 106,0 | 0,00 | 91,17 | - | - | 0,00 | 0,00 | - |
| 18 | 1.173 | 1.176 | 26,68 | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 19 | 1.126 | 1.129 | 27,14 | 104,5 | 0,00 | 72,05 | - | - | 0,00 | 0,00 | - |
| 2 | 4.001 | 4.002 | 12,54 | 106,0 | 0,00 | 83,05 | - | - | 0,00 | 0,00 | - |
| 20 | 1.181 | 1.183 | 26,60 | 104,5 | 0,00 | 72,46 | - | - | 0,00 | 0,00 | - |
| 21 | 752 | 756 | 31,67 | 104,5 | 0,00 | 68,57 | - | - | 0,00 | 0,00 | - |
| 22 | 318 | 327 | 40,52 | 104,5 | 0,00 | 61,30 | - | - | 0,00 | 0,00 | - |
| 23 | 850 | 853 | 30,33 | 104,5 | 0,00 | 69,62 | - | - | 0,00 | 0,00 | - |
| 24 | 1.201 | 1.204 | 26,40 | 104,5 | 0,00 | 72,61 | - | - | 0,00 | 0,00 | - |
| 25 | 2.361 | 2.363 | 18,23 | 104,5 | 0,00 | 78,47 | - | - | 0,00 | 0,00 | - |
| 26 | 2.821 | 2.822 | 16,11 | 104,5 | 0,00 | 80,01 | - | - | 0,00 | 0,00 | - |
| 27 | 4.389 | 4.390 | 10,82 | 104,5 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 28 | 5.953 | 5.954 | 7,20 | 104,5 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 29 | 6.410 | 6.411 | 6,34 | 104,5 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 3 | 3.851 | 3.852 | 13,03 | 106,0 | 0,00 | 82,71 | - | - | 0,00 | 0,00 | - |
| 30 | 5.102 | 5.104 | 9,93 | 106,0 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 31 | 1.895 | 1.901 | 22,45 | 106,0 | 0,00 | 76,58 | - | - | 0,00 | 0,00 | - |
| 32 | 4.113 | 4.116 | 12,57 | 106,0 | 0,00 | 83,29 | - | - | 0,00 | 0,00 | - |
| 33 | 3.766 | 3.769 | 13,72 | 106,0 | 0,00 | 82,52 | - | - | 0,00 | 0,00 | - |
| 34 | 3.299 | 3.303 | 15,44 | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 35 | 585 | 603 | 35,66 | 106,0 | 0,00 | 66,61 | - | - | 0,00 | 0,00 | - |
| 36 | 9.015 | 9.016 | 1,99 | 104,5 | 0,00 | 90,10 | - | - | 0,00 | 0,00 | - |
| 37 | 912 | 923 | 29,44 | 104,5 | 0,00 | 70,31 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 1.360 | 1.367 | 24,91 | 104,5 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 39 | 1.639 | 1.645 | 22,71 | 104,5 | 0,00 | 75,32 | - | - | 0,00 | 0,00 | - |
| 4 | 4.259 | 4.260 | 11,74 | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 40 | 1.245 | 1.253 | 25,93 | 104,5 | 0,00 | 72,96 | - | - | 0,00 | 0,00 | - |
| 5 | 4.618 | 4.620 | 10,69 | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 6 | 4.451 | 4.453 | 11,17 | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 7 | 6.082 | 6.083 | 7,15 | 106,0 | 0,00 | 86,68 | - | - | 0,00 | 0,00 | - |
| 8 | 6.487 | 6.488 | 6,32 | 106,0 | 0,00 | 87,24 | - | - | 0,00 | 0,00 | - |
| 9 | 6.559 | 6.560 | 6,18 | 106,0 | 0,00 | 87,34 | - | - | 0,00 | 0,00 | - |
| Sum | | | 43,36 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: U Noise sensitive point: User defined (23)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.343 | 2.346 | 19,57 | 106,0 | 0,00 | 78,41 | - | - | 0,00 | 0,00 | - |
| 10 | 7.170 | 7.171 | 5,05 | 106,0 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 11 | 7.186 | 7.187 | 5,02 | 106,0 | 0,00 | 88,13 | - | - | 0,00 | 0,00 | - |
| 12 | 7.331 | 7.332 | 4,77 | 106,0 | 0,00 | 88,30 | - | - | 0,00 | 0,00 | - |
| 13 | 7.510 | 7.511 | 4,46 | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 14 | 7.513 | 7.514 | 4,46 | 106,0 | 0,00 | 88,52 | - | - | 0,00 | 0,00 | - |
| 15 | 8.460 | 8.461 | 2,97 | 106,0 | 0,00 | 89,55 | - | - | 0,00 | 0,00 | - |
| 16 | 8.721 | 8.722 | 2,59 | 106,0 | 0,00 | 89,81 | - | - | 0,00 | 0,00 | - |
| 17 | 9.127 | 9.128 | 2,02 | 106,0 | 0,00 | 90,21 | - | - | 0,00 | 0,00 | - |
| 18 | 1.819 | 1.821 | 21,47 | 104,5 | 0,00 | 76,21 | - | - | 0,00 | 0,00 | - |
| 19 | 1.504 | 1.506 | 23,76 | 104,5 | 0,00 | 74,56 | - | - | 0,00 | 0,00 | - |
| 2 | 2.782 | 2.785 | 17,31 | 106,0 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 20 | 1.268 | 1.270 | 25,78 | 104,5 | 0,00 | 73,08 | - | - | 0,00 | 0,00 | - |
| 21 | 1.194 | 1.197 | 26,47 | 104,5 | 0,00 | 72,56 | - | - | 0,00 | 0,00 | - |
| 22 | 1.159 | 1.161 | 26,82 | 104,5 | 0,00 | 72,30 | - | - | 0,00 | 0,00 | - |
| 23 | 600 | 605 | 34,12 | 104,5 | 0,00 | 66,63 | - | - | 0,00 | 0,00 | - |
| 24 | 885 | 888 | 29,88 | 104,5 | 0,00 | 69,97 | - | - | 0,00 | 0,00 | - |
| 25 | 1.743 | 1.745 | 21,99 | 104,5 | 0,00 | 75,84 | - | - | 0,00 | 0,00 | - |
| 26 | 1.943 | 1.945 | 20,66 | 104,5 | 0,00 | 76,78 | - | - | 0,00 | 0,00 | - |
| 27 | 3.094 | 3.095 | 15,01 | 104,5 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 28 | 4.729 | 4.729 | 9,93 | 104,5 | 0,00 | 84,50 | - | - | 0,00 | 0,00 | - |
| 29 | 5.261 | 5.261 | 8,66 | 104,5 | 0,00 | 85,42 | - | - | 0,00 | 0,00 | - |
| 3 | 2.586 | 2.588 | 18,27 | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 30 | 4.218 | 4.221 | 12,24 | 106,0 | 0,00 | 83,51 | - | - | 0,00 | 0,00 | - |
| 31 | 1.278 | 1.287 | 27,13 | 106,0 | 0,00 | 73,19 | - | - | 0,00 | 0,00 | - |
| 32 | 2.928 | 2.931 | 16,98 | 106,0 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 33 | 2.512 | 2.516 | 18,94 | 106,0 | 0,00 | 79,01 | - | - | 0,00 | 0,00 | - |
| 34 | 2.090 | 2.096 | 21,24 | 106,0 | 0,00 | 77,43 | - | - | 0,00 | 0,00 | - |
| 35 | 1.247 | 1.256 | 27,41 | 106,0 | 0,00 | 72,98 | - | - | 0,00 | 0,00 | - |
| 36 | 7.914 | 7.916 | 3,44 | 104,5 | 0,00 | 88,97 | - | - | 0,00 | 0,00 | - |
| 37 | 790 | 803 | 31,01 | 104,5 | 0,00 | 69,09 | - | - | 0,00 | 0,00 | - |
| 38 | 1.082 | 1.091 | 27,54 | 104,5 | 0,00 | 71,76 | - | - | 0,00 | 0,00 | - |
| 39 | 951 | 962 | 28,98 | 104,5 | 0,00 | 70,66 | - | - | 0,00 | 0,00 | - |
| 4 | 3.437 | 3.439 | 14,49 | 106,0 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 40 | 596 | 613 | 33,98 | 104,5 | 0,00 | 66,75 | - | - | 0,00 | 0,00 | - |
| 5 | 3.790 | 3.792 | 13,24 | 106,0 | 0,00 | 82,58 | - | - | 0,00 | 0,00 | - |
| 6 | 3.545 | 3.547 | 14,09 | 106,0 | 0,00 | 82,00 | - | - | 0,00 | 0,00 | - |
| 7 | 4.892 | 4.893 | 9,95 | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 8 | 5.287 | 5.288 | 8,95 | 106,0 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 9 | 5.330 | 5.331 | 8,84 | 106,0 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,92 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: V Noise sensitive point: User defined (24)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.364 | 2.367 | 19,45 | 106,0 | 0,00 | 78,48 | - | - | 0,00 | 0,00 | - |
| 10 | 7.211 | 7.212 | 4,98 | 106,0 | 0,00 | 88,16 | - | - | 0,00 | 0,00 | - |
| 11 | 7.227 | 7.228 | 4,95 | 106,0 | 0,00 | 88,18 | - | - | 0,00 | 0,00 | - |
| 12 | 7.372 | 7.373 | 4,70 | 106,0 | 0,00 | 88,35 | - | - | 0,00 | 0,00 | - |
| 13 | 7.551 | 7.551 | 4,40 | 106,0 | 0,00 | 88,56 | - | - | 0,00 | 0,00 | - |
| 14 | 7.554 | 7.555 | 4,39 | 106,0 | 0,00 | 88,56 | - | - | 0,00 | 0,00 | - |
| 15 | 8.501 | 8.502 | 2,91 | 106,0 | 0,00 | 89,59 | - | - | 0,00 | 0,00 | - |
| 16 | 8.763 | 8.764 | 2,53 | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 17 | 9.169 | 9.169 | 1,96 | 106,0 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 18 | 1.779 | 1.780 | 21,74 | 104,5 | 0,00 | 76,01 | - | - | 0,00 | 0,00 | - |
| 19 | 1.464 | 1.466 | 24,08 | 104,5 | 0,00 | 74,33 | - | - | 0,00 | 0,00 | - |
| 2 | 2.807 | 2.809 | 17,19 | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| 20 | 1.230 | 1.233 | 26,12 | 104,5 | 0,00 | 72,82 | - | - | 0,00 | 0,00 | - |
| 21 | 1.153 | 1.156 | 26,87 | 104,5 | 0,00 | 72,26 | - | - | 0,00 | 0,00 | - |
| 22 | 1.119 | 1.121 | 27,22 | 104,5 | 0,00 | 72,00 | - | - | 0,00 | 0,00 | - |
| 23 | 580 | 585 | 34,48 | 104,5 | 0,00 | 66,34 | - | - | 0,00 | 0,00 | - |
| 24 | 887 | 890 | 29,85 | 104,5 | 0,00 | 69,99 | - | - | 0,00 | 0,00 | - |
| 25 | 1.770 | 1.771 | 21,81 | 104,5 | 0,00 | 75,97 | - | - | 0,00 | 0,00 | - |
| 26 | 1.979 | 1.980 | 20,44 | 104,5 | 0,00 | 76,94 | - | - | 0,00 | 0,00 | - |
| 27 | 3.127 | 3.128 | 14,89 | 104,5 | 0,00 | 80,91 | - | - | 0,00 | 0,00 | - |
| 28 | 4.770 | 4.771 | 9,83 | 104,5 | 0,00 | 84,57 | - | - | 0,00 | 0,00 | - |
| 29 | 5.302 | 5.303 | 8,57 | 104,5 | 0,00 | 85,49 | - | - | 0,00 | 0,00 | - |
| 3 | 2.615 | 2.617 | 18,13 | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 30 | 4.256 | 4.259 | 12,13 | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 31 | 1.262 | 1.270 | 27,28 | 106,0 | 0,00 | 73,08 | - | - | 0,00 | 0,00 | - |
| 32 | 2.969 | 2.973 | 16,80 | 106,0 | 0,00 | 80,46 | - | - | 0,00 | 0,00 | - |
| 33 | 2.553 | 2.557 | 18,74 | 106,0 | 0,00 | 79,15 | - | - | 0,00 | 0,00 | - |
| 34 | 2.132 | 2.137 | 21,00 | 106,0 | 0,00 | 77,60 | - | - | 0,00 | 0,00 | - |
| 35 | 1.224 | 1.232 | 27,63 | 106,0 | 0,00 | 72,82 | - | - | 0,00 | 0,00 | - |
| 36 | 7.956 | 7.957 | 3,38 | 104,5 | 0,00 | 89,02 | - | - | 0,00 | 0,00 | - |
| 37 | 750 | 763 | 31,57 | 104,5 | 0,00 | 68,65 | - | - | 0,00 | 0,00 | - |
| 38 | 1.050 | 1.060 | 27,87 | 104,5 | 0,00 | 71,50 | - | - | 0,00 | 0,00 | - |
| 39 | 933 | 944 | 29,19 | 104,5 | 0,00 | 70,50 | - | - | 0,00 | 0,00 | - |
| 4 | 3.473 | 3.475 | 14,35 | 106,0 | 0,00 | 81,82 | - | - | 0,00 | 0,00 | - |
| 40 | 566 | 584 | 34,51 | 104,5 | 0,00 | 66,33 | - | - | 0,00 | 0,00 | - |
| 5 | 3.826 | 3.828 | 13,12 | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 6 | 3.583 | 3.585 | 13,96 | 106,0 | 0,00 | 82,09 | - | - | 0,00 | 0,00 | - |
| 7 | 4.933 | 4.934 | 9,84 | 106,0 | 0,00 | 84,86 | - | - | 0,00 | 0,00 | - |
| 8 | 5.328 | 5.329 | 8,85 | 106,0 | 0,00 | 85,53 | - | - | 0,00 | 0,00 | - |
| 9 | 5.371 | 5.372 | 8,75 | 106,0 | 0,00 | 85,60 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,24 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: W Noise sensitive point: User defined (25)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.707 | 2.710 | 17,67 | 106,0 | 0,00 | 79,66 | - | - | 0,00 | 0,00 | - |
| 10 | 6.386 | 6.387 | 6,52 | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 11 | 6.447 | 6.448 | 6,40 | 106,0 | 0,00 | 87,19 | - | - | 0,00 | 0,00 | - |
| 12 | 6.621 | 6.622 | 6,06 | 106,0 | 0,00 | 87,42 | - | - | 0,00 | 0,00 | - |
| 13 | 6.707 | 6.708 | 5,90 | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| 14 | 6.745 | 6.746 | 5,83 | 106,0 | 0,00 | 87,58 | - | - | 0,00 | 0,00 | - |
| 15 | 7.821 | 7.822 | 3,95 | 106,0 | 0,00 | 88,87 | - | - | 0,00 | 0,00 | - |
| 16 | 8.014 | 8.015 | 3,65 | 106,0 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 17 | 8.354 | 8.355 | 3,12 | 106,0 | 0,00 | 89,44 | - | - | 0,00 | 0,00 | - |
| 18 | 2.679 | 2.680 | 16,72 | 104,5 | 0,00 | 79,56 | - | - | 0,00 | 0,00 | - |
| 19 | 2.402 | 2.403 | 18,02 | 104,5 | 0,00 | 78,62 | - | - | 0,00 | 0,00 | - |
| 2 | 3.041 | 3.043 | 16,12 | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 20 | 2.196 | 2.198 | 19,14 | 104,5 | 0,00 | 77,84 | - | - | 0,00 | 0,00 | - |
| 21 | 2.039 | 2.041 | 20,07 | 104,5 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 22 | 1.849 | 1.850 | 21,27 | 104,5 | 0,00 | 76,35 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 1.013 | 1.016 | 28,36 | 104,5 | 0,00 | 71,14 | - | - | 0,00 | 0,00 | - |
| 24 | 717 | 721 | 32,20 | 104,5 | 0,00 | 68,16 | - | - | 0,00 | 0,00 | - |
| 25 | 814 | 819 | 30,79 | 104,5 | 0,00 | 69,26 | - | - | 0,00 | 0,00 | - |
| 26 | 1.022 | 1.025 | 28,25 | 104,5 | 0,00 | 71,22 | - | - | 0,00 | 0,00 | - |
| 27 | 3.069 | 3.070 | 15,11 | 104,5 | 0,00 | 80,74 | - | - | 0,00 | 0,00 | - |
| 28 | 4.155 | 4.156 | 11,48 | 104,5 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 29 | 4.568 | 4.569 | 10,34 | 104,5 | 0,00 | 84,20 | - | - | 0,00 | 0,00 | - |
| 3 | 2.735 | 2.737 | 17,54 | 106,0 | 0,00 | 79,75 | - | - | 0,00 | 0,00 | - |
| 30 | 3.323 | 3.327 | 15,35 | 106,0 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 31 | 2.184 | 2.189 | 20,70 | 106,0 | 0,00 | 77,80 | - | - | 0,00 | 0,00 | - |
| 32 | 2.302 | 2.307 | 20,04 | 106,0 | 0,00 | 78,26 | - | - | 0,00 | 0,00 | - |
| 33 | 2.054 | 2.059 | 21,46 | 106,0 | 0,00 | 77,27 | - | - | 0,00 | 0,00 | - |
| 34 | 1.537 | 1.544 | 24,97 | 106,0 | 0,00 | 74,77 | - | - | 0,00 | 0,00 | - |
| 35 | 1.468 | 1.475 | 25,52 | 106,0 | 0,00 | 74,38 | - | - | 0,00 | 0,00 | - |
| 36 | 7.167 | 7.169 | 4,56 | 104,5 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 37 | 1.691 | 1.697 | 22,33 | 104,5 | 0,00 | 75,59 | - | - | 0,00 | 0,00 | - |
| 38 | 2.032 | 2.037 | 20,09 | 104,5 | 0,00 | 77,18 | - | - | 0,00 | 0,00 | - |
| 39 | 1.871 | 1.876 | 21,10 | 104,5 | 0,00 | 76,47 | - | - | 0,00 | 0,00 | - |
| 4 | 2.515 | 2.517 | 18,64 | 106,0 | 0,00 | 79,02 | - | - | 0,00 | 0,00 | - |
| 40 | 1.547 | 1.553 | 23,39 | 104,5 | 0,00 | 74,83 | - | - | 0,00 | 0,00 | - |
| 5 | 2.872 | 2.874 | 16,88 | 106,0 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 6 | 2.656 | 2.658 | 17,92 | 106,0 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 7 | 4.257 | 4.258 | 11,75 | 106,0 | 0,00 | 83,58 | - | - | 0,00 | 0,00 | - |
| 8 | 4.667 | 4.668 | 10,56 | 106,0 | 0,00 | 84,38 | - | - | 0,00 | 0,00 | - |
| 9 | 4.761 | 4.762 | 10,30 | 106,0 | 0,00 | 84,56 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,32 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: X Noise sensitive point: User defined (26)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.766 | 2.768 | 17,39 | 106,0 | 0,00 | 79,84 | - | - | 0,00 | 0,00 | - |
| 10 | 6.394 | 6.395 | 6,51 | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| 11 | 6.460 | 6.461 | 6,38 | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 12 | 6.637 | 6.638 | 6,03 | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 13 | 6.713 | 6.714 | 5,89 | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 14 | 6.755 | 6.756 | 5,81 | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 15 | 7.842 | 7.843 | 3,92 | 106,0 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 16 | 8.030 | 8.030 | 3,62 | 106,0 | 0,00 | 89,09 | - | - | 0,00 | 0,00 | - |
| 17 | 8.363 | 8.364 | 3,11 | 106,0 | 0,00 | 89,45 | - | - | 0,00 | 0,00 | - |
| 18 | 2.689 | 2.690 | 16,68 | 104,5 | 0,00 | 79,59 | - | - | 0,00 | 0,00 | - |
| 19 | 2.417 | 2.418 | 17,94 | 104,5 | 0,00 | 78,67 | - | - | 0,00 | 0,00 | - |
| 2 | 3.099 | 3.101 | 15,86 | 106,0 | 0,00 | 80,83 | - | - | 0,00 | 0,00 | - |
| 20 | 2.216 | 2.218 | 19,03 | 104,5 | 0,00 | 77,92 | - | - | 0,00 | 0,00 | - |
| 21 | 2.049 | 2.050 | 20,01 | 104,5 | 0,00 | 77,24 | - | - | 0,00 | 0,00 | - |
| 22 | 1.847 | 1.848 | 21,29 | 104,5 | 0,00 | 76,34 | - | - | 0,00 | 0,00 | - |
| 23 | 1.008 | 1.011 | 28,41 | 104,5 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 24 | 687 | 691 | 32,67 | 104,5 | 0,00 | 67,79 | - | - | 0,00 | 0,00 | - |
| 25 | 772 | 777 | 31,38 | 104,5 | 0,00 | 68,81 | - | - | 0,00 | 0,00 | - |
| 26 | 1.014 | 1.018 | 28,34 | 104,5 | 0,00 | 71,15 | - | - | 0,00 | 0,00 | - |
| 27 | 3.124 | 3.125 | 14,90 | 104,5 | 0,00 | 80,90 | - | - | 0,00 | 0,00 | - |
| 28 | 4.184 | 4.185 | 11,40 | 104,5 | 0,00 | 83,43 | - | - | 0,00 | 0,00 | - |
| 29 | 4.587 | 4.587 | 10,30 | 104,5 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 3 | 2.793 | 2.795 | 17,26 | 106,0 | 0,00 | 79,93 | - | - | 0,00 | 0,00 | - |
| 30 | 3.317 | 3.321 | 15,37 | 106,0 | 0,00 | 81,42 | - | - | 0,00 | 0,00 | - |
| 31 | 2.224 | 2.229 | 20,47 | 106,0 | 0,00 | 77,96 | - | - | 0,00 | 0,00 | - |
| 32 | 2.330 | 2.335 | 19,89 | 106,0 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 33 | 2.095 | 2.100 | 21,21 | 106,0 | 0,00 | 77,44 | - | - | 0,00 | 0,00 | - |
| 34 | 1.574 | 1.581 | 24,69 | 106,0 | 0,00 | 74,98 | - | - | 0,00 | 0,00 | - |
| 35 | 1.441 | 1.448 | 25,74 | 106,0 | 0,00 | 74,22 | - | - | 0,00 | 0,00 | - |
| 36 | 7.179 | 7.181 | 4,54 | 104,5 | 0,00 | 88,12 | - | - | 0,00 | 0,00 | - |
| 37 | 1.709 | 1.715 | 22,20 | 104,5 | 0,00 | 75,68 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 2.060 | 2.065 | 19,92 | 104,5 | 0,00 | 77,30 | - | - | 0,00 | 0,00 | - |
| 39 | 1.909 | 1.914 | 20,86 | 104,5 | 0,00 | 76,64 | - | - | 0,00 | 0,00 | - |
| 4 | 2.503 | 2.505 | 18,70 | 106,0 | 0,00 | 78,98 | - | - | 0,00 | 0,00 | - |
| 40 | 1.576 | 1.583 | 23,17 | 104,5 | 0,00 | 74,99 | - | - | 0,00 | 0,00 | - |
| 5 | 2.861 | 2.863 | 16,93 | 106,0 | 0,00 | 80,14 | - | - | 0,00 | 0,00 | - |
| 6 | 2.651 | 2.654 | 17,94 | 106,0 | 0,00 | 79,48 | - | - | 0,00 | 0,00 | - |
| 7 | 4.280 | 4.282 | 11,67 | 106,0 | 0,00 | 83,63 | - | - | 0,00 | 0,00 | - |
| 8 | 4.691 | 4.693 | 10,49 | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 9 | 4.790 | 4.791 | 10,22 | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,52 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: Y Noise sensitive point: User defined (27)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.654 | 2.656 | 17,93 | 106,0 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 10 | 6.212 | 6.213 | 6,88 | 106,0 | 0,00 | 86,87 | - | - | 0,00 | 0,00 | - |
| 11 | 6.270 | 6.271 | 6,76 | 106,0 | 0,00 | 86,95 | - | - | 0,00 | 0,00 | - |
| 12 | 6.443 | 6.444 | 6,41 | 106,0 | 0,00 | 87,18 | - | - | 0,00 | 0,00 | - |
| 13 | 6.535 | 6.536 | 6,23 | 106,0 | 0,00 | 87,31 | - | - | 0,00 | 0,00 | - |
| 14 | 6.570 | 6.571 | 6,16 | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 15 | 7.641 | 7.642 | 4,25 | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 16 | 7.836 | 7.837 | 3,93 | 106,0 | 0,00 | 88,88 | - | - | 0,00 | 0,00 | - |
| 17 | 8.180 | 8.181 | 3,39 | 106,0 | 0,00 | 89,26 | - | - | 0,00 | 0,00 | - |
| 18 | 2.835 | 2.836 | 16,05 | 104,5 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 19 | 2.549 | 2.550 | 17,31 | 104,5 | 0,00 | 79,13 | - | - | 0,00 | 0,00 | - |
| 2 | 2.964 | 2.966 | 16,46 | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 20 | 2.333 | 2.334 | 18,39 | 104,5 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 21 | 2.195 | 2.196 | 19,15 | 104,5 | 0,00 | 77,83 | - | - | 0,00 | 0,00 | - |
| 22 | 2.019 | 2.021 | 20,19 | 104,5 | 0,00 | 77,11 | - | - | 0,00 | 0,00 | - |
| 23 | 1.187 | 1.189 | 26,54 | 104,5 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 24 | 894 | 897 | 29,76 | 104,5 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 25 | 771 | 775 | 31,41 | 104,5 | 0,00 | 68,78 | - | - | 0,00 | 0,00 | - |
| 26 | 874 | 878 | 30,01 | 104,5 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 27 | 2.947 | 2.948 | 15,59 | 104,5 | 0,00 | 80,39 | - | - | 0,00 | 0,00 | - |
| 28 | 3.977 | 3.978 | 12,01 | 104,5 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 29 | 4.389 | 4.390 | 10,82 | 104,5 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 3 | 2.643 | 2.645 | 17,99 | 106,0 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 30 | 3.167 | 3.171 | 15,97 | 106,0 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 31 | 2.267 | 2.271 | 20,23 | 106,0 | 0,00 | 78,13 | - | - | 0,00 | 0,00 | - |
| 32 | 2.123 | 2.128 | 21,05 | 106,0 | 0,00 | 77,56 | - | - | 0,00 | 0,00 | - |
| 33 | 1.888 | 1.893 | 22,50 | 106,0 | 0,00 | 76,54 | - | - | 0,00 | 0,00 | - |
| 34 | 1.366 | 1.373 | 26,36 | 106,0 | 0,00 | 73,76 | - | - | 0,00 | 0,00 | - |
| 35 | 1.646 | 1.653 | 24,15 | 106,0 | 0,00 | 75,36 | - | - | 0,00 | 0,00 | - |
| 36 | 6.991 | 6.993 | 4,84 | 104,5 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 37 | 1.834 | 1.840 | 21,34 | 104,5 | 0,00 | 76,30 | - | - | 0,00 | 0,00 | - |
| 38 | 2.152 | 2.156 | 19,38 | 104,5 | 0,00 | 77,67 | - | - | 0,00 | 0,00 | - |
| 39 | 1.963 | 1.968 | 20,52 | 104,5 | 0,00 | 76,88 | - | - | 0,00 | 0,00 | - |
| 4 | 2.369 | 2.372 | 19,42 | 106,0 | 0,00 | 78,50 | - | - | 0,00 | 0,00 | - |
| 40 | 1.665 | 1.671 | 22,51 | 104,5 | 0,00 | 75,46 | - | - | 0,00 | 0,00 | - |
| 5 | 2.725 | 2.727 | 17,58 | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 6 | 2.498 | 2.500 | 18,73 | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 7 | 4.077 | 4.079 | 12,30 | 106,0 | 0,00 | 83,21 | - | - | 0,00 | 0,00 | - |
| 8 | 4.487 | 4.489 | 11,07 | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 9 | 4.583 | 4.584 | 10,79 | 106,0 | 0,00 | 84,22 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,00 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: Z Noise sensitive point: User defined (28)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.713 | 2.715 | 17,64 | 106,0 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 10 | 6.191 | 6.192 | 6,92 | 106,0 | 0,00 | 86,84 | - | - | 0,00 | 0,00 | - |
| 11 | 6.254 | 6.255 | 6,79 | 106,0 | 0,00 | 86,92 | - | - | 0,00 | 0,00 | - |
| 12 | 6.430 | 6.431 | 6,44 | 106,0 | 0,00 | 87,17 | - | - | 0,00 | 0,00 | - |
| 13 | 6.512 | 6.513 | 6,27 | 106,0 | 0,00 | 87,28 | - | - | 0,00 | 0,00 | - |
| 14 | 6.551 | 6.552 | 6,20 | 106,0 | 0,00 | 87,33 | - | - | 0,00 | 0,00 | - |
| 15 | 7.635 | 7.636 | 4,26 | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 16 | 7.823 | 7.824 | 3,95 | 106,0 | 0,00 | 88,87 | - | - | 0,00 | 0,00 | - |
| 17 | 8.160 | 8.161 | 3,42 | 106,0 | 0,00 | 89,23 | - | - | 0,00 | 0,00 | - |
| 18 | 2.870 | 2.871 | 15,91 | 104,5 | 0,00 | 80,16 | - | - | 0,00 | 0,00 | - |
| 19 | 2.588 | 2.589 | 17,13 | 104,5 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 2 | 3.019 | 3.021 | 16,21 | 106,0 | 0,00 | 80,60 | - | - | 0,00 | 0,00 | - |
| 20 | 2.376 | 2.378 | 18,15 | 104,5 | 0,00 | 78,52 | - | - | 0,00 | 0,00 | - |
| 21 | 2.230 | 2.231 | 18,95 | 104,5 | 0,00 | 77,97 | - | - | 0,00 | 0,00 | - |
| 22 | 2.044 | 2.045 | 20,04 | 104,5 | 0,00 | 77,22 | - | - | 0,00 | 0,00 | - |
| 23 | 1.208 | 1.210 | 26,34 | 104,5 | 0,00 | 72,66 | - | - | 0,00 | 0,00 | - |
| 24 | 892 | 895 | 29,79 | 104,5 | 0,00 | 70,04 | - | - | 0,00 | 0,00 | - |
| 25 | 708 | 713 | 32,33 | 104,5 | 0,00 | 68,06 | - | - | 0,00 | 0,00 | - |
| 26 | 833 | 837 | 30,54 | 104,5 | 0,00 | 69,46 | - | - | 0,00 | 0,00 | - |
| 27 | 2.991 | 2.992 | 15,42 | 104,5 | 0,00 | 80,52 | - | - | 0,00 | 0,00 | - |
| 28 | 3.980 | 3.981 | 12,00 | 104,5 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 29 | 4.379 | 4.380 | 10,85 | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 3 | 2.695 | 2.697 | 17,73 | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 30 | 3.132 | 3.136 | 16,11 | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 31 | 2.323 | 2.328 | 19,92 | 106,0 | 0,00 | 78,34 | - | - | 0,00 | 0,00 | - |
| 32 | 2.126 | 2.131 | 21,03 | 106,0 | 0,00 | 77,57 | - | - | 0,00 | 0,00 | - |
| 33 | 1.908 | 1.913 | 22,37 | 106,0 | 0,00 | 76,64 | - | - | 0,00 | 0,00 | - |
| 34 | 1.382 | 1.389 | 26,23 | 106,0 | 0,00 | 73,86 | - | - | 0,00 | 0,00 | - |
| 35 | 1.647 | 1.653 | 24,15 | 106,0 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 36 | 6.974 | 6.976 | 4,87 | 104,5 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| 37 | 1.875 | 1.881 | 21,07 | 104,5 | 0,00 | 76,49 | - | - | 0,00 | 0,00 | - |
| 38 | 2.201 | 2.205 | 19,10 | 104,5 | 0,00 | 77,87 | - | - | 0,00 | 0,00 | - |
| 39 | 2.018 | 2.023 | 20,18 | 104,5 | 0,00 | 77,12 | - | - | 0,00 | 0,00 | - |
| 4 | 2.328 | 2.331 | 19,65 | 106,0 | 0,00 | 78,35 | - | - | 0,00 | 0,00 | - |
| 40 | 1.714 | 1.720 | 22,16 | 104,5 | 0,00 | 75,71 | - | - | 0,00 | 0,00 | - |
| 5 | 2.684 | 2.687 | 17,78 | 106,0 | 0,00 | 79,59 | - | - | 0,00 | 0,00 | - |
| 6 | 2.463 | 2.466 | 18,91 | 106,0 | 0,00 | 78,84 | - | - | 0,00 | 0,00 | - |
| 7 | 4.074 | 4.075 | 12,31 | 106,0 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 8 | 4.485 | 4.486 | 11,07 | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 9 | 4.585 | 4.586 | 10,79 | 106,0 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,25 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AA Noise sensitive point: User defined (29)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.608 | 2.611 | 18,16 | 106,0 | 0,00 | 79,33 | - | - | 0,00 | 0,00 | - |
| 10 | 6.145 | 6.146 | 7,02 | 106,0 | 0,00 | 86,77 | - | - | 0,00 | 0,00 | - |
| 11 | 6.199 | 6.201 | 6,90 | 106,0 | 0,00 | 86,85 | - | - | 0,00 | 0,00 | - |
| 12 | 6.370 | 6.371 | 6,56 | 106,0 | 0,00 | 87,08 | - | - | 0,00 | 0,00 | - |
| 13 | 6.470 | 6.471 | 6,36 | 106,0 | 0,00 | 87,22 | - | - | 0,00 | 0,00 | - |
| 14 | 6.502 | 6.503 | 6,29 | 106,0 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 15 | 7.565 | 7.566 | 4,37 | 106,0 | 0,00 | 88,58 | - | - | 0,00 | 0,00 | - |
| 16 | 7.764 | 7.764 | 4,05 | 106,0 | 0,00 | 88,80 | - | - | 0,00 | 0,00 | - |
| 17 | 8.113 | 8.114 | 3,49 | 106,0 | 0,00 | 89,18 | - | - | 0,00 | 0,00 | - |
| 18 | 2.889 | 2.890 | 15,83 | 104,5 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 19 | 2.598 | 2.599 | 17,08 | 104,5 | 0,00 | 79,30 | - | - | 0,00 | 0,00 | - |
| 2 | 2.910 | 2.912 | 16,71 | 106,0 | 0,00 | 80,28 | - | - | 0,00 | 0,00 | - |
| 20 | 2.376 | 2.378 | 18,15 | 104,5 | 0,00 | 78,52 | - | - | 0,00 | 0,00 | - |
| 21 | 2.250 | 2.252 | 18,84 | 104,5 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 22 | 2.085 | 2.086 | 19,79 | 104,5 | 0,00 | 77,39 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 1.255 | 1.258 | 25,89 | 104,5 | 0,00 | 72,99 | - | - | 0,00 | 0,00 | - |
| 24 | 974 | 977 | 28,80 | 104,5 | 0,00 | 70,80 | - | - | 0,00 | 0,00 | - |
| 25 | 791 | 795 | 31,12 | 104,5 | 0,00 | 69,01 | - | - | 0,00 | 0,00 | - |
| 26 | 833 | 837 | 30,55 | 104,5 | 0,00 | 69,45 | - | - | 0,00 | 0,00 | - |
| 27 | 2.877 | 2.878 | 15,88 | 104,5 | 0,00 | 80,18 | - | - | 0,00 | 0,00 | - |
| 28 | 3.898 | 3.899 | 12,25 | 104,5 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 29 | 4.315 | 4.315 | 11,03 | 104,5 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 3 | 2.583 | 2.585 | 18,29 | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 30 | 3.116 | 3.120 | 16,18 | 106,0 | 0,00 | 80,88 | - | - | 0,00 | 0,00 | - |
| 31 | 2.282 | 2.287 | 20,15 | 106,0 | 0,00 | 78,18 | - | - | 0,00 | 0,00 | - |
| 32 | 2.044 | 2.049 | 21,52 | 106,0 | 0,00 | 77,23 | - | - | 0,00 | 0,00 | - |
| 33 | 1.807 | 1.812 | 23,03 | 106,0 | 0,00 | 76,17 | - | - | 0,00 | 0,00 | - |
| 34 | 1.284 | 1.293 | 27,07 | 106,0 | 0,00 | 73,23 | - | - | 0,00 | 0,00 | - |
| 35 | 1.725 | 1.731 | 23,59 | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 36 | 6.921 | 6.923 | 4,95 | 104,5 | 0,00 | 87,81 | - | - | 0,00 | 0,00 | - |
| 37 | 1.882 | 1.888 | 21,03 | 104,5 | 0,00 | 76,52 | - | - | 0,00 | 0,00 | - |
| 38 | 2.186 | 2.191 | 19,18 | 104,5 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 39 | 1.983 | 1.988 | 20,39 | 104,5 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 4 | 2.326 | 2.329 | 19,66 | 106,0 | 0,00 | 78,34 | - | - | 0,00 | 0,00 | - |
| 40 | 1.700 | 1.706 | 22,27 | 104,5 | 0,00 | 75,64 | - | - | 0,00 | 0,00 | - |
| 5 | 2.679 | 2.682 | 17,81 | 106,0 | 0,00 | 79,57 | - | - | 0,00 | 0,00 | - |
| 6 | 2.445 | 2.447 | 19,01 | 106,0 | 0,00 | 78,77 | - | - | 0,00 | 0,00 | - |
| 7 | 4.000 | 4.001 | 12,55 | 106,0 | 0,00 | 83,04 | - | - | 0,00 | 0,00 | - |
| 8 | 4.410 | 4.411 | 11,29 | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 9 | 4.504 | 4.505 | 11,02 | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,91 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AB Noise sensitive point: User defined (30)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.629 | 2.631 | 18,06 | 106,0 | 0,00 | 79,40 | - | - | 0,00 | 0,00 | - |
| 10 | 6.138 | 6.139 | 7,03 | 106,0 | 0,00 | 86,76 | - | - | 0,00 | 0,00 | - |
| 11 | 6.194 | 6.195 | 6,91 | 106,0 | 0,00 | 86,84 | - | - | 0,00 | 0,00 | - |
| 12 | 6.366 | 6.367 | 6,57 | 106,0 | 0,00 | 87,08 | - | - | 0,00 | 0,00 | - |
| 13 | 6.462 | 6.463 | 6,37 | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 14 | 6.495 | 6.496 | 6,31 | 106,0 | 0,00 | 87,25 | - | - | 0,00 | 0,00 | - |
| 15 | 7.563 | 7.564 | 4,38 | 106,0 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 16 | 7.759 | 7.760 | 4,05 | 106,0 | 0,00 | 88,80 | - | - | 0,00 | 0,00 | - |
| 17 | 8.106 | 8.106 | 3,50 | 106,0 | 0,00 | 89,18 | - | - | 0,00 | 0,00 | - |
| 18 | 2.901 | 2.902 | 15,78 | 104,5 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 19 | 2.611 | 2.612 | 17,02 | 104,5 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 2 | 2.929 | 2.930 | 16,62 | 106,0 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 20 | 2.391 | 2.392 | 18,08 | 104,5 | 0,00 | 78,58 | - | - | 0,00 | 0,00 | - |
| 21 | 2.262 | 2.263 | 18,77 | 104,5 | 0,00 | 78,09 | - | - | 0,00 | 0,00 | - |
| 22 | 2.092 | 2.094 | 19,75 | 104,5 | 0,00 | 77,42 | - | - | 0,00 | 0,00 | - |
| 23 | 1.262 | 1.264 | 25,83 | 104,5 | 0,00 | 73,04 | - | - | 0,00 | 0,00 | - |
| 24 | 973 | 976 | 28,82 | 104,5 | 0,00 | 70,78 | - | - | 0,00 | 0,00 | - |
| 25 | 770 | 774 | 31,42 | 104,5 | 0,00 | 68,77 | - | - | 0,00 | 0,00 | - |
| 26 | 817 | 821 | 30,76 | 104,5 | 0,00 | 69,29 | - | - | 0,00 | 0,00 | - |
| 27 | 2.891 | 2.892 | 15,82 | 104,5 | 0,00 | 80,23 | - | - | 0,00 | 0,00 | - |
| 28 | 3.899 | 3.899 | 12,24 | 104,5 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 29 | 4.311 | 4.312 | 11,04 | 104,5 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 3 | 2.601 | 2.603 | 18,20 | 106,0 | 0,00 | 79,31 | - | - | 0,00 | 0,00 | - |
| 30 | 3.103 | 3.107 | 16,23 | 106,0 | 0,00 | 80,85 | - | - | 0,00 | 0,00 | - |
| 31 | 2.301 | 2.306 | 20,04 | 106,0 | 0,00 | 78,26 | - | - | 0,00 | 0,00 | - |
| 32 | 2.044 | 2.050 | 21,51 | 106,0 | 0,00 | 77,23 | - | - | 0,00 | 0,00 | - |
| 33 | 1.813 | 1.819 | 22,99 | 106,0 | 0,00 | 76,20 | - | - | 0,00 | 0,00 | - |
| 34 | 1.289 | 1.298 | 27,03 | 106,0 | 0,00 | 73,26 | - | - | 0,00 | 0,00 | - |
| 35 | 1.725 | 1.731 | 23,59 | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 36 | 6.915 | 6.917 | 4,96 | 104,5 | 0,00 | 87,80 | - | - | 0,00 | 0,00 | - |
| 37 | 1.896 | 1.901 | 20,94 | 104,5 | 0,00 | 76,58 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 2.202 | 2.207 | 19,09 | 104,5 | 0,00 | 77,88 | - | - | 0,00 | 0,00 | - |
| 39 | 2.002 | 2.006 | 20,28 | 104,5 | 0,00 | 77,05 | - | - | 0,00 | 0,00 | - |
| 4 | 2.311 | 2.314 | 19,74 | 106,0 | 0,00 | 78,29 | - | - | 0,00 | 0,00 | - |
| 40 | 1.716 | 1.722 | 22,15 | 104,5 | 0,00 | 75,72 | - | - | 0,00 | 0,00 | - |
| 5 | 2.665 | 2.668 | 17,88 | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 6 | 2.432 | 2.435 | 19,08 | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 7 | 3.998 | 4.000 | 12,55 | 106,0 | 0,00 | 83,04 | - | - | 0,00 | 0,00 | - |
| 8 | 4.409 | 4.410 | 11,29 | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 9 | 4.504 | 4.505 | 11,02 | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,99 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AC Noise sensitive point: User defined (31)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.658 | 2.661 | 17,91 | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| 10 | 5.995 | 5.996 | 7,33 | 106,0 | 0,00 | 86,56 | - | - | 0,00 | 0,00 | - |
| 11 | 6.053 | 6.054 | 7,21 | 106,0 | 0,00 | 86,64 | - | - | 0,00 | 0,00 | - |
| 12 | 6.227 | 6.228 | 6,85 | 106,0 | 0,00 | 86,89 | - | - | 0,00 | 0,00 | - |
| 13 | 6.318 | 6.319 | 6,66 | 106,0 | 0,00 | 87,01 | - | - | 0,00 | 0,00 | - |
| 14 | 6.353 | 6.354 | 6,59 | 106,0 | 0,00 | 87,06 | - | - | 0,00 | 0,00 | - |
| 15 | 7.430 | 7.431 | 4,60 | 106,0 | 0,00 | 88,42 | - | - | 0,00 | 0,00 | - |
| 16 | 7.620 | 7.621 | 4,28 | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 17 | 7.963 | 7.964 | 3,73 | 106,0 | 0,00 | 89,02 | - | - | 0,00 | 0,00 | - |
| 18 | 3.046 | 3.047 | 15,20 | 104,5 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 19 | 2.755 | 2.756 | 16,39 | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 2 | 2.937 | 2.939 | 16,58 | 106,0 | 0,00 | 80,36 | - | - | 0,00 | 0,00 | - |
| 20 | 2.532 | 2.533 | 17,38 | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 21 | 2.407 | 2.408 | 17,99 | 104,5 | 0,00 | 78,63 | - | - | 0,00 | 0,00 | - |
| 22 | 2.236 | 2.238 | 18,92 | 104,5 | 0,00 | 78,00 | - | - | 0,00 | 0,00 | - |
| 23 | 1.404 | 1.406 | 24,58 | 104,5 | 0,00 | 73,96 | - | - | 0,00 | 0,00 | - |
| 24 | 1.098 | 1.100 | 27,44 | 104,5 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 25 | 718 | 722 | 32,19 | 104,5 | 0,00 | 68,17 | - | - | 0,00 | 0,00 | - |
| 26 | 680 | 685 | 32,77 | 104,5 | 0,00 | 67,71 | - | - | 0,00 | 0,00 | - |
| 27 | 2.855 | 2.856 | 15,97 | 104,5 | 0,00 | 80,11 | - | - | 0,00 | 0,00 | - |
| 28 | 3.775 | 3.776 | 12,63 | 104,5 | 0,00 | 82,54 | - | - | 0,00 | 0,00 | - |
| 29 | 4.175 | 4.176 | 11,42 | 104,5 | 0,00 | 83,41 | - | - | 0,00 | 0,00 | - |
| 3 | 2.597 | 2.599 | 18,22 | 106,0 | 0,00 | 79,30 | - | - | 0,00 | 0,00 | - |
| 30 | 2.959 | 2.963 | 16,84 | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 31 | 2.422 | 2.426 | 19,40 | 106,0 | 0,00 | 78,70 | - | - | 0,00 | 0,00 | - |
| 32 | 1.921 | 1.927 | 22,28 | 106,0 | 0,00 | 76,70 | - | - | 0,00 | 0,00 | - |
| 33 | 1.720 | 1.726 | 23,63 | 106,0 | 0,00 | 75,74 | - | - | 0,00 | 0,00 | - |
| 34 | 1.189 | 1.198 | 27,96 | 106,0 | 0,00 | 72,57 | - | - | 0,00 | 0,00 | - |
| 35 | 1.852 | 1.858 | 22,73 | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 36 | 6.774 | 6.776 | 5,20 | 104,5 | 0,00 | 87,62 | - | - | 0,00 | 0,00 | - |
| 37 | 2.039 | 2.044 | 20,05 | 104,5 | 0,00 | 77,21 | - | - | 0,00 | 0,00 | - |
| 38 | 2.339 | 2.343 | 18,34 | 104,5 | 0,00 | 78,39 | - | - | 0,00 | 0,00 | - |
| 39 | 2.127 | 2.132 | 19,52 | 104,5 | 0,00 | 77,58 | - | - | 0,00 | 0,00 | - |
| 4 | 2.171 | 2.174 | 20,55 | 106,0 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 40 | 1.853 | 1.858 | 21,22 | 104,5 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 5 | 2.524 | 2.527 | 18,59 | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 6 | 2.288 | 2.291 | 19,87 | 106,0 | 0,00 | 78,20 | - | - | 0,00 | 0,00 | - |
| 7 | 3.868 | 3.870 | 12,98 | 106,0 | 0,00 | 82,75 | - | - | 0,00 | 0,00 | - |
| 8 | 4.279 | 4.281 | 11,68 | 106,0 | 0,00 | 83,63 | - | - | 0,00 | 0,00 | - |
| 9 | 4.380 | 4.382 | 11,38 | 106,0 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,46 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AD Noise sensitive point: User defined (32)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.674 | 2.676 | 17,84 | 106,0 | 0,00 | 79,55 | - | - | 0,00 | 0,00 | - |
| 10 | 6.001 | 6.002 | 7,32 | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 11 | 6.061 | 6.062 | 7,19 | 106,0 | 0,00 | 86,65 | - | - | 0,00 | 0,00 | - |
| 12 | 6.235 | 6.236 | 6,83 | 106,0 | 0,00 | 86,90 | - | - | 0,00 | 0,00 | - |
| 13 | 6.324 | 6.325 | 6,65 | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 14 | 6.359 | 6.360 | 6,58 | 106,0 | 0,00 | 87,07 | - | - | 0,00 | 0,00 | - |
| 15 | 7.440 | 7.440 | 4,58 | 106,0 | 0,00 | 88,43 | - | - | 0,00 | 0,00 | - |
| 16 | 7.628 | 7.629 | 4,27 | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 17 | 7.969 | 7.970 | 3,72 | 106,0 | 0,00 | 89,03 | - | - | 0,00 | 0,00 | - |
| 18 | 3.043 | 3.044 | 15,21 | 104,5 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 19 | 2.754 | 2.755 | 16,40 | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 2 | 2.953 | 2.955 | 16,51 | 106,0 | 0,00 | 80,41 | - | - | 0,00 | 0,00 | - |
| 20 | 2.532 | 2.533 | 17,38 | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 21 | 2.404 | 2.405 | 18,01 | 104,5 | 0,00 | 78,62 | - | - | 0,00 | 0,00 | - |
| 22 | 2.231 | 2.232 | 18,95 | 104,5 | 0,00 | 77,97 | - | - | 0,00 | 0,00 | - |
| 23 | 1.398 | 1.400 | 24,63 | 104,5 | 0,00 | 73,92 | - | - | 0,00 | 0,00 | - |
| 24 | 1.087 | 1.089 | 27,56 | 104,5 | 0,00 | 71,74 | - | - | 0,00 | 0,00 | - |
| 25 | 703 | 707 | 32,42 | 104,5 | 0,00 | 67,99 | - | - | 0,00 | 0,00 | - |
| 26 | 677 | 682 | 32,81 | 104,5 | 0,00 | 67,68 | - | - | 0,00 | 0,00 | - |
| 27 | 2.872 | 2.873 | 15,90 | 104,5 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 28 | 3.787 | 3.788 | 12,59 | 104,5 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 29 | 4.184 | 4.185 | 11,40 | 104,5 | 0,00 | 83,43 | - | - | 0,00 | 0,00 | - |
| 3 | 2.613 | 2.615 | 18,14 | 106,0 | 0,00 | 79,35 | - | - | 0,00 | 0,00 | - |
| 30 | 2.961 | 2.965 | 16,84 | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 31 | 2.428 | 2.432 | 19,37 | 106,0 | 0,00 | 78,72 | - | - | 0,00 | 0,00 | - |
| 32 | 1.933 | 1.939 | 22,20 | 106,0 | 0,00 | 76,75 | - | - | 0,00 | 0,00 | - |
| 33 | 1.735 | 1.741 | 23,52 | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 34 | 1.204 | 1.212 | 27,82 | 106,0 | 0,00 | 72,67 | - | - | 0,00 | 0,00 | - |
| 35 | 1.842 | 1.847 | 22,80 | 106,0 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 36 | 6.781 | 6.783 | 5,18 | 104,5 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 37 | 2.038 | 2.043 | 20,05 | 104,5 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 38 | 2.341 | 2.345 | 18,33 | 104,5 | 0,00 | 78,40 | - | - | 0,00 | 0,00 | - |
| 39 | 2.132 | 2.137 | 19,49 | 104,5 | 0,00 | 77,60 | - | - | 0,00 | 0,00 | - |
| 4 | 2.170 | 2.173 | 20,56 | 106,0 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 40 | 1.855 | 1.860 | 21,21 | 104,5 | 0,00 | 76,39 | - | - | 0,00 | 0,00 | - |
| 5 | 2.523 | 2.526 | 18,60 | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 6 | 2.290 | 2.293 | 19,86 | 106,0 | 0,00 | 78,21 | - | - | 0,00 | 0,00 | - |
| 7 | 3.879 | 3.880 | 12,94 | 106,0 | 0,00 | 82,78 | - | - | 0,00 | 0,00 | - |
| 8 | 4.290 | 4.291 | 11,64 | 106,0 | 0,00 | 83,65 | - | - | 0,00 | 0,00 | - |
| 9 | 4.392 | 4.393 | 11,34 | 106,0 | 0,00 | 83,86 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,52 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AE Noise sensitive point: User defined (33)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.672 | 2.674 | 17,84 | 106,0 | 0,00 | 79,54 | - | - | 0,00 | 0,00 | - |
| 10 | 5.516 | 5.518 | 8,40 | 106,0 | 0,00 | 85,83 | - | - | 0,00 | 0,00 | - |
| 11 | 5.571 | 5.572 | 8,28 | 106,0 | 0,00 | 85,92 | - | - | 0,00 | 0,00 | - |
| 12 | 5.744 | 5.745 | 7,88 | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 13 | 5.843 | 5.844 | 7,66 | 106,0 | 0,00 | 86,33 | - | - | 0,00 | 0,00 | - |
| 14 | 5.872 | 5.873 | 7,60 | 106,0 | 0,00 | 86,38 | - | - | 0,00 | 0,00 | - |
| 15 | 6.950 | 6.951 | 5,45 | 106,0 | 0,00 | 87,84 | - | - | 0,00 | 0,00 | - |
| 16 | 7.137 | 7.138 | 5,11 | 106,0 | 0,00 | 88,07 | - | - | 0,00 | 0,00 | - |
| 17 | 7.483 | 7.484 | 4,51 | 106,0 | 0,00 | 88,48 | - | - | 0,00 | 0,00 | - |
| 18 | 3.502 | 3.503 | 13,53 | 104,5 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 19 | 3.198 | 3.199 | 14,62 | 104,5 | 0,00 | 81,10 | - | - | 0,00 | 0,00 | - |
| 2 | 2.874 | 2.876 | 16,88 | 106,0 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 20 | 2.961 | 2.962 | 15,54 | 104,5 | 0,00 | 80,43 | - | - | 0,00 | 0,00 | - |
| 21 | 2.865 | 2.866 | 15,93 | 104,5 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| 22 | 2.713 | 2.714 | 16,57 | 104,5 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 1.885 | 1.886 | 21,04 | 104,5 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 24 | 1.574 | 1.576 | 23,22 | 104,5 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 25 | 874 | 878 | 30,01 | 104,5 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 26 | 420 | 428 | 37,79 | 104,5 | 0,00 | 63,63 | - | - | 0,00 | 0,00 | - |
| 27 | 2.643 | 2.644 | 16,88 | 104,5 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 28 | 3.312 | 3.313 | 14,20 | 104,5 | 0,00 | 81,40 | - | - | 0,00 | 0,00 | - |
| 29 | 3.693 | 3.693 | 12,90 | 104,5 | 0,00 | 82,35 | - | - | 0,00 | 0,00 | - |
| 3 | 2.497 | 2.499 | 18,74 | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 30 | 2.528 | 2.532 | 18,86 | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 31 | 2.759 | 2.763 | 17,75 | 106,0 | 0,00 | 79,83 | - | - | 0,00 | 0,00 | - |
| 32 | 1.462 | 1.470 | 25,56 | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 33 | 1.350 | 1.357 | 26,50 | 106,0 | 0,00 | 73,65 | - | - | 0,00 | 0,00 | - |
| 34 | 817 | 829 | 32,15 | 106,0 | 0,00 | 69,38 | - | - | 0,00 | 0,00 | - |
| 35 | 2.329 | 2.334 | 19,89 | 106,0 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 36 | 6.292 | 6.294 | 6,04 | 104,5 | 0,00 | 86,98 | - | - | 0,00 | 0,00 | - |
| 37 | 2.482 | 2.486 | 17,59 | 104,5 | 0,00 | 78,91 | - | - | 0,00 | 0,00 | - |
| 38 | 2.743 | 2.746 | 16,32 | 104,5 | 0,00 | 79,77 | - | - | 0,00 | 0,00 | - |
| 39 | 2.488 | 2.492 | 17,56 | 104,5 | 0,00 | 78,93 | - | - | 0,00 | 0,00 | - |
| 4 | 1.781 | 1.785 | 23,05 | 106,0 | 0,00 | 76,03 | - | - | 0,00 | 0,00 | - |
| 40 | 2.263 | 2.267 | 18,75 | 104,5 | 0,00 | 78,11 | - | - | 0,00 | 0,00 | - |
| 5 | 2.122 | 2.125 | 20,84 | 106,0 | 0,00 | 77,55 | - | - | 0,00 | 0,00 | - |
| 6 | 1.854 | 1.858 | 22,55 | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 7 | 3.392 | 3.394 | 14,65 | 106,0 | 0,00 | 81,61 | - | - | 0,00 | 0,00 | - |
| 8 | 3.805 | 3.806 | 13,19 | 106,0 | 0,00 | 82,61 | - | - | 0,00 | 0,00 | - |
| 9 | 3.915 | 3.916 | 12,82 | 106,0 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| Sum | | | 40,54 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AF Noise sensitive point: User defined (34)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.734 | 2.736 | 17,54 | 106,0 | 0,00 | 79,74 | - | - | 0,00 | 0,00 | - |
| 10 | 5.535 | 5.536 | 8,36 | 106,0 | 0,00 | 85,86 | - | - | 0,00 | 0,00 | - |
| 11 | 5.596 | 5.597 | 8,22 | 106,0 | 0,00 | 85,96 | - | - | 0,00 | 0,00 | - |
| 12 | 5.773 | 5.774 | 7,82 | 106,0 | 0,00 | 86,23 | - | - | 0,00 | 0,00 | - |
| 13 | 5.859 | 5.860 | 7,63 | 106,0 | 0,00 | 86,36 | - | - | 0,00 | 0,00 | - |
| 14 | 5.893 | 5.894 | 7,55 | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 15 | 6.986 | 6.987 | 5,38 | 106,0 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 16 | 7.166 | 7.166 | 5,06 | 106,0 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 17 | 7.503 | 7.504 | 4,48 | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 18 | 3.496 | 3.497 | 13,55 | 104,5 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 19 | 3.197 | 3.198 | 14,62 | 104,5 | 0,00 | 81,10 | - | - | 0,00 | 0,00 | - |
| 2 | 2.941 | 2.943 | 16,57 | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 20 | 2.964 | 2.965 | 15,52 | 104,5 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 21 | 2.858 | 2.859 | 15,96 | 104,5 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 22 | 2.696 | 2.697 | 16,65 | 104,5 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 23 | 1.864 | 1.865 | 21,18 | 104,5 | 0,00 | 76,41 | - | - | 0,00 | 0,00 | - |
| 24 | 1.538 | 1.540 | 23,50 | 104,5 | 0,00 | 74,75 | - | - | 0,00 | 0,00 | - |
| 25 | 805 | 808 | 30,94 | 104,5 | 0,00 | 69,15 | - | - | 0,00 | 0,00 | - |
| 26 | 361 | 370 | 39,29 | 104,5 | 0,00 | 62,35 | - | - | 0,00 | 0,00 | - |
| 27 | 2.715 | 2.716 | 16,57 | 104,5 | 0,00 | 79,68 | - | - | 0,00 | 0,00 | - |
| 28 | 3.359 | 3.360 | 14,03 | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 29 | 3.726 | 3.727 | 12,79 | 104,5 | 0,00 | 82,43 | - | - | 0,00 | 0,00 | - |
| 3 | 2.566 | 2.568 | 18,38 | 106,0 | 0,00 | 79,19 | - | - | 0,00 | 0,00 | - |
| 30 | 2.522 | 2.526 | 18,89 | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 31 | 2.783 | 2.786 | 17,64 | 106,0 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 32 | 1.513 | 1.520 | 25,16 | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 33 | 1.417 | 1.424 | 25,93 | 106,0 | 0,00 | 74,07 | - | - | 0,00 | 0,00 | - |
| 34 | 885 | 897 | 31,27 | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 35 | 2.293 | 2.297 | 20,09 | 106,0 | 0,00 | 78,22 | - | - | 0,00 | 0,00 | - |
| 36 | 6.316 | 6.317 | 6,00 | 104,5 | 0,00 | 87,01 | - | - | 0,00 | 0,00 | - |
| 37 | 2.481 | 2.484 | 17,60 | 104,5 | 0,00 | 78,90 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 2.752 | 2.756 | 16,27 | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 39 | 2.507 | 2.511 | 17,46 | 104,5 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 4 | 1.761 | 1.765 | 23,19 | 106,0 | 0,00 | 75,93 | - | - | 0,00 | 0,00 | - |
| 40 | 2.271 | 2.275 | 18,71 | 104,5 | 0,00 | 78,14 | - | - | 0,00 | 0,00 | - |
| 5 | 2.106 | 2.109 | 20,94 | 106,0 | 0,00 | 77,48 | - | - | 0,00 | 0,00 | - |
| 6 | 1.848 | 1.852 | 22,59 | 106,0 | 0,00 | 76,35 | - | - | 0,00 | 0,00 | - |
| 7 | 3.433 | 3.435 | 14,50 | 106,0 | 0,00 | 81,72 | - | - | 0,00 | 0,00 | - |
| 8 | 3.846 | 3.848 | 13,05 | 106,0 | 0,00 | 82,70 | - | - | 0,00 | 0,00 | - |
| 9 | 3.961 | 3.963 | 12,67 | 106,0 | 0,00 | 82,96 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,36 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AG Noise sensitive point: User defined (35)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.030 | 4.032 | 12,45 | 106,0 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 10 | 2.953 | 2.955 | 16,51 | 106,0 | 0,00 | 80,41 | - | - | 0,00 | 0,00 | - |
| 11 | 2.987 | 2.989 | 16,36 | 106,0 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 12 | 3.170 | 3.171 | 15,56 | 106,0 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 13 | 3.301 | 3.303 | 15,01 | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 14 | 3.296 | 3.298 | 15,03 | 106,0 | 0,00 | 81,36 | - | - | 0,00 | 0,00 | - |
| 15 | 4.432 | 4.433 | 11,23 | 106,0 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 16 | 4.560 | 4.561 | 10,86 | 106,0 | 0,00 | 84,18 | - | - | 0,00 | 0,00 | - |
| 17 | 4.910 | 4.911 | 9,90 | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 18 | 6.037 | 6.037 | 7,04 | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 19 | 5.710 | 5.710 | 7,70 | 104,5 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 2 | 3.883 | 3.884 | 12,93 | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 20 | 5.446 | 5.446 | 8,25 | 104,5 | 0,00 | 85,72 | - | - | 0,00 | 0,00 | - |
| 21 | 5.411 | 5.412 | 8,33 | 104,5 | 0,00 | 85,67 | - | - | 0,00 | 0,00 | - |
| 22 | 5.292 | 5.292 | 8,59 | 104,5 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 23 | 4.468 | 4.469 | 10,61 | 104,5 | 0,00 | 84,00 | - | - | 0,00 | 0,00 | - |
| 24 | 4.139 | 4.139 | 11,53 | 104,5 | 0,00 | 83,34 | - | - | 0,00 | 0,00 | - |
| 25 | 3.131 | 3.132 | 14,87 | 104,5 | 0,00 | 80,92 | - | - | 0,00 | 0,00 | - |
| 26 | 2.540 | 2.541 | 17,35 | 104,5 | 0,00 | 79,10 | - | - | 0,00 | 0,00 | - |
| 27 | 3.073 | 3.074 | 15,09 | 104,5 | 0,00 | 80,75 | - | - | 0,00 | 0,00 | - |
| 28 | 1.285 | 1.287 | 25,62 | 104,5 | 0,00 | 73,19 | - | - | 0,00 | 0,00 | - |
| 29 | 1.174 | 1.176 | 26,67 | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 3 | 3.491 | 3.493 | 14,29 | 106,0 | 0,00 | 81,86 | - | - | 0,00 | 0,00 | - |
| 30 | 1.144 | 1.153 | 28,40 | 106,0 | 0,00 | 72,24 | - | - | 0,00 | 0,00 | - |
| 31 | 5.041 | 5.043 | 10,07 | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 32 | 1.389 | 1.397 | 26,16 | 106,0 | 0,00 | 73,90 | - | - | 0,00 | 0,00 | - |
| 33 | 1.994 | 1.999 | 21,83 | 106,0 | 0,00 | 77,01 | - | - | 0,00 | 0,00 | - |
| 34 | 2.189 | 2.194 | 20,67 | 106,0 | 0,00 | 77,82 | - | - | 0,00 | 0,00 | - |
| 35 | 4.888 | 4.890 | 10,43 | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 36 | 3.709 | 3.711 | 12,42 | 104,5 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 37 | 5.005 | 5.007 | 8,69 | 104,5 | 0,00 | 84,99 | - | - | 0,00 | 0,00 | - |
| 38 | 5.178 | 5.180 | 8,29 | 104,5 | 0,00 | 85,29 | - | - | 0,00 | 0,00 | - |
| 39 | 4.843 | 4.844 | 9,07 | 104,5 | 0,00 | 84,70 | - | - | 0,00 | 0,00 | - |
| 4 | 1.591 | 1.594 | 24,45 | 106,0 | 0,00 | 75,05 | - | - | 0,00 | 0,00 | - |
| 40 | 4.730 | 4.732 | 9,35 | 104,5 | 0,00 | 84,50 | - | - | 0,00 | 0,00 | - |
| 5 | 1.443 | 1.447 | 25,64 | 106,0 | 0,00 | 74,21 | - | - | 0,00 | 0,00 | - |
| 6 | 1.224 | 1.229 | 27,59 | 106,0 | 0,00 | 72,79 | - | - | 0,00 | 0,00 | - |
| 7 | 1.089 | 1.093 | 28,96 | 106,0 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 8 | 1.470 | 1.474 | 25,41 | 106,0 | 0,00 | 74,37 | - | - | 0,00 | 0,00 | - |
| 9 | 1.729 | 1.731 | 23,43 | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,25 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AH Noise sensitive point: User defined (36)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.071 | 4.072 | 12,32 | 106,0 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 10 | 2.910 | 2.912 | 16,71 | 106,0 | 0,00 | 80,28 | - | - | 0,00 | 0,00 | - |
| 11 | 2.947 | 2.949 | 16,54 | 106,0 | 0,00 | 80,39 | - | - | 0,00 | 0,00 | - |
| 12 | 3.131 | 3.133 | 15,72 | 106,0 | 0,00 | 80,92 | - | - | 0,00 | 0,00 | - |
| 13 | 3.258 | 3.260 | 15,19 | 106,0 | 0,00 | 81,27 | - | - | 0,00 | 0,00 | - |
| 14 | 3.254 | 3.256 | 15,20 | 106,0 | 0,00 | 81,25 | - | - | 0,00 | 0,00 | - |
| 15 | 4.397 | 4.398 | 11,33 | 106,0 | 0,00 | 83,87 | - | - | 0,00 | 0,00 | - |
| 16 | 4.521 | 4.523 | 10,97 | 106,0 | 0,00 | 84,11 | - | - | 0,00 | 0,00 | - |
| 17 | 4.868 | 4.869 | 10,01 | 106,0 | 0,00 | 84,75 | - | - | 0,00 | 0,00 | - |
| 18 | 6.079 | 6.080 | 6,96 | 104,5 | 0,00 | 86,68 | - | - | 0,00 | 0,00 | - |
| 19 | 5.752 | 5.753 | 7,61 | 104,5 | 0,00 | 86,20 | - | - | 0,00 | 0,00 | - |
| 2 | 3.921 | 3.922 | 12,80 | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 20 | 5.488 | 5.489 | 8,16 | 104,5 | 0,00 | 85,79 | - | - | 0,00 | 0,00 | - |
| 21 | 5.453 | 5.454 | 8,24 | 104,5 | 0,00 | 85,73 | - | - | 0,00 | 0,00 | - |
| 22 | 5.333 | 5.334 | 8,50 | 104,5 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 23 | 4.509 | 4.509 | 10,50 | 104,5 | 0,00 | 84,08 | - | - | 0,00 | 0,00 | - |
| 24 | 4.178 | 4.179 | 11,41 | 104,5 | 0,00 | 83,42 | - | - | 0,00 | 0,00 | - |
| 25 | 3.167 | 3.168 | 14,74 | 104,5 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 26 | 2.577 | 2.578 | 17,18 | 104,5 | 0,00 | 79,23 | - | - | 0,00 | 0,00 | - |
| 27 | 3.109 | 3.110 | 14,96 | 104,5 | 0,00 | 80,85 | - | - | 0,00 | 0,00 | - |
| 28 | 1.284 | 1.286 | 25,63 | 104,5 | 0,00 | 73,18 | - | - | 0,00 | 0,00 | - |
| 29 | 1.142 | 1.145 | 26,98 | 104,5 | 0,00 | 72,18 | - | - | 0,00 | 0,00 | - |
| 3 | 3.530 | 3.532 | 14,15 | 106,0 | 0,00 | 81,96 | - | - | 0,00 | 0,00 | - |
| 30 | 1.141 | 1.151 | 28,43 | 106,0 | 0,00 | 72,22 | - | - | 0,00 | 0,00 | - |
| 31 | 5.084 | 5.086 | 9,97 | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 32 | 1.432 | 1.439 | 25,81 | 106,0 | 0,00 | 74,16 | - | - | 0,00 | 0,00 | - |
| 33 | 2.036 | 2.041 | 21,57 | 106,0 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 34 | 2.232 | 2.237 | 20,43 | 106,0 | 0,00 | 77,99 | - | - | 0,00 | 0,00 | - |
| 35 | 4.927 | 4.929 | 10,33 | 106,0 | 0,00 | 84,86 | - | - | 0,00 | 0,00 | - |
| 36 | 3.668 | 3.671 | 12,56 | 104,5 | 0,00 | 82,29 | - | - | 0,00 | 0,00 | - |
| 37 | 5.048 | 5.049 | 8,59 | 104,5 | 0,00 | 85,06 | - | - | 0,00 | 0,00 | - |
| 38 | 5.221 | 5.223 | 8,20 | 104,5 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 39 | 4.886 | 4.887 | 8,97 | 104,5 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 4 | 1.611 | 1.614 | 24,30 | 106,0 | 0,00 | 75,16 | - | - | 0,00 | 0,00 | - |
| 40 | 4.773 | 4.775 | 9,24 | 104,5 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 5 | 1.454 | 1.458 | 25,54 | 106,0 | 0,00 | 74,28 | - | - | 0,00 | 0,00 | - |
| 6 | 1.245 | 1.250 | 27,39 | 106,0 | 0,00 | 72,94 | - | - | 0,00 | 0,00 | - |
| 7 | 1.075 | 1.079 | 29,11 | 106,0 | 0,00 | 71,66 | - | - | 0,00 | 0,00 | - |
| 8 | 1.451 | 1.454 | 25,57 | 106,0 | 0,00 | 74,25 | - | - | 0,00 | 0,00 | - |
| 9 | 1.715 | 1.718 | 23,53 | 106,0 | 0,00 | 75,70 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,25 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AI Noise sensitive point: User defined (37)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.121 | 4.122 | 12,16 | 106,0 | 0,00 | 83,30 | - | - | 0,00 | 0,00 | - |
| 10 | 3.019 | 3.021 | 16,21 | 106,0 | 0,00 | 80,60 | - | - | 0,00 | 0,00 | - |
| 11 | 3.097 | 3.099 | 15,87 | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 12 | 3.302 | 3.304 | 15,00 | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 13 | 3.349 | 3.351 | 14,81 | 106,0 | 0,00 | 81,50 | - | - | 0,00 | 0,00 | - |
| 14 | 3.379 | 3.380 | 14,70 | 106,0 | 0,00 | 81,58 | - | - | 0,00 | 0,00 | - |
| 15 | 4.598 | 4.599 | 10,75 | 106,0 | 0,00 | 84,25 | - | - | 0,00 | 0,00 | - |
| 16 | 4.686 | 4.687 | 10,51 | 106,0 | 0,00 | 84,42 | - | - | 0,00 | 0,00 | - |
| 17 | 4.987 | 4.988 | 9,70 | 106,0 | 0,00 | 84,96 | - | - | 0,00 | 0,00 | - |
| 18 | 5.981 | 5.981 | 7,15 | 104,5 | 0,00 | 86,54 | - | - | 0,00 | 0,00 | - |
| 19 | 5.661 | 5.662 | 7,80 | 104,5 | 0,00 | 86,06 | - | - | 0,00 | 0,00 | - |
| 2 | 4.002 | 4.003 | 12,54 | 106,0 | 0,00 | 83,05 | - | - | 0,00 | 0,00 | - |
| 20 | 5.404 | 5.405 | 8,35 | 104,5 | 0,00 | 85,66 | - | - | 0,00 | 0,00 | - |
| 21 | 5.349 | 5.350 | 8,47 | 104,5 | 0,00 | 85,57 | - | - | 0,00 | 0,00 | - |
| 22 | 5.211 | 5.211 | 8,78 | 104,5 | 0,00 | 85,34 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 4.380 | 4.380 | 10,85 | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 24 | 4.030 | 4.030 | 11,85 | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 25 | 2.986 | 2.987 | 15,44 | 104,5 | 0,00 | 80,50 | - | - | 0,00 | 0,00 | - |
| 26 | 2.414 | 2.415 | 17,95 | 104,5 | 0,00 | 78,66 | - | - | 0,00 | 0,00 | - |
| 27 | 3.222 | 3.223 | 14,53 | 104,5 | 0,00 | 81,16 | - | - | 0,00 | 0,00 | - |
| 28 | 1.546 | 1.547 | 23,44 | 104,5 | 0,00 | 74,79 | - | - | 0,00 | 0,00 | - |
| 29 | 1.370 | 1.372 | 24,87 | 104,5 | 0,00 | 73,75 | - | - | 0,00 | 0,00 | - |
| 3 | 3.603 | 3.604 | 13,89 | 106,0 | 0,00 | 82,14 | - | - | 0,00 | 0,00 | - |
| 30 | 886 | 898 | 31,26 | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 31 | 5.038 | 5.040 | 10,07 | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 32 | 1.430 | 1.437 | 25,83 | 106,0 | 0,00 | 74,15 | - | - | 0,00 | 0,00 | - |
| 33 | 2.050 | 2.055 | 21,48 | 106,0 | 0,00 | 77,26 | - | - | 0,00 | 0,00 | - |
| 34 | 2.183 | 2.187 | 20,71 | 106,0 | 0,00 | 77,80 | - | - | 0,00 | 0,00 | - |
| 35 | 4.773 | 4.775 | 10,71 | 106,0 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 36 | 3.809 | 3.812 | 12,07 | 104,5 | 0,00 | 82,62 | - | - | 0,00 | 0,00 | - |
| 37 | 4.951 | 4.953 | 8,82 | 104,5 | 0,00 | 84,90 | - | - | 0,00 | 0,00 | - |
| 38 | 5.148 | 5.149 | 8,36 | 104,5 | 0,00 | 85,24 | - | - | 0,00 | 0,00 | - |
| 39 | 4.826 | 4.828 | 9,11 | 104,5 | 0,00 | 84,68 | - | - | 0,00 | 0,00 | - |
| 4 | 1.359 | 1.364 | 26,35 | 106,0 | 0,00 | 73,69 | - | - | 0,00 | 0,00 | - |
| 40 | 4.690 | 4.692 | 9,45 | 104,5 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 5 | 1.190 | 1.195 | 27,92 | 106,0 | 0,00 | 72,55 | - | - | 0,00 | 0,00 | - |
| 6 | 998 | 1.004 | 29,96 | 106,0 | 0,00 | 71,03 | - | - | 0,00 | 0,00 | - |
| 7 | 1.338 | 1.342 | 26,54 | 106,0 | 0,00 | 73,56 | - | - | 0,00 | 0,00 | - |
| 8 | 1.708 | 1.711 | 23,58 | 106,0 | 0,00 | 75,67 | - | - | 0,00 | 0,00 | - |
| 9 | 1.979 | 1.981 | 21,74 | 106,0 | 0,00 | 76,94 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,70 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AJ Noise sensitive point: User defined (38)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.459 | 4.460 | 11,15 | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 10 | 2.772 | 2.774 | 17,36 | 106,0 | 0,00 | 79,86 | - | - | 0,00 | 0,00 | - |
| 11 | 2.895 | 2.897 | 16,78 | 106,0 | 0,00 | 80,24 | - | - | 0,00 | 0,00 | - |
| 12 | 3.126 | 3.128 | 15,75 | 106,0 | 0,00 | 80,91 | - | - | 0,00 | 0,00 | - |
| 13 | 3.083 | 3.085 | 15,93 | 106,0 | 0,00 | 80,78 | - | - | 0,00 | 0,00 | - |
| 14 | 3.144 | 3.146 | 15,67 | 106,0 | 0,00 | 80,96 | - | - | 0,00 | 0,00 | - |
| 15 | 4.462 | 4.463 | 11,14 | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 16 | 4.494 | 4.495 | 11,05 | 106,0 | 0,00 | 84,05 | - | - | 0,00 | 0,00 | - |
| 17 | 4.742 | 4.743 | 10,35 | 106,0 | 0,00 | 84,52 | - | - | 0,00 | 0,00 | - |
| 18 | 6.262 | 6.262 | 6,61 | 104,5 | 0,00 | 86,93 | - | - | 0,00 | 0,00 | - |
| 19 | 5.948 | 5.948 | 7,22 | 104,5 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 2 | 4.338 | 4.340 | 11,50 | 106,0 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 20 | 5.696 | 5.697 | 7,72 | 104,5 | 0,00 | 86,11 | - | - | 0,00 | 0,00 | - |
| 21 | 5.627 | 5.628 | 7,87 | 104,5 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 22 | 5.473 | 5.473 | 8,20 | 104,5 | 0,00 | 85,76 | - | - | 0,00 | 0,00 | - |
| 23 | 4.637 | 4.638 | 10,17 | 104,5 | 0,00 | 84,33 | - | - | 0,00 | 0,00 | - |
| 24 | 4.270 | 4.270 | 11,15 | 104,5 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 25 | 3.191 | 3.192 | 14,65 | 104,5 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 26 | 2.646 | 2.647 | 16,87 | 104,5 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 27 | 3.552 | 3.552 | 13,36 | 104,5 | 0,00 | 82,01 | - | - | 0,00 | 0,00 | - |
| 28 | 1.703 | 1.704 | 22,27 | 104,5 | 0,00 | 75,63 | - | - | 0,00 | 0,00 | - |
| 29 | 1.331 | 1.333 | 25,21 | 104,5 | 0,00 | 73,50 | - | - | 0,00 | 0,00 | - |
| 3 | 3.940 | 3.941 | 12,74 | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 30 | 764 | 778 | 32,87 | 106,0 | 0,00 | 68,82 | - | - | 0,00 | 0,00 | - |
| 31 | 5.352 | 5.354 | 9,37 | 106,0 | 0,00 | 85,57 | - | - | 0,00 | 0,00 | - |
| 32 | 1.764 | 1.770 | 23,32 | 106,0 | 0,00 | 75,96 | - | - | 0,00 | 0,00 | - |
| 33 | 2.386 | 2.390 | 19,59 | 106,0 | 0,00 | 78,57 | - | - | 0,00 | 0,00 | - |
| 34 | 2.501 | 2.504 | 19,00 | 106,0 | 0,00 | 78,97 | - | - | 0,00 | 0,00 | - |
| 35 | 5.005 | 5.007 | 10,15 | 106,0 | 0,00 | 84,99 | - | - | 0,00 | 0,00 | - |
| 36 | 3.591 | 3.594 | 12,84 | 104,5 | 0,00 | 82,11 | - | - | 0,00 | 0,00 | - |
| 37 | 5.235 | 5.237 | 8,16 | 104,5 | 0,00 | 85,38 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 5.447 | 5.448 | 7,70 | 104,5 | 0,00 | 85,72 | - | - | 0,00 | 0,00 | - |
| 39 | 5.133 | 5.135 | 8,39 | 104,5 | 0,00 | 85,21 | - | - | 0,00 | 0,00 | - |
| 4 | 1.437 | 1.441 | 25,69 | 106,0 | 0,00 | 74,17 | - | - | 0,00 | 0,00 | - |
| 40 | 4.984 | 4.986 | 8,74 | 104,5 | 0,00 | 84,95 | - | - | 0,00 | 0,00 | - |
| 5 | 1.191 | 1.196 | 27,91 | 106,0 | 0,00 | 72,55 | - | - | 0,00 | 0,00 | - |
| 6 | 1.105 | 1.111 | 28,78 | 106,0 | 0,00 | 71,91 | - | - | 0,00 | 0,00 | - |
| 7 | 1.428 | 1.432 | 25,76 | 106,0 | 0,00 | 74,12 | - | - | 0,00 | 0,00 | - |
| 8 | 1.750 | 1.753 | 23,28 | 106,0 | 0,00 | 75,87 | - | - | 0,00 | 0,00 | - |
| 9 | 2.056 | 2.058 | 21,25 | 106,0 | 0,00 | 77,27 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,64 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AK Noise sensitive point: User defined (39)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.488 | 4.489 | 11,06 | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 10 | 2.723 | 2.725 | 17,59 | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 11 | 2.846 | 2.848 | 17,01 | 106,0 | 0,00 | 80,09 | - | - | 0,00 | 0,00 | - |
| 12 | 3.077 | 3.079 | 15,96 | 106,0 | 0,00 | 80,77 | - | - | 0,00 | 0,00 | - |
| 13 | 3.035 | 3.037 | 16,14 | 106,0 | 0,00 | 80,65 | - | - | 0,00 | 0,00 | - |
| 14 | 3.095 | 3.097 | 15,88 | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 15 | 4.414 | 4.415 | 11,28 | 106,0 | 0,00 | 83,90 | - | - | 0,00 | 0,00 | - |
| 16 | 4.444 | 4.445 | 11,19 | 106,0 | 0,00 | 83,96 | - | - | 0,00 | 0,00 | - |
| 17 | 4.694 | 4.695 | 10,48 | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 18 | 6.307 | 6.308 | 6,53 | 104,5 | 0,00 | 87,00 | - | - | 0,00 | 0,00 | - |
| 19 | 5.993 | 5.993 | 7,13 | 104,5 | 0,00 | 86,55 | - | - | 0,00 | 0,00 | - |
| 2 | 4.363 | 4.364 | 11,43 | 106,0 | 0,00 | 83,80 | - | - | 0,00 | 0,00 | - |
| 20 | 5.740 | 5.741 | 7,63 | 104,5 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 21 | 5.673 | 5.673 | 7,77 | 104,5 | 0,00 | 86,08 | - | - | 0,00 | 0,00 | - |
| 22 | 5.520 | 5.520 | 8,10 | 104,5 | 0,00 | 85,84 | - | - | 0,00 | 0,00 | - |
| 23 | 4.685 | 4.685 | 10,04 | 104,5 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 24 | 4.318 | 4.318 | 11,02 | 104,5 | 0,00 | 83,71 | - | - | 0,00 | 0,00 | - |
| 25 | 3.240 | 3.241 | 14,46 | 104,5 | 0,00 | 81,21 | - | - | 0,00 | 0,00 | - |
| 26 | 2.694 | 2.695 | 16,66 | 104,5 | 0,00 | 79,61 | - | - | 0,00 | 0,00 | - |
| 27 | 3.571 | 3.571 | 13,30 | 104,5 | 0,00 | 82,06 | - | - | 0,00 | 0,00 | - |
| 28 | 1.684 | 1.686 | 22,41 | 104,5 | 0,00 | 75,54 | - | - | 0,00 | 0,00 | - |
| 29 | 1.291 | 1.293 | 25,57 | 104,5 | 0,00 | 73,23 | - | - | 0,00 | 0,00 | - |
| 3 | 3.966 | 3.967 | 12,66 | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 30 | 800 | 814 | 32,37 | 106,0 | 0,00 | 69,21 | - | - | 0,00 | 0,00 | - |
| 31 | 5.393 | 5.394 | 9,28 | 106,0 | 0,00 | 85,64 | - | - | 0,00 | 0,00 | - |
| 32 | 1.797 | 1.803 | 23,10 | 106,0 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 33 | 2.418 | 2.422 | 19,42 | 106,0 | 0,00 | 78,68 | - | - | 0,00 | 0,00 | - |
| 34 | 2.540 | 2.544 | 18,80 | 106,0 | 0,00 | 79,11 | - | - | 0,00 | 0,00 | - |
| 35 | 5.053 | 5.055 | 10,04 | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 36 | 3.542 | 3.544 | 13,02 | 104,5 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 37 | 5.280 | 5.282 | 8,06 | 104,5 | 0,00 | 85,46 | - | - | 0,00 | 0,00 | - |
| 38 | 5.490 | 5.491 | 7,61 | 104,5 | 0,00 | 85,79 | - | - | 0,00 | 0,00 | - |
| 39 | 5.175 | 5.177 | 8,30 | 104,5 | 0,00 | 85,28 | - | - | 0,00 | 0,00 | - |
| 4 | 1.484 | 1.488 | 25,29 | 106,0 | 0,00 | 74,45 | - | - | 0,00 | 0,00 | - |
| 40 | 5.028 | 5.030 | 8,64 | 104,5 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 5 | 1.236 | 1.240 | 27,48 | 106,0 | 0,00 | 72,87 | - | - | 0,00 | 0,00 | - |
| 6 | 1.154 | 1.160 | 28,28 | 106,0 | 0,00 | 72,29 | - | - | 0,00 | 0,00 | - |
| 7 | 1.402 | 1.405 | 25,99 | 106,0 | 0,00 | 73,96 | - | - | 0,00 | 0,00 | - |
| 8 | 1.716 | 1.719 | 23,52 | 106,0 | 0,00 | 75,71 | - | - | 0,00 | 0,00 | - |
| 9 | 2.025 | 2.028 | 21,44 | 106,0 | 0,00 | 77,14 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,39 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AL Noise sensitive point: User defined (40)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.150 | 7.150 | 5,09 | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 10 | 1.215 | 1.220 | 27,68 | 106,0 | 0,00 | 72,73 | - | - | 0,00 | 0,00 | - |
| 11 | 831 | 838 | 32,02 | 106,0 | 0,00 | 69,46 | - | - | 0,00 | 0,00 | - |
| 12 | 589 | 599 | 35,74 | 106,0 | 0,00 | 66,54 | - | - | 0,00 | 0,00 | - |
| 13 | 1.293 | 1.297 | 26,95 | 106,0 | 0,00 | 73,26 | - | - | 0,00 | 0,00 | - |
| 14 | 857 | 864 | 31,67 | 106,0 | 0,00 | 69,73 | - | - | 0,00 | 0,00 | - |
| 15 | 993 | 998 | 30,02 | 106,0 | 0,00 | 70,98 | - | - | 0,00 | 0,00 | - |
| 16 | 804 | 811 | 32,38 | 106,0 | 0,00 | 69,18 | - | - | 0,00 | 0,00 | - |
| 17 | 1.474 | 1.478 | 25,38 | 106,0 | 0,00 | 74,39 | - | - | 0,00 | 0,00 | - |
| 18 | 9.721 | 9.722 | 1,57 | 104,5 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 19 | 9.378 | 9.379 | 1,97 | 104,5 | 0,00 | 90,44 | - | - | 0,00 | 0,00 | - |
| 2 | 6.815 | 6.816 | 5,70 | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 20 | 9.098 | 9.098 | 2,32 | 104,5 | 0,00 | 90,18 | - | - | 0,00 | 0,00 | - |
| 21 | 9.111 | 9.111 | 2,30 | 104,5 | 0,00 | 90,19 | - | - | 0,00 | 0,00 | - |
| 22 | 9.025 | 9.026 | 2,41 | 104,5 | 0,00 | 90,11 | - | - | 0,00 | 0,00 | - |
| 23 | 8.212 | 8.212 | 3,48 | 104,5 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |
| 24 | 7.896 | 7.896 | 3,93 | 104,5 | 0,00 | 88,95 | - | - | 0,00 | 0,00 | - |
| 25 | 6.873 | 6.874 | 5,53 | 104,5 | 0,00 | 87,74 | - | - | 0,00 | 0,00 | - |
| 26 | 6.295 | 6.295 | 6,55 | 104,5 | 0,00 | 86,98 | - | - | 0,00 | 0,00 | - |
| 27 | 5.899 | 5.900 | 7,31 | 104,5 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 28 | 3.321 | 3.321 | 14,17 | 104,5 | 0,00 | 81,43 | - | - | 0,00 | 0,00 | - |
| 29 | 2.657 | 2.659 | 16,82 | 104,5 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 3 | 6.528 | 6.529 | 6,24 | 106,0 | 0,00 | 87,30 | - | - | 0,00 | 0,00 | - |
| 30 | 4.313 | 4.315 | 11,95 | 106,0 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 31 | 8.578 | 8.579 | 4,01 | 106,0 | 0,00 | 89,67 | - | - | 0,00 | 0,00 | - |
| 32 | 4.993 | 4.995 | 10,18 | 106,0 | 0,00 | 84,97 | - | - | 0,00 | 0,00 | - |
| 33 | 5.483 | 5.484 | 9,09 | 106,0 | 0,00 | 85,78 | - | - | 0,00 | 0,00 | - |
| 34 | 5.833 | 5.835 | 8,38 | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| 35 | 8.646 | 8.647 | 3,92 | 106,0 | 0,00 | 89,74 | - | - | 0,00 | 0,00 | - |
| 36 | 480 | 501 | 36,14 | 104,5 | 0,00 | 65,00 | - | - | 0,00 | 0,00 | - |
| 37 | 8.692 | 8.693 | 2,39 | 104,5 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 38 | 8.804 | 8.805 | 2,25 | 104,5 | 0,00 | 89,89 | - | - | 0,00 | 0,00 | - |
| 39 | 8.431 | 8.432 | 2,73 | 104,5 | 0,00 | 89,52 | - | - | 0,00 | 0,00 | - |
| 4 | 5.121 | 5.122 | 9,36 | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 40 | 8.387 | 8.389 | 2,79 | 104,5 | 0,00 | 89,47 | - | - | 0,00 | 0,00 | - |
| 5 | 4.825 | 4.827 | 10,13 | 106,0 | 0,00 | 84,67 | - | - | 0,00 | 0,00 | - |
| 6 | 4.807 | 4.808 | 10,18 | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 7 | 3.062 | 3.064 | 16,03 | 106,0 | 0,00 | 80,73 | - | - | 0,00 | 0,00 | - |
| 8 | 2.711 | 2.713 | 17,65 | 106,0 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 9 | 2.804 | 2.806 | 17,20 | 106,0 | 0,00 | 79,96 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,88 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AM Noise sensitive point: User defined (41)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.210 | 7.211 | 4,98 | 106,0 | 0,00 | 88,16 | - | - | 0,00 | 0,00 | - |
| 10 | 1.206 | 1.211 | 27,77 | 106,0 | 0,00 | 72,66 | - | - | 0,00 | 0,00 | - |
| 11 | 850 | 857 | 31,77 | 106,0 | 0,00 | 69,65 | - | - | 0,00 | 0,00 | - |
| 12 | 634 | 642 | 34,97 | 106,0 | 0,00 | 67,15 | - | - | 0,00 | 0,00 | - |
| 13 | 1.261 | 1.266 | 27,24 | 106,0 | 0,00 | 73,05 | - | - | 0,00 | 0,00 | - |
| 14 | 836 | 843 | 31,95 | 106,0 | 0,00 | 69,52 | - | - | 0,00 | 0,00 | - |
| 15 | 1.020 | 1.025 | 29,71 | 106,0 | 0,00 | 71,22 | - | - | 0,00 | 0,00 | - |
| 16 | 764 | 771 | 32,95 | 106,0 | 0,00 | 68,74 | - | - | 0,00 | 0,00 | - |
| 17 | 1.404 | 1.408 | 25,97 | 106,0 | 0,00 | 73,97 | - | - | 0,00 | 0,00 | - |
| 18 | 9.769 | 9.769 | 1,51 | 104,5 | 0,00 | 90,80 | - | - | 0,00 | 0,00 | - |
| 19 | 9.427 | 9.427 | 1,91 | 104,5 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 2 | 6.878 | 6.878 | 5,58 | 106,0 | 0,00 | 87,75 | - | - | 0,00 | 0,00 | - |
| 20 | 9.147 | 9.148 | 2,26 | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 21 | 9.158 | 9.158 | 2,24 | 104,5 | 0,00 | 90,24 | - | - | 0,00 | 0,00 | - |
| 22 | 9.069 | 9.069 | 2,35 | 104,5 | 0,00 | 90,15 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 8.255 | 8.255 | 3,42 | 104,5 | 0,00 | 89,33 | - | - | 0,00 | 0,00 | - |
| 24 | 7.935 | 7.936 | 3,87 | 104,5 | 0,00 | 88,99 | - | - | 0,00 | 0,00 | - |
| 25 | 6.908 | 6.909 | 5,47 | 104,5 | 0,00 | 87,79 | - | - | 0,00 | 0,00 | - |
| 26 | 6.332 | 6.333 | 6,48 | 104,5 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 27 | 5.962 | 5.962 | 7,19 | 104,5 | 0,00 | 86,51 | - | - | 0,00 | 0,00 | - |
| 28 | 3.378 | 3.379 | 13,97 | 104,5 | 0,00 | 81,57 | - | - | 0,00 | 0,00 | - |
| 29 | 2.704 | 2.705 | 16,61 | 104,5 | 0,00 | 79,64 | - | - | 0,00 | 0,00 | - |
| 3 | 6.589 | 6.590 | 6,13 | 106,0 | 0,00 | 87,38 | - | - | 0,00 | 0,00 | - |
| 30 | 4.336 | 4.338 | 11,89 | 106,0 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 31 | 8.631 | 8.632 | 3,94 | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 32 | 5.041 | 5.043 | 10,07 | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 33 | 5.534 | 5.535 | 8,98 | 106,0 | 0,00 | 85,86 | - | - | 0,00 | 0,00 | - |
| 34 | 5.880 | 5.882 | 8,28 | 106,0 | 0,00 | 86,39 | - | - | 0,00 | 0,00 | - |
| 35 | 8.685 | 8.686 | 3,87 | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 36 | 429 | 452 | 37,23 | 104,5 | 0,00 | 64,10 | - | - | 0,00 | 0,00 | - |
| 37 | 8.740 | 8.741 | 2,33 | 104,5 | 0,00 | 89,83 | - | - | 0,00 | 0,00 | - |
| 38 | 8.854 | 8.855 | 2,19 | 104,5 | 0,00 | 89,94 | - | - | 0,00 | 0,00 | - |
| 39 | 8.483 | 8.484 | 2,67 | 104,5 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 4 | 5.148 | 5.149 | 9,29 | 106,0 | 0,00 | 85,23 | - | - | 0,00 | 0,00 | - |
| 40 | 8.436 | 8.437 | 2,73 | 104,5 | 0,00 | 89,52 | - | - | 0,00 | 0,00 | - |
| 5 | 4.850 | 4.851 | 10,06 | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 6 | 4.837 | 4.838 | 10,10 | 106,0 | 0,00 | 84,69 | - | - | 0,00 | 0,00 | - |
| 7 | 3.115 | 3.117 | 15,80 | 106,0 | 0,00 | 80,87 | - | - | 0,00 | 0,00 | - |
| 8 | 2.767 | 2.769 | 17,38 | 106,0 | 0,00 | 79,85 | - | - | 0,00 | 0,00 | - |
| 9 | 2.866 | 2.867 | 16,92 | 106,0 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,11 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AN Noise sensitive point: User defined (42)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.277 | 7.278 | 4,86 | 106,0 | 0,00 | 88,24 | - | - | 0,00 | 0,00 | - |
| 10 | 1.291 | 1.295 | 26,97 | 106,0 | 0,00 | 73,25 | - | - | 0,00 | 0,00 | - |
| 11 | 940 | 946 | 30,64 | 106,0 | 0,00 | 70,52 | - | - | 0,00 | 0,00 | - |
| 12 | 716 | 723 | 33,66 | 106,0 | 0,00 | 68,19 | - | - | 0,00 | 0,00 | - |
| 13 | 1.332 | 1.336 | 26,60 | 106,0 | 0,00 | 73,52 | - | - | 0,00 | 0,00 | - |
| 14 | 915 | 922 | 30,94 | 106,0 | 0,00 | 70,29 | - | - | 0,00 | 0,00 | - |
| 15 | 952 | 957 | 30,50 | 106,0 | 0,00 | 70,62 | - | - | 0,00 | 0,00 | - |
| 16 | 678 | 687 | 34,24 | 106,0 | 0,00 | 67,73 | - | - | 0,00 | 0,00 | - |
| 17 | 1.363 | 1.368 | 26,31 | 106,0 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 18 | 9.850 | 9.850 | 1,42 | 104,5 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 19 | 9.507 | 9.507 | 1,82 | 104,5 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 2 | 6.942 | 6.942 | 5,46 | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| 20 | 9.227 | 9.227 | 2,16 | 104,5 | 0,00 | 90,30 | - | - | 0,00 | 0,00 | - |
| 21 | 9.239 | 9.239 | 2,14 | 104,5 | 0,00 | 90,31 | - | - | 0,00 | 0,00 | - |
| 22 | 9.152 | 9.152 | 2,25 | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 23 | 8.339 | 8.339 | 3,31 | 104,5 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 24 | 8.021 | 8.021 | 3,75 | 104,5 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 25 | 6.995 | 6.996 | 5,32 | 104,5 | 0,00 | 87,90 | - | - | 0,00 | 0,00 | - |
| 26 | 6.419 | 6.419 | 6,32 | 104,5 | 0,00 | 87,15 | - | - | 0,00 | 0,00 | - |
| 27 | 6.026 | 6.026 | 7,06 | 104,5 | 0,00 | 86,60 | - | - | 0,00 | 0,00 | - |
| 28 | 3.449 | 3.450 | 13,71 | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 29 | 2.785 | 2.786 | 16,26 | 104,5 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 3 | 6.656 | 6.656 | 6,00 | 106,0 | 0,00 | 87,46 | - | - | 0,00 | 0,00 | - |
| 30 | 4.425 | 4.428 | 11,62 | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 31 | 8.707 | 8.708 | 3,85 | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 32 | 5.121 | 5.123 | 9,88 | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 33 | 5.611 | 5.613 | 8,82 | 106,0 | 0,00 | 85,98 | - | - | 0,00 | 0,00 | - |
| 34 | 5.961 | 5.963 | 8,13 | 106,0 | 0,00 | 86,51 | - | - | 0,00 | 0,00 | - |
| 35 | 8.771 | 8.772 | 3,76 | 106,0 | 0,00 | 89,86 | - | - | 0,00 | 0,00 | - |
| 36 | 484 | 505 | 36,06 | 104,5 | 0,00 | 65,06 | - | - | 0,00 | 0,00 | - |
| 37 | 8.821 | 8.822 | 2,23 | 104,5 | 0,00 | 89,91 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 8.933 | 8.934 | 2,09 | 104,5 | 0,00 | 90,02 | - | - | 0,00 | 0,00 | - |
| 39 | 8.560 | 8.561 | 2,56 | 104,5 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 4 | 5.237 | 5.238 | 9,07 | 106,0 | 0,00 | 85,38 | - | - | 0,00 | 0,00 | - |
| 40 | 8.516 | 8.517 | 2,62 | 104,5 | 0,00 | 89,61 | - | - | 0,00 | 0,00 | - |
| 5 | 4.939 | 4.940 | 9,83 | 106,0 | 0,00 | 84,88 | - | - | 0,00 | 0,00 | - |
| 6 | 4.925 | 4.926 | 9,86 | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 7 | 3.191 | 3.193 | 15,47 | 106,0 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 8 | 2.840 | 2.841 | 17,04 | 106,0 | 0,00 | 80,07 | - | - | 0,00 | 0,00 | - |
| 9 | 2.931 | 2.933 | 16,61 | 106,0 | 0,00 | 80,35 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,53 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AO Noise sensitive point: User defined (43)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.283 | 7.284 | 4,85 | 106,0 | 0,00 | 88,25 | - | - | 0,00 | 0,00 | - |
| 10 | 1.265 | 1.270 | 27,20 | 106,0 | 0,00 | 73,07 | - | - | 0,00 | 0,00 | - |
| 11 | 924 | 930 | 30,83 | 106,0 | 0,00 | 70,37 | - | - | 0,00 | 0,00 | - |
| 12 | 711 | 719 | 33,73 | 106,0 | 0,00 | 68,13 | - | - | 0,00 | 0,00 | - |
| 13 | 1.300 | 1.305 | 26,88 | 106,0 | 0,00 | 73,31 | - | - | 0,00 | 0,00 | - |
| 14 | 887 | 893 | 31,29 | 106,0 | 0,00 | 70,02 | - | - | 0,00 | 0,00 | - |
| 15 | 984 | 990 | 30,12 | 106,0 | 0,00 | 70,91 | - | - | 0,00 | 0,00 | - |
| 16 | 686 | 694 | 34,12 | 106,0 | 0,00 | 67,83 | - | - | 0,00 | 0,00 | - |
| 17 | 1.345 | 1.350 | 26,47 | 106,0 | 0,00 | 73,60 | - | - | 0,00 | 0,00 | - |
| 18 | 9.847 | 9.847 | 1,42 | 104,5 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 19 | 9.504 | 9.505 | 1,82 | 104,5 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 2 | 6.949 | 6.950 | 5,45 | 106,0 | 0,00 | 87,84 | - | - | 0,00 | 0,00 | - |
| 20 | 9.225 | 9.225 | 2,16 | 104,5 | 0,00 | 90,30 | - | - | 0,00 | 0,00 | - |
| 21 | 9.235 | 9.235 | 2,15 | 104,5 | 0,00 | 90,31 | - | - | 0,00 | 0,00 | - |
| 22 | 9.147 | 9.147 | 2,26 | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 23 | 8.333 | 8.333 | 3,32 | 104,5 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 24 | 8.013 | 8.013 | 3,76 | 104,5 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 25 | 6.985 | 6.986 | 5,34 | 104,5 | 0,00 | 87,88 | - | - | 0,00 | 0,00 | - |
| 26 | 6.410 | 6.410 | 6,34 | 104,5 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 27 | 6.033 | 6.033 | 7,05 | 104,5 | 0,00 | 86,61 | - | - | 0,00 | 0,00 | - |
| 28 | 3.453 | 3.453 | 13,70 | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 29 | 2.782 | 2.783 | 16,28 | 104,5 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 3 | 6.662 | 6.662 | 5,99 | 106,0 | 0,00 | 87,47 | - | - | 0,00 | 0,00 | - |
| 30 | 4.410 | 4.412 | 11,66 | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 31 | 8.707 | 8.708 | 3,84 | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 32 | 5.118 | 5.120 | 9,89 | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 33 | 5.611 | 5.612 | 8,82 | 106,0 | 0,00 | 85,98 | - | - | 0,00 | 0,00 | - |
| 34 | 5.958 | 5.960 | 8,13 | 106,0 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 35 | 8.763 | 8.764 | 3,77 | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 36 | 451 | 473 | 36,74 | 104,5 | 0,00 | 64,50 | - | - | 0,00 | 0,00 | - |
| 37 | 8.817 | 8.818 | 2,23 | 104,5 | 0,00 | 89,91 | - | - | 0,00 | 0,00 | - |
| 38 | 8.931 | 8.932 | 2,09 | 104,5 | 0,00 | 90,02 | - | - | 0,00 | 0,00 | - |
| 39 | 8.559 | 8.560 | 2,56 | 104,5 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 4 | 5.224 | 5.225 | 9,10 | 106,0 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 40 | 8.514 | 8.515 | 2,62 | 104,5 | 0,00 | 89,60 | - | - | 0,00 | 0,00 | - |
| 5 | 4.924 | 4.925 | 9,87 | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 6 | 4.913 | 4.914 | 9,90 | 106,0 | 0,00 | 84,83 | - | - | 0,00 | 0,00 | - |
| 7 | 3.191 | 3.193 | 15,47 | 106,0 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 8 | 2.842 | 2.844 | 17,02 | 106,0 | 0,00 | 80,08 | - | - | 0,00 | 0,00 | - |
| 9 | 2.938 | 2.939 | 16,58 | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| Sum | | | 41,77 | | | | | | | | |

- Data undefined due to calculation with octave data

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AP Noise sensitive point: User defined (48)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.454 | 1.458 | 25,54 | 106,0 | 0,00 | 74,28 | - | - | 0,00 | 0,00 | - |
| 10 | 6.267 | 6.268 | 6,77 | 106,0 | 0,00 | 86,94 | - | - | 0,00 | 0,00 | - |
| 11 | 6.001 | 6.002 | 7,32 | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 12 | 5.955 | 5.956 | 7,42 | 106,0 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 13 | 6.679 | 6.680 | 5,95 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 14 | 6.454 | 6.455 | 6,39 | 106,0 | 0,00 | 87,20 | - | - | 0,00 | 0,00 | - |
| 15 | 6.564 | 6.565 | 6,17 | 106,0 | 0,00 | 87,34 | - | - | 0,00 | 0,00 | - |
| 16 | 7.149 | 7.150 | 5,09 | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 17 | 7.901 | 7.902 | 3,82 | 106,0 | 0,00 | 88,96 | - | - | 0,00 | 0,00 | - |
| 18 | 4.848 | 4.848 | 9,64 | 104,5 | 0,00 | 84,71 | - | - | 0,00 | 0,00 | - |
| 19 | 4.492 | 4.493 | 10,54 | 104,5 | 0,00 | 84,05 | - | - | 0,00 | 0,00 | - |
| 2 | 958 | 964 | 30,42 | 106,0 | 0,00 | 70,68 | - | - | 0,00 | 0,00 | - |
| 20 | 4.199 | 4.200 | 11,35 | 104,5 | 0,00 | 83,46 | - | - | 0,00 | 0,00 | - |
| 21 | 4.489 | 4.490 | 10,55 | 104,5 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 22 | 4.715 | 4.716 | 9,97 | 104,5 | 0,00 | 84,47 | - | - | 0,00 | 0,00 | - |
| 23 | 4.314 | 4.315 | 11,03 | 104,5 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 24 | 4.426 | 4.427 | 10,72 | 104,5 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 25 | 4.412 | 4.413 | 10,76 | 104,5 | 0,00 | 83,90 | - | - | 0,00 | 0,00 | - |
| 26 | 3.977 | 3.978 | 12,00 | 104,5 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 27 | 1.012 | 1.015 | 28,36 | 104,5 | 0,00 | 71,13 | - | - | 0,00 | 0,00 | - |
| 28 | 3.359 | 3.360 | 14,03 | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 29 | 4.272 | 4.273 | 11,15 | 104,5 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 3 | 1.159 | 1.164 | 28,23 | 106,0 | 0,00 | 72,32 | - | - | 0,00 | 0,00 | - |
| 30 | 4.886 | 4.889 | 10,43 | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 31 | 3.354 | 3.357 | 15,23 | 106,0 | 0,00 | 81,52 | - | - | 0,00 | 0,00 | - |
| 32 | 2.986 | 2.990 | 16,73 | 106,0 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 33 | 2.497 | 2.502 | 19,01 | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 34 | 2.873 | 2.877 | 17,23 | 106,0 | 0,00 | 80,18 | - | - | 0,00 | 0,00 | - |
| 35 | 4.965 | 4.967 | 10,24 | 106,0 | 0,00 | 84,92 | - | - | 0,00 | 0,00 | - |
| 36 | 6.667 | 6.669 | 5,38 | 104,5 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 37 | 4.111 | 4.114 | 11,07 | 104,5 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 38 | 3.861 | 3.864 | 11,89 | 104,5 | 0,00 | 82,74 | - | - | 0,00 | 0,00 | - |
| 39 | 3.449 | 3.452 | 13,36 | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 4 | 4.656 | 4.658 | 10,59 | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 40 | 3.738 | 3.741 | 12,32 | 104,5 | 0,00 | 82,46 | - | - | 0,00 | 0,00 | - |
| 5 | 4.825 | 4.826 | 10,13 | 106,0 | 0,00 | 84,67 | - | - | 0,00 | 0,00 | - |
| 6 | 4.440 | 4.442 | 11,20 | 106,0 | 0,00 | 83,95 | - | - | 0,00 | 0,00 | - |
| 7 | 3.746 | 3.747 | 13,39 | 106,0 | 0,00 | 82,47 | - | - | 0,00 | 0,00 | - |
| 8 | 3.921 | 3.922 | 12,80 | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 9 | 3.707 | 3.709 | 13,52 | 106,0 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,31 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AQ Noise sensitive point: User defined (49)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.417 | 1.421 | 25,85 | 106,0 | 0,00 | 74,05 | - | - | 0,00 | 0,00 | - |
| 10 | 6.256 | 6.258 | 6,79 | 106,0 | 0,00 | 86,93 | - | - | 0,00 | 0,00 | - |
| 11 | 5.994 | 5.995 | 7,33 | 106,0 | 0,00 | 86,56 | - | - | 0,00 | 0,00 | - |
| 12 | 5.950 | 5.952 | 7,43 | 106,0 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 13 | 6.669 | 6.670 | 5,97 | 106,0 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 14 | 6.446 | 6.447 | 6,40 | 106,0 | 0,00 | 87,19 | - | - | 0,00 | 0,00 | - |
| 15 | 6.568 | 6.569 | 6,17 | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 16 | 7.149 | 7.150 | 5,09 | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 17 | 7.898 | 7.899 | 3,83 | 106,0 | 0,00 | 88,95 | - | - | 0,00 | 0,00 | - |
| 18 | 4.812 | 4.812 | 9,72 | 104,5 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 19 | 4.456 | 4.457 | 10,64 | 104,5 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| 2 | 919 | 926 | 30,88 | 106,0 | 0,00 | 70,33 | - | - | 0,00 | 0,00 | - |
| 20 | 4.162 | 4.163 | 11,46 | 104,5 | 0,00 | 83,39 | - | - | 0,00 | 0,00 | - |
| 21 | 4.451 | 4.452 | 10,66 | 104,5 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 22 | 4.676 | 4.676 | 10,07 | 104,5 | 0,00 | 84,40 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 4.273 | 4.274 | 11,14 | 104,5 | 0,00 | 83,62 | - | - | 0,00 | 0,00 | - |
| 24 | 4.384 | 4.385 | 10,84 | 104,5 | 0,00 | 83,84 | - | - | 0,00 | 0,00 | - |
| 25 | 4.371 | 4.372 | 10,87 | 104,5 | 0,00 | 83,81 | - | - | 0,00 | 0,00 | - |
| 26 | 3.937 | 3.938 | 12,13 | 104,5 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 27 | 977 | 980 | 28,76 | 104,5 | 0,00 | 70,83 | - | - | 0,00 | 0,00 | - |
| 28 | 3.346 | 3.347 | 14,08 | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 29 | 4.258 | 4.259 | 11,19 | 104,5 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 3 | 1.117 | 1.123 | 28,65 | 106,0 | 0,00 | 72,01 | - | - | 0,00 | 0,00 | - |
| 30 | 4.856 | 4.859 | 10,50 | 106,0 | 0,00 | 84,73 | - | - | 0,00 | 0,00 | - |
| 31 | 3.319 | 3.322 | 15,37 | 106,0 | 0,00 | 81,43 | - | - | 0,00 | 0,00 | - |
| 32 | 2.953 | 2.957 | 16,87 | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| 33 | 2.461 | 2.465 | 19,20 | 106,0 | 0,00 | 78,84 | - | - | 0,00 | 0,00 | - |
| 34 | 2.834 | 2.838 | 17,40 | 106,0 | 0,00 | 80,06 | - | - | 0,00 | 0,00 | - |
| 35 | 4.924 | 4.926 | 10,34 | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 36 | 6.662 | 6.664 | 5,39 | 104,5 | 0,00 | 87,47 | - | - | 0,00 | 0,00 | - |
| 37 | 4.072 | 4.075 | 11,20 | 104,5 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 38 | 3.824 | 3.827 | 12,02 | 104,5 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 39 | 3.411 | 3.414 | 13,50 | 104,5 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 4 | 4.622 | 4.623 | 10,68 | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 40 | 3.699 | 3.701 | 12,45 | 104,5 | 0,00 | 82,37 | - | - | 0,00 | 0,00 | - |
| 5 | 4.792 | 4.793 | 10,22 | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 6 | 4.407 | 4.409 | 11,30 | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 7 | 3.731 | 3.733 | 13,44 | 106,0 | 0,00 | 82,44 | - | - | 0,00 | 0,00 | - |
| 8 | 3.910 | 3.912 | 12,84 | 106,0 | 0,00 | 82,85 | - | - | 0,00 | 0,00 | - |
| 9 | 3.700 | 3.701 | 13,55 | 106,0 | 0,00 | 82,37 | - | - | 0,00 | 0,00 | - |
| Sum | | | 35,68 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AR Noise sensitive point: User defined (50)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.071 | 1.077 | 29,14 | 106,0 | 0,00 | 71,64 | - | - | 0,00 | 0,00 | - |
| 10 | 6.679 | 6.680 | 5,95 | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 11 | 6.438 | 6.439 | 6,42 | 106,0 | 0,00 | 87,18 | - | - | 0,00 | 0,00 | - |
| 12 | 6.409 | 6.410 | 6,48 | 106,0 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 13 | 7.089 | 7.090 | 5,19 | 106,0 | 0,00 | 88,01 | - | - | 0,00 | 0,00 | - |
| 14 | 6.884 | 6.885 | 5,57 | 106,0 | 0,00 | 87,76 | - | - | 0,00 | 0,00 | - |
| 15 | 7.064 | 7.065 | 5,24 | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 16 | 7.629 | 7.630 | 4,27 | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 17 | 8.359 | 8.360 | 3,12 | 106,0 | 0,00 | 89,44 | - | - | 0,00 | 0,00 | - |
| 18 | 4.401 | 4.402 | 10,79 | 104,5 | 0,00 | 83,87 | - | - | 0,00 | 0,00 | - |
| 19 | 4.054 | 4.054 | 11,78 | 104,5 | 0,00 | 83,16 | - | - | 0,00 | 0,00 | - |
| 2 | 656 | 665 | 34,59 | 106,0 | 0,00 | 67,46 | - | - | 0,00 | 0,00 | - |
| 20 | 3.767 | 3.768 | 12,66 | 104,5 | 0,00 | 82,52 | - | - | 0,00 | 0,00 | - |
| 21 | 4.082 | 4.083 | 11,69 | 104,5 | 0,00 | 83,22 | - | - | 0,00 | 0,00 | - |
| 22 | 4.339 | 4.339 | 10,96 | 104,5 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 23 | 4.009 | 4.010 | 11,91 | 104,5 | 0,00 | 83,06 | - | - | 0,00 | 0,00 | - |
| 24 | 4.172 | 4.173 | 11,43 | 104,5 | 0,00 | 83,41 | - | - | 0,00 | 0,00 | - |
| 25 | 4.294 | 4.295 | 11,09 | 104,5 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 26 | 3.920 | 3.921 | 12,18 | 104,5 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 27 | 1.196 | 1.198 | 26,45 | 104,5 | 0,00 | 72,57 | - | - | 0,00 | 0,00 | - |
| 28 | 3.754 | 3.755 | 12,70 | 104,5 | 0,00 | 82,49 | - | - | 0,00 | 0,00 | - |
| 29 | 4.653 | 4.654 | 10,12 | 104,5 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 3 | 1.013 | 1.019 | 29,79 | 106,0 | 0,00 | 71,16 | - | - | 0,00 | 0,00 | - |
| 30 | 5.075 | 5.077 | 9,99 | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 31 | 2.909 | 2.913 | 17,07 | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 32 | 3.135 | 3.139 | 16,10 | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 33 | 2.583 | 2.587 | 18,59 | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 34 | 2.876 | 2.880 | 17,21 | 106,0 | 0,00 | 80,19 | - | - | 0,00 | 0,00 | - |
| 35 | 4.656 | 4.658 | 11,00 | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 36 | 7.116 | 7.118 | 4,64 | 104,5 | 0,00 | 88,05 | - | - | 0,00 | 0,00 | - |
| 37 | 3.724 | 3.726 | 12,36 | 104,5 | 0,00 | 82,43 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 3.435 | 3.438 | 13,41 | 104,5 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 39 | 3.035 | 3.038 | 15,02 | 104,5 | 0,00 | 80,65 | - | - | 0,00 | 0,00 | - |
| 4 | 4.758 | 4.760 | 10,31 | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 40 | 3.358 | 3.361 | 13,71 | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 5 | 4.960 | 4.962 | 9,77 | 106,0 | 0,00 | 84,91 | - | - | 0,00 | 0,00 | - |
| 6 | 4.577 | 4.579 | 10,81 | 106,0 | 0,00 | 84,21 | - | - | 0,00 | 0,00 | - |
| 7 | 4.128 | 4.129 | 12,14 | 106,0 | 0,00 | 83,32 | - | - | 0,00 | 0,00 | - |
| 8 | 4.336 | 4.337 | 11,51 | 106,0 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 9 | 4.145 | 4.147 | 12,09 | 106,0 | 0,00 | 83,35 | - | - | 0,00 | 0,00 | - |
| Sum | | | 37,56 | | | | | | | | |

- Data undefined due to calculation with octave data

## Noise sensitive area: AS Noise sensitive point: User defined (51)

Wind speed: 10,0 m/s

WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.037 | 1.043 | 29,52 | 106,0 | 0,00 | 71,36 | - | - | 0,00 | 0,00 | - |
| 10 | 6.640 | 6.641 | 6,03 | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 11 | 6.401 | 6.402 | 6,49 | 106,0 | 0,00 | 87,13 | - | - | 0,00 | 0,00 | - |
| 12 | 6.374 | 6.375 | 6,55 | 106,0 | 0,00 | 87,09 | - | - | 0,00 | 0,00 | - |
| 13 | 7.049 | 7.050 | 5,27 | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 14 | 6.846 | 6.848 | 5,64 | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 15 | 7.037 | 7.038 | 5,29 | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 16 | 7.599 | 7.600 | 4,32 | 106,0 | 0,00 | 88,62 | - | - | 0,00 | 0,00 | - |
| 17 | 8.325 | 8.326 | 3,17 | 106,0 | 0,00 | 89,41 | - | - | 0,00 | 0,00 | - |
| 18 | 4.380 | 4.381 | 10,85 | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 19 | 4.031 | 4.032 | 11,84 | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 2 | 611 | 620 | 35,36 | 106,0 | 0,00 | 66,85 | - | - | 0,00 | 0,00 | - |
| 20 | 3.744 | 3.744 | 12,73 | 104,5 | 0,00 | 82,47 | - | - | 0,00 | 0,00 | - |
| 21 | 4.055 | 4.056 | 11,77 | 104,5 | 0,00 | 83,16 | - | - | 0,00 | 0,00 | - |
| 22 | 4.308 | 4.308 | 11,05 | 104,5 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 23 | 3.971 | 3.972 | 12,02 | 104,5 | 0,00 | 82,98 | - | - | 0,00 | 0,00 | - |
| 24 | 4.130 | 4.131 | 11,55 | 104,5 | 0,00 | 83,32 | - | - | 0,00 | 0,00 | - |
| 25 | 4.245 | 4.246 | 11,22 | 104,5 | 0,00 | 83,56 | - | - | 0,00 | 0,00 | - |
| 26 | 3.869 | 3.870 | 12,33 | 104,5 | 0,00 | 82,75 | - | - | 0,00 | 0,00 | - |
| 27 | 1.148 | 1.150 | 26,93 | 104,5 | 0,00 | 72,22 | - | - | 0,00 | 0,00 | - |
| 28 | 3.714 | 3.715 | 12,83 | 104,5 | 0,00 | 82,40 | - | - | 0,00 | 0,00 | - |
| 29 | 4.612 | 4.613 | 10,23 | 104,5 | 0,00 | 84,28 | - | - | 0,00 | 0,00 | - |
| 3 | 962 | 968 | 30,37 | 106,0 | 0,00 | 70,72 | - | - | 0,00 | 0,00 | - |
| 30 | 5.024 | 5.027 | 10,11 | 106,0 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 31 | 2.887 | 2.891 | 17,16 | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 32 | 3.084 | 3.087 | 16,31 | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 33 | 2.531 | 2.535 | 18,84 | 106,0 | 0,00 | 79,08 | - | - | 0,00 | 0,00 | - |
| 34 | 2.824 | 2.828 | 17,45 | 106,0 | 0,00 | 80,03 | - | - | 0,00 | 0,00 | - |
| 35 | 4.618 | 4.621 | 11,09 | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 36 | 7.081 | 7.083 | 4,69 | 104,5 | 0,00 | 88,00 | - | - | 0,00 | 0,00 | - |
| 37 | 3.694 | 3.697 | 12,47 | 104,5 | 0,00 | 82,36 | - | - | 0,00 | 0,00 | - |
| 38 | 3.410 | 3.413 | 13,51 | 104,5 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| 39 | 3.008 | 3.012 | 15,13 | 104,5 | 0,00 | 80,58 | - | - | 0,00 | 0,00 | - |
| 4 | 4.707 | 4.708 | 10,45 | 106,0 | 0,00 | 84,46 | - | - | 0,00 | 0,00 | - |
| 40 | 3.328 | 3.331 | 13,83 | 104,5 | 0,00 | 81,45 | - | - | 0,00 | 0,00 | - |
| 5 | 4.909 | 4.910 | 9,91 | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 6 | 4.526 | 4.527 | 10,95 | 106,0 | 0,00 | 84,12 | - | - | 0,00 | 0,00 | - |
| 7 | 4.087 | 4.088 | 12,27 | 106,0 | 0,00 | 83,23 | - | - | 0,00 | 0,00 | - |
| 8 | 4.297 | 4.299 | 11,62 | 106,0 | 0,00 | 83,67 | - | - | 0,00 | 0,00 | - |
| 9 | 4.109 | 4.111 | 12,20 | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| Sum | | | 38,15 | | | | | | | | |

- Data undefined due to calculation with octave data

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

### Noise sensitive area: AT Noise sensitive point: User defined (52)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.197 | 1.201 | 27,86 | 106,0 | 0,00 | 72,59 | - | - | 0,00 | 0,00 | - |
| 10 | 5.548 | 5.549 | 8,33 | 106,0 | 0,00 | 85,88 | - | - | 0,00 | 0,00 | - |
| 11 | 5.379 | 5.380 | 8,73 | 106,0 | 0,00 | 85,62 | - | - | 0,00 | 0,00 | - |
| 12 | 5.408 | 5.409 | 8,66 | 106,0 | 0,00 | 85,66 | - | - | 0,00 | 0,00 | - |
| 13 | 5.948 | 5.949 | 7,43 | 106,0 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 14 | 5.799 | 5.800 | 7,76 | 106,0 | 0,00 | 86,27 | - | - | 0,00 | 0,00 | - |
| 15 | 6.265 | 6.266 | 6,77 | 106,0 | 0,00 | 86,94 | - | - | 0,00 | 0,00 | - |
| 16 | 6.718 | 6.719 | 5,88 | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 17 | 7.347 | 7.347 | 4,74 | 106,0 | 0,00 | 88,32 | - | - | 0,00 | 0,00 | - |
| 18 | 4.246 | 4.247 | 11,22 | 104,5 | 0,00 | 83,56 | - | - | 0,00 | 0,00 | - |
| 19 | 3.878 | 3.878 | 12,31 | 104,5 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 2 | 951 | 957 | 30,50 | 106,0 | 0,00 | 70,62 | - | - | 0,00 | 0,00 | - |
| 20 | 3.573 | 3.574 | 13,29 | 104,5 | 0,00 | 82,06 | - | - | 0,00 | 0,00 | - |
| 21 | 3.762 | 3.762 | 12,67 | 104,5 | 0,00 | 82,51 | - | - | 0,00 | 0,00 | - |
| 22 | 3.886 | 3.887 | 12,28 | 104,5 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 23 | 3.324 | 3.325 | 14,16 | 104,5 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 24 | 3.333 | 3.334 | 14,12 | 104,5 | 0,00 | 81,46 | - | - | 0,00 | 0,00 | - |
| 25 | 3.149 | 3.150 | 14,80 | 104,5 | 0,00 | 80,97 | - | - | 0,00 | 0,00 | - |
| 26 | 2.678 | 2.680 | 16,72 | 104,5 | 0,00 | 79,56 | - | - | 0,00 | 0,00 | - |
| 27 | 353 | 362 | 39,51 | 104,5 | 0,00 | 62,17 | - | - | 0,00 | 0,00 | - |
| 28 | 2.652 | 2.653 | 16,84 | 104,5 | 0,00 | 79,48 | - | - | 0,00 | 0,00 | - |
| 29 | 3.485 | 3.486 | 13,59 | 104,5 | 0,00 | 81,85 | - | - | 0,00 | 0,00 | - |
| 3 | 585 | 595 | 35,80 | 106,0 | 0,00 | 66,49 | - | - | 0,00 | 0,00 | - |
| 30 | 3.684 | 3.687 | 14,01 | 106,0 | 0,00 | 82,33 | - | - | 0,00 | 0,00 | - |
| 31 | 2.841 | 2.845 | 17,37 | 106,0 | 0,00 | 80,08 | - | - | 0,00 | 0,00 | - |
| 32 | 1.740 | 1.747 | 23,48 | 106,0 | 0,00 | 75,85 | - | - | 0,00 | 0,00 | - |
| 33 | 1.197 | 1.207 | 27,88 | 106,0 | 0,00 | 72,63 | - | - | 0,00 | 0,00 | - |
| 34 | 1.560 | 1.567 | 24,79 | 106,0 | 0,00 | 74,90 | - | - | 0,00 | 0,00 | - |
| 35 | 3.964 | 3.966 | 13,06 | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 36 | 6.090 | 6.092 | 6,41 | 104,5 | 0,00 | 86,70 | - | - | 0,00 | 0,00 | - |
| 37 | 3.341 | 3.344 | 13,77 | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 38 | 3.234 | 3.237 | 14,20 | 104,5 | 0,00 | 81,20 | - | - | 0,00 | 0,00 | - |
| 39 | 2.810 | 2.814 | 16,00 | 104,5 | 0,00 | 79,99 | - | - | 0,00 | 0,00 | - |
| 4 | 3.373 | 3.375 | 14,72 | 106,0 | 0,00 | 81,56 | - | - | 0,00 | 0,00 | - |
| 40 | 2.967 | 2.970 | 15,31 | 104,5 | 0,00 | 80,46 | - | - | 0,00 | 0,00 | - |
| 5 | 3.567 | 3.568 | 14,01 | 106,0 | 0,00 | 82,05 | - | - | 0,00 | 0,00 | - |
| 6 | 3.183 | 3.185 | 15,50 | 106,0 | 0,00 | 81,06 | - | - | 0,00 | 0,00 | - |
| 7 | 2.978 | 2.980 | 16,40 | 106,0 | 0,00 | 80,49 | - | - | 0,00 | 0,00 | - |
| 8 | 3.263 | 3.265 | 15,16 | 106,0 | 0,00 | 81,28 | - | - | 0,00 | 0,00 | - |
| 9 | 3.154 | 3.155 | 15,63 | 106,0 | 0,00 | 80,98 | - | - | 0,00 | 0,00 | - |
| Sum | | | 42,14 | | | | | | | | |

- Data undefined due to calculation with octave data

### Noise sensitive area: AU Noise sensitive point: User defined (53)

Wind speed: 10,0 m/s
WTG

| No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 681 | 690 | 34,19 | 106,0 | 0,00 | 67,78 | - | - | 0,00 | 0,00 | - |
| 10 | 6.633 | 6.634 | 6,04 | 106,0 | 0,00 | 87,43 | - | - | 0,00 | 0,00 | - |
| 11 | 6.421 | 6.422 | 6,45 | 106,0 | 0,00 | 87,15 | - | - | 0,00 | 0,00 | - |
| 12 | 6.414 | 6.415 | 6,47 | 106,0 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 13 | 7.039 | 7.040 | 5,28 | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 14 | 6.858 | 6.859 | 5,62 | 106,0 | 0,00 | 87,72 | - | - | 0,00 | 0,00 | - |
| 15 | 7.141 | 7.142 | 5,10 | 106,0 | 0,00 | 88,08 | - | - | 0,00 | 0,00 | - |
| 16 | 7.671 | 7.672 | 4,20 | 106,0 | 0,00 | 88,70 | - | - | 0,00 | 0,00 | - |
| 17 | 8.365 | 8.366 | 3,11 | 106,0 | 0,00 | 89,45 | - | - | 0,00 | 0,00 | - |
| 18 | 4.048 | 4.048 | 11,79 | 104,5 | 0,00 | 83,15 | - | - | 0,00 | 0,00 | - |
| 19 | 3.695 | 3.696 | 12,89 | 104,5 | 0,00 | 82,35 | - | - | 0,00 | 0,00 | - |
| 2 | 286 | 306 | 42,73 | 106,0 | 0,00 | 60,70 | - | - | 0,00 | 0,00 | - |
| 20 | 3.405 | 3.405 | 13,87 | 104,5 | 0,00 | 81,64 | - | - | 0,00 | 0,00 | - |
| 21 | 3.708 | 3.709 | 12,85 | 104,5 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 22 | 3.955 | 3.956 | 12,07 | 104,5 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |

To be continued on next page...

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# DECIBEL - Detailed results

## Calculation: Foninës VENoise calculation model: ISO 9613-2 General 10,0 m/s

...continued from previous page

| WTG No. | Distance [m] | Sound distance [m] | Calculated [dB(A)] | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 3.615 | 3.616 | 13,15 | 104,5 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| 24 | 3.779 | 3.780 | 12,62 | 104,5 | 0,00 | 82,55 | - | - | 0,00 | 0,00 | - |
| 25 | 3.927 | 3.927 | 12,16 | 104,5 | 0,00 | 82,88 | - | - | 0,00 | 0,00 | - |
| 26 | 3.574 | 3.575 | 13,29 | 104,5 | 0,00 | 82,07 | - | - | 0,00 | 0,00 | - |
| 27 | 1.071 | 1.074 | 27,71 | 104,5 | 0,00 | 71,62 | - | - | 0,00 | 0,00 | - |
| 28 | 3.707 | 3.708 | 12,85 | 104,5 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 29 | 4.584 | 4.585 | 10,30 | 104,5 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 3 | 690 | 698 | 34,06 | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 30 | 4.849 | 4.852 | 10,52 | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 31 | 2.554 | 2.558 | 18,73 | 106,0 | 0,00 | 79,16 | - | - | 0,00 | 0,00 | - |
| 32 | 2.901 | 2.905 | 17,10 | 106,0 | 0,00 | 80,26 | - | - | 0,00 | 0,00 | - |
| 33 | 2.319 | 2.324 | 19,94 | 106,0 | 0,00 | 78,32 | - | - | 0,00 | 0,00 | - |
| 34 | 2.564 | 2.568 | 18,68 | 106,0 | 0,00 | 79,19 | - | - | 0,00 | 0,00 | - |
| 35 | 4.262 | 4.265 | 12,11 | 106,0 | 0,00 | 83,60 | - | - | 0,00 | 0,00 | - |
| 36 | 7.114 | 7.116 | 4,64 | 104,5 | 0,00 | 88,04 | - | - | 0,00 | 0,00 | - |
| 37 | 3.343 | 3.346 | 13,77 | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 38 | 3.069 | 3.072 | 14,87 | 104,5 | 0,00 | 80,75 | - | - | 0,00 | 0,00 | - |
| 39 | 2.663 | 2.666 | 16,70 | 104,5 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 4 | 4.483 | 4.484 | 11,08 | 106,0 | 0,00 | 84,03 | - | - | 0,00 | 0,00 | - |
| 40 | 2.975 | 2.978 | 15,28 | 104,5 | 0,00 | 80,48 | - | - | 0,00 | 0,00 | - |
| 5 | 4.702 | 4.704 | 10,46 | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 6 | 4.322 | 4.324 | 11,55 | 106,0 | 0,00 | 83,72 | - | - | 0,00 | 0,00 | - |
| 7 | 4.064 | 4.066 | 12,34 | 106,0 | 0,00 | 83,18 | - | - | 0,00 | 0,00 | - |
| 8 | 4.304 | 4.306 | 11,60 | 106,0 | 0,00 | 83,68 | - | - | 0,00 | 0,00 | - |
| 9 | 4.142 | 4.144 | 12,10 | 106,0 | 0,00 | 83,35 | - | - | 0,00 | 0,00 | - |
| Sum | | | 44,03 | | | | | | | | |

- Data undefined due to calculation with octave data

# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
10,0 m/s
Ground attenuation:
General, Ground factor: 0,8
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in NSA has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)
Octave data required
Frequency dependent air absorption

| 63 | 125 | 250 | 500 | 1.000 | 2.000 | 4.000 | 8.000 |
|---|---|---|---|---|---|---|---|
| [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] |
| 0,10 | 0,40 | 1,00 | 1,90 | 3,70 | 9,70 | 32,80 | 117,00 |

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

WTG: GE WIND ENERGY GE 2.5-120 2500 120.0 !O!
Noise: Level 0 - Calculated - NO - 05-2015

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Manufacturer | 2015.05.05 | EMD | 2016.12.01 13:44 |

Based on Document Noise_Emissions-NO_2.x-DFIG-120-xxHz_3MW_EN_r01.

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | Octave data 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Interpolated | 110,0 | 10,0 | 106,0 | No | 84,8 | 94,0 | 98,5 | 100,6 | 100,7 | 97,7 | 89,2 | 72,1 |

WTG: NORDEX N131/3000 3000 131.0 !O!
Noise: Mode 0 - 104.5 dB(A) - R00

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| NORDEX | 2013.12.03 | EMD | 2015.01.21 15:58 |

F008_246_A03_R00, 21.11.2013

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | | Octave data 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From other hub height | 80,0 | 10,0 | 104,5 | No | Generic data | 86,1 | 93,1 | 96,5 | 99,1 | 98,9 | 96,0 | 91,2 | 81,7 |
| From Windcat | 144,0 | 10,0 | 104,5 | No | Generic data | 86,1 | 93,1 | 96,5 | 99,1 | 98,9 | 96,0 | 91,2 | 81,7 |

WTG: GE WIND ENERGY 5.3-158 Thrust 700 5300 158.0 !O!
Noise: 5.3-158 NO

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Noise_Emission-NO_5.3-158-50Hz_IEC_EN_r01 | 2018.03.12 | EMD | 2019.02.06 10:21 |

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | | Octave data 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Interpolated | 149,0 | 10,0 | 106,0 | No | Generic data | 87,6 | 94,6 | 98,0 | 100,6 | 100,4 | 97,5 | 92,7 | 83,2 |

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# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

### Noise sensitive area: A Noise sensitive point: User defined (1)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: B Noise sensitive point: User defined (2)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: C Noise sensitive point: User defined (4)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: D Noise sensitive point: User defined (5)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: E Noise sensitive point: User defined (6)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: F Noise sensitive point: User defined (7)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: G Noise sensitive point: User defined (8)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: H Noise sensitive point: User defined (9)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: I Noise sensitive point: User defined (11)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: J Noise sensitive point: User defined (12)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: K Noise sensitive point: User defined (13)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: L Noise sensitive point: User defined (14)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: M Noise sensitive point: User defined (15)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: N Noise sensitive point: User defined (16)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: O Noise sensitive point: User defined (17)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: P Noise sensitive point: User defined (18)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: Q Noise sensitive point: User defined (19)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

### Noise sensitive area: R Noise sensitive point: User defined (20)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: S Noise sensitive point: User defined (21)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: T Noise sensitive point: User defined (22)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: U Noise sensitive point: User defined (23)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: V Noise sensitive point: User defined (24)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: W Noise sensitive point: User defined (25)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: X Noise sensitive point: User defined (26)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: Y Noise sensitive point: User defined (27)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: Z Noise sensitive point: User defined (28)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AA Noise sensitive point: User defined (29)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AB Noise sensitive point: User defined (30)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AC Noise sensitive point: User defined (31)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AD Noise sensitive point: User defined (32)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AE Noise sensitive point: User defined (33)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AF Noise sensitive point: User defined (34)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AG Noise sensitive point: User defined (35)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AH Noise sensitive point: User defined (36)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

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# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

### Noise sensitive area: AI Noise sensitive point: User defined (37)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AJ Noise sensitive point: User defined (38)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AK Noise sensitive point: User defined (39)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AL Noise sensitive point: User defined (40)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AM Noise sensitive point: User defined (41)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AN Noise sensitive point: User defined (42)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AO Noise sensitive point: User defined (43)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AP Noise sensitive point: User defined (48)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AQ Noise sensitive point: User defined (49)
Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

## Calculation: Foninës VE

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AR Noise sensitive point: User defined (50)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AS Noise sensitive point: User defined (51)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

### Noise sensitive area: AT Noise sensitive point: User defined (52)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

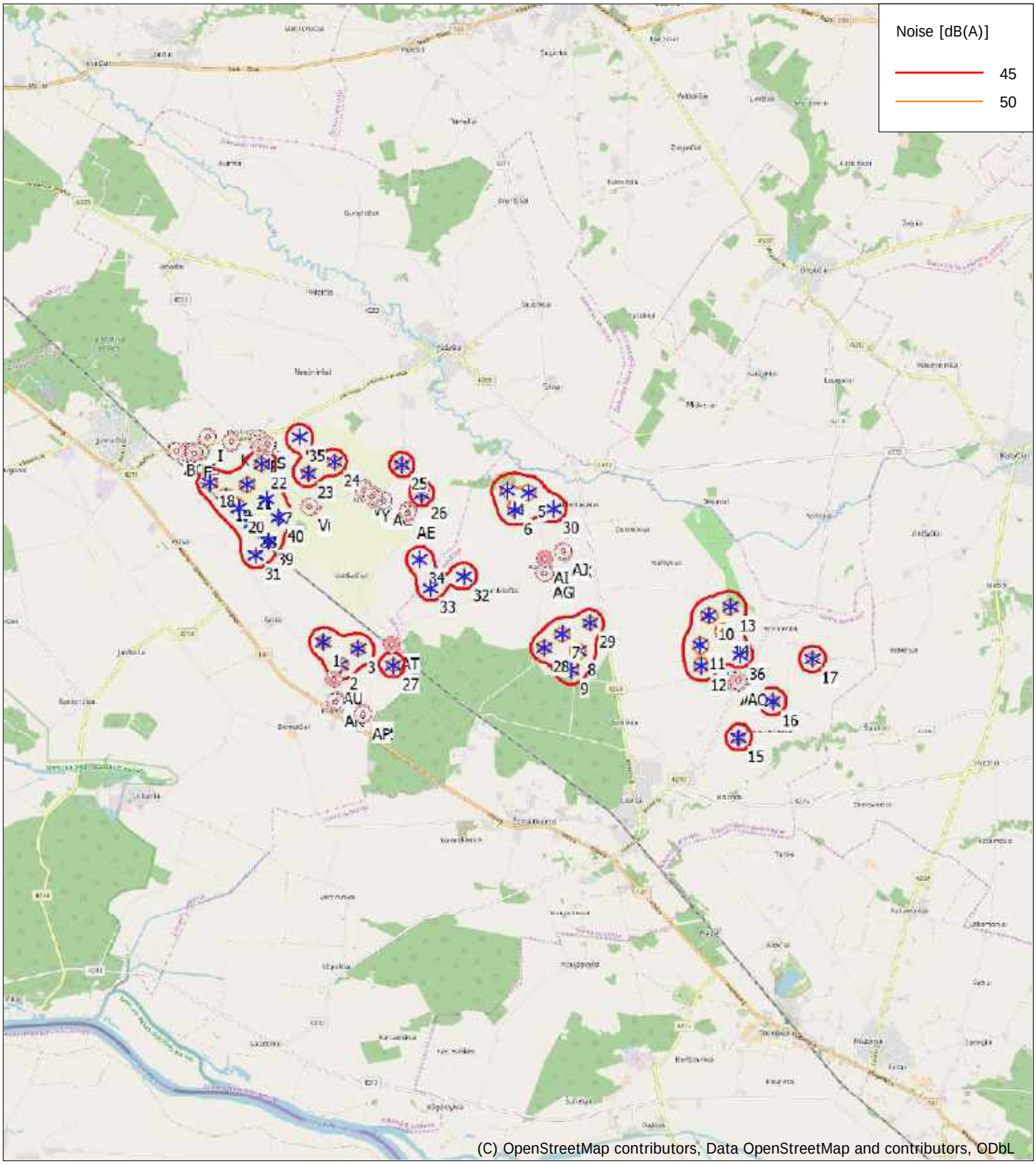
### Noise sensitive area: AU Noise sensitive point: User defined (53)

Predefined calculation standard:
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model

Noise demand: 45,0 dB(A)
No distance demand

# DECIBEL - Map 10,0 m/s

## Calculation: Foninës VE




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 353.094 North: 6.128.105

Existing WTG  Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

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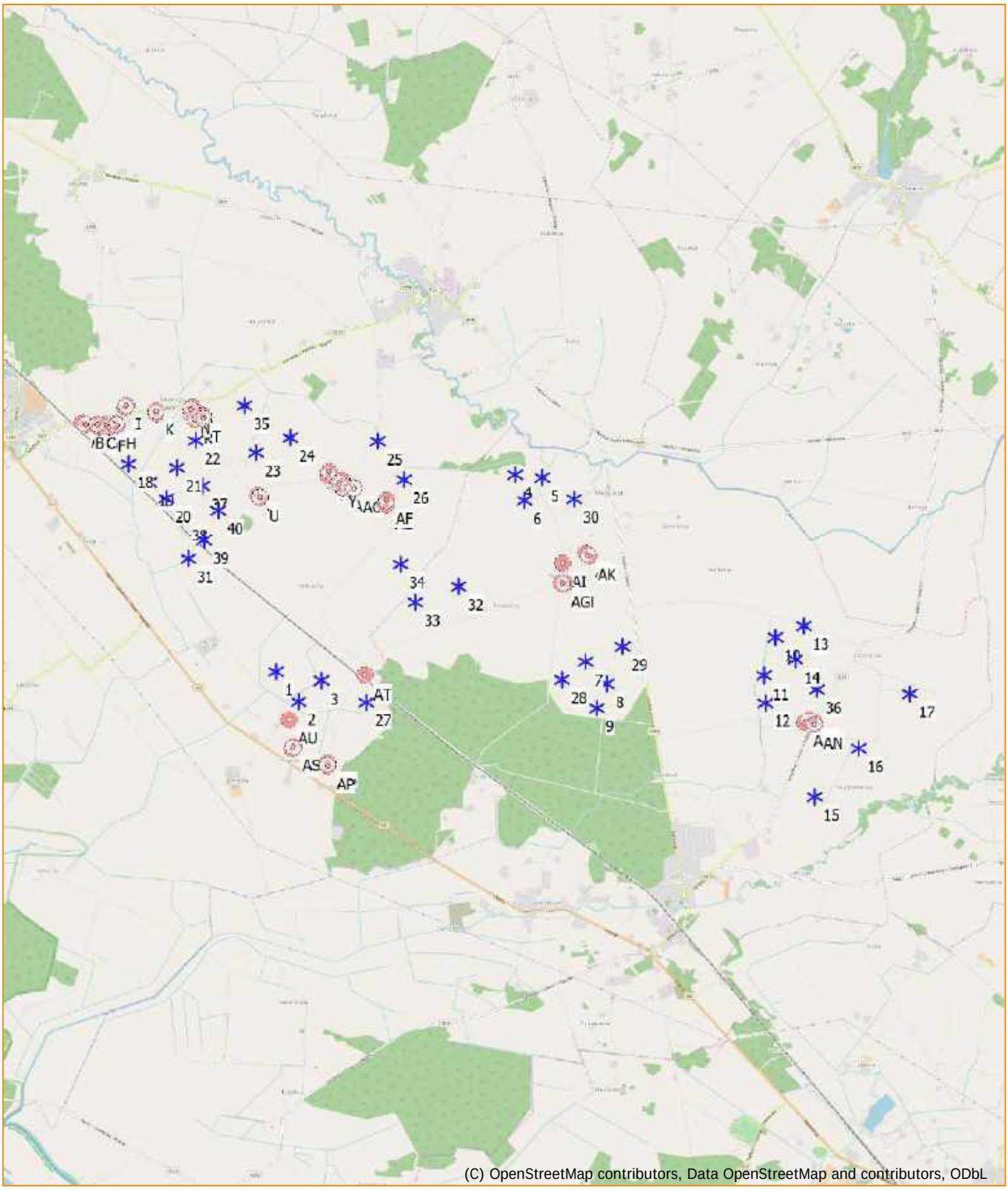
Calculated:
2021.12.06 11:35/3.5.552

# DECIBEL - Map 10,0 m/s

## Calculation: Foninës VE




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

Existing WTG  Noise sensitive area

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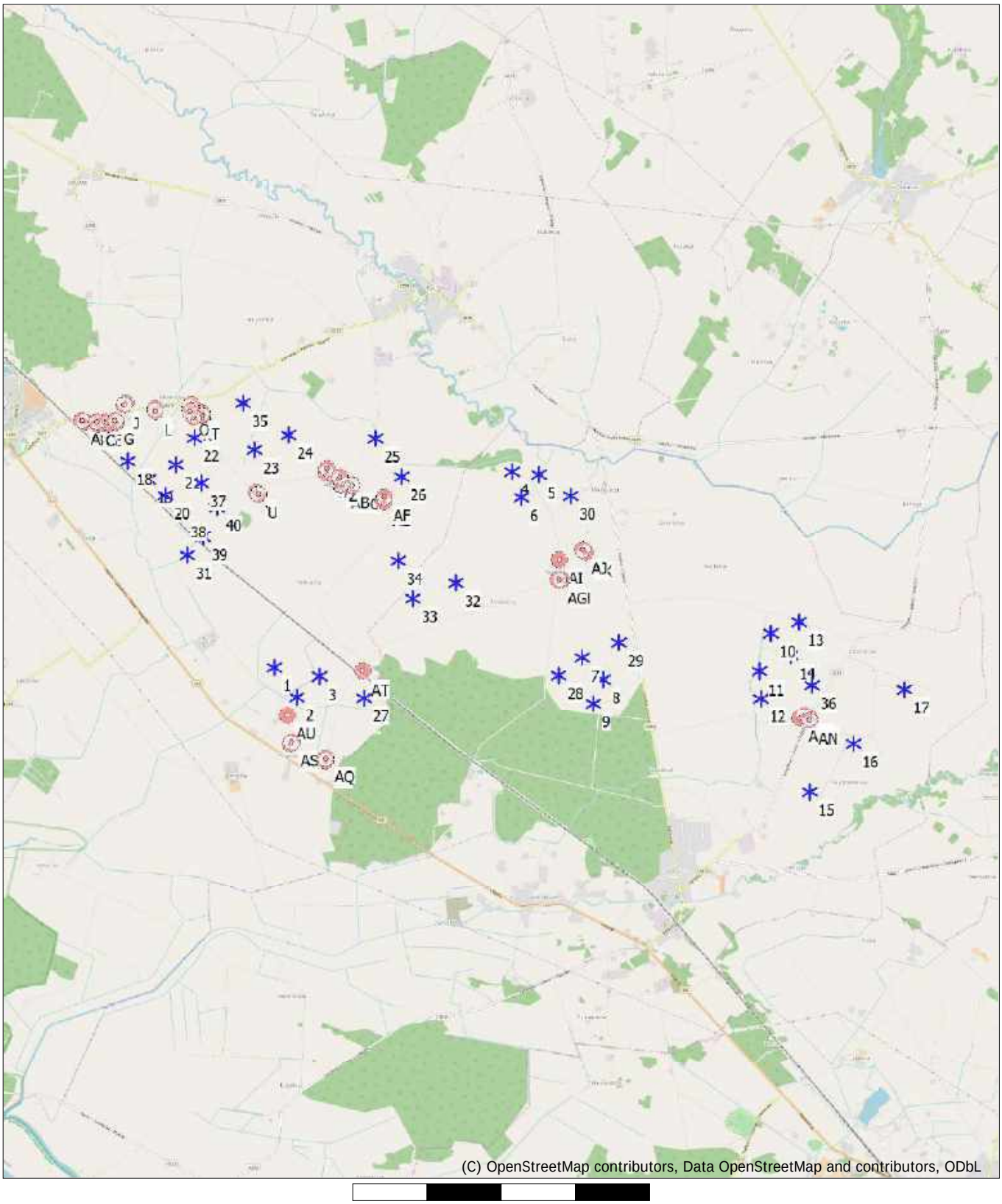
# DECIBEL - Map 10,0 m/s

## Calculation: Foninës VE




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

Existing WTG  Noise sensitive area

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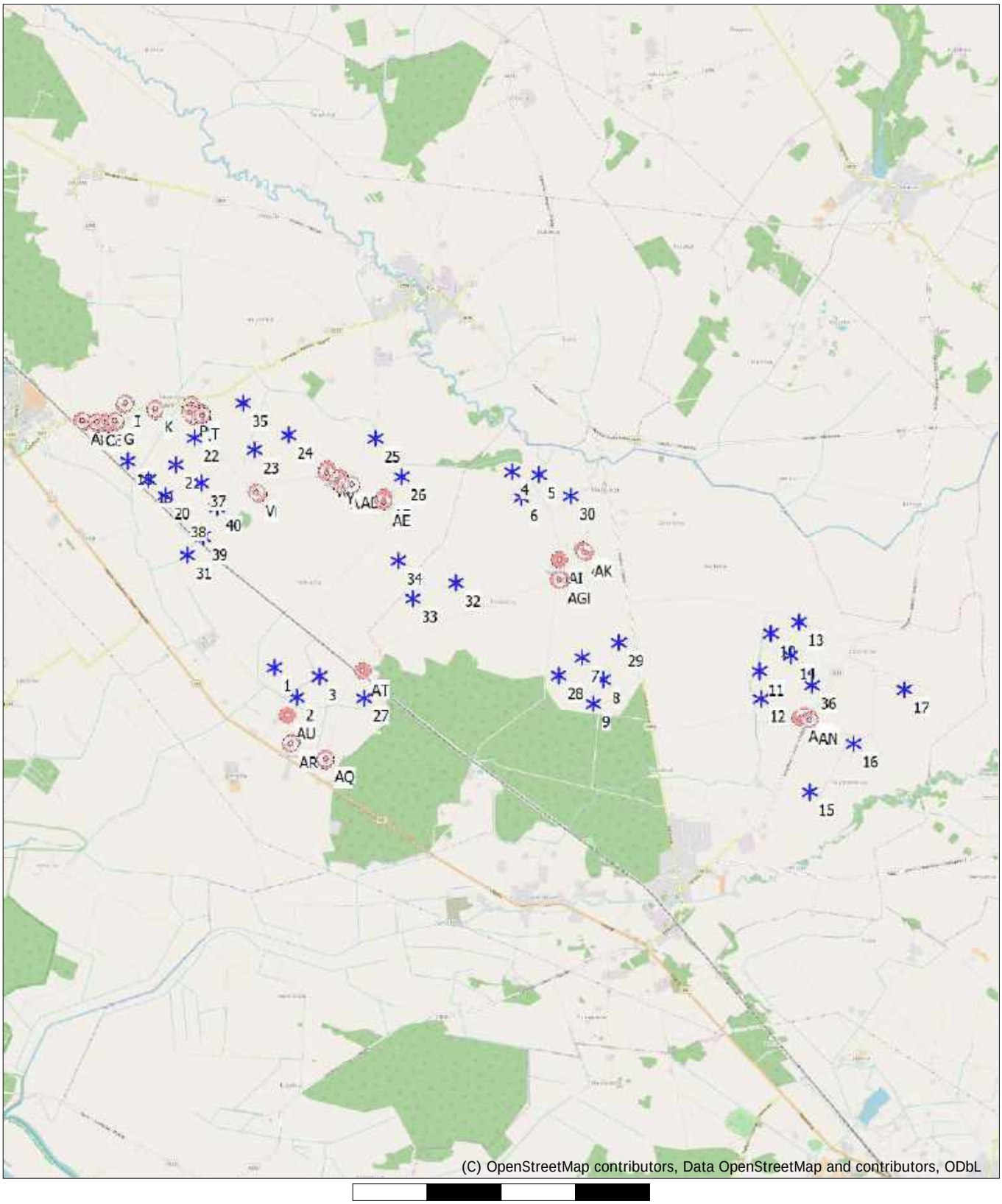
# DECIBEL - Map 10,0 m/s

## Calculation: Foninës VE




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

Existing WTG  Noise sensitive area

Project:

**8 VE Ðilutës r.triukðmas**

Description:

Aðtuoniø vëjo elektriniø (Ðilutës raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija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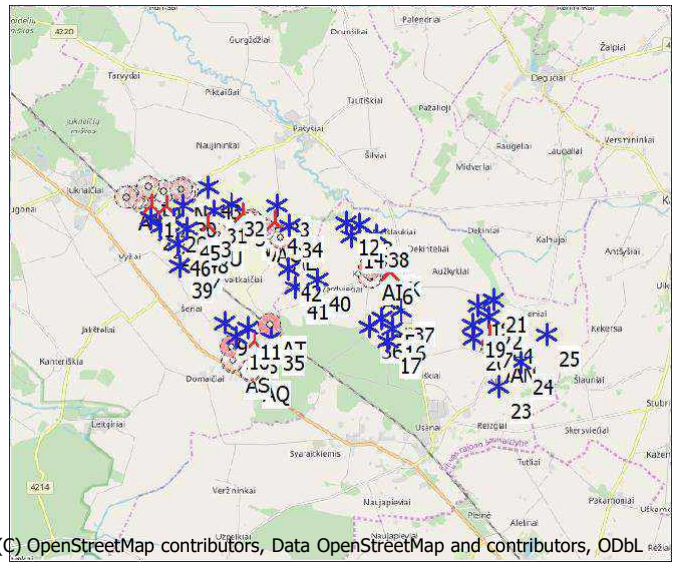
Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

**Noise calculation model:**
ISO 9613-2 General
**Wind speed (in 10 m height):**
10,0 m/s
**Ground attenuation:**
General, Ground factor: 0,8
**Meteorological coefficient, C0:**
0,0 dB
**Type of demand in calculation:**
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
**Noise values in calculation:**
All noise values are mean values (Lwa) (Normal)
**Pure tones:**
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
**Height above ground level, when no value in NSA object:**
1,5 m; Don't allow override of model height with height from NSA object
**Uncertainty margin:**
0,0 dB; Uncertainty margin in NSA has priority
**Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:**
0,0 dB(A)

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




Scale 1:200.000

New WTG  Existing WTG  Noise sensitive area

## WTGs

| | Y | X | Z [m] | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated [kW] | Rotor diameter [m] | Hub height [m] | Noise data Creator | Name | Wind speed [m/s] | Status | LwA,ref [dB(A)] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 8 | 350.546 | 6.126.757 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 9 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 10 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 11 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 12 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 13 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 14 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 15 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 16 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 17 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 18 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 19 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 20 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 21 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 22 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 23 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 24 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 25 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 26 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 27 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 28 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 29 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 30 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 31 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 32 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 33 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 34 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 35 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 36 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 37 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 38 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 39 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 40 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 41 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 42 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 43 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 44 | 357.043 | 6.126.794 | 20,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 45 | 348.872 | 6.129.782 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 46 | 348.589 | 6.129.372 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 47 | 348.873 | 6.129.055 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 48 | 349.068 | 6.129.458 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |

**h) Generic octave distribution used**

**g) Data calculated from data for other wind speed (uncertain)**

# Calculation Results

# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

## Sound level

| Noise sensitive area | | | | | | Demands | Sound level | | Demands fulfilled ? |
|---|---|---|---|---|---|---|---|---|---|
| No. | Name | Y | X | Z | Immission height | Noise | From WTGs | Distance to noise demand | Noise |
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| A | Noise sensitive point: User defined (1) | 347.290 | 6.130.678 | 10,0 | 1,5 | 45,0 | 37,8 | 436 | Yes |
| B | Noise sensitive point: User defined (2) | 347.334 | 6.130.657 | 10,0 | 1,5 | 45,0 | 38,4 | 387 | Yes |
| C | Noise sensitive point: User defined (4) | 347.483 | 6.130.653 | 10,7 | 1,5 | 45,0 | 40,2 | 253 | Yes |
| D | Noise sensitive point: User defined (5) | 347.505 | 6.130.613 | 10,4 | 1,5 | 45,0 | 40,8 | 215 | Yes |
| E | Noise sensitive point: User defined (6) | 347.592 | 6.130.646 | 10,8 | 1,5 | 45,0 | 41,7 | 154 | Yes |
| F | Noise sensitive point: User defined (7) | 347.637 | 6.130.618 | 10,6 | 1,5 | 45,0 | 42,7 | 101 | Yes |
| G | Noise sensitive point: User defined (8) | 347.734 | 6.130.663 | 11,0 | 1,5 | 45,0 | 43,7 | 59 | Yes |
| H | Noise sensitive point: User defined (9) | 347.757 | 6.130.635 | 10,8 | 1,5 | 45,0 | 44,5 | 23 | Yes |
| I | Noise sensitive point: User defined (11) | 347.883 | 6.130.901 | 13,1 | 1,5 | 45,0 | 41,1 | 201 | Yes |
| J | Noise sensitive point: User defined (12) | 347.866 | 6.130.871 | 12,8 | 1,5 | 45,0 | 41,5 | 175 | Yes |
| K | Noise sensitive point: User defined (13) | 348.287 | 6.130.811 | 10,0 | 1,5 | 45,0 | 43,3 | 94 | Yes |
| L | Noise sensitive point: User defined (14) | 348.284 | 6.130.768 | 10,0 | 1,5 | 45,0 | 44,1 | 51 | Yes |
| M | Noise sensitive point: User defined (15) | 348.782 | 6.130.851 | 10,0 | 1,5 | 45,0 | 42,3 | 173 | Yes |
| N | Noise sensitive point: User defined (16) | 348.759 | 6.130.812 | 10,0 | 1,5 | 45,0 | 42,8 | 133 | Yes |
| O | Noise sensitive point: User defined (17) | 348.756 | 6.130.753 | 10,0 | 1,5 | 45,0 | 43,7 | 74 | Yes |
| P | Noise sensitive point: User defined (18) | 348.753 | 6.130.737 | 10,0 | 1,5 | 45,0 | 43,9 | 58 | Yes |
| Q | Noise sensitive point: User defined (19) | 348.810 | 6.130.701 | 10,0 | 1,5 | 45,0 | 44,5 | 26 | Yes |
| R | Noise sensitive point: User defined (20) | 348.790 | 6.130.676 | 10,0 | 1,5 | 45,0 | 45,0 | 1 | Yes |
| S | Noise sensitive point: User defined (21) | 348.913 | 6.130.737 | 10,0 | 1,5 | 45,0 | 43,6 | 86 | Yes |
| T | Noise sensitive point: User defined (22) | 348.911 | 6.130.694 | 10,0 | 1,5 | 45,0 | 44,2 | 45 | Yes |
| U | Noise sensitive point: User defined (23) | 349.644 | 6.129.613 | 10,0 | 1,5 | 45,0 | 44,4 | 31 | Yes |
| V | Noise sensitive point: User defined (24) | 349.607 | 6.129.632 | 10,0 | 1,5 | 45,0 | 45,0 | 1 | Yes |
| W | Noise sensitive point: User defined (25) | 350.562 | 6.129.862 | 10,9 | 1,5 | 45,0 | 43,9 | 57 | Yes |
| X | Noise sensitive point: User defined (26) | 350.576 | 6.129.919 | 10,8 | 1,5 | 45,0 | 44,6 | 25 | Yes |
| Y | Noise sensitive point: User defined (27) | 350.707 | 6.129.756 | 12,0 | 1,5 | 45,0 | 42,3 | 231 | Yes |
| Z | Noise sensitive point: User defined (28) | 350.748 | 6.129.803 | 12,1 | 1,5 | 45,0 | 42,8 | 180 | Yes |
| AA | Noise sensitive point: User defined (29) | 350.753 | 6.129.689 | 12,4 | 1,5 | 45,0 | 42,0 | 218 | Yes |
| AB | Noise sensitive point: User defined (30) | 350.767 | 6.129.705 | 12,4 | 1,5 | 45,0 | 42,2 | 198 | Yes |
| AC | Noise sensitive point: User defined (31) | 350.909 | 6.129.675 | 13,3 | 1,5 | 45,0 | 43,2 | 91 | Yes |
| AD | Noise sensitive point: User defined (32) | 350.909 | 6.129.692 | 13,3 | 1,5 | 45,0 | 43,4 | 79 | Yes |
| AE | Noise sensitive point: User defined (33) | 351.332 | 6.129.441 | 16,3 | 1,5 | 45,0 | 42,6 | 146 | Yes |
| AF | Noise sensitive point: User defined (34) | 351.339 | 6.129.512 | 16,2 | 1,5 | 45,0 | 43,6 | 76 | Yes |
| AG | Noise sensitive point: User defined (35) | 353.662 | 6.128.322 | 20,0 | 1,5 | 45,0 | 39,8 | 314 | Yes |
| AH | Noise sensitive point: User defined (36) | 353.705 | 6.128.318 | 20,0 | 1,5 | 45,0 | 40,1 | 275 | Yes |
| AI | Noise sensitive point: User defined (37) | 353.678 | 6.128.582 | 20,0 | 1,5 | 45,0 | 40,3 | 285 | Yes |
| AJ | Noise sensitive point: User defined (38) | 353.996 | 6.128.697 | 20,0 | 1,5 | 45,0 | 43,6 | 60 | Yes |
| AK | Noise sensitive point: User defined (39) | 354.036 | 6.128.668 | 20,0 | 1,5 | 45,0 | 44,8 | 11 | Yes |
| AL | Noise sensitive point: User defined (40) | 356.862 | 6.126.349 | 19,7 | 1,5 | 45,0 | 44,0 | 56 | Yes |
| AM | Noise sensitive point: User defined (41) | 356.927 | 6.126.381 | 20,0 | 1,5 | 45,0 | 44,3 | 39 | Yes |
| AN | Noise sensitive point: User defined (42) | 356.986 | 6.126.313 | 20,0 | 1,5 | 45,0 | 43,2 | 122 | Yes |
| AO | Noise sensitive point: User defined (43) | 356.996 | 6.126.345 | 20,0 | 1,5 | 45,0 | 43,5 | 95 | Yes |
| AP | Noise sensitive point: User defined (48) | 350.424 | 6.125.973 | 10,0 | 1,5 | 45,0 | 37,0 | 523 | Yes |
| AQ | Noise sensitive point: User defined (49) | 350.424 | 6.126.015 | 10,0 | 1,5 | 45,0 | 37,4 | 481 | Yes |
| AR | Noise sensitive point: User defined (50) | 349.947 | 6.126.215 | 10,0 | 1,5 | 45,0 | 38,6 | 382 | Yes |
| AS | Noise sensitive point: User defined (51) | 349.979 | 6.126.256 | 10,0 | 1,5 | 45,0 | 39,2 | 335 | Yes |
| AT | Noise sensitive point: User defined (52) | 350.962 | 6.127.173 | 10,0 | 1,5 | 45,0 | 43,0 | 104 | Yes |
| AU | Noise sensitive point: User defined (53) | 349.928 | 6.126.609 | 10,0 | 1,5 | 45,0 | 44,5 | 21 | Yes |

## Distances (m)

| WTG | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 715 | 666 | 527 | 491 | 428 | 375 | 327 | 291 | 481 | 454 | 506 | 472 | 926 | 888 | 861 | 852 | 894 | 867 | 1003 | 989 | 1870 | 1828 |
| 2 | 1093 | 1044 | 900 | 868 | 794 | 743 | 667 | 635 | 683 | 674 | 416 | 374 | 627 | 583 | 541 | 528 | 552 | 522 | 659 | 636 | 1516 | 1474 |
| 3 | 2297 | 2248 | 2108 | 2073 | 2004 | 1952 | 1881 | 1849 | 1868 | 1865 | 1488 | 1464 | 1181 | 1162 | 1117 | 1106 | 1043 | 1036 | 1015 | 979 | 327 | 290 |
| 4 | 3980 | 3933 | 3786 | 3757 | 3678 | 3628 | 3543 | 3515 | 3460 | 3468 | 3048 | 3038 | 2595 | 2602 | 2585 | 2582 | 2517 | 2528 | 2432 | 2419 | 1573 | 1606 |
| 5 | 3133 | 3086 | 2939 | 2910 | 2830 | 2781 | 2694 | 2666 | 2609 | 2617 | 2197 | 2187 | 1750 | 1756 | 1736 | 1733 | 1668 | 1678 | 1584 | 1570 | 891 | 912 |
| 6 | 7239 | 7190 | 7048 | 7014 | 6942 | 6890 | 6813 | 6782 | 6754 | 6759 | 6345 | 6332 | 5903 | 5909 | 5889 | 5885 | 5819 | 5828 | 5738 | 5723 | 4683 | 4724 |
| 7 | 10274 | 10225 | 10087 | 10051 | 9984 | 9931 | 9860 | 9828 | 9823 | 9825 | 9419 | 9403 | 8994 | 8997 | 8973 | 8968 | 8902 | 8908 | 8826 | 8808 | 7693 | 7735 |
| 8 | 5094 | 5050 | 4954 | 4909 | 4881 | 4832 | 4811 | 4775 | 4924 | 4908 | 4639 | 4603 | 4456 | 4429 | 4377 | 4363 | 4308 | 4292 | 4300 | 4261 | 2994 | 3023 |
| 9 | 4211 | 4168 | 4079 | 4034 | 4014 | 3966 | 3953 | 3917 | 4088 | 4069 | 3835 | 3797 | 3711 | 3680 | 3624 | 3609 | 3559 | 3540 | 3567 | 3526 | 2343 | 2364 |
| 10 | 4716 | 4673 | 4584 | 4539 | 4518 | 4470 | 4457 | 4421 | 4589 | 4570 | 4329 | 4291 | 4189 | 4159 | 4104 | 4090 | 4038 | 4020 | 4041 | 4001 | 2782 | 2807 |
| 11 | 4700 | 4655 | 4556 | 4511 | 4482 | 4433 | 4409 | 4373 | 4518 | 4502 | 4230 | 4194 | 4045 | 4019 | 3966 | 3953 | 3897 | 3882 | 3889 | 3851 | 2586 | 2615 |
| 12 | 5850 | 5803 | 5656 | 5628 | 5547 | 5498 | 5409 | 5382 | 5307 | 5317 | 4893 | 4887 | 4419 | 4433 | 4422 | 4422 | 4359 | 4373 | 4266 | 4259 | 3437 | 3473 |
| 13 | 6210 | 6163 | 6016 | 5988 | 5907 | 5858 | 5770 | 5742 | 5666 | 5677 | 5252 | 5247 | 4778 | 4792 | 4782 | 4781 | 4719 | 4733 | 4625 | 4618 | 3790 | 3826 |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

*...continued from previous page*

| WTG | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 6021 | 5973 | 5827 | 5797 | 5719 | 5669 | 5584 | 5555 | 5496 | 5505 | 5083 | 5075 | 4620 | 4630 | 4616 | 4615 | 455( | 456 | 446 | 445 | 3545 | 3583 |
| 15 | 7469 | 7420 | 7287 | 7249 | 7187 | 7134 | 7070 | 7037 | 7059 | 7059 | 6668 | 6648 | 6277 | 6274 | 6243 | 6237 | 617( | 617 | 610 | 608 | 4892 | 4933 |
| 16 | 7860 | 7811 | 7679 | 7640 | 7580 | 7527 | 7465 | 7431 | 7459 | 7457 | 7070 | 7049 | 6683 | 6679 | 6648 | 6641 | 657 | 657 | 651 | 648 | 5287 | 5328 |
| 17 | 7889 | 7840 | 7710 | 7671 | 7614 | 7561 | 7503 | 7468 | 7510 | 7507 | 7127 | 7105 | 6757 | 6751 | 6717 | 6710 | 664 | 664 | 658 | 655 | 5330 | 5371 |
| 18 | 9737 | 9688 | 9547 | 9513 | 9442 | 9390 | 9314 | 9282 | 9258 | 9263 | 8849 | 8836 | 8408 | 8414 | 8394 | 8390 | 832 | 833 | 824 | 822 | 7170 | 7211 |
| 19 | 9766 | 9717 | 9578 | 9542 | 9475 | 9422 | 9351 | 9318 | 9311 | 9314 | 8907 | 8891 | 8481 | 8483 | 8460 | 8455 | 838 | 839 | 831 | 829 | 7186 | 7227 |
| 20 | 9913 | 9864 | 9727 | 9691 | 9625 | 9573 | 9504 | 9471 | 9474 | 9475 | 9073 | 9056 | 8656 | 8658 | 8632 | 8627 | 856( | 856 | 848 | 846 | 7331 | 7372 |
| 21 | 10068 | 10019 | 9877 | 9843 | 9771 | 9719 | 9641 | 9610 | 9578 | 9584 | 9168 | 9156 | 8720 | 8727 | 8709 | 8706 | 864( | 864 | 855 | 854 | 7510 | 7551 |
| 22 | 10086 | 10038 | 9897 | 9862 | 9792 | 9740 | 9666 | 9634 | 9616 | 9620 | 9209 | 9195 | 8772 | 8777 | 8756 | 8752 | 868 | 869 | 860 | 859 | 7513 | 7554 |
| 23 | 11032 | 10983 | 10851 | 10813 | 10753 | 10700 | 10638 | 10604 | 10631 | 10630 | 10240 | 10220 | 9847 | 9845 | 9815 | 9808 | 974 | 974 | 967 | 965 | 8460 | 8501 |
| 24 | 11304 | 11255 | 11118 | 11081 | 11016 | 10964 | 10895 | 10863 | 10867 | 10868 | 10466 | 10449 | 10049 | 10051 | 10025 | 10020 | 995 | 995 | 988 | 986 | 8721 | 8763 |
| 25 | 11700 | 11651 | 11510 | 11476 | 11406 | 11354 | 11278 | 11247 | 11226 | 11231 | 10818 | 10805 | 10378 | 10384 | 10363 | 10360 | 1029 | 1030 | 1021 | 1019 | 9127 | 9169 |
| 26 | 828 | 781 | 680 | 635 | 614 | 569 | 575 | 542 | 791 | 761 | 804 | 765 | 1157 | 1114 | 1076 | 1064 | 109( | 106( | 119 | 117 | 1819 | 1779 |
| 27 | 1196 | 1150 | 1045 | 1001 | 973 | 924 | 913 | 877 | 1081 | 1057 | 964 | 921 | 1174 | 1129 | 1078 | 1063 | 106 | 103 | 116( | 112 | 1504 | 1464 |
| 28 | 1501 | 1454 | 1349 | 1305 | 1274 | 1224 | 1206 | 1170 | 1352 | 1331 | 1173 | 1130 | 1276 | 1231 | 1175 | 1158 | 114 | 111 | 122( | 118 | 1268 | 1230 |
| 29 | 1392 | 1342 | 1210 | 1171 | 1114 | 1061 | 1007 | 972 | 1073 | 1059 | 803 | 763 | 844 | 800 | 743 | 727 | 71 | 68 | 791 | 752 | 1194 | 1153 |
| 30 | 1527 | 1480 | 1333 | 1304 | 1225 | 1175 | 1090 | 1061 | 1038 | 1039 | 651 | 628 | 452 | 414 | 356 | 340 | 30 | 27 | 35 | 318 | 1159 | 1119 |
| 31 | 2366 | 2319 | 2172 | 2143 | 2064 | 2014 | 1930 | 1901 | 1860 | 1864 | 1453 | 1438 | 1046 | 1042 | 1011 | 1005 | 93 | 94 | 87 | 85 | 600 | 580 |
| 32 | 2797 | 2751 | 2602 | 2577 | 2493 | 2446 | 2354 | 2328 | 2249 | 2258 | 1835 | 1828 | 1371 | 1380 | 1366 | 1365 | 1301 | 131 | 121 | 120 | 885 | 887 |
| 33 | 3967 | 3921 | 3773 | 3747 | 3664 | 3616 | 3524 | 3498 | 3409 | 3421 | 2996 | 2992 | 2517 | 2532 | 2524 | 2524 | 2462 | 247 | 236 | 236 | 1743 | 1770 |
| 34 | 4382 | 4334 | 4188 | 4158 | 4080 | 4030 | 3945 | 3917 | 3863 | 3870 | 3450 | 3440 | 2996 | 3003 | 2987 | 2984 | 291 | 293 | 283 | 282 | 1943 | 1979 |
| 35 | 5335 | 5290 | 5185 | 5141 | 5107 | 5057 | 5027 | 4991 | 5120 | 5107 | 4812 | 4778 | 4589 | 4566 | 4516 | 4503 | 444 | 443 | 442 | 438 | 3094 | 3127 |
| 36 | 7292 | 7243 | 7113 | 7074 | 7016 | 6963 | 6903 | 6869 | 6907 | 6905 | 6524 | 6502 | 6152 | 6146 | 6112 | 6105 | 603 | 603 | 597 | 595 | 4729 | 4770 |
| 37 | 7843 | 7794 | 7657 | 7621 | 7556 | 7503 | 7435 | 7402 | 7409 | 7410 | 7011 | 6993 | 6601 | 6601 | 6574 | 6568 | 650 | 650 | 643 | 641 | 5261 | 5302 |
| 38 | 6682 | 6634 | 6488 | 6459 | 6379 | 6330 | 6243 | 6215 | 6149 | 6159 | 5735 | 5728 | 5267 | 5279 | 5267 | 5266 | 520 | 521 | 511 | 510 | 4218 | 4256 |
| 39 | 2300 | 2257 | 2171 | 2125 | 2108 | 2062 | 2057 | 2021 | 2217 | 2195 | 2025 | 1983 | 2038 | 1997 | 1938 | 1922 | 189 | 186 | 193 | 189 | 1278 | 1262 |
| 40 | 5509 | 5460 | 5325 | 5287 | 5224 | 5171 | 5105 | 5072 | 5089 | 5089 | 4697 | 4677 | 4309 | 4305 | 4274 | 4267 | 420 | 420 | 413 | 411 | 2928 | 2969 |
| 41 | 5068 | 5019 | 4889 | 4849 | 4792 | 4739 | 4681 | 4646 | 4692 | 4688 | 4316 | 4292 | 3967 | 3957 | 3920 | 3912 | 384 | 384 | 379 | 376 | 2512 | 2553 |
| 42 | 4671 | 4622 | 4487 | 4449 | 4386 | 4334 | 4269 | 4235 | 4259 | 4258 | 3872 | 3850 | 3498 | 3492 | 3458 | 3450 | 338 | 338 | 332 | 329 | 2090 | 2132 |
| 43 | 2191 | 2148 | 2001 | 1983 | 1893 | 1852 | 1750 | 1730 | 1592 | 1608 | 1188 | 1193 | 693 | 717 | 725 | 730 | 68 | 70 | 57 | 58 | 1247 | 1224 |
| 44 | 10493 | 10444 | 10305 | 10270 | 10201 | 10149 | 10077 | 10045 | 10034 | 10037 | 9629 | 9614 | 9199 | 9203 | 9180 | 9176 | 910 | 911 | 903 | 901 | 7914 | 7956 |
| 45 | 1817 | 1768 | 1639 | 1599 | 1544 | 1491 | 1439 | 1403 | 1493 | 1482 | 1183 | 1147 | 1072 | 1036 | 977 | 962 | 92 | 89 | 95 | 91 | 790 | 750 |
| 46 | 1841 | 1795 | 1692 | 1647 | 1617 | 1567 | 1548 | 1512 | 1683 | 1663 | 1470 | 1428 | 1491 | 1449 | 1390 | 1374 | 134 | 131 | 140 | 136 | 1082 | 1050 |
| 47 | 2266 | 2220 | 2117 | 2072 | 2042 | 1992 | 1970 | 1933 | 2094 | 2076 | 1850 | 1811 | 1797 | 1760 | 1701 | 1685 | 164 | 162 | 168 | 163 | 951 | 933 |
| 48 | 2155 | 2107 | 1984 | 1943 | 1894 | 1841 | 1797 | 1761 | 1866 | 1854 | 1562 | 1526 | 1421 | 1388 | 1331 | 1317 | 126 | 124 | 128 | 124 | 596 | 566 |

| WTG | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2662 | 2664 | 2827 | 2856 | 2888 | 2898 | 3043 | 3039 | 3512 | 3500 | 6076 | 6118 | 6006 | 6277 | 6323 | 9788 | 9834 | 9915 | 9911 | 5087 | 5051 | 4655 |
| 2 | 2278 | 2279 | 2445 | 2473 | 2507 | 2516 | 2661 | 2657 | 3134 | 3119 | 5704 | 5745 | 5630 | 5897 | 5944 | 9425 | 9470 | 9552 | 9548 | 4887 | 4849 | 4477 |
| 3 | 1121 | 1136 | 1271 | 1308 | 1324 | 1336 | 1480 | 1478 | 1938 | 1931 | 4494 | 4536 | 4426 | 4702 | 4747 | 8210 | 8255 | 8338 | 8333 | 4017 | 3977 | 3688 |
| 4 | 631 | 617 | 503 | 453 | 483 | 463 | 355 | 345 | 468 | 403 | 2922 | 2961 | 2806 | 3044 | 3092 | 6680 | 6719 | 6804 | 6796 | 3988 | 3947 | 3877 |
| 5 | 322 | 287 | 495 | 492 | 576 | 574 | 697 | 687 | 1175 | 1141 | 3747 | 3787 | 3644 | 3890 | 3938 | 7502 | 7542 | 7627 | 7620 | 4149 | 4107 | 3931 |
| 6 | 3881 | 3889 | 3709 | 3687 | 3643 | 3635 | 3491 | 3497 | 3015 | 3031 | 549 | 509 | 522 | 294 | 246 | 3414 | 3445 | 3534 | 3522 | 4519 | 4495 | 4804 |
| 7 | 6960 | 6974 | 6783 | 6768 | 6712 | 6707 | 6566 | 6574 | 6083 | 6109 | 3500 | 3460 | 3613 | 3409 | 3360 | 384 | 374 | 460 | 437 | 6395 | 6391 | 6847 |
| 8 | 3104 | 3161 | 3002 | 3051 | 2938 | 2955 | 2939 | 2956 | 2795 | 2866 | 3485 | 3522 | 3623 | 3956 | 3977 | 6326 | 6389 | 6452 | 6460 | 793 | 752 | 807 |
| 9 | 2707 | 2766 | 2654 | 2713 | 2608 | 2629 | 2658 | 2674 | 2672 | 2734 | 4030 | 4071 | 4121 | 4459 | 4488 | 7150 | 7210 | 7277 | 7283 | 1454 | 1417 | 1071 |
| 10 | 3041 | 3099 | 2964 | 3019 | 2910 | 2929 | 2937 | 2953 | 2874 | 2941 | 3883 | 3921 | 4002 | 4338 | 4363 | 6815 | 6878 | 6942 | 6949 | 958 | 919 | 656 |
| 11 | 2735 | 2793 | 2643 | 2695 | 2583 | 2601 | 2597 | 2613 | 2497 | 2566 | 3491 | 3530 | 3603 | 3940 | 3966 | 6528 | 6589 | 6656 | 6662 | 1159 | 1117 | 1013 |
| 12 | 2515 | 2503 | 2369 | 2328 | 2326 | 2311 | 2171 | 2170 | 1781 | 1761 | 1591 | 1611 | 1359 | 1437 | 1484 | 5121 | 5148 | 5237 | 5224 | 4656 | 4622 | 4758 |
| 13 | 2872 | 2861 | 2725 | 2684 | 2679 | 2665 | 2524 | 2523 | 2122 | 2106 | 1443 | 1454 | 1190 | 1191 | 1236 | 4825 | 4850 | 4939 | 4924 | 4825 | 4792 | 4960 |
| 14 | 2656 | 2651 | 2498 | 2463 | 2445 | 2432 | 2288 | 2290 | 1854 | 1848 | 1224 | 1245 | 998 | 1105 | 1154 | 4807 | 4837 | 4925 | 4913 | 4440 | 4407 | 4577 |
| 15 | 4257 | 4280 | 4077 | 4074 | 4000 | 3998 | 3868 | 3879 | 3392 | 3433 | 1089 | 1075 | 1338 | 1428 | 1402 | 3062 | 3115 | 3191 | 3191 | 3746 | 3731 | 4128 |
| 16 | 4667 | 4691 | 4487 | 4485 | 4410 | 4409 | 4279 | 4290 | 3805 | 3846 | 1470 | 1451 | 1708 | 1750 | 1716 | 2711 | 2767 | 2840 | 2842 | 3921 | 3910 | 4336 |
| 17 | 4761 | 4790 | 4583 | 4585 | 4504 | 4504 | 4380 | 4392 | 3915 | 3961 | 1729 | 1715 | 1979 | 2056 | 2025 | 2804 | 2866 | 2931 | 2938 | 3707 | 3700 | 4145 |
| 18 | 6386 | 6394 | 6212 | 6191 | 6145 | 6138 | 5995 | 6001 | 5516 | 5535 | 2953 | 2910 | 3019 | 2772 | 2723 | 1215 | 1206 | 1291 | 1265 | 6267 | 6256 | 6679 |
| 19 | 6447 | 6460 | 6270 | 6254 | 6199 | 6194 | 6053 | 6061 | 5571 | 5596 | 2987 | 2947 | 3097 | 2895 | 2846 | 831 | 850 | 940 | 924 | 6001 | 5994 | 6438 |
| 20 | 6621 | 6637 | 6443 | 6430 | 6370 | 6366 | 6227 | 6235 | 5744 | 5773 | 3170 | 3131 | 3302 | 3126 | 3077 | 589 | 634 | 716 | 711 | 5955 | 5950 | 6409 |
| 21 | 6707 | 6713 | 6535 | 6512 | 6470 | 6462 | 6318 | 6324 | 5843 | 5859 | 3301 | 3258 | 3349 | 3083 | 3035 | 1293 | 1261 | 1332 | 1300 | 6679 | 6669 | 7089 |
| 22 | 6745 | 6755 | 6570 | 6551 | 6502 | 6495 | 6353 | 6359 | 5872 | 5893 | 3296 | 3254 | 3379 | 3144 | 3095 | 857 | 836 | 915 | 887 | 6454 | 6446 | 6884 |
| 23 | 7821 | 7842 | 7641 | 7635 | 7565 | 7563 | 7430 | 7440 | 6950 | 6986 | 4432 | 4397 | 4598 | 4462 | 4414 | 993 | 1020 | 952 | 984 | 6564 | 6568 | 7064 |
| 24 | 8014 | 8030 | 7836 | 7823 | 7764 | 7759 | 7620 | 7628 | 7137 | 7166 | 4560 | 4521 | 4686 | 4494 | 4444 | 804 | 764 | 678 | 686 | 7149 | 7149 | 7629 |
| 25 | 8354 | 8363 | 8180 | 8160 | 8113 | 8106 | 7963 | 7969 | 7483 | 7503 | 4910 | 4868 | 4987 | 4742 | 4694 | 1474 | 1404 | 1363 | 1345 | 7901 | 7898 | 8359 |
| 26 | 2679 | 2689 | 2835 | 2870 | 2889 | 2901 | 3046 | 3043 | 3502 | 3496 | 6037 | 6079 | 5981 | 6262 | 6307 | 9721 | 9769 | 9850 | 9847 | 4848 | 4812 | 4401 |
| 27 | 2402 | 2417 | 2549 | 2588 | 2598 | 2611 | 2755 | 2754 | 3198 | 3197 | 5710 | 5752 | 5661 | 5948 | 5993 | 9378 | 9427 | 9507 | 9504 | 4492 | 4456 | 4054 |
| 28 | 2196 | 2216 | 2333 | 2376 | 2376 | 2391 | 2532 | 2532 | 2961 | 2964 | 5446 | 5488 | 5404 | 5696 | 5740 | 9098 | 9147 | 9227 | 9225 | 4199 | 4162 | 3767 |
| 29 | 2039 | 2049 | 2195 | 2230 | 2250 | 2262 | 2407 | 2404 | 2865 | 2858 | 5411 | 5453 | 5349 | 5627 | 5673 | 9111 | 9158 | 9239 | 9235 | 4489 | 4451 | 4082 |
| 30 | 1849 | 1847 | 2019 | 2044 | 2085 | 2092 | 2236 | 2231 | 2713 | 2696 | 5292 | 5333 | 5211 | 5473 | 5520 | 9025 | 9069 | 9152 | 9147 | 4715 | 4676 | 4339 |
| 31 | 1013 | 1008 | 1187 | 1208 | 1255 | 1262 | 1404 | 1398 | 1885 | 1864 | 4468 | 4509 | 4380 | 4637 | 4685 | 8212 | 8255 | 8339 | 8333 | 4314 | 4273 | 4009 |
| 32 | 717 | 687 | 894 | 892 | 974 | 973 | 1098 | 1087 | 1574 | 1538 | 4139 | 4178 | 4030 | 4270 | 4318 | 7896 | 7935 | 8021 | 8013 | 4426 | 4384 | 4172 |
| 33 | 814 | 772 | 771 | 708 | 791 | 770 | 718 | 703 | 874 | 805 | 3131 | 3167 | 2986 | 3191 | 3240 | 6873 | 6908 | 6995 | 6985 | 4412 | 4371 | 4294 |
| 34 | 1022 | 1014 | 874 | 833 | 833 | 817 | 680 | 677 | 420 | 361 | 2540 | 2577 | 2414 | 2646 | 2694 | 6295 | 6332 | 6419 | 6410 | 3977 | 3937 | 3920 |
| 35 | 3069 | 3124 | 2947 | 2991 | 2877 | 2891 | 2855 | 2872 | 2643 | 2715 | 3073 | 3109 | 3222 | 3552 | 3571 | 5899 | 5962 | 6026 | 6033 | 1012 | 977 | 1196 |

*To be continued on next page...*

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# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

*...continued from previous page*

| WTG | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 4155 | 4184 | 3977 | 3980 | 3898 | 3899 | 3775 | 3787 | 3312 | 3359 | 1285 | 1284 | 1546 | 1703 | 1684 | 3321 | 3378 | 3449 | 3453 | 3359 | 3346 | 3754 |
| 37 | 4568 | 4587 | 4389 | 4379 | 4315 | 4311 | 4175 | 4184 | 3693 | 3726 | 1174 | 1142 | 1370 | 1331 | 1291 | 2657 | 2704 | 2785 | 2782 | 4272 | 4258 | 4653 |
| 38 | 3323 | 3317 | 3167 | 3132 | 3116 | 3103 | 2959 | 2961 | 2528 | 2522 | 1144 | 1141 | 886 | 764 | 800 | 4313 | 4336 | 4425 | 4410 | 4886 | 4856 | 5075 |
| 39 | 2184 | 2224 | 2267 | 2323 | 2282 | 2301 | 2422 | 2428 | 2759 | 2783 | 5041 | 5084 | 5038 | 5352 | 5393 | 8578 | 8631 | 8707 | 8707 | 3354 | 3319 | 2909 |
| 40 | 2302 | 2330 | 2123 | 2126 | 2044 | 2044 | 1921 | 1933 | 1462 | 1513 | 1389 | 1432 | 1430 | 1764 | 1797 | 4993 | 5041 | 5121 | 5118 | 2986 | 2953 | 3135 |
| 41 | 2054 | 2095 | 1888 | 1908 | 1807 | 1813 | 1720 | 1735 | 1350 | 1417 | 1994 | 2036 | 2050 | 2386 | 2418 | 5483 | 5534 | 5611 | 5611 | 2497 | 2461 | 2583 |
| 42 | 1537 | 1574 | 1366 | 1382 | 1284 | 1289 | 1189 | 1204 | 817 | 885 | 2189 | 2232 | 2183 | 2501 | 2540 | 5833 | 5880 | 5961 | 5958 | 2873 | 2834 | 2876 |
| 43 | 1468 | 1441 | 1646 | 1647 | 1725 | 1725 | 1852 | 1842 | 2329 | 2293 | 4888 | 4927 | 4773 | 5005 | 5053 | 8646 | 8685 | 8771 | 8763 | 4965 | 4924 | 4656 |
| 44 | 7167 | 7179 | 6991 | 6974 | 6921 | 6915 | 6774 | 6781 | 6292 | 6316 | 3709 | 3668 | 3809 | 3591 | 3542 | 480 | 429 | 484 | 451 | 6667 | 6662 | 7116 |
| 45 | 1691 | 1709 | 1834 | 1875 | 1882 | 1896 | 2039 | 2038 | 2482 | 2481 | 5005 | 5048 | 4951 | 5235 | 5280 | 8692 | 8740 | 8821 | 8817 | 4111 | 4072 | 3724 |
| 46 | 2032 | 2060 | 2152 | 2201 | 2186 | 2202 | 2339 | 2341 | 2743 | 2752 | 5178 | 5221 | 5148 | 5447 | 5490 | 8804 | 8854 | 8933 | 8931 | 3861 | 3824 | 3435 |
| 47 | 1871 | 1909 | 1963 | 2018 | 1983 | 2002 | 2127 | 2132 | 2488 | 2507 | 4843 | 4886 | 4826 | 5133 | 5175 | 8431 | 8483 | 8560 | 8559 | 3449 | 3411 | 3035 |
| 48 | 1547 | 1576 | 1665 | 1714 | 1700 | 1716 | 1853 | 1855 | 2263 | 2271 | 4730 | 4773 | 4690 | 4984 | 5028 | 8387 | 8436 | 8516 | 8514 | 3738 | 3699 | 3358 |

| WTG | AS | AT | AU |
|---|---|---|---|
| 1 | 4631 | 4425 | 4293 |
| 2 | 4451 | 4151 | 4105 |
| 3 | 3652 | 3095 | 3296 |
| 4 | 3828 | 2724 | 3513 |
| 5 | 3886 | 3007 | 3542 |
| 6 | 4757 | 3478 | 4650 |
| 7 | 6812 | 5831 | 6848 |
| 8 | 756 | 588 | 635 |
| 9 | 1037 | 1197 | 681 |
| 10 | 611 | 951 | 286 |
| 11 | 962 | 585 | 690 |
| 12 | 4707 | 3373 | 4483 |
| 13 | 4909 | 3567 | 4702 |
| 14 | 4526 | 3183 | 4322 |
| 15 | 4087 | 2978 | 4064 |
| 16 | 4297 | 3263 | 4304 |
| 17 | 4109 | 3154 | 4142 |
| 18 | 6640 | 5548 | 6633 |
| 19 | 6401 | 5379 | 6421 |
| 20 | 6374 | 5408 | 6414 |
| 21 | 7049 | 5948 | 7039 |
| 22 | 6846 | 5799 | 6858 |
| 23 | 7037 | 6265 | 7141 |
| 24 | 7599 | 6718 | 7671 |
| 25 | 8325 | 7347 | 8365 |
| 26 | 4380 | 4246 | 4048 |
| 27 | 4031 | 3878 | 3695 |
| 28 | 3744 | 3573 | 3405 |
| 29 | 4055 | 3762 | 3708 |
| 30 | 4308 | 3886 | 3955 |
| 31 | 3971 | 3324 | 3615 |
| 32 | 4130 | 3333 | 3779 |
| 33 | 4245 | 3149 | 3927 |
| 34 | 3869 | 2678 | 3574 |
| 35 | 1148 | 353 | 1071 |
| 36 | 3714 | 2652 | 3707 |
| 37 | 4612 | 3485 | 4584 |
| 38 | 5024 | 3684 | 4849 |
| 39 | 2887 | 2841 | 2554 |
| 40 | 3084 | 1740 | 2901 |
| 41 | 2531 | 1197 | 2319 |
| 42 | 2824 | 1560 | 2564 |
| 43 | 4618 | 3964 | 4262 |
| 44 | 7081 | 6090 | 7114 |
| 45 | 3694 | 3341 | 3343 |
| 46 | 3410 | 3234 | 3069 |
| 47 | 3008 | 2810 | 2663 |
| 48 | 3328 | 2967 | 2975 |

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

| | |
|---|---|
| LWA,ref: | Sound pressure level at WTG |
| K: | Pure tone |
| Dc: | Directivity correction |
| Adiv: | the attenuation due to geometrical divergence |
| Aatm: | the attenuation due to atmospheric absorption |
| Agr: | the attenuation due to ground effect |
| Abar: | the attenuation due to a barrier |
| Amisc: | the attenuation due to miscellaneous other effects |
| Cmet: | Meteorological correction |

## Calculation Results

### Noise sensitive area: A Noise sensitive point: User defined (1)

Wind speed: 10,0 m/s
**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 715 | 726 | **33,08** | 106,0 | 0,00 | 68,22 | - | - | 0,00 | 0,00 | - |
| 10 | 4.716 | 4.717 | **10,42** | 106,0 | 0,00 | 84,47 | - | - | 0,00 | 0,00 | - |
| 11 | 4.700 | 4.701 | **10,47** | 106,0 | 0,00 | 84,44 | - | - | 0,00 | 0,00 | - |
| 12 | 5.850 | 5.851 | **7,65** | 106,0 | 0,00 | 86,35 | - | - | 0,00 | 0,00 | - |
| 13 | 6.210 | 6.211 | **6,88** | 106,0 | 0,00 | 86,86 | - | - | 0,00 | 0,00 | - |
| 14 | 6.021 | 6.022 | **7,28** | 106,0 | 0,00 | 86,59 | - | - | 0,00 | 0,00 | - |
| 15 | 7.469 | 7.470 | **4,53** | 106,0 | 0,00 | 88,47 | - | - | 0,00 | 0,00 | - |
| 16 | 7.860 | 7.861 | **3,89** | 106,0 | 0,00 | 88,91 | - | - | 0,00 | 0,00 | - |
| 17 | 7.889 | 7.889 | **3,85** | 106,0 | 0,00 | 88,94 | - | - | 0,00 | 0,00 | - |
| 18 | 9.737 | 9.738 | **1,22** | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 19 | 9.766 | 9.767 | **1,18** | 106,0 | 0,00 | 90,79 | - | - | 0,00 | 0,00 | - |
| 2 | 1.093 | 1.100 | **27,95** | 106,0 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 20 | 9.913 | 9.914 | **1,00** | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 21 | 10.068 | 10.069 | **0,81** | 106,0 | 0,00 | 91,06 | - | - | 0,00 | 0,00 | - |
| 22 | 10.086 | 10.087 | **0,78** | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| 23 | 11.032 | 11.033 | **-0,32** | 106,0 | 0,00 | 91,85 | - | - | 0,00 | 0,00 | - |
| 24 | 11.304 | 11.305 | **-0,62** | 106,0 | 0,00 | 92,07 | - | - | 0,00 | 0,00 | - |
| 25 | 11.700 | 11.701 | **-1,04** | 106,0 | 0,00 | 92,36 | - | - | 0,00 | 0,00 | - |
| 26 | 828 | 832 | **30,62** | 104,5 | 0,00 | 69,40 | - | - | 0,00 | 0,00 | - |
| 27 | 1.196 | 1.199 | **26,45** | 104,5 | 0,00 | 72,58 | - | - | 0,00 | 0,00 | - |
| 28 | 1.501 | 1.503 | **23,79** | 104,5 | 0,00 | 74,54 | - | - | 0,00 | 0,00 | - |
| 29 | 1.392 | 1.394 | **24,68** | 104,5 | 0,00 | 73,88 | - | - | 0,00 | 0,00 | - |
| 3 | 2.297 | 2.300 | **18,36** | 106,0 | 0,00 | 78,24 | - | - | 0,00 | 0,00 | - |
| 30 | 1.527 | 1.529 | **23,58** | 104,5 | 0,00 | 74,69 | - | - | 0,00 | 0,00 | - |
| 31 | 2.366 | 2.368 | **18,21** | 104,5 | 0,00 | 78,49 | - | - | 0,00 | 0,00 | - |
| 32 | 2.797 | 2.798 | **16,21** | 104,5 | 0,00 | 79,94 | - | - | 0,00 | 0,00 | - |
| 33 | 3.967 | 3.968 | **12,04** | 104,5 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 34 | 4.382 | 4.383 | **10,84** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 35 | 5.335 | 5.336 | **8,50** | 104,5 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 36 | 7.292 | 7.293 | **4,84** | 104,5 | 0,00 | 88,26 | - | - | 0,00 | 0,00 | - |
| 37 | 7.843 | 7.844 | **4,01** | 104,5 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 38 | 6.682 | 6.684 | **6,82** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 39 | 2.300 | 2.305 | **20,05** | 106,0 | 0,00 | 78,25 | - | - | 0,00 | 0,00 | - |
| 4 | 3.980 | 3.983 | **11,10** | 106,0 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 40 | 5.509 | 5.511 | **9,03** | 106,0 | 0,00 | 85,83 | - | - | 0,00 | 0,00 | - |
| 41 | 5.068 | 5.070 | **10,01** | 106,0 | 0,00 | 85,10 | - | - | 0,00 | 0,00 | - |
| 42 | 4.671 | 4.673 | **10,96** | 106,0 | 0,00 | 84,39 | - | - | 0,00 | 0,00 | - |
| 43 | 2.191 | 2.196 | **20,66** | 106,0 | 0,00 | 77,83 | - | - | 0,00 | 0,00 | - |
| 44 | 10.493 | 10.494 | **0,71** | 104,5 | 0,00 | 91,42 | - | - | 0,00 | 0,00 | - |
| 45 | 1.817 | 1.823 | **21,46** | 104,5 | 0,00 | 76,22 | - | - | 0,00 | 0,00 | - |
| 46 | 1.841 | 1.847 | **21,30** | 104,5 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 47 | 2.266 | 2.271 | **18,73** | 104,5 | 0,00 | 78,12 | - | - | 0,00 | 0,00 | - |
| 48 | 2.155 | 2.160 | **19,36** | 104,5 | 0,00 | 77,69 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 3.133 | 3.136 | **14,25** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 6 | 7.239 | 7.240 | **4,47** | 106,0 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 7 | 10.274 | 10.275 | **0,82** | 106,0 | 0,00 | 91,24 | - | - | 0,00 | 0,00 | - |
| 8 | 5.094 | 5.096 | **8,28** | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 9 | 4.211 | 4.212 | **11,89** | 106,0 | 0,00 | 83,49 | - | - | 0,00 | 0,00 | - |
| Sum | | | **37,81** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: B Noise sensitive point: User defined (2)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 666 | 678 | **33,90** | 106,0 | 0,00 | 67,62 | - | - | 0,00 | 0,00 | - |
| 10 | 4.673 | 4.674 | **10,54** | 106,0 | 0,00 | 84,39 | - | - | 0,00 | 0,00 | - |
| 11 | 4.655 | 4.656 | **10,59** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 12 | 5.803 | 5.804 | **7,75** | 106,0 | 0,00 | 86,28 | - | - | 0,00 | 0,00 | - |
| 13 | 6.163 | 6.164 | **6,98** | 106,0 | 0,00 | 86,80 | - | - | 0,00 | 0,00 | - |
| 14 | 5.973 | 5.974 | **7,38** | 106,0 | 0,00 | 86,53 | - | - | 0,00 | 0,00 | - |
| 15 | 7.420 | 7.421 | **4,62** | 106,0 | 0,00 | 88,41 | - | - | 0,00 | 0,00 | - |
| 16 | 7.811 | 7.812 | **3,97** | 106,0 | 0,00 | 88,86 | - | - | 0,00 | 0,00 | - |
| 17 | 7.840 | 7.840 | **3,92** | 106,0 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 18 | 9.688 | 9.689 | **1,28** | 106,0 | 0,00 | 90,73 | - | - | 0,00 | 0,00 | - |
| 19 | 9.717 | 9.718 | **1,24** | 106,0 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 2 | 1.044 | 1.052 | **28,51** | 106,0 | 0,00 | 71,44 | - | - | 0,00 | 0,00 | - |
| 20 | 9.864 | 9.865 | **1,06** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 21 | 10.019 | 10.020 | **0,87** | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 22 | 10.038 | 10.038 | **0,84** | 106,0 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 23 | 10.983 | 10.984 | **-0,26** | 106,0 | 0,00 | 91,82 | - | - | 0,00 | 0,00 | - |
| 24 | 11.255 | 11.255 | **-0,56** | 106,0 | 0,00 | 92,03 | - | - | 0,00 | 0,00 | - |
| 25 | 11.651 | 11.652 | **-0,99** | 106,0 | 0,00 | 92,33 | - | - | 0,00 | 0,00 | - |
| 26 | 781 | 785 | **31,25** | 104,5 | 0,00 | 68,90 | - | - | 0,00 | 0,00 | - |
| 27 | 1.150 | 1.152 | **26,91** | 104,5 | 0,00 | 72,23 | - | - | 0,00 | 0,00 | - |
| 28 | 1.454 | 1.456 | **24,16** | 104,5 | 0,00 | 74,27 | - | - | 0,00 | 0,00 | - |
| 29 | 1.342 | 1.345 | **25,11** | 104,5 | 0,00 | 73,57 | - | - | 0,00 | 0,00 | - |
| 3 | 2.248 | 2.251 | **18,65** | 106,0 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 30 | 1.480 | 1.482 | **23,96** | 104,5 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 31 | 2.319 | 2.320 | **18,46** | 104,5 | 0,00 | 78,31 | - | - | 0,00 | 0,00 | - |
| 32 | 2.751 | 2.752 | **16,41** | 104,5 | 0,00 | 79,79 | - | - | 0,00 | 0,00 | - |
| 33 | 3.921 | 3.922 | **12,18** | 104,5 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 34 | 4.334 | 4.335 | **10,97** | 104,5 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 35 | 5.290 | 5.290 | **8,60** | 104,5 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 36 | 7.243 | 7.244 | **4,92** | 104,5 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 37 | 7.794 | 7.795 | **4,08** | 104,5 | 0,00 | 88,84 | - | - | 0,00 | 0,00 | - |
| 38 | 6.634 | 6.636 | **6,90** | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 39 | 2.257 | 2.262 | **20,29** | 106,0 | 0,00 | 78,09 | - | - | 0,00 | 0,00 | - |
| 4 | 3.933 | 3.935 | **11,25** | 106,0 | 0,00 | 82,90 | - | - | 0,00 | 0,00 | - |
| 40 | 5.460 | 5.462 | **9,14** | 106,0 | 0,00 | 85,75 | - | - | 0,00 | 0,00 | - |
| 41 | 5.019 | 5.021 | **10,12** | 106,0 | 0,00 | 85,02 | - | - | 0,00 | 0,00 | - |
| 42 | 4.622 | 4.624 | **11,08** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 43 | 2.148 | 2.153 | **20,90** | 106,0 | 0,00 | 77,66 | - | - | 0,00 | 0,00 | - |
| 44 | 10.444 | 10.445 | **0,76** | 104,5 | 0,00 | 91,38 | - | - | 0,00 | 0,00 | - |
| 45 | 1.768 | 1.774 | **21,79** | 104,5 | 0,00 | 75,98 | - | - | 0,00 | 0,00 | - |
| 46 | 1.795 | 1.801 | **21,61** | 104,5 | 0,00 | 76,11 | - | - | 0,00 | 0,00 | - |
| 47 | 2.220 | 2.225 | **18,99** | 104,5 | 0,00 | 77,95 | - | - | 0,00 | 0,00 | - |
| 48 | 2.107 | 2.112 | **19,64** | 104,5 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 5 | 3.086 | 3.088 | **14,45** | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 6 | 7.190 | 7.192 | **4,54** | 106,0 | 0,00 | 88,14 | - | - | 0,00 | 0,00 | - |
| 7 | 10.225 | 10.226 | **0,87** | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| 8 | 5.050 | 5.051 | **8,38** | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 9 | 4.168 | 4.169 | **12,02** | 106,0 | 0,00 | 83,40 | - | - | 0,00 | 0,00 | - |
| Sum | | | **38,40** | | | | | | | | |

*- Data undefined due to calculation with octave data*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: C Noise sensitive point: User defined (4)

Wind speed: 10,0 m/s
**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 527 | 542 | **36,51** | 106,0 | 0,00 | 65,69 | - | - | 0,00 | 0,00 | - |
| 10 | 4.584 | 4.586 | **10,79** | 106,0 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 11 | 4.556 | 4.558 | **10,87** | 106,0 | 0,00 | 84,17 | - | - | 0,00 | 0,00 | - |
| 12 | 5.656 | 5.657 | **8,08** | 106,0 | 0,00 | 86,05 | - | - | 0,00 | 0,00 | - |
| 13 | 6.016 | 6.017 | **7,29** | 106,0 | 0,00 | 86,59 | - | - | 0,00 | 0,00 | - |
| 14 | 5.827 | 5.828 | **7,70** | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 15 | 7.287 | 7.288 | **4,85** | 106,0 | 0,00 | 88,25 | - | - | 0,00 | 0,00 | - |
| 16 | 7.679 | 7.680 | **4,18** | 106,0 | 0,00 | 88,71 | - | - | 0,00 | 0,00 | - |
| 17 | 7.710 | 7.711 | **4,13** | 106,0 | 0,00 | 88,74 | - | - | 0,00 | 0,00 | - |
| 18 | 9.547 | 9.547 | **1,46** | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 19 | 9.578 | 9.579 | **1,42** | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 2 | 900 | 909 | **30,33** | 106,0 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 20 | 9.727 | 9.728 | **1,23** | 106,0 | 0,00 | 90,76 | - | - | 0,00 | 0,00 | - |
| 21 | 9.877 | 9.877 | **1,04** | 106,0 | 0,00 | 90,89 | - | - | 0,00 | 0,00 | - |
| 22 | 9.897 | 9.898 | **1,02** | 106,0 | 0,00 | 90,91 | - | - | 0,00 | 0,00 | - |
| 23 | 10.851 | 10.852 | **-0,12** | 106,0 | 0,00 | 91,71 | - | - | 0,00 | 0,00 | - |
| 24 | 11.118 | 11.119 | **-0,41** | 106,0 | 0,00 | 91,92 | - | - | 0,00 | 0,00 | - |
| 25 | 11.510 | 11.511 | **-0,84** | 106,0 | 0,00 | 92,22 | - | - | 0,00 | 0,00 | - |
| 26 | 680 | 685 | **32,77** | 104,5 | 0,00 | 67,71 | - | - | 0,00 | 0,00 | - |
| 27 | 1.045 | 1.048 | **28,00** | 104,5 | 0,00 | 71,41 | - | - | 0,00 | 0,00 | - |
| 28 | 1.349 | 1.351 | **25,05** | 104,5 | 0,00 | 73,61 | - | - | 0,00 | 0,00 | - |
| 29 | 1.210 | 1.213 | **26,32** | 104,5 | 0,00 | 72,67 | - | - | 0,00 | 0,00 | - |
| 3 | 2.108 | 2.112 | **19,50** | 106,0 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 30 | 1.333 | 1.335 | **25,19** | 104,5 | 0,00 | 73,51 | - | - | 0,00 | 0,00 | - |
| 31 | 2.172 | 2.174 | **19,28** | 104,5 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 32 | 2.602 | 2.604 | **17,06** | 104,5 | 0,00 | 79,31 | - | - | 0,00 | 0,00 | - |
| 33 | 3.773 | 3.774 | **12,64** | 104,5 | 0,00 | 82,54 | - | - | 0,00 | 0,00 | - |
| 34 | 4.188 | 4.189 | **11,38** | 104,5 | 0,00 | 83,44 | - | - | 0,00 | 0,00 | - |
| 35 | 5.185 | 5.186 | **8,83** | 104,5 | 0,00 | 85,30 | - | - | 0,00 | 0,00 | - |
| 36 | 7.113 | 7.113 | **5,13** | 104,5 | 0,00 | 88,04 | - | - | 0,00 | 0,00 | - |
| 37 | 7.657 | 7.658 | **4,28** | 104,5 | 0,00 | 88,68 | - | - | 0,00 | 0,00 | - |
| 38 | 6.488 | 6.490 | **7,16** | 106,0 | 0,00 | 87,24 | - | - | 0,00 | 0,00 | - |
| 39 | 2.171 | 2.176 | **20,77** | 106,0 | 0,00 | 77,75 | - | - | 0,00 | 0,00 | - |
| 4 | 3.786 | 3.789 | **11,74** | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 40 | 5.325 | 5.327 | **9,43** | 106,0 | 0,00 | 85,53 | - | - | 0,00 | 0,00 | - |
| 41 | 4.889 | 4.891 | **10,43** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 42 | 4.487 | 4.489 | **11,44** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 43 | 2.001 | 2.006 | **21,78** | 106,0 | 0,00 | 77,05 | - | - | 0,00 | 0,00 | - |
| 44 | 10.305 | 10.305 | **0,91** | 104,5 | 0,00 | 91,26 | - | - | 0,00 | 0,00 | - |
| 45 | 1.639 | 1.645 | **22,71** | 104,5 | 0,00 | 75,32 | - | - | 0,00 | 0,00 | - |
| 46 | 1.692 | 1.698 | **22,32** | 104,5 | 0,00 | 75,60 | - | - | 0,00 | 0,00 | - |
| 47 | 2.117 | 2.122 | **19,58** | 104,5 | 0,00 | 77,53 | - | - | 0,00 | 0,00 | - |
| 48 | 1.984 | 1.989 | **20,38** | 104,5 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 5 | 2.939 | 2.941 | **15,10** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 6 | 7.048 | 7.049 | **4,75** | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 7 | 10.087 | 10.088 | **1,01** | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.954 | 4.955 | **8,59** | 106,0 | 0,00 | 84,90 | - | - | 0,00 | 0,00 | - |
| 9 | 4.079 | 4.081 | **12,29** | 106,0 | 0,00 | 83,21 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,19** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: D Noise sensitive point: User defined (5)

Wind speed: 10,0 m/s
**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 491 | 507 | **37,28** | 106,0 | 0,00 | 65,11 | - | - | 0,00 | 0,00 | - |
| 10 | 4.539 | 4.540 | **10,92** | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| 11 | 4.511 | 4.513 | **11,00** | 106,0 | 0,00 | 84,09 | - | - | 0,00 | 0,00 | - |
| 12 | 5.628 | 5.629 | **8,14** | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 13 | 5.988 | 5.989 | **7,35** | 106,0 | 0,00 | 86,55 | - | - | 0,00 | 0,00 | - |
| 14 | 5.797 | 5.798 | **7,76** | 106,0 | 0,00 | 86,27 | - | - | 0,00 | 0,00 | - |
| 15 | 7.249 | 7.250 | **4,91** | 106,0 | 0,00 | 88,21 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 7.640 | 7.641 | **4,25** | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 17 | 7.671 | 7.672 | **4,20** | 106,0 | 0,00 | 88,70 | - | - | 0,00 | 0,00 | - |
| 18 | 9.513 | 9.514 | **1,51** | 106,0 | 0,00 | 90,57 | - | - | 0,00 | 0,00 | - |
| 19 | 9.542 | 9.543 | **1,47** | 106,0 | 0,00 | 90,59 | - | - | 0,00 | 0,00 | - |
| 2 | 868 | 878 | **30,77** | 106,0 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 20 | 9.691 | 9.691 | **1,28** | 106,0 | 0,00 | 90,73 | - | - | 0,00 | 0,00 | - |
| 21 | 9.843 | 9.844 | **1,08** | 106,0 | 0,00 | 90,86 | - | - | 0,00 | 0,00 | - |
| 22 | 9.862 | 9.863 | **1,06** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 23 | 10.813 | 10.813 | **-0,07** | 106,0 | 0,00 | 91,68 | - | - | 0,00 | 0,00 | - |
| 24 | 11.081 | 11.082 | **-0,37** | 106,0 | 0,00 | 91,89 | - | - | 0,00 | 0,00 | - |
| 25 | 11.476 | 11.476 | **-0,80** | 106,0 | 0,00 | 92,20 | - | - | 0,00 | 0,00 | - |
| 26 | 635 | 640 | **33,51** | 104,5 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 27 | 1.001 | 1.004 | **28,49** | 104,5 | 0,00 | 71,03 | - | - | 0,00 | 0,00 | - |
| 28 | 1.305 | 1.307 | **25,44** | 104,5 | 0,00 | 73,32 | - | - | 0,00 | 0,00 | - |
| 29 | 1.171 | 1.174 | **26,69** | 104,5 | 0,00 | 72,39 | - | - | 0,00 | 0,00 | - |
| 3 | 2.073 | 2.077 | **19,72** | 106,0 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 30 | 1.304 | 1.306 | **25,45** | 104,5 | 0,00 | 73,32 | - | - | 0,00 | 0,00 | - |
| 31 | 2.143 | 2.144 | **19,45** | 104,5 | 0,00 | 77,63 | - | - | 0,00 | 0,00 | - |
| 32 | 2.577 | 2.578 | **17,18** | 104,5 | 0,00 | 79,23 | - | - | 0,00 | 0,00 | - |
| 33 | 3.747 | 3.748 | **12,72** | 104,5 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 34 | 4.158 | 4.159 | **11,47** | 104,5 | 0,00 | 83,38 | - | - | 0,00 | 0,00 | - |
| 35 | 5.141 | 5.142 | **8,94** | 104,5 | 0,00 | 85,22 | - | - | 0,00 | 0,00 | - |
| 36 | 7.074 | 7.074 | **5,20** | 104,5 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 37 | 7.621 | 7.621 | **4,34** | 104,5 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 38 | 6.459 | 6.461 | **7,21** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 39 | 2.125 | 2.130 | **21,04** | 106,0 | 0,00 | 77,57 | - | - | 0,00 | 0,00 | - |
| 4 | 3.757 | 3.759 | **11,85** | 106,0 | 0,00 | 82,50 | - | - | 0,00 | 0,00 | - |
| 40 | 5.287 | 5.290 | **9,51** | 106,0 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 41 | 4.849 | 4.852 | **10,52** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 42 | 4.449 | 4.452 | **11,55** | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 43 | 1.983 | 1.989 | **21,89** | 106,0 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 44 | 10.270 | 10.270 | **0,95** | 104,5 | 0,00 | 91,23 | - | - | 0,00 | 0,00 | - |
| 45 | 1.599 | 1.605 | **23,00** | 104,5 | 0,00 | 75,11 | - | - | 0,00 | 0,00 | - |
| 46 | 1.647 | 1.653 | **22,64** | 104,5 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 47 | 2.072 | 2.077 | **19,84** | 104,5 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 48 | 1.943 | 1.948 | **20,64** | 104,5 | 0,00 | 76,79 | - | - | 0,00 | 0,00 | - |
| 5 | 2.910 | 2.913 | **15,23** | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 6 | 7.014 | 7.016 | **4,80** | 106,0 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 7 | 10.051 | 10.052 | **1,05** | 106,0 | 0,00 | 91,05 | - | - | 0,00 | 0,00 | - |
| 8 | 4.909 | 4.910 | **8,70** | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 9 | 4.034 | 4.035 | **12,44** | 106,0 | 0,00 | 83,12 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,79** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: E Noise sensitive point: User defined (6)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 428 | 446 | **38,73** | 106,0 | 0,00 | 64,00 | - | - | 0,00 | 0,00 | - |
| 10 | 4.518 | 4.519 | **10,98** | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 11 | 4.482 | 4.484 | **11,08** | 106,0 | 0,00 | 84,03 | - | - | 0,00 | 0,00 | - |
| 12 | 5.547 | 5.548 | **8,33** | 106,0 | 0,00 | 85,88 | - | - | 0,00 | 0,00 | - |
| 13 | 5.907 | 5.908 | **7,52** | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 14 | 5.719 | 5.720 | **7,94** | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 15 | 7.187 | 7.188 | **5,02** | 106,0 | 0,00 | 88,13 | - | - | 0,00 | 0,00 | - |
| 16 | 7.580 | 7.581 | **4,35** | 106,0 | 0,00 | 88,59 | - | - | 0,00 | 0,00 | - |
| 17 | 7.614 | 7.615 | **4,29** | 106,0 | 0,00 | 88,63 | - | - | 0,00 | 0,00 | - |
| 18 | 9.442 | 9.442 | **1,60** | 106,0 | 0,00 | 90,50 | - | - | 0,00 | 0,00 | - |
| 19 | 9.475 | 9.475 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 2 | 794 | 804 | **31,84** | 106,0 | 0,00 | 69,11 | - | - | 0,00 | 0,00 | - |
| 20 | 9.625 | 9.626 | **1,36** | 106,0 | 0,00 | 90,67 | - | - | 0,00 | 0,00 | - |
| 21 | 9.771 | 9.771 | **1,18** | 106,0 | 0,00 | 90,80 | - | - | 0,00 | 0,00 | - |
| 22 | 9.792 | 9.793 | **1,15** | 106,0 | 0,00 | 90,82 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
**UAB Infraplanas**
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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 10.753 | 10.754 | **0,00** | 106,0 | 0,00 | 91,63 | - | - | 0,00 | 0,00 | - |
| 24 | 11.016 | 11.017 | **-0,30** | 106,0 | 0,00 | 91,84 | - | - | 0,00 | 0,00 | - |
| 25 | 11.406 | 11.406 | **-0,73** | 106,0 | 0,00 | 92,14 | - | - | 0,00 | 0,00 | - |
| 26 | 614 | 619 | **33,86** | 104,5 | 0,00 | 66,84 | - | - | 0,00 | 0,00 | - |
| 27 | 973 | 976 | **28,81** | 104,5 | 0,00 | 70,79 | - | - | 0,00 | 0,00 | - |
| 28 | 1.274 | 1.276 | **25,72** | 104,5 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 29 | 1.114 | 1.116 | **27,28** | 104,5 | 0,00 | 71,95 | - | - | 0,00 | 0,00 | - |
| 3 | 2.004 | 2.008 | **20,16** | 106,0 | 0,00 | 77,06 | - | - | 0,00 | 0,00 | - |
| 30 | 1.225 | 1.227 | **26,18** | 104,5 | 0,00 | 72,78 | - | - | 0,00 | 0,00 | - |
| 31 | 2.064 | 2.066 | **19,91** | 104,5 | 0,00 | 77,30 | - | - | 0,00 | 0,00 | - |
| 32 | 2.493 | 2.495 | **17,56** | 104,5 | 0,00 | 78,94 | - | - | 0,00 | 0,00 | - |
| 33 | 3.664 | 3.665 | **12,99** | 104,5 | 0,00 | 82,28 | - | - | 0,00 | 0,00 | - |
| 34 | 4.080 | 4.081 | **11,70** | 104,5 | 0,00 | 83,22 | - | - | 0,00 | 0,00 | - |
| 35 | 5.107 | 5.108 | **9,01** | 104,5 | 0,00 | 85,17 | - | - | 0,00 | 0,00 | - |
| 36 | 7.016 | 7.016 | **5,29** | 104,5 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 37 | 7.556 | 7.556 | **4,44** | 104,5 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 38 | 6.379 | 6.381 | **7,35** | 106,0 | 0,00 | 87,10 | - | - | 0,00 | 0,00 | - |
| 39 | 2.108 | 2.114 | **21,13** | 106,0 | 0,00 | 77,50 | - | - | 0,00 | 0,00 | - |
| 4 | 3.678 | 3.681 | **12,13** | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| 40 | 5.224 | 5.226 | **9,65** | 106,0 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 41 | 4.792 | 4.794 | **10,66** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 42 | 4.386 | 4.389 | **11,73** | 106,0 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 43 | 1.893 | 1.899 | **22,46** | 106,0 | 0,00 | 76,57 | - | - | 0,00 | 0,00 | - |
| 44 | 10.201 | 10.202 | **1,02** | 104,5 | 0,00 | 91,17 | - | - | 0,00 | 0,00 | - |
| 45 | 1.544 | 1.550 | **23,42** | 104,5 | 0,00 | 74,81 | - | - | 0,00 | 0,00 | - |
| 46 | 1.617 | 1.623 | **22,87** | 104,5 | 0,00 | 75,21 | - | - | 0,00 | 0,00 | - |
| 47 | 2.042 | 2.047 | **20,03** | 104,5 | 0,00 | 77,22 | - | - | 0,00 | 0,00 | - |
| 48 | 1.894 | 1.899 | **20,95** | 104,5 | 0,00 | 76,57 | - | - | 0,00 | 0,00 | - |
| 5 | 2.830 | 2.833 | **15,60** | 106,0 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 6 | 6.942 | 6.943 | **4,91** | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| 7 | 9.984 | 9.985 | **1,12** | 106,0 | 0,00 | 90,99 | - | - | 0,00 | 0,00 | - |
| 8 | 4.881 | 4.883 | **8,76** | 106,0 | 0,00 | 84,77 | - | - | 0,00 | 0,00 | - |
| 9 | 4.014 | 4.015 | **12,50** | 106,0 | 0,00 | 83,07 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,74** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: F Noise sensitive point: User defined (7)

Wind speed: 10,0 m/s

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 375 | 396 | **40,05** | 106,0 | 0,00 | 62,96 | - | - | 0,00 | 0,00 | - |
| 10 | 4.470 | 4.471 | **11,11** | 106,0 | 0,00 | 84,01 | - | - | 0,00 | 0,00 | - |
| 11 | 4.433 | 4.434 | **11,22** | 106,0 | 0,00 | 83,94 | - | - | 0,00 | 0,00 | - |
| 12 | 5.498 | 5.500 | **8,44** | 106,0 | 0,00 | 85,81 | - | - | 0,00 | 0,00 | - |
| 13 | 5.858 | 5.860 | **7,63** | 106,0 | 0,00 | 86,36 | - | - | 0,00 | 0,00 | - |
| 14 | 5.669 | 5.670 | **8,05** | 106,0 | 0,00 | 86,07 | - | - | 0,00 | 0,00 | - |
| 15 | 7.134 | 7.135 | **5,11** | 106,0 | 0,00 | 88,07 | - | - | 0,00 | 0,00 | - |
| 16 | 7.527 | 7.528 | **4,44** | 106,0 | 0,00 | 88,53 | - | - | 0,00 | 0,00 | - |
| 17 | 7.561 | 7.562 | **4,38** | 106,0 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 18 | 9.390 | 9.391 | **1,67** | 106,0 | 0,00 | 90,45 | - | - | 0,00 | 0,00 | - |
| 19 | 9.422 | 9.423 | **1,63** | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| 2 | 743 | 754 | **32,63** | 106,0 | 0,00 | 68,54 | - | - | 0,00 | 0,00 | - |
| 20 | 9.573 | 9.573 | **1,43** | 106,0 | 0,00 | 90,62 | - | - | 0,00 | 0,00 | - |
| 21 | 9.719 | 9.720 | **1,24** | 106,0 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 22 | 9.740 | 9.741 | **1,21** | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 23 | 10.700 | 10.701 | **0,06** | 106,0 | 0,00 | 91,59 | - | - | 0,00 | 0,00 | - |
| 24 | 10.964 | 10.964 | **-0,24** | 106,0 | 0,00 | 91,80 | - | - | 0,00 | 0,00 | - |
| 25 | 11.354 | 11.354 | **-0,67** | 106,0 | 0,00 | 92,10 | - | - | 0,00 | 0,00 | - |
| 26 | 569 | 574 | **34,68** | 104,5 | 0,00 | 66,18 | - | - | 0,00 | 0,00 | - |
| 27 | 924 | 927 | **29,39** | 104,5 | 0,00 | 70,34 | - | - | 0,00 | 0,00 | - |
| 28 | 1.224 | 1.227 | **26,18** | 104,5 | 0,00 | 72,78 | - | - | 0,00 | 0,00 | - |
| 29 | 1.061 | 1.063 | **27,83** | 104,5 | 0,00 | 71,53 | - | - | 0,00 | 0,00 | - |
| 3 | 1.952 | 1.956 | **20,51** | 106,0 | 0,00 | 76,83 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 1.175 | 1.178 | **26,66** | 104,5 | 0,00 | 72,42 | - | - | 0,00 | 0,00 | - |
| 31 | 2.014 | 2.016 | **20,22** | 104,5 | 0,00 | 77,09 | - | - | 0,00 | 0,00 | - |
| 32 | 2.446 | 2.447 | **17,79** | 104,5 | 0,00 | 78,77 | - | - | 0,00 | 0,00 | - |
| 33 | 3.616 | 3.617 | **13,15** | 104,5 | 0,00 | 82,17 | - | - | 0,00 | 0,00 | - |
| 34 | 4.030 | 4.031 | **11,85** | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 35 | 5.057 | 5.057 | **9,13** | 104,5 | 0,00 | 85,08 | - | - | 0,00 | 0,00 | - |
| 36 | 6.963 | 6.963 | **5,38** | 104,5 | 0,00 | 87,86 | - | - | 0,00 | 0,00 | - |
| 37 | 7.503 | 7.504 | **4,52** | 104,5 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 38 | 6.330 | 6.332 | **7,44** | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 39 | 2.062 | 2.067 | **21,41** | 106,0 | 0,00 | 77,31 | - | - | 0,00 | 0,00 | - |
| 4 | 3.628 | 3.631 | **12,30** | 106,0 | 0,00 | 82,20 | - | - | 0,00 | 0,00 | - |
| 40 | 5.171 | 5.173 | **9,77** | 106,0 | 0,00 | 85,28 | - | - | 0,00 | 0,00 | - |
| 41 | 4.739 | 4.741 | **10,79** | 106,0 | 0,00 | 84,52 | - | - | 0,00 | 0,00 | - |
| 42 | 4.334 | 4.336 | **11,89** | 106,0 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 43 | 1.852 | 1.857 | **22,73** | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 44 | 10.149 | 10.149 | **1,08** | 104,5 | 0,00 | 91,13 | - | - | 0,00 | 0,00 | - |
| 45 | 1.491 | 1.497 | **23,83** | 104,5 | 0,00 | 74,51 | - | - | 0,00 | 0,00 | - |
| 46 | 1.567 | 1.574 | **23,24** | 104,5 | 0,00 | 74,94 | - | - | 0,00 | 0,00 | - |
| 47 | 1.992 | 1.997 | **20,34** | 104,5 | 0,00 | 77,01 | - | - | 0,00 | 0,00 | - |
| 48 | 1.841 | 1.847 | **21,30** | 104,5 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 5 | 2.781 | 2.784 | **15,83** | 106,0 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 6 | 6.890 | 6.892 | **4,99** | 106,0 | 0,00 | 87,77 | - | - | 0,00 | 0,00 | - |
| 7 | 9.931 | 9.932 | **1,17** | 106,0 | 0,00 | 90,94 | - | - | 0,00 | 0,00 | - |
| 8 | 4.832 | 4.834 | **8,87** | 106,0 | 0,00 | 84,69 | - | - | 0,00 | 0,00 | - |
| 9 | 3.966 | 3.967 | **12,66** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,74** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: G Noise sensitive point: User defined (8)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 327 | 351 | **41,38** | 106,0 | 0,00 | 61,90 | - | - | 0,00 | 0,00 | - |
| 10 | 4.457 | 4.458 | **11,15** | 106,0 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| 11 | 4.409 | 4.410 | **11,29** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 12 | 5.409 | 5.411 | **8,65** | 106,0 | 0,00 | 85,67 | - | - | 0,00 | 0,00 | - |
| 13 | 5.770 | 5.771 | **7,82** | 106,0 | 0,00 | 86,22 | - | - | 0,00 | 0,00 | - |
| 14 | 5.584 | 5.585 | **8,25** | 106,0 | 0,00 | 85,94 | - | - | 0,00 | 0,00 | - |
| 15 | 7.070 | 7.071 | **5,23** | 106,0 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 16 | 7.465 | 7.466 | **4,54** | 106,0 | 0,00 | 88,46 | - | - | 0,00 | 0,00 | - |
| 17 | 7.503 | 7.503 | **4,48** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 18 | 9.314 | 9.314 | **1,77** | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 19 | 9.351 | 9.351 | **1,72** | 106,0 | 0,00 | 90,42 | - | - | 0,00 | 0,00 | - |
| 2 | 667 | 679 | **33,88** | 106,0 | 0,00 | 67,64 | - | - | 0,00 | 0,00 | - |
| 20 | 9.504 | 9.504 | **1,52** | 106,0 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 21 | 9.641 | 9.642 | **1,34** | 106,0 | 0,00 | 90,68 | - | - | 0,00 | 0,00 | - |
| 22 | 9.666 | 9.666 | **1,31** | 106,0 | 0,00 | 90,71 | - | - | 0,00 | 0,00 | - |
| 23 | 10.638 | 10.639 | **0,13** | 106,0 | 0,00 | 91,54 | - | - | 0,00 | 0,00 | - |
| 24 | 10.895 | 10.896 | **-0,17** | 106,0 | 0,00 | 91,75 | - | - | 0,00 | 0,00 | - |
| 25 | 11.278 | 11.279 | **-0,59** | 106,0 | 0,00 | 92,05 | - | - | 0,00 | 0,00 | - |
| 26 | 575 | 580 | **34,56** | 104,5 | 0,00 | 66,27 | - | - | 0,00 | 0,00 | - |
| 27 | 913 | 916 | **29,53** | 104,5 | 0,00 | 70,24 | - | - | 0,00 | 0,00 | - |
| 28 | 1.206 | 1.209 | **26,35** | 104,5 | 0,00 | 72,65 | - | - | 0,00 | 0,00 | - |
| 29 | 1.007 | 1.010 | **28,42** | 104,5 | 0,00 | 71,09 | - | - | 0,00 | 0,00 | - |
| 3 | 1.881 | 1.886 | **20,99** | 106,0 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 30 | 1.090 | 1.093 | **27,52** | 104,5 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 31 | 1.930 | 1.931 | **20,75** | 104,5 | 0,00 | 76,72 | - | - | 0,00 | 0,00 | - |
| 32 | 2.354 | 2.355 | **18,27** | 104,5 | 0,00 | 78,44 | - | - | 0,00 | 0,00 | - |
| 33 | 3.524 | 3.525 | **13,46** | 104,5 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 34 | 3.945 | 3.946 | **12,10** | 104,5 | 0,00 | 82,92 | - | - | 0,00 | 0,00 | - |
| 35 | 5.027 | 5.028 | **9,20** | 104,5 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 36 | 6.903 | 6.904 | **5,48** | 104,5 | 0,00 | 87,78 | - | - | 0,00 | 0,00 | - |
| 37 | 7.435 | 7.435 | **4,62** | 104,5 | 0,00 | 88,43 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 6.243 | 6.245 | **7,59** | 106,0 | 0,00 | 86,91 | - | - | 0,00 | 0,00 | - |
| 39 | 2.057 | 2.062 | **21,44** | 106,0 | 0,00 | 77,29 | - | - | 0,00 | 0,00 | - |
| 4 | 3.543 | 3.546 | **12,62** | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 40 | 5.105 | 5.107 | **9,92** | 106,0 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 41 | 4.681 | 4.683 | **10,93** | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 42 | 4.269 | 4.271 | **12,09** | 106,0 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 43 | 1.750 | 1.756 | **23,42** | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 44 | 10.077 | 10.077 | **1,16** | 104,5 | 0,00 | 91,07 | - | - | 0,00 | 0,00 | - |
| 45 | 1.439 | 1.445 | **24,25** | 104,5 | 0,00 | 74,20 | - | - | 0,00 | 0,00 | - |
| 46 | 1.548 | 1.554 | **23,39** | 104,5 | 0,00 | 74,83 | - | - | 0,00 | 0,00 | - |
| 47 | 1.970 | 1.975 | **20,47** | 104,5 | 0,00 | 76,91 | - | - | 0,00 | 0,00 | - |
| 48 | 1.797 | 1.802 | **21,59** | 104,5 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 5 | 2.694 | 2.697 | **16,25** | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 6 | 6.813 | 6.814 | **5,11** | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 7 | 9.860 | 9.861 | **1,25** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 8 | 4.811 | 4.812 | **8,92** | 106,0 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 9 | 3.953 | 3.954 | **12,70** | 106,0 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,67** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: H Noise sensitive point: User defined (9)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 291 | 317 | **42,45** | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 10 | 4.421 | 4.422 | **11,26** | 106,0 | 0,00 | 83,91 | - | - | 0,00 | 0,00 | - |
| 11 | 4.373 | 4.374 | **11,40** | 106,0 | 0,00 | 83,82 | - | - | 0,00 | 0,00 | - |
| 12 | 5.382 | 5.384 | **8,72** | 106,0 | 0,00 | 85,62 | - | - | 0,00 | 0,00 | - |
| 13 | 5.742 | 5.744 | **7,89** | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 14 | 5.555 | 5.556 | **8,31** | 106,0 | 0,00 | 85,90 | - | - | 0,00 | 0,00 | - |
| 15 | 7.037 | 7.038 | **5,29** | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 16 | 7.431 | 7.432 | **4,60** | 106,0 | 0,00 | 88,42 | - | - | 0,00 | 0,00 | - |
| 17 | 7.468 | 7.469 | **4,54** | 106,0 | 0,00 | 88,47 | - | - | 0,00 | 0,00 | - |
| 18 | 9.282 | 9.283 | **1,81** | 106,0 | 0,00 | 90,35 | - | - | 0,00 | 0,00 | - |
| 19 | 9.318 | 9.319 | **1,76** | 106,0 | 0,00 | 90,39 | - | - | 0,00 | 0,00 | - |
| 2 | 635 | 648 | **34,44** | 106,0 | 0,00 | 67,23 | - | - | 0,00 | 0,00 | - |
| 20 | 9.471 | 9.472 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 21 | 9.610 | 9.611 | **1,38** | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 22 | 9.634 | 9.635 | **1,35** | 106,0 | 0,00 | 90,68 | - | - | 0,00 | 0,00 | - |
| 23 | 10.604 | 10.605 | **0,17** | 106,0 | 0,00 | 91,51 | - | - | 0,00 | 0,00 | - |
| 24 | 10.863 | 10.863 | **-0,13** | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 25 | 11.247 | 11.248 | **-0,56** | 106,0 | 0,00 | 92,02 | - | - | 0,00 | 0,00 | - |
| 26 | 542 | 548 | **35,19** | 104,5 | 0,00 | 65,77 | - | - | 0,00 | 0,00 | - |
| 27 | 877 | 881 | **29,98** | 104,5 | 0,00 | 69,89 | - | - | 0,00 | 0,00 | - |
| 28 | 1.170 | 1.173 | **26,70** | 104,5 | 0,00 | 72,39 | - | - | 0,00 | 0,00 | - |
| 29 | 972 | 975 | **28,82** | 104,5 | 0,00 | 70,78 | - | - | 0,00 | 0,00 | - |
| 3 | 1.849 | 1.853 | **21,22** | 106,0 | 0,00 | 76,36 | - | - | 0,00 | 0,00 | - |
| 30 | 1.061 | 1.064 | **27,83** | 104,5 | 0,00 | 71,54 | - | - | 0,00 | 0,00 | - |
| 31 | 1.901 | 1.902 | **20,93** | 104,5 | 0,00 | 76,59 | - | - | 0,00 | 0,00 | - |
| 32 | 2.328 | 2.329 | **18,41** | 104,5 | 0,00 | 78,35 | - | - | 0,00 | 0,00 | - |
| 33 | 3.498 | 3.499 | **13,54** | 104,5 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 34 | 3.917 | 3.918 | **12,19** | 104,5 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 35 | 4.991 | 4.992 | **9,29** | 104,5 | 0,00 | 84,97 | - | - | 0,00 | 0,00 | - |
| 36 | 6.869 | 6.869 | **5,54** | 104,5 | 0,00 | 87,74 | - | - | 0,00 | 0,00 | - |
| 37 | 7.402 | 7.402 | **4,67** | 104,5 | 0,00 | 88,39 | - | - | 0,00 | 0,00 | - |
| 38 | 6.215 | 6.217 | **7,65** | 106,0 | 0,00 | 86,87 | - | - | 0,00 | 0,00 | - |
| 39 | 2.021 | 2.027 | **21,66** | 106,0 | 0,00 | 77,14 | - | - | 0,00 | 0,00 | - |
| 4 | 3.515 | 3.517 | **12,72** | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 40 | 5.072 | 5.074 | **10,00** | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 41 | 4.646 | 4.649 | **11,02** | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 42 | 4.235 | 4.238 | **12,19** | 106,0 | 0,00 | 83,54 | - | - | 0,00 | 0,00 | - |
| 43 | 1.730 | 1.737 | **23,55** | 106,0 | 0,00 | 75,79 | - | - | 0,00 | 0,00 | - |
| 44 | 10.045 | 10.045 | **1,20** | 104,5 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 1.403 | 1.410 | **24,54** | 104,5 | 0,00 | 73,99 | - | - | 0,00 | 0,00 | - |
| 46 | 1.512 | 1.518 | **23,67** | 104,5 | 0,00 | 74,63 | - | - | 0,00 | 0,00 | - |
| 47 | 1.933 | 1.939 | **20,70** | 104,5 | 0,00 | 76,75 | - | - | 0,00 | 0,00 | - |
| 48 | 1.761 | 1.767 | **21,84** | 104,5 | 0,00 | 75,94 | - | - | 0,00 | 0,00 | - |
| 5 | 2.666 | 2.669 | **16,39** | 106,0 | 0,00 | 79,53 | - | - | 0,00 | 0,00 | - |
| 6 | 6.782 | 6.783 | **5,16** | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 7 | 9.828 | 9.829 | **1,28** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.775 | 4.776 | **9,01** | 106,0 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 9 | 3.917 | 3.919 | **12,82** | 106,0 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,51** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: I Noise sensitive point: User defined (11)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 481 | 497 | **37,52** | 106,0 | 0,00 | 64,93 | - | - | 0,00 | 0,00 | - |
| 10 | 4.589 | 4.590 | **10,78** | 106,0 | 0,00 | 84,24 | - | - | 0,00 | 0,00 | - |
| 11 | 4.518 | 4.519 | **10,98** | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 12 | 5.307 | 5.308 | **8,90** | 106,0 | 0,00 | 85,50 | - | - | 0,00 | 0,00 | - |
| 13 | 5.666 | 5.667 | **8,06** | 106,0 | 0,00 | 86,07 | - | - | 0,00 | 0,00 | - |
| 14 | 5.496 | 5.498 | **8,45** | 106,0 | 0,00 | 85,80 | - | - | 0,00 | 0,00 | - |
| 15 | 7.059 | 7.060 | **5,25** | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 16 | 7.459 | 7.460 | **4,55** | 106,0 | 0,00 | 88,45 | - | - | 0,00 | 0,00 | - |
| 17 | 7.510 | 7.510 | **4,47** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 18 | 9.258 | 9.259 | **1,84** | 106,0 | 0,00 | 90,33 | - | - | 0,00 | 0,00 | - |
| 19 | 9.311 | 9.312 | **1,77** | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 2 | 683 | 695 | **33,61** | 106,0 | 0,00 | 67,84 | - | - | 0,00 | 0,00 | - |
| 20 | 9.474 | 9.474 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 21 | 9.578 | 9.579 | **1,42** | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 22 | 9.616 | 9.617 | **1,37** | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 23 | 10.631 | 10.632 | **0,14** | 106,0 | 0,00 | 91,53 | - | - | 0,00 | 0,00 | - |
| 24 | 10.867 | 10.867 | **-0,13** | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 25 | 11.226 | 11.227 | **-0,53** | 106,0 | 0,00 | 92,01 | - | - | 0,00 | 0,00 | - |
| 26 | 791 | 794 | **31,13** | 104,5 | 0,00 | 69,00 | - | - | 0,00 | 0,00 | - |
| 27 | 1.081 | 1.084 | **27,61** | 104,5 | 0,00 | 71,70 | - | - | 0,00 | 0,00 | - |
| 28 | 1.352 | 1.355 | **25,02** | 104,5 | 0,00 | 73,64 | - | - | 0,00 | 0,00 | - |
| 29 | 1.073 | 1.075 | **27,71** | 104,5 | 0,00 | 71,63 | - | - | 0,00 | 0,00 | - |
| 3 | 1.868 | 1.872 | **21,09** | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 30 | 1.038 | 1.041 | **28,08** | 104,5 | 0,00 | 71,35 | - | - | 0,00 | 0,00 | - |
| 31 | 1.860 | 1.861 | **21,20** | 104,5 | 0,00 | 76,40 | - | - | 0,00 | 0,00 | - |
| 32 | 2.249 | 2.250 | **18,85** | 104,5 | 0,00 | 78,04 | - | - | 0,00 | 0,00 | - |
| 33 | 3.409 | 3.410 | **13,85** | 104,5 | 0,00 | 81,65 | - | - | 0,00 | 0,00 | - |
| 34 | 3.863 | 3.863 | **12,36** | 104,5 | 0,00 | 82,74 | - | - | 0,00 | 0,00 | - |
| 35 | 5.120 | 5.121 | **8,98** | 104,5 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 36 | 6.907 | 6.908 | **5,47** | 104,5 | 0,00 | 87,79 | - | - | 0,00 | 0,00 | - |
| 37 | 7.409 | 7.409 | **4,66** | 104,5 | 0,00 | 88,40 | - | - | 0,00 | 0,00 | - |
| 38 | 6.149 | 6.151 | **7,77** | 106,0 | 0,00 | 86,78 | - | - | 0,00 | 0,00 | - |
| 39 | 2.217 | 2.222 | **20,51** | 106,0 | 0,00 | 77,93 | - | - | 0,00 | 0,00 | - |
| 4 | 3.460 | 3.463 | **12,93** | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 40 | 5.089 | 5.092 | **9,96** | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 41 | 4.692 | 4.695 | **10,90** | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 42 | 4.259 | 4.262 | **12,12** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 43 | 1.592 | 1.599 | **24,55** | 106,0 | 0,00 | 75,08 | - | - | 0,00 | 0,00 | - |
| 44 | 10.034 | 10.035 | **1,21** | 104,5 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 45 | 1.493 | 1.499 | **23,82** | 104,5 | 0,00 | 74,52 | - | - | 0,00 | 0,00 | - |
| 46 | 1.683 | 1.689 | **22,38** | 104,5 | 0,00 | 75,55 | - | - | 0,00 | 0,00 | - |
| 47 | 2.094 | 2.098 | **19,72** | 104,5 | 0,00 | 77,44 | - | - | 0,00 | 0,00 | - |
| 48 | 1.866 | 1.872 | **21,13** | 104,5 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 5 | 2.609 | 2.612 | **16,67** | 106,0 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 6 | 6.754 | 6.755 | **5,21** | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 7 | 9.823 | 9.824 | **1,29** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.924 | 4.925 | **8,66** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 4.088 | 4.089 | **12,27** | 106,0 | 0,00 | 83,23 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,14** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: J Noise sensitive point: User defined (12)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 454 | 472 | **38,11** | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 10 | 4.570 | 4.572 | **10,83** | 106,0 | 0,00 | 84,20 | - | - | 0,00 | 0,00 | - |
| 11 | 4.502 | 4.504 | **11,02** | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 12 | 5.317 | 5.318 | **8,88** | 106,0 | 0,00 | 85,52 | - | - | 0,00 | 0,00 | - |
| 13 | 5.677 | 5.678 | **8,03** | 106,0 | 0,00 | 86,08 | - | - | 0,00 | 0,00 | - |
| 14 | 5.505 | 5.506 | **8,43** | 106,0 | 0,00 | 85,82 | - | - | 0,00 | 0,00 | - |
| 15 | 7.059 | 7.059 | **5,25** | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 16 | 7.457 | 7.458 | **4,55** | 106,0 | 0,00 | 88,45 | - | - | 0,00 | 0,00 | - |
| 17 | 7.507 | 7.507 | **4,47** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 18 | 9.263 | 9.264 | **1,84** | 106,0 | 0,00 | 90,34 | - | - | 0,00 | 0,00 | - |
| 19 | 9.314 | 9.315 | **1,77** | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 2 | 674 | 685 | **33,77** | 106,0 | 0,00 | 67,72 | - | - | 0,00 | 0,00 | - |
| 20 | 9.475 | 9.476 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 21 | 9.584 | 9.585 | **1,41** | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 22 | 9.620 | 9.621 | **1,37** | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 23 | 10.630 | 10.631 | **0,14** | 106,0 | 0,00 | 91,53 | - | - | 0,00 | 0,00 | - |
| 24 | 10.868 | 10.869 | **-0,14** | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 25 | 11.231 | 11.231 | **-0,54** | 106,0 | 0,00 | 92,01 | - | - | 0,00 | 0,00 | - |
| 26 | 761 | 765 | **31,55** | 104,5 | 0,00 | 68,67 | - | - | 0,00 | 0,00 | - |
| 27 | 1.057 | 1.060 | **27,87** | 104,5 | 0,00 | 71,50 | - | - | 0,00 | 0,00 | - |
| 28 | 1.331 | 1.333 | **25,21** | 104,5 | 0,00 | 73,50 | - | - | 0,00 | 0,00 | - |
| 29 | 1.059 | 1.062 | **27,85** | 104,5 | 0,00 | 71,52 | - | - | 0,00 | 0,00 | - |
| 3 | 1.865 | 1.870 | **21,10** | 106,0 | 0,00 | 76,43 | - | - | 0,00 | 0,00 | - |
| 30 | 1.039 | 1.042 | **28,07** | 104,5 | 0,00 | 71,35 | - | - | 0,00 | 0,00 | - |
| 31 | 1.864 | 1.866 | **21,17** | 104,5 | 0,00 | 76,42 | - | - | 0,00 | 0,00 | - |
| 32 | 2.258 | 2.260 | **18,79** | 104,5 | 0,00 | 78,08 | - | - | 0,00 | 0,00 | - |
| 33 | 3.421 | 3.421 | **13,81** | 104,5 | 0,00 | 81,68 | - | - | 0,00 | 0,00 | - |
| 34 | 3.870 | 3.871 | **12,33** | 104,5 | 0,00 | 82,76 | - | - | 0,00 | 0,00 | - |
| 35 | 5.107 | 5.107 | **9,02** | 104,5 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 36 | 6.905 | 6.905 | **5,48** | 104,5 | 0,00 | 87,78 | - | - | 0,00 | 0,00 | - |
| 37 | 7.410 | 7.410 | **4,66** | 104,5 | 0,00 | 88,40 | - | - | 0,00 | 0,00 | - |
| 38 | 6.159 | 6.160 | **7,75** | 106,0 | 0,00 | 86,79 | - | - | 0,00 | 0,00 | - |
| 39 | 2.195 | 2.200 | **20,63** | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 4 | 3.468 | 3.470 | **12,90** | 106,0 | 0,00 | 81,81 | - | - | 0,00 | 0,00 | - |
| 40 | 5.089 | 5.091 | **9,96** | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 41 | 4.688 | 4.691 | **10,91** | 106,0 | 0,00 | 84,42 | - | - | 0,00 | 0,00 | - |
| 42 | 4.258 | 4.261 | **12,12** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 43 | 1.608 | 1.615 | **24,43** | 106,0 | 0,00 | 75,16 | - | - | 0,00 | 0,00 | - |
| 44 | 10.037 | 10.038 | **1,21** | 104,5 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 45 | 1.482 | 1.488 | **23,90** | 104,5 | 0,00 | 74,45 | - | - | 0,00 | 0,00 | - |
| 46 | 1.663 | 1.669 | **22,53** | 104,5 | 0,00 | 75,45 | - | - | 0,00 | 0,00 | - |
| 47 | 2.076 | 2.080 | **19,83** | 104,5 | 0,00 | 77,36 | - | - | 0,00 | 0,00 | - |
| 48 | 1.854 | 1.859 | **21,21** | 104,5 | 0,00 | 76,39 | - | - | 0,00 | 0,00 | - |
| 5 | 2.617 | 2.620 | **16,64** | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 6 | 6.759 | 6.760 | **5,20** | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| 7 | 9.825 | 9.826 | **1,28** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.908 | 4.909 | **8,70** | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 9 | 4.069 | 4.071 | **12,33** | 106,0 | 0,00 | 83,19 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,50** | | | | | | | | |

*- Data undefined due to calculation with octave data*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: K Noise sensitive point: User defined (13)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 506 | 522 | **36,96** | 106,0 | 0,00 | 65,35 | - | - | 0,00 | 0,00 | - |
| 10 | 4.329 | 4.330 | **11,53** | 106,0 | 0,00 | 83,73 | - | - | 0,00 | 0,00 | - |
| 11 | 4.230 | 4.231 | **11,83** | 106,0 | 0,00 | 83,53 | - | - | 0,00 | 0,00 | - |
| 12 | 4.893 | 4.894 | **9,95** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 13 | 5.252 | 5.254 | **9,03** | 106,0 | 0,00 | 85,41 | - | - | 0,00 | 0,00 | - |
| 14 | 5.083 | 5.084 | **9,46** | 106,0 | 0,00 | 85,12 | - | - | 0,00 | 0,00 | - |
| 15 | 6.668 | 6.669 | **5,97** | 106,0 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 16 | 7.070 | 7.070 | **5,23** | 106,0 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 17 | 7.127 | 7.128 | **5,13** | 106,0 | 0,00 | 88,06 | - | - | 0,00 | 0,00 | - |
| 18 | 8.849 | 8.850 | **2,41** | 106,0 | 0,00 | 89,94 | - | - | 0,00 | 0,00 | - |
| 19 | 8.907 | 8.908 | **2,32** | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| 2 | 416 | 436 | **39,00** | 106,0 | 0,00 | 63,78 | - | - | 0,00 | 0,00 | - |
| 20 | 9.073 | 9.074 | **2,09** | 106,0 | 0,00 | 90,16 | - | - | 0,00 | 0,00 | - |
| 21 | 9.168 | 9.169 | **1,97** | 106,0 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 22 | 9.209 | 9.209 | **1,91** | 106,0 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 23 | 10.240 | 10.241 | **0,60** | 106,0 | 0,00 | 91,21 | - | - | 0,00 | 0,00 | - |
| 24 | 10.466 | 10.467 | **0,33** | 106,0 | 0,00 | 91,40 | - | - | 0,00 | 0,00 | - |
| 25 | 10.818 | 10.819 | **-0,08** | 106,0 | 0,00 | 91,68 | - | - | 0,00 | 0,00 | - |
| 26 | 804 | 808 | **30,94** | 104,5 | 0,00 | 69,14 | - | - | 0,00 | 0,00 | - |
| 27 | 964 | 967 | **28,91** | 104,5 | 0,00 | 70,71 | - | - | 0,00 | 0,00 | - |
| 28 | 1.173 | 1.175 | **26,68** | 104,5 | 0,00 | 72,40 | - | - | 0,00 | 0,00 | - |
| 29 | 803 | 807 | **30,95** | 104,5 | 0,00 | 69,14 | - | - | 0,00 | 0,00 | - |
| 3 | 1.488 | 1.494 | **24,03** | 106,0 | 0,00 | 74,49 | - | - | 0,00 | 0,00 | - |
| 30 | 651 | 656 | **33,23** | 104,5 | 0,00 | 67,34 | - | - | 0,00 | 0,00 | - |
| 31 | 1.453 | 1.455 | **24,18** | 104,5 | 0,00 | 74,26 | - | - | 0,00 | 0,00 | - |
| 32 | 1.835 | 1.836 | **21,37** | 104,5 | 0,00 | 76,28 | - | - | 0,00 | 0,00 | - |
| 33 | 2.996 | 2.997 | **15,40** | 104,5 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 34 | 3.450 | 3.451 | **13,71** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 35 | 4.812 | 4.812 | **9,72** | 104,5 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 36 | 6.524 | 6.524 | **6,13** | 104,5 | 0,00 | 87,29 | - | - | 0,00 | 0,00 | - |
| 37 | 7.011 | 7.011 | **5,30** | 104,5 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 38 | 5.735 | 5.738 | **8,57** | 106,0 | 0,00 | 86,17 | - | - | 0,00 | 0,00 | - |
| 39 | 2.025 | 2.030 | **21,64** | 106,0 | 0,00 | 77,15 | - | - | 0,00 | 0,00 | - |
| 4 | 3.048 | 3.051 | **14,61** | 106,0 | 0,00 | 80,69 | - | - | 0,00 | 0,00 | - |
| 40 | 4.697 | 4.700 | **10,89** | 106,0 | 0,00 | 84,44 | - | - | 0,00 | 0,00 | - |
| 41 | 4.316 | 4.319 | **11,94** | 106,0 | 0,00 | 83,71 | - | - | 0,00 | 0,00 | - |
| 42 | 3.872 | 3.875 | **13,36** | 106,0 | 0,00 | 82,76 | - | - | 0,00 | 0,00 | - |
| 43 | 1.188 | 1.197 | **27,97** | 106,0 | 0,00 | 72,56 | - | - | 0,00 | 0,00 | - |
| 44 | 9.629 | 9.630 | **1,67** | 104,5 | 0,00 | 90,67 | - | - | 0,00 | 0,00 | - |
| 45 | 1.183 | 1.192 | **26,52** | 104,5 | 0,00 | 72,52 | - | - | 0,00 | 0,00 | - |
| 46 | 1.470 | 1.477 | **24,00** | 104,5 | 0,00 | 74,39 | - | - | 0,00 | 0,00 | - |
| 47 | 1.850 | 1.856 | **21,24** | 104,5 | 0,00 | 76,37 | - | - | 0,00 | 0,00 | - |
| 48 | 1.562 | 1.568 | **23,28** | 104,5 | 0,00 | 74,91 | - | - | 0,00 | 0,00 | - |
| 5 | 2.197 | 2.201 | **18,95** | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 6 | 6.345 | 6.346 | **5,87** | 106,0 | 0,00 | 87,05 | - | - | 0,00 | 0,00 | - |
| 7 | 9.419 | 9.420 | **1,72** | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| 8 | 4.639 | 4.641 | **9,34** | 106,0 | 0,00 | 84,33 | - | - | 0,00 | 0,00 | - |
| 9 | 3.835 | 3.837 | **13,09** | 106,0 | 0,00 | 82,68 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,34** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: L Noise sensitive point: User defined (14)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 472 | 489 | **37,70** | 106,0 | 0,00 | 64,78 | - | - | 0,00 | 0,00 | - |
| 10 | 4.291 | 4.292 | **11,64** | 106,0 | 0,00 | 83,65 | - | - | 0,00 | 0,00 | - |
| 11 | 4.194 | 4.195 | **11,94** | 106,0 | 0,00 | 83,46 | - | - | 0,00 | 0,00 | - |
| 12 | 4.887 | 4.889 | **9,96** | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 13 | 5.247 | 5.248 | **9,05** | 106,0 | 0,00 | 85,40 | - | - | 0,00 | 0,00 | - |
| 14 | 5.075 | 5.076 | **9,48** | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 15 | 6.648 | 6.649 | **6,01** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 7.049 | 7.050 | **5,27** | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 17 | 7.105 | 7.106 | **5,17** | 106,0 | 0,00 | 88,03 | - | - | 0,00 | 0,00 | - |
| 18 | 8.836 | 8.837 | **2,42** | 106,0 | 0,00 | 89,93 | - | - | 0,00 | 0,00 | - |
| 19 | 8.891 | 8.892 | **2,35** | 106,0 | 0,00 | 89,98 | - | - | 0,00 | 0,00 | - |
| 2 | 374 | 396 | **40,06** | 106,0 | 0,00 | 62,95 | - | - | 0,00 | 0,00 | - |
| 20 | 9.056 | 9.057 | **2,12** | 106,0 | 0,00 | 90,14 | - | - | 0,00 | 0,00 | - |
| 21 | 9.156 | 9.157 | **1,98** | 106,0 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 22 | 9.195 | 9.195 | **1,93** | 106,0 | 0,00 | 90,27 | - | - | 0,00 | 0,00 | - |
| 23 | 10.220 | 10.221 | **0,62** | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| 24 | 10.449 | 10.450 | **0,35** | 106,0 | 0,00 | 91,38 | - | - | 0,00 | 0,00 | - |
| 25 | 10.805 | 10.805 | **-0,06** | 106,0 | 0,00 | 91,67 | - | - | 0,00 | 0,00 | - |
| 26 | 765 | 769 | **31,49** | 104,5 | 0,00 | 68,72 | - | - | 0,00 | 0,00 | - |
| 27 | 921 | 924 | **29,43** | 104,5 | 0,00 | 70,32 | - | - | 0,00 | 0,00 | - |
| 28 | 1.130 | 1.133 | **27,10** | 104,5 | 0,00 | 72,08 | - | - | 0,00 | 0,00 | - |
| 29 | 763 | 767 | **31,51** | 104,5 | 0,00 | 68,70 | - | - | 0,00 | 0,00 | - |
| 3 | 1.464 | 1.470 | **24,24** | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 30 | 628 | 632 | **33,63** | 104,5 | 0,00 | 67,02 | - | - | 0,00 | 0,00 | - |
| 31 | 1.438 | 1.440 | **24,30** | 104,5 | 0,00 | 74,17 | - | - | 0,00 | 0,00 | - |
| 32 | 1.828 | 1.830 | **21,41** | 104,5 | 0,00 | 76,25 | - | - | 0,00 | 0,00 | - |
| 33 | 2.992 | 2.993 | **15,41** | 104,5 | 0,00 | 80,52 | - | - | 0,00 | 0,00 | - |
| 34 | 3.440 | 3.441 | **13,74** | 104,5 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 35 | 4.778 | 4.779 | **9,81** | 104,5 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 36 | 6.502 | 6.502 | **6,17** | 104,5 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 37 | 6.993 | 6.993 | **5,33** | 104,5 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 38 | 5.728 | 5.730 | **8,58** | 106,0 | 0,00 | 86,16 | - | - | 0,00 | 0,00 | - |
| 39 | 1.983 | 1.988 | **21,89** | 106,0 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 4 | 3.038 | 3.041 | **14,65** | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 40 | 4.677 | 4.680 | **10,94** | 106,0 | 0,00 | 84,40 | - | - | 0,00 | 0,00 | - |
| 41 | 4.292 | 4.295 | **12,02** | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 42 | 3.850 | 3.853 | **13,43** | 106,0 | 0,00 | 82,72 | - | - | 0,00 | 0,00 | - |
| 43 | 1.193 | 1.202 | **27,92** | 106,0 | 0,00 | 72,60 | - | - | 0,00 | 0,00 | - |
| 44 | 9.614 | 9.614 | **1,69** | 104,5 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 45 | 1.147 | 1.156 | **26,87** | 104,5 | 0,00 | 72,26 | - | - | 0,00 | 0,00 | - |
| 46 | 1.428 | 1.435 | **24,34** | 104,5 | 0,00 | 74,14 | - | - | 0,00 | 0,00 | - |
| 47 | 1.811 | 1.816 | **21,50** | 104,5 | 0,00 | 76,18 | - | - | 0,00 | 0,00 | - |
| 48 | 1.526 | 1.533 | **23,55** | 104,5 | 0,00 | 74,71 | - | - | 0,00 | 0,00 | - |
| 5 | 2.187 | 2.191 | **19,01** | 106,0 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 6 | 6.332 | 6.333 | **5,90** | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 7 | 9.403 | 9.404 | **1,74** | 106,0 | 0,00 | 90,47 | - | - | 0,00 | 0,00 | - |
| 8 | 4.603 | 4.605 | **9,42** | 106,0 | 0,00 | 84,26 | - | - | 0,00 | 0,00 | - |
| 9 | 3.797 | 3.798 | **13,22** | 106,0 | 0,00 | 82,59 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,06** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: M Noise sensitive point: User defined (15)

Wind speed: 10,0 m/s

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 926 | 935 | **29,99** | 106,0 | 0,00 | 70,41 | - | - | 0,00 | 0,00 | - |
| 10 | 4.189 | 4.190 | **11,95** | 106,0 | 0,00 | 83,44 | - | - | 0,00 | 0,00 | - |
| 11 | 4.045 | 4.047 | **12,40** | 106,0 | 0,00 | 83,14 | - | - | 0,00 | 0,00 | - |
| 12 | 4.419 | 4.421 | **11,26** | 106,0 | 0,00 | 83,91 | - | - | 0,00 | 0,00 | - |
| 13 | 4.778 | 4.780 | **10,25** | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 14 | 4.620 | 4.622 | **10,69** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 15 | 6.277 | 6.278 | **6,74** | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 16 | 6.683 | 6.684 | **5,94** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 17 | 6.757 | 6.758 | **5,80** | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| 18 | 8.408 | 8.409 | **3,04** | 106,0 | 0,00 | 89,49 | - | - | 0,00 | 0,00 | - |
| 19 | 8.481 | 8.481 | **2,94** | 106,0 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 2 | 627 | 640 | **34,58** | 106,0 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 20 | 8.656 | 8.657 | **2,68** | 106,0 | 0,00 | 89,75 | - | - | 0,00 | 0,00 | - |
| 21 | 8.720 | 8.721 | **2,59** | 106,0 | 0,00 | 89,81 | - | - | 0,00 | 0,00 | - |
| 22 | 8.772 | 8.773 | **2,51** | 106,0 | 0,00 | 89,86 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 9.847 | 9.848 | **1,08** | 106,0 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 24 | 10.049 | 10.050 | **0,83** | 106,0 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 25 | 10.378 | 10.379 | **0,43** | 106,0 | 0,00 | 91,32 | - | - | 0,00 | 0,00 | - |
| 26 | 1.157 | 1.159 | **26,84** | 104,5 | 0,00 | 72,28 | - | - | 0,00 | 0,00 | - |
| 27 | 1.174 | 1.177 | **26,66** | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 28 | 1.276 | 1.278 | **25,70** | 104,5 | 0,00 | 73,13 | - | - | 0,00 | 0,00 | - |
| 29 | 844 | 848 | **30,40** | 104,5 | 0,00 | 69,57 | - | - | 0,00 | 0,00 | - |
| 3 | 1.181 | 1.188 | **26,97** | 106,0 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 30 | 452 | 459 | **37,06** | 104,5 | 0,00 | 64,23 | - | - | 0,00 | 0,00 | - |
| 31 | 1.046 | 1.049 | **27,99** | 104,5 | 0,00 | 71,42 | - | - | 0,00 | 0,00 | - |
| 32 | 1.371 | 1.374 | **24,86** | 104,5 | 0,00 | 73,76 | - | - | 0,00 | 0,00 | - |
| 33 | 2.517 | 2.519 | **17,45** | 104,5 | 0,00 | 79,02 | - | - | 0,00 | 0,00 | - |
| 34 | 2.996 | 2.997 | **15,40** | 104,5 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 35 | 4.589 | 4.589 | **10,29** | 104,5 | 0,00 | 84,24 | - | - | 0,00 | 0,00 | - |
| 36 | 6.152 | 6.152 | **6,82** | 104,5 | 0,00 | 86,78 | - | - | 0,00 | 0,00 | - |
| 37 | 6.601 | 6.602 | **6,00** | 104,5 | 0,00 | 87,39 | - | - | 0,00 | 0,00 | - |
| 38 | 5.267 | 5.269 | **9,56** | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 39 | 2.038 | 2.043 | **21,56** | 106,0 | 0,00 | 77,21 | - | - | 0,00 | 0,00 | - |
| 4 | 2.595 | 2.598 | **16,75** | 106,0 | 0,00 | 79,29 | - | - | 0,00 | 0,00 | - |
| 40 | 4.309 | 4.312 | **11,96** | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 41 | 3.967 | 3.970 | **13,04** | 106,0 | 0,00 | 82,98 | - | - | 0,00 | 0,00 | - |
| 42 | 3.498 | 3.501 | **14,68** | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 43 | 693 | 708 | **33,91** | 106,0 | 0,00 | 68,00 | - | - | 0,00 | 0,00 | - |
| 44 | 9.199 | 9.200 | **2,19** | 104,5 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 45 | 1.072 | 1.082 | **27,64** | 104,5 | 0,00 | 71,68 | - | - | 0,00 | 0,00 | - |
| 46 | 1.491 | 1.498 | **23,83** | 104,5 | 0,00 | 74,51 | - | - | 0,00 | 0,00 | - |
| 47 | 1.797 | 1.803 | **21,59** | 104,5 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 48 | 1.421 | 1.429 | **24,39** | 104,5 | 0,00 | 74,10 | - | - | 0,00 | 0,00 | - |
| 5 | 1.750 | 1.755 | **21,93** | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 6 | 5.903 | 5.905 | **6,65** | 106,0 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 7 | 8.994 | 8.995 | **2,20** | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.456 | 4.458 | **9,79** | 106,0 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| 9 | 3.711 | 3.712 | **13,51** | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,35** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: N Noise sensitive point: User defined (16)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 888 | 897 | **30,50** | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 10 | 4.159 | 4.160 | **12,05** | 106,0 | 0,00 | 83,38 | - | - | 0,00 | 0,00 | - |
| 11 | 4.019 | 4.020 | **12,49** | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 12 | 4.433 | 4.434 | **11,22** | 106,0 | 0,00 | 83,94 | - | - | 0,00 | 0,00 | - |
| 13 | 4.792 | 4.793 | **10,22** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 14 | 4.630 | 4.632 | **10,66** | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 15 | 6.274 | 6.275 | **6,75** | 106,0 | 0,00 | 86,95 | - | - | 0,00 | 0,00 | - |
| 16 | 6.679 | 6.680 | **5,95** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 17 | 6.751 | 6.752 | **5,82** | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 18 | 8.414 | 8.415 | **3,04** | 106,0 | 0,00 | 89,50 | - | - | 0,00 | 0,00 | - |
| 19 | 8.483 | 8.484 | **2,93** | 106,0 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 2 | 583 | 597 | **35,40** | 106,0 | 0,00 | 66,52 | - | - | 0,00 | 0,00 | - |
| 20 | 8.658 | 8.658 | **2,68** | 106,0 | 0,00 | 89,75 | - | - | 0,00 | 0,00 | - |
| 21 | 8.727 | 8.728 | **2,58** | 106,0 | 0,00 | 89,82 | - | - | 0,00 | 0,00 | - |
| 22 | 8.777 | 8.778 | **2,51** | 106,0 | 0,00 | 89,87 | - | - | 0,00 | 0,00 | - |
| 23 | 9.845 | 9.845 | **1,08** | 106,0 | 0,00 | 90,86 | - | - | 0,00 | 0,00 | - |
| 24 | 10.051 | 10.051 | **0,83** | 106,0 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 25 | 10.384 | 10.385 | **0,42** | 106,0 | 0,00 | 91,33 | - | - | 0,00 | 0,00 | - |
| 26 | 1.114 | 1.117 | **27,27** | 104,5 | 0,00 | 71,96 | - | - | 0,00 | 0,00 | - |
| 27 | 1.129 | 1.132 | **27,12** | 104,5 | 0,00 | 72,07 | - | - | 0,00 | 0,00 | - |
| 28 | 1.231 | 1.234 | **26,11** | 104,5 | 0,00 | 72,83 | - | - | 0,00 | 0,00 | - |
| 29 | 800 | 804 | **30,99** | 104,5 | 0,00 | 69,10 | - | - | 0,00 | 0,00 | - |
| 3 | 1.162 | 1.170 | **27,17** | 106,0 | 0,00 | 72,36 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 414 | 421 | **37,94** | 104,5 | 0,00 | 63,50 | - | - | 0,00 | 0,00 | - |
| 31 | 1.042 | 1.045 | **28,04** | 104,5 | 0,00 | 71,38 | - | - | 0,00 | 0,00 | - |
| 32 | 1.380 | 1.383 | **24,78** | 104,5 | 0,00 | 73,81 | - | - | 0,00 | 0,00 | - |
| 33 | 2.532 | 2.533 | **17,38** | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 34 | 3.003 | 3.005 | **15,37** | 104,5 | 0,00 | 80,56 | - | - | 0,00 | 0,00 | - |
| 35 | 4.566 | 4.566 | **10,35** | 104,5 | 0,00 | 84,19 | - | - | 0,00 | 0,00 | - |
| 36 | 6.146 | 6.146 | **6,83** | 104,5 | 0,00 | 86,77 | - | - | 0,00 | 0,00 | - |
| 37 | 6.601 | 6.602 | **6,00** | 104,5 | 0,00 | 87,39 | - | - | 0,00 | 0,00 | - |
| 38 | 5.279 | 5.281 | **9,53** | 106,0 | 0,00 | 85,45 | - | - | 0,00 | 0,00 | - |
| 39 | 1.997 | 2.003 | **21,80** | 106,0 | 0,00 | 77,03 | - | - | 0,00 | 0,00 | - |
| 4 | 2.602 | 2.606 | **16,71** | 106,0 | 0,00 | 79,32 | - | - | 0,00 | 0,00 | - |
| 40 | 4.305 | 4.308 | **11,98** | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 41 | 3.957 | 3.960 | **13,08** | 106,0 | 0,00 | 82,95 | - | - | 0,00 | 0,00 | - |
| 42 | 3.492 | 3.495 | **14,71** | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 43 | 717 | 732 | **33,55** | 106,0 | 0,00 | 68,29 | - | - | 0,00 | 0,00 | - |
| 44 | 9.203 | 9.203 | **2,19** | 104,5 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 45 | 1.036 | 1.045 | **28,03** | 104,5 | 0,00 | 71,39 | - | - | 0,00 | 0,00 | - |
| 46 | 1.449 | 1.456 | **24,16** | 104,5 | 0,00 | 74,27 | - | - | 0,00 | 0,00 | - |
| 47 | 1.760 | 1.766 | **21,85** | 104,5 | 0,00 | 75,94 | - | - | 0,00 | 0,00 | - |
| 48 | 1.388 | 1.395 | **24,67** | 104,5 | 0,00 | 73,89 | - | - | 0,00 | 0,00 | - |
| 5 | 1.756 | 1.760 | **21,89** | 106,0 | 0,00 | 75,91 | - | - | 0,00 | 0,00 | - |
| 6 | 5.909 | 5.911 | **6,64** | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 7 | 8.997 | 8.998 | **2,20** | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.429 | 4.431 | **9,86** | 106,0 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 9 | 3.680 | 3.681 | **13,62** | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,85** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: O Noise sensitive point: User defined (17)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 861 | 871 | **30,87** | 106,0 | 0,00 | 69,80 | - | - | 0,00 | 0,00 | - |
| 10 | 4.104 | 4.105 | **12,22** | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| 11 | 3.966 | 3.967 | **12,66** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 12 | 4.422 | 4.424 | **11,25** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 13 | 4.782 | 4.783 | **10,24** | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 14 | 4.616 | 4.618 | **10,70** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 15 | 6.243 | 6.244 | **6,81** | 106,0 | 0,00 | 86,91 | - | - | 0,00 | 0,00 | - |
| 16 | 6.648 | 6.649 | **6,01** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 17 | 6.717 | 6.718 | **5,88** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 18 | 8.394 | 8.395 | **3,07** | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 19 | 8.460 | 8.461 | **2,97** | 106,0 | 0,00 | 89,55 | - | - | 0,00 | 0,00 | - |
| 2 | 541 | 556 | **36,23** | 106,0 | 0,00 | 65,90 | - | - | 0,00 | 0,00 | - |
| 20 | 8.632 | 8.633 | **2,72** | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 21 | 8.709 | 8.709 | **2,61** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 22 | 8.756 | 8.756 | **2,54** | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 23 | 9.815 | 9.815 | **1,12** | 106,0 | 0,00 | 90,84 | - | - | 0,00 | 0,00 | - |
| 24 | 10.025 | 10.026 | **0,86** | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 25 | 10.363 | 10.364 | **0,45** | 106,0 | 0,00 | 91,31 | - | - | 0,00 | 0,00 | - |
| 26 | 1.076 | 1.079 | **27,67** | 104,5 | 0,00 | 71,66 | - | - | 0,00 | 0,00 | - |
| 27 | 1.078 | 1.081 | **27,65** | 104,5 | 0,00 | 71,67 | - | - | 0,00 | 0,00 | - |
| 28 | 1.175 | 1.177 | **26,66** | 104,5 | 0,00 | 72,42 | - | - | 0,00 | 0,00 | - |
| 29 | 743 | 747 | **31,81** | 104,5 | 0,00 | 68,47 | - | - | 0,00 | 0,00 | - |
| 3 | 1.117 | 1.124 | **27,67** | 106,0 | 0,00 | 72,02 | - | - | 0,00 | 0,00 | - |
| 30 | 356 | 364 | **39,44** | 104,5 | 0,00 | 62,23 | - | - | 0,00 | 0,00 | - |
| 31 | 1.011 | 1.014 | **28,37** | 104,5 | 0,00 | 71,12 | - | - | 0,00 | 0,00 | - |
| 32 | 1.366 | 1.369 | **24,90** | 104,5 | 0,00 | 73,73 | - | - | 0,00 | 0,00 | - |
| 33 | 2.524 | 2.525 | **17,42** | 104,5 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 34 | 2.987 | 2.988 | **15,43** | 104,5 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 35 | 4.516 | 4.516 | **10,48** | 104,5 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 36 | 6.112 | 6.112 | **6,90** | 104,5 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| 37 | 6.574 | 6.574 | **6,05** | 104,5 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 5.267 | 5.269 | **9,56** | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 39 | 1.938 | 1.944 | **22,17** | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 4 | 2.585 | 2.588 | **16,80** | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 40 | 4.274 | 4.276 | **12,07** | 106,0 | 0,00 | 83,62 | - | - | 0,00 | 0,00 | - |
| 41 | 3.920 | 3.923 | **13,20** | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 42 | 3.458 | 3.461 | **14,83** | 106,0 | 0,00 | 81,78 | - | - | 0,00 | 0,00 | - |
| 43 | 725 | 740 | **33,42** | 106,0 | 0,00 | 68,38 | - | - | 0,00 | 0,00 | - |
| 44 | 9.180 | 9.180 | **2,21** | 104,5 | 0,00 | 90,26 | - | - | 0,00 | 0,00 | - |
| 45 | 977 | 988 | **28,68** | 104,5 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 46 | 1.390 | 1.398 | **24,65** | 104,5 | 0,00 | 73,91 | - | - | 0,00 | 0,00 | - |
| 47 | 1.701 | 1.707 | **22,26** | 104,5 | 0,00 | 75,65 | - | - | 0,00 | 0,00 | - |
| 48 | 1.331 | 1.339 | **25,16** | 104,5 | 0,00 | 73,54 | - | - | 0,00 | 0,00 | - |
| 5 | 1.736 | 1.741 | **22,04** | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 6 | 5.889 | 5.890 | **6,68** | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.973 | 8.974 | **2,22** | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| 8 | 4.377 | 4.378 | **10,00** | 106,0 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 9 | 3.624 | 3.625 | **13,81** | 106,0 | 0,00 | 82,19 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,69** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: P Noise sensitive point: User defined (18)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 852 | 862 | **30,99** | 106,0 | 0,00 | 69,71 | - | - | 0,00 | 0,00 | - |
| 10 | 4.090 | 4.091 | **12,26** | 106,0 | 0,00 | 83,24 | - | - | 0,00 | 0,00 | - |
| 11 | 3.953 | 3.954 | **12,70** | 106,0 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 12 | 4.422 | 4.424 | **11,25** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 13 | 4.781 | 4.783 | **10,24** | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 14 | 4.615 | 4.616 | **10,70** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 15 | 6.237 | 6.238 | **6,83** | 106,0 | 0,00 | 86,90 | - | - | 0,00 | 0,00 | - |
| 16 | 6.641 | 6.642 | **6,02** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 17 | 6.710 | 6.711 | **5,89** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 18 | 8.390 | 8.391 | **3,07** | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 19 | 8.455 | 8.456 | **2,97** | 106,0 | 0,00 | 89,54 | - | - | 0,00 | 0,00 | - |
| 2 | 528 | 544 | **36,49** | 106,0 | 0,00 | 65,70 | - | - | 0,00 | 0,00 | - |
| 20 | 8.627 | 8.628 | **2,72** | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 21 | 8.706 | 8.706 | **2,61** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 22 | 8.752 | 8.753 | **2,54** | 106,0 | 0,00 | 89,84 | - | - | 0,00 | 0,00 | - |
| 23 | 9.808 | 9.809 | **1,13** | 106,0 | 0,00 | 90,83 | - | - | 0,00 | 0,00 | - |
| 24 | 10.020 | 10.021 | **0,86** | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 25 | 10.360 | 10.361 | **0,45** | 106,0 | 0,00 | 91,31 | - | - | 0,00 | 0,00 | - |
| 26 | 1.064 | 1.067 | **27,80** | 104,5 | 0,00 | 71,56 | - | - | 0,00 | 0,00 | - |
| 27 | 1.063 | 1.066 | **27,81** | 104,5 | 0,00 | 71,55 | - | - | 0,00 | 0,00 | - |
| 28 | 1.158 | 1.161 | **26,82** | 104,5 | 0,00 | 72,30 | - | - | 0,00 | 0,00 | - |
| 29 | 727 | 731 | **32,05** | 104,5 | 0,00 | 68,28 | - | - | 0,00 | 0,00 | - |
| 3 | 1.106 | 1.114 | **27,79** | 106,0 | 0,00 | 71,94 | - | - | 0,00 | 0,00 | - |
| 30 | 340 | 349 | **39,87** | 104,5 | 0,00 | 61,86 | - | - | 0,00 | 0,00 | - |
| 31 | 1.005 | 1.008 | **28,44** | 104,5 | 0,00 | 71,07 | - | - | 0,00 | 0,00 | - |
| 32 | 1.365 | 1.367 | **24,91** | 104,5 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 33 | 2.524 | 2.525 | **17,42** | 104,5 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 34 | 2.984 | 2.985 | **15,44** | 104,5 | 0,00 | 80,50 | - | - | 0,00 | 0,00 | - |
| 35 | 4.503 | 4.504 | **10,52** | 104,5 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 36 | 6.105 | 6.105 | **6,91** | 104,5 | 0,00 | 86,71 | - | - | 0,00 | 0,00 | - |
| 37 | 6.568 | 6.569 | **6,06** | 104,5 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 38 | 5.266 | 5.268 | **9,56** | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 39 | 1.922 | 1.928 | **22,27** | 106,0 | 0,00 | 76,70 | - | - | 0,00 | 0,00 | - |
| 4 | 2.582 | 2.586 | **16,81** | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 40 | 4.267 | 4.270 | **12,09** | 106,0 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 41 | 3.912 | 3.914 | **13,23** | 106,0 | 0,00 | 82,85 | - | - | 0,00 | 0,00 | - |
| 42 | 3.450 | 3.454 | **14,86** | 106,0 | 0,00 | 81,77 | - | - | 0,00 | 0,00 | - |
| 43 | 730 | 745 | **33,35** | 106,0 | 0,00 | 68,44 | - | - | 0,00 | 0,00 | - |
| 44 | 9.176 | 9.176 | **2,22** | 104,5 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 962 | 972 | **28,85** | 104,5 | 0,00 | 70,76 | - | - | 0,00 | 0,00 | - |
| 46 | 1.374 | 1.382 | **24,79** | 104,5 | 0,00 | 73,81 | - | - | 0,00 | 0,00 | - |
| 47 | 1.685 | 1.692 | **22,37** | 104,5 | 0,00 | 75,57 | - | - | 0,00 | 0,00 | - |
| 48 | 1.317 | 1.324 | **25,29** | 104,5 | 0,00 | 73,44 | - | - | 0,00 | 0,00 | - |
| 5 | 1.733 | 1.738 | **22,06** | 106,0 | 0,00 | 75,80 | - | - | 0,00 | 0,00 | - |
| 6 | 5.885 | 5.887 | **6,69** | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.968 | 8.970 | **2,23** | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| 8 | 4.363 | 4.365 | **10,04** | 106,0 | 0,00 | 83,80 | - | - | 0,00 | 0,00 | - |
| 9 | 3.609 | 3.611 | **13,86** | 106,0 | 0,00 | 82,15 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,94** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: Q Noise sensitive point: User defined (19)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 894 | 903 | **30,42** | 106,0 | 0,00 | 70,11 | - | - | 0,00 | 0,00 | - |
| 10 | 4.038 | 4.039 | **12,42** | 106,0 | 0,00 | 83,13 | - | - | 0,00 | 0,00 | - |
| 11 | 3.897 | 3.898 | **12,88** | 106,0 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 12 | 4.359 | 4.361 | **11,44** | 106,0 | 0,00 | 83,79 | - | - | 0,00 | 0,00 | - |
| 13 | 4.719 | 4.720 | **10,42** | 106,0 | 0,00 | 84,48 | - | - | 0,00 | 0,00 | - |
| 14 | 4.550 | 4.552 | **10,88** | 106,0 | 0,00 | 84,16 | - | - | 0,00 | 0,00 | - |
| 15 | 6.170 | 6.171 | **6,96** | 106,0 | 0,00 | 86,81 | - | - | 0,00 | 0,00 | - |
| 16 | 6.574 | 6.575 | **6,15** | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 17 | 6.643 | 6.644 | **6,02** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 18 | 8.324 | 8.325 | **3,17** | 106,0 | 0,00 | 89,41 | - | - | 0,00 | 0,00 | - |
| 19 | 8.389 | 8.390 | **3,07** | 106,0 | 0,00 | 89,47 | - | - | 0,00 | 0,00 | - |
| 2 | 552 | 567 | **36,00** | 106,0 | 0,00 | 66,08 | - | - | 0,00 | 0,00 | - |
| 20 | 8.560 | 8.561 | **2,82** | 106,0 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 21 | 8.640 | 8.641 | **2,70** | 106,0 | 0,00 | 89,73 | - | - | 0,00 | 0,00 | - |
| 22 | 8.686 | 8.686 | **2,64** | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 23 | 9.741 | 9.742 | **1,21** | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 24 | 9.953 | 9.954 | **0,95** | 106,0 | 0,00 | 90,96 | - | - | 0,00 | 0,00 | - |
| 25 | 10.294 | 10.295 | **0,53** | 106,0 | 0,00 | 91,25 | - | - | 0,00 | 0,00 | - |
| 26 | 1.090 | 1.093 | **27,51** | 104,5 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 27 | 1.067 | 1.070 | **27,76** | 104,5 | 0,00 | 71,59 | - | - | 0,00 | 0,00 | - |
| 28 | 1.145 | 1.148 | **26,95** | 104,5 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 29 | 713 | 717 | **32,26** | 104,5 | 0,00 | 68,12 | - | - | 0,00 | 0,00 | - |
| 3 | 1.043 | 1.051 | **28,52** | 106,0 | 0,00 | 71,43 | - | - | 0,00 | 0,00 | - |
| 30 | 303 | 313 | **40,98** | 104,5 | 0,00 | 60,90 | - | - | 0,00 | 0,00 | - |
| 31 | 938 | 942 | **29,22** | 104,5 | 0,00 | 70,48 | - | - | 0,00 | 0,00 | - |
| 32 | 1.301 | 1.304 | **25,47** | 104,5 | 0,00 | 73,30 | - | - | 0,00 | 0,00 | - |
| 33 | 2.462 | 2.464 | **17,71** | 104,5 | 0,00 | 78,83 | - | - | 0,00 | 0,00 | - |
| 34 | 2.919 | 2.920 | **15,71** | 104,5 | 0,00 | 80,31 | - | - | 0,00 | 0,00 | - |
| 35 | 4.444 | 4.445 | **10,67** | 104,5 | 0,00 | 83,96 | - | - | 0,00 | 0,00 | - |
| 36 | 6.038 | 6.038 | **7,04** | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 37 | 6.502 | 6.502 | **6,17** | 104,5 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 38 | 5.202 | 5.204 | **9,70** | 106,0 | 0,00 | 85,33 | - | - | 0,00 | 0,00 | - |
| 39 | 1.891 | 1.897 | **22,47** | 106,0 | 0,00 | 76,56 | - | - | 0,00 | 0,00 | - |
| 4 | 2.517 | 2.521 | **17,15** | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 40 | 4.200 | 4.203 | **12,30** | 106,0 | 0,00 | 83,47 | - | - | 0,00 | 0,00 | - |
| 41 | 3.846 | 3.848 | **13,45** | 106,0 | 0,00 | 82,71 | - | - | 0,00 | 0,00 | - |
| 42 | 3.384 | 3.387 | **15,11** | 106,0 | 0,00 | 81,60 | - | - | 0,00 | 0,00 | - |
| 43 | 681 | 697 | **34,08** | 106,0 | 0,00 | 67,86 | - | - | 0,00 | 0,00 | - |
| 44 | 9.109 | 9.110 | **2,30** | 104,5 | 0,00 | 90,19 | - | - | 0,00 | 0,00 | - |
| 45 | 921 | 932 | **29,34** | 104,5 | 0,00 | 70,39 | - | - | 0,00 | 0,00 | - |
| 46 | 1.347 | 1.354 | **25,02** | 104,5 | 0,00 | 73,64 | - | - | 0,00 | 0,00 | - |
| 47 | 1.647 | 1.653 | **22,65** | 104,5 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 48 | 1.269 | 1.277 | **25,71** | 104,5 | 0,00 | 73,13 | - | - | 0,00 | 0,00 | - |
| 5 | 1.668 | 1.673 | **22,56** | 106,0 | 0,00 | 75,47 | - | - | 0,00 | 0,00 | - |
| 6 | 5.819 | 5.821 | **6,81** | 106,0 | 0,00 | 86,30 | - | - | 0,00 | 0,00 | - |
| 7 | 8.902 | 8.903 | **2,31** | 106,0 | 0,00 | 89,99 | - | - | 0,00 | 0,00 | - |
| 8 | 4.308 | 4.310 | **10,18** | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 3.559 | 3.561 | **14,04** | 106,0 | 0,00 | 82,03 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,46** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: R Noise sensitive point: User defined (20)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 867 | 877 | **30,78** | 106,0 | 0,00 | 69,86 | - | - | 0,00 | 0,00 | - |
| 10 | 4.020 | 4.021 | **12,48** | 106,0 | 0,00 | 83,09 | - | - | 0,00 | 0,00 | - |
| 11 | 3.882 | 3.883 | **12,93** | 106,0 | 0,00 | 82,78 | - | - | 0,00 | 0,00 | - |
| 12 | 4.373 | 4.375 | **11,40** | 106,0 | 0,00 | 83,82 | - | - | 0,00 | 0,00 | - |
| 13 | 4.733 | 4.734 | **10,38** | 106,0 | 0,00 | 84,51 | - | - | 0,00 | 0,00 | - |
| 14 | 4.562 | 4.564 | **10,85** | 106,0 | 0,00 | 84,19 | - | - | 0,00 | 0,00 | - |
| 15 | 6.172 | 6.173 | **6,96** | 106,0 | 0,00 | 86,81 | - | - | 0,00 | 0,00 | - |
| 16 | 6.576 | 6.577 | **6,15** | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 17 | 6.643 | 6.644 | **6,02** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 18 | 8.333 | 8.334 | **3,16** | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 19 | 8.395 | 8.396 | **3,06** | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 2 | 522 | 538 | **36,61** | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 20 | 8.565 | 8.566 | **2,81** | 106,0 | 0,00 | 89,66 | - | - | 0,00 | 0,00 | - |
| 21 | 8.649 | 8.650 | **2,69** | 106,0 | 0,00 | 89,74 | - | - | 0,00 | 0,00 | - |
| 22 | 8.694 | 8.694 | **2,63** | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 23 | 9.744 | 9.745 | **1,21** | 106,0 | 0,00 | 90,78 | - | - | 0,00 | 0,00 | - |
| 24 | 9.959 | 9.959 | **0,94** | 106,0 | 0,00 | 90,96 | - | - | 0,00 | 0,00 | - |
| 25 | 10.302 | 10.303 | **0,52** | 106,0 | 0,00 | 91,26 | - | - | 0,00 | 0,00 | - |
| 26 | 1.060 | 1.063 | **27,84** | 104,5 | 0,00 | 71,53 | - | - | 0,00 | 0,00 | - |
| 27 | 1.035 | 1.038 | **28,11** | 104,5 | 0,00 | 71,32 | - | - | 0,00 | 0,00 | - |
| 28 | 1.114 | 1.117 | **27,27** | 104,5 | 0,00 | 71,96 | - | - | 0,00 | 0,00 | - |
| 29 | 682 | 687 | **32,74** | 104,5 | 0,00 | 67,73 | - | - | 0,00 | 0,00 | - |
| 3 | 1.036 | 1.044 | **28,61** | 106,0 | 0,00 | 71,37 | - | - | 0,00 | 0,00 | - |
| 30 | 277 | 288 | **41,81** | 104,5 | 0,00 | 60,18 | - | - | 0,00 | 0,00 | - |
| 31 | 943 | 946 | **29,17** | 104,5 | 0,00 | 70,52 | - | - | 0,00 | 0,00 | - |
| 32 | 1.315 | 1.317 | **25,35** | 104,5 | 0,00 | 73,39 | - | - | 0,00 | 0,00 | - |
| 33 | 2.478 | 2.479 | **17,64** | 104,5 | 0,00 | 78,89 | - | - | 0,00 | 0,00 | - |
| 34 | 2.930 | 2.931 | **15,66** | 104,5 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 35 | 4.432 | 4.433 | **10,71** | 104,5 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 36 | 6.038 | 6.039 | **7,04** | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 37 | 6.506 | 6.507 | **6,17** | 104,5 | 0,00 | 87,27 | - | - | 0,00 | 0,00 | - |
| 38 | 5.215 | 5.217 | **9,67** | 106,0 | 0,00 | 85,35 | - | - | 0,00 | 0,00 | - |
| 39 | 1.864 | 1.870 | **22,65** | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 4 | 2.528 | 2.531 | **17,09** | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 40 | 4.202 | 4.205 | **12,29** | 106,0 | 0,00 | 83,48 | - | - | 0,00 | 0,00 | - |
| 41 | 3.843 | 3.846 | **13,46** | 106,0 | 0,00 | 82,70 | - | - | 0,00 | 0,00 | - |
| 42 | 3.384 | 3.387 | **15,11** | 106,0 | 0,00 | 81,60 | - | - | 0,00 | 0,00 | - |
| 43 | 706 | 721 | **33,70** | 106,0 | 0,00 | 68,16 | - | - | 0,00 | 0,00 | - |
| 44 | 9.116 | 9.117 | **2,29** | 104,5 | 0,00 | 90,20 | - | - | 0,00 | 0,00 | - |
| 45 | 897 | 909 | **29,62** | 104,5 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 46 | 1.319 | 1.326 | **25,27** | 104,5 | 0,00 | 73,45 | - | - | 0,00 | 0,00 | - |
| 47 | 1.622 | 1.629 | **22,82** | 104,5 | 0,00 | 75,24 | - | - | 0,00 | 0,00 | - |
| 48 | 1.249 | 1.257 | **25,90** | 104,5 | 0,00 | 72,99 | - | - | 0,00 | 0,00 | - |
| 5 | 1.678 | 1.683 | **22,48** | 106,0 | 0,00 | 75,52 | - | - | 0,00 | 0,00 | - |
| 6 | 5.828 | 5.829 | **6,79** | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 7 | 8.908 | 8.909 | **2,30** | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| 8 | 4.292 | 4.294 | **10,22** | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 9 | 3.540 | 3.542 | **14,11** | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,98** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: S Noise sensitive point: User defined (21)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.003 | 1.011 | **29,01** | 106,0 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 10 | 4.041 | 4.043 | **12,41** | 106,0 | 0,00 | 83,13 | - | - | 0,00 | 0,00 | - |
| 11 | 3.889 | 3.891 | **12,91** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 12 | 4.266 | 4.267 | **11,72** | 106,0 | 0,00 | 83,60 | - | - | 0,00 | 0,00 | - |
| 13 | 4.625 | 4.626 | **10,67** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 14 | 4.461 | 4.463 | **11,14** | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 15 | 6.104 | 6.105 | **7,10** | 106,0 | 0,00 | 86,71 | - | - | 0,00 | 0,00 | - |
| 16 | 6.510 | 6.511 | **6,28** | 106,0 | 0,00 | 87,27 | - | - | 0,00 | 0,00 | - |
| 17 | 6.584 | 6.584 | **6,14** | 106,0 | 0,00 | 87,37 | - | - | 0,00 | 0,00 | - |
| 18 | 8.243 | 8.244 | **3,29** | 106,0 | 0,00 | 89,32 | - | - | 0,00 | 0,00 | - |
| 19 | 8.312 | 8.313 | **3,19** | 106,0 | 0,00 | 89,40 | - | - | 0,00 | 0,00 | - |
| 2 | 659 | 672 | **34,01** | 106,0 | 0,00 | 67,54 | - | - | 0,00 | 0,00 | - |
| 20 | 8.486 | 8.487 | **2,93** | 106,0 | 0,00 | 89,58 | - | - | 0,00 | 0,00 | - |
| 21 | 8.556 | 8.557 | **2,83** | 106,0 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 22 | 8.606 | 8.606 | **2,75** | 106,0 | 0,00 | 89,70 | - | - | 0,00 | 0,00 | - |
| 23 | 9.675 | 9.675 | **1,30** | 106,0 | 0,00 | 90,71 | - | - | 0,00 | 0,00 | - |
| 24 | 9.880 | 9.880 | **1,04** | 106,0 | 0,00 | 90,90 | - | - | 0,00 | 0,00 | - |
| 25 | 10.213 | 10.213 | **0,63** | 106,0 | 0,00 | 91,18 | - | - | 0,00 | 0,00 | - |
| 26 | 1.197 | 1.199 | **26,44** | 104,5 | 0,00 | 72,58 | - | - | 0,00 | 0,00 | - |
| 27 | 1.160 | 1.163 | **26,80** | 104,5 | 0,00 | 72,31 | - | - | 0,00 | 0,00 | - |
| 28 | 1.220 | 1.223 | **26,22** | 104,5 | 0,00 | 72,75 | - | - | 0,00 | 0,00 | - |
| 29 | 791 | 795 | **31,13** | 104,5 | 0,00 | 69,00 | - | - | 0,00 | 0,00 | - |
| 3 | 1.015 | 1.023 | **28,87** | 106,0 | 0,00 | 71,20 | - | - | 0,00 | 0,00 | - |
| 30 | 359 | 367 | **39,35** | 104,5 | 0,00 | 62,30 | - | - | 0,00 | 0,00 | - |
| 31 | 873 | 876 | **30,03** | 104,5 | 0,00 | 69,85 | - | - | 0,00 | 0,00 | - |
| 32 | 1.211 | 1.213 | **26,31** | 104,5 | 0,00 | 72,68 | - | - | 0,00 | 0,00 | - |
| 33 | 2.366 | 2.368 | **18,20** | 104,5 | 0,00 | 78,49 | - | - | 0,00 | 0,00 | - |
| 34 | 2.833 | 2.834 | **16,06** | 104,5 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 35 | 4.426 | 4.427 | **10,72** | 104,5 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 36 | 5.978 | 5.979 | **7,16** | 104,5 | 0,00 | 86,53 | - | - | 0,00 | 0,00 | - |
| 37 | 6.430 | 6.431 | **6,30** | 104,5 | 0,00 | 87,17 | - | - | 0,00 | 0,00 | - |
| 38 | 5.110 | 5.113 | **9,91** | 106,0 | 0,00 | 85,17 | - | - | 0,00 | 0,00 | - |
| 39 | 1.938 | 1.944 | **22,17** | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 4 | 2.432 | 2.435 | **17,61** | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 40 | 4.136 | 4.139 | **12,50** | 106,0 | 0,00 | 83,34 | - | - | 0,00 | 0,00 | - |
| 41 | 3.793 | 3.796 | **13,63** | 106,0 | 0,00 | 82,59 | - | - | 0,00 | 0,00 | - |
| 42 | 3.325 | 3.328 | **15,34** | 106,0 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 43 | 573 | 591 | **35,87** | 106,0 | 0,00 | 66,44 | - | - | 0,00 | 0,00 | - |
| 44 | 9.032 | 9.032 | **2,40** | 104,5 | 0,00 | 90,12 | - | - | 0,00 | 0,00 | - |
| 45 | 955 | 966 | **28,93** | 104,5 | 0,00 | 70,70 | - | - | 0,00 | 0,00 | - |
| 46 | 1.402 | 1.410 | **24,55** | 104,5 | 0,00 | 73,98 | - | - | 0,00 | 0,00 | - |
| 47 | 1.682 | 1.688 | **22,39** | 104,5 | 0,00 | 75,55 | - | - | 0,00 | 0,00 | - |
| 48 | 1.288 | 1.296 | **25,54** | 104,5 | 0,00 | 73,25 | - | - | 0,00 | 0,00 | - |
| 5 | 1.584 | 1.590 | **23,22** | 106,0 | 0,00 | 75,03 | - | - | 0,00 | 0,00 | - |
| 6 | 5.738 | 5.739 | **6,96** | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 7 | 8.826 | 8.827 | **2,40** | 106,0 | 0,00 | 89,92 | - | - | 0,00 | 0,00 | - |
| 8 | 4.300 | 4.302 | **10,20** | 106,0 | 0,00 | 83,67 | - | - | 0,00 | 0,00 | - |
| 9 | 3.567 | 3.569 | **14,01** | 106,0 | 0,00 | 82,05 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,62** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: T Noise sensitive point: User defined (22)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 989 | 997 | **29,19** | 106,0 | 0,00 | 70,97 | - | - | 0,00 | 0,00 | - |
| 10 | 4.001 | 4.002 | **12,54** | 106,0 | 0,00 | 83,05 | - | - | 0,00 | 0,00 | - |
| 11 | 3.851 | 3.852 | **13,03** | 106,0 | 0,00 | 82,71 | - | - | 0,00 | 0,00 | - |
| 12 | 4.259 | 4.260 | **11,74** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 13 | 4.618 | 4.620 | **10,69** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 14 | 4.451 | 4.453 | **11,17** | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 15 | 6.082 | 6.083 | **7,15** | 106,0 | 0,00 | 86,68 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
**UAB Infraplanas**
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt
Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 6.487 | 6.488 | **6,32** | 106,0 | 0,00 | 87,24 | - | - | 0,00 | 0,00 | - |
| 17 | 6.559 | 6.560 | **6,18** | 106,0 | 0,00 | 87,34 | - | - | 0,00 | 0,00 | - |
| 18 | 8.228 | 8.229 | **3,32** | 106,0 | 0,00 | 89,31 | - | - | 0,00 | 0,00 | - |
| 19 | 8.295 | 8.296 | **3,21** | 106,0 | 0,00 | 89,38 | - | - | 0,00 | 0,00 | - |
| 2 | 636 | 649 | **34,42** | 106,0 | 0,00 | 67,25 | - | - | 0,00 | 0,00 | - |
| 20 | 8.468 | 8.468 | **2,96** | 106,0 | 0,00 | 89,56 | - | - | 0,00 | 0,00 | - |
| 21 | 8.543 | 8.544 | **2,85** | 106,0 | 0,00 | 89,63 | - | - | 0,00 | 0,00 | - |
| 22 | 8.590 | 8.591 | **2,78** | 106,0 | 0,00 | 89,68 | - | - | 0,00 | 0,00 | - |
| 23 | 9.653 | 9.653 | **1,33** | 106,0 | 0,00 | 90,69 | - | - | 0,00 | 0,00 | - |
| 24 | 9.861 | 9.862 | **1,06** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 25 | 10.198 | 10.198 | **0,65** | 106,0 | 0,00 | 91,17 | - | - | 0,00 | 0,00 | - |
| 26 | 1.173 | 1.176 | **26,68** | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 27 | 1.126 | 1.129 | **27,14** | 104,5 | 0,00 | 72,05 | - | - | 0,00 | 0,00 | - |
| 28 | 1.181 | 1.183 | **26,60** | 104,5 | 0,00 | 72,46 | - | - | 0,00 | 0,00 | - |
| 29 | 752 | 756 | **31,67** | 104,5 | 0,00 | 68,57 | - | - | 0,00 | 0,00 | - |
| 3 | 979 | 988 | **29,30** | 106,0 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 30 | 318 | 327 | **40,52** | 104,5 | 0,00 | 61,30 | - | - | 0,00 | 0,00 | - |
| 31 | 850 | 853 | **30,33** | 104,5 | 0,00 | 69,62 | - | - | 0,00 | 0,00 | - |
| 32 | 1.201 | 1.204 | **26,40** | 104,5 | 0,00 | 72,61 | - | - | 0,00 | 0,00 | - |
| 33 | 2.361 | 2.363 | **18,23** | 104,5 | 0,00 | 78,47 | - | - | 0,00 | 0,00 | - |
| 34 | 2.821 | 2.822 | **16,11** | 104,5 | 0,00 | 80,01 | - | - | 0,00 | 0,00 | - |
| 35 | 4.389 | 4.390 | **10,82** | 104,5 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 36 | 5.953 | 5.954 | **7,20** | 104,5 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 37 | 6.410 | 6.411 | **6,34** | 104,5 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 38 | 5.102 | 5.104 | **9,93** | 106,0 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 39 | 1.895 | 1.901 | **22,45** | 106,0 | 0,00 | 76,58 | - | - | 0,00 | 0,00 | - |
| 4 | 2.419 | 2.423 | **17,68** | 106,0 | 0,00 | 78,69 | - | - | 0,00 | 0,00 | - |
| 40 | 4.113 | 4.116 | **12,57** | 106,0 | 0,00 | 83,29 | - | - | 0,00 | 0,00 | - |
| 41 | 3.766 | 3.769 | **13,72** | 106,0 | 0,00 | 82,52 | - | - | 0,00 | 0,00 | - |
| 42 | 3.299 | 3.303 | **15,44** | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 43 | 585 | 603 | **35,66** | 106,0 | 0,00 | 66,61 | - | - | 0,00 | 0,00 | - |
| 44 | 9.015 | 9.015 | **2,42** | 104,5 | 0,00 | 90,10 | - | - | 0,00 | 0,00 | - |
| 45 | 912 | 923 | **29,44** | 104,5 | 0,00 | 70,31 | - | - | 0,00 | 0,00 | - |
| 46 | 1.360 | 1.367 | **24,91** | 104,5 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 47 | 1.639 | 1.645 | **22,71** | 104,5 | 0,00 | 75,32 | - | - | 0,00 | 0,00 | - |
| 48 | 1.245 | 1.253 | **25,93** | 104,5 | 0,00 | 72,96 | - | - | 0,00 | 0,00 | - |
| 5 | 1.570 | 1.576 | **23,34** | 106,0 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 6 | 5.723 | 5.725 | **6,99** | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 7 | 8.808 | 8.809 | **2,42** | 106,0 | 0,00 | 89,90 | - | - | 0,00 | 0,00 | - |
| 8 | 4.261 | 4.263 | **10,31** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 9 | 3.526 | 3.528 | **14,16** | 106,0 | 0,00 | 81,95 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,22** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: U Noise sensitive point: User defined (23)

Wind speed: 10,0 m/s

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.870 | 1.874 | **21,07** | 106,0 | 0,00 | 76,46 | - | - | 0,00 | 0,00 | - |
| 10 | 2.782 | 2.785 | **17,31** | 106,0 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 11 | 2.586 | 2.588 | **18,27** | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 12 | 3.437 | 3.439 | **14,49** | 106,0 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 13 | 3.790 | 3.792 | **13,24** | 106,0 | 0,00 | 82,58 | - | - | 0,00 | 0,00 | - |
| 14 | 3.545 | 3.547 | **14,09** | 106,0 | 0,00 | 82,00 | - | - | 0,00 | 0,00 | - |
| 15 | 4.892 | 4.893 | **9,95** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 16 | 5.287 | 5.288 | **8,95** | 106,0 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 17 | 5.330 | 5.331 | **8,84** | 106,0 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 18 | 7.170 | 7.171 | **5,05** | 106,0 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 19 | 7.186 | 7.187 | **5,02** | 106,0 | 0,00 | 88,13 | - | - | 0,00 | 0,00 | - |
| 2 | 1.516 | 1.521 | **23,79** | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 20 | 7.331 | 7.332 | **4,77** | 106,0 | 0,00 | 88,30 | - | - | 0,00 | 0,00 | - |
| 21 | 7.510 | 7.511 | **4,46** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 22 | 7.513 | 7.514 | **4,46** | 106,0 | 0,00 | 88,52 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 8.460 | 8.461 | **2,97** | 106,0 | 0,00 | 89,55 | - | - | 0,00 | 0,00 | - |
| 24 | 8.721 | 8.722 | **2,59** | 106,0 | 0,00 | 89,81 | - | - | 0,00 | 0,00 | - |
| 25 | 9.127 | 9.128 | **2,02** | 106,0 | 0,00 | 90,21 | - | - | 0,00 | 0,00 | - |
| 26 | 1.819 | 1.821 | **21,47** | 104,5 | 0,00 | 76,21 | - | - | 0,00 | 0,00 | - |
| 27 | 1.504 | 1.506 | **23,76** | 104,5 | 0,00 | 74,56 | - | - | 0,00 | 0,00 | - |
| 28 | 1.268 | 1.270 | **25,78** | 104,5 | 0,00 | 73,08 | - | - | 0,00 | 0,00 | - |
| 29 | 1.194 | 1.197 | **26,47** | 104,5 | 0,00 | 72,56 | - | - | 0,00 | 0,00 | - |
| 3 | 327 | 352 | **41,35** | 106,0 | 0,00 | 61,93 | - | - | 0,00 | 0,00 | - |
| 30 | 1.159 | 1.161 | **26,82** | 104,5 | 0,00 | 72,30 | - | - | 0,00 | 0,00 | - |
| 31 | 600 | 605 | **34,12** | 104,5 | 0,00 | 66,63 | - | - | 0,00 | 0,00 | - |
| 32 | 885 | 888 | **29,88** | 104,5 | 0,00 | 69,97 | - | - | 0,00 | 0,00 | - |
| 33 | 1.743 | 1.745 | **21,99** | 104,5 | 0,00 | 75,84 | - | - | 0,00 | 0,00 | - |
| 34 | 1.943 | 1.945 | **20,66** | 104,5 | 0,00 | 76,78 | - | - | 0,00 | 0,00 | - |
| 35 | 3.094 | 3.095 | **15,01** | 104,5 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 36 | 4.729 | 4.729 | **9,93** | 104,5 | 0,00 | 84,50 | - | - | 0,00 | 0,00 | - |
| 37 | 5.261 | 5.261 | **8,66** | 104,5 | 0,00 | 85,42 | - | - | 0,00 | 0,00 | - |
| 38 | 4.218 | 4.221 | **12,24** | 106,0 | 0,00 | 83,51 | - | - | 0,00 | 0,00 | - |
| 39 | 1.278 | 1.287 | **27,13** | 106,0 | 0,00 | 73,19 | - | - | 0,00 | 0,00 | - |
| 4 | 1.573 | 1.578 | **23,32** | 106,0 | 0,00 | 74,96 | - | - | 0,00 | 0,00 | - |
| 40 | 2.928 | 2.931 | **16,98** | 106,0 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 41 | 2.512 | 2.516 | **18,94** | 106,0 | 0,00 | 79,01 | - | - | 0,00 | 0,00 | - |
| 42 | 2.090 | 2.096 | **21,24** | 106,0 | 0,00 | 77,43 | - | - | 0,00 | 0,00 | - |
| 43 | 1.247 | 1.256 | **27,41** | 106,0 | 0,00 | 72,98 | - | - | 0,00 | 0,00 | - |
| 44 | 7.914 | 7.915 | **3,90** | 104,5 | 0,00 | 88,97 | - | - | 0,00 | 0,00 | - |
| 45 | 790 | 803 | **31,01** | 104,5 | 0,00 | 69,09 | - | - | 0,00 | 0,00 | - |
| 46 | 1.082 | 1.091 | **27,54** | 104,5 | 0,00 | 71,76 | - | - | 0,00 | 0,00 | - |
| 47 | 951 | 962 | **28,98** | 104,5 | 0,00 | 70,66 | - | - | 0,00 | 0,00 | - |
| 48 | 596 | 613 | **33,98** | 104,5 | 0,00 | 66,75 | - | - | 0,00 | 0,00 | - |
| 5 | 891 | 901 | **30,45** | 106,0 | 0,00 | 70,09 | - | - | 0,00 | 0,00 | - |
| 6 | 4.683 | 4.685 | **9,23** | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 7 | 7.693 | 7.695 | **3,83** | 106,0 | 0,00 | 88,72 | - | - | 0,00 | 0,00 | - |
| 8 | 2.994 | 2.996 | **14,85** | 106,0 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 9 | 2.343 | 2.346 | **19,57** | 106,0 | 0,00 | 78,41 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,43** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: V Noise sensitive point: User defined (24)

Wind speed: 10,0 m/s

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.828 | 1.833 | **21,36** | 106,0 | 0,00 | 76,26 | - | - | 0,00 | 0,00 | - |
| 10 | 2.807 | 2.809 | **17,19** | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| 11 | 2.615 | 2.617 | **18,13** | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 12 | 3.473 | 3.475 | **14,35** | 106,0 | 0,00 | 81,82 | - | - | 0,00 | 0,00 | - |
| 13 | 3.826 | 3.828 | **13,12** | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 14 | 3.583 | 3.585 | **13,96** | 106,0 | 0,00 | 82,09 | - | - | 0,00 | 0,00 | - |
| 15 | 4.933 | 4.934 | **9,84** | 106,0 | 0,00 | 84,86 | - | - | 0,00 | 0,00 | - |
| 16 | 5.328 | 5.329 | **8,85** | 106,0 | 0,00 | 85,53 | - | - | 0,00 | 0,00 | - |
| 17 | 5.371 | 5.372 | **8,75** | 106,0 | 0,00 | 85,60 | - | - | 0,00 | 0,00 | - |
| 18 | 7.211 | 7.212 | **4,98** | 106,0 | 0,00 | 88,16 | - | - | 0,00 | 0,00 | - |
| 19 | 7.227 | 7.228 | **4,95** | 106,0 | 0,00 | 88,18 | - | - | 0,00 | 0,00 | - |
| 2 | 1.474 | 1.480 | **24,15** | 106,0 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 20 | 7.372 | 7.373 | **4,70** | 106,0 | 0,00 | 88,35 | - | - | 0,00 | 0,00 | - |
| 21 | 7.551 | 7.551 | **4,40** | 106,0 | 0,00 | 88,56 | - | - | 0,00 | 0,00 | - |
| 22 | 7.554 | 7.555 | **4,39** | 106,0 | 0,00 | 88,56 | - | - | 0,00 | 0,00 | - |
| 23 | 8.501 | 8.502 | **2,91** | 106,0 | 0,00 | 89,59 | - | - | 0,00 | 0,00 | - |
| 24 | 8.763 | 8.764 | **2,53** | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 25 | 9.169 | 9.169 | **1,96** | 106,0 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 26 | 1.779 | 1.780 | **21,74** | 104,5 | 0,00 | 76,01 | - | - | 0,00 | 0,00 | - |
| 27 | 1.464 | 1.466 | **24,08** | 104,5 | 0,00 | 74,33 | - | - | 0,00 | 0,00 | - |
| 28 | 1.230 | 1.233 | **26,12** | 104,5 | 0,00 | 72,82 | - | - | 0,00 | 0,00 | - |
| 29 | 1.153 | 1.156 | **26,87** | 104,5 | 0,00 | 72,26 | - | - | 0,00 | 0,00 | - |
| 3 | 290 | 317 | **42,45** | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 1.119 | 1.121 | **27,22** | 104,5 | 0,00 | 72,00 | - | - | 0,00 | 0,00 | - |
| 31 | 580 | 585 | **34,48** | 104,5 | 0,00 | 66,34 | - | - | 0,00 | 0,00 | - |
| 32 | 887 | 890 | **29,85** | 104,5 | 0,00 | 69,99 | - | - | 0,00 | 0,00 | - |
| 33 | 1.770 | 1.771 | **21,81** | 104,5 | 0,00 | 75,97 | - | - | 0,00 | 0,00 | - |
| 34 | 1.979 | 1.980 | **20,44** | 104,5 | 0,00 | 76,94 | - | - | 0,00 | 0,00 | - |
| 35 | 3.127 | 3.128 | **14,89** | 104,5 | 0,00 | 80,91 | - | - | 0,00 | 0,00 | - |
| 36 | 4.770 | 4.771 | **9,83** | 104,5 | 0,00 | 84,57 | - | - | 0,00 | 0,00 | - |
| 37 | 5.302 | 5.303 | **8,57** | 104,5 | 0,00 | 85,49 | - | - | 0,00 | 0,00 | - |
| 38 | 4.256 | 4.259 | **12,13** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 39 | 1.262 | 1.270 | **27,28** | 106,0 | 0,00 | 73,08 | - | - | 0,00 | 0,00 | - |
| 4 | 1.606 | 1.611 | **23,05** | 106,0 | 0,00 | 75,14 | - | - | 0,00 | 0,00 | - |
| 40 | 2.969 | 2.973 | **16,80** | 106,0 | 0,00 | 80,46 | - | - | 0,00 | 0,00 | - |
| 41 | 2.553 | 2.557 | **18,74** | 106,0 | 0,00 | 79,15 | - | - | 0,00 | 0,00 | - |
| 42 | 2.132 | 2.137 | **21,00** | 106,0 | 0,00 | 77,60 | - | - | 0,00 | 0,00 | - |
| 43 | 1.224 | 1.232 | **27,63** | 106,0 | 0,00 | 72,82 | - | - | 0,00 | 0,00 | - |
| 44 | 7.956 | 7.956 | **3,84** | 104,5 | 0,00 | 89,01 | - | - | 0,00 | 0,00 | - |
| 45 | 750 | 763 | **31,57** | 104,5 | 0,00 | 68,65 | - | - | 0,00 | 0,00 | - |
| 46 | 1.050 | 1.060 | **27,87** | 104,5 | 0,00 | 71,50 | - | - | 0,00 | 0,00 | - |
| 47 | 933 | 944 | **29,19** | 104,5 | 0,00 | 70,50 | - | - | 0,00 | 0,00 | - |
| 48 | 566 | 584 | **34,51** | 104,5 | 0,00 | 66,33 | - | - | 0,00 | 0,00 | - |
| 5 | 912 | 921 | **30,18** | 106,0 | 0,00 | 70,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.724 | 4.726 | **9,13** | 106,0 | 0,00 | 84,49 | - | - | 0,00 | 0,00 | - |
| 7 | 7.735 | 7.736 | **3,77** | 106,0 | 0,00 | 88,77 | - | - | 0,00 | 0,00 | - |
| 8 | 3.023 | 3.026 | **14,72** | 106,0 | 0,00 | 80,62 | - | - | 0,00 | 0,00 | - |
| 9 | 2.364 | 2.367 | **19,45** | 106,0 | 0,00 | 78,48 | - | - | 0,00 | 0,00 | - |
| Sum | | | **45,03** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: W Noise sensitive point: User defined (25)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.662 | 2.665 | **16,41** | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 10 | 3.041 | 3.043 | **16,12** | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 11 | 2.735 | 2.737 | **17,54** | 106,0 | 0,00 | 79,75 | - | - | 0,00 | 0,00 | - |
| 12 | 2.515 | 2.517 | **18,64** | 106,0 | 0,00 | 79,02 | - | - | 0,00 | 0,00 | - |
| 13 | 2.872 | 2.874 | **16,88** | 106,0 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 14 | 2.656 | 2.658 | **17,92** | 106,0 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 15 | 4.257 | 4.258 | **11,75** | 106,0 | 0,00 | 83,58 | - | - | 0,00 | 0,00 | - |
| 16 | 4.667 | 4.668 | **10,56** | 106,0 | 0,00 | 84,38 | - | - | 0,00 | 0,00 | - |
| 17 | 4.761 | 4.762 | **10,30** | 106,0 | 0,00 | 84,56 | - | - | 0,00 | 0,00 | - |
| 18 | 6.386 | 6.387 | **6,52** | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 19 | 6.447 | 6.448 | **6,40** | 106,0 | 0,00 | 87,19 | - | - | 0,00 | 0,00 | - |
| 2 | 2.278 | 2.282 | **18,47** | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 20 | 6.621 | 6.622 | **6,06** | 106,0 | 0,00 | 87,42 | - | - | 0,00 | 0,00 | - |
| 21 | 6.707 | 6.708 | **5,90** | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| 22 | 6.745 | 6.746 | **5,83** | 106,0 | 0,00 | 87,58 | - | - | 0,00 | 0,00 | - |
| 23 | 7.821 | 7.822 | **3,95** | 106,0 | 0,00 | 88,87 | - | - | 0,00 | 0,00 | - |
| 24 | 8.014 | 8.015 | **3,65** | 106,0 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 25 | 8.354 | 8.355 | **3,12** | 106,0 | 0,00 | 89,44 | - | - | 0,00 | 0,00 | - |
| 26 | 2.679 | 2.680 | **16,72** | 104,5 | 0,00 | 79,56 | - | - | 0,00 | 0,00 | - |
| 27 | 2.402 | 2.403 | **18,02** | 104,5 | 0,00 | 78,62 | - | - | 0,00 | 0,00 | - |
| 28 | 2.196 | 2.198 | **19,14** | 104,5 | 0,00 | 77,84 | - | - | 0,00 | 0,00 | - |
| 29 | 2.039 | 2.041 | **20,07** | 104,5 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 3 | 1.121 | 1.128 | **27,63** | 106,0 | 0,00 | 72,04 | - | - | 0,00 | 0,00 | - |
| 30 | 1.849 | 1.850 | **21,27** | 104,5 | 0,00 | 76,35 | - | - | 0,00 | 0,00 | - |
| 31 | 1.013 | 1.016 | **28,36** | 104,5 | 0,00 | 71,14 | - | - | 0,00 | 0,00 | - |
| 32 | 717 | 721 | **32,20** | 104,5 | 0,00 | 68,16 | - | - | 0,00 | 0,00 | - |
| 33 | 814 | 819 | **30,79** | 104,5 | 0,00 | 69,26 | - | - | 0,00 | 0,00 | - |
| 34 | 1.022 | 1.025 | **28,25** | 104,5 | 0,00 | 71,22 | - | - | 0,00 | 0,00 | - |
| 35 | 3.069 | 3.070 | **15,11** | 104,5 | 0,00 | 80,74 | - | - | 0,00 | 0,00 | - |
| 36 | 4.155 | 4.156 | **11,48** | 104,5 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 37 | 4.568 | 4.569 | **10,34** | 104,5 | 0,00 | 84,20 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 3.323 | 3.327 | **15,35** | 106,0 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 39 | 2.184 | 2.189 | **20,70** | 106,0 | 0,00 | 77,80 | - | - | 0,00 | 0,00 | - |
| 4 | 631 | 645 | **34,49** | 106,0 | 0,00 | 67,19 | - | - | 0,00 | 0,00 | - |
| 40 | 2.302 | 2.307 | **20,04** | 106,0 | 0,00 | 78,26 | - | - | 0,00 | 0,00 | - |
| 41 | 2.054 | 2.059 | **21,46** | 106,0 | 0,00 | 77,27 | - | - | 0,00 | 0,00 | - |
| 42 | 1.537 | 1.544 | **24,97** | 106,0 | 0,00 | 74,77 | - | - | 0,00 | 0,00 | - |
| 43 | 1.468 | 1.475 | **25,52** | 106,0 | 0,00 | 74,38 | - | - | 0,00 | 0,00 | - |
| 44 | 7.167 | 7.168 | **5,04** | 104,5 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 45 | 1.691 | 1.697 | **22,33** | 104,5 | 0,00 | 75,59 | - | - | 0,00 | 0,00 | - |
| 46 | 2.032 | 2.037 | **20,09** | 104,5 | 0,00 | 77,18 | - | - | 0,00 | 0,00 | - |
| 47 | 1.871 | 1.876 | **21,10** | 104,5 | 0,00 | 76,47 | - | - | 0,00 | 0,00 | - |
| 48 | 1.547 | 1.553 | **23,39** | 104,5 | 0,00 | 74,83 | - | - | 0,00 | 0,00 | - |
| 5 | 322 | 346 | **41,52** | 106,0 | 0,00 | 61,79 | - | - | 0,00 | 0,00 | - |
| 6 | 3.881 | 3.884 | **11,42** | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 7 | 6.960 | 6.961 | **4,88** | 106,0 | 0,00 | 87,85 | - | - | 0,00 | 0,00 | - |
| 8 | 3.104 | 3.106 | **14,37** | 106,0 | 0,00 | 80,84 | - | - | 0,00 | 0,00 | - |
| 9 | 2.707 | 2.710 | **17,67** | 106,0 | 0,00 | 79,66 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,90** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: X Noise sensitive point: User defined (26)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.664 | 2.668 | **16,40** | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 10 | 3.099 | 3.101 | **15,86** | 106,0 | 0,00 | 80,83 | - | - | 0,00 | 0,00 | - |
| 11 | 2.793 | 2.795 | **17,26** | 106,0 | 0,00 | 79,93 | - | - | 0,00 | 0,00 | - |
| 12 | 2.503 | 2.505 | **18,70** | 106,0 | 0,00 | 78,98 | - | - | 0,00 | 0,00 | - |
| 13 | 2.861 | 2.863 | **16,93** | 106,0 | 0,00 | 80,14 | - | - | 0,00 | 0,00 | - |
| 14 | 2.651 | 2.654 | **17,94** | 106,0 | 0,00 | 79,48 | - | - | 0,00 | 0,00 | - |
| 15 | 4.280 | 4.282 | **11,67** | 106,0 | 0,00 | 83,63 | - | - | 0,00 | 0,00 | - |
| 16 | 4.691 | 4.693 | **10,49** | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 17 | 4.790 | 4.791 | **10,22** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 18 | 6.394 | 6.395 | **6,51** | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| 19 | 6.460 | 6.461 | **6,38** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 2 | 2.279 | 2.283 | **18,47** | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 20 | 6.637 | 6.638 | **6,03** | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 21 | 6.713 | 6.714 | **5,89** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 22 | 6.755 | 6.756 | **5,81** | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 23 | 7.842 | 7.843 | **3,92** | 106,0 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 24 | 8.030 | 8.030 | **3,62** | 106,0 | 0,00 | 89,09 | - | - | 0,00 | 0,00 | - |
| 25 | 8.363 | 8.364 | **3,11** | 106,0 | 0,00 | 89,45 | - | - | 0,00 | 0,00 | - |
| 26 | 2.689 | 2.690 | **16,68** | 104,5 | 0,00 | 79,59 | - | - | 0,00 | 0,00 | - |
| 27 | 2.417 | 2.418 | **17,94** | 104,5 | 0,00 | 78,67 | - | - | 0,00 | 0,00 | - |
| 28 | 2.216 | 2.218 | **19,03** | 104,5 | 0,00 | 77,92 | - | - | 0,00 | 0,00 | - |
| 29 | 2.049 | 2.050 | **20,01** | 104,5 | 0,00 | 77,24 | - | - | 0,00 | 0,00 | - |
| 3 | 1.136 | 1.143 | **27,47** | 106,0 | 0,00 | 72,16 | - | - | 0,00 | 0,00 | - |
| 30 | 1.847 | 1.848 | **21,29** | 104,5 | 0,00 | 76,34 | - | - | 0,00 | 0,00 | - |
| 31 | 1.008 | 1.011 | **28,41** | 104,5 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 32 | 687 | 691 | **32,67** | 104,5 | 0,00 | 67,79 | - | - | 0,00 | 0,00 | - |
| 33 | 772 | 777 | **31,38** | 104,5 | 0,00 | 68,81 | - | - | 0,00 | 0,00 | - |
| 34 | 1.014 | 1.018 | **28,34** | 104,5 | 0,00 | 71,15 | - | - | 0,00 | 0,00 | - |
| 35 | 3.124 | 3.125 | **14,90** | 104,5 | 0,00 | 80,90 | - | - | 0,00 | 0,00 | - |
| 36 | 4.184 | 4.185 | **11,40** | 104,5 | 0,00 | 83,43 | - | - | 0,00 | 0,00 | - |
| 37 | 4.587 | 4.587 | **10,30** | 104,5 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 38 | 3.317 | 3.321 | **15,37** | 106,0 | 0,00 | 81,42 | - | - | 0,00 | 0,00 | - |
| 39 | 2.224 | 2.229 | **20,47** | 106,0 | 0,00 | 77,96 | - | - | 0,00 | 0,00 | - |
| 4 | 617 | 632 | **34,74** | 106,0 | 0,00 | 67,01 | - | - | 0,00 | 0,00 | - |
| 40 | 2.330 | 2.335 | **19,89** | 106,0 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 41 | 2.095 | 2.100 | **21,21** | 106,0 | 0,00 | 77,44 | - | - | 0,00 | 0,00 | - |
| 42 | 1.574 | 1.581 | **24,69** | 106,0 | 0,00 | 74,98 | - | - | 0,00 | 0,00 | - |
| 43 | 1.441 | 1.448 | **25,74** | 106,0 | 0,00 | 74,22 | - | - | 0,00 | 0,00 | - |
| 44 | 7.179 | 7.180 | **5,02** | 104,5 | 0,00 | 88,12 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 1.709 | 1.715 | **22,20** | 104,5 | 0,00 | 75,68 | - | - | 0,00 | 0,00 | - |
| 46 | 2.060 | 2.065 | **19,92** | 104,5 | 0,00 | 77,30 | - | - | 0,00 | 0,00 | - |
| 47 | 1.909 | 1.914 | **20,86** | 104,5 | 0,00 | 76,64 | - | - | 0,00 | 0,00 | - |
| 48 | 1.576 | 1.583 | **23,17** | 104,5 | 0,00 | 74,99 | - | - | 0,00 | 0,00 | - |
| 5 | 287 | 314 | **42,56** | 106,0 | 0,00 | 60,94 | - | - | 0,00 | 0,00 | - |
| 6 | 3.889 | 3.892 | **11,39** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 7 | 6.974 | 6.975 | **4,86** | 106,0 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| 8 | 3.161 | 3.163 | **14,13** | 106,0 | 0,00 | 81,00 | - | - | 0,00 | 0,00 | - |
| 9 | 2.766 | 2.768 | **17,39** | 106,0 | 0,00 | 79,84 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,60** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: Y Noise sensitive point: User defined (27)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.827 | 2.830 | **15,61** | 106,0 | 0,00 | 80,04 | - | - | 0,00 | 0,00 | - |
| 10 | 2.964 | 2.966 | **16,46** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 11 | 2.643 | 2.645 | **17,99** | 106,0 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 12 | 2.369 | 2.372 | **19,42** | 106,0 | 0,00 | 78,50 | - | - | 0,00 | 0,00 | - |
| 13 | 2.725 | 2.727 | **17,58** | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 14 | 2.498 | 2.500 | **18,73** | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 15 | 4.077 | 4.079 | **12,30** | 106,0 | 0,00 | 83,21 | - | - | 0,00 | 0,00 | - |
| 16 | 4.487 | 4.489 | **11,07** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 17 | 4.583 | 4.584 | **10,79** | 106,0 | 0,00 | 84,22 | - | - | 0,00 | 0,00 | - |
| 18 | 6.212 | 6.213 | **6,88** | 106,0 | 0,00 | 86,87 | - | - | 0,00 | 0,00 | - |
| 19 | 6.270 | 6.271 | **6,76** | 106,0 | 0,00 | 86,95 | - | - | 0,00 | 0,00 | - |
| 2 | 2.445 | 2.448 | **17,54** | 106,0 | 0,00 | 78,78 | - | - | 0,00 | 0,00 | - |
| 20 | 6.443 | 6.444 | **6,41** | 106,0 | 0,00 | 87,18 | - | - | 0,00 | 0,00 | - |
| 21 | 6.535 | 6.536 | **6,23** | 106,0 | 0,00 | 87,31 | - | - | 0,00 | 0,00 | - |
| 22 | 6.570 | 6.571 | **6,16** | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 23 | 7.641 | 7.642 | **4,25** | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 24 | 7.836 | 7.837 | **3,93** | 106,0 | 0,00 | 88,88 | - | - | 0,00 | 0,00 | - |
| 25 | 8.180 | 8.181 | **3,39** | 106,0 | 0,00 | 89,26 | - | - | 0,00 | 0,00 | - |
| 26 | 2.835 | 2.836 | **16,05** | 104,5 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 27 | 2.549 | 2.550 | **17,31** | 104,5 | 0,00 | 79,13 | - | - | 0,00 | 0,00 | - |
| 28 | 2.333 | 2.334 | **18,39** | 104,5 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 29 | 2.195 | 2.196 | **19,15** | 104,5 | 0,00 | 77,83 | - | - | 0,00 | 0,00 | - |
| 3 | 1.271 | 1.277 | **26,05** | 106,0 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 30 | 2.019 | 2.021 | **20,19** | 104,5 | 0,00 | 77,11 | - | - | 0,00 | 0,00 | - |
| 31 | 1.187 | 1.189 | **26,54** | 104,5 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 32 | 894 | 897 | **29,76** | 104,5 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 33 | 771 | 775 | **31,41** | 104,5 | 0,00 | 68,78 | - | - | 0,00 | 0,00 | - |
| 34 | 874 | 878 | **30,01** | 104,5 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 35 | 2.947 | 2.948 | **15,59** | 104,5 | 0,00 | 80,39 | - | - | 0,00 | 0,00 | - |
| 36 | 3.977 | 3.978 | **12,01** | 104,5 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 37 | 4.389 | 4.390 | **10,82** | 104,5 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 38 | 3.167 | 3.171 | **15,97** | 106,0 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 39 | 2.267 | 2.271 | **20,23** | 106,0 | 0,00 | 78,13 | - | - | 0,00 | 0,00 | - |
| 4 | 503 | 520 | **37,00** | 106,0 | 0,00 | 65,32 | - | - | 0,00 | 0,00 | - |
| 40 | 2.123 | 2.128 | **21,05** | 106,0 | 0,00 | 77,56 | - | - | 0,00 | 0,00 | - |
| 41 | 1.888 | 1.893 | **22,50** | 106,0 | 0,00 | 76,54 | - | - | 0,00 | 0,00 | - |
| 42 | 1.366 | 1.373 | **26,36** | 106,0 | 0,00 | 73,76 | - | - | 0,00 | 0,00 | - |
| 43 | 1.646 | 1.653 | **24,15** | 106,0 | 0,00 | 75,36 | - | - | 0,00 | 0,00 | - |
| 44 | 6.991 | 6.992 | **5,33** | 104,5 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 45 | 1.834 | 1.840 | **21,34** | 104,5 | 0,00 | 76,30 | - | - | 0,00 | 0,00 | - |
| 46 | 2.152 | 2.156 | **19,38** | 104,5 | 0,00 | 77,67 | - | - | 0,00 | 0,00 | - |
| 47 | 1.963 | 1.968 | **20,52** | 104,5 | 0,00 | 76,88 | - | - | 0,00 | 0,00 | - |
| 48 | 1.665 | 1.671 | **22,51** | 104,5 | 0,00 | 75,46 | - | - | 0,00 | 0,00 | - |
| 5 | 495 | 511 | **37,19** | 106,0 | 0,00 | 65,17 | - | - | 0,00 | 0,00 | - |
| 6 | 3.709 | 3.711 | **12,02** | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 7 | 6.783 | 6.784 | **5,16** | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 8 | 3.002 | 3.005 | **14,81** | 106,0 | 0,00 | 80,56 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 2.654 | 2.656 | **17,93** | 106,0 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,33** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: Z Noise sensitive point: User defined (28)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.856 | 2.859 | **15,47** | 106,0 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 10 | 3.019 | 3.021 | **16,21** | 106,0 | 0,00 | 80,60 | - | - | 0,00 | 0,00 | - |
| 11 | 2.695 | 2.697 | **17,73** | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 12 | 2.328 | 2.331 | **19,65** | 106,0 | 0,00 | 78,35 | - | - | 0,00 | 0,00 | - |
| 13 | 2.684 | 2.687 | **17,78** | 106,0 | 0,00 | 79,59 | - | - | 0,00 | 0,00 | - |
| 14 | 2.463 | 2.466 | **18,91** | 106,0 | 0,00 | 78,84 | - | - | 0,00 | 0,00 | - |
| 15 | 4.074 | 4.075 | **12,31** | 106,0 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 16 | 4.485 | 4.486 | **11,07** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 17 | 4.585 | 4.586 | **10,79** | 106,0 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 18 | 6.191 | 6.192 | **6,92** | 106,0 | 0,00 | 86,84 | - | - | 0,00 | 0,00 | - |
| 19 | 6.254 | 6.255 | **6,79** | 106,0 | 0,00 | 86,92 | - | - | 0,00 | 0,00 | - |
| 2 | 2.473 | 2.476 | **17,39** | 106,0 | 0,00 | 78,87 | - | - | 0,00 | 0,00 | - |
| 20 | 6.430 | 6.431 | **6,44** | 106,0 | 0,00 | 87,17 | - | - | 0,00 | 0,00 | - |
| 21 | 6.512 | 6.513 | **6,27** | 106,0 | 0,00 | 87,28 | - | - | 0,00 | 0,00 | - |
| 22 | 6.551 | 6.552 | **6,20** | 106,0 | 0,00 | 87,33 | - | - | 0,00 | 0,00 | - |
| 23 | 7.635 | 7.636 | **4,26** | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 24 | 7.823 | 7.824 | **3,95** | 106,0 | 0,00 | 88,87 | - | - | 0,00 | 0,00 | - |
| 25 | 8.160 | 8.161 | **3,42** | 106,0 | 0,00 | 89,23 | - | - | 0,00 | 0,00 | - |
| 26 | 2.870 | 2.871 | **15,91** | 104,5 | 0,00 | 80,16 | - | - | 0,00 | 0,00 | - |
| 27 | 2.588 | 2.589 | **17,13** | 104,5 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 28 | 2.376 | 2.378 | **18,15** | 104,5 | 0,00 | 78,52 | - | - | 0,00 | 0,00 | - |
| 29 | 2.230 | 2.231 | **18,95** | 104,5 | 0,00 | 77,97 | - | - | 0,00 | 0,00 | - |
| 3 | 1.308 | 1.314 | **25,68** | 106,0 | 0,00 | 73,37 | - | - | 0,00 | 0,00 | - |
| 30 | 2.044 | 2.045 | **20,04** | 104,5 | 0,00 | 77,22 | - | - | 0,00 | 0,00 | - |
| 31 | 1.208 | 1.210 | **26,34** | 104,5 | 0,00 | 72,66 | - | - | 0,00 | 0,00 | - |
| 32 | 892 | 895 | **29,79** | 104,5 | 0,00 | 70,04 | - | - | 0,00 | 0,00 | - |
| 33 | 708 | 713 | **32,33** | 104,5 | 0,00 | 68,06 | - | - | 0,00 | 0,00 | - |
| 34 | 833 | 837 | **30,54** | 104,5 | 0,00 | 69,46 | - | - | 0,00 | 0,00 | - |
| 35 | 2.991 | 2.992 | **15,42** | 104,5 | 0,00 | 80,52 | - | - | 0,00 | 0,00 | - |
| 36 | 3.980 | 3.981 | **12,00** | 104,5 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 37 | 4.379 | 4.380 | **10,85** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 38 | 3.132 | 3.136 | **16,11** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 39 | 2.323 | 2.328 | **19,92** | 106,0 | 0,00 | 78,34 | - | - | 0,00 | 0,00 | - |
| 4 | 453 | 471 | **38,11** | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 40 | 2.126 | 2.131 | **21,03** | 106,0 | 0,00 | 77,57 | - | - | 0,00 | 0,00 | - |
| 41 | 1.908 | 1.913 | **22,37** | 106,0 | 0,00 | 76,64 | - | - | 0,00 | 0,00 | - |
| 42 | 1.382 | 1.389 | **26,23** | 106,0 | 0,00 | 73,86 | - | - | 0,00 | 0,00 | - |
| 43 | 1.647 | 1.653 | **24,15** | 106,0 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 44 | 6.974 | 6.975 | **5,36** | 104,5 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| 45 | 1.875 | 1.881 | **21,07** | 104,5 | 0,00 | 76,49 | - | - | 0,00 | 0,00 | - |
| 46 | 2.201 | 2.205 | **19,10** | 104,5 | 0,00 | 77,87 | - | - | 0,00 | 0,00 | - |
| 47 | 2.018 | 2.023 | **20,18** | 104,5 | 0,00 | 77,12 | - | - | 0,00 | 0,00 | - |
| 48 | 1.714 | 1.720 | **22,16** | 104,5 | 0,00 | 75,71 | - | - | 0,00 | 0,00 | - |
| 5 | 492 | 508 | **37,27** | 106,0 | 0,00 | 65,12 | - | - | 0,00 | 0,00 | - |
| 6 | 3.687 | 3.689 | **12,09** | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 7 | 6.768 | 6.769 | **5,18** | 106,0 | 0,00 | 87,61 | - | - | 0,00 | 0,00 | - |
| 8 | 3.051 | 3.054 | **14,60** | 106,0 | 0,00 | 80,70 | - | - | 0,00 | 0,00 | - |
| 9 | 2.713 | 2.715 | **17,64** | 106,0 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,79** | | | | | | | | |

*- Data undefined due to calculation with octave data*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: AA Noise sensitive point: User defined (29)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.888 | 2.891 | **15,33** | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 10 | 2.910 | 2.912 | **16,71** | 106,0 | 0,00 | 80,28 | - | - | 0,00 | 0,00 | - |
| 11 | 2.583 | 2.585 | **18,29** | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 12 | 2.326 | 2.329 | **19,66** | 106,0 | 0,00 | 78,34 | - | - | 0,00 | 0,00 | - |
| 13 | 2.679 | 2.682 | **17,81** | 106,0 | 0,00 | 79,57 | - | - | 0,00 | 0,00 | - |
| 14 | 2.445 | 2.447 | **19,01** | 106,0 | 0,00 | 78,77 | - | - | 0,00 | 0,00 | - |
| 15 | 4.000 | 4.001 | **12,55** | 106,0 | 0,00 | 83,04 | - | - | 0,00 | 0,00 | - |
| 16 | 4.410 | 4.411 | **11,29** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 17 | 4.504 | 4.505 | **11,02** | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 18 | 6.145 | 6.146 | **7,02** | 106,0 | 0,00 | 86,77 | - | - | 0,00 | 0,00 | - |
| 19 | 6.199 | 6.201 | **6,90** | 106,0 | 0,00 | 86,85 | - | - | 0,00 | 0,00 | - |
| 2 | 2.507 | 2.511 | **17,20** | 106,0 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 20 | 6.370 | 6.371 | **6,56** | 106,0 | 0,00 | 87,08 | - | - | 0,00 | 0,00 | - |
| 21 | 6.470 | 6.471 | **6,36** | 106,0 | 0,00 | 87,22 | - | - | 0,00 | 0,00 | - |
| 22 | 6.502 | 6.503 | **6,29** | 106,0 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 23 | 7.565 | 7.566 | **4,37** | 106,0 | 0,00 | 88,58 | - | - | 0,00 | 0,00 | - |
| 24 | 7.764 | 7.764 | **4,05** | 106,0 | 0,00 | 88,80 | - | - | 0,00 | 0,00 | - |
| 25 | 8.113 | 8.114 | **3,49** | 106,0 | 0,00 | 89,18 | - | - | 0,00 | 0,00 | - |
| 26 | 2.889 | 2.890 | **15,83** | 104,5 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 27 | 2.598 | 2.599 | **17,08** | 104,5 | 0,00 | 79,30 | - | - | 0,00 | 0,00 | - |
| 28 | 2.376 | 2.378 | **18,15** | 104,5 | 0,00 | 78,52 | - | - | 0,00 | 0,00 | - |
| 29 | 2.250 | 2.252 | **18,84** | 104,5 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 3 | 1.324 | 1.330 | **25,53** | 106,0 | 0,00 | 73,48 | - | - | 0,00 | 0,00 | - |
| 30 | 2.085 | 2.086 | **19,79** | 104,5 | 0,00 | 77,39 | - | - | 0,00 | 0,00 | - |
| 31 | 1.255 | 1.258 | **25,89** | 104,5 | 0,00 | 72,99 | - | - | 0,00 | 0,00 | - |
| 32 | 974 | 977 | **28,80** | 104,5 | 0,00 | 70,80 | - | - | 0,00 | 0,00 | - |
| 33 | 791 | 795 | **31,12** | 104,5 | 0,00 | 69,01 | - | - | 0,00 | 0,00 | - |
| 34 | 833 | 837 | **30,55** | 104,5 | 0,00 | 69,45 | - | - | 0,00 | 0,00 | - |
| 35 | 2.877 | 2.878 | **15,88** | 104,5 | 0,00 | 80,18 | - | - | 0,00 | 0,00 | - |
| 36 | 3.898 | 3.899 | **12,25** | 104,5 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 37 | 4.315 | 4.315 | **11,03** | 104,5 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 38 | 3.116 | 3.120 | **16,18** | 106,0 | 0,00 | 80,88 | - | - | 0,00 | 0,00 | - |
| 39 | 2.282 | 2.287 | **20,15** | 106,0 | 0,00 | 78,18 | - | - | 0,00 | 0,00 | - |
| 4 | 483 | 500 | **37,45** | 106,0 | 0,00 | 64,98 | - | - | 0,00 | 0,00 | - |
| 40 | 2.044 | 2.049 | **21,52** | 106,0 | 0,00 | 77,23 | - | - | 0,00 | 0,00 | - |
| 41 | 1.807 | 1.812 | **23,03** | 106,0 | 0,00 | 76,17 | - | - | 0,00 | 0,00 | - |
| 42 | 1.284 | 1.293 | **27,07** | 106,0 | 0,00 | 73,23 | - | - | 0,00 | 0,00 | - |
| 43 | 1.725 | 1.731 | **23,59** | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 44 | 6.921 | 6.922 | **5,45** | 104,5 | 0,00 | 87,80 | - | - | 0,00 | 0,00 | - |
| 45 | 1.882 | 1.888 | **21,03** | 104,5 | 0,00 | 76,52 | - | - | 0,00 | 0,00 | - |
| 46 | 2.186 | 2.191 | **19,18** | 104,5 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 47 | 1.983 | 1.988 | **20,39** | 104,5 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 48 | 1.700 | 1.706 | **22,27** | 104,5 | 0,00 | 75,64 | - | - | 0,00 | 0,00 | - |
| 5 | 576 | 590 | **35,55** | 106,0 | 0,00 | 66,41 | - | - | 0,00 | 0,00 | - |
| 6 | 3.643 | 3.645 | **12,25** | 106,0 | 0,00 | 82,23 | - | - | 0,00 | 0,00 | - |
| 7 | 6.712 | 6.713 | **5,27** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 8 | 2.938 | 2.941 | **15,10** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 9 | 2.608 | 2.611 | **18,16** | 106,0 | 0,00 | 79,33 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,99** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AB Noise sensitive point: User defined (30)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.898 | 2.901 | **15,28** | 106,0 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 10 | 2.929 | 2.930 | **16,62** | 106,0 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 11 | 2.601 | 2.603 | **18,20** | 106,0 | 0,00 | 79,31 | - | - | 0,00 | 0,00 | - |
| 12 | 2.311 | 2.314 | **19,74** | 106,0 | 0,00 | 78,29 | - | - | 0,00 | 0,00 | - |
| 13 | 2.665 | 2.668 | **17,88** | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 14 | 2.432 | 2.435 | **19,08** | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 15 | 3.998 | 4.000 | **12,55** | 106,0 | 0,00 | 83,04 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 4.409 | 4.410 | **11,29** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 17 | 4.504 | 4.505 | **11,02** | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 18 | 6.138 | 6.139 | **7,03** | 106,0 | 0,00 | 86,76 | - | - | 0,00 | 0,00 | - |
| 19 | 6.194 | 6.195 | **6,91** | 106,0 | 0,00 | 86,84 | - | - | 0,00 | 0,00 | - |
| 2 | 2.516 | 2.520 | **17,15** | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 20 | 6.366 | 6.367 | **6,57** | 106,0 | 0,00 | 87,08 | - | - | 0,00 | 0,00 | - |
| 21 | 6.462 | 6.463 | **6,37** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 22 | 6.495 | 6.496 | **6,31** | 106,0 | 0,00 | 87,25 | - | - | 0,00 | 0,00 | - |
| 23 | 7.563 | 7.564 | **4,38** | 106,0 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 24 | 7.759 | 7.760 | **4,05** | 106,0 | 0,00 | 88,80 | - | - | 0,00 | 0,00 | - |
| 25 | 8.106 | 8.106 | **3,50** | 106,0 | 0,00 | 89,18 | - | - | 0,00 | 0,00 | - |
| 26 | 2.901 | 2.902 | **15,78** | 104,5 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 27 | 2.611 | 2.612 | **17,02** | 104,5 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 28 | 2.391 | 2.392 | **18,08** | 104,5 | 0,00 | 78,58 | - | - | 0,00 | 0,00 | - |
| 29 | 2.262 | 2.263 | **18,77** | 104,5 | 0,00 | 78,09 | - | - | 0,00 | 0,00 | - |
| 3 | 1.336 | 1.342 | **25,42** | 106,0 | 0,00 | 73,55 | - | - | 0,00 | 0,00 | - |
| 30 | 2.092 | 2.094 | **19,75** | 104,5 | 0,00 | 77,42 | - | - | 0,00 | 0,00 | - |
| 31 | 1.262 | 1.264 | **25,83** | 104,5 | 0,00 | 73,04 | - | - | 0,00 | 0,00 | - |
| 32 | 973 | 976 | **28,82** | 104,5 | 0,00 | 70,78 | - | - | 0,00 | 0,00 | - |
| 33 | 770 | 774 | **31,42** | 104,5 | 0,00 | 68,77 | - | - | 0,00 | 0,00 | - |
| 34 | 817 | 821 | **30,76** | 104,5 | 0,00 | 69,29 | - | - | 0,00 | 0,00 | - |
| 35 | 2.891 | 2.892 | **15,82** | 104,5 | 0,00 | 80,23 | - | - | 0,00 | 0,00 | - |
| 36 | 3.899 | 3.899 | **12,24** | 104,5 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 37 | 4.311 | 4.312 | **11,04** | 104,5 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 38 | 3.103 | 3.107 | **16,23** | 106,0 | 0,00 | 80,85 | - | - | 0,00 | 0,00 | - |
| 39 | 2.301 | 2.306 | **20,04** | 106,0 | 0,00 | 78,26 | - | - | 0,00 | 0,00 | - |
| 4 | 463 | 482 | **37,87** | 106,0 | 0,00 | 64,65 | - | - | 0,00 | 0,00 | - |
| 40 | 2.044 | 2.050 | **21,51** | 106,0 | 0,00 | 77,23 | - | - | 0,00 | 0,00 | - |
| 41 | 1.813 | 1.819 | **22,99** | 106,0 | 0,00 | 76,20 | - | - | 0,00 | 0,00 | - |
| 42 | 1.289 | 1.298 | **27,03** | 106,0 | 0,00 | 73,26 | - | - | 0,00 | 0,00 | - |
| 43 | 1.725 | 1.731 | **23,59** | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 44 | 6.915 | 6.916 | **5,46** | 104,5 | 0,00 | 87,80 | - | - | 0,00 | 0,00 | - |
| 45 | 1.896 | 1.901 | **20,94** | 104,5 | 0,00 | 76,58 | - | - | 0,00 | 0,00 | - |
| 46 | 2.202 | 2.207 | **19,09** | 104,5 | 0,00 | 77,88 | - | - | 0,00 | 0,00 | - |
| 47 | 2.002 | 2.006 | **20,28** | 104,5 | 0,00 | 77,05 | - | - | 0,00 | 0,00 | - |
| 48 | 1.716 | 1.722 | **22,15** | 104,5 | 0,00 | 75,72 | - | - | 0,00 | 0,00 | - |
| 5 | 574 | 587 | **35,59** | 106,0 | 0,00 | 66,38 | - | - | 0,00 | 0,00 | - |
| 6 | 3.635 | 3.637 | **12,28** | 106,0 | 0,00 | 82,22 | - | - | 0,00 | 0,00 | - |
| 7 | 6.707 | 6.708 | **5,28** | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| 8 | 2.955 | 2.958 | **15,02** | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| 9 | 2.629 | 2.631 | **18,06** | 106,0 | 0,00 | 79,40 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,18** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AC Noise sensitive point: User defined (31)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.043 | 3.045 | **14,63** | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 10 | 2.937 | 2.939 | **16,58** | 106,0 | 0,00 | 80,36 | - | - | 0,00 | 0,00 | - |
| 11 | 2.597 | 2.599 | **18,22** | 106,0 | 0,00 | 79,30 | - | - | 0,00 | 0,00 | - |
| 12 | 2.171 | 2.174 | **20,55** | 106,0 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 13 | 2.524 | 2.527 | **18,59** | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 14 | 2.288 | 2.291 | **19,87** | 106,0 | 0,00 | 78,20 | - | - | 0,00 | 0,00 | - |
| 15 | 3.868 | 3.870 | **12,98** | 106,0 | 0,00 | 82,75 | - | - | 0,00 | 0,00 | - |
| 16 | 4.279 | 4.281 | **11,68** | 106,0 | 0,00 | 83,63 | - | - | 0,00 | 0,00 | - |
| 17 | 4.380 | 4.382 | **11,38** | 106,0 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 18 | 5.995 | 5.996 | **7,33** | 106,0 | 0,00 | 86,56 | - | - | 0,00 | 0,00 | - |
| 19 | 6.053 | 6.054 | **7,21** | 106,0 | 0,00 | 86,64 | - | - | 0,00 | 0,00 | - |
| 2 | 2.661 | 2.664 | **16,41** | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 20 | 6.227 | 6.228 | **6,85** | 106,0 | 0,00 | 86,89 | - | - | 0,00 | 0,00 | - |
| 21 | 6.318 | 6.319 | **6,66** | 106,0 | 0,00 | 87,01 | - | - | 0,00 | 0,00 | - |
| 22 | 6.353 | 6.354 | **6,59** | 106,0 | 0,00 | 87,06 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 7.430 | 7.431 | **4,60** | 106,0 | 0,00 | 88,42 | - | - | 0,00 | 0,00 | - |
| 24 | 7.620 | 7.621 | **4,28** | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 25 | 7.963 | 7.964 | **3,73** | 106,0 | 0,00 | 89,02 | - | - | 0,00 | 0,00 | - |
| 26 | 3.046 | 3.047 | **15,20** | 104,5 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 27 | 2.755 | 2.756 | **16,39** | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 28 | 2.532 | 2.533 | **17,38** | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 29 | 2.407 | 2.408 | **17,99** | 104,5 | 0,00 | 78,63 | - | - | 0,00 | 0,00 | - |
| 3 | 1.480 | 1.486 | **24,10** | 106,0 | 0,00 | 74,44 | - | - | 0,00 | 0,00 | - |
| 30 | 2.236 | 2.238 | **18,92** | 104,5 | 0,00 | 78,00 | - | - | 0,00 | 0,00 | - |
| 31 | 1.404 | 1.406 | **24,58** | 104,5 | 0,00 | 73,96 | - | - | 0,00 | 0,00 | - |
| 32 | 1.098 | 1.100 | **27,44** | 104,5 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 33 | 718 | 722 | **32,19** | 104,5 | 0,00 | 68,17 | - | - | 0,00 | 0,00 | - |
| 34 | 680 | 685 | **32,77** | 104,5 | 0,00 | 67,71 | - | - | 0,00 | 0,00 | - |
| 35 | 2.855 | 2.856 | **15,97** | 104,5 | 0,00 | 80,11 | - | - | 0,00 | 0,00 | - |
| 36 | 3.775 | 3.776 | **12,63** | 104,5 | 0,00 | 82,54 | - | - | 0,00 | 0,00 | - |
| 37 | 4.175 | 4.176 | **11,42** | 104,5 | 0,00 | 83,41 | - | - | 0,00 | 0,00 | - |
| 38 | 2.959 | 2.963 | **16,84** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 39 | 2.422 | 2.426 | **19,40** | 106,0 | 0,00 | 78,70 | - | - | 0,00 | 0,00 | - |
| 4 | 355 | 378 | **40,57** | 106,0 | 0,00 | 62,55 | - | - | 0,00 | 0,00 | - |
| 40 | 1.921 | 1.927 | **22,28** | 106,0 | 0,00 | 76,70 | - | - | 0,00 | 0,00 | - |
| 41 | 1.720 | 1.726 | **23,63** | 106,0 | 0,00 | 75,74 | - | - | 0,00 | 0,00 | - |
| 42 | 1.189 | 1.198 | **27,96** | 106,0 | 0,00 | 72,57 | - | - | 0,00 | 0,00 | - |
| 43 | 1.852 | 1.858 | **22,73** | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 44 | 6.774 | 6.774 | **5,70** | 104,5 | 0,00 | 87,62 | - | - | 0,00 | 0,00 | - |
| 45 | 2.039 | 2.044 | **20,05** | 104,5 | 0,00 | 77,21 | - | - | 0,00 | 0,00 | - |
| 46 | 2.339 | 2.343 | **18,34** | 104,5 | 0,00 | 78,39 | - | - | 0,00 | 0,00 | - |
| 47 | 2.127 | 2.132 | **19,52** | 104,5 | 0,00 | 77,58 | - | - | 0,00 | 0,00 | - |
| 48 | 1.853 | 1.858 | **21,22** | 104,5 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 5 | 697 | 709 | **33,37** | 106,0 | 0,00 | 68,01 | - | - | 0,00 | 0,00 | - |
| 6 | 3.491 | 3.494 | **12,81** | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 7 | 6.566 | 6.568 | **5,51** | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 8 | 2.939 | 2.942 | **15,09** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 9 | 2.658 | 2.661 | **17,91** | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,22** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AD Noise sensitive point: User defined (32)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.039 | 3.041 | **14,65** | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 10 | 2.953 | 2.955 | **16,51** | 106,0 | 0,00 | 80,41 | - | - | 0,00 | 0,00 | - |
| 11 | 2.613 | 2.615 | **18,14** | 106,0 | 0,00 | 79,35 | - | - | 0,00 | 0,00 | - |
| 12 | 2.170 | 2.173 | **20,56** | 106,0 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 13 | 2.523 | 2.526 | **18,60** | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 14 | 2.290 | 2.293 | **19,86** | 106,0 | 0,00 | 78,21 | - | - | 0,00 | 0,00 | - |
| 15 | 3.879 | 3.880 | **12,94** | 106,0 | 0,00 | 82,78 | - | - | 0,00 | 0,00 | - |
| 16 | 4.290 | 4.291 | **11,64** | 106,0 | 0,00 | 83,65 | - | - | 0,00 | 0,00 | - |
| 17 | 4.392 | 4.393 | **11,34** | 106,0 | 0,00 | 83,86 | - | - | 0,00 | 0,00 | - |
| 18 | 6.001 | 6.002 | **7,32** | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 19 | 6.061 | 6.062 | **7,19** | 106,0 | 0,00 | 86,65 | - | - | 0,00 | 0,00 | - |
| 2 | 2.657 | 2.660 | **16,44** | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| 20 | 6.235 | 6.236 | **6,83** | 106,0 | 0,00 | 86,90 | - | - | 0,00 | 0,00 | - |
| 21 | 6.324 | 6.325 | **6,65** | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 22 | 6.359 | 6.360 | **6,58** | 106,0 | 0,00 | 87,07 | - | - | 0,00 | 0,00 | - |
| 23 | 7.440 | 7.440 | **4,58** | 106,0 | 0,00 | 88,43 | - | - | 0,00 | 0,00 | - |
| 24 | 7.628 | 7.629 | **4,27** | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 25 | 7.969 | 7.970 | **3,72** | 106,0 | 0,00 | 89,03 | - | - | 0,00 | 0,00 | - |
| 26 | 3.043 | 3.044 | **15,21** | 104,5 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 27 | 2.754 | 2.755 | **16,40** | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 28 | 2.532 | 2.533 | **17,38** | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 29 | 2.404 | 2.405 | **18,01** | 104,5 | 0,00 | 78,62 | - | - | 0,00 | 0,00 | - |
| 3 | 1.478 | 1.483 | **24,12** | 106,0 | 0,00 | 74,43 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 2.231 | 2.232 | **18,95** | 104,5 | 0,00 | 77,97 | - | - | 0,00 | 0,00 | - |
| 31 | 1.398 | 1.400 | **24,63** | 104,5 | 0,00 | 73,92 | - | - | 0,00 | 0,00 | - |
| 32 | 1.087 | 1.089 | **27,56** | 104,5 | 0,00 | 71,74 | - | - | 0,00 | 0,00 | - |
| 33 | 703 | 707 | **32,42** | 104,5 | 0,00 | 67,99 | - | - | 0,00 | 0,00 | - |
| 34 | 677 | 682 | **32,81** | 104,5 | 0,00 | 67,68 | - | - | 0,00 | 0,00 | - |
| 35 | 2.872 | 2.873 | **15,90** | 104,5 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 36 | 3.787 | 3.788 | **12,59** | 104,5 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 37 | 4.184 | 4.185 | **11,40** | 104,5 | 0,00 | 83,43 | - | - | 0,00 | 0,00 | - |
| 38 | 2.961 | 2.965 | **16,84** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 39 | 2.428 | 2.432 | **19,37** | 106,0 | 0,00 | 78,72 | - | - | 0,00 | 0,00 | - |
| 4 | 345 | 369 | **40,84** | 106,0 | 0,00 | 62,33 | - | - | 0,00 | 0,00 | - |
| 40 | 1.933 | 1.939 | **22,20** | 106,0 | 0,00 | 76,75 | - | - | 0,00 | 0,00 | - |
| 41 | 1.735 | 1.741 | **23,52** | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 42 | 1.204 | 1.212 | **27,82** | 106,0 | 0,00 | 72,67 | - | - | 0,00 | 0,00 | - |
| 43 | 1.842 | 1.847 | **22,80** | 106,0 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 44 | 6.781 | 6.782 | **5,69** | 104,5 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 45 | 2.038 | 2.043 | **20,05** | 104,5 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 46 | 2.341 | 2.345 | **18,33** | 104,5 | 0,00 | 78,40 | - | - | 0,00 | 0,00 | - |
| 47 | 2.132 | 2.137 | **19,49** | 104,5 | 0,00 | 77,60 | - | - | 0,00 | 0,00 | - |
| 48 | 1.855 | 1.860 | **21,21** | 104,5 | 0,00 | 76,39 | - | - | 0,00 | 0,00 | - |
| 5 | 687 | 698 | **33,55** | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 6 | 3.497 | 3.500 | **12,79** | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 7 | 6.574 | 6.575 | **5,49** | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 8 | 2.956 | 2.959 | **15,02** | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| 9 | 2.674 | 2.676 | **17,84** | 106,0 | 0,00 | 79,55 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,40** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AE Noise sensitive point: User defined (33)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.512 | 3.514 | **12,73** | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 10 | 2.874 | 2.876 | **16,88** | 106,0 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 11 | 2.497 | 2.499 | **18,74** | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 12 | 1.781 | 1.785 | **23,05** | 106,0 | 0,00 | 76,03 | - | - | 0,00 | 0,00 | - |
| 13 | 2.122 | 2.125 | **20,84** | 106,0 | 0,00 | 77,55 | - | - | 0,00 | 0,00 | - |
| 14 | 1.854 | 1.858 | **22,55** | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 15 | 3.392 | 3.394 | **14,65** | 106,0 | 0,00 | 81,61 | - | - | 0,00 | 0,00 | - |
| 16 | 3.805 | 3.806 | **13,19** | 106,0 | 0,00 | 82,61 | - | - | 0,00 | 0,00 | - |
| 17 | 3.915 | 3.916 | **12,82** | 106,0 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 18 | 5.516 | 5.518 | **8,40** | 106,0 | 0,00 | 85,83 | - | - | 0,00 | 0,00 | - |
| 19 | 5.571 | 5.572 | **8,28** | 106,0 | 0,00 | 85,92 | - | - | 0,00 | 0,00 | - |
| 2 | 3.134 | 3.136 | **14,25** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 20 | 5.744 | 5.745 | **7,88** | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 21 | 5.843 | 5.844 | **7,66** | 106,0 | 0,00 | 86,33 | - | - | 0,00 | 0,00 | - |
| 22 | 5.872 | 5.873 | **7,60** | 106,0 | 0,00 | 86,38 | - | - | 0,00 | 0,00 | - |
| 23 | 6.950 | 6.951 | **5,45** | 106,0 | 0,00 | 87,84 | - | - | 0,00 | 0,00 | - |
| 24 | 7.137 | 7.138 | **5,11** | 106,0 | 0,00 | 88,07 | - | - | 0,00 | 0,00 | - |
| 25 | 7.483 | 7.484 | **4,51** | 106,0 | 0,00 | 88,48 | - | - | 0,00 | 0,00 | - |
| 26 | 3.502 | 3.503 | **13,53** | 104,5 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 27 | 3.198 | 3.199 | **14,62** | 104,5 | 0,00 | 81,10 | - | - | 0,00 | 0,00 | - |
| 28 | 2.961 | 2.962 | **15,54** | 104,5 | 0,00 | 80,43 | - | - | 0,00 | 0,00 | - |
| 29 | 2.865 | 2.866 | **15,93** | 104,5 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| 3 | 1.938 | 1.942 | **20,60** | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 30 | 2.713 | 2.714 | **16,57** | 104,5 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 31 | 1.885 | 1.886 | **21,04** | 104,5 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 32 | 1.574 | 1.576 | **23,22** | 104,5 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 33 | 874 | 878 | **30,01** | 104,5 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 34 | 420 | 428 | **37,79** | 104,5 | 0,00 | 63,63 | - | - | 0,00 | 0,00 | - |
| 35 | 2.643 | 2.644 | **16,88** | 104,5 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 36 | 3.312 | 3.313 | **14,20** | 104,5 | 0,00 | 81,40 | - | - | 0,00 | 0,00 | - |
| 37 | 3.693 | 3.693 | **12,90** | 104,5 | 0,00 | 82,35 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 2.528 | 2.532 | **18,86** | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 39 | 2.759 | 2.763 | **17,75** | 106,0 | 0,00 | 79,83 | - | - | 0,00 | 0,00 | - |
| 4 | 468 | 485 | **37,80** | 106,0 | 0,00 | 64,71 | - | - | 0,00 | 0,00 | - |
| 40 | 1.462 | 1.470 | **25,56** | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 41 | 1.350 | 1.357 | **26,50** | 106,0 | 0,00 | 73,65 | - | - | 0,00 | 0,00 | - |
| 42 | 817 | 829 | **32,15** | 106,0 | 0,00 | 69,38 | - | - | 0,00 | 0,00 | - |
| 43 | 2.329 | 2.334 | **19,89** | 106,0 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 44 | 6.292 | 6.292 | **6,56** | 104,5 | 0,00 | 86,98 | - | - | 0,00 | 0,00 | - |
| 45 | 2.482 | 2.486 | **17,59** | 104,5 | 0,00 | 78,91 | - | - | 0,00 | 0,00 | - |
| 46 | 2.743 | 2.746 | **16,32** | 104,5 | 0,00 | 79,77 | - | - | 0,00 | 0,00 | - |
| 47 | 2.488 | 2.492 | **17,56** | 104,5 | 0,00 | 78,93 | - | - | 0,00 | 0,00 | - |
| 48 | 2.263 | 2.267 | **18,75** | 104,5 | 0,00 | 78,11 | - | - | 0,00 | 0,00 | - |
| 5 | 1.175 | 1.182 | **27,04** | 106,0 | 0,00 | 72,45 | - | - | 0,00 | 0,00 | - |
| 6 | 3.015 | 3.017 | **14,76** | 106,0 | 0,00 | 80,59 | - | - | 0,00 | 0,00 | - |
| 7 | 6.083 | 6.085 | **6,33** | 106,0 | 0,00 | 86,69 | - | - | 0,00 | 0,00 | - |
| 8 | 2.795 | 2.798 | **15,76** | 106,0 | 0,00 | 79,94 | - | - | 0,00 | 0,00 | - |
| 9 | 2.672 | 2.674 | **17,84** | 106,0 | 0,00 | 79,54 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,57** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AF Noise sensitive point: User defined (34)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.500 | 3.502 | **12,78** | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 10 | 2.941 | 2.943 | **16,57** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 11 | 2.566 | 2.568 | **18,38** | 106,0 | 0,00 | 79,19 | - | - | 0,00 | 0,00 | - |
| 12 | 1.761 | 1.765 | **23,19** | 106,0 | 0,00 | 75,93 | - | - | 0,00 | 0,00 | - |
| 13 | 2.106 | 2.109 | **20,94** | 106,0 | 0,00 | 77,48 | - | - | 0,00 | 0,00 | - |
| 14 | 1.848 | 1.852 | **22,59** | 106,0 | 0,00 | 76,35 | - | - | 0,00 | 0,00 | - |
| 15 | 3.433 | 3.435 | **14,50** | 106,0 | 0,00 | 81,72 | - | - | 0,00 | 0,00 | - |
| 16 | 3.846 | 3.848 | **13,05** | 106,0 | 0,00 | 82,70 | - | - | 0,00 | 0,00 | - |
| 17 | 3.961 | 3.963 | **12,67** | 106,0 | 0,00 | 82,96 | - | - | 0,00 | 0,00 | - |
| 18 | 5.535 | 5.536 | **8,36** | 106,0 | 0,00 | 85,86 | - | - | 0,00 | 0,00 | - |
| 19 | 5.596 | 5.597 | **8,22** | 106,0 | 0,00 | 85,96 | - | - | 0,00 | 0,00 | - |
| 2 | 3.119 | 3.122 | **14,31** | 106,0 | 0,00 | 80,89 | - | - | 0,00 | 0,00 | - |
| 20 | 5.773 | 5.774 | **7,82** | 106,0 | 0,00 | 86,23 | - | - | 0,00 | 0,00 | - |
| 21 | 5.859 | 5.860 | **7,63** | 106,0 | 0,00 | 86,36 | - | - | 0,00 | 0,00 | - |
| 22 | 5.893 | 5.894 | **7,55** | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 23 | 6.986 | 6.987 | **5,38** | 106,0 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 24 | 7.166 | 7.166 | **5,06** | 106,0 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 25 | 7.503 | 7.504 | **4,48** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 26 | 3.496 | 3.497 | **13,55** | 104,5 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 27 | 3.197 | 3.198 | **14,62** | 104,5 | 0,00 | 81,10 | - | - | 0,00 | 0,00 | - |
| 28 | 2.964 | 2.965 | **15,52** | 104,5 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 29 | 2.858 | 2.859 | **15,96** | 104,5 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 3 | 1.931 | 1.934 | **20,65** | 106,0 | 0,00 | 76,73 | - | - | 0,00 | 0,00 | - |
| 30 | 2.696 | 2.697 | **16,65** | 104,5 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 31 | 1.864 | 1.865 | **21,18** | 104,5 | 0,00 | 76,41 | - | - | 0,00 | 0,00 | - |
| 32 | 1.538 | 1.540 | **23,50** | 104,5 | 0,00 | 74,75 | - | - | 0,00 | 0,00 | - |
| 33 | 805 | 808 | **30,94** | 104,5 | 0,00 | 69,15 | - | - | 0,00 | 0,00 | - |
| 34 | 361 | 370 | **39,29** | 104,5 | 0,00 | 62,35 | - | - | 0,00 | 0,00 | - |
| 35 | 2.715 | 2.716 | **16,57** | 104,5 | 0,00 | 79,68 | - | - | 0,00 | 0,00 | - |
| 36 | 3.359 | 3.360 | **14,03** | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 37 | 3.726 | 3.727 | **12,79** | 104,5 | 0,00 | 82,43 | - | - | 0,00 | 0,00 | - |
| 38 | 2.522 | 2.526 | **18,89** | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 39 | 2.783 | 2.786 | **17,64** | 106,0 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 4 | 403 | 423 | **39,33** | 106,0 | 0,00 | 63,52 | - | - | 0,00 | 0,00 | - |
| 40 | 1.513 | 1.520 | **25,16** | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 41 | 1.417 | 1.424 | **25,93** | 106,0 | 0,00 | 74,07 | - | - | 0,00 | 0,00 | - |
| 42 | 885 | 897 | **31,27** | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 43 | 2.293 | 2.297 | **20,09** | 106,0 | 0,00 | 78,22 | - | - | 0,00 | 0,00 | - |
| 44 | 6.316 | 6.316 | **6,51** | 104,5 | 0,00 | 87,01 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 2.481 | 2.484 | **17,60** | 104,5 | 0,00 | 78,90 | - | - | 0,00 | 0,00 | - |
| 46 | 2.752 | 2.756 | **16,27** | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 47 | 2.507 | 2.511 | **17,46** | 104,5 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 48 | 2.271 | 2.275 | **18,71** | 104,5 | 0,00 | 78,14 | - | - | 0,00 | 0,00 | - |
| 5 | 1.141 | 1.148 | **27,41** | 106,0 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 6 | 3.031 | 3.034 | **14,68** | 106,0 | 0,00 | 80,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.109 | 6.111 | **6,28** | 106,0 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| 8 | 2.866 | 2.868 | **15,43** | 106,0 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| 9 | 2.734 | 2.736 | **17,54** | 106,0 | 0,00 | 79,74 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,63** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AG Noise sensitive point: User defined (35)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.076 | 6.077 | **6,34** | 106,0 | 0,00 | 86,67 | - | - | 0,00 | 0,00 | - |
| 10 | 3.883 | 3.884 | **12,93** | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 11 | 3.491 | 3.493 | **14,29** | 106,0 | 0,00 | 81,86 | - | - | 0,00 | 0,00 | - |
| 12 | 1.591 | 1.594 | **24,45** | 106,0 | 0,00 | 75,05 | - | - | 0,00 | 0,00 | - |
| 13 | 1.443 | 1.447 | **25,64** | 106,0 | 0,00 | 74,21 | - | - | 0,00 | 0,00 | - |
| 14 | 1.224 | 1.229 | **27,59** | 106,0 | 0,00 | 72,79 | - | - | 0,00 | 0,00 | - |
| 15 | 1.089 | 1.093 | **28,96** | 106,0 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 16 | 1.470 | 1.474 | **25,41** | 106,0 | 0,00 | 74,37 | - | - | 0,00 | 0,00 | - |
| 17 | 1.729 | 1.731 | **23,43** | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 18 | 2.953 | 2.955 | **16,51** | 106,0 | 0,00 | 80,41 | - | - | 0,00 | 0,00 | - |
| 19 | 2.987 | 2.989 | **16,36** | 106,0 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 2 | 5.704 | 5.705 | **7,03** | 106,0 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 20 | 3.170 | 3.171 | **15,56** | 106,0 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 21 | 3.301 | 3.303 | **15,01** | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 22 | 3.296 | 3.298 | **15,03** | 106,0 | 0,00 | 81,36 | - | - | 0,00 | 0,00 | - |
| 23 | 4.432 | 4.433 | **11,23** | 106,0 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 24 | 4.560 | 4.561 | **10,86** | 106,0 | 0,00 | 84,18 | - | - | 0,00 | 0,00 | - |
| 25 | 4.910 | 4.911 | **9,90** | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 26 | 6.037 | 6.037 | **7,04** | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 27 | 5.710 | 5.710 | **7,70** | 104,5 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 28 | 5.446 | 5.446 | **8,25** | 104,5 | 0,00 | 85,72 | - | - | 0,00 | 0,00 | - |
| 29 | 5.411 | 5.412 | **8,33** | 104,5 | 0,00 | 85,67 | - | - | 0,00 | 0,00 | - |
| 3 | 4.494 | 4.495 | **9,70** | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 30 | 5.292 | 5.292 | **8,59** | 104,5 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 31 | 4.468 | 4.469 | **10,61** | 104,5 | 0,00 | 84,00 | - | - | 0,00 | 0,00 | - |
| 32 | 4.139 | 4.139 | **11,53** | 104,5 | 0,00 | 83,34 | - | - | 0,00 | 0,00 | - |
| 33 | 3.131 | 3.132 | **14,87** | 104,5 | 0,00 | 80,92 | - | - | 0,00 | 0,00 | - |
| 34 | 2.540 | 2.541 | **17,35** | 104,5 | 0,00 | 79,10 | - | - | 0,00 | 0,00 | - |
| 35 | 3.073 | 3.074 | **15,09** | 104,5 | 0,00 | 80,75 | - | - | 0,00 | 0,00 | - |
| 36 | 1.285 | 1.287 | **25,62** | 104,5 | 0,00 | 73,19 | - | - | 0,00 | 0,00 | - |
| 37 | 1.174 | 1.176 | **26,67** | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 38 | 1.144 | 1.153 | **28,40** | 106,0 | 0,00 | 72,24 | - | - | 0,00 | 0,00 | - |
| 39 | 5.041 | 5.043 | **10,07** | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 4 | 2.922 | 2.925 | **15,17** | 106,0 | 0,00 | 80,32 | - | - | 0,00 | 0,00 | - |
| 40 | 1.389 | 1.397 | **26,16** | 106,0 | 0,00 | 73,90 | - | - | 0,00 | 0,00 | - |
| 41 | 1.994 | 1.999 | **21,83** | 106,0 | 0,00 | 77,01 | - | - | 0,00 | 0,00 | - |
| 42 | 2.189 | 2.194 | **20,67** | 106,0 | 0,00 | 77,82 | - | - | 0,00 | 0,00 | - |
| 43 | 4.888 | 4.890 | **10,43** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 44 | 3.709 | 3.709 | **12,84** | 104,5 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 45 | 5.005 | 5.007 | **8,69** | 104,5 | 0,00 | 84,99 | - | - | 0,00 | 0,00 | - |
| 46 | 5.178 | 5.180 | **8,29** | 104,5 | 0,00 | 85,29 | - | - | 0,00 | 0,00 | - |
| 47 | 4.843 | 4.844 | **9,07** | 104,5 | 0,00 | 84,70 | - | - | 0,00 | 0,00 | - |
| 48 | 4.730 | 4.732 | **9,35** | 104,5 | 0,00 | 84,50 | - | - | 0,00 | 0,00 | - |
| 5 | 3.747 | 3.749 | **11,88** | 106,0 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 6 | 549 | 563 | **36,08** | 106,0 | 0,00 | 66,02 | - | - | 0,00 | 0,00 | - |
| 7 | 3.500 | 3.503 | **12,78** | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 8 | 3.485 | 3.487 | **12,84** | 106,0 | 0,00 | 81,85 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 4.030 | 4.032 | **12,45** | 106,0 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| Sum | | | **39,76** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AH Noise sensitive point: User defined (36)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.118 | 6.119 | **6,27** | 106,0 | 0,00 | 86,73 | - | - | 0,00 | 0,00 | - |
| 10 | 3.921 | 3.922 | **12,80** | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 11 | 3.530 | 3.532 | **14,15** | 106,0 | 0,00 | 81,96 | - | - | 0,00 | 0,00 | - |
| 12 | 1.611 | 1.614 | **24,30** | 106,0 | 0,00 | 75,16 | - | - | 0,00 | 0,00 | - |
| 13 | 1.454 | 1.458 | **25,54** | 106,0 | 0,00 | 74,28 | - | - | 0,00 | 0,00 | - |
| 14 | 1.245 | 1.250 | **27,39** | 106,0 | 0,00 | 72,94 | - | - | 0,00 | 0,00 | - |
| 15 | 1.075 | 1.079 | **29,11** | 106,0 | 0,00 | 71,66 | - | - | 0,00 | 0,00 | - |
| 16 | 1.451 | 1.454 | **25,57** | 106,0 | 0,00 | 74,25 | - | - | 0,00 | 0,00 | - |
| 17 | 1.715 | 1.718 | **23,53** | 106,0 | 0,00 | 75,70 | - | - | 0,00 | 0,00 | - |
| 18 | 2.910 | 2.912 | **16,71** | 106,0 | 0,00 | 80,28 | - | - | 0,00 | 0,00 | - |
| 19 | 2.947 | 2.949 | **16,54** | 106,0 | 0,00 | 80,39 | - | - | 0,00 | 0,00 | - |
| 2 | 5.745 | 5.747 | **6,95** | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 20 | 3.131 | 3.133 | **15,72** | 106,0 | 0,00 | 80,92 | - | - | 0,00 | 0,00 | - |
| 21 | 3.258 | 3.260 | **15,19** | 106,0 | 0,00 | 81,27 | - | - | 0,00 | 0,00 | - |
| 22 | 3.254 | 3.256 | **15,20** | 106,0 | 0,00 | 81,25 | - | - | 0,00 | 0,00 | - |
| 23 | 4.397 | 4.398 | **11,33** | 106,0 | 0,00 | 83,87 | - | - | 0,00 | 0,00 | - |
| 24 | 4.521 | 4.523 | **10,97** | 106,0 | 0,00 | 84,11 | - | - | 0,00 | 0,00 | - |
| 25 | 4.868 | 4.869 | **10,01** | 106,0 | 0,00 | 84,75 | - | - | 0,00 | 0,00 | - |
| 26 | 6.079 | 6.080 | **6,96** | 104,5 | 0,00 | 86,68 | - | - | 0,00 | 0,00 | - |
| 27 | 5.752 | 5.753 | **7,61** | 104,5 | 0,00 | 86,20 | - | - | 0,00 | 0,00 | - |
| 28 | 5.488 | 5.489 | **8,16** | 104,5 | 0,00 | 85,79 | - | - | 0,00 | 0,00 | - |
| 29 | 5.453 | 5.454 | **8,24** | 104,5 | 0,00 | 85,73 | - | - | 0,00 | 0,00 | - |
| 3 | 4.536 | 4.537 | **9,59** | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| 30 | 5.333 | 5.334 | **8,50** | 104,5 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 31 | 4.509 | 4.509 | **10,50** | 104,5 | 0,00 | 84,08 | - | - | 0,00 | 0,00 | - |
| 32 | 4.178 | 4.179 | **11,41** | 104,5 | 0,00 | 83,42 | - | - | 0,00 | 0,00 | - |
| 33 | 3.167 | 3.168 | **14,74** | 104,5 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 34 | 2.577 | 2.578 | **17,18** | 104,5 | 0,00 | 79,23 | - | - | 0,00 | 0,00 | - |
| 35 | 3.109 | 3.110 | **14,96** | 104,5 | 0,00 | 80,85 | - | - | 0,00 | 0,00 | - |
| 36 | 1.284 | 1.286 | **25,63** | 104,5 | 0,00 | 73,18 | - | - | 0,00 | 0,00 | - |
| 37 | 1.142 | 1.145 | **26,98** | 104,5 | 0,00 | 72,18 | - | - | 0,00 | 0,00 | - |
| 38 | 1.141 | 1.151 | **28,43** | 106,0 | 0,00 | 72,22 | - | - | 0,00 | 0,00 | - |
| 39 | 5.084 | 5.086 | **9,97** | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 4 | 2.961 | 2.964 | **15,00** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 40 | 1.432 | 1.439 | **25,81** | 106,0 | 0,00 | 74,16 | - | - | 0,00 | 0,00 | - |
| 41 | 2.036 | 2.041 | **21,57** | 106,0 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 42 | 2.232 | 2.237 | **20,43** | 106,0 | 0,00 | 77,99 | - | - | 0,00 | 0,00 | - |
| 43 | 4.927 | 4.929 | **10,33** | 106,0 | 0,00 | 84,86 | - | - | 0,00 | 0,00 | - |
| 44 | 3.668 | 3.669 | **12,98** | 104,5 | 0,00 | 82,29 | - | - | 0,00 | 0,00 | - |
| 45 | 5.048 | 5.049 | **8,59** | 104,5 | 0,00 | 85,06 | - | - | 0,00 | 0,00 | - |
| 46 | 5.221 | 5.223 | **8,20** | 104,5 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 47 | 4.886 | 4.887 | **8,97** | 104,5 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 48 | 4.773 | 4.775 | **9,24** | 104,5 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 5 | 3.787 | 3.788 | **11,75** | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 6 | 509 | 525 | **36,90** | 106,0 | 0,00 | 65,40 | - | - | 0,00 | 0,00 | - |
| 7 | 3.460 | 3.463 | **12,93** | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 8 | 3.522 | 3.524 | **12,70** | 106,0 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 9 | 4.071 | 4.072 | **12,32** | 106,0 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,13** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: AI Noise sensitive point: User defined (37)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.006 | 6.007 | **6,47** | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 10 | 4.002 | 4.003 | **12,54** | 106,0 | 0,00 | 83,05 | - | - | 0,00 | 0,00 | - |
| 11 | 3.603 | 3.604 | **13,89** | 106,0 | 0,00 | 82,14 | - | - | 0,00 | 0,00 | - |
| 12 | 1.359 | 1.364 | **26,35** | 106,0 | 0,00 | 73,69 | - | - | 0,00 | 0,00 | - |
| 13 | 1.190 | 1.195 | **27,92** | 106,0 | 0,00 | 72,55 | - | - | 0,00 | 0,00 | - |
| 14 | 998 | 1.004 | **29,96** | 106,0 | 0,00 | 71,03 | - | - | 0,00 | 0,00 | - |
| 15 | 1.338 | 1.342 | **26,54** | 106,0 | 0,00 | 73,56 | - | - | 0,00 | 0,00 | - |
| 16 | 1.708 | 1.711 | **23,58** | 106,0 | 0,00 | 75,67 | - | - | 0,00 | 0,00 | - |
| 17 | 1.979 | 1.981 | **21,74** | 106,0 | 0,00 | 76,94 | - | - | 0,00 | 0,00 | - |
| 18 | 3.019 | 3.021 | **16,21** | 106,0 | 0,00 | 80,60 | - | - | 0,00 | 0,00 | - |
| 19 | 3.097 | 3.099 | **15,87** | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 2 | 5.630 | 5.631 | **7,17** | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 20 | 3.302 | 3.304 | **15,00** | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 21 | 3.349 | 3.351 | **14,81** | 106,0 | 0,00 | 81,50 | - | - | 0,00 | 0,00 | - |
| 22 | 3.379 | 3.380 | **14,70** | 106,0 | 0,00 | 81,58 | - | - | 0,00 | 0,00 | - |
| 23 | 4.598 | 4.599 | **10,75** | 106,0 | 0,00 | 84,25 | - | - | 0,00 | 0,00 | - |
| 24 | 4.686 | 4.687 | **10,51** | 106,0 | 0,00 | 84,42 | - | - | 0,00 | 0,00 | - |
| 25 | 4.987 | 4.988 | **9,70** | 106,0 | 0,00 | 84,96 | - | - | 0,00 | 0,00 | - |
| 26 | 5.981 | 5.981 | **7,15** | 104,5 | 0,00 | 86,54 | - | - | 0,00 | 0,00 | - |
| 27 | 5.661 | 5.662 | **7,80** | 104,5 | 0,00 | 86,06 | - | - | 0,00 | 0,00 | - |
| 28 | 5.404 | 5.405 | **8,35** | 104,5 | 0,00 | 85,66 | - | - | 0,00 | 0,00 | - |
| 29 | 5.349 | 5.350 | **8,47** | 104,5 | 0,00 | 85,57 | - | - | 0,00 | 0,00 | - |
| 3 | 4.426 | 4.428 | **9,87** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 30 | 5.211 | 5.211 | **8,78** | 104,5 | 0,00 | 85,34 | - | - | 0,00 | 0,00 | - |
| 31 | 4.380 | 4.380 | **10,85** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 32 | 4.030 | 4.030 | **11,85** | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 33 | 2.986 | 2.987 | **15,44** | 104,5 | 0,00 | 80,50 | - | - | 0,00 | 0,00 | - |
| 34 | 2.414 | 2.415 | **17,95** | 104,5 | 0,00 | 78,66 | - | - | 0,00 | 0,00 | - |
| 35 | 3.222 | 3.223 | **14,53** | 104,5 | 0,00 | 81,16 | - | - | 0,00 | 0,00 | - |
| 36 | 1.546 | 1.547 | **23,44** | 104,5 | 0,00 | 74,79 | - | - | 0,00 | 0,00 | - |
| 37 | 1.370 | 1.372 | **24,87** | 104,5 | 0,00 | 73,75 | - | - | 0,00 | 0,00 | - |
| 38 | 886 | 898 | **31,26** | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 39 | 5.038 | 5.040 | **10,07** | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 4 | 2.806 | 2.809 | **15,71** | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| 40 | 1.430 | 1.437 | **25,83** | 106,0 | 0,00 | 74,15 | - | - | 0,00 | 0,00 | - |
| 41 | 2.050 | 2.055 | **21,48** | 106,0 | 0,00 | 77,26 | - | - | 0,00 | 0,00 | - |
| 42 | 2.183 | 2.187 | **20,71** | 106,0 | 0,00 | 77,80 | - | - | 0,00 | 0,00 | - |
| 43 | 4.773 | 4.775 | **10,71** | 106,0 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 44 | 3.809 | 3.810 | **12,52** | 104,5 | 0,00 | 82,62 | - | - | 0,00 | 0,00 | - |
| 45 | 4.951 | 4.953 | **8,82** | 104,5 | 0,00 | 84,90 | - | - | 0,00 | 0,00 | - |
| 46 | 5.148 | 5.149 | **8,36** | 104,5 | 0,00 | 85,24 | - | - | 0,00 | 0,00 | - |
| 47 | 4.826 | 4.828 | **9,11** | 104,5 | 0,00 | 84,68 | - | - | 0,00 | 0,00 | - |
| 48 | 4.690 | 4.692 | **9,45** | 104,5 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 5 | 3.644 | 3.646 | **12,25** | 106,0 | 0,00 | 82,24 | - | - | 0,00 | 0,00 | - |
| 6 | 522 | 538 | **36,62** | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 7 | 3.613 | 3.615 | **12,36** | 106,0 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| 8 | 3.623 | 3.625 | **12,32** | 106,0 | 0,00 | 82,19 | - | - | 0,00 | 0,00 | - |
| 9 | 4.121 | 4.122 | **12,16** | 106,0 | 0,00 | 83,30 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,25** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AJ Noise sensitive point: User defined (38)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.277 | 6.278 | **5,99** | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 10 | 4.338 | 4.340 | **11,50** | 106,0 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 11 | 3.940 | 3.941 | **12,74** | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 12 | 1.437 | 1.441 | **25,69** | 106,0 | 0,00 | 74,17 | - | - | 0,00 | 0,00 | - |
| 13 | 1.191 | 1.196 | **27,91** | 106,0 | 0,00 | 72,55 | - | - | 0,00 | 0,00 | - |
| 14 | 1.105 | 1.111 | **28,78** | 106,0 | 0,00 | 71,91 | - | - | 0,00 | 0,00 | - |
| 15 | 1.428 | 1.432 | **25,76** | 106,0 | 0,00 | 74,12 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 1.750 | 1.753 | **23,28** | 106,0 | 0,00 | 75,87 | - | - | 0,00 | 0,00 | - |
| 17 | 2.056 | 2.058 | **21,25** | 106,0 | 0,00 | 77,27 | - | - | 0,00 | 0,00 | - |
| 18 | 2.772 | 2.774 | **17,36** | 106,0 | 0,00 | 79,86 | - | - | 0,00 | 0,00 | - |
| 19 | 2.895 | 2.897 | **16,78** | 106,0 | 0,00 | 80,24 | - | - | 0,00 | 0,00 | - |
| 2 | 5.897 | 5.898 | **6,67** | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 20 | 3.126 | 3.128 | **15,75** | 106,0 | 0,00 | 80,91 | - | - | 0,00 | 0,00 | - |
| 21 | 3.083 | 3.085 | **15,93** | 106,0 | 0,00 | 80,78 | - | - | 0,00 | 0,00 | - |
| 22 | 3.144 | 3.146 | **15,67** | 106,0 | 0,00 | 80,96 | - | - | 0,00 | 0,00 | - |
| 23 | 4.462 | 4.463 | **11,14** | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 24 | 4.494 | 4.495 | **11,05** | 106,0 | 0,00 | 84,05 | - | - | 0,00 | 0,00 | - |
| 25 | 4.742 | 4.743 | **10,35** | 106,0 | 0,00 | 84,52 | - | - | 0,00 | 0,00 | - |
| 26 | 6.262 | 6.262 | **6,61** | 104,5 | 0,00 | 86,93 | - | - | 0,00 | 0,00 | - |
| 27 | 5.948 | 5.948 | **7,22** | 104,5 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 28 | 5.696 | 5.697 | **7,72** | 104,5 | 0,00 | 86,11 | - | - | 0,00 | 0,00 | - |
| 29 | 5.627 | 5.628 | **7,87** | 104,5 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 3 | 4.702 | 4.703 | **9,18** | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 30 | 5.473 | 5.473 | **8,20** | 104,5 | 0,00 | 85,76 | - | - | 0,00 | 0,00 | - |
| 31 | 4.637 | 4.638 | **10,17** | 104,5 | 0,00 | 84,33 | - | - | 0,00 | 0,00 | - |
| 32 | 4.270 | 4.270 | **11,15** | 104,5 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 33 | 3.191 | 3.192 | **14,65** | 104,5 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 34 | 2.646 | 2.647 | **16,87** | 104,5 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 35 | 3.552 | 3.552 | **13,36** | 104,5 | 0,00 | 82,01 | - | - | 0,00 | 0,00 | - |
| 36 | 1.703 | 1.704 | **22,27** | 104,5 | 0,00 | 75,63 | - | - | 0,00 | 0,00 | - |
| 37 | 1.331 | 1.333 | **25,21** | 104,5 | 0,00 | 73,50 | - | - | 0,00 | 0,00 | - |
| 38 | 764 | 778 | **32,87** | 106,0 | 0,00 | 68,82 | - | - | 0,00 | 0,00 | - |
| 39 | 5.352 | 5.354 | **9,37** | 106,0 | 0,00 | 85,57 | - | - | 0,00 | 0,00 | - |
| 4 | 3.044 | 3.047 | **14,63** | 106,0 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 40 | 1.764 | 1.770 | **23,32** | 106,0 | 0,00 | 75,96 | - | - | 0,00 | 0,00 | - |
| 41 | 2.386 | 2.390 | **19,59** | 106,0 | 0,00 | 78,57 | - | - | 0,00 | 0,00 | - |
| 42 | 2.501 | 2.504 | **19,00** | 106,0 | 0,00 | 78,97 | - | - | 0,00 | 0,00 | - |
| 43 | 5.005 | 5.007 | **10,15** | 106,0 | 0,00 | 84,99 | - | - | 0,00 | 0,00 | - |
| 44 | 3.591 | 3.592 | **13,23** | 104,5 | 0,00 | 82,11 | - | - | 0,00 | 0,00 | - |
| 45 | 5.235 | 5.237 | **8,16** | 104,5 | 0,00 | 85,38 | - | - | 0,00 | 0,00 | - |
| 46 | 5.447 | 5.448 | **7,70** | 104,5 | 0,00 | 85,72 | - | - | 0,00 | 0,00 | - |
| 47 | 5.133 | 5.135 | **8,39** | 104,5 | 0,00 | 85,21 | - | - | 0,00 | 0,00 | - |
| 48 | 4.984 | 4.986 | **8,74** | 104,5 | 0,00 | 84,95 | - | - | 0,00 | 0,00 | - |
| 5 | 3.890 | 3.892 | **11,39** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 294 | 321 | **42,33** | 106,0 | 0,00 | 61,13 | - | - | 0,00 | 0,00 | - |
| 7 | 3.409 | 3.412 | **13,13** | 106,0 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| 8 | 3.956 | 3.958 | **11,17** | 106,0 | 0,00 | 82,95 | - | - | 0,00 | 0,00 | - |
| 9 | 4.459 | 4.460 | **11,15** | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,62** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AK Noise sensitive point: User defined (39)

Wind speed: 10,0 m/s

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.323 | 6.324 | **5,91** | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 10 | 4.363 | 4.364 | **11,43** | 106,0 | 0,00 | 83,80 | - | - | 0,00 | 0,00 | - |
| 11 | 3.966 | 3.967 | **12,66** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 12 | 1.484 | 1.488 | **25,29** | 106,0 | 0,00 | 74,45 | - | - | 0,00 | 0,00 | - |
| 13 | 1.236 | 1.240 | **27,48** | 106,0 | 0,00 | 72,87 | - | - | 0,00 | 0,00 | - |
| 14 | 1.154 | 1.160 | **28,28** | 106,0 | 0,00 | 72,29 | - | - | 0,00 | 0,00 | - |
| 15 | 1.402 | 1.405 | **25,99** | 106,0 | 0,00 | 73,96 | - | - | 0,00 | 0,00 | - |
| 16 | 1.716 | 1.719 | **23,52** | 106,0 | 0,00 | 75,71 | - | - | 0,00 | 0,00 | - |
| 17 | 2.025 | 2.028 | **21,44** | 106,0 | 0,00 | 77,14 | - | - | 0,00 | 0,00 | - |
| 18 | 2.723 | 2.725 | **17,59** | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 19 | 2.846 | 2.848 | **17,01** | 106,0 | 0,00 | 80,09 | - | - | 0,00 | 0,00 | - |
| 2 | 5.944 | 5.945 | **6,58** | 106,0 | 0,00 | 86,48 | - | - | 0,00 | 0,00 | - |
| 20 | 3.077 | 3.079 | **15,96** | 106,0 | 0,00 | 80,77 | - | - | 0,00 | 0,00 | - |
| 21 | 3.035 | 3.037 | **16,14** | 106,0 | 0,00 | 80,65 | - | - | 0,00 | 0,00 | - |
| 22 | 3.095 | 3.097 | **15,88** | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 4.414 | 4.415 | **11,28** | 106,0 | 0,00 | 83,90 | - | - | 0,00 | 0,00 | - |
| 24 | 4.444 | 4.445 | **11,19** | 106,0 | 0,00 | 83,96 | - | - | 0,00 | 0,00 | - |
| 25 | 4.694 | 4.695 | **10,48** | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 26 | 6.307 | 6.308 | **6,53** | 104,5 | 0,00 | 87,00 | - | - | 0,00 | 0,00 | - |
| 27 | 5.993 | 5.993 | **7,13** | 104,5 | 0,00 | 86,55 | - | - | 0,00 | 0,00 | - |
| 28 | 5.740 | 5.741 | **7,63** | 104,5 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 29 | 5.673 | 5.673 | **7,77** | 104,5 | 0,00 | 86,08 | - | - | 0,00 | 0,00 | - |
| 3 | 4.747 | 4.749 | **9,07** | 106,0 | 0,00 | 84,53 | - | - | 0,00 | 0,00 | - |
| 30 | 5.520 | 5.520 | **8,10** | 104,5 | 0,00 | 85,84 | - | - | 0,00 | 0,00 | - |
| 31 | 4.685 | 4.685 | **10,04** | 104,5 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 32 | 4.318 | 4.318 | **11,02** | 104,5 | 0,00 | 83,71 | - | - | 0,00 | 0,00 | - |
| 33 | 3.240 | 3.241 | **14,46** | 104,5 | 0,00 | 81,21 | - | - | 0,00 | 0,00 | - |
| 34 | 2.694 | 2.695 | **16,66** | 104,5 | 0,00 | 79,61 | - | - | 0,00 | 0,00 | - |
| 35 | 3.571 | 3.571 | **13,30** | 104,5 | 0,00 | 82,06 | - | - | 0,00 | 0,00 | - |
| 36 | 1.684 | 1.686 | **22,41** | 104,5 | 0,00 | 75,54 | - | - | 0,00 | 0,00 | - |
| 37 | 1.291 | 1.293 | **25,57** | 104,5 | 0,00 | 73,23 | - | - | 0,00 | 0,00 | - |
| 38 | 800 | 814 | **32,37** | 106,0 | 0,00 | 69,21 | - | - | 0,00 | 0,00 | - |
| 39 | 5.393 | 5.394 | **9,28** | 106,0 | 0,00 | 85,64 | - | - | 0,00 | 0,00 | - |
| 4 | 3.092 | 3.095 | **14,42** | 106,0 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 40 | 1.797 | 1.803 | **23,10** | 106,0 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 41 | 2.418 | 2.422 | **19,42** | 106,0 | 0,00 | 78,68 | - | - | 0,00 | 0,00 | - |
| 42 | 2.540 | 2.544 | **18,80** | 106,0 | 0,00 | 79,11 | - | - | 0,00 | 0,00 | - |
| 43 | 5.053 | 5.055 | **10,04** | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 44 | 3.542 | 3.542 | **13,40** | 104,5 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 45 | 5.280 | 5.282 | **8,06** | 104,5 | 0,00 | 85,46 | - | - | 0,00 | 0,00 | - |
| 46 | 5.490 | 5.491 | **7,61** | 104,5 | 0,00 | 85,79 | - | - | 0,00 | 0,00 | - |
| 47 | 5.175 | 5.177 | **8,30** | 104,5 | 0,00 | 85,28 | - | - | 0,00 | 0,00 | - |
| 48 | 5.028 | 5.030 | **8,64** | 104,5 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 5 | 3.938 | 3.940 | **11,23** | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 6 | 246 | 278 | **43,86** | 106,0 | 0,00 | 59,88 | - | - | 0,00 | 0,00 | - |
| 7 | 3.360 | 3.362 | **13,32** | 106,0 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 8 | 3.977 | 3.979 | **11,11** | 106,0 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 9 | 4.488 | 4.489 | **11,06** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,76** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AL Noise sensitive point: User defined (40)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.788 | 9.788 | **1,32** | 106,0 | 0,00 | 90,81 | - | - | 0,00 | 0,00 | - |
| 10 | 6.815 | 6.816 | **5,70** | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 11 | 6.528 | 6.529 | **6,24** | 106,0 | 0,00 | 87,30 | - | - | 0,00 | 0,00 | - |
| 12 | 5.121 | 5.122 | **9,36** | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 13 | 4.825 | 4.827 | **10,13** | 106,0 | 0,00 | 84,67 | - | - | 0,00 | 0,00 | - |
| 14 | 4.807 | 4.808 | **10,18** | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 15 | 3.062 | 3.064 | **16,03** | 106,0 | 0,00 | 80,73 | - | - | 0,00 | 0,00 | - |
| 16 | 2.711 | 2.713 | **17,65** | 106,0 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 17 | 2.804 | 2.806 | **17,20** | 106,0 | 0,00 | 79,96 | - | - | 0,00 | 0,00 | - |
| 18 | 1.215 | 1.220 | **27,68** | 106,0 | 0,00 | 72,73 | - | - | 0,00 | 0,00 | - |
| 19 | 831 | 838 | **32,02** | 106,0 | 0,00 | 69,46 | - | - | 0,00 | 0,00 | - |
| 2 | 9.425 | 9.426 | **1,72** | 106,0 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 20 | 589 | 599 | **35,74** | 106,0 | 0,00 | 66,54 | - | - | 0,00 | 0,00 | - |
| 21 | 1.293 | 1.297 | **26,95** | 106,0 | 0,00 | 73,26 | - | - | 0,00 | 0,00 | - |
| 22 | 857 | 864 | **31,67** | 106,0 | 0,00 | 69,73 | - | - | 0,00 | 0,00 | - |
| 23 | 993 | 998 | **30,02** | 106,0 | 0,00 | 70,98 | - | - | 0,00 | 0,00 | - |
| 24 | 804 | 811 | **32,38** | 106,0 | 0,00 | 69,18 | - | - | 0,00 | 0,00 | - |
| 25 | 1.474 | 1.478 | **25,38** | 106,0 | 0,00 | 74,39 | - | - | 0,00 | 0,00 | - |
| 26 | 9.721 | 9.722 | **1,57** | 104,5 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 27 | 9.378 | 9.379 | **1,97** | 104,5 | 0,00 | 90,44 | - | - | 0,00 | 0,00 | - |
| 28 | 9.098 | 9.098 | **2,32** | 104,5 | 0,00 | 90,18 | - | - | 0,00 | 0,00 | - |
| 29 | 9.111 | 9.111 | **2,30** | 104,5 | 0,00 | 90,19 | - | - | 0,00 | 0,00 | - |
| 3 | 8.210 | 8.211 | **3,15** | 106,0 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 9.025 | 9.026 | **2,41** | 104,5 | 0,00 | 90,11 | - | - | 0,00 | 0,00 | - |
| 31 | 8.212 | 8.212 | **3,48** | 104,5 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |
| 32 | 7.896 | 7.896 | **3,93** | 104,5 | 0,00 | 88,95 | - | - | 0,00 | 0,00 | - |
| 33 | 6.873 | 6.874 | **5,53** | 104,5 | 0,00 | 87,74 | - | - | 0,00 | 0,00 | - |
| 34 | 6.295 | 6.295 | **6,55** | 104,5 | 0,00 | 86,98 | - | - | 0,00 | 0,00 | - |
| 35 | 5.899 | 5.900 | **7,31** | 104,5 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 36 | 3.321 | 3.321 | **14,17** | 104,5 | 0,00 | 81,43 | - | - | 0,00 | 0,00 | - |
| 37 | 2.657 | 2.659 | **16,82** | 104,5 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 38 | 4.313 | 4.315 | **11,95** | 106,0 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 39 | 8.578 | 8.579 | **4,01** | 106,0 | 0,00 | 89,67 | - | - | 0,00 | 0,00 | - |
| 4 | 6.680 | 6.681 | **5,32** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 40 | 4.993 | 4.995 | **10,18** | 106,0 | 0,00 | 84,97 | - | - | 0,00 | 0,00 | - |
| 41 | 5.483 | 5.484 | **9,09** | 106,0 | 0,00 | 85,78 | - | - | 0,00 | 0,00 | - |
| 42 | 5.833 | 5.835 | **8,38** | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| 43 | 8.646 | 8.647 | **3,92** | 106,0 | 0,00 | 89,74 | - | - | 0,00 | 0,00 | - |
| 44 | 480 | 487 | **36,44** | 104,5 | 0,00 | 64,74 | - | - | 0,00 | 0,00 | - |
| 45 | 8.692 | 8.693 | **2,39** | 104,5 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 46 | 8.804 | 8.805 | **2,25** | 104,5 | 0,00 | 89,89 | - | - | 0,00 | 0,00 | - |
| 47 | 8.431 | 8.432 | **2,73** | 104,5 | 0,00 | 89,52 | - | - | 0,00 | 0,00 | - |
| 48 | 8.387 | 8.389 | **2,79** | 104,5 | 0,00 | 89,47 | - | - | 0,00 | 0,00 | - |
| 5 | 7.502 | 7.503 | **4,09** | 106,0 | 0,00 | 88,50 | - | - | 0,00 | 0,00 | - |
| 6 | 3.414 | 3.416 | **13,11** | 106,0 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 7 | 384 | 405 | **39,81** | 106,0 | 0,00 | 63,15 | - | - | 0,00 | 0,00 | - |
| 8 | 6.326 | 6.328 | **5,91** | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 9 | 7.150 | 7.150 | **5,09** | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,04** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AM Noise sensitive point: User defined (41)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.834 | 9.834 | **1,28** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 10 | 6.878 | 6.878 | **5,58** | 106,0 | 0,00 | 87,75 | - | - | 0,00 | 0,00 | - |
| 11 | 6.589 | 6.590 | **6,13** | 106,0 | 0,00 | 87,38 | - | - | 0,00 | 0,00 | - |
| 12 | 5.148 | 5.149 | **9,29** | 106,0 | 0,00 | 85,23 | - | - | 0,00 | 0,00 | - |
| 13 | 4.850 | 4.851 | **10,06** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 14 | 4.837 | 4.838 | **10,10** | 106,0 | 0,00 | 84,69 | - | - | 0,00 | 0,00 | - |
| 15 | 3.115 | 3.117 | **15,80** | 106,0 | 0,00 | 80,87 | - | - | 0,00 | 0,00 | - |
| 16 | 2.767 | 2.769 | **17,38** | 106,0 | 0,00 | 79,85 | - | - | 0,00 | 0,00 | - |
| 17 | 2.866 | 2.867 | **16,92** | 106,0 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| 18 | 1.206 | 1.211 | **27,77** | 106,0 | 0,00 | 72,66 | - | - | 0,00 | 0,00 | - |
| 19 | 850 | 857 | **31,77** | 106,0 | 0,00 | 69,65 | - | - | 0,00 | 0,00 | - |
| 2 | 9.470 | 9.471 | **1,67** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 20 | 634 | 642 | **34,97** | 106,0 | 0,00 | 67,15 | - | - | 0,00 | 0,00 | - |
| 21 | 1.261 | 1.266 | **27,24** | 106,0 | 0,00 | 73,05 | - | - | 0,00 | 0,00 | - |
| 22 | 836 | 843 | **31,95** | 106,0 | 0,00 | 69,52 | - | - | 0,00 | 0,00 | - |
| 23 | 1.020 | 1.025 | **29,71** | 106,0 | 0,00 | 71,22 | - | - | 0,00 | 0,00 | - |
| 24 | 764 | 771 | **32,95** | 106,0 | 0,00 | 68,74 | - | - | 0,00 | 0,00 | - |
| 25 | 1.404 | 1.408 | **25,97** | 106,0 | 0,00 | 73,97 | - | - | 0,00 | 0,00 | - |
| 26 | 9.769 | 9.769 | **1,51** | 104,5 | 0,00 | 90,80 | - | - | 0,00 | 0,00 | - |
| 27 | 9.427 | 9.427 | **1,91** | 104,5 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 28 | 9.147 | 9.148 | **2,26** | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 29 | 9.158 | 9.158 | **2,24** | 104,5 | 0,00 | 90,24 | - | - | 0,00 | 0,00 | - |
| 3 | 8.255 | 8.256 | **3,09** | 106,0 | 0,00 | 89,34 | - | - | 0,00 | 0,00 | - |
| 30 | 9.069 | 9.069 | **2,35** | 104,5 | 0,00 | 90,15 | - | - | 0,00 | 0,00 | - |
| 31 | 8.255 | 8.255 | **3,42** | 104,5 | 0,00 | 89,33 | - | - | 0,00 | 0,00 | - |
| 32 | 7.935 | 7.936 | **3,87** | 104,5 | 0,00 | 88,99 | - | - | 0,00 | 0,00 | - |
| 33 | 6.908 | 6.909 | **5,47** | 104,5 | 0,00 | 87,79 | - | - | 0,00 | 0,00 | - |
| 34 | 6.332 | 6.333 | **6,48** | 104,5 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 35 | 5.962 | 5.962 | **7,19** | 104,5 | 0,00 | 86,51 | - | - | 0,00 | 0,00 | - |
| 36 | 3.378 | 3.379 | **13,97** | 104,5 | 0,00 | 81,57 | - | - | 0,00 | 0,00 | - |
| 37 | 2.704 | 2.705 | **16,61** | 104,5 | 0,00 | 79,64 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 4.336 | 4.338 | **11,89** | 106,0 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 39 | 8.631 | 8.632 | **3,94** | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 4 | 6.719 | 6.720 | **5,26** | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 40 | 5.041 | 5.043 | **10,07** | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 41 | 5.534 | 5.535 | **8,98** | 106,0 | 0,00 | 85,86 | - | - | 0,00 | 0,00 | - |
| 42 | 5.880 | 5.882 | **8,28** | 106,0 | 0,00 | 86,39 | - | - | 0,00 | 0,00 | - |
| 43 | 8.685 | 8.686 | **3,87** | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 44 | 429 | 436 | **37,59** | 104,5 | 0,00 | 63,79 | - | - | 0,00 | 0,00 | - |
| 45 | 8.740 | 8.741 | **2,33** | 104,5 | 0,00 | 89,83 | - | - | 0,00 | 0,00 | - |
| 46 | 8.854 | 8.855 | **2,19** | 104,5 | 0,00 | 89,94 | - | - | 0,00 | 0,00 | - |
| 47 | 8.483 | 8.484 | **2,67** | 104,5 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 48 | 8.436 | 8.437 | **2,73** | 104,5 | 0,00 | 89,52 | - | - | 0,00 | 0,00 | - |
| 5 | 7.542 | 7.543 | **4,04** | 106,0 | 0,00 | 88,55 | - | - | 0,00 | 0,00 | - |
| 6 | 3.445 | 3.448 | **12,99** | 106,0 | 0,00 | 81,75 | - | - | 0,00 | 0,00 | - |
| 7 | 374 | 395 | **40,08** | 106,0 | 0,00 | 62,93 | - | - | 0,00 | 0,00 | - |
| 8 | 6.389 | 6.390 | **5,80** | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 9 | 7.210 | 7.211 | **4,98** | 106,0 | 0,00 | 88,16 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,30** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AN Noise sensitive point: User defined (42)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.915 | 9.916 | **1,19** | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 10 | 6.942 | 6.942 | **5,46** | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| 11 | 6.656 | 6.656 | **6,00** | 106,0 | 0,00 | 87,46 | - | - | 0,00 | 0,00 | - |
| 12 | 5.237 | 5.238 | **9,07** | 106,0 | 0,00 | 85,38 | - | - | 0,00 | 0,00 | - |
| 13 | 4.939 | 4.940 | **9,83** | 106,0 | 0,00 | 84,88 | - | - | 0,00 | 0,00 | - |
| 14 | 4.925 | 4.926 | **9,86** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 15 | 3.191 | 3.193 | **15,47** | 106,0 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 16 | 2.840 | 2.841 | **17,04** | 106,0 | 0,00 | 80,07 | - | - | 0,00 | 0,00 | - |
| 17 | 2.931 | 2.933 | **16,61** | 106,0 | 0,00 | 80,35 | - | - | 0,00 | 0,00 | - |
| 18 | 1.291 | 1.295 | **26,97** | 106,0 | 0,00 | 73,25 | - | - | 0,00 | 0,00 | - |
| 19 | 940 | 946 | **30,64** | 106,0 | 0,00 | 70,52 | - | - | 0,00 | 0,00 | - |
| 2 | 9.552 | 9.553 | **1,58** | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 20 | 716 | 723 | **33,66** | 106,0 | 0,00 | 68,19 | - | - | 0,00 | 0,00 | - |
| 21 | 1.332 | 1.336 | **26,60** | 106,0 | 0,00 | 73,52 | - | - | 0,00 | 0,00 | - |
| 22 | 915 | 922 | **30,94** | 106,0 | 0,00 | 70,29 | - | - | 0,00 | 0,00 | - |
| 23 | 952 | 957 | **30,50** | 106,0 | 0,00 | 70,62 | - | - | 0,00 | 0,00 | - |
| 24 | 678 | 687 | **34,24** | 106,0 | 0,00 | 67,73 | - | - | 0,00 | 0,00 | - |
| 25 | 1.363 | 1.368 | **26,31** | 106,0 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 26 | 9.850 | 9.850 | **1,42** | 104,5 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 27 | 9.507 | 9.507 | **1,82** | 104,5 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 28 | 9.227 | 9.227 | **2,16** | 104,5 | 0,00 | 90,30 | - | - | 0,00 | 0,00 | - |
| 29 | 9.239 | 9.239 | **2,14** | 104,5 | 0,00 | 90,31 | - | - | 0,00 | 0,00 | - |
| 3 | 8.338 | 8.339 | **2,99** | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 30 | 9.152 | 9.152 | **2,25** | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 31 | 8.339 | 8.339 | **3,31** | 104,5 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 32 | 8.021 | 8.021 | **3,75** | 104,5 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 33 | 6.995 | 6.996 | **5,32** | 104,5 | 0,00 | 87,90 | - | - | 0,00 | 0,00 | - |
| 34 | 6.419 | 6.419 | **6,32** | 104,5 | 0,00 | 87,15 | - | - | 0,00 | 0,00 | - |
| 35 | 6.026 | 6.026 | **7,06** | 104,5 | 0,00 | 86,60 | - | - | 0,00 | 0,00 | - |
| 36 | 3.449 | 3.450 | **13,71** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 37 | 2.785 | 2.786 | **16,26** | 104,5 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 38 | 4.425 | 4.428 | **11,62** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 39 | 8.707 | 8.708 | **3,85** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 4 | 6.804 | 6.805 | **5,13** | 106,0 | 0,00 | 87,66 | - | - | 0,00 | 0,00 | - |
| 40 | 5.121 | 5.123 | **9,88** | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 41 | 5.611 | 5.613 | **8,82** | 106,0 | 0,00 | 85,98 | - | - | 0,00 | 0,00 | - |
| 42 | 5.961 | 5.963 | **8,13** | 106,0 | 0,00 | 86,51 | - | - | 0,00 | 0,00 | - |
| 43 | 8.771 | 8.772 | **3,76** | 106,0 | 0,00 | 89,86 | - | - | 0,00 | 0,00 | - |
| 44 | 484 | 490 | **36,36** | 104,5 | 0,00 | 64,81 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 8.821 | 8.822 | **2,23** | 104,5 | 0,00 | 89,91 | - | - | 0,00 | 0,00 | - |
| 46 | 8.933 | 8.934 | **2,09** | 104,5 | 0,00 | 90,02 | - | - | 0,00 | 0,00 | - |
| 47 | 8.560 | 8.561 | **2,56** | 104,5 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 48 | 8.516 | 8.517 | **2,62** | 104,5 | 0,00 | 89,61 | - | - | 0,00 | 0,00 | - |
| 5 | 7.627 | 7.628 | **3,92** | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 6 | 3.534 | 3.536 | **12,65** | 106,0 | 0,00 | 81,97 | - | - | 0,00 | 0,00 | - |
| 7 | 460 | 478 | **37,96** | 106,0 | 0,00 | 64,59 | - | - | 0,00 | 0,00 | - |
| 8 | 6.452 | 6.454 | **5,69** | 106,0 | 0,00 | 87,20 | - | - | 0,00 | 0,00 | - |
| 9 | 7.277 | 7.278 | **4,86** | 106,0 | 0,00 | 88,24 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,18** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AO Noise sensitive point: User defined (43)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.911 | 9.912 | **1,19** | 106,0 | 0,00 | 90,92 | - | - | 0,00 | 0,00 | - |
| 10 | 6.949 | 6.950 | **5,45** | 106,0 | 0,00 | 87,84 | - | - | 0,00 | 0,00 | - |
| 11 | 6.662 | 6.662 | **5,99** | 106,0 | 0,00 | 87,47 | - | - | 0,00 | 0,00 | - |
| 12 | 5.224 | 5.225 | **9,10** | 106,0 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 13 | 4.924 | 4.925 | **9,87** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 14 | 4.913 | 4.914 | **9,90** | 106,0 | 0,00 | 84,83 | - | - | 0,00 | 0,00 | - |
| 15 | 3.191 | 3.193 | **15,47** | 106,0 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 16 | 2.842 | 2.844 | **17,02** | 106,0 | 0,00 | 80,08 | - | - | 0,00 | 0,00 | - |
| 17 | 2.938 | 2.939 | **16,58** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 18 | 1.265 | 1.270 | **27,20** | 106,0 | 0,00 | 73,07 | - | - | 0,00 | 0,00 | - |
| 19 | 924 | 930 | **30,83** | 106,0 | 0,00 | 70,37 | - | - | 0,00 | 0,00 | - |
| 2 | 9.548 | 9.548 | **1,58** | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 20 | 711 | 719 | **33,73** | 106,0 | 0,00 | 68,13 | - | - | 0,00 | 0,00 | - |
| 21 | 1.300 | 1.305 | **26,88** | 106,0 | 0,00 | 73,31 | - | - | 0,00 | 0,00 | - |
| 22 | 887 | 893 | **31,29** | 106,0 | 0,00 | 70,02 | - | - | 0,00 | 0,00 | - |
| 23 | 984 | 990 | **30,12** | 106,0 | 0,00 | 70,91 | - | - | 0,00 | 0,00 | - |
| 24 | 686 | 694 | **34,12** | 106,0 | 0,00 | 67,83 | - | - | 0,00 | 0,00 | - |
| 25 | 1.345 | 1.350 | **26,47** | 106,0 | 0,00 | 73,60 | - | - | 0,00 | 0,00 | - |
| 26 | 9.847 | 9.847 | **1,42** | 104,5 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 27 | 9.504 | 9.505 | **1,82** | 104,5 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 28 | 9.225 | 9.225 | **2,16** | 104,5 | 0,00 | 90,30 | - | - | 0,00 | 0,00 | - |
| 29 | 9.235 | 9.235 | **2,15** | 104,5 | 0,00 | 90,31 | - | - | 0,00 | 0,00 | - |
| 3 | 8.333 | 8.334 | **2,99** | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 30 | 9.147 | 9.147 | **2,26** | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 31 | 8.333 | 8.333 | **3,32** | 104,5 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 32 | 8.013 | 8.013 | **3,76** | 104,5 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 33 | 6.985 | 6.986 | **5,34** | 104,5 | 0,00 | 87,88 | - | - | 0,00 | 0,00 | - |
| 34 | 6.410 | 6.410 | **6,34** | 104,5 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 35 | 6.033 | 6.033 | **7,05** | 104,5 | 0,00 | 86,61 | - | - | 0,00 | 0,00 | - |
| 36 | 3.453 | 3.453 | **13,70** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 37 | 2.782 | 2.783 | **16,28** | 104,5 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 38 | 4.410 | 4.412 | **11,66** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 39 | 8.707 | 8.708 | **3,84** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 4 | 6.796 | 6.797 | **5,14** | 106,0 | 0,00 | 87,65 | - | - | 0,00 | 0,00 | - |
| 40 | 5.118 | 5.120 | **9,89** | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 41 | 5.611 | 5.612 | **8,82** | 106,0 | 0,00 | 85,98 | - | - | 0,00 | 0,00 | - |
| 42 | 5.958 | 5.960 | **8,13** | 106,0 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 43 | 8.763 | 8.764 | **3,77** | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 44 | 451 | 458 | **37,07** | 104,5 | 0,00 | 64,22 | - | - | 0,00 | 0,00 | - |
| 45 | 8.817 | 8.818 | **2,23** | 104,5 | 0,00 | 89,91 | - | - | 0,00 | 0,00 | - |
| 46 | 8.931 | 8.932 | **2,09** | 104,5 | 0,00 | 90,02 | - | - | 0,00 | 0,00 | - |
| 47 | 8.559 | 8.560 | **2,56** | 104,5 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 48 | 8.514 | 8.515 | **2,62** | 104,5 | 0,00 | 89,60 | - | - | 0,00 | 0,00 | - |
| 5 | 7.620 | 7.621 | **3,93** | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 6 | 3.522 | 3.524 | **12,70** | 106,0 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 7 | 437 | 455 | **38,50** | 106,0 | 0,00 | 64,17 | - | - | 0,00 | 0,00 | - |
| 8 | 6.460 | 6.461 | **5,68** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 7.283 | 7.284 | **4,85** | 106,0 | 0,00 | 88,25 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,52** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AP Noise sensitive point: User defined (48)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.087 | 5.089 | **8,29** | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 10 | 958 | 964 | **30,42** | 106,0 | 0,00 | 70,68 | - | - | 0,00 | 0,00 | - |
| 11 | 1.159 | 1.164 | **28,23** | 106,0 | 0,00 | 72,32 | - | - | 0,00 | 0,00 | - |
| 12 | 4.656 | 4.658 | **10,59** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 13 | 4.825 | 4.826 | **10,13** | 106,0 | 0,00 | 84,67 | - | - | 0,00 | 0,00 | - |
| 14 | 4.440 | 4.442 | **11,20** | 106,0 | 0,00 | 83,95 | - | - | 0,00 | 0,00 | - |
| 15 | 3.746 | 3.747 | **13,39** | 106,0 | 0,00 | 82,47 | - | - | 0,00 | 0,00 | - |
| 16 | 3.921 | 3.922 | **12,80** | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 17 | 3.707 | 3.709 | **13,52** | 106,0 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 18 | 6.267 | 6.268 | **6,77** | 106,0 | 0,00 | 86,94 | - | - | 0,00 | 0,00 | - |
| 19 | 6.001 | 6.002 | **7,32** | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 2 | 4.887 | 4.889 | **8,75** | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 20 | 5.955 | 5.956 | **7,42** | 106,0 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 21 | 6.679 | 6.680 | **5,95** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 22 | 6.454 | 6.455 | **6,39** | 106,0 | 0,00 | 87,20 | - | - | 0,00 | 0,00 | - |
| 23 | 6.564 | 6.565 | **6,17** | 106,0 | 0,00 | 87,34 | - | - | 0,00 | 0,00 | - |
| 24 | 7.149 | 7.150 | **5,09** | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 25 | 7.901 | 7.902 | **3,82** | 106,0 | 0,00 | 88,96 | - | - | 0,00 | 0,00 | - |
| 26 | 4.848 | 4.848 | **9,64** | 104,5 | 0,00 | 84,71 | - | - | 0,00 | 0,00 | - |
| 27 | 4.492 | 4.493 | **10,54** | 104,5 | 0,00 | 84,05 | - | - | 0,00 | 0,00 | - |
| 28 | 4.199 | 4.200 | **11,35** | 104,5 | 0,00 | 83,46 | - | - | 0,00 | 0,00 | - |
| 29 | 4.489 | 4.490 | **10,55** | 104,5 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 3 | 4.017 | 4.019 | **10,99** | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 30 | 4.715 | 4.716 | **9,97** | 104,5 | 0,00 | 84,47 | - | - | 0,00 | 0,00 | - |
| 31 | 4.314 | 4.315 | **11,03** | 104,5 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 32 | 4.426 | 4.427 | **10,72** | 104,5 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 33 | 4.412 | 4.413 | **10,76** | 104,5 | 0,00 | 83,90 | - | - | 0,00 | 0,00 | - |
| 34 | 3.977 | 3.978 | **12,00** | 104,5 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 35 | 1.012 | 1.015 | **28,36** | 104,5 | 0,00 | 71,13 | - | - | 0,00 | 0,00 | - |
| 36 | 3.359 | 3.360 | **14,03** | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 37 | 4.272 | 4.273 | **11,15** | 104,5 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 38 | 4.886 | 4.889 | **10,43** | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 39 | 3.354 | 3.357 | **15,23** | 106,0 | 0,00 | 81,52 | - | - | 0,00 | 0,00 | - |
| 4 | 3.988 | 3.990 | **11,08** | 106,0 | 0,00 | 83,02 | - | - | 0,00 | 0,00 | - |
| 40 | 2.986 | 2.990 | **16,73** | 106,0 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 41 | 2.497 | 2.502 | **19,01** | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 42 | 2.873 | 2.877 | **17,23** | 106,0 | 0,00 | 80,18 | - | - | 0,00 | 0,00 | - |
| 43 | 4.965 | 4.967 | **10,24** | 106,0 | 0,00 | 84,92 | - | - | 0,00 | 0,00 | - |
| 44 | 6.667 | 6.667 | **5,88** | 104,5 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 45 | 4.111 | 4.114 | **11,07** | 104,5 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 46 | 3.861 | 3.864 | **11,89** | 104,5 | 0,00 | 82,74 | - | - | 0,00 | 0,00 | - |
| 47 | 3.449 | 3.452 | **13,36** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 48 | 3.738 | 3.741 | **12,32** | 104,5 | 0,00 | 82,46 | - | - | 0,00 | 0,00 | - |
| 5 | 4.149 | 4.151 | **10,62** | 106,0 | 0,00 | 83,36 | - | - | 0,00 | 0,00 | - |
| 6 | 4.519 | 4.521 | **9,63** | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 7 | 6.395 | 6.397 | **5,79** | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| 8 | 793 | 803 | **31,85** | 106,0 | 0,00 | 69,10 | - | - | 0,00 | 0,00 | - |
| 9 | 1.454 | 1.458 | **25,54** | 106,0 | 0,00 | 74,28 | - | - | 0,00 | 0,00 | - |
| Sum | | | **36,98** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: AQ Noise sensitive point: User defined (49)

Wind speed: 10,0 m/s
**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.051 | 5.052 | **8,38** | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 10 | 919 | 926 | **30,88** | 106,0 | 0,00 | 70,33 | - | - | 0,00 | 0,00 | - |
| 11 | 1.117 | 1.123 | **28,65** | 106,0 | 0,00 | 72,01 | - | - | 0,00 | 0,00 | - |
| 12 | 4.622 | 4.623 | **10,68** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 13 | 4.792 | 4.793 | **10,22** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 14 | 4.407 | 4.409 | **11,30** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 15 | 3.731 | 3.733 | **13,44** | 106,0 | 0,00 | 82,44 | - | - | 0,00 | 0,00 | - |
| 16 | 3.910 | 3.912 | **12,84** | 106,0 | 0,00 | 82,85 | - | - | 0,00 | 0,00 | - |
| 17 | 3.700 | 3.701 | **13,55** | 106,0 | 0,00 | 82,37 | - | - | 0,00 | 0,00 | - |
| 18 | 6.256 | 6.258 | **6,79** | 106,0 | 0,00 | 86,93 | - | - | 0,00 | 0,00 | - |
| 19 | 5.994 | 5.995 | **7,33** | 106,0 | 0,00 | 86,56 | - | - | 0,00 | 0,00 | - |
| 2 | 4.849 | 4.851 | **8,83** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 20 | 5.950 | 5.952 | **7,43** | 106,0 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 21 | 6.669 | 6.670 | **5,97** | 106,0 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 22 | 6.446 | 6.447 | **6,40** | 106,0 | 0,00 | 87,19 | - | - | 0,00 | 0,00 | - |
| 23 | 6.568 | 6.569 | **6,17** | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 24 | 7.149 | 7.150 | **5,09** | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 25 | 7.898 | 7.899 | **3,83** | 106,0 | 0,00 | 88,95 | - | - | 0,00 | 0,00 | - |
| 26 | 4.812 | 4.812 | **9,72** | 104,5 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 27 | 4.456 | 4.457 | **10,64** | 104,5 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| 28 | 4.162 | 4.163 | **11,46** | 104,5 | 0,00 | 83,39 | - | - | 0,00 | 0,00 | - |
| 29 | 4.451 | 4.452 | **10,66** | 104,5 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 3 | 3.977 | 3.979 | **11,11** | 106,0 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 30 | 4.676 | 4.676 | **10,07** | 104,5 | 0,00 | 84,40 | - | - | 0,00 | 0,00 | - |
| 31 | 4.273 | 4.274 | **11,14** | 104,5 | 0,00 | 83,62 | - | - | 0,00 | 0,00 | - |
| 32 | 4.384 | 4.385 | **10,84** | 104,5 | 0,00 | 83,84 | - | - | 0,00 | 0,00 | - |
| 33 | 4.371 | 4.372 | **10,87** | 104,5 | 0,00 | 83,81 | - | - | 0,00 | 0,00 | - |
| 34 | 3.937 | 3.938 | **12,13** | 104,5 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 35 | 977 | 980 | **28,76** | 104,5 | 0,00 | 70,83 | - | - | 0,00 | 0,00 | - |
| 36 | 3.346 | 3.347 | **14,08** | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 37 | 4.258 | 4.259 | **11,19** | 104,5 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 38 | 4.856 | 4.859 | **10,50** | 106,0 | 0,00 | 84,73 | - | - | 0,00 | 0,00 | - |
| 39 | 3.319 | 3.322 | **15,37** | 106,0 | 0,00 | 81,43 | - | - | 0,00 | 0,00 | - |
| 4 | 3.947 | 3.949 | **11,20** | 106,0 | 0,00 | 82,93 | - | - | 0,00 | 0,00 | - |
| 40 | 2.953 | 2.957 | **16,87** | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| 41 | 2.461 | 2.465 | **19,20** | 106,0 | 0,00 | 78,84 | - | - | 0,00 | 0,00 | - |
| 42 | 2.834 | 2.838 | **17,40** | 106,0 | 0,00 | 80,06 | - | - | 0,00 | 0,00 | - |
| 43 | 4.924 | 4.926 | **10,34** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 44 | 6.662 | 6.662 | **5,89** | 104,5 | 0,00 | 87,47 | - | - | 0,00 | 0,00 | - |
| 45 | 4.072 | 4.075 | **11,20** | 104,5 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 46 | 3.824 | 3.827 | **12,02** | 104,5 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 47 | 3.411 | 3.414 | **13,50** | 104,5 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 48 | 3.699 | 3.701 | **12,45** | 104,5 | 0,00 | 82,37 | - | - | 0,00 | 0,00 | - |
| 5 | 4.107 | 4.109 | **10,73** | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.495 | 4.498 | **9,69** | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 7 | 6.391 | 6.392 | **5,80** | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 8 | 752 | 763 | **32,49** | 106,0 | 0,00 | 68,65 | - | - | 0,00 | 0,00 | - |
| 9 | 1.417 | 1.421 | **25,85** | 106,0 | 0,00 | 74,05 | - | - | 0,00 | 0,00 | - |
| Sum | | | **37,43** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AR Noise sensitive point: User defined (50)

Wind speed: 10,0 m/s
**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.655 | 4.656 | **9,30** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 10 | 656 | 665 | **34,59** | 106,0 | 0,00 | 67,46 | - | - | 0,00 | 0,00 | - |
| 11 | 1.013 | 1.019 | **29,79** | 106,0 | 0,00 | 71,16 | - | - | 0,00 | 0,00 | - |
| 12 | 4.758 | 4.760 | **10,31** | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 13 | 4.960 | 4.962 | **9,77** | 106,0 | 0,00 | 84,91 | - | - | 0,00 | 0,00 | - |
| 14 | 4.577 | 4.579 | **10,81** | 106,0 | 0,00 | 84,21 | - | - | 0,00 | 0,00 | - |
| 15 | 4.128 | 4.129 | **12,14** | 106,0 | 0,00 | 83,32 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 4.336 | 4.337 | **11,51** | 106,0 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 17 | 4.145 | 4.147 | **12,09** | 106,0 | 0,00 | 83,35 | - | - | 0,00 | 0,00 | - |
| 18 | 6.679 | 6.680 | **5,95** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 19 | 6.438 | 6.439 | **6,42** | 106,0 | 0,00 | 87,18 | - | - | 0,00 | 0,00 | - |
| 2 | 4.477 | 4.479 | **9,74** | 106,0 | 0,00 | 84,02 | - | - | 0,00 | 0,00 | - |
| 20 | 6.409 | 6.410 | **6,48** | 106,0 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 21 | 7.089 | 7.090 | **5,19** | 106,0 | 0,00 | 88,01 | - | - | 0,00 | 0,00 | - |
| 22 | 6.884 | 6.885 | **5,57** | 106,0 | 0,00 | 87,76 | - | - | 0,00 | 0,00 | - |
| 23 | 7.064 | 7.065 | **5,24** | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 24 | 7.629 | 7.630 | **4,27** | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 25 | 8.359 | 8.360 | **3,12** | 106,0 | 0,00 | 89,44 | - | - | 0,00 | 0,00 | - |
| 26 | 4.401 | 4.402 | **10,79** | 104,5 | 0,00 | 83,87 | - | - | 0,00 | 0,00 | - |
| 27 | 4.054 | 4.054 | **11,78** | 104,5 | 0,00 | 83,16 | - | - | 0,00 | 0,00 | - |
| 28 | 3.767 | 3.768 | **12,66** | 104,5 | 0,00 | 82,52 | - | - | 0,00 | 0,00 | - |
| 29 | 4.082 | 4.083 | **11,69** | 104,5 | 0,00 | 83,22 | - | - | 0,00 | 0,00 | - |
| 3 | 3.688 | 3.690 | **12,09** | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 30 | 4.339 | 4.339 | **10,96** | 104,5 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 31 | 4.009 | 4.010 | **11,91** | 104,5 | 0,00 | 83,06 | - | - | 0,00 | 0,00 | - |
| 32 | 4.172 | 4.173 | **11,43** | 104,5 | 0,00 | 83,41 | - | - | 0,00 | 0,00 | - |
| 33 | 4.294 | 4.295 | **11,09** | 104,5 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 34 | 3.920 | 3.921 | **12,18** | 104,5 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 35 | 1.196 | 1.198 | **26,45** | 104,5 | 0,00 | 72,57 | - | - | 0,00 | 0,00 | - |
| 36 | 3.754 | 3.755 | **12,70** | 104,5 | 0,00 | 82,49 | - | - | 0,00 | 0,00 | - |
| 37 | 4.653 | 4.654 | **10,12** | 104,5 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 38 | 5.075 | 5.077 | **9,99** | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 39 | 2.909 | 2.913 | **17,07** | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 4 | 3.877 | 3.879 | **11,43** | 106,0 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 40 | 3.135 | 3.139 | **16,10** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 41 | 2.583 | 2.587 | **18,59** | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 42 | 2.876 | 2.880 | **17,21** | 106,0 | 0,00 | 80,19 | - | - | 0,00 | 0,00 | - |
| 43 | 4.656 | 4.658 | **11,00** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 44 | 7.116 | 7.117 | **5,13** | 104,5 | 0,00 | 88,05 | - | - | 0,00 | 0,00 | - |
| 45 | 3.724 | 3.726 | **12,36** | 104,5 | 0,00 | 82,43 | - | - | 0,00 | 0,00 | - |
| 46 | 3.435 | 3.438 | **13,41** | 104,5 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 47 | 3.035 | 3.038 | **15,02** | 104,5 | 0,00 | 80,65 | - | - | 0,00 | 0,00 | - |
| 48 | 3.358 | 3.361 | **13,71** | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 5 | 3.931 | 3.933 | **11,25** | 106,0 | 0,00 | 82,89 | - | - | 0,00 | 0,00 | - |
| 6 | 4.804 | 4.806 | **8,94** | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.847 | 6.848 | **5,06** | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 8 | 807 | 818 | **31,64** | 106,0 | 0,00 | 69,25 | - | - | 0,00 | 0,00 | - |
| 9 | 1.071 | 1.077 | **29,14** | 106,0 | 0,00 | 71,64 | - | - | 0,00 | 0,00 | - |
| Sum | | | **38,59** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AS Noise sensitive point: User defined (51)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.631 | 4.633 | **9,35** | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 10 | 611 | 620 | **35,36** | 106,0 | 0,00 | 66,85 | - | - | 0,00 | 0,00 | - |
| 11 | 962 | 968 | **30,37** | 106,0 | 0,00 | 70,72 | - | - | 0,00 | 0,00 | - |
| 12 | 4.707 | 4.708 | **10,45** | 106,0 | 0,00 | 84,46 | - | - | 0,00 | 0,00 | - |
| 13 | 4.909 | 4.910 | **9,91** | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 14 | 4.526 | 4.527 | **10,95** | 106,0 | 0,00 | 84,12 | - | - | 0,00 | 0,00 | - |
| 15 | 4.087 | 4.088 | **12,27** | 106,0 | 0,00 | 83,23 | - | - | 0,00 | 0,00 | - |
| 16 | 4.297 | 4.299 | **11,62** | 106,0 | 0,00 | 83,67 | - | - | 0,00 | 0,00 | - |
| 17 | 4.109 | 4.111 | **12,20** | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 18 | 6.640 | 6.641 | **6,03** | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 19 | 6.401 | 6.402 | **6,49** | 106,0 | 0,00 | 87,13 | - | - | 0,00 | 0,00 | - |
| 2 | 4.451 | 4.453 | **9,81** | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 20 | 6.374 | 6.375 | **6,55** | 106,0 | 0,00 | 87,09 | - | - | 0,00 | 0,00 | - |
| 21 | 7.049 | 7.050 | **5,27** | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 22 | 6.846 | 6.848 | **5,64** | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 7.037 | 7.038 | **5,29** | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 24 | 7.599 | 7.600 | **4,32** | 106,0 | 0,00 | 88,62 | - | - | 0,00 | 0,00 | - |
| 25 | 8.325 | 8.326 | **3,17** | 106,0 | 0,00 | 89,41 | - | - | 0,00 | 0,00 | - |
| 26 | 4.380 | 4.381 | **10,85** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 27 | 4.031 | 4.032 | **11,84** | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 28 | 3.744 | 3.744 | **12,73** | 104,5 | 0,00 | 82,47 | - | - | 0,00 | 0,00 | - |
| 29 | 4.055 | 4.056 | **11,77** | 104,5 | 0,00 | 83,16 | - | - | 0,00 | 0,00 | - |
| 3 | 3.652 | 3.654 | **12,22** | 106,0 | 0,00 | 82,26 | - | - | 0,00 | 0,00 | - |
| 30 | 4.308 | 4.308 | **11,05** | 104,5 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 31 | 3.971 | 3.972 | **12,02** | 104,5 | 0,00 | 82,98 | - | - | 0,00 | 0,00 | - |
| 32 | 4.130 | 4.131 | **11,55** | 104,5 | 0,00 | 83,32 | - | - | 0,00 | 0,00 | - |
| 33 | 4.245 | 4.246 | **11,22** | 104,5 | 0,00 | 83,56 | - | - | 0,00 | 0,00 | - |
| 34 | 3.869 | 3.870 | **12,33** | 104,5 | 0,00 | 82,75 | - | - | 0,00 | 0,00 | - |
| 35 | 1.148 | 1.150 | **26,93** | 104,5 | 0,00 | 72,22 | - | - | 0,00 | 0,00 | - |
| 36 | 3.714 | 3.715 | **12,83** | 104,5 | 0,00 | 82,40 | - | - | 0,00 | 0,00 | - |
| 37 | 4.612 | 4.613 | **10,23** | 104,5 | 0,00 | 84,28 | - | - | 0,00 | 0,00 | - |
| 38 | 5.024 | 5.027 | **10,11** | 106,0 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 39 | 2.887 | 2.891 | **17,16** | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 4 | 3.828 | 3.830 | **11,60** | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 40 | 3.084 | 3.087 | **16,31** | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 41 | 2.531 | 2.535 | **18,84** | 106,0 | 0,00 | 79,08 | - | - | 0,00 | 0,00 | - |
| 42 | 2.824 | 2.828 | **17,45** | 106,0 | 0,00 | 80,03 | - | - | 0,00 | 0,00 | - |
| 43 | 4.618 | 4.621 | **11,09** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 44 | 7.081 | 7.082 | **5,18** | 104,5 | 0,00 | 88,00 | - | - | 0,00 | 0,00 | - |
| 45 | 3.694 | 3.697 | **12,47** | 104,5 | 0,00 | 82,36 | - | - | 0,00 | 0,00 | - |
| 46 | 3.410 | 3.413 | **13,51** | 104,5 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| 47 | 3.008 | 3.012 | **15,13** | 104,5 | 0,00 | 80,58 | - | - | 0,00 | 0,00 | - |
| 48 | 3.328 | 3.331 | **13,83** | 104,5 | 0,00 | 81,45 | - | - | 0,00 | 0,00 | - |
| 5 | 3.886 | 3.889 | **11,40** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 4.757 | 4.759 | **9,05** | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 7 | 6.812 | 6.813 | **5,11** | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 8 | 756 | 767 | **32,42** | 106,0 | 0,00 | 68,70 | - | - | 0,00 | 0,00 | - |
| 9 | 1.037 | 1.043 | **29,52** | 106,0 | 0,00 | 71,36 | - | - | 0,00 | 0,00 | - |
| Sum | | | **39,22** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AT Noise sensitive point: User defined (52)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.425 | 4.427 | **9,87** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 10 | 951 | 957 | **30,50** | 106,0 | 0,00 | 70,62 | - | - | 0,00 | 0,00 | - |
| 11 | 585 | 595 | **35,80** | 106,0 | 0,00 | 66,49 | - | - | 0,00 | 0,00 | - |
| 12 | 3.373 | 3.375 | **14,72** | 106,0 | 0,00 | 81,56 | - | - | 0,00 | 0,00 | - |
| 13 | 3.567 | 3.568 | **14,01** | 106,0 | 0,00 | 82,05 | - | - | 0,00 | 0,00 | - |
| 14 | 3.183 | 3.185 | **15,50** | 106,0 | 0,00 | 81,06 | - | - | 0,00 | 0,00 | - |
| 15 | 2.978 | 2.980 | **16,40** | 106,0 | 0,00 | 80,49 | - | - | 0,00 | 0,00 | - |
| 16 | 3.263 | 3.265 | **15,16** | 106,0 | 0,00 | 81,28 | - | - | 0,00 | 0,00 | - |
| 17 | 3.154 | 3.155 | **15,63** | 106,0 | 0,00 | 80,98 | - | - | 0,00 | 0,00 | - |
| 18 | 5.548 | 5.549 | **8,33** | 106,0 | 0,00 | 85,88 | - | - | 0,00 | 0,00 | - |
| 19 | 5.379 | 5.380 | **8,73** | 106,0 | 0,00 | 85,62 | - | - | 0,00 | 0,00 | - |
| 2 | 4.151 | 4.153 | **10,61** | 106,0 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 20 | 5.408 | 5.409 | **8,66** | 106,0 | 0,00 | 85,66 | - | - | 0,00 | 0,00 | - |
| 21 | 5.948 | 5.949 | **7,43** | 106,0 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 22 | 5.799 | 5.800 | **7,76** | 106,0 | 0,00 | 86,27 | - | - | 0,00 | 0,00 | - |
| 23 | 6.265 | 6.266 | **6,77** | 106,0 | 0,00 | 86,94 | - | - | 0,00 | 0,00 | - |
| 24 | 6.718 | 6.719 | **5,88** | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 25 | 7.347 | 7.347 | **4,74** | 106,0 | 0,00 | 88,32 | - | - | 0,00 | 0,00 | - |
| 26 | 4.246 | 4.247 | **11,22** | 104,5 | 0,00 | 83,56 | - | - | 0,00 | 0,00 | - |
| 27 | 3.878 | 3.878 | **12,31** | 104,5 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 28 | 3.573 | 3.574 | **13,29** | 104,5 | 0,00 | 82,06 | - | - | 0,00 | 0,00 | - |
| 29 | 3.762 | 3.762 | **12,67** | 104,5 | 0,00 | 82,51 | - | - | 0,00 | 0,00 | - |
| 3 | 3.095 | 3.098 | **14,41** | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 3.886 | 3.887 | **12,28** | 104,5 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 31 | 3.324 | 3.325 | **14,16** | 104,5 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 32 | 3.333 | 3.334 | **14,12** | 104,5 | 0,00 | 81,46 | - | - | 0,00 | 0,00 | - |
| 33 | 3.149 | 3.150 | **14,80** | 104,5 | 0,00 | 80,97 | - | - | 0,00 | 0,00 | - |
| 34 | 2.678 | 2.680 | **16,72** | 104,5 | 0,00 | 79,56 | - | - | 0,00 | 0,00 | - |
| 35 | 353 | 362 | **39,51** | 104,5 | 0,00 | 62,17 | - | - | 0,00 | 0,00 | - |
| 36 | 2.652 | 2.653 | **16,84** | 104,5 | 0,00 | 79,48 | - | - | 0,00 | 0,00 | - |
| 37 | 3.485 | 3.486 | **13,59** | 104,5 | 0,00 | 81,85 | - | - | 0,00 | 0,00 | - |
| 38 | 3.684 | 3.687 | **14,01** | 106,0 | 0,00 | 82,33 | - | - | 0,00 | 0,00 | - |
| 39 | 2.841 | 2.845 | **17,37** | 106,0 | 0,00 | 80,08 | - | - | 0,00 | 0,00 | - |
| 4 | 2.724 | 2.727 | **16,10** | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 40 | 1.740 | 1.747 | **23,48** | 106,0 | 0,00 | 75,85 | - | - | 0,00 | 0,00 | - |
| 41 | 1.197 | 1.207 | **27,88** | 106,0 | 0,00 | 72,63 | - | - | 0,00 | 0,00 | - |
| 42 | 1.560 | 1.567 | **24,79** | 106,0 | 0,00 | 74,90 | - | - | 0,00 | 0,00 | - |
| 43 | 3.964 | 3.966 | **13,06** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 44 | 6.090 | 6.091 | **6,94** | 104,5 | 0,00 | 86,69 | - | - | 0,00 | 0,00 | - |
| 45 | 3.341 | 3.344 | **13,77** | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 46 | 3.234 | 3.237 | **14,20** | 104,5 | 0,00 | 81,20 | - | - | 0,00 | 0,00 | - |
| 47 | 2.810 | 2.814 | **16,00** | 104,5 | 0,00 | 79,99 | - | - | 0,00 | 0,00 | - |
| 48 | 2.967 | 2.970 | **15,31** | 104,5 | 0,00 | 80,46 | - | - | 0,00 | 0,00 | - |
| 5 | 3.007 | 3.010 | **14,79** | 106,0 | 0,00 | 80,57 | - | - | 0,00 | 0,00 | - |
| 6 | 3.478 | 3.481 | **12,86** | 106,0 | 0,00 | 81,83 | - | - | 0,00 | 0,00 | - |
| 7 | 5.831 | 5.832 | **6,79** | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| 8 | 588 | 602 | **35,31** | 106,0 | 0,00 | 66,59 | - | - | 0,00 | 0,00 | - |
| 9 | 1.197 | 1.201 | **27,86** | 106,0 | 0,00 | 72,59 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,99** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AU Noise sensitive point: User defined (53)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.293 | 4.295 | **10,22** | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 10 | 286 | 306 | **42,73** | 106,0 | 0,00 | 60,70 | - | - | 0,00 | 0,00 | - |
| 11 | 690 | 698 | **34,06** | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 12 | 4.483 | 4.484 | **11,08** | 106,0 | 0,00 | 84,03 | - | - | 0,00 | 0,00 | - |
| 13 | 4.702 | 4.704 | **10,46** | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 14 | 4.322 | 4.324 | **11,55** | 106,0 | 0,00 | 83,72 | - | - | 0,00 | 0,00 | - |
| 15 | 4.064 | 4.066 | **12,34** | 106,0 | 0,00 | 83,18 | - | - | 0,00 | 0,00 | - |
| 16 | 4.304 | 4.306 | **11,60** | 106,0 | 0,00 | 83,68 | - | - | 0,00 | 0,00 | - |
| 17 | 4.142 | 4.144 | **12,10** | 106,0 | 0,00 | 83,35 | - | - | 0,00 | 0,00 | - |
| 18 | 6.633 | 6.634 | **6,04** | 106,0 | 0,00 | 87,43 | - | - | 0,00 | 0,00 | - |
| 19 | 6.421 | 6.422 | **6,45** | 106,0 | 0,00 | 87,15 | - | - | 0,00 | 0,00 | - |
| 2 | 4.105 | 4.107 | **10,74** | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| 20 | 6.414 | 6.415 | **6,47** | 106,0 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 21 | 7.039 | 7.040 | **5,28** | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 22 | 6.858 | 6.859 | **5,62** | 106,0 | 0,00 | 87,72 | - | - | 0,00 | 0,00 | - |
| 23 | 7.141 | 7.142 | **5,10** | 106,0 | 0,00 | 88,08 | - | - | 0,00 | 0,00 | - |
| 24 | 7.671 | 7.672 | **4,20** | 106,0 | 0,00 | 88,70 | - | - | 0,00 | 0,00 | - |
| 25 | 8.365 | 8.366 | **3,11** | 106,0 | 0,00 | 89,45 | - | - | 0,00 | 0,00 | - |
| 26 | 4.048 | 4.048 | **11,79** | 104,5 | 0,00 | 83,15 | - | - | 0,00 | 0,00 | - |
| 27 | 3.695 | 3.696 | **12,89** | 104,5 | 0,00 | 82,35 | - | - | 0,00 | 0,00 | - |
| 28 | 3.405 | 3.405 | **13,87** | 104,5 | 0,00 | 81,64 | - | - | 0,00 | 0,00 | - |
| 29 | 3.708 | 3.709 | **12,85** | 104,5 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 3 | 3.296 | 3.298 | **13,58** | 106,0 | 0,00 | 81,37 | - | - | 0,00 | 0,00 | - |
| 30 | 3.955 | 3.956 | **12,07** | 104,5 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 31 | 3.615 | 3.616 | **13,15** | 104,5 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| 32 | 3.779 | 3.780 | **12,62** | 104,5 | 0,00 | 82,55 | - | - | 0,00 | 0,00 | - |
| 33 | 3.927 | 3.927 | **12,16** | 104,5 | 0,00 | 82,88 | - | - | 0,00 | 0,00 | - |
| 34 | 3.574 | 3.575 | **13,29** | 104,5 | 0,00 | 82,07 | - | - | 0,00 | 0,00 | - |
| 35 | 1.071 | 1.074 | **27,71** | 104,5 | 0,00 | 71,62 | - | - | 0,00 | 0,00 | - |
| 36 | 3.707 | 3.708 | **12,85** | 104,5 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 37 | 4.584 | 4.585 | **10,30** | 104,5 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 4.849 | 4.852 | **10,52** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 39 | 2.554 | 2.558 | **18,73** | 106,0 | 0,00 | 79,16 | - | - | 0,00 | 0,00 | - |
| 4 | 3.513 | 3.515 | **12,73** | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 40 | 2.901 | 2.905 | **17,10** | 106,0 | 0,00 | 80,26 | - | - | 0,00 | 0,00 | - |
| 41 | 2.319 | 2.324 | **19,94** | 106,0 | 0,00 | 78,32 | - | - | 0,00 | 0,00 | - |
| 42 | 2.564 | 2.568 | **18,68** | 106,0 | 0,00 | 79,19 | - | - | 0,00 | 0,00 | - |
| 43 | 4.262 | 4.265 | **12,11** | 106,0 | 0,00 | 83,60 | - | - | 0,00 | 0,00 | - |
| 44 | 7.114 | 7.115 | **5,13** | 104,5 | 0,00 | 88,04 | - | - | 0,00 | 0,00 | - |
| 45 | 3.343 | 3.346 | **13,77** | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 46 | 3.069 | 3.072 | **14,87** | 104,5 | 0,00 | 80,75 | - | - | 0,00 | 0,00 | - |
| 47 | 2.663 | 2.666 | **16,70** | 104,5 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 48 | 2.975 | 2.978 | **15,28** | 104,5 | 0,00 | 80,48 | - | - | 0,00 | 0,00 | - |
| 5 | 3.542 | 3.544 | **12,62** | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 6 | 4.650 | 4.652 | **9,31** | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 7 | 6.848 | 6.849 | **5,06** | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 8 | 635 | 648 | **34,44** | 106,0 | 0,00 | 67,23 | - | - | 0,00 | 0,00 | - |
| 9 | 681 | 690 | **34,19** | 106,0 | 0,00 | 67,78 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,50** | | | | | | | | |

*- Data undefined due to calculation with octave data*

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

**Noise calculation model:**
ISO 9613-2 General
**Wind speed (in 10 m height):**
10,0 m/s
**Ground attenuation:**
General, Ground factor: 0,8
**Meteorological coefficient, C0:**
0,0 dB
**Type of demand in calculation:**
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
**Noise values in calculation:**
All noise values are mean values (Lwa) (Normal)
**Pure tones:**
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
**Height above ground level, when no value in NSA object:**
1,5 m; Don't allow override of model height with height from NSA object
**Uncertainty margin:**
0,0 dB; Uncertainty margin in NSA has priority
**Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:**
0,0 dB(A)
**Octave data required**
Frequency dependent air absorption

| 63 | 125 | 250 | 500 | 1.000 | 2.000 | 4.000 | 8.000 |
|---|---|---|---|---|---|---|---|
| [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] |
| 0,10 | 0,40 | 1,00 | 1,90 | 3,70 | 9,70 | 32,80 | 117,00 |

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

**WTG:** ENERCON E-138 EP3 E2 4200 138.3 !O!
**Noise:** Level 0 - OM 0s - 4200 kW

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Enercon GmbH | 2019.11.08 | EMD | 2020.01.21 11:45 |

The sound power levels do not include uncertainties.
According to manufacturer specification document (D0748822-6/D0748941-3).
Enercon reserves the right to change the above specifications without prior notice.

| | | | | | **Octave data** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| From Windcat | 130,3 | 10,0 | 106,0 | No | 86,9 | 92,3 | 94,8 | 97,4 | 100,1 | 101,7 | 95,9 | 78,2 |

**WTG:** ENERCON E-138 EP3 E2 4200 138.3 !O!
**Noise:** Level 0 - OM 0s - 4200 kW

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Enercon GmbH | 2019.11.08 | EMD | 2020.01.21 11:45 |

The sound power levels do not include uncertainties.
According to manufacturer specification document (D0748822-6/D0748941-3).
Enercon reserves the right to change the above specifications without prior notice.

| | | | | | **Octave data** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| From Windcat | 130,3 | 10,0 | 106,0 | No | 86,9 | 92,3 | 94,8 | 97,4 | 100,1 | 101,7 | 95,9 | 78,2 |

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2
**WTG:** GE WIND ENERGY GE 2.5-120 2500 120.0 !O!
**Noise:** Level 0 - Calculated - NO - 05-2015

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Manufacturer | 2015.05.05 | EMD | 2016.12.01 13:44 |

Based on Document Noise_Emissions-NO_2.x-DFIG-120-xxHz_3MW_EN_r01.

| | | | | | Octave data | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| Interpolated | 110,0 | 10,0 | 106,0 | No | 84,8 | 94,0 | 98,5 | 100,6 | 100,7 | 97,7 | 89,2 | 72,1 |

**WTG:** NORDEX N131/3000 3000 131.0 !O!
**Noise:** Mode 0 - 104.5 dB(A) - R00

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| NORDEX | 2013.12.03 | EMD | 2015.01.21 15:58 |

F008_246_A03_R00, 21.11.2013

| | | | | | | Octave data | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| From other hub height | 80,0 | 10,0 | 104,5 | No | Generic data | 86,1 | 93,1 | 96,5 | 99,1 | 98,9 | 96,0 | 91,2 | 81,7 |
| From Windcat | 144,0 | 10,0 | 104,5 | No | Generic data | 86,1 | 93,1 | 96,5 | 99,1 | 98,9 | 96,0 | 91,2 | 81,7 |

**WTG:** GE WIND ENERGY 5.3-158 Thrust 700 5300 158.0 !O!
**Noise:** 5.3-158 NO

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Noise_Emission-NO_5.3-158-50Hz_IEC_EN_r01 | 2018.03.12 | EMD | 2019.02.06 10:21 |

| | | | | | | Octave data | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
| Interpolated | 149,0 | 10,0 | 106,0 | No | Generic data | 87,6 | 94,6 | 98,0 | 100,6 | 100,4 | 97,5 | 92,7 | 83,2 |

## Noise sensitive area: A Noise sensitive point: User defined (1)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: B Noise sensitive point: User defined (2)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: C Noise sensitive point: User defined (4)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: D Noise sensitive point: User defined (5)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

## Noise sensitive area: E Noise sensitive point: User defined (6)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: F Noise sensitive point: User defined (7)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: G Noise sensitive point: User defined (8)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: H Noise sensitive point: User defined (9)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: I Noise sensitive point: User defined (11)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: J Noise sensitive point: User defined (12)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: K Noise sensitive point: User defined (13)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: L Noise sensitive point: User defined (14)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: M Noise sensitive point: User defined (15)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2
**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: N Noise sensitive point: User defined (16)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: O Noise sensitive point: User defined (17)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: P Noise sensitive point: User defined (18)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: Q Noise sensitive point: User defined (19)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: R Noise sensitive point: User defined (20)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: S Noise sensitive point: User defined (21)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: T Noise sensitive point: User defined (22)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: U Noise sensitive point: User defined (23)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

## Noise sensitive area: V Noise sensitive point: User defined (24)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: W Noise sensitive point: User defined (25)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: X Noise sensitive point: User defined (26)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: Y Noise sensitive point: User defined (27)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: Z Noise sensitive point: User defined (28)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AA Noise sensitive point: User defined (29)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AB Noise sensitive point: User defined (30)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AC Noise sensitive point: User defined (31)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AD Noise sensitive point: User defined (32)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

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Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2
**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AE Noise sensitive point: User defined (33)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AF Noise sensitive point: User defined (34)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AG Noise sensitive point: User defined (35)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AH Noise sensitive point: User defined (36)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AI Noise sensitive point: User defined (37)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AJ Noise sensitive point: User defined (38)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AK Noise sensitive point: User defined (39)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AL Noise sensitive point: User defined (40)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

## Noise sensitive area: AM Noise sensitive point: User defined (41)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AN Noise sensitive point: User defined (42)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AO Noise sensitive point: User defined (43)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AP Noise sensitive point: User defined (48)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AQ Noise sensitive point: User defined (49)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AR Noise sensitive point: User defined (50)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AS Noise sensitive point: User defined (51)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AT Noise sensitive point: User defined (52)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AU Noise sensitive point: User defined (53)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

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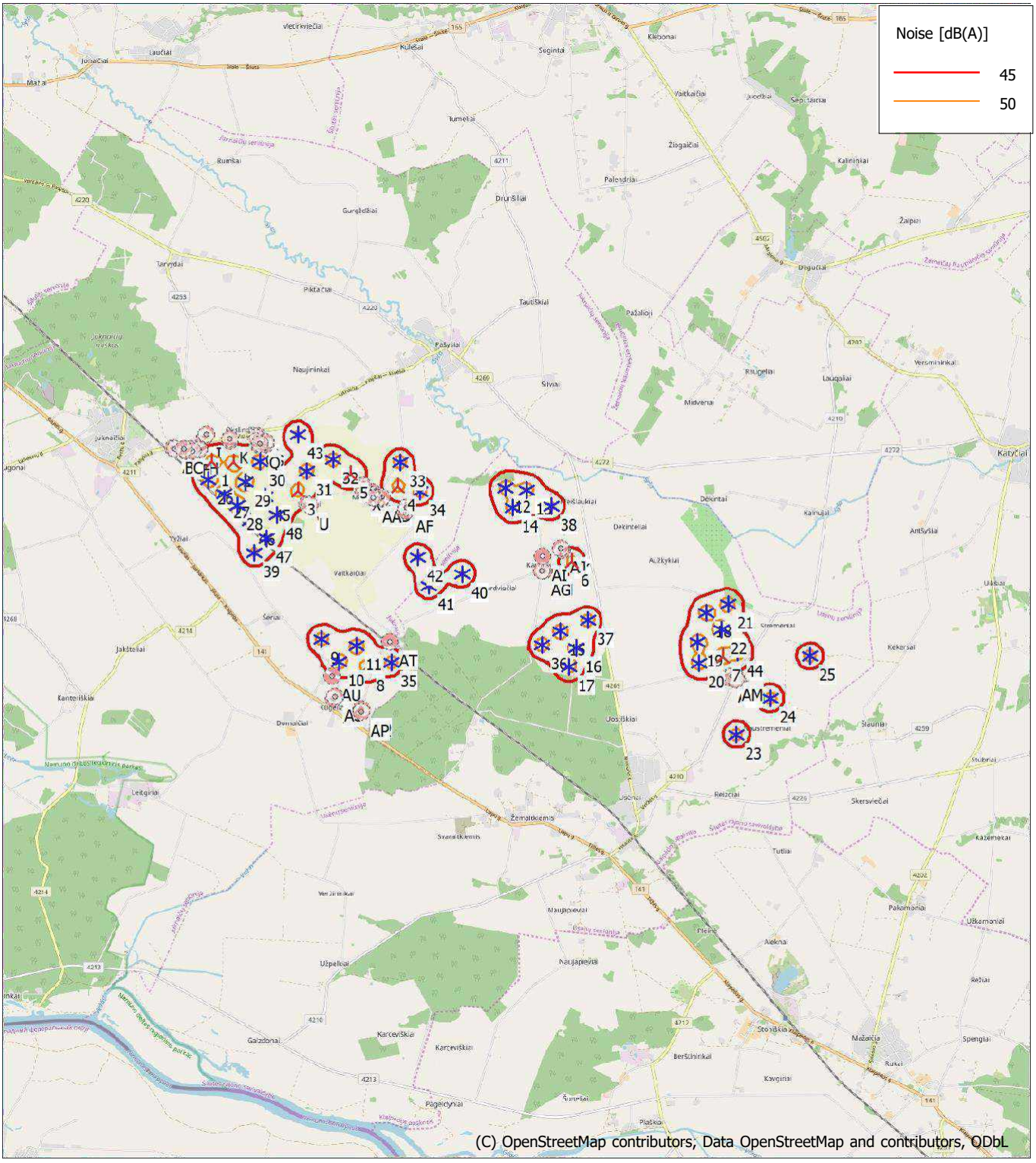
## DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2

**Noise demand:** 45,0 dB(A)
**No distance demand**

# DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 353.094 North: 6.128.105

New WTG  Existing WTG  Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

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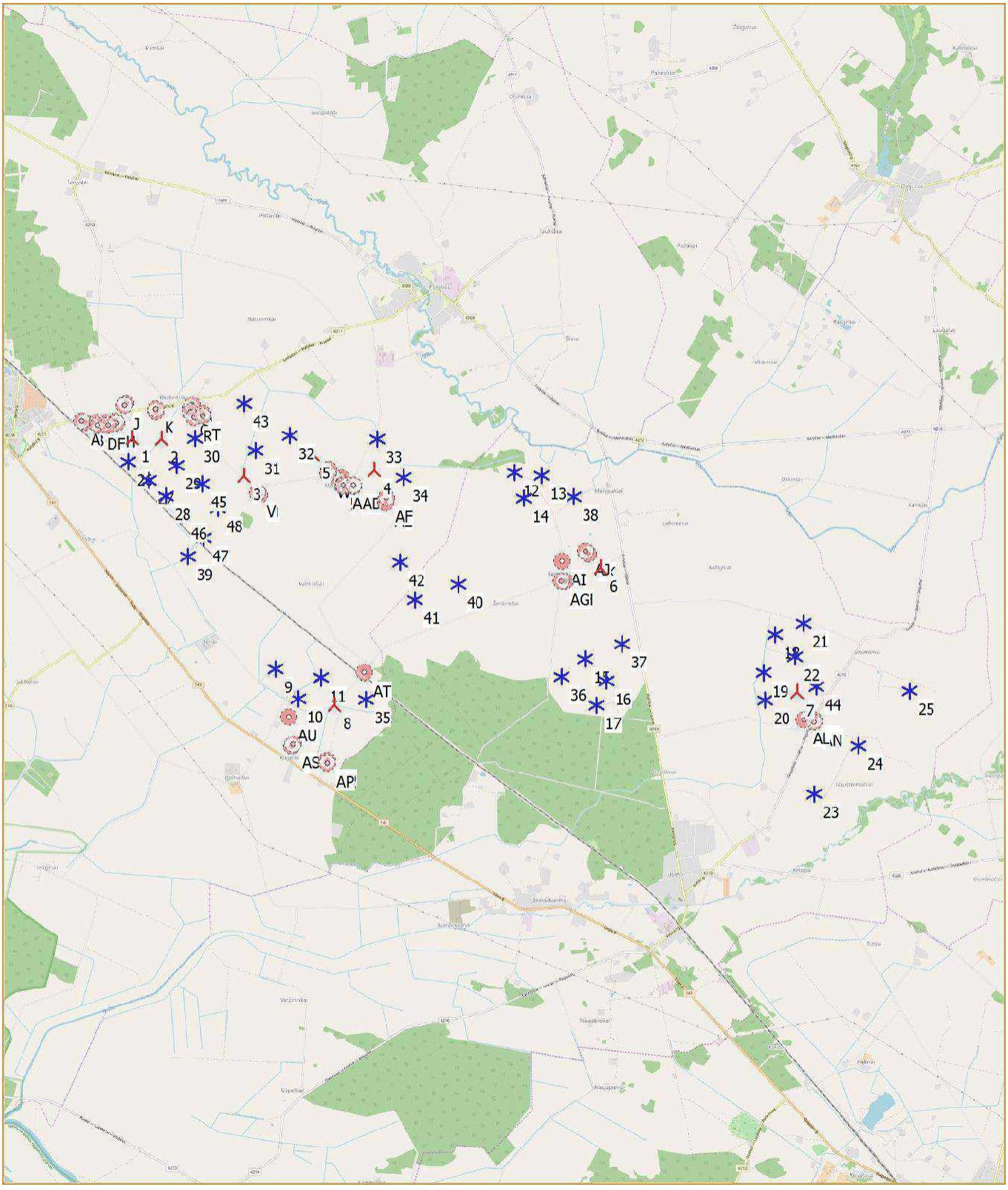
Calculated:
2021.11.30 11:43/3.5.552

# DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2



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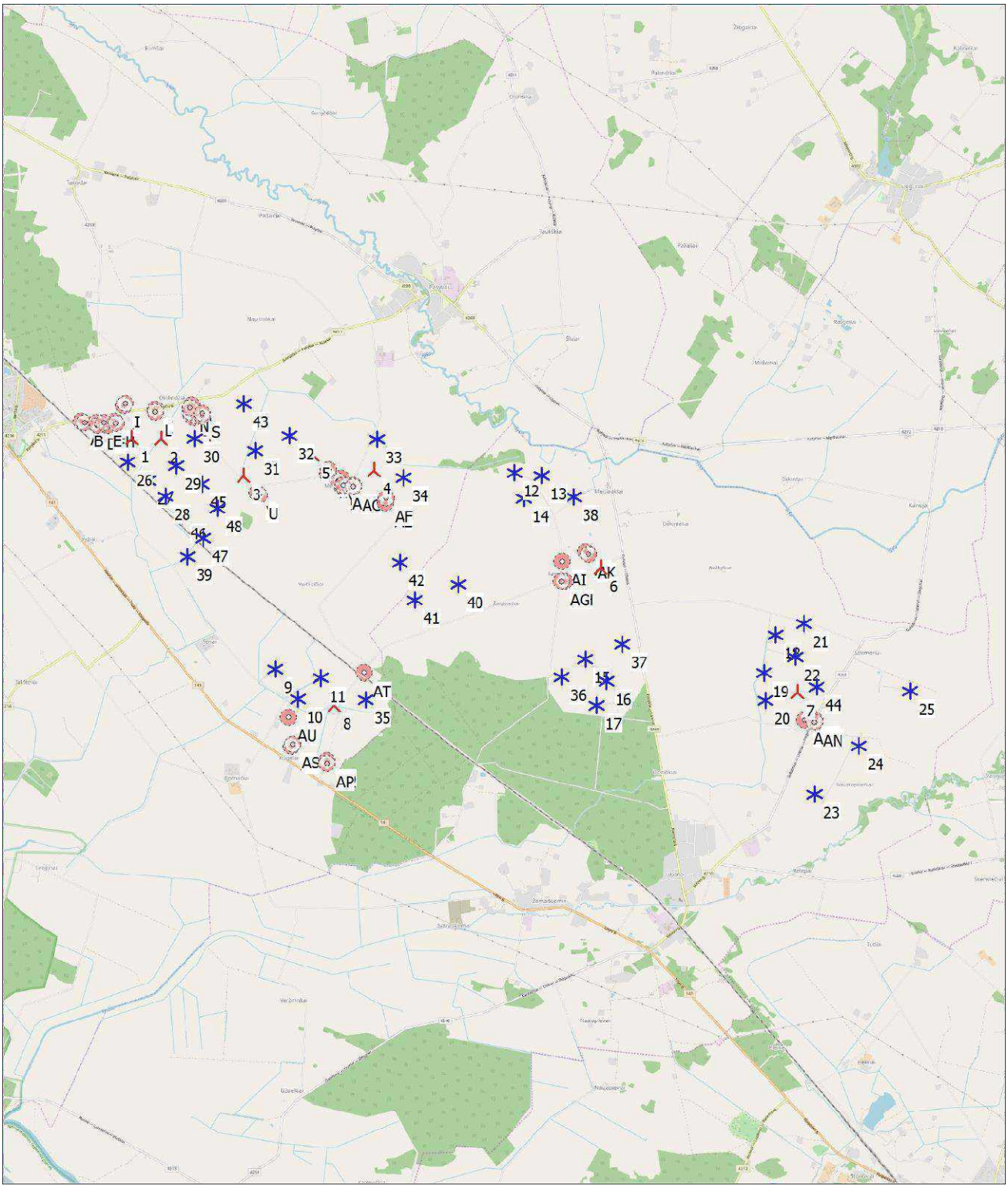
Calculated:
2021.11.30 11:43/3.5.552

## DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2




(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

New WTG Existing WTG Noise sensitive area

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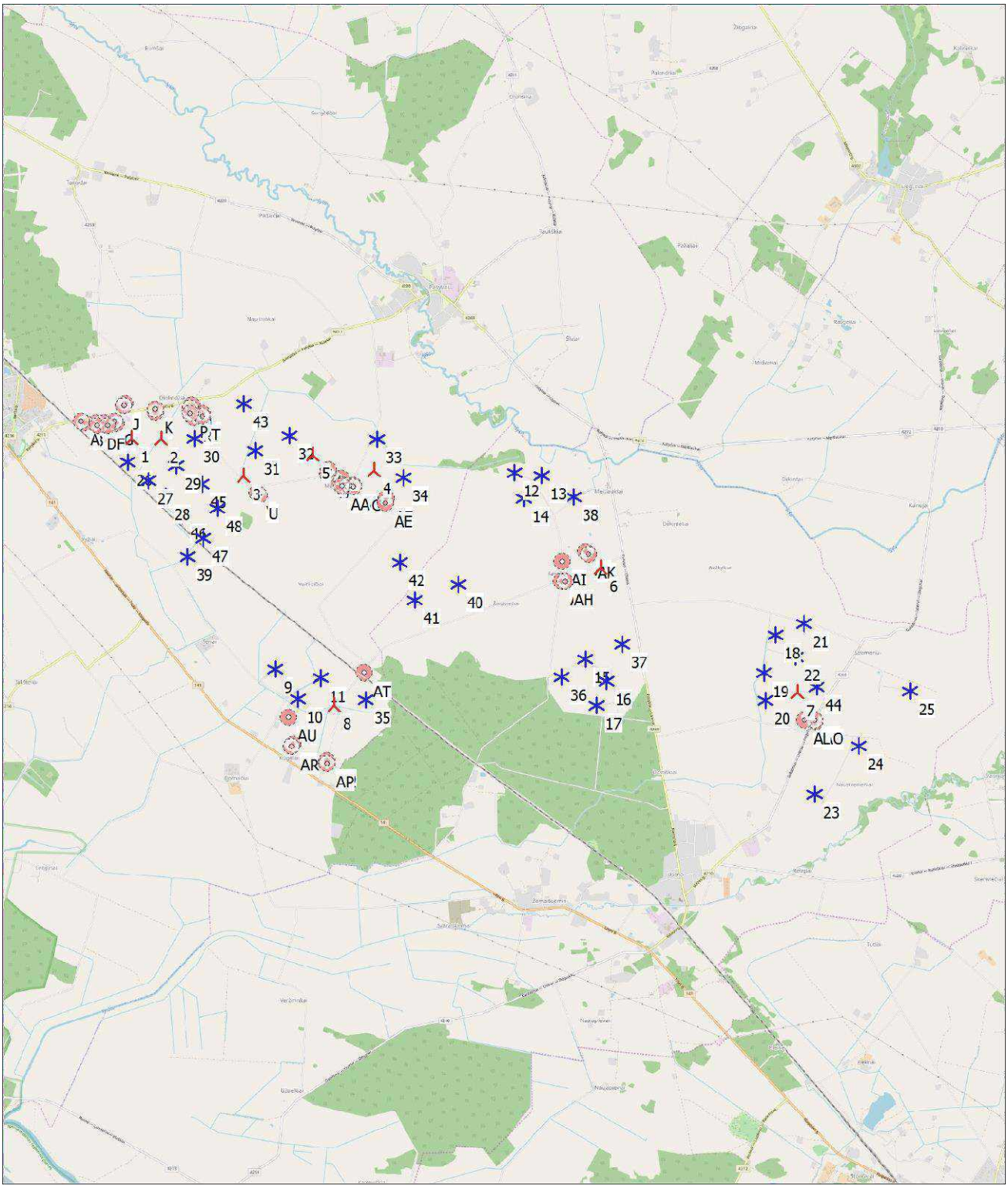
## DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

New WTG Existing WTG Noise sensitive area

Project:

**8 VE Ðilutës r.triukðmas**

Description:

Aðtuoniø vëjo elektriniø (Ðilutës raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija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Calculated:

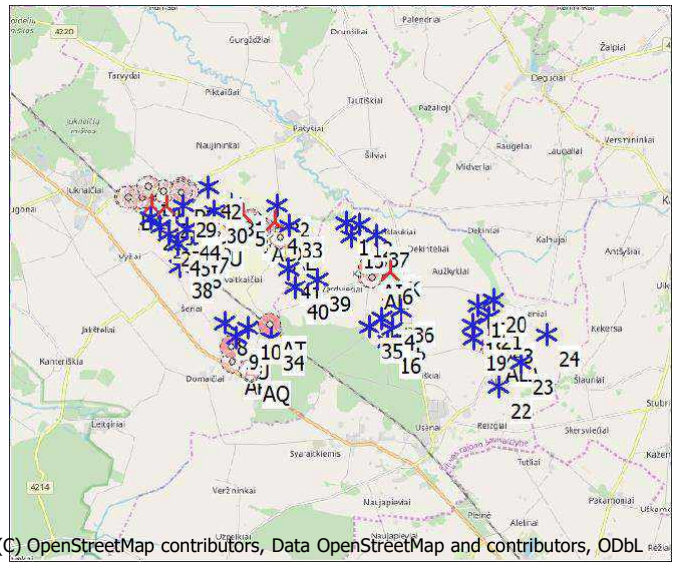
2021.11.30 11:21/3.5.552

# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

**Noise calculation model:**
ISO 9613-2 General
**Wind speed (in 10 m height):**
10,0 m/s
**Ground attenuation:**
General, Ground factor: 0,8
**Meteorological coefficient, C0:**
0,0 dB
**Type of demand in calculation:**
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
**Noise values in calculation:**
All noise values are mean values (Lwa) (Normal)
**Pure tones:**
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
**Height above ground level, when no value in NSA object:**
1,5 m; Don't allow override of model height with height from NSA object
**Uncertainty margin:**
0,0 dB; Uncertainty margin in NSA has priority
**Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:**
0,0 dB(A)

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




Scale 1:200.000

New WTG  Existing WTG  Noise sensitive area

## WTGs

| | Y | X | Z [m] | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated [kW] | Rotor diameter [m] | Hub height [m] | Noise data Creator | Name | Wind speed [m/s] | Status | LwA,ref [dB(A)] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 4200 138... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | EMD | Level 0 - OM 0s - 4200 kW | 10,0 | | 106,0 | |
| 8 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 9 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 10 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 11 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 12 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 13 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 14 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 15 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 16 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 17 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 18 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 19 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 20 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 21 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 22 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 23 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 24 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY GE 2.5-120 25... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | EMD | Level 0 - Calculated - NO - 05-2015 | 10,0 | Interpolated | 106,0 | g |
| 25 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 26 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 27 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 28 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 29 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 30 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 31 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 32 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 33 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 34 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 35 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 36 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 37 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 38 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 39 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 40 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 41 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 42 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.3-158 Thrust... | No | GE WIND ENERGY | 5.3-158 Thrust 700-5.300 | 5.300 | 158,0 | 149,0 | EMD | 5.3-158 NO | 10,0 | Interpolated | 106,0 | g |
| 43 | 357.043 | 6.126.794 | 20,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 80,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | From other hub height | 104,5 | h |
| 44 | 348.872 | 6.129.782 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 45 | 348.589 | 6.129.372 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 46 | 348.873 | 6.129.055 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |
| 47 | 349.068 | 6.129.458 | 10,0 | NORDEX N131/3000 3000 131.0 !... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | EMD | Mode 0 - 104.5 dB(A) - R00 | 10,0 | | 104,5 | h |

**h) Generic octave distribution used**

**g) Data calculated from data for other wind speed (uncertain)**

# Calculation Results

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# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

## Sound level

| Noise sensitive area | | | | | | Demands | Sound level | | Demands fulfilled ? |
|---|---|---|---|---|---|---|---|---|---|
| No. | Name | Y | X | Z | Immission height | Noise | From WTGs | Distance to noise demand | Noise |
| | | | | [m] | [m] | [dB(A)] | [dB(A)] | [m] | |
| A | Noise sensitive point: User defined (1) | 347.290 | 6.130.678 | 10,0 | 1,5 | 45,0 | 37,8 | 436 | Yes |
| B | Noise sensitive point: User defined (2) | 347.334 | 6.130.657 | 10,0 | 1,5 | 45,0 | 38,4 | 387 | Yes |
| C | Noise sensitive point: User defined (4) | 347.483 | 6.130.653 | 10,7 | 1,5 | 45,0 | 40,2 | 253 | Yes |
| D | Noise sensitive point: User defined (5) | 347.505 | 6.130.613 | 10,4 | 1,5 | 45,0 | 40,8 | 215 | Yes |
| E | Noise sensitive point: User defined (6) | 347.592 | 6.130.646 | 10,8 | 1,5 | 45,0 | 41,7 | 154 | Yes |
| F | Noise sensitive point: User defined (7) | 347.637 | 6.130.618 | 10,6 | 1,5 | 45,0 | 42,7 | 101 | Yes |
| G | Noise sensitive point: User defined (8) | 347.734 | 6.130.663 | 11,0 | 1,5 | 45,0 | 43,7 | 59 | Yes |
| H | Noise sensitive point: User defined (9) | 347.757 | 6.130.635 | 10,8 | 1,5 | 45,0 | 44,5 | 23 | Yes |
| I | Noise sensitive point: User defined (11) | 347.883 | 6.130.901 | 13,1 | 1,5 | 45,0 | 41,1 | 202 | Yes |
| J | Noise sensitive point: User defined (12) | 347.866 | 6.130.871 | 12,8 | 1,5 | 45,0 | 41,5 | 175 | Yes |
| K | Noise sensitive point: User defined (13) | 348.287 | 6.130.811 | 10,0 | 1,5 | 45,0 | 43,3 | 94 | Yes |
| L | Noise sensitive point: User defined (14) | 348.284 | 6.130.768 | 10,0 | 1,5 | 45,0 | 44,1 | 51 | Yes |
| M | Noise sensitive point: User defined (15) | 348.782 | 6.130.851 | 10,0 | 1,5 | 45,0 | 42,3 | 174 | Yes |
| N | Noise sensitive point: User defined (16) | 348.759 | 6.130.812 | 10,0 | 1,5 | 45,0 | 42,8 | 133 | Yes |
| O | Noise sensitive point: User defined (17) | 348.756 | 6.130.753 | 10,0 | 1,5 | 45,0 | 43,7 | 74 | Yes |
| P | Noise sensitive point: User defined (18) | 348.753 | 6.130.737 | 10,0 | 1,5 | 45,0 | 43,9 | 58 | Yes |
| Q | Noise sensitive point: User defined (19) | 348.810 | 6.130.701 | 10,0 | 1,5 | 45,0 | 44,5 | 26 | Yes |
| R | Noise sensitive point: User defined (20) | 348.790 | 6.130.676 | 10,0 | 1,5 | 45,0 | 45,0 | 1 | Yes |
| S | Noise sensitive point: User defined (21) | 348.913 | 6.130.737 | 10,0 | 1,5 | 45,0 | 43,6 | 86 | Yes |
| T | Noise sensitive point: User defined (22) | 348.911 | 6.130.694 | 10,0 | 1,5 | 45,0 | 44,2 | 45 | Yes |
| U | Noise sensitive point: User defined (23) | 349.644 | 6.129.613 | 10,0 | 1,5 | 45,0 | 44,4 | 31 | Yes |
| V | Noise sensitive point: User defined (24) | 349.607 | 6.129.632 | 10,0 | 1,5 | 45,0 | 45,0 | 1 | Yes |
| W | Noise sensitive point: User defined (25) | 350.562 | 6.129.862 | 10,9 | 1,5 | 45,0 | 43,9 | 57 | Yes |
| X | Noise sensitive point: User defined (26) | 350.576 | 6.129.919 | 10,8 | 1,5 | 45,0 | 44,6 | 26 | Yes |
| Y | Noise sensitive point: User defined (27) | 350.707 | 6.129.756 | 12,0 | 1,5 | 45,0 | 42,3 | 231 | Yes |
| Z | Noise sensitive point: User defined (28) | 350.748 | 6.129.803 | 12,1 | 1,5 | 45,0 | 42,8 | 180 | Yes |
| AA | Noise sensitive point: User defined (29) | 350.753 | 6.129.689 | 12,4 | 1,5 | 45,0 | 42,0 | 218 | Yes |
| AB | Noise sensitive point: User defined (30) | 350.767 | 6.129.705 | 12,4 | 1,5 | 45,0 | 42,2 | 199 | Yes |
| AC | Noise sensitive point: User defined (31) | 350.909 | 6.129.675 | 13,3 | 1,5 | 45,0 | 43,2 | 91 | Yes |
| AD | Noise sensitive point: User defined (32) | 350.909 | 6.129.692 | 13,3 | 1,5 | 45,0 | 43,4 | 80 | Yes |
| AE | Noise sensitive point: User defined (33) | 351.332 | 6.129.441 | 16,3 | 1,5 | 45,0 | 42,6 | 146 | Yes |
| AF | Noise sensitive point: User defined (34) | 351.339 | 6.129.512 | 16,2 | 1,5 | 45,0 | 43,6 | 77 | Yes |
| AG | Noise sensitive point: User defined (35) | 353.662 | 6.128.322 | 20,0 | 1,5 | 45,0 | 39,8 | 314 | Yes |
| AH | Noise sensitive point: User defined (36) | 353.705 | 6.128.318 | 20,0 | 1,5 | 45,0 | 40,1 | 276 | Yes |
| AI | Noise sensitive point: User defined (37) | 353.678 | 6.128.582 | 20,0 | 1,5 | 45,0 | 40,2 | 285 | Yes |
| AJ | Noise sensitive point: User defined (38) | 353.996 | 6.128.697 | 20,0 | 1,5 | 45,0 | 43,6 | 60 | Yes |
| AK | Noise sensitive point: User defined (39) | 354.036 | 6.128.668 | 20,0 | 1,5 | 45,0 | 44,8 | 11 | Yes |
| AL | Noise sensitive point: User defined (40) | 356.862 | 6.126.349 | 19,7 | 1,5 | 45,0 | 44,0 | 56 | Yes |
| AM | Noise sensitive point: User defined (41) | 356.927 | 6.126.381 | 20,0 | 1,5 | 45,0 | 44,3 | 39 | Yes |
| AN | Noise sensitive point: User defined (42) | 356.986 | 6.126.313 | 20,0 | 1,5 | 45,0 | 43,2 | 122 | Yes |
| AO | Noise sensitive point: User defined (43) | 356.996 | 6.126.345 | 20,0 | 1,5 | 45,0 | 43,5 | 95 | Yes |
| AP | Noise sensitive point: User defined (48) | 350.424 | 6.125.973 | 10,0 | 1,5 | 45,0 | 35,4 | 703 | Yes |
| AQ | Noise sensitive point: User defined (49) | 350.424 | 6.126.015 | 10,0 | 1,5 | 45,0 | 35,8 | 663 | Yes |
| AR | Noise sensitive point: User defined (50) | 349.947 | 6.126.215 | 10,0 | 1,5 | 45,0 | 37,6 | 405 | Yes |
| AS | Noise sensitive point: User defined (51) | 349.979 | 6.126.256 | 10,0 | 1,5 | 45,0 | 38,2 | 359 | Yes |
| AT | Noise sensitive point: User defined (52) | 350.962 | 6.127.173 | 10,0 | 1,5 | 45,0 | 42,2 | 135 | Yes |
| AU | Noise sensitive point: User defined (53) | 349.928 | 6.126.609 | 10,0 | 1,5 | 45,0 | 44,0 | 37 | Yes |

## Distances (m)

| | WTG | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| A | 715 | 1093 | 2297 | 3980 | 3133 | 7239 | 10274 | 4211 | 4716 | 4700 | 5850 | 6210 | 6021 | 7469 | 7860 | 7889 | 9737 | 9766 | 9913 | 10068 | 10086 | 11032 |
| B | 666 | 1044 | 2248 | 3933 | 3086 | 7190 | 10225 | 4168 | 4673 | 4655 | 5803 | 6163 | 5973 | 7420 | 7811 | 7840 | 9688 | 9717 | 9864 | 10019 | 10038 | 10983 |
| C | 527 | 900 | 2108 | 3786 | 2939 | 7048 | 10087 | 4079 | 4584 | 4556 | 5656 | 6016 | 5827 | 7287 | 7679 | 7710 | 9547 | 9578 | 9727 | 9877 | 9897 | 10851 |
| D | 491 | 868 | 2073 | 3757 | 2910 | 7014 | 10051 | 4034 | 4539 | 4511 | 5628 | 5988 | 5797 | 7249 | 7640 | 7671 | 9513 | 9542 | 9691 | 9843 | 9862 | 10813 |
| E | 428 | 794 | 2004 | 3678 | 2830 | 6942 | 9984 | 4014 | 4518 | 4482 | 5547 | 5907 | 5719 | 7187 | 7580 | 7614 | 9442 | 9475 | 9625 | 9771 | 9792 | 10753 |
| F | 375 | 743 | 1952 | 3628 | 2781 | 6890 | 9931 | 3966 | 4470 | 4433 | 5498 | 5858 | 5669 | 7134 | 7527 | 7561 | 9390 | 9422 | 9573 | 9719 | 9740 | 10700 |
| G | 327 | 667 | 1881 | 3543 | 2694 | 6813 | 9860 | 3953 | 4457 | 4409 | 5409 | 5770 | 5584 | 7070 | 7465 | 7503 | 9314 | 9351 | 9504 | 9641 | 9666 | 10638 |
| H | 291 | 635 | 1849 | 3515 | 2666 | 6782 | 9828 | 3917 | 4421 | 4373 | 5382 | 5742 | 5555 | 7037 | 7431 | 7468 | 9282 | 9318 | 9471 | 9610 | 9634 | 10604 |
| I | 481 | 683 | 1868 | 3460 | 2609 | 6754 | 9823 | 4088 | 4589 | 4518 | 5307 | 5666 | 5496 | 7059 | 7459 | 7510 | 9258 | 9311 | 9474 | 9578 | 9616 | 10631 |
| J | 454 | 674 | 1865 | 3468 | 2617 | 6759 | 9825 | 4069 | 4570 | 4502 | 5317 | 5677 | 5505 | 7059 | 7457 | 7507 | 9263 | 9314 | 9475 | 9584 | 9620 | 10630 |

*To be continued on next page...*

# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

*...continued from previous page*

| | WTG | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| K | 506 | 416 | 1488 | 3048 | 2197 | 6345 | 9419 | 3835 | 4329 | 4230 | 4893 | 5252 | 5083 | 6668 | 7070 | 7127 | 8849 | 8907 | 9073 | 9168 | 9209 | 10240 |
| L | 472 | 374 | 1464 | 3038 | 2187 | 6332 | 9403 | 3797 | 4291 | 4194 | 4887 | 5247 | 5075 | 6648 | 7049 | 7105 | 8836 | 8891 | 9056 | 9156 | 9195 | 10220 |
| M | 926 | 627 | 1181 | 2595 | 1750 | 5903 | 8994 | 3711 | 4189 | 4045 | 4419 | 4778 | 4620 | 6277 | 6683 | 6757 | 8408 | 8481 | 8656 | 8720 | 8772 | 9847 |
| N | 888 | 583 | 1162 | 2602 | 1756 | 5909 | 8997 | 3680 | 4159 | 4019 | 4433 | 4792 | 4630 | 6274 | 6679 | 6751 | 8414 | 8483 | 8658 | 8727 | 8777 | 9845 |
| O | 861 | 541 | 1117 | 2585 | 1736 | 5889 | 8973 | 3624 | 4104 | 3966 | 4422 | 4782 | 4616 | 6243 | 6648 | 6717 | 8394 | 8460 | 8632 | 8709 | 8756 | 9815 |
| P | 852 | 528 | 1106 | 2582 | 1733 | 5885 | 8968 | 3609 | 4090 | 3953 | 4422 | 4781 | 4615 | 6237 | 6641 | 6710 | 8390 | 8455 | 8627 | 8706 | 8752 | 9808 |
| Q | 894 | 552 | 1043 | 2517 | 1668 | 5819 | 8902 | 3559 | 4038 | 3897 | 4359 | 4719 | 4550 | 6170 | 6574 | 6643 | 8324 | 8389 | 8560 | 8640 | 8686 | 9741 |
| R | 867 | 522 | 1036 | 2528 | 1678 | 5828 | 8908 | 3540 | 4020 | 3882 | 4373 | 4733 | 4562 | 6172 | 6576 | 6643 | 8333 | 8395 | 8565 | 8649 | 8694 | 9744 |
| S | 1003 | 659 | 1015 | 2432 | 1584 | 5738 | 8826 | 3567 | 4041 | 3889 | 4266 | 4625 | 4461 | 6104 | 6510 | 6584 | 8243 | 8312 | 8486 | 8556 | 8606 | 9675 |
| T | 989 | 636 | 979 | 2419 | 1570 | 5723 | 8808 | 3526 | 4001 | 3851 | 4259 | 4618 | 4451 | 6082 | 6487 | 6559 | 8228 | 8295 | 8468 | 8543 | 8590 | 9653 |
| U | 1870 | 1516 | 327 | 1573 | 891 | 4683 | 7693 | 2343 | 2782 | 2586 | 3437 | 3790 | 3545 | 4892 | 5287 | 5330 | 7170 | 7186 | 7331 | 7510 | 7513 | 8460 |
| V | 1828 | 1474 | 290 | 1606 | 912 | 4724 | 7735 | 2364 | 2807 | 2615 | 3473 | 3826 | 3583 | 4933 | 5328 | 5371 | 7211 | 7227 | 7372 | 7551 | 7554 | 8501 |
| W | 2662 | 2278 | 1121 | 631 | 322 | 3881 | 6960 | 2707 | 3041 | 2735 | 2515 | 2872 | 2656 | 4257 | 4667 | 4761 | 6386 | 6447 | 6621 | 6707 | 6745 | 7821 |
| X | 2664 | 2279 | 1136 | 617 | 287 | 3889 | 6974 | 2766 | 3099 | 2793 | 2503 | 2861 | 2651 | 4280 | 4691 | 4790 | 6394 | 6460 | 6637 | 6713 | 6755 | 7842 |
| Y | 2827 | 2445 | 1271 | 503 | 495 | 3709 | 6783 | 2654 | 2964 | 2643 | 2369 | 2725 | 2498 | 4077 | 4487 | 4583 | 6212 | 6270 | 6443 | 6535 | 6570 | 7641 |
| Z | 2856 | 2473 | 1308 | 453 | 492 | 3687 | 6768 | 2713 | 3019 | 2695 | 2328 | 2684 | 2463 | 4074 | 4485 | 4585 | 6191 | 6254 | 6430 | 6512 | 6551 | 7635 |
| AA | 2888 | 2507 | 1324 | 483 | 576 | 3643 | 6712 | 2608 | 2910 | 2583 | 2326 | 2679 | 2445 | 4000 | 4410 | 4504 | 6145 | 6199 | 6370 | 6470 | 6502 | 7565 |
| AB | 2898 | 2516 | 1336 | 463 | 574 | 3635 | 6707 | 2629 | 2929 | 2601 | 2311 | 2665 | 2432 | 3998 | 4409 | 4504 | 6138 | 6194 | 6366 | 6462 | 6495 | 7563 |
| AC | 3043 | 2661 | 1480 | 355 | 697 | 3491 | 6566 | 2658 | 2937 | 2597 | 2171 | 2524 | 2288 | 3868 | 4279 | 4380 | 5995 | 6053 | 6227 | 6318 | 6353 | 7430 |
| AD | 3039 | 2657 | 1478 | 345 | 687 | 3497 | 6574 | 2674 | 2953 | 2613 | 2170 | 2523 | 2290 | 3879 | 4290 | 4392 | 6001 | 6061 | 6235 | 6324 | 6359 | 7440 |
| AE | 3512 | 3134 | 1938 | 468 | 1175 | 3015 | 6083 | 2672 | 2874 | 2497 | 1781 | 2122 | 1854 | 3392 | 3805 | 3915 | 5516 | 5571 | 5744 | 5843 | 5872 | 6950 |
| AF | 3500 | 3119 | 1931 | 403 | 1141 | 3031 | 6109 | 2734 | 2941 | 2566 | 1761 | 2106 | 1848 | 3433 | 3846 | 3961 | 5535 | 5596 | 5773 | 5859 | 5893 | 6986 |
| AG | 6076 | 5704 | 4494 | 2922 | 3747 | 549 | 3500 | 4030 | 3883 | 3491 | 1591 | 1443 | 1224 | 1089 | 1470 | 1729 | 2953 | 2987 | 3170 | 3301 | 3296 | 4432 |
| AH | 6118 | 5745 | 4536 | 2961 | 3787 | 509 | 3460 | 4071 | 3921 | 3530 | 1611 | 1454 | 1245 | 1075 | 1451 | 1715 | 2910 | 2947 | 3131 | 3258 | 3254 | 4397 |
| AI | 6006 | 5630 | 4426 | 2806 | 3644 | 522 | 3613 | 4121 | 4002 | 3603 | 1359 | 1190 | 998 | 1338 | 1708 | 1979 | 3019 | 3097 | 3302 | 3349 | 3379 | 4598 |
| AJ | 6277 | 5897 | 4702 | 3044 | 3890 | 294 | 3409 | 4459 | 4338 | 3940 | 1437 | 1191 | 1105 | 1428 | 1750 | 2056 | 2772 | 2895 | 3126 | 3083 | 3144 | 4462 |
| AK | 6323 | 5944 | 4747 | 3092 | 3938 | 246 | 3360 | 4488 | 4363 | 3966 | 1484 | 1236 | 1154 | 1402 | 1716 | 2025 | 2723 | 2846 | 3077 | 3035 | 3095 | 4414 |
| AL | 9788 | 9425 | 8210 | 6680 | 7502 | 3414 | 384 | 7150 | 6815 | 6528 | 5121 | 4825 | 4807 | 3062 | 2711 | 2804 | 1215 | 831 | 589 | 1293 | 857 | 993 |
| AM | 9834 | 9470 | 8255 | 6719 | 7542 | 3445 | 374 | 7210 | 6878 | 6589 | 5148 | 4850 | 4837 | 3115 | 2767 | 2866 | 1206 | 850 | 634 | 1261 | 836 | 1020 |
| AN | 9915 | 9552 | 8338 | 6804 | 7627 | 3534 | 460 | 7277 | 6942 | 6656 | 5237 | 4939 | 4925 | 3191 | 2840 | 2931 | 1291 | 940 | 716 | 1332 | 915 | 952 |
| AO | 9911 | 9548 | 8333 | 6796 | 7620 | 3522 | 437 | 7283 | 6949 | 6662 | 5224 | 4924 | 4913 | 3191 | 2842 | 2938 | 1265 | 924 | 711 | 1300 | 887 | 984 |
| AP | 5087 | 4887 | 4017 | 3988 | 4149 | 4519 | 6395 | 1454 | 958 | 1159 | 4656 | 4825 | 4440 | 3746 | 3921 | 3707 | 6267 | 6001 | 5955 | 6679 | 6454 | 6564 |
| AQ | 5051 | 4849 | 3977 | 3947 | 4107 | 4495 | 6391 | 1417 | 919 | 1117 | 4622 | 4792 | 4407 | 3731 | 3910 | 3700 | 6256 | 5994 | 5950 | 6669 | 6446 | 6568 |
| AR | 4655 | 4477 | 3688 | 3877 | 3931 | 4804 | 6847 | 1071 | 656 | 1013 | 4758 | 4960 | 4577 | 4128 | 4336 | 4145 | 6679 | 6438 | 6409 | 7089 | 6884 | 7064 |
| AS | 4631 | 4451 | 3652 | 3828 | 3886 | 4757 | 6812 | 1037 | 611 | 962 | 4707 | 4909 | 4526 | 4087 | 4297 | 4109 | 6640 | 6401 | 6374 | 7049 | 6846 | 7037 |
| AT | 4425 | 4151 | 3095 | 2724 | 3007 | 3478 | 5831 | 1197 | 951 | 585 | 3373 | 3567 | 3183 | 2978 | 3263 | 3154 | 5548 | 5379 | 5408 | 5948 | 5799 | 6265 |
| AU | 4293 | 4105 | 3296 | 3513 | 3542 | 4650 | 6848 | 681 | 286 | 690 | 4483 | 4702 | 4322 | 4064 | 4304 | 4142 | 6633 | 6421 | 6414 | 7039 | 6858 | 7141 |

| | WTG | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| A | 11304 | 1170 | 82 | 119 | 150 | 1392 | 1527 | 2366 | 2797 | 3967 | 4382 | 5335 | 7292 | 7843 | 6682 | 2300 | 5509 | 5068 | 4671 | 2191 | 10493 | 1817 |
| B | 11255 | 1165 | 78 | 115 | 145 | 1342 | 1480 | 2319 | 2751 | 3921 | 4334 | 5290 | 7243 | 7794 | 6634 | 2257 | 5460 | 5019 | 4622 | 2148 | 10444 | 1768 |
| C | 11118 | 1151 | 68 | 104 | 134 | 1210 | 1333 | 2172 | 2602 | 3773 | 4188 | 5185 | 7113 | 7657 | 6488 | 2171 | 5325 | 4889 | 4487 | 2001 | 10305 | 1639 |
| D | 11081 | 1147 | 63 | 100 | 130 | 1171 | 1304 | 2143 | 2577 | 3747 | 4158 | 5141 | 7074 | 7621 | 6459 | 2125 | 5287 | 4849 | 4449 | 1983 | 10270 | 1599 |
| E | 11016 | 1140 | 61 | 97 | 127 | 1114 | 1225 | 2064 | 2493 | 3664 | 4080 | 5107 | 7016 | 7556 | 6379 | 2108 | 5224 | 4792 | 4386 | 1893 | 10201 | 1544 |
| F | 10964 | 1135 | 56 | 92 | 122 | 1061 | 1175 | 2014 | 2446 | 3616 | 4030 | 5057 | 6963 | 7503 | 6330 | 2062 | 5171 | 4739 | 4334 | 1852 | 10149 | 1491 |
| G | 10895 | 1127 | 57 | 91 | 120 | 1007 | 1090 | 1930 | 2354 | 3524 | 3945 | 5027 | 6903 | 7435 | 6243 | 2057 | 5105 | 4681 | 4269 | 1750 | 10077 | 1439 |
| H | 10863 | 1124 | 54 | 87 | 117 | 972 | 1061 | 1901 | 2328 | 3498 | 3917 | 4991 | 6869 | 7402 | 6215 | 2021 | 5072 | 4646 | 4235 | 1730 | 10045 | 1403 |
| I | 10867 | 1122 | 79 | 108 | 135 | 1073 | 1038 | 1860 | 2249 | 3409 | 3863 | 5120 | 6907 | 7409 | 6149 | 2217 | 5089 | 4692 | 4259 | 1592 | 10034 | 1493 |
| J | 10868 | 1123 | 76 | 105 | 133 | 1059 | 1039 | 1864 | 2258 | 3421 | 3870 | 5107 | 6905 | 7410 | 6159 | 2195 | 5089 | 4688 | 4258 | 1608 | 10037 | 1482 |
| K | 10466 | 1081 | 80 | 96 | 117 | 803 | 651 | 1453 | 1835 | 2996 | 3450 | 4812 | 6524 | 7011 | 5735 | 2025 | 4697 | 4316 | 3872 | 1188 | 9629 | 1183 |
| L | 10449 | 1080 | 76 | 92 | 113 | 763 | 628 | 1438 | 1828 | 2992 | 3440 | 4778 | 6502 | 6993 | 5728 | 1983 | 4677 | 4292 | 3850 | 1193 | 9614 | 1147 |
| M | 10049 | 1037 | 115 | 117 | 127 | 844 | 452 | 1046 | 1371 | 2517 | 2996 | 4589 | 6152 | 6601 | 5267 | 2038 | 4309 | 3967 | 3498 | 693 | 9199 | 1072 |
| N | 10051 | 1038 | 111 | 112 | 123 | 800 | 414 | 1042 | 1380 | 2532 | 3003 | 4566 | 6146 | 6601 | 5279 | 1997 | 4305 | 3957 | 3492 | 717 | 9203 | 1036 |
| O | 10025 | 1036 | 107 | 107 | 117 | 743 | 356 | 1011 | 1366 | 2524 | 2987 | 4516 | 6112 | 6574 | 5267 | 1938 | 4274 | 3920 | 3458 | 725 | 9180 | 977 |
| P | 10020 | 1036 | 106 | 106 | 115 | 727 | 340 | 1005 | 1365 | 2524 | 2984 | 4503 | 6105 | 6568 | 5266 | 1922 | 4267 | 3912 | 3450 | 730 | 9176 | 962 |
| Q | 9953 | 1029 | 109 | 106 | 114 | 713 | 303 | 938 | 1301 | 2462 | 2919 | 4444 | 6038 | 6502 | 5202 | 1891 | 4200 | 3846 | 3384 | 681 | 9109 | 921 |
| R | 9959 | 1030 | 106 | 103 | 111 | 682 | 277 | 943 | 1315 | 2478 | 2930 | 4432 | 6038 | 6506 | 5215 | 1864 | 4202 | 3843 | 3384 | 706 | 9116 | 897 |
| S | 9880 | 1021 | 119 | 116 | 122 | 791 | 359 | 873 | 1211 | 2366 | 2833 | 4426 | 5978 | 6430 | 5110 | 1938 | 4136 | 3793 | 3325 | 573 | 9032 | 955 |
| T | 9861 | 1019 | 117 | 112 | 118 | 752 | 318 | 850 | 1201 | 2361 | 2821 | 4389 | 5953 | 6410 | 5102 | 1895 | 4113 | 3766 | 3299 | 585 | 9015 | 912 |
| U | 8721 | 912 | 181 | 150 | 126 | 1194 | 1159 | 600 | 885 | 1743 | 1943 | 3094 | 4729 | 5261 | 4218 | 1278 | 2928 | 2512 | 2090 | 1247 | 7914 | 790 |
| V | 8763 | 916 | 177 | 146 | 123 | 1153 | 1119 | 580 | 887 | 1770 | 1979 | 3127 | 4770 | 5302 | 4256 | 1262 | 2969 | 2553 | 2132 | 1224 | 7956 | 750 |
| W | 8014 | 835 | 267 | 240 | 219 | 2039 | 1849 | 1013 | 717 | 814 | 1022 | 3069 | 4155 | 4568 | 3323 | 2184 | 2302 | 2054 | 1537 | 1468 | 7167 | 1691 |
| X | 8030 | 836 | 268 | 241 | 221 | 2049 | 1847 | 1008 | 687 | 772 | 1014 | 3124 | 4184 | 4587 | 3317 | 2224 | 2330 | 2095 | 1574 | 1441 | 7179 | 1709 |
| Y | 7836 | 818 | 283 | 254 | 233 | 2195 | 2019 | 1187 | 894 | 771 | 874 | 2947 | 3977 | 4389 | 3167 | 2267 | 2123 | 1888 | 1366 | 1646 | 6991 | 1834 |
| Z | 7823 | 816 | 287 | 258 | 237 | 2230 | 2044 | 1208 | 892 | 708 | 833 | 2991 | 3980 | 4379 | 3132 | 2323 | 2126 | 1908 | 1382 | 1647 | 6974 | 1875 |

*To be continued on next page...*

# DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

*...continued from previous page*

| | WTG | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSA | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| AA | 7764 | 8113 | 2889 | 2598 | 2376 | 2250 | 2085 | 1255 | 974 | 791 | 833 | 2877 | 3898 | 4315 | 3116 | 2282 | 2044 | 1807 | 1284 | 1725 | 6921 | 1882 |
| AB | 7759 | 8106 | 2901 | 2611 | 2391 | 2262 | 2092 | 1262 | 973 | 770 | 817 | 2891 | 3899 | 4311 | 3103 | 2301 | 2044 | 1813 | 1289 | 1725 | 6915 | 1896 |
| AC | 7620 | 7963 | 3046 | 2755 | 2532 | 2407 | 2236 | 1404 | 1098 | 718 | 680 | 2855 | 3775 | 4175 | 2959 | 2422 | 1921 | 1720 | 1189 | 1852 | 6774 | 2039 |
| AD | 7628 | 7969 | 3043 | 2754 | 2532 | 2404 | 2231 | 1398 | 1087 | 703 | 677 | 2872 | 3787 | 4184 | 2961 | 2428 | 1933 | 1735 | 1204 | 1842 | 6781 | 2038 |
| AE | 7137 | 7483 | 3502 | 3198 | 2961 | 2865 | 2713 | 1885 | 1574 | 874 | 420 | 2643 | 3312 | 3693 | 2528 | 2759 | 1462 | 1350 | 817 | 2329 | 6292 | 2482 |
| AF | 7166 | 7503 | 3496 | 3197 | 2964 | 2858 | 2696 | 1864 | 1538 | 805 | 361 | 2715 | 3359 | 3726 | 2522 | 2783 | 1513 | 1417 | 885 | 2293 | 6316 | 2481 |
| AG | 4560 | 4910 | 6037 | 5710 | 5446 | 5411 | 5292 | 4468 | 4139 | 3131 | 2540 | 3073 | 1285 | 1174 | 1144 | 5041 | 1389 | 1994 | 2189 | 4888 | 3709 | 5005 |
| AH | 4521 | 4868 | 6079 | 5752 | 5488 | 5453 | 5333 | 4509 | 4178 | 3167 | 2577 | 3109 | 1284 | 1142 | 1141 | 5084 | 1432 | 2036 | 2232 | 4927 | 3668 | 5048 |
| AI | 4686 | 4987 | 5981 | 5661 | 5404 | 5349 | 5211 | 4380 | 4030 | 2986 | 2414 | 3222 | 1546 | 1370 | 886 | 5038 | 1430 | 2050 | 2183 | 4773 | 3809 | 4951 |
| AJ | 4494 | 4742 | 6262 | 5948 | 5696 | 5627 | 5473 | 4637 | 4270 | 3191 | 2646 | 3552 | 1703 | 1331 | 764 | 5352 | 1764 | 2386 | 2501 | 5005 | 3591 | 5235 |
| AK | 4444 | 4694 | 6307 | 5993 | 5740 | 5673 | 5520 | 4685 | 4318 | 3240 | 2694 | 3571 | 1684 | 1291 | 800 | 5393 | 1797 | 2418 | 2540 | 5053 | 3542 | 5280 |
| AL | 804 | 1474 | 9721 | 9378 | 9098 | 9111 | 9025 | 8212 | 7896 | 6873 | 6295 | 5899 | 3321 | 2657 | 4313 | 8578 | 4993 | 5483 | 5833 | 8646 | 480 | 8692 |
| AM | 764 | 1404 | 9769 | 9427 | 9147 | 9158 | 9069 | 8255 | 7935 | 6908 | 6332 | 5962 | 3378 | 2704 | 4336 | 8631 | 5041 | 5534 | 5880 | 8685 | 429 | 8740 |
| AN | 678 | 1363 | 9850 | 9507 | 9227 | 9239 | 9152 | 8339 | 8021 | 6995 | 6419 | 6026 | 3449 | 2785 | 4425 | 8707 | 5121 | 5611 | 5961 | 8771 | 484 | 8821 |
| AO | 686 | 1345 | 9847 | 9504 | 9225 | 9235 | 9147 | 8333 | 8013 | 6985 | 6410 | 6033 | 3453 | 2782 | 4410 | 8707 | 5118 | 5611 | 5958 | 8763 | 451 | 8817 |
| AP | 7149 | 7901 | 4848 | 4492 | 4199 | 4489 | 4715 | 4314 | 4426 | 4412 | 3977 | 1012 | 3359 | 4272 | 4886 | 3354 | 2986 | 2497 | 2873 | 4965 | 6667 | 4111 |
| AQ | 7149 | 7898 | 4812 | 4456 | 4162 | 4451 | 4676 | 4273 | 4384 | 4371 | 3937 | 977 | 3346 | 4258 | 4856 | 3319 | 2953 | 2461 | 2834 | 4924 | 6662 | 4072 |
| AR | 7629 | 8359 | 4401 | 4054 | 3767 | 4082 | 4339 | 4009 | 4172 | 4294 | 3920 | 1196 | 3754 | 4653 | 5075 | 2909 | 3135 | 2583 | 2876 | 4656 | 7116 | 3724 |
| AS | 7599 | 8325 | 4380 | 4031 | 3744 | 4055 | 4308 | 3971 | 4130 | 4245 | 3869 | 1148 | 3714 | 4612 | 5024 | 2887 | 3084 | 2531 | 2824 | 4618 | 7081 | 3694 |
| AT | 6718 | 7347 | 4246 | 3878 | 3573 | 3762 | 3886 | 3324 | 3333 | 3149 | 2678 | 353 | 2652 | 3485 | 3684 | 2841 | 1740 | 1197 | 1560 | 3964 | 6090 | 3341 |
| AU | 7671 | 8365 | 4048 | 3695 | 3405 | 3708 | 3955 | 3615 | 3779 | 3927 | 3574 | 1071 | 3707 | 4584 | 4849 | 2554 | 2901 | 2319 | 2564 | 4262 | 7114 | 3343 |

| | WTG | | |
|---|---|---|---|
| NSA | 45 | 46 | 47 |
| A | 1841 | 2266 | 2155 |
| B | 1795 | 2220 | 2107 |
| C | 1692 | 2117 | 1984 |
| D | 1647 | 2072 | 1943 |
| E | 1617 | 2042 | 1894 |
| F | 1567 | 1992 | 1841 |
| G | 1548 | 1970 | 1797 |
| H | 1512 | 1933 | 1761 |
| I | 1683 | 2094 | 1866 |
| J | 1663 | 2076 | 1854 |
| K | 1470 | 1850 | 1562 |
| L | 1428 | 1811 | 1526 |
| M | 1491 | 1797 | 1421 |
| N | 1449 | 1760 | 1388 |
| O | 1390 | 1701 | 1331 |
| P | 1374 | 1685 | 1317 |
| Q | 1347 | 1647 | 1269 |
| R | 1319 | 1622 | 1249 |
| S | 1402 | 1682 | 1288 |
| T | 1360 | 1639 | 1245 |
| U | 1082 | 951 | 596 |
| V | 1050 | 933 | 566 |
| W | 2032 | 1871 | 1547 |
| X | 2060 | 1909 | 1576 |
| Y | 2152 | 1963 | 1665 |
| Z | 2201 | 2018 | 1714 |
| AA | 2186 | 1983 | 1700 |
| AB | 2202 | 2002 | 1716 |
| AC | 2339 | 2127 | 1853 |
| AD | 2341 | 2132 | 1855 |
| AE | 2743 | 2488 | 2263 |
| AF | 2752 | 2507 | 2271 |
| AG | 5178 | 4843 | 4730 |
| AH | 5221 | 4886 | 4773 |
| AI | 5148 | 4826 | 4690 |
| AJ | 5447 | 5133 | 4984 |
| AK | 5490 | 5175 | 5028 |
| AL | 8804 | 8431 | 8387 |
| AM | 8854 | 8483 | 8436 |
| AN | 8933 | 8560 | 8516 |
| AO | 8931 | 8559 | 8514 |
| AP | 3861 | 3449 | 3738 |

*To be continued on next page...*

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## DECIBEL - Main Result

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

*...continued from previous page*

| | WTG | | |
|---|---|---|---|
| NSA | 45 | 46 | 47 |
| AQ | 3824 | 3411 | 3699 |
| AR | 3435 | 3035 | 3358 |
| AS | 3410 | 3008 | 3328 |
| AT | 3234 | 2810 | 2967 |
| AU | 3069 | 2663 | 2975 |

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

| | |
|---|---|
| LWA,ref: | Sound pressure level at WTG |
| K: | Pure tone |
| Dc: | Directivity correction |
| Adiv: | the attenuation due to geometrical divergence |
| Aatm: | the attenuation due to atmospheric absorption |
| Agr: | the attenuation due to ground effect |
| Abar: | the attenuation due to a barrier |
| Amisc: | the attenuation due to miscellaneous other effects |
| Cmet: | Meteorological correction |

## Calculation Results

### Noise sensitive area: A Noise sensitive point: User defined (1)

Wind speed: 10,0 m/s
**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 715 | 726 | **33,08** | 106,0 | 0,00 | 68,22 | - | - | 0,00 | 0,00 | - |
| 10 | 4.700 | 4.701 | **10,47** | 106,0 | 0,00 | 84,44 | - | - | 0,00 | 0,00 | - |
| 11 | 5.850 | 5.851 | **7,65** | 106,0 | 0,00 | 86,35 | - | - | 0,00 | 0,00 | - |
| 12 | 6.210 | 6.211 | **6,88** | 106,0 | 0,00 | 86,86 | - | - | 0,00 | 0,00 | - |
| 13 | 6.021 | 6.022 | **7,28** | 106,0 | 0,00 | 86,59 | - | - | 0,00 | 0,00 | - |
| 14 | 7.469 | 7.470 | **4,53** | 106,0 | 0,00 | 88,47 | - | - | 0,00 | 0,00 | - |
| 15 | 7.860 | 7.861 | **3,89** | 106,0 | 0,00 | 88,91 | - | - | 0,00 | 0,00 | - |
| 16 | 7.889 | 7.889 | **3,85** | 106,0 | 0,00 | 88,94 | - | - | 0,00 | 0,00 | - |
| 17 | 9.737 | 9.738 | **1,22** | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 18 | 9.766 | 9.767 | **1,18** | 106,0 | 0,00 | 90,79 | - | - | 0,00 | 0,00 | - |
| 19 | 9.913 | 9.914 | **1,00** | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 2 | 1.093 | 1.100 | **27,95** | 106,0 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 20 | 10.068 | 10.069 | **0,81** | 106,0 | 0,00 | 91,06 | - | - | 0,00 | 0,00 | - |
| 21 | 10.086 | 10.087 | **0,78** | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| 22 | 11.032 | 11.033 | **-0,32** | 106,0 | 0,00 | 91,85 | - | - | 0,00 | 0,00 | - |
| 23 | 11.304 | 11.305 | **-0,62** | 106,0 | 0,00 | 92,07 | - | - | 0,00 | 0,00 | - |
| 24 | 11.700 | 11.701 | **-1,04** | 106,0 | 0,00 | 92,36 | - | - | 0,00 | 0,00 | - |
| 25 | 828 | 832 | **30,62** | 104,5 | 0,00 | 69,40 | - | - | 0,00 | 0,00 | - |
| 26 | 1.196 | 1.199 | **26,45** | 104,5 | 0,00 | 72,58 | - | - | 0,00 | 0,00 | - |
| 27 | 1.501 | 1.503 | **23,79** | 104,5 | 0,00 | 74,54 | - | - | 0,00 | 0,00 | - |
| 28 | 1.392 | 1.394 | **24,68** | 104,5 | 0,00 | 73,88 | - | - | 0,00 | 0,00 | - |
| 29 | 1.527 | 1.529 | **23,58** | 104,5 | 0,00 | 74,69 | - | - | 0,00 | 0,00 | - |
| 3 | 2.297 | 2.300 | **18,36** | 106,0 | 0,00 | 78,24 | - | - | 0,00 | 0,00 | - |
| 30 | 2.366 | 2.368 | **18,21** | 104,5 | 0,00 | 78,49 | - | - | 0,00 | 0,00 | - |
| 31 | 2.797 | 2.798 | **16,21** | 104,5 | 0,00 | 79,94 | - | - | 0,00 | 0,00 | - |
| 32 | 3.967 | 3.968 | **12,04** | 104,5 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 33 | 4.382 | 4.383 | **10,84** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 34 | 5.335 | 5.336 | **8,50** | 104,5 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 35 | 7.292 | 7.293 | **4,84** | 104,5 | 0,00 | 88,26 | - | - | 0,00 | 0,00 | - |
| 36 | 7.843 | 7.844 | **4,01** | 104,5 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 37 | 6.682 | 6.684 | **6,82** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 38 | 2.300 | 2.305 | **20,05** | 106,0 | 0,00 | 78,25 | - | - | 0,00 | 0,00 | - |
| 39 | 5.509 | 5.511 | **9,03** | 106,0 | 0,00 | 85,83 | - | - | 0,00 | 0,00 | - |
| 4 | 3.980 | 3.983 | **11,10** | 106,0 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 40 | 5.068 | 5.070 | **10,01** | 106,0 | 0,00 | 85,10 | - | - | 0,00 | 0,00 | - |
| 41 | 4.671 | 4.673 | **10,96** | 106,0 | 0,00 | 84,39 | - | - | 0,00 | 0,00 | - |
| 42 | 2.191 | 2.196 | **20,66** | 106,0 | 0,00 | 77,83 | - | - | 0,00 | 0,00 | - |
| 43 | 10.493 | 10.494 | **0,71** | 104,5 | 0,00 | 91,42 | - | - | 0,00 | 0,00 | - |
| 44 | 1.817 | 1.823 | **21,46** | 104,5 | 0,00 | 76,22 | - | - | 0,00 | 0,00 | - |
| 45 | 1.841 | 1.847 | **21,30** | 104,5 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 46 | 2.266 | 2.271 | **18,73** | 104,5 | 0,00 | 78,12 | - | - | 0,00 | 0,00 | - |
| 47 | 2.155 | 2.160 | **19,36** | 104,5 | 0,00 | 77,69 | - | - | 0,00 | 0,00 | - |
| 5 | 3.133 | 3.136 | **14,25** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 7.239 | 7.240 | **4,47** | 106,0 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 7 | 10.274 | 10.275 | **0,82** | 106,0 | 0,00 | 91,24 | - | - | 0,00 | 0,00 | - |
| 8 | 4.211 | 4.212 | **11,89** | 106,0 | 0,00 | 83,49 | - | - | 0,00 | 0,00 | - |
| 9 | 4.716 | 4.717 | **10,42** | 106,0 | 0,00 | 84,47 | - | - | 0,00 | 0,00 | - |
| Sum | | | **37,80** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: B Noise sensitive point: User defined (2)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 666 | 678 | **33,90** | 106,0 | 0,00 | 67,62 | - | - | 0,00 | 0,00 | - |
| 10 | 4.655 | 4.656 | **10,59** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 11 | 5.803 | 5.804 | **7,75** | 106,0 | 0,00 | 86,28 | - | - | 0,00 | 0,00 | - |
| 12 | 6.163 | 6.164 | **6,98** | 106,0 | 0,00 | 86,80 | - | - | 0,00 | 0,00 | - |
| 13 | 5.973 | 5.974 | **7,38** | 106,0 | 0,00 | 86,53 | - | - | 0,00 | 0,00 | - |
| 14 | 7.420 | 7.421 | **4,62** | 106,0 | 0,00 | 88,41 | - | - | 0,00 | 0,00 | - |
| 15 | 7.811 | 7.812 | **3,97** | 106,0 | 0,00 | 88,86 | - | - | 0,00 | 0,00 | - |
| 16 | 7.840 | 7.840 | **3,92** | 106,0 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 17 | 9.688 | 9.689 | **1,28** | 106,0 | 0,00 | 90,73 | - | - | 0,00 | 0,00 | - |
| 18 | 9.717 | 9.718 | **1,24** | 106,0 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 19 | 9.864 | 9.865 | **1,06** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 2 | 1.044 | 1.052 | **28,51** | 106,0 | 0,00 | 71,44 | - | - | 0,00 | 0,00 | - |
| 20 | 10.019 | 10.020 | **0,87** | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 21 | 10.038 | 10.038 | **0,84** | 106,0 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 22 | 10.983 | 10.984 | **-0,26** | 106,0 | 0,00 | 91,82 | - | - | 0,00 | 0,00 | - |
| 23 | 11.255 | 11.255 | **-0,56** | 106,0 | 0,00 | 92,03 | - | - | 0,00 | 0,00 | - |
| 24 | 11.651 | 11.652 | **-0,99** | 106,0 | 0,00 | 92,33 | - | - | 0,00 | 0,00 | - |
| 25 | 781 | 785 | **31,25** | 104,5 | 0,00 | 68,90 | - | - | 0,00 | 0,00 | - |
| 26 | 1.150 | 1.152 | **26,91** | 104,5 | 0,00 | 72,23 | - | - | 0,00 | 0,00 | - |
| 27 | 1.454 | 1.456 | **24,16** | 104,5 | 0,00 | 74,27 | - | - | 0,00 | 0,00 | - |
| 28 | 1.342 | 1.345 | **25,11** | 104,5 | 0,00 | 73,57 | - | - | 0,00 | 0,00 | - |
| 29 | 1.480 | 1.482 | **23,96** | 104,5 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 3 | 2.248 | 2.251 | **18,65** | 106,0 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 30 | 2.319 | 2.320 | **18,46** | 104,5 | 0,00 | 78,31 | - | - | 0,00 | 0,00 | - |
| 31 | 2.751 | 2.752 | **16,41** | 104,5 | 0,00 | 79,79 | - | - | 0,00 | 0,00 | - |
| 32 | 3.921 | 3.922 | **12,18** | 104,5 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 33 | 4.334 | 4.335 | **10,97** | 104,5 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 34 | 5.290 | 5.290 | **8,60** | 104,5 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 35 | 7.243 | 7.244 | **4,92** | 104,5 | 0,00 | 88,20 | - | - | 0,00 | 0,00 | - |
| 36 | 7.794 | 7.795 | **4,08** | 104,5 | 0,00 | 88,84 | - | - | 0,00 | 0,00 | - |
| 37 | 6.634 | 6.636 | **6,90** | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 38 | 2.257 | 2.262 | **20,29** | 106,0 | 0,00 | 78,09 | - | - | 0,00 | 0,00 | - |
| 39 | 5.460 | 5.462 | **9,14** | 106,0 | 0,00 | 85,75 | - | - | 0,00 | 0,00 | - |
| 4 | 3.933 | 3.935 | **11,25** | 106,0 | 0,00 | 82,90 | - | - | 0,00 | 0,00 | - |
| 40 | 5.019 | 5.021 | **10,12** | 106,0 | 0,00 | 85,02 | - | - | 0,00 | 0,00 | - |
| 41 | 4.622 | 4.624 | **11,08** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 42 | 2.148 | 2.153 | **20,90** | 106,0 | 0,00 | 77,66 | - | - | 0,00 | 0,00 | - |
| 43 | 10.444 | 10.445 | **0,76** | 104,5 | 0,00 | 91,38 | - | - | 0,00 | 0,00 | - |
| 44 | 1.768 | 1.774 | **21,79** | 104,5 | 0,00 | 75,98 | - | - | 0,00 | 0,00 | - |
| 45 | 1.795 | 1.801 | **21,61** | 104,5 | 0,00 | 76,11 | - | - | 0,00 | 0,00 | - |
| 46 | 2.220 | 2.225 | **18,99** | 104,5 | 0,00 | 77,95 | - | - | 0,00 | 0,00 | - |
| 47 | 2.107 | 2.112 | **19,64** | 104,5 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 5 | 3.086 | 3.088 | **14,45** | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 6 | 7.190 | 7.192 | **4,54** | 106,0 | 0,00 | 88,14 | - | - | 0,00 | 0,00 | - |
| 7 | 10.225 | 10.226 | **0,87** | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| 8 | 4.168 | 4.169 | **12,02** | 106,0 | 0,00 | 83,40 | - | - | 0,00 | 0,00 | - |
| 9 | 4.673 | 4.674 | **10,54** | 106,0 | 0,00 | 84,39 | - | - | 0,00 | 0,00 | - |
| Sum | | | **38,39** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: C Noise sensitive point: User defined (4)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 527 | 542 | **36,51** | 106,0 | 0,00 | 65,69 | - | - | 0,00 | 0,00 | - |
| 10 | 4.556 | 4.558 | **10,87** | 106,0 | 0,00 | 84,17 | - | - | 0,00 | 0,00 | - |
| 11 | 5.656 | 5.657 | **8,08** | 106,0 | 0,00 | 86,05 | - | - | 0,00 | 0,00 | - |
| 12 | 6.016 | 6.017 | **7,29** | 106,0 | 0,00 | 86,59 | - | - | 0,00 | 0,00 | - |
| 13 | 5.827 | 5.828 | **7,70** | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 14 | 7.287 | 7.288 | **4,85** | 106,0 | 0,00 | 88,25 | - | - | 0,00 | 0,00 | - |
| 15 | 7.679 | 7.680 | **4,18** | 106,0 | 0,00 | 88,71 | - | - | 0,00 | 0,00 | - |
| 16 | 7.710 | 7.711 | **4,13** | 106,0 | 0,00 | 88,74 | - | - | 0,00 | 0,00 | - |
| 17 | 9.547 | 9.547 | **1,46** | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 18 | 9.578 | 9.579 | **1,42** | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 19 | 9.727 | 9.728 | **1,23** | 106,0 | 0,00 | 90,76 | - | - | 0,00 | 0,00 | - |
| 2 | 900 | 909 | **30,33** | 106,0 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 20 | 9.877 | 9.877 | **1,04** | 106,0 | 0,00 | 90,89 | - | - | 0,00 | 0,00 | - |
| 21 | 9.897 | 9.898 | **1,02** | 106,0 | 0,00 | 90,91 | - | - | 0,00 | 0,00 | - |
| 22 | 10.851 | 10.852 | **-0,12** | 106,0 | 0,00 | 91,71 | - | - | 0,00 | 0,00 | - |
| 23 | 11.118 | 11.119 | **-0,41** | 106,0 | 0,00 | 91,92 | - | - | 0,00 | 0,00 | - |
| 24 | 11.510 | 11.511 | **-0,84** | 106,0 | 0,00 | 92,22 | - | - | 0,00 | 0,00 | - |
| 25 | 680 | 685 | **32,77** | 104,5 | 0,00 | 67,71 | - | - | 0,00 | 0,00 | - |
| 26 | 1.045 | 1.048 | **28,00** | 104,5 | 0,00 | 71,41 | - | - | 0,00 | 0,00 | - |
| 27 | 1.349 | 1.351 | **25,05** | 104,5 | 0,00 | 73,61 | - | - | 0,00 | 0,00 | - |
| 28 | 1.210 | 1.213 | **26,32** | 104,5 | 0,00 | 72,67 | - | - | 0,00 | 0,00 | - |
| 29 | 1.333 | 1.335 | **25,19** | 104,5 | 0,00 | 73,51 | - | - | 0,00 | 0,00 | - |
| 3 | 2.108 | 2.112 | **19,50** | 106,0 | 0,00 | 77,49 | - | - | 0,00 | 0,00 | - |
| 30 | 2.172 | 2.174 | **19,28** | 104,5 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 31 | 2.602 | 2.604 | **17,06** | 104,5 | 0,00 | 79,31 | - | - | 0,00 | 0,00 | - |
| 32 | 3.773 | 3.774 | **12,64** | 104,5 | 0,00 | 82,54 | - | - | 0,00 | 0,00 | - |
| 33 | 4.188 | 4.189 | **11,38** | 104,5 | 0,00 | 83,44 | - | - | 0,00 | 0,00 | - |
| 34 | 5.185 | 5.186 | **8,83** | 104,5 | 0,00 | 85,30 | - | - | 0,00 | 0,00 | - |
| 35 | 7.113 | 7.113 | **5,13** | 104,5 | 0,00 | 88,04 | - | - | 0,00 | 0,00 | - |
| 36 | 7.657 | 7.658 | **4,28** | 104,5 | 0,00 | 88,68 | - | - | 0,00 | 0,00 | - |
| 37 | 6.488 | 6.490 | **7,16** | 106,0 | 0,00 | 87,24 | - | - | 0,00 | 0,00 | - |
| 38 | 2.171 | 2.176 | **20,77** | 106,0 | 0,00 | 77,75 | - | - | 0,00 | 0,00 | - |
| 39 | 5.325 | 5.327 | **9,43** | 106,0 | 0,00 | 85,53 | - | - | 0,00 | 0,00 | - |
| 4 | 3.786 | 3.789 | **11,74** | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 40 | 4.889 | 4.891 | **10,43** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 41 | 4.487 | 4.489 | **11,44** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 42 | 2.001 | 2.006 | **21,78** | 106,0 | 0,00 | 77,05 | - | - | 0,00 | 0,00 | - |
| 43 | 10.305 | 10.305 | **0,91** | 104,5 | 0,00 | 91,26 | - | - | 0,00 | 0,00 | - |
| 44 | 1.639 | 1.645 | **22,71** | 104,5 | 0,00 | 75,32 | - | - | 0,00 | 0,00 | - |
| 45 | 1.692 | 1.698 | **22,32** | 104,5 | 0,00 | 75,60 | - | - | 0,00 | 0,00 | - |
| 46 | 2.117 | 2.122 | **19,58** | 104,5 | 0,00 | 77,53 | - | - | 0,00 | 0,00 | - |
| 47 | 1.984 | 1.989 | **20,38** | 104,5 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 5 | 2.939 | 2.941 | **15,10** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 6 | 7.048 | 7.049 | **4,75** | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 7 | 10.087 | 10.088 | **1,01** | 106,0 | 0,00 | 91,08 | - | - | 0,00 | 0,00 | - |
| 8 | 4.079 | 4.081 | **12,29** | 106,0 | 0,00 | 83,21 | - | - | 0,00 | 0,00 | - |
| 9 | 4.584 | 4.586 | **10,79** | 106,0 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,18** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: D Noise sensitive point: User defined (5)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 491 | 507 | **37,28** | 106,0 | 0,00 | 65,11 | - | - | 0,00 | 0,00 | - |
| 10 | 4.511 | 4.513 | **11,00** | 106,0 | 0,00 | 84,09 | - | - | 0,00 | 0,00 | - |
| 11 | 5.628 | 5.629 | **8,14** | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 12 | 5.988 | 5.989 | **7,35** | 106,0 | 0,00 | 86,55 | - | - | 0,00 | 0,00 | - |
| 13 | 5.797 | 5.798 | **7,76** | 106,0 | 0,00 | 86,27 | - | - | 0,00 | 0,00 | - |
| 14 | 7.249 | 7.250 | **4,91** | 106,0 | 0,00 | 88,21 | - | - | 0,00 | 0,00 | - |
| 15 | 7.640 | 7.641 | **4,25** | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 16 | 7.671 | 7.672 | **4,20** | 106,0 | 0,00 | 88,70 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 9.513 | 9.514 | **1,51** | 106,0 | 0,00 | 90,57 | - | - | 0,00 | 0,00 | - |
| 18 | 9.542 | 9.543 | **1,47** | 106,0 | 0,00 | 90,59 | - | - | 0,00 | 0,00 | - |
| 19 | 9.691 | 9.691 | **1,28** | 106,0 | 0,00 | 90,73 | - | - | 0,00 | 0,00 | - |
| 2 | 868 | 878 | **30,77** | 106,0 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 20 | 9.843 | 9.844 | **1,08** | 106,0 | 0,00 | 90,86 | - | - | 0,00 | 0,00 | - |
| 21 | 9.862 | 9.863 | **1,06** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 22 | 10.813 | 10.813 | **-0,07** | 106,0 | 0,00 | 91,68 | - | - | 0,00 | 0,00 | - |
| 23 | 11.081 | 11.082 | **-0,37** | 106,0 | 0,00 | 91,89 | - | - | 0,00 | 0,00 | - |
| 24 | 11.476 | 11.476 | **-0,80** | 106,0 | 0,00 | 92,20 | - | - | 0,00 | 0,00 | - |
| 25 | 635 | 640 | **33,51** | 104,5 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 26 | 1.001 | 1.004 | **28,49** | 104,5 | 0,00 | 71,03 | - | - | 0,00 | 0,00 | - |
| 27 | 1.305 | 1.307 | **25,44** | 104,5 | 0,00 | 73,32 | - | - | 0,00 | 0,00 | - |
| 28 | 1.171 | 1.174 | **26,69** | 104,5 | 0,00 | 72,39 | - | - | 0,00 | 0,00 | - |
| 29 | 1.304 | 1.306 | **25,45** | 104,5 | 0,00 | 73,32 | - | - | 0,00 | 0,00 | - |
| 3 | 2.073 | 2.077 | **19,72** | 106,0 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 30 | 2.143 | 2.144 | **19,45** | 104,5 | 0,00 | 77,63 | - | - | 0,00 | 0,00 | - |
| 31 | 2.577 | 2.578 | **17,18** | 104,5 | 0,00 | 79,23 | - | - | 0,00 | 0,00 | - |
| 32 | 3.747 | 3.748 | **12,72** | 104,5 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 33 | 4.158 | 4.159 | **11,47** | 104,5 | 0,00 | 83,38 | - | - | 0,00 | 0,00 | - |
| 34 | 5.141 | 5.142 | **8,94** | 104,5 | 0,00 | 85,22 | - | - | 0,00 | 0,00 | - |
| 35 | 7.074 | 7.074 | **5,20** | 104,5 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 36 | 7.621 | 7.621 | **4,34** | 104,5 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 37 | 6.459 | 6.461 | **7,21** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 38 | 2.125 | 2.130 | **21,04** | 106,0 | 0,00 | 77,57 | - | - | 0,00 | 0,00 | - |
| 39 | 5.287 | 5.290 | **9,51** | 106,0 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 4 | 3.757 | 3.759 | **11,85** | 106,0 | 0,00 | 82,50 | - | - | 0,00 | 0,00 | - |
| 40 | 4.849 | 4.852 | **10,52** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 41 | 4.449 | 4.452 | **11,55** | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 42 | 1.983 | 1.989 | **21,89** | 106,0 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 43 | 10.270 | 10.270 | **0,95** | 104,5 | 0,00 | 91,23 | - | - | 0,00 | 0,00 | - |
| 44 | 1.599 | 1.605 | **23,00** | 104,5 | 0,00 | 75,11 | - | - | 0,00 | 0,00 | - |
| 45 | 1.647 | 1.653 | **22,64** | 104,5 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 46 | 2.072 | 2.077 | **19,84** | 104,5 | 0,00 | 77,35 | - | - | 0,00 | 0,00 | - |
| 47 | 1.943 | 1.948 | **20,64** | 104,5 | 0,00 | 76,79 | - | - | 0,00 | 0,00 | - |
| 5 | 2.910 | 2.913 | **15,23** | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 6 | 7.014 | 7.016 | **4,80** | 106,0 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 7 | 10.051 | 10.052 | **1,05** | 106,0 | 0,00 | 91,05 | - | - | 0,00 | 0,00 | - |
| 8 | 4.034 | 4.035 | **12,44** | 106,0 | 0,00 | 83,12 | - | - | 0,00 | 0,00 | - |
| 9 | 4.539 | 4.540 | **10,92** | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,79** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: E Noise sensitive point: User defined (6)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 428 | 446 | **38,73** | 106,0 | 0,00 | 64,00 | - | - | 0,00 | 0,00 | - |
| 10 | 4.482 | 4.484 | **11,08** | 106,0 | 0,00 | 84,03 | - | - | 0,00 | 0,00 | - |
| 11 | 5.547 | 5.548 | **8,33** | 106,0 | 0,00 | 85,88 | - | - | 0,00 | 0,00 | - |
| 12 | 5.907 | 5.908 | **7,52** | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 13 | 5.719 | 5.720 | **7,94** | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 14 | 7.187 | 7.188 | **5,02** | 106,0 | 0,00 | 88,13 | - | - | 0,00 | 0,00 | - |
| 15 | 7.580 | 7.581 | **4,35** | 106,0 | 0,00 | 88,59 | - | - | 0,00 | 0,00 | - |
| 16 | 7.614 | 7.615 | **4,29** | 106,0 | 0,00 | 88,63 | - | - | 0,00 | 0,00 | - |
| 17 | 9.442 | 9.442 | **1,60** | 106,0 | 0,00 | 90,50 | - | - | 0,00 | 0,00 | - |
| 18 | 9.475 | 9.475 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 19 | 9.625 | 9.626 | **1,36** | 106,0 | 0,00 | 90,67 | - | - | 0,00 | 0,00 | - |
| 2 | 794 | 804 | **31,84** | 106,0 | 0,00 | 69,11 | - | - | 0,00 | 0,00 | - |
| 20 | 9.771 | 9.771 | **1,18** | 106,0 | 0,00 | 90,80 | - | - | 0,00 | 0,00 | - |
| 21 | 9.792 | 9.793 | **1,15** | 106,0 | 0,00 | 90,82 | - | - | 0,00 | 0,00 | - |
| 22 | 10.753 | 10.754 | **0,00** | 106,0 | 0,00 | 91,63 | - | - | 0,00 | 0,00 | - |
| 23 | 11.016 | 11.017 | **-0,30** | 106,0 | 0,00 | 91,84 | - | - | 0,00 | 0,00 | - |
| 24 | 11.406 | 11.406 | **-0,73** | 106,0 | 0,00 | 92,14 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 614 | 619 | **33,86** | 104,5 | 0,00 | 66,84 | - | - | 0,00 | 0,00 | - |
| 26 | 973 | 976 | **28,81** | 104,5 | 0,00 | 70,79 | - | - | 0,00 | 0,00 | - |
| 27 | 1.274 | 1.276 | **25,72** | 104,5 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 28 | 1.114 | 1.116 | **27,28** | 104,5 | 0,00 | 71,95 | - | - | 0,00 | 0,00 | - |
| 29 | 1.225 | 1.227 | **26,18** | 104,5 | 0,00 | 72,78 | - | - | 0,00 | 0,00 | - |
| 3 | 2.004 | 2.008 | **20,16** | 106,0 | 0,00 | 77,06 | - | - | 0,00 | 0,00 | - |
| 30 | 2.064 | 2.066 | **19,91** | 104,5 | 0,00 | 77,30 | - | - | 0,00 | 0,00 | - |
| 31 | 2.493 | 2.495 | **17,56** | 104,5 | 0,00 | 78,94 | - | - | 0,00 | 0,00 | - |
| 32 | 3.664 | 3.665 | **12,99** | 104,5 | 0,00 | 82,28 | - | - | 0,00 | 0,00 | - |
| 33 | 4.080 | 4.081 | **11,70** | 104,5 | 0,00 | 83,22 | - | - | 0,00 | 0,00 | - |
| 34 | 5.107 | 5.108 | **9,01** | 104,5 | 0,00 | 85,17 | - | - | 0,00 | 0,00 | - |
| 35 | 7.016 | 7.016 | **5,29** | 104,5 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 36 | 7.556 | 7.556 | **4,44** | 104,5 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 37 | 6.379 | 6.381 | **7,35** | 106,0 | 0,00 | 87,10 | - | - | 0,00 | 0,00 | - |
| 38 | 2.108 | 2.114 | **21,13** | 106,0 | 0,00 | 77,50 | - | - | 0,00 | 0,00 | - |
| 39 | 5.224 | 5.226 | **9,65** | 106,0 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 4 | 3.678 | 3.681 | **12,13** | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| 40 | 4.792 | 4.794 | **10,66** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 41 | 4.386 | 4.389 | **11,73** | 106,0 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 42 | 1.893 | 1.899 | **22,46** | 106,0 | 0,00 | 76,57 | - | - | 0,00 | 0,00 | - |
| 43 | 10.201 | 10.202 | **1,02** | 104,5 | 0,00 | 91,17 | - | - | 0,00 | 0,00 | - |
| 44 | 1.544 | 1.550 | **23,42** | 104,5 | 0,00 | 74,81 | - | - | 0,00 | 0,00 | - |
| 45 | 1.617 | 1.623 | **22,87** | 104,5 | 0,00 | 75,21 | - | - | 0,00 | 0,00 | - |
| 46 | 2.042 | 2.047 | **20,03** | 104,5 | 0,00 | 77,22 | - | - | 0,00 | 0,00 | - |
| 47 | 1.894 | 1.899 | **20,95** | 104,5 | 0,00 | 76,57 | - | - | 0,00 | 0,00 | - |
| 5 | 2.830 | 2.833 | **15,60** | 106,0 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 6 | 6.942 | 6.943 | **4,91** | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| 7 | 9.984 | 9.985 | **1,12** | 106,0 | 0,00 | 90,99 | - | - | 0,00 | 0,00 | - |
| 8 | 4.014 | 4.015 | **12,50** | 106,0 | 0,00 | 83,07 | - | - | 0,00 | 0,00 | - |
| 9 | 4.518 | 4.519 | **10,98** | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,74** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: F Noise sensitive point: User defined (7)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 375 | 396 | **40,05** | 106,0 | 0,00 | 62,96 | - | - | 0,00 | 0,00 | - |
| 10 | 4.433 | 4.434 | **11,22** | 106,0 | 0,00 | 83,94 | - | - | 0,00 | 0,00 | - |
| 11 | 5.498 | 5.500 | **8,44** | 106,0 | 0,00 | 85,81 | - | - | 0,00 | 0,00 | - |
| 12 | 5.858 | 5.860 | **7,63** | 106,0 | 0,00 | 86,36 | - | - | 0,00 | 0,00 | - |
| 13 | 5.669 | 5.670 | **8,05** | 106,0 | 0,00 | 86,07 | - | - | 0,00 | 0,00 | - |
| 14 | 7.134 | 7.135 | **5,11** | 106,0 | 0,00 | 88,07 | - | - | 0,00 | 0,00 | - |
| 15 | 7.527 | 7.528 | **4,44** | 106,0 | 0,00 | 88,53 | - | - | 0,00 | 0,00 | - |
| 16 | 7.561 | 7.562 | **4,38** | 106,0 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 17 | 9.390 | 9.391 | **1,67** | 106,0 | 0,00 | 90,45 | - | - | 0,00 | 0,00 | - |
| 18 | 9.422 | 9.423 | **1,63** | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| 19 | 9.573 | 9.573 | **1,43** | 106,0 | 0,00 | 90,62 | - | - | 0,00 | 0,00 | - |
| 2 | 743 | 754 | **32,63** | 106,0 | 0,00 | 68,54 | - | - | 0,00 | 0,00 | - |
| 20 | 9.719 | 9.720 | **1,24** | 106,0 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 21 | 9.740 | 9.741 | **1,21** | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 22 | 10.700 | 10.701 | **0,06** | 106,0 | 0,00 | 91,59 | - | - | 0,00 | 0,00 | - |
| 23 | 10.964 | 10.964 | **-0,24** | 106,0 | 0,00 | 91,80 | - | - | 0,00 | 0,00 | - |
| 24 | 11.354 | 11.354 | **-0,67** | 106,0 | 0,00 | 92,10 | - | - | 0,00 | 0,00 | - |
| 25 | 569 | 574 | **34,68** | 104,5 | 0,00 | 66,18 | - | - | 0,00 | 0,00 | - |
| 26 | 924 | 927 | **29,39** | 104,5 | 0,00 | 70,34 | - | - | 0,00 | 0,00 | - |
| 27 | 1.224 | 1.227 | **26,18** | 104,5 | 0,00 | 72,78 | - | - | 0,00 | 0,00 | - |
| 28 | 1.061 | 1.063 | **27,83** | 104,5 | 0,00 | 71,53 | - | - | 0,00 | 0,00 | - |
| 29 | 1.175 | 1.178 | **26,66** | 104,5 | 0,00 | 72,42 | - | - | 0,00 | 0,00 | - |
| 3 | 1.952 | 1.956 | **20,51** | 106,0 | 0,00 | 76,83 | - | - | 0,00 | 0,00 | - |
| 30 | 2.014 | 2.016 | **20,22** | 104,5 | 0,00 | 77,09 | - | - | 0,00 | 0,00 | - |
| 31 | 2.446 | 2.447 | **17,79** | 104,5 | 0,00 | 78,77 | - | - | 0,00 | 0,00 | - |
| 32 | 3.616 | 3.617 | **13,15** | 104,5 | 0,00 | 82,17 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 4.030 | 4.031 | **11,85** | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 34 | 5.057 | 5.057 | **9,13** | 104,5 | 0,00 | 85,08 | - | - | 0,00 | 0,00 | - |
| 35 | 6.963 | 6.963 | **5,38** | 104,5 | 0,00 | 87,86 | - | - | 0,00 | 0,00 | - |
| 36 | 7.503 | 7.504 | **4,52** | 104,5 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 37 | 6.330 | 6.332 | **7,44** | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 38 | 2.062 | 2.067 | **21,41** | 106,0 | 0,00 | 77,31 | - | - | 0,00 | 0,00 | - |
| 39 | 5.171 | 5.173 | **9,77** | 106,0 | 0,00 | 85,28 | - | - | 0,00 | 0,00 | - |
| 4 | 3.628 | 3.631 | **12,30** | 106,0 | 0,00 | 82,20 | - | - | 0,00 | 0,00 | - |
| 40 | 4.739 | 4.741 | **10,79** | 106,0 | 0,00 | 84,52 | - | - | 0,00 | 0,00 | - |
| 41 | 4.334 | 4.336 | **11,89** | 106,0 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 42 | 1.852 | 1.857 | **22,73** | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 43 | 10.149 | 10.149 | **1,08** | 104,5 | 0,00 | 91,13 | - | - | 0,00 | 0,00 | - |
| 44 | 1.491 | 1.497 | **23,83** | 104,5 | 0,00 | 74,51 | - | - | 0,00 | 0,00 | - |
| 45 | 1.567 | 1.574 | **23,24** | 104,5 | 0,00 | 74,94 | - | - | 0,00 | 0,00 | - |
| 46 | 1.992 | 1.997 | **20,34** | 104,5 | 0,00 | 77,01 | - | - | 0,00 | 0,00 | - |
| 47 | 1.841 | 1.847 | **21,30** | 104,5 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 5 | 2.781 | 2.784 | **15,83** | 106,0 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 6 | 6.890 | 6.892 | **4,99** | 106,0 | 0,00 | 87,77 | - | - | 0,00 | 0,00 | - |
| 7 | 9.931 | 9.932 | **1,17** | 106,0 | 0,00 | 90,94 | - | - | 0,00 | 0,00 | - |
| 8 | 3.966 | 3.967 | **12,66** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 9 | 4.470 | 4.471 | **11,11** | 106,0 | 0,00 | 84,01 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,74** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: G Noise sensitive point: User defined (8)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 327 | 351 | **41,38** | 106,0 | 0,00 | 61,90 | - | - | 0,00 | 0,00 | - |
| 10 | 4.409 | 4.410 | **11,29** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 11 | 5.409 | 5.411 | **8,65** | 106,0 | 0,00 | 85,67 | - | - | 0,00 | 0,00 | - |
| 12 | 5.770 | 5.771 | **7,82** | 106,0 | 0,00 | 86,22 | - | - | 0,00 | 0,00 | - |
| 13 | 5.584 | 5.585 | **8,25** | 106,0 | 0,00 | 85,94 | - | - | 0,00 | 0,00 | - |
| 14 | 7.070 | 7.071 | **5,23** | 106,0 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 15 | 7.465 | 7.466 | **4,54** | 106,0 | 0,00 | 88,46 | - | - | 0,00 | 0,00 | - |
| 16 | 7.503 | 7.503 | **4,48** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 17 | 9.314 | 9.314 | **1,77** | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 18 | 9.351 | 9.351 | **1,72** | 106,0 | 0,00 | 90,42 | - | - | 0,00 | 0,00 | - |
| 19 | 9.504 | 9.504 | **1,52** | 106,0 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 2 | 667 | 679 | **33,88** | 106,0 | 0,00 | 67,64 | - | - | 0,00 | 0,00 | - |
| 20 | 9.641 | 9.642 | **1,34** | 106,0 | 0,00 | 90,68 | - | - | 0,00 | 0,00 | - |
| 21 | 9.666 | 9.666 | **1,31** | 106,0 | 0,00 | 90,71 | - | - | 0,00 | 0,00 | - |
| 22 | 10.638 | 10.639 | **0,13** | 106,0 | 0,00 | 91,54 | - | - | 0,00 | 0,00 | - |
| 23 | 10.895 | 10.896 | **-0,17** | 106,0 | 0,00 | 91,75 | - | - | 0,00 | 0,00 | - |
| 24 | 11.278 | 11.279 | **-0,59** | 106,0 | 0,00 | 92,05 | - | - | 0,00 | 0,00 | - |
| 25 | 575 | 580 | **34,56** | 104,5 | 0,00 | 66,27 | - | - | 0,00 | 0,00 | - |
| 26 | 913 | 916 | **29,53** | 104,5 | 0,00 | 70,24 | - | - | 0,00 | 0,00 | - |
| 27 | 1.206 | 1.209 | **26,35** | 104,5 | 0,00 | 72,65 | - | - | 0,00 | 0,00 | - |
| 28 | 1.007 | 1.010 | **28,42** | 104,5 | 0,00 | 71,09 | - | - | 0,00 | 0,00 | - |
| 29 | 1.090 | 1.093 | **27,52** | 104,5 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 3 | 1.881 | 1.886 | **20,99** | 106,0 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 30 | 1.930 | 1.931 | **20,75** | 104,5 | 0,00 | 76,72 | - | - | 0,00 | 0,00 | - |
| 31 | 2.354 | 2.355 | **18,27** | 104,5 | 0,00 | 78,44 | - | - | 0,00 | 0,00 | - |
| 32 | 3.524 | 3.525 | **13,46** | 104,5 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 33 | 3.945 | 3.946 | **12,10** | 104,5 | 0,00 | 82,92 | - | - | 0,00 | 0,00 | - |
| 34 | 5.027 | 5.028 | **9,20** | 104,5 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 35 | 6.903 | 6.904 | **5,48** | 104,5 | 0,00 | 87,78 | - | - | 0,00 | 0,00 | - |
| 36 | 7.435 | 7.435 | **4,62** | 104,5 | 0,00 | 88,43 | - | - | 0,00 | 0,00 | - |
| 37 | 6.243 | 6.245 | **7,59** | 106,0 | 0,00 | 86,91 | - | - | 0,00 | 0,00 | - |
| 38 | 2.057 | 2.062 | **21,44** | 106,0 | 0,00 | 77,29 | - | - | 0,00 | 0,00 | - |
| 39 | 5.105 | 5.107 | **9,92** | 106,0 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 4 | 3.543 | 3.546 | **12,62** | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 40 | 4.681 | 4.683 | **10,93** | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 4.269 | 4.271 | **12,09** | 106,0 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 42 | 1.750 | 1.756 | **23,42** | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 43 | 10.077 | 10.077 | **1,16** | 104,5 | 0,00 | 91,07 | - | - | 0,00 | 0,00 | - |
| 44 | 1.439 | 1.445 | **24,25** | 104,5 | 0,00 | 74,20 | - | - | 0,00 | 0,00 | - |
| 45 | 1.548 | 1.554 | **23,39** | 104,5 | 0,00 | 74,83 | - | - | 0,00 | 0,00 | - |
| 46 | 1.970 | 1.975 | **20,47** | 104,5 | 0,00 | 76,91 | - | - | 0,00 | 0,00 | - |
| 47 | 1.797 | 1.802 | **21,59** | 104,5 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 5 | 2.694 | 2.697 | **16,25** | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 6 | 6.813 | 6.814 | **5,11** | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 7 | 9.860 | 9.861 | **1,25** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 8 | 3.953 | 3.954 | **12,70** | 106,0 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 9 | 4.457 | 4.458 | **11,15** | 106,0 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,67** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: H Noise sensitive point: User defined (9)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 291 | 317 | **42,45** | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 10 | 4.373 | 4.374 | **11,40** | 106,0 | 0,00 | 83,82 | - | - | 0,00 | 0,00 | - |
| 11 | 5.382 | 5.384 | **8,72** | 106,0 | 0,00 | 85,62 | - | - | 0,00 | 0,00 | - |
| 12 | 5.742 | 5.744 | **7,89** | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 13 | 5.555 | 5.556 | **8,31** | 106,0 | 0,00 | 85,90 | - | - | 0,00 | 0,00 | - |
| 14 | 7.037 | 7.038 | **5,29** | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 15 | 7.431 | 7.432 | **4,60** | 106,0 | 0,00 | 88,42 | - | - | 0,00 | 0,00 | - |
| 16 | 7.468 | 7.469 | **4,54** | 106,0 | 0,00 | 88,47 | - | - | 0,00 | 0,00 | - |
| 17 | 9.282 | 9.283 | **1,81** | 106,0 | 0,00 | 90,35 | - | - | 0,00 | 0,00 | - |
| 18 | 9.318 | 9.319 | **1,76** | 106,0 | 0,00 | 90,39 | - | - | 0,00 | 0,00 | - |
| 19 | 9.471 | 9.472 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 2 | 635 | 648 | **34,44** | 106,0 | 0,00 | 67,23 | - | - | 0,00 | 0,00 | - |
| 20 | 9.610 | 9.611 | **1,38** | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 21 | 9.634 | 9.635 | **1,35** | 106,0 | 0,00 | 90,68 | - | - | 0,00 | 0,00 | - |
| 22 | 10.604 | 10.605 | **0,17** | 106,0 | 0,00 | 91,51 | - | - | 0,00 | 0,00 | - |
| 23 | 10.863 | 10.863 | **-0,13** | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 24 | 11.247 | 11.248 | **-0,56** | 106,0 | 0,00 | 92,02 | - | - | 0,00 | 0,00 | - |
| 25 | 542 | 548 | **35,19** | 104,5 | 0,00 | 65,77 | - | - | 0,00 | 0,00 | - |
| 26 | 877 | 881 | **29,98** | 104,5 | 0,00 | 69,89 | - | - | 0,00 | 0,00 | - |
| 27 | 1.170 | 1.173 | **26,70** | 104,5 | 0,00 | 72,39 | - | - | 0,00 | 0,00 | - |
| 28 | 972 | 975 | **28,82** | 104,5 | 0,00 | 70,78 | - | - | 0,00 | 0,00 | - |
| 29 | 1.061 | 1.064 | **27,83** | 104,5 | 0,00 | 71,54 | - | - | 0,00 | 0,00 | - |
| 3 | 1.849 | 1.853 | **21,22** | 106,0 | 0,00 | 76,36 | - | - | 0,00 | 0,00 | - |
| 30 | 1.901 | 1.902 | **20,93** | 104,5 | 0,00 | 76,59 | - | - | 0,00 | 0,00 | - |
| 31 | 2.328 | 2.329 | **18,41** | 104,5 | 0,00 | 78,35 | - | - | 0,00 | 0,00 | - |
| 32 | 3.498 | 3.499 | **13,54** | 104,5 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 33 | 3.917 | 3.918 | **12,19** | 104,5 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 34 | 4.991 | 4.992 | **9,29** | 104,5 | 0,00 | 84,97 | - | - | 0,00 | 0,00 | - |
| 35 | 6.869 | 6.869 | **5,54** | 104,5 | 0,00 | 87,74 | - | - | 0,00 | 0,00 | - |
| 36 | 7.402 | 7.402 | **4,67** | 104,5 | 0,00 | 88,39 | - | - | 0,00 | 0,00 | - |
| 37 | 6.215 | 6.217 | **7,65** | 106,0 | 0,00 | 86,87 | - | - | 0,00 | 0,00 | - |
| 38 | 2.021 | 2.027 | **21,66** | 106,0 | 0,00 | 77,14 | - | - | 0,00 | 0,00 | - |
| 39 | 5.072 | 5.074 | **10,00** | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 4 | 3.515 | 3.517 | **12,72** | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 40 | 4.646 | 4.649 | **11,02** | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 41 | 4.235 | 4.238 | **12,19** | 106,0 | 0,00 | 83,54 | - | - | 0,00 | 0,00 | - |
| 42 | 1.730 | 1.737 | **23,55** | 106,0 | 0,00 | 75,79 | - | - | 0,00 | 0,00 | - |
| 43 | 10.045 | 10.045 | **1,20** | 104,5 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 44 | 1.403 | 1.410 | **24,54** | 104,5 | 0,00 | 73,99 | - | - | 0,00 | 0,00 | - |
| 45 | 1.512 | 1.518 | **23,67** | 104,5 | 0,00 | 74,63 | - | - | 0,00 | 0,00 | - |
| 46 | 1.933 | 1.939 | **20,70** | 104,5 | 0,00 | 76,75 | - | - | 0,00 | 0,00 | - |
| 47 | 1.761 | 1.767 | **21,84** | 104,5 | 0,00 | 75,94 | - | - | 0,00 | 0,00 | - |
| 5 | 2.666 | 2.669 | **16,39** | 106,0 | 0,00 | 79,53 | - | - | 0,00 | 0,00 | - |
| 6 | 6.782 | 6.783 | **5,16** | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 9.828 | 9.829 | **1,28** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 3.917 | 3.919 | **12,82** | 106,0 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 9 | 4.421 | 4.422 | **11,26** | 106,0 | 0,00 | 83,91 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,51** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: I Noise sensitive point: User defined (11)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 481 | 497 | **37,52** | 106,0 | 0,00 | 64,93 | - | - | 0,00 | 0,00 | - |
| 10 | 4.518 | 4.519 | **10,98** | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 11 | 5.307 | 5.308 | **8,90** | 106,0 | 0,00 | 85,50 | - | - | 0,00 | 0,00 | - |
| 12 | 5.666 | 5.667 | **8,06** | 106,0 | 0,00 | 86,07 | - | - | 0,00 | 0,00 | - |
| 13 | 5.496 | 5.498 | **8,45** | 106,0 | 0,00 | 85,80 | - | - | 0,00 | 0,00 | - |
| 14 | 7.059 | 7.060 | **5,25** | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 15 | 7.459 | 7.460 | **4,55** | 106,0 | 0,00 | 88,45 | - | - | 0,00 | 0,00 | - |
| 16 | 7.510 | 7.510 | **4,47** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 17 | 9.258 | 9.259 | **1,84** | 106,0 | 0,00 | 90,33 | - | - | 0,00 | 0,00 | - |
| 18 | 9.311 | 9.312 | **1,77** | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 19 | 9.474 | 9.474 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 2 | 683 | 695 | **33,61** | 106,0 | 0,00 | 67,84 | - | - | 0,00 | 0,00 | - |
| 20 | 9.578 | 9.579 | **1,42** | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 21 | 9.616 | 9.617 | **1,37** | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 22 | 10.631 | 10.632 | **0,14** | 106,0 | 0,00 | 91,53 | - | - | 0,00 | 0,00 | - |
| 23 | 10.867 | 10.867 | **-0,13** | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 24 | 11.226 | 11.227 | **-0,53** | 106,0 | 0,00 | 92,01 | - | - | 0,00 | 0,00 | - |
| 25 | 791 | 794 | **31,13** | 104,5 | 0,00 | 69,00 | - | - | 0,00 | 0,00 | - |
| 26 | 1.081 | 1.084 | **27,61** | 104,5 | 0,00 | 71,70 | - | - | 0,00 | 0,00 | - |
| 27 | 1.352 | 1.355 | **25,02** | 104,5 | 0,00 | 73,64 | - | - | 0,00 | 0,00 | - |
| 28 | 1.073 | 1.075 | **27,71** | 104,5 | 0,00 | 71,63 | - | - | 0,00 | 0,00 | - |
| 29 | 1.038 | 1.041 | **28,08** | 104,5 | 0,00 | 71,35 | - | - | 0,00 | 0,00 | - |
| 3 | 1.868 | 1.872 | **21,09** | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 30 | 1.860 | 1.861 | **21,20** | 104,5 | 0,00 | 76,40 | - | - | 0,00 | 0,00 | - |
| 31 | 2.249 | 2.250 | **18,85** | 104,5 | 0,00 | 78,04 | - | - | 0,00 | 0,00 | - |
| 32 | 3.409 | 3.410 | **13,85** | 104,5 | 0,00 | 81,65 | - | - | 0,00 | 0,00 | - |
| 33 | 3.863 | 3.863 | **12,36** | 104,5 | 0,00 | 82,74 | - | - | 0,00 | 0,00 | - |
| 34 | 5.120 | 5.121 | **8,98** | 104,5 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 35 | 6.907 | 6.908 | **5,47** | 104,5 | 0,00 | 87,79 | - | - | 0,00 | 0,00 | - |
| 36 | 7.409 | 7.409 | **4,66** | 104,5 | 0,00 | 88,40 | - | - | 0,00 | 0,00 | - |
| 37 | 6.149 | 6.151 | **7,77** | 106,0 | 0,00 | 86,78 | - | - | 0,00 | 0,00 | - |
| 38 | 2.217 | 2.222 | **20,51** | 106,0 | 0,00 | 77,93 | - | - | 0,00 | 0,00 | - |
| 39 | 5.089 | 5.092 | **9,96** | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 4 | 3.460 | 3.463 | **12,93** | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 40 | 4.692 | 4.695 | **10,90** | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 41 | 4.259 | 4.262 | **12,12** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 42 | 1.592 | 1.599 | **24,55** | 106,0 | 0,00 | 75,08 | - | - | 0,00 | 0,00 | - |
| 43 | 10.034 | 10.035 | **1,21** | 104,5 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 44 | 1.493 | 1.499 | **23,82** | 104,5 | 0,00 | 74,52 | - | - | 0,00 | 0,00 | - |
| 45 | 1.683 | 1.689 | **22,38** | 104,5 | 0,00 | 75,55 | - | - | 0,00 | 0,00 | - |
| 46 | 2.094 | 2.098 | **19,72** | 104,5 | 0,00 | 77,44 | - | - | 0,00 | 0,00 | - |
| 47 | 1.866 | 1.872 | **21,13** | 104,5 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 5 | 2.609 | 2.612 | **16,67** | 106,0 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 6 | 6.754 | 6.755 | **5,21** | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 7 | 9.823 | 9.824 | **1,29** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.088 | 4.089 | **12,27** | 106,0 | 0,00 | 83,23 | - | - | 0,00 | 0,00 | - |
| 9 | 4.589 | 4.590 | **10,78** | 106,0 | 0,00 | 84,24 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,14** | | | | | | | | |

*- Data undefined due to calculation with octave data*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: J Noise sensitive point: User defined (12)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 454 | 472 | **38,11** | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 10 | 4.502 | 4.504 | **11,02** | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 11 | 5.317 | 5.318 | **8,88** | 106,0 | 0,00 | 85,52 | - | - | 0,00 | 0,00 | - |
| 12 | 5.677 | 5.678 | **8,03** | 106,0 | 0,00 | 86,08 | - | - | 0,00 | 0,00 | - |
| 13 | 5.505 | 5.506 | **8,43** | 106,0 | 0,00 | 85,82 | - | - | 0,00 | 0,00 | - |
| 14 | 7.059 | 7.059 | **5,25** | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 15 | 7.457 | 7.458 | **4,55** | 106,0 | 0,00 | 88,45 | - | - | 0,00 | 0,00 | - |
| 16 | 7.507 | 7.507 | **4,47** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 17 | 9.263 | 9.264 | **1,84** | 106,0 | 0,00 | 90,34 | - | - | 0,00 | 0,00 | - |
| 18 | 9.314 | 9.315 | **1,77** | 106,0 | 0,00 | 90,38 | - | - | 0,00 | 0,00 | - |
| 19 | 9.475 | 9.476 | **1,56** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 2 | 674 | 685 | **33,77** | 106,0 | 0,00 | 67,72 | - | - | 0,00 | 0,00 | - |
| 20 | 9.584 | 9.585 | **1,41** | 106,0 | 0,00 | 90,63 | - | - | 0,00 | 0,00 | - |
| 21 | 9.620 | 9.621 | **1,37** | 106,0 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 22 | 10.630 | 10.631 | **0,14** | 106,0 | 0,00 | 91,53 | - | - | 0,00 | 0,00 | - |
| 23 | 10.868 | 10.869 | **-0,14** | 106,0 | 0,00 | 91,72 | - | - | 0,00 | 0,00 | - |
| 24 | 11.231 | 11.231 | **-0,54** | 106,0 | 0,00 | 92,01 | - | - | 0,00 | 0,00 | - |
| 25 | 761 | 765 | **31,55** | 104,5 | 0,00 | 68,67 | - | - | 0,00 | 0,00 | - |
| 26 | 1.057 | 1.060 | **27,87** | 104,5 | 0,00 | 71,50 | - | - | 0,00 | 0,00 | - |
| 27 | 1.331 | 1.333 | **25,21** | 104,5 | 0,00 | 73,50 | - | - | 0,00 | 0,00 | - |
| 28 | 1.059 | 1.062 | **27,85** | 104,5 | 0,00 | 71,52 | - | - | 0,00 | 0,00 | - |
| 29 | 1.039 | 1.042 | **28,07** | 104,5 | 0,00 | 71,35 | - | - | 0,00 | 0,00 | - |
| 3 | 1.865 | 1.870 | **21,10** | 106,0 | 0,00 | 76,43 | - | - | 0,00 | 0,00 | - |
| 30 | 1.864 | 1.866 | **21,17** | 104,5 | 0,00 | 76,42 | - | - | 0,00 | 0,00 | - |
| 31 | 2.258 | 2.260 | **18,79** | 104,5 | 0,00 | 78,08 | - | - | 0,00 | 0,00 | - |
| 32 | 3.421 | 3.421 | **13,81** | 104,5 | 0,00 | 81,68 | - | - | 0,00 | 0,00 | - |
| 33 | 3.870 | 3.871 | **12,33** | 104,5 | 0,00 | 82,76 | - | - | 0,00 | 0,00 | - |
| 34 | 5.107 | 5.107 | **9,02** | 104,5 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 35 | 6.905 | 6.905 | **5,48** | 104,5 | 0,00 | 87,78 | - | - | 0,00 | 0,00 | - |
| 36 | 7.410 | 7.410 | **4,66** | 104,5 | 0,00 | 88,40 | - | - | 0,00 | 0,00 | - |
| 37 | 6.159 | 6.160 | **7,75** | 106,0 | 0,00 | 86,79 | - | - | 0,00 | 0,00 | - |
| 38 | 2.195 | 2.200 | **20,63** | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 39 | 5.089 | 5.091 | **9,96** | 106,0 | 0,00 | 85,14 | - | - | 0,00 | 0,00 | - |
| 4 | 3.468 | 3.470 | **12,90** | 106,0 | 0,00 | 81,81 | - | - | 0,00 | 0,00 | - |
| 40 | 4.688 | 4.691 | **10,91** | 106,0 | 0,00 | 84,42 | - | - | 0,00 | 0,00 | - |
| 41 | 4.258 | 4.261 | **12,12** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 42 | 1.608 | 1.615 | **24,43** | 106,0 | 0,00 | 75,16 | - | - | 0,00 | 0,00 | - |
| 43 | 10.037 | 10.038 | **1,21** | 104,5 | 0,00 | 91,03 | - | - | 0,00 | 0,00 | - |
| 44 | 1.482 | 1.488 | **23,90** | 104,5 | 0,00 | 74,45 | - | - | 0,00 | 0,00 | - |
| 45 | 1.663 | 1.669 | **22,53** | 104,5 | 0,00 | 75,45 | - | - | 0,00 | 0,00 | - |
| 46 | 2.076 | 2.080 | **19,83** | 104,5 | 0,00 | 77,36 | - | - | 0,00 | 0,00 | - |
| 47 | 1.854 | 1.859 | **21,21** | 104,5 | 0,00 | 76,39 | - | - | 0,00 | 0,00 | - |
| 5 | 2.617 | 2.620 | **16,64** | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 6 | 6.759 | 6.760 | **5,20** | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| 7 | 9.825 | 9.826 | **1,28** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 8 | 4.069 | 4.071 | **12,33** | 106,0 | 0,00 | 83,19 | - | - | 0,00 | 0,00 | - |
| 9 | 4.570 | 4.572 | **10,83** | 106,0 | 0,00 | 84,20 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,50** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: K Noise sensitive point: User defined (13)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 506 | 522 | **36,96** | 106,0 | 0,00 | 65,35 | - | - | 0,00 | 0,00 | - |
| 10 | 4.230 | 4.231 | **11,83** | 106,0 | 0,00 | 83,53 | - | - | 0,00 | 0,00 | - |
| 11 | 4.893 | 4.894 | **9,95** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 12 | 5.252 | 5.254 | **9,03** | 106,0 | 0,00 | 85,41 | - | - | 0,00 | 0,00 | - |
| 13 | 5.083 | 5.084 | **9,46** | 106,0 | 0,00 | 85,12 | - | - | 0,00 | 0,00 | - |
| 14 | 6.668 | 6.669 | **5,97** | 106,0 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 15 | 7.070 | 7.070 | **5,23** | 106,0 | 0,00 | 87,99 | - | - | 0,00 | 0,00 | - |
| 16 | 7.127 | 7.128 | **5,13** | 106,0 | 0,00 | 88,06 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 8.849 | 8.850 | **2,41** | 106,0 | 0,00 | 89,94 | - | - | 0,00 | 0,00 | - |
| 18 | 8.907 | 8.908 | **2,32** | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| 19 | 9.073 | 9.074 | **2,09** | 106,0 | 0,00 | 90,16 | - | - | 0,00 | 0,00 | - |
| 2 | 416 | 436 | **39,00** | 106,0 | 0,00 | 63,78 | - | - | 0,00 | 0,00 | - |
| 20 | 9.168 | 9.169 | **1,97** | 106,0 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 21 | 9.209 | 9.209 | **1,91** | 106,0 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 22 | 10.240 | 10.241 | **0,60** | 106,0 | 0,00 | 91,21 | - | - | 0,00 | 0,00 | - |
| 23 | 10.466 | 10.467 | **0,33** | 106,0 | 0,00 | 91,40 | - | - | 0,00 | 0,00 | - |
| 24 | 10.818 | 10.819 | **-0,08** | 106,0 | 0,00 | 91,68 | - | - | 0,00 | 0,00 | - |
| 25 | 804 | 808 | **30,94** | 104,5 | 0,00 | 69,14 | - | - | 0,00 | 0,00 | - |
| 26 | 964 | 967 | **28,91** | 104,5 | 0,00 | 70,71 | - | - | 0,00 | 0,00 | - |
| 27 | 1.173 | 1.175 | **26,68** | 104,5 | 0,00 | 72,40 | - | - | 0,00 | 0,00 | - |
| 28 | 803 | 807 | **30,95** | 104,5 | 0,00 | 69,14 | - | - | 0,00 | 0,00 | - |
| 29 | 651 | 656 | **33,23** | 104,5 | 0,00 | 67,34 | - | - | 0,00 | 0,00 | - |
| 3 | 1.488 | 1.494 | **24,03** | 106,0 | 0,00 | 74,49 | - | - | 0,00 | 0,00 | - |
| 30 | 1.453 | 1.455 | **24,18** | 104,5 | 0,00 | 74,26 | - | - | 0,00 | 0,00 | - |
| 31 | 1.835 | 1.836 | **21,37** | 104,5 | 0,00 | 76,28 | - | - | 0,00 | 0,00 | - |
| 32 | 2.996 | 2.997 | **15,40** | 104,5 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 33 | 3.450 | 3.451 | **13,71** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 34 | 4.812 | 4.812 | **9,72** | 104,5 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 35 | 6.524 | 6.524 | **6,13** | 104,5 | 0,00 | 87,29 | - | - | 0,00 | 0,00 | - |
| 36 | 7.011 | 7.011 | **5,30** | 104,5 | 0,00 | 87,92 | - | - | 0,00 | 0,00 | - |
| 37 | 5.735 | 5.738 | **8,57** | 106,0 | 0,00 | 86,17 | - | - | 0,00 | 0,00 | - |
| 38 | 2.025 | 2.030 | **21,64** | 106,0 | 0,00 | 77,15 | - | - | 0,00 | 0,00 | - |
| 39 | 4.697 | 4.700 | **10,89** | 106,0 | 0,00 | 84,44 | - | - | 0,00 | 0,00 | - |
| 4 | 3.048 | 3.051 | **14,61** | 106,0 | 0,00 | 80,69 | - | - | 0,00 | 0,00 | - |
| 40 | 4.316 | 4.319 | **11,94** | 106,0 | 0,00 | 83,71 | - | - | 0,00 | 0,00 | - |
| 41 | 3.872 | 3.875 | **13,36** | 106,0 | 0,00 | 82,76 | - | - | 0,00 | 0,00 | - |
| 42 | 1.188 | 1.197 | **27,97** | 106,0 | 0,00 | 72,56 | - | - | 0,00 | 0,00 | - |
| 43 | 9.629 | 9.630 | **1,67** | 104,5 | 0,00 | 90,67 | - | - | 0,00 | 0,00 | - |
| 44 | 1.183 | 1.192 | **26,52** | 104,5 | 0,00 | 72,52 | - | - | 0,00 | 0,00 | - |
| 45 | 1.470 | 1.477 | **24,00** | 104,5 | 0,00 | 74,39 | - | - | 0,00 | 0,00 | - |
| 46 | 1.850 | 1.856 | **21,24** | 104,5 | 0,00 | 76,37 | - | - | 0,00 | 0,00 | - |
| 47 | 1.562 | 1.568 | **23,28** | 104,5 | 0,00 | 74,91 | - | - | 0,00 | 0,00 | - |
| 5 | 2.197 | 2.201 | **18,95** | 106,0 | 0,00 | 77,85 | - | - | 0,00 | 0,00 | - |
| 6 | 6.345 | 6.346 | **5,87** | 106,0 | 0,00 | 87,05 | - | - | 0,00 | 0,00 | - |
| 7 | 9.419 | 9.420 | **1,72** | 106,0 | 0,00 | 90,48 | - | - | 0,00 | 0,00 | - |
| 8 | 3.835 | 3.837 | **13,09** | 106,0 | 0,00 | 82,68 | - | - | 0,00 | 0,00 | - |
| 9 | 4.329 | 4.330 | **11,53** | 106,0 | 0,00 | 83,73 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,34** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: L Noise sensitive point: User defined (14)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 472 | 489 | **37,70** | 106,0 | 0,00 | 64,78 | - | - | 0,00 | 0,00 | - |
| 10 | 4.194 | 4.195 | **11,94** | 106,0 | 0,00 | 83,46 | - | - | 0,00 | 0,00 | - |
| 11 | 4.887 | 4.889 | **9,96** | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 12 | 5.247 | 5.248 | **9,05** | 106,0 | 0,00 | 85,40 | - | - | 0,00 | 0,00 | - |
| 13 | 5.075 | 5.076 | **9,48** | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 14 | 6.648 | 6.649 | **6,01** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 15 | 7.049 | 7.050 | **5,27** | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 16 | 7.105 | 7.106 | **5,17** | 106,0 | 0,00 | 88,03 | - | - | 0,00 | 0,00 | - |
| 17 | 8.836 | 8.837 | **2,42** | 106,0 | 0,00 | 89,93 | - | - | 0,00 | 0,00 | - |
| 18 | 8.891 | 8.892 | **2,35** | 106,0 | 0,00 | 89,98 | - | - | 0,00 | 0,00 | - |
| 19 | 9.056 | 9.057 | **2,12** | 106,0 | 0,00 | 90,14 | - | - | 0,00 | 0,00 | - |
| 2 | 374 | 396 | **40,06** | 106,0 | 0,00 | 62,95 | - | - | 0,00 | 0,00 | - |
| 20 | 9.156 | 9.157 | **1,98** | 106,0 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 21 | 9.195 | 9.195 | **1,93** | 106,0 | 0,00 | 90,27 | - | - | 0,00 | 0,00 | - |
| 22 | 10.220 | 10.221 | **0,62** | 106,0 | 0,00 | 91,19 | - | - | 0,00 | 0,00 | - |
| 23 | 10.449 | 10.450 | **0,35** | 106,0 | 0,00 | 91,38 | - | - | 0,00 | 0,00 | - |
| 24 | 10.805 | 10.805 | **-0,06** | 106,0 | 0,00 | 91,67 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
**UAB Infraplanas**
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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 765 | 769 | **31,49** | 104,5 | 0,00 | 68,72 | - | - | 0,00 | 0,00 | - |
| 26 | 921 | 924 | **29,43** | 104,5 | 0,00 | 70,32 | - | - | 0,00 | 0,00 | - |
| 27 | 1.130 | 1.133 | **27,10** | 104,5 | 0,00 | 72,08 | - | - | 0,00 | 0,00 | - |
| 28 | 763 | 767 | **31,51** | 104,5 | 0,00 | 68,70 | - | - | 0,00 | 0,00 | - |
| 29 | 628 | 632 | **33,63** | 104,5 | 0,00 | 67,02 | - | - | 0,00 | 0,00 | - |
| 3 | 1.464 | 1.470 | **24,24** | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 30 | 1.438 | 1.440 | **24,30** | 104,5 | 0,00 | 74,17 | - | - | 0,00 | 0,00 | - |
| 31 | 1.828 | 1.830 | **21,41** | 104,5 | 0,00 | 76,25 | - | - | 0,00 | 0,00 | - |
| 32 | 2.992 | 2.993 | **15,41** | 104,5 | 0,00 | 80,52 | - | - | 0,00 | 0,00 | - |
| 33 | 3.440 | 3.441 | **13,74** | 104,5 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 34 | 4.778 | 4.779 | **9,81** | 104,5 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 35 | 6.502 | 6.502 | **6,17** | 104,5 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 36 | 6.993 | 6.993 | **5,33** | 104,5 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 37 | 5.728 | 5.730 | **8,58** | 106,0 | 0,00 | 86,16 | - | - | 0,00 | 0,00 | - |
| 38 | 1.983 | 1.988 | **21,89** | 106,0 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 39 | 4.677 | 4.680 | **10,94** | 106,0 | 0,00 | 84,40 | - | - | 0,00 | 0,00 | - |
| 4 | 3.038 | 3.041 | **14,65** | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 40 | 4.292 | 4.295 | **12,02** | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 41 | 3.850 | 3.853 | **13,43** | 106,0 | 0,00 | 82,72 | - | - | 0,00 | 0,00 | - |
| 42 | 1.193 | 1.202 | **27,92** | 106,0 | 0,00 | 72,60 | - | - | 0,00 | 0,00 | - |
| 43 | 9.614 | 9.614 | **1,69** | 104,5 | 0,00 | 90,66 | - | - | 0,00 | 0,00 | - |
| 44 | 1.147 | 1.156 | **26,87** | 104,5 | 0,00 | 72,26 | - | - | 0,00 | 0,00 | - |
| 45 | 1.428 | 1.435 | **24,34** | 104,5 | 0,00 | 74,14 | - | - | 0,00 | 0,00 | - |
| 46 | 1.811 | 1.816 | **21,50** | 104,5 | 0,00 | 76,18 | - | - | 0,00 | 0,00 | - |
| 47 | 1.526 | 1.533 | **23,55** | 104,5 | 0,00 | 74,71 | - | - | 0,00 | 0,00 | - |
| 5 | 2.187 | 2.191 | **19,01** | 106,0 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 6 | 6.332 | 6.333 | **5,90** | 106,0 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 7 | 9.403 | 9.404 | **1,74** | 106,0 | 0,00 | 90,47 | - | - | 0,00 | 0,00 | - |
| 8 | 3.797 | 3.798 | **13,22** | 106,0 | 0,00 | 82,59 | - | - | 0,00 | 0,00 | - |
| 9 | 4.291 | 4.292 | **11,64** | 106,0 | 0,00 | 83,65 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,06** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: M Noise sensitive point: User defined (15)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 926 | 935 | **29,99** | 106,0 | 0,00 | 70,41 | - | - | 0,00 | 0,00 | - |
| 10 | 4.045 | 4.047 | **12,40** | 106,0 | 0,00 | 83,14 | - | - | 0,00 | 0,00 | - |
| 11 | 4.419 | 4.421 | **11,26** | 106,0 | 0,00 | 83,91 | - | - | 0,00 | 0,00 | - |
| 12 | 4.778 | 4.780 | **10,25** | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 13 | 4.620 | 4.622 | **10,69** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 14 | 6.277 | 6.278 | **6,74** | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 15 | 6.683 | 6.684 | **5,94** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 16 | 6.757 | 6.758 | **5,80** | 106,0 | 0,00 | 87,60 | - | - | 0,00 | 0,00 | - |
| 17 | 8.408 | 8.409 | **3,04** | 106,0 | 0,00 | 89,49 | - | - | 0,00 | 0,00 | - |
| 18 | 8.481 | 8.481 | **2,94** | 106,0 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 19 | 8.656 | 8.657 | **2,68** | 106,0 | 0,00 | 89,75 | - | - | 0,00 | 0,00 | - |
| 2 | 627 | 640 | **34,58** | 106,0 | 0,00 | 67,12 | - | - | 0,00 | 0,00 | - |
| 20 | 8.720 | 8.721 | **2,59** | 106,0 | 0,00 | 89,81 | - | - | 0,00 | 0,00 | - |
| 21 | 8.772 | 8.773 | **2,51** | 106,0 | 0,00 | 89,86 | - | - | 0,00 | 0,00 | - |
| 22 | 9.847 | 9.848 | **1,08** | 106,0 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 23 | 10.049 | 10.050 | **0,83** | 106,0 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 24 | 10.378 | 10.379 | **0,43** | 106,0 | 0,00 | 91,32 | - | - | 0,00 | 0,00 | - |
| 25 | 1.157 | 1.159 | **26,84** | 104,5 | 0,00 | 72,28 | - | - | 0,00 | 0,00 | - |
| 26 | 1.174 | 1.177 | **26,66** | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 27 | 1.276 | 1.278 | **25,70** | 104,5 | 0,00 | 73,13 | - | - | 0,00 | 0,00 | - |
| 28 | 844 | 848 | **30,40** | 104,5 | 0,00 | 69,57 | - | - | 0,00 | 0,00 | - |
| 29 | 452 | 459 | **37,06** | 104,5 | 0,00 | 64,23 | - | - | 0,00 | 0,00 | - |
| 3 | 1.181 | 1.188 | **26,97** | 106,0 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 30 | 1.046 | 1.049 | **27,99** | 104,5 | 0,00 | 71,42 | - | - | 0,00 | 0,00 | - |
| 31 | 1.371 | 1.374 | **24,86** | 104,5 | 0,00 | 73,76 | - | - | 0,00 | 0,00 | - |
| 32 | 2.517 | 2.519 | **17,45** | 104,5 | 0,00 | 79,02 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 2.996 | 2.997 | **15,40** | 104,5 | 0,00 | 80,53 | - | - | 0,00 | 0,00 | - |
| 34 | 4.589 | 4.589 | **10,29** | 104,5 | 0,00 | 84,24 | - | - | 0,00 | 0,00 | - |
| 35 | 6.152 | 6.152 | **6,82** | 104,5 | 0,00 | 86,78 | - | - | 0,00 | 0,00 | - |
| 36 | 6.601 | 6.602 | **6,00** | 104,5 | 0,00 | 87,39 | - | - | 0,00 | 0,00 | - |
| 37 | 5.267 | 5.269 | **9,56** | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 38 | 2.038 | 2.043 | **21,56** | 106,0 | 0,00 | 77,21 | - | - | 0,00 | 0,00 | - |
| 39 | 4.309 | 4.312 | **11,96** | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 4 | 2.595 | 2.598 | **16,75** | 106,0 | 0,00 | 79,29 | - | - | 0,00 | 0,00 | - |
| 40 | 3.967 | 3.970 | **13,04** | 106,0 | 0,00 | 82,98 | - | - | 0,00 | 0,00 | - |
| 41 | 3.498 | 3.501 | **14,68** | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 42 | 693 | 708 | **33,91** | 106,0 | 0,00 | 68,00 | - | - | 0,00 | 0,00 | - |
| 43 | 9.199 | 9.200 | **2,19** | 104,5 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 44 | 1.072 | 1.082 | **27,64** | 104,5 | 0,00 | 71,68 | - | - | 0,00 | 0,00 | - |
| 45 | 1.491 | 1.498 | **23,83** | 104,5 | 0,00 | 74,51 | - | - | 0,00 | 0,00 | - |
| 46 | 1.797 | 1.803 | **21,59** | 104,5 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 47 | 1.421 | 1.429 | **24,39** | 104,5 | 0,00 | 74,10 | - | - | 0,00 | 0,00 | - |
| 5 | 1.750 | 1.755 | **21,93** | 106,0 | 0,00 | 75,89 | - | - | 0,00 | 0,00 | - |
| 6 | 5.903 | 5.905 | **6,65** | 106,0 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 7 | 8.994 | 8.995 | **2,20** | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| 8 | 3.711 | 3.712 | **13,51** | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 9 | 4.189 | 4.190 | **11,95** | 106,0 | 0,00 | 83,44 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,34** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: N Noise sensitive point: User defined (16)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 888 | 897 | **30,50** | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 10 | 4.019 | 4.020 | **12,49** | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 11 | 4.433 | 4.434 | **11,22** | 106,0 | 0,00 | 83,94 | - | - | 0,00 | 0,00 | - |
| 12 | 4.792 | 4.793 | **10,22** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 13 | 4.630 | 4.632 | **10,66** | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 14 | 6.274 | 6.275 | **6,75** | 106,0 | 0,00 | 86,95 | - | - | 0,00 | 0,00 | - |
| 15 | 6.679 | 6.680 | **5,95** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 16 | 6.751 | 6.752 | **5,82** | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 17 | 8.414 | 8.415 | **3,04** | 106,0 | 0,00 | 89,50 | - | - | 0,00 | 0,00 | - |
| 18 | 8.483 | 8.484 | **2,93** | 106,0 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 19 | 8.658 | 8.658 | **2,68** | 106,0 | 0,00 | 89,75 | - | - | 0,00 | 0,00 | - |
| 2 | 583 | 597 | **35,40** | 106,0 | 0,00 | 66,52 | - | - | 0,00 | 0,00 | - |
| 20 | 8.727 | 8.728 | **2,58** | 106,0 | 0,00 | 89,82 | - | - | 0,00 | 0,00 | - |
| 21 | 8.777 | 8.778 | **2,51** | 106,0 | 0,00 | 89,87 | - | - | 0,00 | 0,00 | - |
| 22 | 9.845 | 9.845 | **1,08** | 106,0 | 0,00 | 90,86 | - | - | 0,00 | 0,00 | - |
| 23 | 10.051 | 10.051 | **0,83** | 106,0 | 0,00 | 91,04 | - | - | 0,00 | 0,00 | - |
| 24 | 10.384 | 10.385 | **0,42** | 106,0 | 0,00 | 91,33 | - | - | 0,00 | 0,00 | - |
| 25 | 1.114 | 1.117 | **27,27** | 104,5 | 0,00 | 71,96 | - | - | 0,00 | 0,00 | - |
| 26 | 1.129 | 1.132 | **27,12** | 104,5 | 0,00 | 72,07 | - | - | 0,00 | 0,00 | - |
| 27 | 1.231 | 1.234 | **26,11** | 104,5 | 0,00 | 72,83 | - | - | 0,00 | 0,00 | - |
| 28 | 800 | 804 | **30,99** | 104,5 | 0,00 | 69,10 | - | - | 0,00 | 0,00 | - |
| 29 | 414 | 421 | **37,94** | 104,5 | 0,00 | 63,50 | - | - | 0,00 | 0,00 | - |
| 3 | 1.162 | 1.170 | **27,17** | 106,0 | 0,00 | 72,36 | - | - | 0,00 | 0,00 | - |
| 30 | 1.042 | 1.045 | **28,04** | 104,5 | 0,00 | 71,38 | - | - | 0,00 | 0,00 | - |
| 31 | 1.380 | 1.383 | **24,78** | 104,5 | 0,00 | 73,81 | - | - | 0,00 | 0,00 | - |
| 32 | 2.532 | 2.533 | **17,38** | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 33 | 3.003 | 3.005 | **15,37** | 104,5 | 0,00 | 80,56 | - | - | 0,00 | 0,00 | - |
| 34 | 4.566 | 4.566 | **10,35** | 104,5 | 0,00 | 84,19 | - | - | 0,00 | 0,00 | - |
| 35 | 6.146 | 6.146 | **6,83** | 104,5 | 0,00 | 86,77 | - | - | 0,00 | 0,00 | - |
| 36 | 6.601 | 6.602 | **6,00** | 104,5 | 0,00 | 87,39 | - | - | 0,00 | 0,00 | - |
| 37 | 5.279 | 5.281 | **9,53** | 106,0 | 0,00 | 85,45 | - | - | 0,00 | 0,00 | - |
| 38 | 1.997 | 2.003 | **21,80** | 106,0 | 0,00 | 77,03 | - | - | 0,00 | 0,00 | - |
| 39 | 4.305 | 4.308 | **11,98** | 106,0 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 4 | 2.602 | 2.606 | **16,71** | 106,0 | 0,00 | 79,32 | - | - | 0,00 | 0,00 | - |
| 40 | 3.957 | 3.960 | **13,08** | 106,0 | 0,00 | 82,95 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 3.492 | 3.495 | **14,71** | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 42 | 717 | 732 | **33,55** | 106,0 | 0,00 | 68,29 | - | - | 0,00 | 0,00 | - |
| 43 | 9.203 | 9.203 | **2,19** | 104,5 | 0,00 | 90,28 | - | - | 0,00 | 0,00 | - |
| 44 | 1.036 | 1.045 | **28,03** | 104,5 | 0,00 | 71,39 | - | - | 0,00 | 0,00 | - |
| 45 | 1.449 | 1.456 | **24,16** | 104,5 | 0,00 | 74,27 | - | - | 0,00 | 0,00 | - |
| 46 | 1.760 | 1.766 | **21,85** | 104,5 | 0,00 | 75,94 | - | - | 0,00 | 0,00 | - |
| 47 | 1.388 | 1.395 | **24,67** | 104,5 | 0,00 | 73,89 | - | - | 0,00 | 0,00 | - |
| 5 | 1.756 | 1.760 | **21,89** | 106,0 | 0,00 | 75,91 | - | - | 0,00 | 0,00 | - |
| 6 | 5.909 | 5.911 | **6,64** | 106,0 | 0,00 | 86,43 | - | - | 0,00 | 0,00 | - |
| 7 | 8.997 | 8.998 | **2,20** | 106,0 | 0,00 | 90,08 | - | - | 0,00 | 0,00 | - |
| 8 | 3.680 | 3.681 | **13,62** | 106,0 | 0,00 | 82,32 | - | - | 0,00 | 0,00 | - |
| 9 | 4.159 | 4.160 | **12,05** | 106,0 | 0,00 | 83,38 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,84** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: O Noise sensitive point: User defined (17)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 861 | 871 | **30,87** | 106,0 | 0,00 | 69,80 | - | - | 0,00 | 0,00 | - |
| 10 | 3.966 | 3.967 | **12,66** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 11 | 4.422 | 4.424 | **11,25** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 12 | 4.782 | 4.783 | **10,24** | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 13 | 4.616 | 4.618 | **10,70** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 14 | 6.243 | 6.244 | **6,81** | 106,0 | 0,00 | 86,91 | - | - | 0,00 | 0,00 | - |
| 15 | 6.648 | 6.649 | **6,01** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 16 | 6.717 | 6.718 | **5,88** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 17 | 8.394 | 8.395 | **3,07** | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 18 | 8.460 | 8.461 | **2,97** | 106,0 | 0,00 | 89,55 | - | - | 0,00 | 0,00 | - |
| 19 | 8.632 | 8.633 | **2,72** | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 2 | 541 | 556 | **36,23** | 106,0 | 0,00 | 65,90 | - | - | 0,00 | 0,00 | - |
| 20 | 8.709 | 8.709 | **2,61** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 21 | 8.756 | 8.756 | **2,54** | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 22 | 9.815 | 9.815 | **1,12** | 106,0 | 0,00 | 90,84 | - | - | 0,00 | 0,00 | - |
| 23 | 10.025 | 10.026 | **0,86** | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 24 | 10.363 | 10.364 | **0,45** | 106,0 | 0,00 | 91,31 | - | - | 0,00 | 0,00 | - |
| 25 | 1.076 | 1.079 | **27,67** | 104,5 | 0,00 | 71,66 | - | - | 0,00 | 0,00 | - |
| 26 | 1.078 | 1.081 | **27,65** | 104,5 | 0,00 | 71,67 | - | - | 0,00 | 0,00 | - |
| 27 | 1.175 | 1.177 | **26,66** | 104,5 | 0,00 | 72,42 | - | - | 0,00 | 0,00 | - |
| 28 | 743 | 747 | **31,81** | 104,5 | 0,00 | 68,47 | - | - | 0,00 | 0,00 | - |
| 29 | 356 | 364 | **39,44** | 104,5 | 0,00 | 62,23 | - | - | 0,00 | 0,00 | - |
| 3 | 1.117 | 1.124 | **27,67** | 106,0 | 0,00 | 72,02 | - | - | 0,00 | 0,00 | - |
| 30 | 1.011 | 1.014 | **28,37** | 104,5 | 0,00 | 71,12 | - | - | 0,00 | 0,00 | - |
| 31 | 1.366 | 1.369 | **24,90** | 104,5 | 0,00 | 73,73 | - | - | 0,00 | 0,00 | - |
| 32 | 2.524 | 2.525 | **17,42** | 104,5 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 33 | 2.987 | 2.988 | **15,43** | 104,5 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 34 | 4.516 | 4.516 | **10,48** | 104,5 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 35 | 6.112 | 6.112 | **6,90** | 104,5 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| 36 | 6.574 | 6.574 | **6,05** | 104,5 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 37 | 5.267 | 5.269 | **9,56** | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 38 | 1.938 | 1.944 | **22,17** | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 39 | 4.274 | 4.276 | **12,07** | 106,0 | 0,00 | 83,62 | - | - | 0,00 | 0,00 | - |
| 4 | 2.585 | 2.588 | **16,80** | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 40 | 3.920 | 3.923 | **13,20** | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 41 | 3.458 | 3.461 | **14,83** | 106,0 | 0,00 | 81,78 | - | - | 0,00 | 0,00 | - |
| 42 | 725 | 740 | **33,42** | 106,0 | 0,00 | 68,38 | - | - | 0,00 | 0,00 | - |
| 43 | 9.180 | 9.180 | **2,21** | 104,5 | 0,00 | 90,26 | - | - | 0,00 | 0,00 | - |
| 44 | 977 | 988 | **28,68** | 104,5 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 45 | 1.390 | 1.398 | **24,65** | 104,5 | 0,00 | 73,91 | - | - | 0,00 | 0,00 | - |
| 46 | 1.701 | 1.707 | **22,26** | 104,5 | 0,00 | 75,65 | - | - | 0,00 | 0,00 | - |
| 47 | 1.331 | 1.339 | **25,16** | 104,5 | 0,00 | 73,54 | - | - | 0,00 | 0,00 | - |
| 5 | 1.736 | 1.741 | **22,04** | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 6 | 5.889 | 5.890 | **6,68** | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 8.973 | 8.974 | **2,22** | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| 8 | 3.624 | 3.625 | **13,81** | 106,0 | 0,00 | 82,19 | - | - | 0,00 | 0,00 | - |
| 9 | 4.104 | 4.105 | **12,22** | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,68** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: P Noise sensitive point: User defined (18)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 852 | 862 | **30,99** | 106,0 | 0,00 | 69,71 | - | - | 0,00 | 0,00 | - |
| 10 | 3.953 | 3.954 | **12,70** | 106,0 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 11 | 4.422 | 4.424 | **11,25** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 12 | 4.781 | 4.783 | **10,24** | 106,0 | 0,00 | 84,59 | - | - | 0,00 | 0,00 | - |
| 13 | 4.615 | 4.616 | **10,70** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 14 | 6.237 | 6.238 | **6,83** | 106,0 | 0,00 | 86,90 | - | - | 0,00 | 0,00 | - |
| 15 | 6.641 | 6.642 | **6,02** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 16 | 6.710 | 6.711 | **5,89** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 17 | 8.390 | 8.391 | **3,07** | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 18 | 8.455 | 8.456 | **2,97** | 106,0 | 0,00 | 89,54 | - | - | 0,00 | 0,00 | - |
| 19 | 8.627 | 8.628 | **2,72** | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 2 | 528 | 544 | **36,49** | 106,0 | 0,00 | 65,70 | - | - | 0,00 | 0,00 | - |
| 20 | 8.706 | 8.706 | **2,61** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 21 | 8.752 | 8.753 | **2,54** | 106,0 | 0,00 | 89,84 | - | - | 0,00 | 0,00 | - |
| 22 | 9.808 | 9.809 | **1,13** | 106,0 | 0,00 | 90,83 | - | - | 0,00 | 0,00 | - |
| 23 | 10.020 | 10.021 | **0,86** | 106,0 | 0,00 | 91,02 | - | - | 0,00 | 0,00 | - |
| 24 | 10.360 | 10.361 | **0,45** | 106,0 | 0,00 | 91,31 | - | - | 0,00 | 0,00 | - |
| 25 | 1.064 | 1.067 | **27,80** | 104,5 | 0,00 | 71,56 | - | - | 0,00 | 0,00 | - |
| 26 | 1.063 | 1.066 | **27,81** | 104,5 | 0,00 | 71,55 | - | - | 0,00 | 0,00 | - |
| 27 | 1.158 | 1.161 | **26,82** | 104,5 | 0,00 | 72,30 | - | - | 0,00 | 0,00 | - |
| 28 | 727 | 731 | **32,05** | 104,5 | 0,00 | 68,28 | - | - | 0,00 | 0,00 | - |
| 29 | 340 | 349 | **39,87** | 104,5 | 0,00 | 61,86 | - | - | 0,00 | 0,00 | - |
| 3 | 1.106 | 1.114 | **27,79** | 106,0 | 0,00 | 71,94 | - | - | 0,00 | 0,00 | - |
| 30 | 1.005 | 1.008 | **28,44** | 104,5 | 0,00 | 71,07 | - | - | 0,00 | 0,00 | - |
| 31 | 1.365 | 1.367 | **24,91** | 104,5 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 32 | 2.524 | 2.525 | **17,42** | 104,5 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 33 | 2.984 | 2.985 | **15,44** | 104,5 | 0,00 | 80,50 | - | - | 0,00 | 0,00 | - |
| 34 | 4.503 | 4.504 | **10,52** | 104,5 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 35 | 6.105 | 6.105 | **6,91** | 104,5 | 0,00 | 86,71 | - | - | 0,00 | 0,00 | - |
| 36 | 6.568 | 6.569 | **6,06** | 104,5 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 37 | 5.266 | 5.268 | **9,56** | 106,0 | 0,00 | 85,43 | - | - | 0,00 | 0,00 | - |
| 38 | 1.922 | 1.928 | **22,27** | 106,0 | 0,00 | 76,70 | - | - | 0,00 | 0,00 | - |
| 39 | 4.267 | 4.270 | **12,09** | 106,0 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 4 | 2.582 | 2.586 | **16,81** | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 40 | 3.912 | 3.914 | **13,23** | 106,0 | 0,00 | 82,85 | - | - | 0,00 | 0,00 | - |
| 41 | 3.450 | 3.454 | **14,86** | 106,0 | 0,00 | 81,77 | - | - | 0,00 | 0,00 | - |
| 42 | 730 | 745 | **33,35** | 106,0 | 0,00 | 68,44 | - | - | 0,00 | 0,00 | - |
| 43 | 9.176 | 9.176 | **2,22** | 104,5 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 44 | 962 | 972 | **28,85** | 104,5 | 0,00 | 70,76 | - | - | 0,00 | 0,00 | - |
| 45 | 1.374 | 1.382 | **24,79** | 104,5 | 0,00 | 73,81 | - | - | 0,00 | 0,00 | - |
| 46 | 1.685 | 1.692 | **22,37** | 104,5 | 0,00 | 75,57 | - | - | 0,00 | 0,00 | - |
| 47 | 1.317 | 1.324 | **25,29** | 104,5 | 0,00 | 73,44 | - | - | 0,00 | 0,00 | - |
| 5 | 1.733 | 1.738 | **22,06** | 106,0 | 0,00 | 75,80 | - | - | 0,00 | 0,00 | - |
| 6 | 5.885 | 5.887 | **6,69** | 106,0 | 0,00 | 86,40 | - | - | 0,00 | 0,00 | - |
| 7 | 8.968 | 8.970 | **2,23** | 106,0 | 0,00 | 90,06 | - | - | 0,00 | 0,00 | - |
| 8 | 3.609 | 3.611 | **13,86** | 106,0 | 0,00 | 82,15 | - | - | 0,00 | 0,00 | - |
| 9 | 4.090 | 4.091 | **12,26** | 106,0 | 0,00 | 83,24 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,94** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: Q Noise sensitive point: User defined (19)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 894 | 903 | **30,42** | 106,0 | 0,00 | 70,11 | - | - | 0,00 | 0,00 | - |
| 10 | 3.897 | 3.898 | **12,88** | 106,0 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 11 | 4.359 | 4.361 | **11,44** | 106,0 | 0,00 | 83,79 | - | - | 0,00 | 0,00 | - |
| 12 | 4.719 | 4.720 | **10,42** | 106,0 | 0,00 | 84,48 | - | - | 0,00 | 0,00 | - |
| 13 | 4.550 | 4.552 | **10,88** | 106,0 | 0,00 | 84,16 | - | - | 0,00 | 0,00 | - |
| 14 | 6.170 | 6.171 | **6,96** | 106,0 | 0,00 | 86,81 | - | - | 0,00 | 0,00 | - |
| 15 | 6.574 | 6.575 | **6,15** | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 16 | 6.643 | 6.644 | **6,02** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |
| 17 | 8.324 | 8.325 | **3,17** | 106,0 | 0,00 | 89,41 | - | - | 0,00 | 0,00 | - |
| 18 | 8.389 | 8.390 | **3,07** | 106,0 | 0,00 | 89,47 | - | - | 0,00 | 0,00 | - |
| 19 | 8.560 | 8.561 | **2,82** | 106,0 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 2 | 552 | 567 | **36,00** | 106,0 | 0,00 | 66,08 | - | - | 0,00 | 0,00 | - |
| 20 | 8.640 | 8.641 | **2,70** | 106,0 | 0,00 | 89,73 | - | - | 0,00 | 0,00 | - |
| 21 | 8.686 | 8.686 | **2,64** | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 22 | 9.741 | 9.742 | **1,21** | 106,0 | 0,00 | 90,77 | - | - | 0,00 | 0,00 | - |
| 23 | 9.953 | 9.954 | **0,95** | 106,0 | 0,00 | 90,96 | - | - | 0,00 | 0,00 | - |
| 24 | 10.294 | 10.295 | **0,53** | 106,0 | 0,00 | 91,25 | - | - | 0,00 | 0,00 | - |
| 25 | 1.090 | 1.093 | **27,51** | 104,5 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 26 | 1.067 | 1.070 | **27,76** | 104,5 | 0,00 | 71,59 | - | - | 0,00 | 0,00 | - |
| 27 | 1.145 | 1.148 | **26,95** | 104,5 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 28 | 713 | 717 | **32,26** | 104,5 | 0,00 | 68,12 | - | - | 0,00 | 0,00 | - |
| 29 | 303 | 313 | **40,98** | 104,5 | 0,00 | 60,90 | - | - | 0,00 | 0,00 | - |
| 3 | 1.043 | 1.051 | **28,52** | 106,0 | 0,00 | 71,43 | - | - | 0,00 | 0,00 | - |
| 30 | 938 | 942 | **29,22** | 104,5 | 0,00 | 70,48 | - | - | 0,00 | 0,00 | - |
| 31 | 1.301 | 1.304 | **25,47** | 104,5 | 0,00 | 73,30 | - | - | 0,00 | 0,00 | - |
| 32 | 2.462 | 2.464 | **17,71** | 104,5 | 0,00 | 78,83 | - | - | 0,00 | 0,00 | - |
| 33 | 2.919 | 2.920 | **15,71** | 104,5 | 0,00 | 80,31 | - | - | 0,00 | 0,00 | - |
| 34 | 4.444 | 4.445 | **10,67** | 104,5 | 0,00 | 83,96 | - | - | 0,00 | 0,00 | - |
| 35 | 6.038 | 6.038 | **7,04** | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 36 | 6.502 | 6.502 | **6,17** | 104,5 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 37 | 5.202 | 5.204 | **9,70** | 106,0 | 0,00 | 85,33 | - | - | 0,00 | 0,00 | - |
| 38 | 1.891 | 1.897 | **22,47** | 106,0 | 0,00 | 76,56 | - | - | 0,00 | 0,00 | - |
| 39 | 4.200 | 4.203 | **12,30** | 106,0 | 0,00 | 83,47 | - | - | 0,00 | 0,00 | - |
| 4 | 2.517 | 2.521 | **17,15** | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 40 | 3.846 | 3.848 | **13,45** | 106,0 | 0,00 | 82,71 | - | - | 0,00 | 0,00 | - |
| 41 | 3.384 | 3.387 | **15,11** | 106,0 | 0,00 | 81,60 | - | - | 0,00 | 0,00 | - |
| 42 | 681 | 697 | **34,08** | 106,0 | 0,00 | 67,86 | - | - | 0,00 | 0,00 | - |
| 43 | 9.109 | 9.110 | **2,30** | 104,5 | 0,00 | 90,19 | - | - | 0,00 | 0,00 | - |
| 44 | 921 | 932 | **29,34** | 104,5 | 0,00 | 70,39 | - | - | 0,00 | 0,00 | - |
| 45 | 1.347 | 1.354 | **25,02** | 104,5 | 0,00 | 73,64 | - | - | 0,00 | 0,00 | - |
| 46 | 1.647 | 1.653 | **22,65** | 104,5 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 47 | 1.269 | 1.277 | **25,71** | 104,5 | 0,00 | 73,13 | - | - | 0,00 | 0,00 | - |
| 5 | 1.668 | 1.673 | **22,56** | 106,0 | 0,00 | 75,47 | - | - | 0,00 | 0,00 | - |
| 6 | 5.819 | 5.821 | **6,81** | 106,0 | 0,00 | 86,30 | - | - | 0,00 | 0,00 | - |
| 7 | 8.902 | 8.903 | **2,31** | 106,0 | 0,00 | 89,99 | - | - | 0,00 | 0,00 | - |
| 8 | 3.559 | 3.561 | **14,04** | 106,0 | 0,00 | 82,03 | - | - | 0,00 | 0,00 | - |
| 9 | 4.038 | 4.039 | **12,42** | 106,0 | 0,00 | 83,13 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,45** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: R Noise sensitive point: User defined (20)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 867 | 877 | **30,78** | 106,0 | 0,00 | 69,86 | - | - | 0,00 | 0,00 | - |
| 10 | 3.882 | 3.883 | **12,93** | 106,0 | 0,00 | 82,78 | - | - | 0,00 | 0,00 | - |
| 11 | 4.373 | 4.375 | **11,40** | 106,0 | 0,00 | 83,82 | - | - | 0,00 | 0,00 | - |
| 12 | 4.733 | 4.734 | **10,38** | 106,0 | 0,00 | 84,51 | - | - | 0,00 | 0,00 | - |
| 13 | 4.562 | 4.564 | **10,85** | 106,0 | 0,00 | 84,19 | - | - | 0,00 | 0,00 | - |
| 14 | 6.172 | 6.173 | **6,96** | 106,0 | 0,00 | 86,81 | - | - | 0,00 | 0,00 | - |
| 15 | 6.576 | 6.577 | **6,15** | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 16 | 6.643 | 6.644 | **6,02** | 106,0 | 0,00 | 87,45 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 8.333 | 8.334 | **3,16** | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 18 | 8.395 | 8.396 | **3,06** | 106,0 | 0,00 | 89,48 | - | - | 0,00 | 0,00 | - |
| 19 | 8.565 | 8.566 | **2,81** | 106,0 | 0,00 | 89,66 | - | - | 0,00 | 0,00 | - |
| 2 | 522 | 538 | **36,61** | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 20 | 8.649 | 8.650 | **2,69** | 106,0 | 0,00 | 89,74 | - | - | 0,00 | 0,00 | - |
| 21 | 8.694 | 8.694 | **2,63** | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 22 | 9.744 | 9.745 | **1,21** | 106,0 | 0,00 | 90,78 | - | - | 0,00 | 0,00 | - |
| 23 | 9.959 | 9.959 | **0,94** | 106,0 | 0,00 | 90,96 | - | - | 0,00 | 0,00 | - |
| 24 | 10.302 | 10.303 | **0,52** | 106,0 | 0,00 | 91,26 | - | - | 0,00 | 0,00 | - |
| 25 | 1.060 | 1.063 | **27,84** | 104,5 | 0,00 | 71,53 | - | - | 0,00 | 0,00 | - |
| 26 | 1.035 | 1.038 | **28,11** | 104,5 | 0,00 | 71,32 | - | - | 0,00 | 0,00 | - |
| 27 | 1.114 | 1.117 | **27,27** | 104,5 | 0,00 | 71,96 | - | - | 0,00 | 0,00 | - |
| 28 | 682 | 687 | **32,74** | 104,5 | 0,00 | 67,73 | - | - | 0,00 | 0,00 | - |
| 29 | 277 | 288 | **41,81** | 104,5 | 0,00 | 60,18 | - | - | 0,00 | 0,00 | - |
| 3 | 1.036 | 1.044 | **28,61** | 106,0 | 0,00 | 71,37 | - | - | 0,00 | 0,00 | - |
| 30 | 943 | 946 | **29,17** | 104,5 | 0,00 | 70,52 | - | - | 0,00 | 0,00 | - |
| 31 | 1.315 | 1.317 | **25,35** | 104,5 | 0,00 | 73,39 | - | - | 0,00 | 0,00 | - |
| 32 | 2.478 | 2.479 | **17,64** | 104,5 | 0,00 | 78,89 | - | - | 0,00 | 0,00 | - |
| 33 | 2.930 | 2.931 | **15,66** | 104,5 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 34 | 4.432 | 4.433 | **10,71** | 104,5 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 35 | 6.038 | 6.039 | **7,04** | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 36 | 6.506 | 6.507 | **6,17** | 104,5 | 0,00 | 87,27 | - | - | 0,00 | 0,00 | - |
| 37 | 5.215 | 5.217 | **9,67** | 106,0 | 0,00 | 85,35 | - | - | 0,00 | 0,00 | - |
| 38 | 1.864 | 1.870 | **22,65** | 106,0 | 0,00 | 76,44 | - | - | 0,00 | 0,00 | - |
| 39 | 4.202 | 4.205 | **12,29** | 106,0 | 0,00 | 83,48 | - | - | 0,00 | 0,00 | - |
| 4 | 2.528 | 2.531 | **17,09** | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 40 | 3.843 | 3.846 | **13,46** | 106,0 | 0,00 | 82,70 | - | - | 0,00 | 0,00 | - |
| 41 | 3.384 | 3.387 | **15,11** | 106,0 | 0,00 | 81,60 | - | - | 0,00 | 0,00 | - |
| 42 | 706 | 721 | **33,70** | 106,0 | 0,00 | 68,16 | - | - | 0,00 | 0,00 | - |
| 43 | 9.116 | 9.117 | **2,29** | 104,5 | 0,00 | 90,20 | - | - | 0,00 | 0,00 | - |
| 44 | 897 | 909 | **29,62** | 104,5 | 0,00 | 70,17 | - | - | 0,00 | 0,00 | - |
| 45 | 1.319 | 1.326 | **25,27** | 104,5 | 0,00 | 73,45 | - | - | 0,00 | 0,00 | - |
| 46 | 1.622 | 1.629 | **22,82** | 104,5 | 0,00 | 75,24 | - | - | 0,00 | 0,00 | - |
| 47 | 1.249 | 1.257 | **25,90** | 104,5 | 0,00 | 72,99 | - | - | 0,00 | 0,00 | - |
| 5 | 1.678 | 1.683 | **22,48** | 106,0 | 0,00 | 75,52 | - | - | 0,00 | 0,00 | - |
| 6 | 5.828 | 5.829 | **6,79** | 106,0 | 0,00 | 86,31 | - | - | 0,00 | 0,00 | - |
| 7 | 8.908 | 8.909 | **2,30** | 106,0 | 0,00 | 90,00 | - | - | 0,00 | 0,00 | - |
| 8 | 3.540 | 3.542 | **14,11** | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 9 | 4.020 | 4.021 | **12,48** | 106,0 | 0,00 | 83,09 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,98** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: S Noise sensitive point: User defined (21)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.003 | 1.011 | **29,01** | 106,0 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 10 | 3.889 | 3.891 | **12,91** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 11 | 4.266 | 4.267 | **11,72** | 106,0 | 0,00 | 83,60 | - | - | 0,00 | 0,00 | - |
| 12 | 4.625 | 4.626 | **10,67** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 13 | 4.461 | 4.463 | **11,14** | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 14 | 6.104 | 6.105 | **7,10** | 106,0 | 0,00 | 86,71 | - | - | 0,00 | 0,00 | - |
| 15 | 6.510 | 6.511 | **6,28** | 106,0 | 0,00 | 87,27 | - | - | 0,00 | 0,00 | - |
| 16 | 6.584 | 6.584 | **6,14** | 106,0 | 0,00 | 87,37 | - | - | 0,00 | 0,00 | - |
| 17 | 8.243 | 8.244 | **3,29** | 106,0 | 0,00 | 89,32 | - | - | 0,00 | 0,00 | - |
| 18 | 8.312 | 8.313 | **3,19** | 106,0 | 0,00 | 89,40 | - | - | 0,00 | 0,00 | - |
| 19 | 8.486 | 8.487 | **2,93** | 106,0 | 0,00 | 89,58 | - | - | 0,00 | 0,00 | - |
| 2 | 659 | 672 | **34,01** | 106,0 | 0,00 | 67,54 | - | - | 0,00 | 0,00 | - |
| 20 | 8.556 | 8.557 | **2,83** | 106,0 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 21 | 8.606 | 8.606 | **2,75** | 106,0 | 0,00 | 89,70 | - | - | 0,00 | 0,00 | - |
| 22 | 9.675 | 9.675 | **1,30** | 106,0 | 0,00 | 90,71 | - | - | 0,00 | 0,00 | - |
| 23 | 9.880 | 9.880 | **1,04** | 106,0 | 0,00 | 90,90 | - | - | 0,00 | 0,00 | - |
| 24 | 10.213 | 10.213 | **0,63** | 106,0 | 0,00 | 91,18 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 1.197 | 1.199 | **26,44** | 104,5 | 0,00 | 72,58 | - | - | 0,00 | 0,00 | - |
| 26 | 1.160 | 1.163 | **26,80** | 104,5 | 0,00 | 72,31 | - | - | 0,00 | 0,00 | - |
| 27 | 1.220 | 1.223 | **26,22** | 104,5 | 0,00 | 72,75 | - | - | 0,00 | 0,00 | - |
| 28 | 791 | 795 | **31,13** | 104,5 | 0,00 | 69,00 | - | - | 0,00 | 0,00 | - |
| 29 | 359 | 367 | **39,35** | 104,5 | 0,00 | 62,30 | - | - | 0,00 | 0,00 | - |
| 3 | 1.015 | 1.023 | **28,87** | 106,0 | 0,00 | 71,20 | - | - | 0,00 | 0,00 | - |
| 30 | 873 | 876 | **30,03** | 104,5 | 0,00 | 69,85 | - | - | 0,00 | 0,00 | - |
| 31 | 1.211 | 1.213 | **26,31** | 104,5 | 0,00 | 72,68 | - | - | 0,00 | 0,00 | - |
| 32 | 2.366 | 2.368 | **18,20** | 104,5 | 0,00 | 78,49 | - | - | 0,00 | 0,00 | - |
| 33 | 2.833 | 2.834 | **16,06** | 104,5 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 34 | 4.426 | 4.427 | **10,72** | 104,5 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 35 | 5.978 | 5.979 | **7,16** | 104,5 | 0,00 | 86,53 | - | - | 0,00 | 0,00 | - |
| 36 | 6.430 | 6.431 | **6,30** | 104,5 | 0,00 | 87,17 | - | - | 0,00 | 0,00 | - |
| 37 | 5.110 | 5.113 | **9,91** | 106,0 | 0,00 | 85,17 | - | - | 0,00 | 0,00 | - |
| 38 | 1.938 | 1.944 | **22,17** | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 39 | 4.136 | 4.139 | **12,50** | 106,0 | 0,00 | 83,34 | - | - | 0,00 | 0,00 | - |
| 4 | 2.432 | 2.435 | **17,61** | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 40 | 3.793 | 3.796 | **13,63** | 106,0 | 0,00 | 82,59 | - | - | 0,00 | 0,00 | - |
| 41 | 3.325 | 3.328 | **15,34** | 106,0 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 42 | 573 | 591 | **35,87** | 106,0 | 0,00 | 66,44 | - | - | 0,00 | 0,00 | - |
| 43 | 9.032 | 9.032 | **2,40** | 104,5 | 0,00 | 90,12 | - | - | 0,00 | 0,00 | - |
| 44 | 955 | 966 | **28,93** | 104,5 | 0,00 | 70,70 | - | - | 0,00 | 0,00 | - |
| 45 | 1.402 | 1.410 | **24,55** | 104,5 | 0,00 | 73,98 | - | - | 0,00 | 0,00 | - |
| 46 | 1.682 | 1.688 | **22,39** | 104,5 | 0,00 | 75,55 | - | - | 0,00 | 0,00 | - |
| 47 | 1.288 | 1.296 | **25,54** | 104,5 | 0,00 | 73,25 | - | - | 0,00 | 0,00 | - |
| 5 | 1.584 | 1.590 | **23,22** | 106,0 | 0,00 | 75,03 | - | - | 0,00 | 0,00 | - |
| 6 | 5.738 | 5.739 | **6,96** | 106,0 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 7 | 8.826 | 8.827 | **2,40** | 106,0 | 0,00 | 89,92 | - | - | 0,00 | 0,00 | - |
| 8 | 3.567 | 3.569 | **14,01** | 106,0 | 0,00 | 82,05 | - | - | 0,00 | 0,00 | - |
| 9 | 4.041 | 4.043 | **12,41** | 106,0 | 0,00 | 83,13 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,62** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: T Noise sensitive point: User defined (22)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 989 | 997 | **29,19** | 106,0 | 0,00 | 70,97 | - | - | 0,00 | 0,00 | - |
| 10 | 3.851 | 3.852 | **13,03** | 106,0 | 0,00 | 82,71 | - | - | 0,00 | 0,00 | - |
| 11 | 4.259 | 4.260 | **11,74** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 12 | 4.618 | 4.620 | **10,69** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 13 | 4.451 | 4.453 | **11,17** | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 14 | 6.082 | 6.083 | **7,15** | 106,0 | 0,00 | 86,68 | - | - | 0,00 | 0,00 | - |
| 15 | 6.487 | 6.488 | **6,32** | 106,0 | 0,00 | 87,24 | - | - | 0,00 | 0,00 | - |
| 16 | 6.559 | 6.560 | **6,18** | 106,0 | 0,00 | 87,34 | - | - | 0,00 | 0,00 | - |
| 17 | 8.228 | 8.229 | **3,32** | 106,0 | 0,00 | 89,31 | - | - | 0,00 | 0,00 | - |
| 18 | 8.295 | 8.296 | **3,21** | 106,0 | 0,00 | 89,38 | - | - | 0,00 | 0,00 | - |
| 19 | 8.468 | 8.468 | **2,96** | 106,0 | 0,00 | 89,56 | - | - | 0,00 | 0,00 | - |
| 2 | 636 | 649 | **34,42** | 106,0 | 0,00 | 67,25 | - | - | 0,00 | 0,00 | - |
| 20 | 8.543 | 8.544 | **2,85** | 106,0 | 0,00 | 89,63 | - | - | 0,00 | 0,00 | - |
| 21 | 8.590 | 8.591 | **2,78** | 106,0 | 0,00 | 89,68 | - | - | 0,00 | 0,00 | - |
| 22 | 9.653 | 9.653 | **1,33** | 106,0 | 0,00 | 90,69 | - | - | 0,00 | 0,00 | - |
| 23 | 9.861 | 9.862 | **1,06** | 106,0 | 0,00 | 90,88 | - | - | 0,00 | 0,00 | - |
| 24 | 10.198 | 10.198 | **0,65** | 106,0 | 0,00 | 91,17 | - | - | 0,00 | 0,00 | - |
| 25 | 1.173 | 1.176 | **26,68** | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 26 | 1.126 | 1.129 | **27,14** | 104,5 | 0,00 | 72,05 | - | - | 0,00 | 0,00 | - |
| 27 | 1.181 | 1.183 | **26,60** | 104,5 | 0,00 | 72,46 | - | - | 0,00 | 0,00 | - |
| 28 | 752 | 756 | **31,67** | 104,5 | 0,00 | 68,57 | - | - | 0,00 | 0,00 | - |
| 29 | 318 | 327 | **40,52** | 104,5 | 0,00 | 61,30 | - | - | 0,00 | 0,00 | - |
| 3 | 979 | 988 | **29,30** | 106,0 | 0,00 | 70,89 | - | - | 0,00 | 0,00 | - |
| 30 | 850 | 853 | **30,33** | 104,5 | 0,00 | 69,62 | - | - | 0,00 | 0,00 | - |
| 31 | 1.201 | 1.204 | **26,40** | 104,5 | 0,00 | 72,61 | - | - | 0,00 | 0,00 | - |
| 32 | 2.361 | 2.363 | **18,23** | 104,5 | 0,00 | 78,47 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 2.821 | 2.822 | **16,11** | 104,5 | 0,00 | 80,01 | - | - | 0,00 | 0,00 | - |
| 34 | 4.389 | 4.390 | **10,82** | 104,5 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 35 | 5.953 | 5.954 | **7,20** | 104,5 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 36 | 6.410 | 6.411 | **6,34** | 104,5 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 37 | 5.102 | 5.104 | **9,93** | 106,0 | 0,00 | 85,16 | - | - | 0,00 | 0,00 | - |
| 38 | 1.895 | 1.901 | **22,45** | 106,0 | 0,00 | 76,58 | - | - | 0,00 | 0,00 | - |
| 39 | 4.113 | 4.116 | **12,57** | 106,0 | 0,00 | 83,29 | - | - | 0,00 | 0,00 | - |
| 4 | 2.419 | 2.423 | **17,68** | 106,0 | 0,00 | 78,69 | - | - | 0,00 | 0,00 | - |
| 40 | 3.766 | 3.769 | **13,72** | 106,0 | 0,00 | 82,52 | - | - | 0,00 | 0,00 | - |
| 41 | 3.299 | 3.303 | **15,44** | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 42 | 585 | 603 | **35,66** | 106,0 | 0,00 | 66,61 | - | - | 0,00 | 0,00 | - |
| 43 | 9.015 | 9.015 | **2,42** | 104,5 | 0,00 | 90,10 | - | - | 0,00 | 0,00 | - |
| 44 | 912 | 923 | **29,44** | 104,5 | 0,00 | 70,31 | - | - | 0,00 | 0,00 | - |
| 45 | 1.360 | 1.367 | **24,91** | 104,5 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |
| 46 | 1.639 | 1.645 | **22,71** | 104,5 | 0,00 | 75,32 | - | - | 0,00 | 0,00 | - |
| 47 | 1.245 | 1.253 | **25,93** | 104,5 | 0,00 | 72,96 | - | - | 0,00 | 0,00 | - |
| 5 | 1.570 | 1.576 | **23,34** | 106,0 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 6 | 5.723 | 5.725 | **6,99** | 106,0 | 0,00 | 86,15 | - | - | 0,00 | 0,00 | - |
| 7 | 8.808 | 8.809 | **2,42** | 106,0 | 0,00 | 89,90 | - | - | 0,00 | 0,00 | - |
| 8 | 3.526 | 3.528 | **14,16** | 106,0 | 0,00 | 81,95 | - | - | 0,00 | 0,00 | - |
| 9 | 4.001 | 4.002 | **12,54** | 106,0 | 0,00 | 83,05 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,22** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: U Noise sensitive point: User defined (23)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.870 | 1.874 | **21,07** | 106,0 | 0,00 | 76,46 | - | - | 0,00 | 0,00 | - |
| 10 | 2.586 | 2.588 | **18,27** | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 11 | 3.437 | 3.439 | **14,49** | 106,0 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 12 | 3.790 | 3.792 | **13,24** | 106,0 | 0,00 | 82,58 | - | - | 0,00 | 0,00 | - |
| 13 | 3.545 | 3.547 | **14,09** | 106,0 | 0,00 | 82,00 | - | - | 0,00 | 0,00 | - |
| 14 | 4.892 | 4.893 | **9,95** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 15 | 5.287 | 5.288 | **8,95** | 106,0 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 16 | 5.330 | 5.331 | **8,84** | 106,0 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 17 | 7.170 | 7.171 | **5,05** | 106,0 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 18 | 7.186 | 7.187 | **5,02** | 106,0 | 0,00 | 88,13 | - | - | 0,00 | 0,00 | - |
| 19 | 7.331 | 7.332 | **4,77** | 106,0 | 0,00 | 88,30 | - | - | 0,00 | 0,00 | - |
| 2 | 1.516 | 1.521 | **23,79** | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 20 | 7.510 | 7.511 | **4,46** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 21 | 7.513 | 7.514 | **4,46** | 106,0 | 0,00 | 88,52 | - | - | 0,00 | 0,00 | - |
| 22 | 8.460 | 8.461 | **2,97** | 106,0 | 0,00 | 89,55 | - | - | 0,00 | 0,00 | - |
| 23 | 8.721 | 8.722 | **2,59** | 106,0 | 0,00 | 89,81 | - | - | 0,00 | 0,00 | - |
| 24 | 9.127 | 9.128 | **2,02** | 106,0 | 0,00 | 90,21 | - | - | 0,00 | 0,00 | - |
| 25 | 1.819 | 1.821 | **21,47** | 104,5 | 0,00 | 76,21 | - | - | 0,00 | 0,00 | - |
| 26 | 1.504 | 1.506 | **23,76** | 104,5 | 0,00 | 74,56 | - | - | 0,00 | 0,00 | - |
| 27 | 1.268 | 1.270 | **25,78** | 104,5 | 0,00 | 73,08 | - | - | 0,00 | 0,00 | - |
| 28 | 1.194 | 1.197 | **26,47** | 104,5 | 0,00 | 72,56 | - | - | 0,00 | 0,00 | - |
| 29 | 1.159 | 1.161 | **26,82** | 104,5 | 0,00 | 72,30 | - | - | 0,00 | 0,00 | - |
| 3 | 327 | 352 | **41,35** | 106,0 | 0,00 | 61,93 | - | - | 0,00 | 0,00 | - |
| 30 | 600 | 605 | **34,12** | 104,5 | 0,00 | 66,63 | - | - | 0,00 | 0,00 | - |
| 31 | 885 | 888 | **29,88** | 104,5 | 0,00 | 69,97 | - | - | 0,00 | 0,00 | - |
| 32 | 1.743 | 1.745 | **21,99** | 104,5 | 0,00 | 75,84 | - | - | 0,00 | 0,00 | - |
| 33 | 1.943 | 1.945 | **20,66** | 104,5 | 0,00 | 76,78 | - | - | 0,00 | 0,00 | - |
| 34 | 3.094 | 3.095 | **15,01** | 104,5 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 35 | 4.729 | 4.729 | **9,93** | 104,5 | 0,00 | 84,50 | - | - | 0,00 | 0,00 | - |
| 36 | 5.261 | 5.261 | **8,66** | 104,5 | 0,00 | 85,42 | - | - | 0,00 | 0,00 | - |
| 37 | 4.218 | 4.221 | **12,24** | 106,0 | 0,00 | 83,51 | - | - | 0,00 | 0,00 | - |
| 38 | 1.278 | 1.287 | **27,13** | 106,0 | 0,00 | 73,19 | - | - | 0,00 | 0,00 | - |
| 39 | 2.928 | 2.931 | **16,98** | 106,0 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| 4 | 1.573 | 1.578 | **23,32** | 106,0 | 0,00 | 74,96 | - | - | 0,00 | 0,00 | - |
| 40 | 2.512 | 2.516 | **18,94** | 106,0 | 0,00 | 79,01 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 2.090 | 2.096 | **21,24** | 106,0 | 0,00 | 77,43 | - | - | 0,00 | 0,00 | - |
| 42 | 1.247 | 1.256 | **27,41** | 106,0 | 0,00 | 72,98 | - | - | 0,00 | 0,00 | - |
| 43 | 7.914 | 7.915 | **3,90** | 104,5 | 0,00 | 88,97 | - | - | 0,00 | 0,00 | - |
| 44 | 790 | 803 | **31,01** | 104,5 | 0,00 | 69,09 | - | - | 0,00 | 0,00 | - |
| 45 | 1.082 | 1.091 | **27,54** | 104,5 | 0,00 | 71,76 | - | - | 0,00 | 0,00 | - |
| 46 | 951 | 962 | **28,98** | 104,5 | 0,00 | 70,66 | - | - | 0,00 | 0,00 | - |
| 47 | 596 | 613 | **33,98** | 104,5 | 0,00 | 66,75 | - | - | 0,00 | 0,00 | - |
| 5 | 891 | 901 | **30,45** | 106,0 | 0,00 | 70,09 | - | - | 0,00 | 0,00 | - |
| 6 | 4.683 | 4.685 | **9,23** | 106,0 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 7 | 7.693 | 7.695 | **3,83** | 106,0 | 0,00 | 88,72 | - | - | 0,00 | 0,00 | - |
| 8 | 2.343 | 2.346 | **19,57** | 106,0 | 0,00 | 78,41 | - | - | 0,00 | 0,00 | - |
| 9 | 2.782 | 2.785 | **17,31** | 106,0 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,42** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: V Noise sensitive point: User defined (24)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.828 | 1.833 | **21,36** | 106,0 | 0,00 | 76,26 | - | - | 0,00 | 0,00 | - |
| 10 | 2.615 | 2.617 | **18,13** | 106,0 | 0,00 | 79,36 | - | - | 0,00 | 0,00 | - |
| 11 | 3.473 | 3.475 | **14,35** | 106,0 | 0,00 | 81,82 | - | - | 0,00 | 0,00 | - |
| 12 | 3.826 | 3.828 | **13,12** | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 13 | 3.583 | 3.585 | **13,96** | 106,0 | 0,00 | 82,09 | - | - | 0,00 | 0,00 | - |
| 14 | 4.933 | 4.934 | **9,84** | 106,0 | 0,00 | 84,86 | - | - | 0,00 | 0,00 | - |
| 15 | 5.328 | 5.329 | **8,85** | 106,0 | 0,00 | 85,53 | - | - | 0,00 | 0,00 | - |
| 16 | 5.371 | 5.372 | **8,75** | 106,0 | 0,00 | 85,60 | - | - | 0,00 | 0,00 | - |
| 17 | 7.211 | 7.212 | **4,98** | 106,0 | 0,00 | 88,16 | - | - | 0,00 | 0,00 | - |
| 18 | 7.227 | 7.228 | **4,95** | 106,0 | 0,00 | 88,18 | - | - | 0,00 | 0,00 | - |
| 19 | 7.372 | 7.373 | **4,70** | 106,0 | 0,00 | 88,35 | - | - | 0,00 | 0,00 | - |
| 2 | 1.474 | 1.480 | **24,15** | 106,0 | 0,00 | 74,41 | - | - | 0,00 | 0,00 | - |
| 20 | 7.551 | 7.551 | **4,40** | 106,0 | 0,00 | 88,56 | - | - | 0,00 | 0,00 | - |
| 21 | 7.554 | 7.555 | **4,39** | 106,0 | 0,00 | 88,56 | - | - | 0,00 | 0,00 | - |
| 22 | 8.501 | 8.502 | **2,91** | 106,0 | 0,00 | 89,59 | - | - | 0,00 | 0,00 | - |
| 23 | 8.763 | 8.764 | **2,53** | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 24 | 9.169 | 9.169 | **1,96** | 106,0 | 0,00 | 90,25 | - | - | 0,00 | 0,00 | - |
| 25 | 1.779 | 1.780 | **21,74** | 104,5 | 0,00 | 76,01 | - | - | 0,00 | 0,00 | - |
| 26 | 1.464 | 1.466 | **24,08** | 104,5 | 0,00 | 74,33 | - | - | 0,00 | 0,00 | - |
| 27 | 1.230 | 1.233 | **26,12** | 104,5 | 0,00 | 72,82 | - | - | 0,00 | 0,00 | - |
| 28 | 1.153 | 1.156 | **26,87** | 104,5 | 0,00 | 72,26 | - | - | 0,00 | 0,00 | - |
| 29 | 1.119 | 1.121 | **27,22** | 104,5 | 0,00 | 72,00 | - | - | 0,00 | 0,00 | - |
| 3 | 290 | 317 | **42,45** | 106,0 | 0,00 | 61,03 | - | - | 0,00 | 0,00 | - |
| 30 | 580 | 585 | **34,48** | 104,5 | 0,00 | 66,34 | - | - | 0,00 | 0,00 | - |
| 31 | 887 | 890 | **29,85** | 104,5 | 0,00 | 69,99 | - | - | 0,00 | 0,00 | - |
| 32 | 1.770 | 1.771 | **21,81** | 104,5 | 0,00 | 75,97 | - | - | 0,00 | 0,00 | - |
| 33 | 1.979 | 1.980 | **20,44** | 104,5 | 0,00 | 76,94 | - | - | 0,00 | 0,00 | - |
| 34 | 3.127 | 3.128 | **14,89** | 104,5 | 0,00 | 80,91 | - | - | 0,00 | 0,00 | - |
| 35 | 4.770 | 4.771 | **9,83** | 104,5 | 0,00 | 84,57 | - | - | 0,00 | 0,00 | - |
| 36 | 5.302 | 5.303 | **8,57** | 104,5 | 0,00 | 85,49 | - | - | 0,00 | 0,00 | - |
| 37 | 4.256 | 4.259 | **12,13** | 106,0 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 38 | 1.262 | 1.270 | **27,28** | 106,0 | 0,00 | 73,08 | - | - | 0,00 | 0,00 | - |
| 39 | 2.969 | 2.973 | **16,80** | 106,0 | 0,00 | 80,46 | - | - | 0,00 | 0,00 | - |
| 4 | 1.606 | 1.611 | **23,05** | 106,0 | 0,00 | 75,14 | - | - | 0,00 | 0,00 | - |
| 40 | 2.553 | 2.557 | **18,74** | 106,0 | 0,00 | 79,15 | - | - | 0,00 | 0,00 | - |
| 41 | 2.132 | 2.137 | **21,00** | 106,0 | 0,00 | 77,60 | - | - | 0,00 | 0,00 | - |
| 42 | 1.224 | 1.232 | **27,63** | 106,0 | 0,00 | 72,82 | - | - | 0,00 | 0,00 | - |
| 43 | 7.956 | 7.956 | **3,84** | 104,5 | 0,00 | 89,01 | - | - | 0,00 | 0,00 | - |
| 44 | 750 | 763 | **31,57** | 104,5 | 0,00 | 68,65 | - | - | 0,00 | 0,00 | - |
| 45 | 1.050 | 1.060 | **27,87** | 104,5 | 0,00 | 71,50 | - | - | 0,00 | 0,00 | - |
| 46 | 933 | 944 | **29,19** | 104,5 | 0,00 | 70,50 | - | - | 0,00 | 0,00 | - |
| 47 | 566 | 584 | **34,51** | 104,5 | 0,00 | 66,33 | - | - | 0,00 | 0,00 | - |
| 5 | 912 | 921 | **30,18** | 106,0 | 0,00 | 70,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.724 | 4.726 | **9,13** | 106,0 | 0,00 | 84,49 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 7.735 | 7.736 | **3,77** | 106,0 | 0,00 | 88,77 | - | - | 0,00 | 0,00 | - |
| 8 | 2.364 | 2.367 | **19,45** | 106,0 | 0,00 | 78,48 | - | - | 0,00 | 0,00 | - |
| 9 | 2.807 | 2.809 | **17,19** | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| Sum | | | **45,03** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: W Noise sensitive point: User defined (25)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.662 | 2.665 | **16,41** | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 10 | 2.735 | 2.737 | **17,54** | 106,0 | 0,00 | 79,75 | - | - | 0,00 | 0,00 | - |
| 11 | 2.515 | 2.517 | **18,64** | 106,0 | 0,00 | 79,02 | - | - | 0,00 | 0,00 | - |
| 12 | 2.872 | 2.874 | **16,88** | 106,0 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 13 | 2.656 | 2.658 | **17,92** | 106,0 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 14 | 4.257 | 4.258 | **11,75** | 106,0 | 0,00 | 83,58 | - | - | 0,00 | 0,00 | - |
| 15 | 4.667 | 4.668 | **10,56** | 106,0 | 0,00 | 84,38 | - | - | 0,00 | 0,00 | - |
| 16 | 4.761 | 4.762 | **10,30** | 106,0 | 0,00 | 84,56 | - | - | 0,00 | 0,00 | - |
| 17 | 6.386 | 6.387 | **6,52** | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 18 | 6.447 | 6.448 | **6,40** | 106,0 | 0,00 | 87,19 | - | - | 0,00 | 0,00 | - |
| 19 | 6.621 | 6.622 | **6,06** | 106,0 | 0,00 | 87,42 | - | - | 0,00 | 0,00 | - |
| 2 | 2.278 | 2.282 | **18,47** | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 20 | 6.707 | 6.708 | **5,90** | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| 21 | 6.745 | 6.746 | **5,83** | 106,0 | 0,00 | 87,58 | - | - | 0,00 | 0,00 | - |
| 22 | 7.821 | 7.822 | **3,95** | 106,0 | 0,00 | 88,87 | - | - | 0,00 | 0,00 | - |
| 23 | 8.014 | 8.015 | **3,65** | 106,0 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 24 | 8.354 | 8.355 | **3,12** | 106,0 | 0,00 | 89,44 | - | - | 0,00 | 0,00 | - |
| 25 | 2.679 | 2.680 | **16,72** | 104,5 | 0,00 | 79,56 | - | - | 0,00 | 0,00 | - |
| 26 | 2.402 | 2.403 | **18,02** | 104,5 | 0,00 | 78,62 | - | - | 0,00 | 0,00 | - |
| 27 | 2.196 | 2.198 | **19,14** | 104,5 | 0,00 | 77,84 | - | - | 0,00 | 0,00 | - |
| 28 | 2.039 | 2.041 | **20,07** | 104,5 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 29 | 1.849 | 1.850 | **21,27** | 104,5 | 0,00 | 76,35 | - | - | 0,00 | 0,00 | - |
| 3 | 1.121 | 1.128 | **27,63** | 106,0 | 0,00 | 72,04 | - | - | 0,00 | 0,00 | - |
| 30 | 1.013 | 1.016 | **28,36** | 104,5 | 0,00 | 71,14 | - | - | 0,00 | 0,00 | - |
| 31 | 717 | 721 | **32,20** | 104,5 | 0,00 | 68,16 | - | - | 0,00 | 0,00 | - |
| 32 | 814 | 819 | **30,79** | 104,5 | 0,00 | 69,26 | - | - | 0,00 | 0,00 | - |
| 33 | 1.022 | 1.025 | **28,25** | 104,5 | 0,00 | 71,22 | - | - | 0,00 | 0,00 | - |
| 34 | 3.069 | 3.070 | **15,11** | 104,5 | 0,00 | 80,74 | - | - | 0,00 | 0,00 | - |
| 35 | 4.155 | 4.156 | **11,48** | 104,5 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 36 | 4.568 | 4.569 | **10,34** | 104,5 | 0,00 | 84,20 | - | - | 0,00 | 0,00 | - |
| 37 | 3.323 | 3.327 | **15,35** | 106,0 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 38 | 2.184 | 2.189 | **20,70** | 106,0 | 0,00 | 77,80 | - | - | 0,00 | 0,00 | - |
| 39 | 2.302 | 2.307 | **20,04** | 106,0 | 0,00 | 78,26 | - | - | 0,00 | 0,00 | - |
| 4 | 631 | 645 | **34,49** | 106,0 | 0,00 | 67,19 | - | - | 0,00 | 0,00 | - |
| 40 | 2.054 | 2.059 | **21,46** | 106,0 | 0,00 | 77,27 | - | - | 0,00 | 0,00 | - |
| 41 | 1.537 | 1.544 | **24,97** | 106,0 | 0,00 | 74,77 | - | - | 0,00 | 0,00 | - |
| 42 | 1.468 | 1.475 | **25,52** | 106,0 | 0,00 | 74,38 | - | - | 0,00 | 0,00 | - |
| 43 | 7.167 | 7.168 | **5,04** | 104,5 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 44 | 1.691 | 1.697 | **22,33** | 104,5 | 0,00 | 75,59 | - | - | 0,00 | 0,00 | - |
| 45 | 2.032 | 2.037 | **20,09** | 104,5 | 0,00 | 77,18 | - | - | 0,00 | 0,00 | - |
| 46 | 1.871 | 1.876 | **21,10** | 104,5 | 0,00 | 76,47 | - | - | 0,00 | 0,00 | - |
| 47 | 1.547 | 1.553 | **23,39** | 104,5 | 0,00 | 74,83 | - | - | 0,00 | 0,00 | - |
| 5 | 322 | 346 | **41,52** | 106,0 | 0,00 | 61,79 | - | - | 0,00 | 0,00 | - |
| 6 | 3.881 | 3.884 | **11,42** | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 7 | 6.960 | 6.961 | **4,88** | 106,0 | 0,00 | 87,85 | - | - | 0,00 | 0,00 | - |
| 8 | 2.707 | 2.710 | **17,67** | 106,0 | 0,00 | 79,66 | - | - | 0,00 | 0,00 | - |
| 9 | 3.041 | 3.043 | **16,12** | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,89** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: X Noise sensitive point: User defined (26)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.664 | 2.668 | **16,40** | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 10 | 2.793 | 2.795 | **17,26** | 106,0 | 0,00 | 79,93 | - | - | 0,00 | 0,00 | - |
| 11 | 2.503 | 2.505 | **18,70** | 106,0 | 0,00 | 78,98 | - | - | 0,00 | 0,00 | - |
| 12 | 2.861 | 2.863 | **16,93** | 106,0 | 0,00 | 80,14 | - | - | 0,00 | 0,00 | - |
| 13 | 2.651 | 2.654 | **17,94** | 106,0 | 0,00 | 79,48 | - | - | 0,00 | 0,00 | - |
| 14 | 4.280 | 4.282 | **11,67** | 106,0 | 0,00 | 83,63 | - | - | 0,00 | 0,00 | - |
| 15 | 4.691 | 4.693 | **10,49** | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 16 | 4.790 | 4.791 | **10,22** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 17 | 6.394 | 6.395 | **6,51** | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| 18 | 6.460 | 6.461 | **6,38** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 19 | 6.637 | 6.638 | **6,03** | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 2 | 2.279 | 2.283 | **18,47** | 106,0 | 0,00 | 78,17 | - | - | 0,00 | 0,00 | - |
| 20 | 6.713 | 6.714 | **5,89** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 21 | 6.755 | 6.756 | **5,81** | 106,0 | 0,00 | 87,59 | - | - | 0,00 | 0,00 | - |
| 22 | 7.842 | 7.843 | **3,92** | 106,0 | 0,00 | 88,89 | - | - | 0,00 | 0,00 | - |
| 23 | 8.030 | 8.030 | **3,62** | 106,0 | 0,00 | 89,09 | - | - | 0,00 | 0,00 | - |
| 24 | 8.363 | 8.364 | **3,11** | 106,0 | 0,00 | 89,45 | - | - | 0,00 | 0,00 | - |
| 25 | 2.689 | 2.690 | **16,68** | 104,5 | 0,00 | 79,59 | - | - | 0,00 | 0,00 | - |
| 26 | 2.417 | 2.418 | **17,94** | 104,5 | 0,00 | 78,67 | - | - | 0,00 | 0,00 | - |
| 27 | 2.216 | 2.218 | **19,03** | 104,5 | 0,00 | 77,92 | - | - | 0,00 | 0,00 | - |
| 28 | 2.049 | 2.050 | **20,01** | 104,5 | 0,00 | 77,24 | - | - | 0,00 | 0,00 | - |
| 29 | 1.847 | 1.848 | **21,29** | 104,5 | 0,00 | 76,34 | - | - | 0,00 | 0,00 | - |
| 3 | 1.136 | 1.143 | **27,47** | 106,0 | 0,00 | 72,16 | - | - | 0,00 | 0,00 | - |
| 30 | 1.008 | 1.011 | **28,41** | 104,5 | 0,00 | 71,10 | - | - | 0,00 | 0,00 | - |
| 31 | 687 | 691 | **32,67** | 104,5 | 0,00 | 67,79 | - | - | 0,00 | 0,00 | - |
| 32 | 772 | 777 | **31,38** | 104,5 | 0,00 | 68,81 | - | - | 0,00 | 0,00 | - |
| 33 | 1.014 | 1.018 | **28,34** | 104,5 | 0,00 | 71,15 | - | - | 0,00 | 0,00 | - |
| 34 | 3.124 | 3.125 | **14,90** | 104,5 | 0,00 | 80,90 | - | - | 0,00 | 0,00 | - |
| 35 | 4.184 | 4.185 | **11,40** | 104,5 | 0,00 | 83,43 | - | - | 0,00 | 0,00 | - |
| 36 | 4.587 | 4.587 | **10,30** | 104,5 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 37 | 3.317 | 3.321 | **15,37** | 106,0 | 0,00 | 81,42 | - | - | 0,00 | 0,00 | - |
| 38 | 2.224 | 2.229 | **20,47** | 106,0 | 0,00 | 77,96 | - | - | 0,00 | 0,00 | - |
| 39 | 2.330 | 2.335 | **19,89** | 106,0 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 4 | 617 | 632 | **34,74** | 106,0 | 0,00 | 67,01 | - | - | 0,00 | 0,00 | - |
| 40 | 2.095 | 2.100 | **21,21** | 106,0 | 0,00 | 77,44 | - | - | 0,00 | 0,00 | - |
| 41 | 1.574 | 1.581 | **24,69** | 106,0 | 0,00 | 74,98 | - | - | 0,00 | 0,00 | - |
| 42 | 1.441 | 1.448 | **25,74** | 106,0 | 0,00 | 74,22 | - | - | 0,00 | 0,00 | - |
| 43 | 7.179 | 7.180 | **5,02** | 104,5 | 0,00 | 88,12 | - | - | 0,00 | 0,00 | - |
| 44 | 1.709 | 1.715 | **22,20** | 104,5 | 0,00 | 75,68 | - | - | 0,00 | 0,00 | - |
| 45 | 2.060 | 2.065 | **19,92** | 104,5 | 0,00 | 77,30 | - | - | 0,00 | 0,00 | - |
| 46 | 1.909 | 1.914 | **20,86** | 104,5 | 0,00 | 76,64 | - | - | 0,00 | 0,00 | - |
| 47 | 1.576 | 1.583 | **23,17** | 104,5 | 0,00 | 74,99 | - | - | 0,00 | 0,00 | - |
| 5 | 287 | 314 | **42,56** | 106,0 | 0,00 | 60,94 | - | - | 0,00 | 0,00 | - |
| 6 | 3.889 | 3.892 | **11,39** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 7 | 6.974 | 6.975 | **4,86** | 106,0 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| 8 | 2.766 | 2.768 | **17,39** | 106,0 | 0,00 | 79,84 | - | - | 0,00 | 0,00 | - |
| 9 | 3.099 | 3.101 | **15,86** | 106,0 | 0,00 | 80,83 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,59** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: Y Noise sensitive point: User defined (27)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.827 | 2.830 | **15,61** | 106,0 | 0,00 | 80,04 | - | - | 0,00 | 0,00 | - |
| 10 | 2.643 | 2.645 | **17,99** | 106,0 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 11 | 2.369 | 2.372 | **19,42** | 106,0 | 0,00 | 78,50 | - | - | 0,00 | 0,00 | - |
| 12 | 2.725 | 2.727 | **17,58** | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 13 | 2.498 | 2.500 | **18,73** | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 14 | 4.077 | 4.079 | **12,30** | 106,0 | 0,00 | 83,21 | - | - | 0,00 | 0,00 | - |
| 15 | 4.487 | 4.489 | **11,07** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 16 | 4.583 | 4.584 | **10,79** | 106,0 | 0,00 | 84,22 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 6.212 | 6.213 | **6,88** | 106,0 | 0,00 | 86,87 | - | - | 0,00 | 0,00 | - |
| 18 | 6.270 | 6.271 | **6,76** | 106,0 | 0,00 | 86,95 | - | - | 0,00 | 0,00 | - |
| 19 | 6.443 | 6.444 | **6,41** | 106,0 | 0,00 | 87,18 | - | - | 0,00 | 0,00 | - |
| 2 | 2.445 | 2.448 | **17,54** | 106,0 | 0,00 | 78,78 | - | - | 0,00 | 0,00 | - |
| 20 | 6.535 | 6.536 | **6,23** | 106,0 | 0,00 | 87,31 | - | - | 0,00 | 0,00 | - |
| 21 | 6.570 | 6.571 | **6,16** | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 22 | 7.641 | 7.642 | **4,25** | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 23 | 7.836 | 7.837 | **3,93** | 106,0 | 0,00 | 88,88 | - | - | 0,00 | 0,00 | - |
| 24 | 8.180 | 8.181 | **3,39** | 106,0 | 0,00 | 89,26 | - | - | 0,00 | 0,00 | - |
| 25 | 2.835 | 2.836 | **16,05** | 104,5 | 0,00 | 80,05 | - | - | 0,00 | 0,00 | - |
| 26 | 2.549 | 2.550 | **17,31** | 104,5 | 0,00 | 79,13 | - | - | 0,00 | 0,00 | - |
| 27 | 2.333 | 2.334 | **18,39** | 104,5 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 28 | 2.195 | 2.196 | **19,15** | 104,5 | 0,00 | 77,83 | - | - | 0,00 | 0,00 | - |
| 29 | 2.019 | 2.021 | **20,19** | 104,5 | 0,00 | 77,11 | - | - | 0,00 | 0,00 | - |
| 3 | 1.271 | 1.277 | **26,05** | 106,0 | 0,00 | 73,12 | - | - | 0,00 | 0,00 | - |
| 30 | 1.187 | 1.189 | **26,54** | 104,5 | 0,00 | 72,50 | - | - | 0,00 | 0,00 | - |
| 31 | 894 | 897 | **29,76** | 104,5 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 32 | 771 | 775 | **31,41** | 104,5 | 0,00 | 68,78 | - | - | 0,00 | 0,00 | - |
| 33 | 874 | 878 | **30,01** | 104,5 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 34 | 2.947 | 2.948 | **15,59** | 104,5 | 0,00 | 80,39 | - | - | 0,00 | 0,00 | - |
| 35 | 3.977 | 3.978 | **12,01** | 104,5 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 36 | 4.389 | 4.390 | **10,82** | 104,5 | 0,00 | 83,85 | - | - | 0,00 | 0,00 | - |
| 37 | 3.167 | 3.171 | **15,97** | 106,0 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 38 | 2.267 | 2.271 | **20,23** | 106,0 | 0,00 | 78,13 | - | - | 0,00 | 0,00 | - |
| 39 | 2.123 | 2.128 | **21,05** | 106,0 | 0,00 | 77,56 | - | - | 0,00 | 0,00 | - |
| 4 | 503 | 520 | **37,00** | 106,0 | 0,00 | 65,32 | - | - | 0,00 | 0,00 | - |
| 40 | 1.888 | 1.893 | **22,50** | 106,0 | 0,00 | 76,54 | - | - | 0,00 | 0,00 | - |
| 41 | 1.366 | 1.373 | **26,36** | 106,0 | 0,00 | 73,76 | - | - | 0,00 | 0,00 | - |
| 42 | 1.646 | 1.653 | **24,15** | 106,0 | 0,00 | 75,36 | - | - | 0,00 | 0,00 | - |
| 43 | 6.991 | 6.992 | **5,33** | 104,5 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 44 | 1.834 | 1.840 | **21,34** | 104,5 | 0,00 | 76,30 | - | - | 0,00 | 0,00 | - |
| 45 | 2.152 | 2.156 | **19,38** | 104,5 | 0,00 | 77,67 | - | - | 0,00 | 0,00 | - |
| 46 | 1.963 | 1.968 | **20,52** | 104,5 | 0,00 | 76,88 | - | - | 0,00 | 0,00 | - |
| 47 | 1.665 | 1.671 | **22,51** | 104,5 | 0,00 | 75,46 | - | - | 0,00 | 0,00 | - |
| 5 | 495 | 511 | **37,19** | 106,0 | 0,00 | 65,17 | - | - | 0,00 | 0,00 | - |
| 6 | 3.709 | 3.711 | **12,02** | 106,0 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 7 | 6.783 | 6.784 | **5,16** | 106,0 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 8 | 2.654 | 2.656 | **17,93** | 106,0 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 9 | 2.964 | 2.966 | **16,46** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,32** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: Z Noise sensitive point: User defined (28)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.856 | 2.859 | **15,47** | 106,0 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 10 | 2.695 | 2.697 | **17,73** | 106,0 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 11 | 2.328 | 2.331 | **19,65** | 106,0 | 0,00 | 78,35 | - | - | 0,00 | 0,00 | - |
| 12 | 2.684 | 2.687 | **17,78** | 106,0 | 0,00 | 79,59 | - | - | 0,00 | 0,00 | - |
| 13 | 2.463 | 2.466 | **18,91** | 106,0 | 0,00 | 78,84 | - | - | 0,00 | 0,00 | - |
| 14 | 4.074 | 4.075 | **12,31** | 106,0 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 15 | 4.485 | 4.486 | **11,07** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 16 | 4.585 | 4.586 | **10,79** | 106,0 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 17 | 6.191 | 6.192 | **6,92** | 106,0 | 0,00 | 86,84 | - | - | 0,00 | 0,00 | - |
| 18 | 6.254 | 6.255 | **6,79** | 106,0 | 0,00 | 86,92 | - | - | 0,00 | 0,00 | - |
| 19 | 6.430 | 6.431 | **6,44** | 106,0 | 0,00 | 87,17 | - | - | 0,00 | 0,00 | - |
| 2 | 2.473 | 2.476 | **17,39** | 106,0 | 0,00 | 78,87 | - | - | 0,00 | 0,00 | - |
| 20 | 6.512 | 6.513 | **6,27** | 106,0 | 0,00 | 87,28 | - | - | 0,00 | 0,00 | - |
| 21 | 6.551 | 6.552 | **6,20** | 106,0 | 0,00 | 87,33 | - | - | 0,00 | 0,00 | - |
| 22 | 7.635 | 7.636 | **4,26** | 106,0 | 0,00 | 88,66 | - | - | 0,00 | 0,00 | - |
| 23 | 7.823 | 7.824 | **3,95** | 106,0 | 0,00 | 88,87 | - | - | 0,00 | 0,00 | - |
| 24 | 8.160 | 8.161 | **3,42** | 106,0 | 0,00 | 89,23 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 2.870 | 2.871 | **15,91** | 104,5 | 0,00 | 80,16 | - | - | 0,00 | 0,00 | - |
| 26 | 2.588 | 2.589 | **17,13** | 104,5 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 27 | 2.376 | 2.378 | **18,15** | 104,5 | 0,00 | 78,52 | - | - | 0,00 | 0,00 | - |
| 28 | 2.230 | 2.231 | **18,95** | 104,5 | 0,00 | 77,97 | - | - | 0,00 | 0,00 | - |
| 29 | 2.044 | 2.045 | **20,04** | 104,5 | 0,00 | 77,22 | - | - | 0,00 | 0,00 | - |
| 3 | 1.308 | 1.314 | **25,68** | 106,0 | 0,00 | 73,37 | - | - | 0,00 | 0,00 | - |
| 30 | 1.208 | 1.210 | **26,34** | 104,5 | 0,00 | 72,66 | - | - | 0,00 | 0,00 | - |
| 31 | 892 | 895 | **29,79** | 104,5 | 0,00 | 70,04 | - | - | 0,00 | 0,00 | - |
| 32 | 708 | 713 | **32,33** | 104,5 | 0,00 | 68,06 | - | - | 0,00 | 0,00 | - |
| 33 | 833 | 837 | **30,54** | 104,5 | 0,00 | 69,46 | - | - | 0,00 | 0,00 | - |
| 34 | 2.991 | 2.992 | **15,42** | 104,5 | 0,00 | 80,52 | - | - | 0,00 | 0,00 | - |
| 35 | 3.980 | 3.981 | **12,00** | 104,5 | 0,00 | 83,00 | - | - | 0,00 | 0,00 | - |
| 36 | 4.379 | 4.380 | **10,85** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 37 | 3.132 | 3.136 | **16,11** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 38 | 2.323 | 2.328 | **19,92** | 106,0 | 0,00 | 78,34 | - | - | 0,00 | 0,00 | - |
| 39 | 2.126 | 2.131 | **21,03** | 106,0 | 0,00 | 77,57 | - | - | 0,00 | 0,00 | - |
| 4 | 453 | 471 | **38,11** | 106,0 | 0,00 | 64,47 | - | - | 0,00 | 0,00 | - |
| 40 | 1.908 | 1.913 | **22,37** | 106,0 | 0,00 | 76,64 | - | - | 0,00 | 0,00 | - |
| 41 | 1.382 | 1.389 | **26,23** | 106,0 | 0,00 | 73,86 | - | - | 0,00 | 0,00 | - |
| 42 | 1.647 | 1.653 | **24,15** | 106,0 | 0,00 | 75,37 | - | - | 0,00 | 0,00 | - |
| 43 | 6.974 | 6.975 | **5,36** | 104,5 | 0,00 | 87,87 | - | - | 0,00 | 0,00 | - |
| 44 | 1.875 | 1.881 | **21,07** | 104,5 | 0,00 | 76,49 | - | - | 0,00 | 0,00 | - |
| 45 | 2.201 | 2.205 | **19,10** | 104,5 | 0,00 | 77,87 | - | - | 0,00 | 0,00 | - |
| 46 | 2.018 | 2.023 | **20,18** | 104,5 | 0,00 | 77,12 | - | - | 0,00 | 0,00 | - |
| 47 | 1.714 | 1.720 | **22,16** | 104,5 | 0,00 | 75,71 | - | - | 0,00 | 0,00 | - |
| 5 | 492 | 508 | **37,27** | 106,0 | 0,00 | 65,12 | - | - | 0,00 | 0,00 | - |
| 6 | 3.687 | 3.689 | **12,09** | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 7 | 6.768 | 6.769 | **5,18** | 106,0 | 0,00 | 87,61 | - | - | 0,00 | 0,00 | - |
| 8 | 2.713 | 2.715 | **17,64** | 106,0 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 9 | 3.019 | 3.021 | **16,21** | 106,0 | 0,00 | 80,60 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,78** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AA Noise sensitive point: User defined (29)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.888 | 2.891 | **15,33** | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 10 | 2.583 | 2.585 | **18,29** | 106,0 | 0,00 | 79,25 | - | - | 0,00 | 0,00 | - |
| 11 | 2.326 | 2.329 | **19,66** | 106,0 | 0,00 | 78,34 | - | - | 0,00 | 0,00 | - |
| 12 | 2.679 | 2.682 | **17,81** | 106,0 | 0,00 | 79,57 | - | - | 0,00 | 0,00 | - |
| 13 | 2.445 | 2.447 | **19,01** | 106,0 | 0,00 | 78,77 | - | - | 0,00 | 0,00 | - |
| 14 | 4.000 | 4.001 | **12,55** | 106,0 | 0,00 | 83,04 | - | - | 0,00 | 0,00 | - |
| 15 | 4.410 | 4.411 | **11,29** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 16 | 4.504 | 4.505 | **11,02** | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 17 | 6.145 | 6.146 | **7,02** | 106,0 | 0,00 | 86,77 | - | - | 0,00 | 0,00 | - |
| 18 | 6.199 | 6.201 | **6,90** | 106,0 | 0,00 | 86,85 | - | - | 0,00 | 0,00 | - |
| 19 | 6.370 | 6.371 | **6,56** | 106,0 | 0,00 | 87,08 | - | - | 0,00 | 0,00 | - |
| 2 | 2.507 | 2.511 | **17,20** | 106,0 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 20 | 6.470 | 6.471 | **6,36** | 106,0 | 0,00 | 87,22 | - | - | 0,00 | 0,00 | - |
| 21 | 6.502 | 6.503 | **6,29** | 106,0 | 0,00 | 87,26 | - | - | 0,00 | 0,00 | - |
| 22 | 7.565 | 7.566 | **4,37** | 106,0 | 0,00 | 88,58 | - | - | 0,00 | 0,00 | - |
| 23 | 7.764 | 7.764 | **4,05** | 106,0 | 0,00 | 88,80 | - | - | 0,00 | 0,00 | - |
| 24 | 8.113 | 8.114 | **3,49** | 106,0 | 0,00 | 89,18 | - | - | 0,00 | 0,00 | - |
| 25 | 2.889 | 2.890 | **15,83** | 104,5 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 26 | 2.598 | 2.599 | **17,08** | 104,5 | 0,00 | 79,30 | - | - | 0,00 | 0,00 | - |
| 27 | 2.376 | 2.378 | **18,15** | 104,5 | 0,00 | 78,52 | - | - | 0,00 | 0,00 | - |
| 28 | 2.250 | 2.252 | **18,84** | 104,5 | 0,00 | 78,05 | - | - | 0,00 | 0,00 | - |
| 29 | 2.085 | 2.086 | **19,79** | 104,5 | 0,00 | 77,39 | - | - | 0,00 | 0,00 | - |
| 3 | 1.324 | 1.330 | **25,53** | 106,0 | 0,00 | 73,48 | - | - | 0,00 | 0,00 | - |
| 30 | 1.255 | 1.258 | **25,89** | 104,5 | 0,00 | 72,99 | - | - | 0,00 | 0,00 | - |
| 31 | 974 | 977 | **28,80** | 104,5 | 0,00 | 70,80 | - | - | 0,00 | 0,00 | - |
| 32 | 791 | 795 | **31,12** | 104,5 | 0,00 | 69,01 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 833 | 837 | **30,55** | 104,5 | 0,00 | 69,45 | - | - | 0,00 | 0,00 | - |
| 34 | 2.877 | 2.878 | **15,88** | 104,5 | 0,00 | 80,18 | - | - | 0,00 | 0,00 | - |
| 35 | 3.898 | 3.899 | **12,25** | 104,5 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 36 | 4.315 | 4.315 | **11,03** | 104,5 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 37 | 3.116 | 3.120 | **16,18** | 106,0 | 0,00 | 80,88 | - | - | 0,00 | 0,00 | - |
| 38 | 2.282 | 2.287 | **20,15** | 106,0 | 0,00 | 78,18 | - | - | 0,00 | 0,00 | - |
| 39 | 2.044 | 2.049 | **21,52** | 106,0 | 0,00 | 77,23 | - | - | 0,00 | 0,00 | - |
| 4 | 483 | 500 | **37,45** | 106,0 | 0,00 | 64,98 | - | - | 0,00 | 0,00 | - |
| 40 | 1.807 | 1.812 | **23,03** | 106,0 | 0,00 | 76,17 | - | - | 0,00 | 0,00 | - |
| 41 | 1.284 | 1.293 | **27,07** | 106,0 | 0,00 | 73,23 | - | - | 0,00 | 0,00 | - |
| 42 | 1.725 | 1.731 | **23,59** | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 43 | 6.921 | 6.922 | **5,45** | 104,5 | 0,00 | 87,80 | - | - | 0,00 | 0,00 | - |
| 44 | 1.882 | 1.888 | **21,03** | 104,5 | 0,00 | 76,52 | - | - | 0,00 | 0,00 | - |
| 45 | 2.186 | 2.191 | **19,18** | 104,5 | 0,00 | 77,81 | - | - | 0,00 | 0,00 | - |
| 46 | 1.983 | 1.988 | **20,39** | 104,5 | 0,00 | 76,97 | - | - | 0,00 | 0,00 | - |
| 47 | 1.700 | 1.706 | **22,27** | 104,5 | 0,00 | 75,64 | - | - | 0,00 | 0,00 | - |
| 5 | 576 | 590 | **35,55** | 106,0 | 0,00 | 66,41 | - | - | 0,00 | 0,00 | - |
| 6 | 3.643 | 3.645 | **12,25** | 106,0 | 0,00 | 82,23 | - | - | 0,00 | 0,00 | - |
| 7 | 6.712 | 6.713 | **5,27** | 106,0 | 0,00 | 87,54 | - | - | 0,00 | 0,00 | - |
| 8 | 2.608 | 2.611 | **18,16** | 106,0 | 0,00 | 79,33 | - | - | 0,00 | 0,00 | - |
| 9 | 2.910 | 2.912 | **16,71** | 106,0 | 0,00 | 80,28 | - | - | 0,00 | 0,00 | - |
| Sum | | | **41,98** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AB Noise sensitive point: User defined (30)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.898 | 2.901 | **15,28** | 106,0 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 10 | 2.601 | 2.603 | **18,20** | 106,0 | 0,00 | 79,31 | - | - | 0,00 | 0,00 | - |
| 11 | 2.311 | 2.314 | **19,74** | 106,0 | 0,00 | 78,29 | - | - | 0,00 | 0,00 | - |
| 12 | 2.665 | 2.668 | **17,88** | 106,0 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 13 | 2.432 | 2.435 | **19,08** | 106,0 | 0,00 | 78,73 | - | - | 0,00 | 0,00 | - |
| 14 | 3.998 | 4.000 | **12,55** | 106,0 | 0,00 | 83,04 | - | - | 0,00 | 0,00 | - |
| 15 | 4.409 | 4.410 | **11,29** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 16 | 4.504 | 4.505 | **11,02** | 106,0 | 0,00 | 84,07 | - | - | 0,00 | 0,00 | - |
| 17 | 6.138 | 6.139 | **7,03** | 106,0 | 0,00 | 86,76 | - | - | 0,00 | 0,00 | - |
| 18 | 6.194 | 6.195 | **6,91** | 106,0 | 0,00 | 86,84 | - | - | 0,00 | 0,00 | - |
| 19 | 6.366 | 6.367 | **6,57** | 106,0 | 0,00 | 87,08 | - | - | 0,00 | 0,00 | - |
| 2 | 2.516 | 2.520 | **17,15** | 106,0 | 0,00 | 79,03 | - | - | 0,00 | 0,00 | - |
| 20 | 6.462 | 6.463 | **6,37** | 106,0 | 0,00 | 87,21 | - | - | 0,00 | 0,00 | - |
| 21 | 6.495 | 6.496 | **6,31** | 106,0 | 0,00 | 87,25 | - | - | 0,00 | 0,00 | - |
| 22 | 7.563 | 7.564 | **4,38** | 106,0 | 0,00 | 88,57 | - | - | 0,00 | 0,00 | - |
| 23 | 7.759 | 7.760 | **4,05** | 106,0 | 0,00 | 88,80 | - | - | 0,00 | 0,00 | - |
| 24 | 8.106 | 8.106 | **3,50** | 106,0 | 0,00 | 89,18 | - | - | 0,00 | 0,00 | - |
| 25 | 2.901 | 2.902 | **15,78** | 104,5 | 0,00 | 80,25 | - | - | 0,00 | 0,00 | - |
| 26 | 2.611 | 2.612 | **17,02** | 104,5 | 0,00 | 79,34 | - | - | 0,00 | 0,00 | - |
| 27 | 2.391 | 2.392 | **18,08** | 104,5 | 0,00 | 78,58 | - | - | 0,00 | 0,00 | - |
| 28 | 2.262 | 2.263 | **18,77** | 104,5 | 0,00 | 78,09 | - | - | 0,00 | 0,00 | - |
| 29 | 2.092 | 2.094 | **19,75** | 104,5 | 0,00 | 77,42 | - | - | 0,00 | 0,00 | - |
| 3 | 1.336 | 1.342 | **25,42** | 106,0 | 0,00 | 73,55 | - | - | 0,00 | 0,00 | - |
| 30 | 1.262 | 1.264 | **25,83** | 104,5 | 0,00 | 73,04 | - | - | 0,00 | 0,00 | - |
| 31 | 973 | 976 | **28,82** | 104,5 | 0,00 | 70,78 | - | - | 0,00 | 0,00 | - |
| 32 | 770 | 774 | **31,42** | 104,5 | 0,00 | 68,77 | - | - | 0,00 | 0,00 | - |
| 33 | 817 | 821 | **30,76** | 104,5 | 0,00 | 69,29 | - | - | 0,00 | 0,00 | - |
| 34 | 2.891 | 2.892 | **15,82** | 104,5 | 0,00 | 80,23 | - | - | 0,00 | 0,00 | - |
| 35 | 3.899 | 3.899 | **12,24** | 104,5 | 0,00 | 82,82 | - | - | 0,00 | 0,00 | - |
| 36 | 4.311 | 4.312 | **11,04** | 104,5 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 37 | 3.103 | 3.107 | **16,23** | 106,0 | 0,00 | 80,85 | - | - | 0,00 | 0,00 | - |
| 38 | 2.301 | 2.306 | **20,04** | 106,0 | 0,00 | 78,26 | - | - | 0,00 | 0,00 | - |
| 39 | 2.044 | 2.050 | **21,51** | 106,0 | 0,00 | 77,23 | - | - | 0,00 | 0,00 | - |
| 4 | 463 | 482 | **37,87** | 106,0 | 0,00 | 64,65 | - | - | 0,00 | 0,00 | - |
| 40 | 1.813 | 1.819 | **22,99** | 106,0 | 0,00 | 76,20 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
**UAB Infraplanas**
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Raminta Survilë / r.survile@infraplanas.lt
Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 1.289 | 1.298 | **27,03** | 106,0 | 0,00 | 73,26 | - | - | 0,00 | 0,00 | - |
| 42 | 1.725 | 1.731 | **23,59** | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 43 | 6.915 | 6.916 | **5,46** | 104,5 | 0,00 | 87,80 | - | - | 0,00 | 0,00 | - |
| 44 | 1.896 | 1.901 | **20,94** | 104,5 | 0,00 | 76,58 | - | - | 0,00 | 0,00 | - |
| 45 | 2.202 | 2.207 | **19,09** | 104,5 | 0,00 | 77,88 | - | - | 0,00 | 0,00 | - |
| 46 | 2.002 | 2.006 | **20,28** | 104,5 | 0,00 | 77,05 | - | - | 0,00 | 0,00 | - |
| 47 | 1.716 | 1.722 | **22,15** | 104,5 | 0,00 | 75,72 | - | - | 0,00 | 0,00 | - |
| 5 | 574 | 587 | **35,59** | 106,0 | 0,00 | 66,38 | - | - | 0,00 | 0,00 | - |
| 6 | 3.635 | 3.637 | **12,28** | 106,0 | 0,00 | 82,22 | - | - | 0,00 | 0,00 | - |
| 7 | 6.707 | 6.708 | **5,28** | 106,0 | 0,00 | 87,53 | - | - | 0,00 | 0,00 | - |
| 8 | 2.629 | 2.631 | **18,06** | 106,0 | 0,00 | 79,40 | - | - | 0,00 | 0,00 | - |
| 9 | 2.929 | 2.930 | **16,62** | 106,0 | 0,00 | 80,34 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,18** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AC Noise sensitive point: User defined (31)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.043 | 3.045 | **14,63** | 106,0 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 10 | 2.597 | 2.599 | **18,22** | 106,0 | 0,00 | 79,30 | - | - | 0,00 | 0,00 | - |
| 11 | 2.171 | 2.174 | **20,55** | 106,0 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 12 | 2.524 | 2.527 | **18,59** | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 13 | 2.288 | 2.291 | **19,87** | 106,0 | 0,00 | 78,20 | - | - | 0,00 | 0,00 | - |
| 14 | 3.868 | 3.870 | **12,98** | 106,0 | 0,00 | 82,75 | - | - | 0,00 | 0,00 | - |
| 15 | 4.279 | 4.281 | **11,68** | 106,0 | 0,00 | 83,63 | - | - | 0,00 | 0,00 | - |
| 16 | 4.380 | 4.382 | **11,38** | 106,0 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 17 | 5.995 | 5.996 | **7,33** | 106,0 | 0,00 | 86,56 | - | - | 0,00 | 0,00 | - |
| 18 | 6.053 | 6.054 | **7,21** | 106,0 | 0,00 | 86,64 | - | - | 0,00 | 0,00 | - |
| 19 | 6.227 | 6.228 | **6,85** | 106,0 | 0,00 | 86,89 | - | - | 0,00 | 0,00 | - |
| 2 | 2.661 | 2.664 | **16,41** | 106,0 | 0,00 | 79,51 | - | - | 0,00 | 0,00 | - |
| 20 | 6.318 | 6.319 | **6,66** | 106,0 | 0,00 | 87,01 | - | - | 0,00 | 0,00 | - |
| 21 | 6.353 | 6.354 | **6,59** | 106,0 | 0,00 | 87,06 | - | - | 0,00 | 0,00 | - |
| 22 | 7.430 | 7.431 | **4,60** | 106,0 | 0,00 | 88,42 | - | - | 0,00 | 0,00 | - |
| 23 | 7.620 | 7.621 | **4,28** | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 24 | 7.963 | 7.964 | **3,73** | 106,0 | 0,00 | 89,02 | - | - | 0,00 | 0,00 | - |
| 25 | 3.046 | 3.047 | **15,20** | 104,5 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 26 | 2.755 | 2.756 | **16,39** | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 27 | 2.532 | 2.533 | **17,38** | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 28 | 2.407 | 2.408 | **17,99** | 104,5 | 0,00 | 78,63 | - | - | 0,00 | 0,00 | - |
| 29 | 2.236 | 2.238 | **18,92** | 104,5 | 0,00 | 78,00 | - | - | 0,00 | 0,00 | - |
| 3 | 1.480 | 1.486 | **24,10** | 106,0 | 0,00 | 74,44 | - | - | 0,00 | 0,00 | - |
| 30 | 1.404 | 1.406 | **24,58** | 104,5 | 0,00 | 73,96 | - | - | 0,00 | 0,00 | - |
| 31 | 1.098 | 1.100 | **27,44** | 104,5 | 0,00 | 71,83 | - | - | 0,00 | 0,00 | - |
| 32 | 718 | 722 | **32,19** | 104,5 | 0,00 | 68,17 | - | - | 0,00 | 0,00 | - |
| 33 | 680 | 685 | **32,77** | 104,5 | 0,00 | 67,71 | - | - | 0,00 | 0,00 | - |
| 34 | 2.855 | 2.856 | **15,97** | 104,5 | 0,00 | 80,11 | - | - | 0,00 | 0,00 | - |
| 35 | 3.775 | 3.776 | **12,63** | 104,5 | 0,00 | 82,54 | - | - | 0,00 | 0,00 | - |
| 36 | 4.175 | 4.176 | **11,42** | 104,5 | 0,00 | 83,41 | - | - | 0,00 | 0,00 | - |
| 37 | 2.959 | 2.963 | **16,84** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 38 | 2.422 | 2.426 | **19,40** | 106,0 | 0,00 | 78,70 | - | - | 0,00 | 0,00 | - |
| 39 | 1.921 | 1.927 | **22,28** | 106,0 | 0,00 | 76,70 | - | - | 0,00 | 0,00 | - |
| 4 | 355 | 378 | **40,57** | 106,0 | 0,00 | 62,55 | - | - | 0,00 | 0,00 | - |
| 40 | 1.720 | 1.726 | **23,63** | 106,0 | 0,00 | 75,74 | - | - | 0,00 | 0,00 | - |
| 41 | 1.189 | 1.198 | **27,96** | 106,0 | 0,00 | 72,57 | - | - | 0,00 | 0,00 | - |
| 42 | 1.852 | 1.858 | **22,73** | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 43 | 6.774 | 6.774 | **5,70** | 104,5 | 0,00 | 87,62 | - | - | 0,00 | 0,00 | - |
| 44 | 2.039 | 2.044 | **20,05** | 104,5 | 0,00 | 77,21 | - | - | 0,00 | 0,00 | - |
| 45 | 2.339 | 2.343 | **18,34** | 104,5 | 0,00 | 78,39 | - | - | 0,00 | 0,00 | - |
| 46 | 2.127 | 2.132 | **19,52** | 104,5 | 0,00 | 77,58 | - | - | 0,00 | 0,00 | - |
| 47 | 1.853 | 1.858 | **21,22** | 104,5 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 5 | 697 | 709 | **33,37** | 106,0 | 0,00 | 68,01 | - | - | 0,00 | 0,00 | - |
| 6 | 3.491 | 3.494 | **12,81** | 106,0 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

Licensed user:
**UAB Infraplanas**
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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6.566 | 6.568 | **5,51** | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 8 | 2.658 | 2.661 | **17,91** | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| 9 | 2.937 | 2.939 | **16,58** | 106,0 | 0,00 | 80,36 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,21** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AD Noise sensitive point: User defined (32)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.039 | 3.041 | **14,65** | 106,0 | 0,00 | 80,66 | - | - | 0,00 | 0,00 | - |
| 10 | 2.613 | 2.615 | **18,14** | 106,0 | 0,00 | 79,35 | - | - | 0,00 | 0,00 | - |
| 11 | 2.170 | 2.173 | **20,56** | 106,0 | 0,00 | 77,74 | - | - | 0,00 | 0,00 | - |
| 12 | 2.523 | 2.526 | **18,60** | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 13 | 2.290 | 2.293 | **19,86** | 106,0 | 0,00 | 78,21 | - | - | 0,00 | 0,00 | - |
| 14 | 3.879 | 3.880 | **12,94** | 106,0 | 0,00 | 82,78 | - | - | 0,00 | 0,00 | - |
| 15 | 4.290 | 4.291 | **11,64** | 106,0 | 0,00 | 83,65 | - | - | 0,00 | 0,00 | - |
| 16 | 4.392 | 4.393 | **11,34** | 106,0 | 0,00 | 83,86 | - | - | 0,00 | 0,00 | - |
| 17 | 6.001 | 6.002 | **7,32** | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 18 | 6.061 | 6.062 | **7,19** | 106,0 | 0,00 | 86,65 | - | - | 0,00 | 0,00 | - |
| 19 | 6.235 | 6.236 | **6,83** | 106,0 | 0,00 | 86,90 | - | - | 0,00 | 0,00 | - |
| 2 | 2.657 | 2.660 | **16,44** | 106,0 | 0,00 | 79,50 | - | - | 0,00 | 0,00 | - |
| 20 | 6.324 | 6.325 | **6,65** | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 21 | 6.359 | 6.360 | **6,58** | 106,0 | 0,00 | 87,07 | - | - | 0,00 | 0,00 | - |
| 22 | 7.440 | 7.440 | **4,58** | 106,0 | 0,00 | 88,43 | - | - | 0,00 | 0,00 | - |
| 23 | 7.628 | 7.629 | **4,27** | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 24 | 7.969 | 7.970 | **3,72** | 106,0 | 0,00 | 89,03 | - | - | 0,00 | 0,00 | - |
| 25 | 3.043 | 3.044 | **15,21** | 104,5 | 0,00 | 80,67 | - | - | 0,00 | 0,00 | - |
| 26 | 2.754 | 2.755 | **16,40** | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 27 | 2.532 | 2.533 | **17,38** | 104,5 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 28 | 2.404 | 2.405 | **18,01** | 104,5 | 0,00 | 78,62 | - | - | 0,00 | 0,00 | - |
| 29 | 2.231 | 2.232 | **18,95** | 104,5 | 0,00 | 77,97 | - | - | 0,00 | 0,00 | - |
| 3 | 1.478 | 1.483 | **24,12** | 106,0 | 0,00 | 74,43 | - | - | 0,00 | 0,00 | - |
| 30 | 1.398 | 1.400 | **24,63** | 104,5 | 0,00 | 73,92 | - | - | 0,00 | 0,00 | - |
| 31 | 1.087 | 1.089 | **27,56** | 104,5 | 0,00 | 71,74 | - | - | 0,00 | 0,00 | - |
| 32 | 703 | 707 | **32,42** | 104,5 | 0,00 | 67,99 | - | - | 0,00 | 0,00 | - |
| 33 | 677 | 682 | **32,81** | 104,5 | 0,00 | 67,68 | - | - | 0,00 | 0,00 | - |
| 34 | 2.872 | 2.873 | **15,90** | 104,5 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| 35 | 3.787 | 3.788 | **12,59** | 104,5 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 36 | 4.184 | 4.185 | **11,40** | 104,5 | 0,00 | 83,43 | - | - | 0,00 | 0,00 | - |
| 37 | 2.961 | 2.965 | **16,84** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 38 | 2.428 | 2.432 | **19,37** | 106,0 | 0,00 | 78,72 | - | - | 0,00 | 0,00 | - |
| 39 | 1.933 | 1.939 | **22,20** | 106,0 | 0,00 | 76,75 | - | - | 0,00 | 0,00 | - |
| 4 | 345 | 369 | **40,84** | 106,0 | 0,00 | 62,33 | - | - | 0,00 | 0,00 | - |
| 40 | 1.735 | 1.741 | **23,52** | 106,0 | 0,00 | 75,82 | - | - | 0,00 | 0,00 | - |
| 41 | 1.204 | 1.212 | **27,82** | 106,0 | 0,00 | 72,67 | - | - | 0,00 | 0,00 | - |
| 42 | 1.842 | 1.847 | **22,80** | 106,0 | 0,00 | 76,33 | - | - | 0,00 | 0,00 | - |
| 43 | 6.781 | 6.782 | **5,69** | 104,5 | 0,00 | 87,63 | - | - | 0,00 | 0,00 | - |
| 44 | 2.038 | 2.043 | **20,05** | 104,5 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 45 | 2.341 | 2.345 | **18,33** | 104,5 | 0,00 | 78,40 | - | - | 0,00 | 0,00 | - |
| 46 | 2.132 | 2.137 | **19,49** | 104,5 | 0,00 | 77,60 | - | - | 0,00 | 0,00 | - |
| 47 | 1.855 | 1.860 | **21,21** | 104,5 | 0,00 | 76,39 | - | - | 0,00 | 0,00 | - |
| 5 | 687 | 698 | **33,55** | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 6 | 3.497 | 3.500 | **12,79** | 106,0 | 0,00 | 81,88 | - | - | 0,00 | 0,00 | - |
| 7 | 6.574 | 6.575 | **5,49** | 106,0 | 0,00 | 87,36 | - | - | 0,00 | 0,00 | - |
| 8 | 2.674 | 2.676 | **17,84** | 106,0 | 0,00 | 79,55 | - | - | 0,00 | 0,00 | - |
| 9 | 2.953 | 2.955 | **16,51** | 106,0 | 0,00 | 80,41 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,40** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: AE Noise sensitive point: User defined (33)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.512 | 3.514 | **12,73** | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 10 | 2.497 | 2.499 | **18,74** | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |
| 11 | 1.781 | 1.785 | **23,05** | 106,0 | 0,00 | 76,03 | - | - | 0,00 | 0,00 | - |
| 12 | 2.122 | 2.125 | **20,84** | 106,0 | 0,00 | 77,55 | - | - | 0,00 | 0,00 | - |
| 13 | 1.854 | 1.858 | **22,55** | 106,0 | 0,00 | 76,38 | - | - | 0,00 | 0,00 | - |
| 14 | 3.392 | 3.394 | **14,65** | 106,0 | 0,00 | 81,61 | - | - | 0,00 | 0,00 | - |
| 15 | 3.805 | 3.806 | **13,19** | 106,0 | 0,00 | 82,61 | - | - | 0,00 | 0,00 | - |
| 16 | 3.915 | 3.916 | **12,82** | 106,0 | 0,00 | 82,86 | - | - | 0,00 | 0,00 | - |
| 17 | 5.516 | 5.518 | **8,40** | 106,0 | 0,00 | 85,83 | - | - | 0,00 | 0,00 | - |
| 18 | 5.571 | 5.572 | **8,28** | 106,0 | 0,00 | 85,92 | - | - | 0,00 | 0,00 | - |
| 19 | 5.744 | 5.745 | **7,88** | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 2 | 3.134 | 3.136 | **14,25** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 20 | 5.843 | 5.844 | **7,66** | 106,0 | 0,00 | 86,33 | - | - | 0,00 | 0,00 | - |
| 21 | 5.872 | 5.873 | **7,60** | 106,0 | 0,00 | 86,38 | - | - | 0,00 | 0,00 | - |
| 22 | 6.950 | 6.951 | **5,45** | 106,0 | 0,00 | 87,84 | - | - | 0,00 | 0,00 | - |
| 23 | 7.137 | 7.138 | **5,11** | 106,0 | 0,00 | 88,07 | - | - | 0,00 | 0,00 | - |
| 24 | 7.483 | 7.484 | **4,51** | 106,0 | 0,00 | 88,48 | - | - | 0,00 | 0,00 | - |
| 25 | 3.502 | 3.503 | **13,53** | 104,5 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 26 | 3.198 | 3.199 | **14,62** | 104,5 | 0,00 | 81,10 | - | - | 0,00 | 0,00 | - |
| 27 | 2.961 | 2.962 | **15,54** | 104,5 | 0,00 | 80,43 | - | - | 0,00 | 0,00 | - |
| 28 | 2.865 | 2.866 | **15,93** | 104,5 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |
| 29 | 2.713 | 2.714 | **16,57** | 104,5 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 3 | 1.938 | 1.942 | **20,60** | 106,0 | 0,00 | 76,77 | - | - | 0,00 | 0,00 | - |
| 30 | 1.885 | 1.886 | **21,04** | 104,5 | 0,00 | 76,51 | - | - | 0,00 | 0,00 | - |
| 31 | 1.574 | 1.576 | **23,22** | 104,5 | 0,00 | 74,95 | - | - | 0,00 | 0,00 | - |
| 32 | 874 | 878 | **30,01** | 104,5 | 0,00 | 69,87 | - | - | 0,00 | 0,00 | - |
| 33 | 420 | 428 | **37,79** | 104,5 | 0,00 | 63,63 | - | - | 0,00 | 0,00 | - |
| 34 | 2.643 | 2.644 | **16,88** | 104,5 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 35 | 3.312 | 3.313 | **14,20** | 104,5 | 0,00 | 81,40 | - | - | 0,00 | 0,00 | - |
| 36 | 3.693 | 3.693 | **12,90** | 104,5 | 0,00 | 82,35 | - | - | 0,00 | 0,00 | - |
| 37 | 2.528 | 2.532 | **18,86** | 106,0 | 0,00 | 79,07 | - | - | 0,00 | 0,00 | - |
| 38 | 2.759 | 2.763 | **17,75** | 106,0 | 0,00 | 79,83 | - | - | 0,00 | 0,00 | - |
| 39 | 1.462 | 1.470 | **25,56** | 106,0 | 0,00 | 74,34 | - | - | 0,00 | 0,00 | - |
| 4 | 468 | 485 | **37,80** | 106,0 | 0,00 | 64,71 | - | - | 0,00 | 0,00 | - |
| 40 | 1.350 | 1.357 | **26,50** | 106,0 | 0,00 | 73,65 | - | - | 0,00 | 0,00 | - |
| 41 | 817 | 829 | **32,15** | 106,0 | 0,00 | 69,38 | - | - | 0,00 | 0,00 | - |
| 42 | 2.329 | 2.334 | **19,89** | 106,0 | 0,00 | 78,36 | - | - | 0,00 | 0,00 | - |
| 43 | 6.292 | 6.292 | **6,56** | 104,5 | 0,00 | 86,98 | - | - | 0,00 | 0,00 | - |
| 44 | 2.482 | 2.486 | **17,59** | 104,5 | 0,00 | 78,91 | - | - | 0,00 | 0,00 | - |
| 45 | 2.743 | 2.746 | **16,32** | 104,5 | 0,00 | 79,77 | - | - | 0,00 | 0,00 | - |
| 46 | 2.488 | 2.492 | **17,56** | 104,5 | 0,00 | 78,93 | - | - | 0,00 | 0,00 | - |
| 47 | 2.263 | 2.267 | **18,75** | 104,5 | 0,00 | 78,11 | - | - | 0,00 | 0,00 | - |
| 5 | 1.175 | 1.182 | **27,04** | 106,0 | 0,00 | 72,45 | - | - | 0,00 | 0,00 | - |
| 6 | 3.015 | 3.017 | **14,76** | 106,0 | 0,00 | 80,59 | - | - | 0,00 | 0,00 | - |
| 7 | 6.083 | 6.085 | **6,33** | 106,0 | 0,00 | 86,69 | - | - | 0,00 | 0,00 | - |
| 8 | 2.672 | 2.674 | **17,84** | 106,0 | 0,00 | 79,54 | - | - | 0,00 | 0,00 | - |
| 9 | 2.874 | 2.876 | **16,88** | 106,0 | 0,00 | 80,17 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,57** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AF Noise sensitive point: User defined (34)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.500 | 3.502 | **12,78** | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 10 | 2.566 | 2.568 | **18,38** | 106,0 | 0,00 | 79,19 | - | - | 0,00 | 0,00 | - |
| 11 | 1.761 | 1.765 | **23,19** | 106,0 | 0,00 | 75,93 | - | - | 0,00 | 0,00 | - |
| 12 | 2.106 | 2.109 | **20,94** | 106,0 | 0,00 | 77,48 | - | - | 0,00 | 0,00 | - |
| 13 | 1.848 | 1.852 | **22,59** | 106,0 | 0,00 | 76,35 | - | - | 0,00 | 0,00 | - |
| 14 | 3.433 | 3.435 | **14,50** | 106,0 | 0,00 | 81,72 | - | - | 0,00 | 0,00 | - |
| 15 | 3.846 | 3.848 | **13,05** | 106,0 | 0,00 | 82,70 | - | - | 0,00 | 0,00 | - |
| 16 | 3.961 | 3.963 | **12,67** | 106,0 | 0,00 | 82,96 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 5.535 | 5.536 | **8,36** | 106,0 | 0,00 | 85,86 | - | - | 0,00 | 0,00 | - |
| 18 | 5.596 | 5.597 | **8,22** | 106,0 | 0,00 | 85,96 | - | - | 0,00 | 0,00 | - |
| 19 | 5.773 | 5.774 | **7,82** | 106,0 | 0,00 | 86,23 | - | - | 0,00 | 0,00 | - |
| 2 | 3.119 | 3.122 | **14,31** | 106,0 | 0,00 | 80,89 | - | - | 0,00 | 0,00 | - |
| 20 | 5.859 | 5.860 | **7,63** | 106,0 | 0,00 | 86,36 | - | - | 0,00 | 0,00 | - |
| 21 | 5.893 | 5.894 | **7,55** | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 22 | 6.986 | 6.987 | **5,38** | 106,0 | 0,00 | 87,89 | - | - | 0,00 | 0,00 | - |
| 23 | 7.166 | 7.166 | **5,06** | 106,0 | 0,00 | 88,11 | - | - | 0,00 | 0,00 | - |
| 24 | 7.503 | 7.504 | **4,48** | 106,0 | 0,00 | 88,51 | - | - | 0,00 | 0,00 | - |
| 25 | 3.496 | 3.497 | **13,55** | 104,5 | 0,00 | 81,87 | - | - | 0,00 | 0,00 | - |
| 26 | 3.197 | 3.198 | **14,62** | 104,5 | 0,00 | 81,10 | - | - | 0,00 | 0,00 | - |
| 27 | 2.964 | 2.965 | **15,52** | 104,5 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 28 | 2.858 | 2.859 | **15,96** | 104,5 | 0,00 | 80,12 | - | - | 0,00 | 0,00 | - |
| 29 | 2.696 | 2.697 | **16,65** | 104,5 | 0,00 | 79,62 | - | - | 0,00 | 0,00 | - |
| 3 | 1.931 | 1.934 | **20,65** | 106,0 | 0,00 | 76,73 | - | - | 0,00 | 0,00 | - |
| 30 | 1.864 | 1.865 | **21,18** | 104,5 | 0,00 | 76,41 | - | - | 0,00 | 0,00 | - |
| 31 | 1.538 | 1.540 | **23,50** | 104,5 | 0,00 | 74,75 | - | - | 0,00 | 0,00 | - |
| 32 | 805 | 808 | **30,94** | 104,5 | 0,00 | 69,15 | - | - | 0,00 | 0,00 | - |
| 33 | 361 | 370 | **39,29** | 104,5 | 0,00 | 62,35 | - | - | 0,00 | 0,00 | - |
| 34 | 2.715 | 2.716 | **16,57** | 104,5 | 0,00 | 79,68 | - | - | 0,00 | 0,00 | - |
| 35 | 3.359 | 3.360 | **14,03** | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 36 | 3.726 | 3.727 | **12,79** | 104,5 | 0,00 | 82,43 | - | - | 0,00 | 0,00 | - |
| 37 | 2.522 | 2.526 | **18,89** | 106,0 | 0,00 | 79,05 | - | - | 0,00 | 0,00 | - |
| 38 | 2.783 | 2.786 | **17,64** | 106,0 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 39 | 1.513 | 1.520 | **25,16** | 106,0 | 0,00 | 74,64 | - | - | 0,00 | 0,00 | - |
| 4 | 403 | 423 | **39,33** | 106,0 | 0,00 | 63,52 | - | - | 0,00 | 0,00 | - |
| 40 | 1.417 | 1.424 | **25,93** | 106,0 | 0,00 | 74,07 | - | - | 0,00 | 0,00 | - |
| 41 | 885 | 897 | **31,27** | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 42 | 2.293 | 2.297 | **20,09** | 106,0 | 0,00 | 78,22 | - | - | 0,00 | 0,00 | - |
| 43 | 6.316 | 6.316 | **6,51** | 104,5 | 0,00 | 87,01 | - | - | 0,00 | 0,00 | - |
| 44 | 2.481 | 2.484 | **17,60** | 104,5 | 0,00 | 78,90 | - | - | 0,00 | 0,00 | - |
| 45 | 2.752 | 2.756 | **16,27** | 104,5 | 0,00 | 79,80 | - | - | 0,00 | 0,00 | - |
| 46 | 2.507 | 2.511 | **17,46** | 104,5 | 0,00 | 79,00 | - | - | 0,00 | 0,00 | - |
| 47 | 2.271 | 2.275 | **18,71** | 104,5 | 0,00 | 78,14 | - | - | 0,00 | 0,00 | - |
| 5 | 1.141 | 1.148 | **27,41** | 106,0 | 0,00 | 72,20 | - | - | 0,00 | 0,00 | - |
| 6 | 3.031 | 3.034 | **14,68** | 106,0 | 0,00 | 80,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.109 | 6.111 | **6,28** | 106,0 | 0,00 | 86,72 | - | - | 0,00 | 0,00 | - |
| 8 | 2.734 | 2.736 | **17,54** | 106,0 | 0,00 | 79,74 | - | - | 0,00 | 0,00 | - |
| 9 | 2.941 | 2.943 | **16,57** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,62** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AG Noise sensitive point: User defined (35)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.076 | 6.077 | **6,34** | 106,0 | 0,00 | 86,67 | - | - | 0,00 | 0,00 | - |
| 10 | 3.491 | 3.493 | **14,29** | 106,0 | 0,00 | 81,86 | - | - | 0,00 | 0,00 | - |
| 11 | 1.591 | 1.594 | **24,45** | 106,0 | 0,00 | 75,05 | - | - | 0,00 | 0,00 | - |
| 12 | 1.443 | 1.447 | **25,64** | 106,0 | 0,00 | 74,21 | - | - | 0,00 | 0,00 | - |
| 13 | 1.224 | 1.229 | **27,59** | 106,0 | 0,00 | 72,79 | - | - | 0,00 | 0,00 | - |
| 14 | 1.089 | 1.093 | **28,96** | 106,0 | 0,00 | 71,77 | - | - | 0,00 | 0,00 | - |
| 15 | 1.470 | 1.474 | **25,41** | 106,0 | 0,00 | 74,37 | - | - | 0,00 | 0,00 | - |
| 16 | 1.729 | 1.731 | **23,43** | 106,0 | 0,00 | 75,77 | - | - | 0,00 | 0,00 | - |
| 17 | 2.953 | 2.955 | **16,51** | 106,0 | 0,00 | 80,41 | - | - | 0,00 | 0,00 | - |
| 18 | 2.987 | 2.989 | **16,36** | 106,0 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 19 | 3.170 | 3.171 | **15,56** | 106,0 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |
| 2 | 5.704 | 5.705 | **7,03** | 106,0 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 20 | 3.301 | 3.303 | **15,01** | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 21 | 3.296 | 3.298 | **15,03** | 106,0 | 0,00 | 81,36 | - | - | 0,00 | 0,00 | - |
| 22 | 4.432 | 4.433 | **11,23** | 106,0 | 0,00 | 83,93 | - | - | 0,00 | 0,00 | - |
| 23 | 4.560 | 4.561 | **10,86** | 106,0 | 0,00 | 84,18 | - | - | 0,00 | 0,00 | - |
| 24 | 4.910 | 4.911 | **9,90** | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 6.037 | 6.037 | **7,04** | 104,5 | 0,00 | 86,62 | - | - | 0,00 | 0,00 | - |
| 26 | 5.710 | 5.710 | **7,70** | 104,5 | 0,00 | 86,13 | - | - | 0,00 | 0,00 | - |
| 27 | 5.446 | 5.446 | **8,25** | 104,5 | 0,00 | 85,72 | - | - | 0,00 | 0,00 | - |
| 28 | 5.411 | 5.412 | **8,33** | 104,5 | 0,00 | 85,67 | - | - | 0,00 | 0,00 | - |
| 29 | 5.292 | 5.292 | **8,59** | 104,5 | 0,00 | 85,47 | - | - | 0,00 | 0,00 | - |
| 3 | 4.494 | 4.495 | **9,70** | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |
| 30 | 4.468 | 4.469 | **10,61** | 104,5 | 0,00 | 84,00 | - | - | 0,00 | 0,00 | - |
| 31 | 4.139 | 4.139 | **11,53** | 104,5 | 0,00 | 83,34 | - | - | 0,00 | 0,00 | - |
| 32 | 3.131 | 3.132 | **14,87** | 104,5 | 0,00 | 80,92 | - | - | 0,00 | 0,00 | - |
| 33 | 2.540 | 2.541 | **17,35** | 104,5 | 0,00 | 79,10 | - | - | 0,00 | 0,00 | - |
| 34 | 3.073 | 3.074 | **15,09** | 104,5 | 0,00 | 80,75 | - | - | 0,00 | 0,00 | - |
| 35 | 1.285 | 1.287 | **25,62** | 104,5 | 0,00 | 73,19 | - | - | 0,00 | 0,00 | - |
| 36 | 1.174 | 1.176 | **26,67** | 104,5 | 0,00 | 72,41 | - | - | 0,00 | 0,00 | - |
| 37 | 1.144 | 1.153 | **28,40** | 106,0 | 0,00 | 72,24 | - | - | 0,00 | 0,00 | - |
| 38 | 5.041 | 5.043 | **10,07** | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 39 | 1.389 | 1.397 | **26,16** | 106,0 | 0,00 | 73,90 | - | - | 0,00 | 0,00 | - |
| 4 | 2.922 | 2.925 | **15,17** | 106,0 | 0,00 | 80,32 | - | - | 0,00 | 0,00 | - |
| 40 | 1.994 | 1.999 | **21,83** | 106,0 | 0,00 | 77,01 | - | - | 0,00 | 0,00 | - |
| 41 | 2.189 | 2.194 | **20,67** | 106,0 | 0,00 | 77,82 | - | - | 0,00 | 0,00 | - |
| 42 | 4.888 | 4.890 | **10,43** | 106,0 | 0,00 | 84,79 | - | - | 0,00 | 0,00 | - |
| 43 | 3.709 | 3.709 | **12,84** | 104,5 | 0,00 | 82,39 | - | - | 0,00 | 0,00 | - |
| 44 | 5.005 | 5.007 | **8,69** | 104,5 | 0,00 | 84,99 | - | - | 0,00 | 0,00 | - |
| 45 | 5.178 | 5.180 | **8,29** | 104,5 | 0,00 | 85,29 | - | - | 0,00 | 0,00 | - |
| 46 | 4.843 | 4.844 | **9,07** | 104,5 | 0,00 | 84,70 | - | - | 0,00 | 0,00 | - |
| 47 | 4.730 | 4.732 | **9,35** | 104,5 | 0,00 | 84,50 | - | - | 0,00 | 0,00 | - |
| 5 | 3.747 | 3.749 | **11,88** | 106,0 | 0,00 | 82,48 | - | - | 0,00 | 0,00 | - |
| 6 | 549 | 563 | **36,08** | 106,0 | 0,00 | 66,02 | - | - | 0,00 | 0,00 | - |
| 7 | 3.500 | 3.503 | **12,78** | 106,0 | 0,00 | 81,89 | - | - | 0,00 | 0,00 | - |
| 8 | 4.030 | 4.032 | **12,45** | 106,0 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 9 | 3.883 | 3.884 | **12,93** | 106,0 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| Sum | | | **39,75** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AH Noise sensitive point: User defined (36)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.118 | 6.119 | **6,27** | 106,0 | 0,00 | 86,73 | - | - | 0,00 | 0,00 | - |
| 10 | 3.530 | 3.532 | **14,15** | 106,0 | 0,00 | 81,96 | - | - | 0,00 | 0,00 | - |
| 11 | 1.611 | 1.614 | **24,30** | 106,0 | 0,00 | 75,16 | - | - | 0,00 | 0,00 | - |
| 12 | 1.454 | 1.458 | **25,54** | 106,0 | 0,00 | 74,28 | - | - | 0,00 | 0,00 | - |
| 13 | 1.245 | 1.250 | **27,39** | 106,0 | 0,00 | 72,94 | - | - | 0,00 | 0,00 | - |
| 14 | 1.075 | 1.079 | **29,11** | 106,0 | 0,00 | 71,66 | - | - | 0,00 | 0,00 | - |
| 15 | 1.451 | 1.454 | **25,57** | 106,0 | 0,00 | 74,25 | - | - | 0,00 | 0,00 | - |
| 16 | 1.715 | 1.718 | **23,53** | 106,0 | 0,00 | 75,70 | - | - | 0,00 | 0,00 | - |
| 17 | 2.910 | 2.912 | **16,71** | 106,0 | 0,00 | 80,28 | - | - | 0,00 | 0,00 | - |
| 18 | 2.947 | 2.949 | **16,54** | 106,0 | 0,00 | 80,39 | - | - | 0,00 | 0,00 | - |
| 19 | 3.131 | 3.133 | **15,72** | 106,0 | 0,00 | 80,92 | - | - | 0,00 | 0,00 | - |
| 2 | 5.745 | 5.747 | **6,95** | 106,0 | 0,00 | 86,19 | - | - | 0,00 | 0,00 | - |
| 20 | 3.258 | 3.260 | **15,19** | 106,0 | 0,00 | 81,27 | - | - | 0,00 | 0,00 | - |
| 21 | 3.254 | 3.256 | **15,20** | 106,0 | 0,00 | 81,25 | - | - | 0,00 | 0,00 | - |
| 22 | 4.397 | 4.398 | **11,33** | 106,0 | 0,00 | 83,87 | - | - | 0,00 | 0,00 | - |
| 23 | 4.521 | 4.523 | **10,97** | 106,0 | 0,00 | 84,11 | - | - | 0,00 | 0,00 | - |
| 24 | 4.868 | 4.869 | **10,01** | 106,0 | 0,00 | 84,75 | - | - | 0,00 | 0,00 | - |
| 25 | 6.079 | 6.080 | **6,96** | 104,5 | 0,00 | 86,68 | - | - | 0,00 | 0,00 | - |
| 26 | 5.752 | 5.753 | **7,61** | 104,5 | 0,00 | 86,20 | - | - | 0,00 | 0,00 | - |
| 27 | 5.488 | 5.489 | **8,16** | 104,5 | 0,00 | 85,79 | - | - | 0,00 | 0,00 | - |
| 28 | 5.453 | 5.454 | **8,24** | 104,5 | 0,00 | 85,73 | - | - | 0,00 | 0,00 | - |
| 29 | 5.333 | 5.334 | **8,50** | 104,5 | 0,00 | 85,54 | - | - | 0,00 | 0,00 | - |
| 3 | 4.536 | 4.537 | **9,59** | 106,0 | 0,00 | 84,14 | - | - | 0,00 | 0,00 | - |
| 30 | 4.509 | 4.509 | **10,50** | 104,5 | 0,00 | 84,08 | - | - | 0,00 | 0,00 | - |
| 31 | 4.178 | 4.179 | **11,41** | 104,5 | 0,00 | 83,42 | - | - | 0,00 | 0,00 | - |
| 32 | 3.167 | 3.168 | **14,74** | 104,5 | 0,00 | 81,02 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 2.577 | 2.578 | **17,18** | 104,5 | 0,00 | 79,23 | - | - | 0,00 | 0,00 | - |
| 34 | 3.109 | 3.110 | **14,96** | 104,5 | 0,00 | 80,85 | - | - | 0,00 | 0,00 | - |
| 35 | 1.284 | 1.286 | **25,63** | 104,5 | 0,00 | 73,18 | - | - | 0,00 | 0,00 | - |
| 36 | 1.142 | 1.145 | **26,98** | 104,5 | 0,00 | 72,18 | - | - | 0,00 | 0,00 | - |
| 37 | 1.141 | 1.151 | **28,43** | 106,0 | 0,00 | 72,22 | - | - | 0,00 | 0,00 | - |
| 38 | 5.084 | 5.086 | **9,97** | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 39 | 1.432 | 1.439 | **25,81** | 106,0 | 0,00 | 74,16 | - | - | 0,00 | 0,00 | - |
| 4 | 2.961 | 2.964 | **15,00** | 106,0 | 0,00 | 80,44 | - | - | 0,00 | 0,00 | - |
| 40 | 2.036 | 2.041 | **21,57** | 106,0 | 0,00 | 77,20 | - | - | 0,00 | 0,00 | - |
| 41 | 2.232 | 2.237 | **20,43** | 106,0 | 0,00 | 77,99 | - | - | 0,00 | 0,00 | - |
| 42 | 4.927 | 4.929 | **10,33** | 106,0 | 0,00 | 84,86 | - | - | 0,00 | 0,00 | - |
| 43 | 3.668 | 3.669 | **12,98** | 104,5 | 0,00 | 82,29 | - | - | 0,00 | 0,00 | - |
| 44 | 5.048 | 5.049 | **8,59** | 104,5 | 0,00 | 85,06 | - | - | 0,00 | 0,00 | - |
| 45 | 5.221 | 5.223 | **8,20** | 104,5 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 46 | 4.886 | 4.887 | **8,97** | 104,5 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 47 | 4.773 | 4.775 | **9,24** | 104,5 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 5 | 3.787 | 3.788 | **11,75** | 106,0 | 0,00 | 82,57 | - | - | 0,00 | 0,00 | - |
| 6 | 509 | 525 | **36,90** | 106,0 | 0,00 | 65,40 | - | - | 0,00 | 0,00 | - |
| 7 | 3.460 | 3.463 | **12,93** | 106,0 | 0,00 | 81,79 | - | - | 0,00 | 0,00 | - |
| 8 | 4.071 | 4.072 | **12,32** | 106,0 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 9 | 3.921 | 3.922 | **12,80** | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,12** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AI Noise sensitive point: User defined (37)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.006 | 6.007 | **6,47** | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 10 | 3.603 | 3.604 | **13,89** | 106,0 | 0,00 | 82,14 | - | - | 0,00 | 0,00 | - |
| 11 | 1.359 | 1.364 | **26,35** | 106,0 | 0,00 | 73,69 | - | - | 0,00 | 0,00 | - |
| 12 | 1.190 | 1.195 | **27,92** | 106,0 | 0,00 | 72,55 | - | - | 0,00 | 0,00 | - |
| 13 | 998 | 1.004 | **29,96** | 106,0 | 0,00 | 71,03 | - | - | 0,00 | 0,00 | - |
| 14 | 1.338 | 1.342 | **26,54** | 106,0 | 0,00 | 73,56 | - | - | 0,00 | 0,00 | - |
| 15 | 1.708 | 1.711 | **23,58** | 106,0 | 0,00 | 75,67 | - | - | 0,00 | 0,00 | - |
| 16 | 1.979 | 1.981 | **21,74** | 106,0 | 0,00 | 76,94 | - | - | 0,00 | 0,00 | - |
| 17 | 3.019 | 3.021 | **16,21** | 106,0 | 0,00 | 80,60 | - | - | 0,00 | 0,00 | - |
| 18 | 3.097 | 3.099 | **15,87** | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 19 | 3.302 | 3.304 | **15,00** | 106,0 | 0,00 | 81,38 | - | - | 0,00 | 0,00 | - |
| 2 | 5.630 | 5.631 | **7,17** | 106,0 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 20 | 3.349 | 3.351 | **14,81** | 106,0 | 0,00 | 81,50 | - | - | 0,00 | 0,00 | - |
| 21 | 3.379 | 3.380 | **14,70** | 106,0 | 0,00 | 81,58 | - | - | 0,00 | 0,00 | - |
| 22 | 4.598 | 4.599 | **10,75** | 106,0 | 0,00 | 84,25 | - | - | 0,00 | 0,00 | - |
| 23 | 4.686 | 4.687 | **10,51** | 106,0 | 0,00 | 84,42 | - | - | 0,00 | 0,00 | - |
| 24 | 4.987 | 4.988 | **9,70** | 106,0 | 0,00 | 84,96 | - | - | 0,00 | 0,00 | - |
| 25 | 5.981 | 5.981 | **7,15** | 104,5 | 0,00 | 86,54 | - | - | 0,00 | 0,00 | - |
| 26 | 5.661 | 5.662 | **7,80** | 104,5 | 0,00 | 86,06 | - | - | 0,00 | 0,00 | - |
| 27 | 5.404 | 5.405 | **8,35** | 104,5 | 0,00 | 85,66 | - | - | 0,00 | 0,00 | - |
| 28 | 5.349 | 5.350 | **8,47** | 104,5 | 0,00 | 85,57 | - | - | 0,00 | 0,00 | - |
| 29 | 5.211 | 5.211 | **8,78** | 104,5 | 0,00 | 85,34 | - | - | 0,00 | 0,00 | - |
| 3 | 4.426 | 4.428 | **9,87** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 30 | 4.380 | 4.380 | **10,85** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 31 | 4.030 | 4.030 | **11,85** | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 32 | 2.986 | 2.987 | **15,44** | 104,5 | 0,00 | 80,50 | - | - | 0,00 | 0,00 | - |
| 33 | 2.414 | 2.415 | **17,95** | 104,5 | 0,00 | 78,66 | - | - | 0,00 | 0,00 | - |
| 34 | 3.222 | 3.223 | **14,53** | 104,5 | 0,00 | 81,16 | - | - | 0,00 | 0,00 | - |
| 35 | 1.546 | 1.547 | **23,44** | 104,5 | 0,00 | 74,79 | - | - | 0,00 | 0,00 | - |
| 36 | 1.370 | 1.372 | **24,87** | 104,5 | 0,00 | 73,75 | - | - | 0,00 | 0,00 | - |
| 37 | 886 | 898 | **31,26** | 106,0 | 0,00 | 70,06 | - | - | 0,00 | 0,00 | - |
| 38 | 5.038 | 5.040 | **10,07** | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 39 | 1.430 | 1.437 | **25,83** | 106,0 | 0,00 | 74,15 | - | - | 0,00 | 0,00 | - |
| 4 | 2.806 | 2.809 | **15,71** | 106,0 | 0,00 | 79,97 | - | - | 0,00 | 0,00 | - |
| 40 | 2.050 | 2.055 | **21,48** | 106,0 | 0,00 | 77,26 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 2.183 | 2.187 | **20,71** | 106,0 | 0,00 | 77,80 | - | - | 0,00 | 0,00 | - |
| 42 | 4.773 | 4.775 | **10,71** | 106,0 | 0,00 | 84,58 | - | - | 0,00 | 0,00 | - |
| 43 | 3.809 | 3.810 | **12,52** | 104,5 | 0,00 | 82,62 | - | - | 0,00 | 0,00 | - |
| 44 | 4.951 | 4.953 | **8,82** | 104,5 | 0,00 | 84,90 | - | - | 0,00 | 0,00 | - |
| 45 | 5.148 | 5.149 | **8,36** | 104,5 | 0,00 | 85,24 | - | - | 0,00 | 0,00 | - |
| 46 | 4.826 | 4.828 | **9,11** | 104,5 | 0,00 | 84,68 | - | - | 0,00 | 0,00 | - |
| 47 | 4.690 | 4.692 | **9,45** | 104,5 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 5 | 3.644 | 3.646 | **12,25** | 106,0 | 0,00 | 82,24 | - | - | 0,00 | 0,00 | - |
| 6 | 522 | 538 | **36,62** | 106,0 | 0,00 | 65,61 | - | - | 0,00 | 0,00 | - |
| 7 | 3.613 | 3.615 | **12,36** | 106,0 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| 8 | 4.121 | 4.122 | **12,16** | 106,0 | 0,00 | 83,30 | - | - | 0,00 | 0,00 | - |
| 9 | 4.002 | 4.003 | **12,54** | 106,0 | 0,00 | 83,05 | - | - | 0,00 | 0,00 | - |
| Sum | | | **40,24** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AJ Noise sensitive point: User defined (38)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.277 | 6.278 | **5,99** | 106,0 | 0,00 | 86,96 | - | - | 0,00 | 0,00 | - |
| 10 | 3.940 | 3.941 | **12,74** | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 11 | 1.437 | 1.441 | **25,69** | 106,0 | 0,00 | 74,17 | - | - | 0,00 | 0,00 | - |
| 12 | 1.191 | 1.196 | **27,91** | 106,0 | 0,00 | 72,55 | - | - | 0,00 | 0,00 | - |
| 13 | 1.105 | 1.111 | **28,78** | 106,0 | 0,00 | 71,91 | - | - | 0,00 | 0,00 | - |
| 14 | 1.428 | 1.432 | **25,76** | 106,0 | 0,00 | 74,12 | - | - | 0,00 | 0,00 | - |
| 15 | 1.750 | 1.753 | **23,28** | 106,0 | 0,00 | 75,87 | - | - | 0,00 | 0,00 | - |
| 16 | 2.056 | 2.058 | **21,25** | 106,0 | 0,00 | 77,27 | - | - | 0,00 | 0,00 | - |
| 17 | 2.772 | 2.774 | **17,36** | 106,0 | 0,00 | 79,86 | - | - | 0,00 | 0,00 | - |
| 18 | 2.895 | 2.897 | **16,78** | 106,0 | 0,00 | 80,24 | - | - | 0,00 | 0,00 | - |
| 19 | 3.126 | 3.128 | **15,75** | 106,0 | 0,00 | 80,91 | - | - | 0,00 | 0,00 | - |
| 2 | 5.897 | 5.898 | **6,67** | 106,0 | 0,00 | 86,41 | - | - | 0,00 | 0,00 | - |
| 20 | 3.083 | 3.085 | **15,93** | 106,0 | 0,00 | 80,78 | - | - | 0,00 | 0,00 | - |
| 21 | 3.144 | 3.146 | **15,67** | 106,0 | 0,00 | 80,96 | - | - | 0,00 | 0,00 | - |
| 22 | 4.462 | 4.463 | **11,14** | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 23 | 4.494 | 4.495 | **11,05** | 106,0 | 0,00 | 84,05 | - | - | 0,00 | 0,00 | - |
| 24 | 4.742 | 4.743 | **10,35** | 106,0 | 0,00 | 84,52 | - | - | 0,00 | 0,00 | - |
| 25 | 6.262 | 6.262 | **6,61** | 104,5 | 0,00 | 86,93 | - | - | 0,00 | 0,00 | - |
| 26 | 5.948 | 5.948 | **7,22** | 104,5 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 27 | 5.696 | 5.697 | **7,72** | 104,5 | 0,00 | 86,11 | - | - | 0,00 | 0,00 | - |
| 28 | 5.627 | 5.628 | **7,87** | 104,5 | 0,00 | 86,01 | - | - | 0,00 | 0,00 | - |
| 29 | 5.473 | 5.473 | **8,20** | 104,5 | 0,00 | 85,76 | - | - | 0,00 | 0,00 | - |
| 3 | 4.702 | 4.703 | **9,18** | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 30 | 4.637 | 4.638 | **10,17** | 104,5 | 0,00 | 84,33 | - | - | 0,00 | 0,00 | - |
| 31 | 4.270 | 4.270 | **11,15** | 104,5 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 32 | 3.191 | 3.192 | **14,65** | 104,5 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 33 | 2.646 | 2.647 | **16,87** | 104,5 | 0,00 | 79,45 | - | - | 0,00 | 0,00 | - |
| 34 | 3.552 | 3.552 | **13,36** | 104,5 | 0,00 | 82,01 | - | - | 0,00 | 0,00 | - |
| 35 | 1.703 | 1.704 | **22,27** | 104,5 | 0,00 | 75,63 | - | - | 0,00 | 0,00 | - |
| 36 | 1.331 | 1.333 | **25,21** | 104,5 | 0,00 | 73,50 | - | - | 0,00 | 0,00 | - |
| 37 | 764 | 778 | **32,87** | 106,0 | 0,00 | 68,82 | - | - | 0,00 | 0,00 | - |
| 38 | 5.352 | 5.354 | **9,37** | 106,0 | 0,00 | 85,57 | - | - | 0,00 | 0,00 | - |
| 39 | 1.764 | 1.770 | **23,32** | 106,0 | 0,00 | 75,96 | - | - | 0,00 | 0,00 | - |
| 4 | 3.044 | 3.047 | **14,63** | 106,0 | 0,00 | 80,68 | - | - | 0,00 | 0,00 | - |
| 40 | 2.386 | 2.390 | **19,59** | 106,0 | 0,00 | 78,57 | - | - | 0,00 | 0,00 | - |
| 41 | 2.501 | 2.504 | **19,00** | 106,0 | 0,00 | 78,97 | - | - | 0,00 | 0,00 | - |
| 42 | 5.005 | 5.007 | **10,15** | 106,0 | 0,00 | 84,99 | - | - | 0,00 | 0,00 | - |
| 43 | 3.591 | 3.592 | **13,23** | 104,5 | 0,00 | 82,11 | - | - | 0,00 | 0,00 | - |
| 44 | 5.235 | 5.237 | **8,16** | 104,5 | 0,00 | 85,38 | - | - | 0,00 | 0,00 | - |
| 45 | 5.447 | 5.448 | **7,70** | 104,5 | 0,00 | 85,72 | - | - | 0,00 | 0,00 | - |
| 46 | 5.133 | 5.135 | **8,39** | 104,5 | 0,00 | 85,21 | - | - | 0,00 | 0,00 | - |
| 47 | 4.984 | 4.986 | **8,74** | 104,5 | 0,00 | 84,95 | - | - | 0,00 | 0,00 | - |
| 5 | 3.890 | 3.892 | **11,39** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 294 | 321 | **42,33** | 106,0 | 0,00 | 61,13 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 3.409 | 3.412 | **13,13** | 106,0 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| 8 | 4.459 | 4.460 | **11,15** | 106,0 | 0,00 | 83,99 | - | - | 0,00 | 0,00 | - |
| 9 | 4.338 | 4.340 | **11,50** | 106,0 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,61** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AK Noise sensitive point: User defined (39)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.323 | 6.324 | **5,91** | 106,0 | 0,00 | 87,02 | - | - | 0,00 | 0,00 | - |
| 10 | 3.966 | 3.967 | **12,66** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 11 | 1.484 | 1.488 | **25,29** | 106,0 | 0,00 | 74,45 | - | - | 0,00 | 0,00 | - |
| 12 | 1.236 | 1.240 | **27,48** | 106,0 | 0,00 | 72,87 | - | - | 0,00 | 0,00 | - |
| 13 | 1.154 | 1.160 | **28,28** | 106,0 | 0,00 | 72,29 | - | - | 0,00 | 0,00 | - |
| 14 | 1.402 | 1.405 | **25,99** | 106,0 | 0,00 | 73,96 | - | - | 0,00 | 0,00 | - |
| 15 | 1.716 | 1.719 | **23,52** | 106,0 | 0,00 | 75,71 | - | - | 0,00 | 0,00 | - |
| 16 | 2.025 | 2.028 | **21,44** | 106,0 | 0,00 | 77,14 | - | - | 0,00 | 0,00 | - |
| 17 | 2.723 | 2.725 | **17,59** | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 18 | 2.846 | 2.848 | **17,01** | 106,0 | 0,00 | 80,09 | - | - | 0,00 | 0,00 | - |
| 19 | 3.077 | 3.079 | **15,96** | 106,0 | 0,00 | 80,77 | - | - | 0,00 | 0,00 | - |
| 2 | 5.944 | 5.945 | **6,58** | 106,0 | 0,00 | 86,48 | - | - | 0,00 | 0,00 | - |
| 20 | 3.035 | 3.037 | **16,14** | 106,0 | 0,00 | 80,65 | - | - | 0,00 | 0,00 | - |
| 21 | 3.095 | 3.097 | **15,88** | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 22 | 4.414 | 4.415 | **11,28** | 106,0 | 0,00 | 83,90 | - | - | 0,00 | 0,00 | - |
| 23 | 4.444 | 4.445 | **11,19** | 106,0 | 0,00 | 83,96 | - | - | 0,00 | 0,00 | - |
| 24 | 4.694 | 4.695 | **10,48** | 106,0 | 0,00 | 84,43 | - | - | 0,00 | 0,00 | - |
| 25 | 6.307 | 6.308 | **6,53** | 104,5 | 0,00 | 87,00 | - | - | 0,00 | 0,00 | - |
| 26 | 5.993 | 5.993 | **7,13** | 104,5 | 0,00 | 86,55 | - | - | 0,00 | 0,00 | - |
| 27 | 5.740 | 5.741 | **7,63** | 104,5 | 0,00 | 86,18 | - | - | 0,00 | 0,00 | - |
| 28 | 5.673 | 5.673 | **7,77** | 104,5 | 0,00 | 86,08 | - | - | 0,00 | 0,00 | - |
| 29 | 5.520 | 5.520 | **8,10** | 104,5 | 0,00 | 85,84 | - | - | 0,00 | 0,00 | - |
| 3 | 4.747 | 4.749 | **9,07** | 106,0 | 0,00 | 84,53 | - | - | 0,00 | 0,00 | - |
| 30 | 4.685 | 4.685 | **10,04** | 104,5 | 0,00 | 84,41 | - | - | 0,00 | 0,00 | - |
| 31 | 4.318 | 4.318 | **11,02** | 104,5 | 0,00 | 83,71 | - | - | 0,00 | 0,00 | - |
| 32 | 3.240 | 3.241 | **14,46** | 104,5 | 0,00 | 81,21 | - | - | 0,00 | 0,00 | - |
| 33 | 2.694 | 2.695 | **16,66** | 104,5 | 0,00 | 79,61 | - | - | 0,00 | 0,00 | - |
| 34 | 3.571 | 3.571 | **13,30** | 104,5 | 0,00 | 82,06 | - | - | 0,00 | 0,00 | - |
| 35 | 1.684 | 1.686 | **22,41** | 104,5 | 0,00 | 75,54 | - | - | 0,00 | 0,00 | - |
| 36 | 1.291 | 1.293 | **25,57** | 104,5 | 0,00 | 73,23 | - | - | 0,00 | 0,00 | - |
| 37 | 800 | 814 | **32,37** | 106,0 | 0,00 | 69,21 | - | - | 0,00 | 0,00 | - |
| 38 | 5.393 | 5.394 | **9,28** | 106,0 | 0,00 | 85,64 | - | - | 0,00 | 0,00 | - |
| 39 | 1.797 | 1.803 | **23,10** | 106,0 | 0,00 | 76,12 | - | - | 0,00 | 0,00 | - |
| 4 | 3.092 | 3.095 | **14,42** | 106,0 | 0,00 | 80,81 | - | - | 0,00 | 0,00 | - |
| 40 | 2.418 | 2.422 | **19,42** | 106,0 | 0,00 | 78,68 | - | - | 0,00 | 0,00 | - |
| 41 | 2.540 | 2.544 | **18,80** | 106,0 | 0,00 | 79,11 | - | - | 0,00 | 0,00 | - |
| 42 | 5.053 | 5.055 | **10,04** | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 43 | 3.542 | 3.542 | **13,40** | 104,5 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 44 | 5.280 | 5.282 | **8,06** | 104,5 | 0,00 | 85,46 | - | - | 0,00 | 0,00 | - |
| 45 | 5.490 | 5.491 | **7,61** | 104,5 | 0,00 | 85,79 | - | - | 0,00 | 0,00 | - |
| 46 | 5.175 | 5.177 | **8,30** | 104,5 | 0,00 | 85,28 | - | - | 0,00 | 0,00 | - |
| 47 | 5.028 | 5.030 | **8,64** | 104,5 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 5 | 3.938 | 3.940 | **11,23** | 106,0 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 6 | 246 | 278 | **43,86** | 106,0 | 0,00 | 59,88 | - | - | 0,00 | 0,00 | - |
| 7 | 3.360 | 3.362 | **13,32** | 106,0 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 8 | 4.488 | 4.489 | **11,06** | 106,0 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 9 | 4.363 | 4.364 | **11,43** | 106,0 | 0,00 | 83,80 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,75** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: AL Noise sensitive point: User defined (40)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.788 | 9.788 | **1,32** | 106,0 | 0,00 | 90,81 | - | - | 0,00 | 0,00 | - |
| 10 | 6.528 | 6.529 | **6,24** | 106,0 | 0,00 | 87,30 | - | - | 0,00 | 0,00 | - |
| 11 | 5.121 | 5.122 | **9,36** | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 12 | 4.825 | 4.827 | **10,13** | 106,0 | 0,00 | 84,67 | - | - | 0,00 | 0,00 | - |
| 13 | 4.807 | 4.808 | **10,18** | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 14 | 3.062 | 3.064 | **16,03** | 106,0 | 0,00 | 80,73 | - | - | 0,00 | 0,00 | - |
| 15 | 2.711 | 2.713 | **17,65** | 106,0 | 0,00 | 79,67 | - | - | 0,00 | 0,00 | - |
| 16 | 2.804 | 2.806 | **17,20** | 106,0 | 0,00 | 79,96 | - | - | 0,00 | 0,00 | - |
| 17 | 1.215 | 1.220 | **27,68** | 106,0 | 0,00 | 72,73 | - | - | 0,00 | 0,00 | - |
| 18 | 831 | 838 | **32,02** | 106,0 | 0,00 | 69,46 | - | - | 0,00 | 0,00 | - |
| 19 | 589 | 599 | **35,74** | 106,0 | 0,00 | 66,54 | - | - | 0,00 | 0,00 | - |
| 2 | 9.425 | 9.426 | **1,72** | 106,0 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 20 | 1.293 | 1.297 | **26,95** | 106,0 | 0,00 | 73,26 | - | - | 0,00 | 0,00 | - |
| 21 | 857 | 864 | **31,67** | 106,0 | 0,00 | 69,73 | - | - | 0,00 | 0,00 | - |
| 22 | 993 | 998 | **30,02** | 106,0 | 0,00 | 70,98 | - | - | 0,00 | 0,00 | - |
| 23 | 804 | 811 | **32,38** | 106,0 | 0,00 | 69,18 | - | - | 0,00 | 0,00 | - |
| 24 | 1.474 | 1.478 | **25,38** | 106,0 | 0,00 | 74,39 | - | - | 0,00 | 0,00 | - |
| 25 | 9.721 | 9.722 | **1,57** | 104,5 | 0,00 | 90,75 | - | - | 0,00 | 0,00 | - |
| 26 | 9.378 | 9.379 | **1,97** | 104,5 | 0,00 | 90,44 | - | - | 0,00 | 0,00 | - |
| 27 | 9.098 | 9.098 | **2,32** | 104,5 | 0,00 | 90,18 | - | - | 0,00 | 0,00 | - |
| 28 | 9.111 | 9.111 | **2,30** | 104,5 | 0,00 | 90,19 | - | - | 0,00 | 0,00 | - |
| 29 | 9.025 | 9.026 | **2,41** | 104,5 | 0,00 | 90,11 | - | - | 0,00 | 0,00 | - |
| 3 | 8.210 | 8.211 | **3,15** | 106,0 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |
| 30 | 8.212 | 8.212 | **3,48** | 104,5 | 0,00 | 89,29 | - | - | 0,00 | 0,00 | - |
| 31 | 7.896 | 7.896 | **3,93** | 104,5 | 0,00 | 88,95 | - | - | 0,00 | 0,00 | - |
| 32 | 6.873 | 6.874 | **5,53** | 104,5 | 0,00 | 87,74 | - | - | 0,00 | 0,00 | - |
| 33 | 6.295 | 6.295 | **6,55** | 104,5 | 0,00 | 86,98 | - | - | 0,00 | 0,00 | - |
| 34 | 5.899 | 5.900 | **7,31** | 104,5 | 0,00 | 86,42 | - | - | 0,00 | 0,00 | - |
| 35 | 3.321 | 3.321 | **14,17** | 104,5 | 0,00 | 81,43 | - | - | 0,00 | 0,00 | - |
| 36 | 2.657 | 2.659 | **16,82** | 104,5 | 0,00 | 79,49 | - | - | 0,00 | 0,00 | - |
| 37 | 4.313 | 4.315 | **11,95** | 106,0 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 38 | 8.578 | 8.579 | **4,01** | 106,0 | 0,00 | 89,67 | - | - | 0,00 | 0,00 | - |
| 39 | 4.993 | 4.995 | **10,18** | 106,0 | 0,00 | 84,97 | - | - | 0,00 | 0,00 | - |
| 4 | 6.680 | 6.681 | **5,32** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 40 | 5.483 | 5.484 | **9,09** | 106,0 | 0,00 | 85,78 | - | - | 0,00 | 0,00 | - |
| 41 | 5.833 | 5.835 | **8,38** | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| 42 | 8.646 | 8.647 | **3,92** | 106,0 | 0,00 | 89,74 | - | - | 0,00 | 0,00 | - |
| 43 | 480 | 487 | **36,44** | 104,5 | 0,00 | 64,74 | - | - | 0,00 | 0,00 | - |
| 44 | 8.692 | 8.693 | **2,39** | 104,5 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 45 | 8.804 | 8.805 | **2,25** | 104,5 | 0,00 | 89,89 | - | - | 0,00 | 0,00 | - |
| 46 | 8.431 | 8.432 | **2,73** | 104,5 | 0,00 | 89,52 | - | - | 0,00 | 0,00 | - |
| 47 | 8.387 | 8.389 | **2,79** | 104,5 | 0,00 | 89,47 | - | - | 0,00 | 0,00 | - |
| 5 | 7.502 | 7.503 | **4,09** | 106,0 | 0,00 | 88,50 | - | - | 0,00 | 0,00 | - |
| 6 | 3.414 | 3.416 | **13,11** | 106,0 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 7 | 384 | 405 | **39,81** | 106,0 | 0,00 | 63,15 | - | - | 0,00 | 0,00 | - |
| 8 | 7.150 | 7.150 | **5,09** | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 9 | 6.815 | 6.816 | **5,70** | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,04** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AM Noise sensitive point: User defined (41)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.834 | 9.834 | **1,28** | 106,0 | 0,00 | 90,85 | - | - | 0,00 | 0,00 | - |
| 10 | 6.589 | 6.590 | **6,13** | 106,0 | 0,00 | 87,38 | - | - | 0,00 | 0,00 | - |
| 11 | 5.148 | 5.149 | **9,29** | 106,0 | 0,00 | 85,23 | - | - | 0,00 | 0,00 | - |
| 12 | 4.850 | 4.851 | **10,06** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 13 | 4.837 | 4.838 | **10,10** | 106,0 | 0,00 | 84,69 | - | - | 0,00 | 0,00 | - |
| 14 | 3.115 | 3.117 | **15,80** | 106,0 | 0,00 | 80,87 | - | - | 0,00 | 0,00 | - |
| 15 | 2.767 | 2.769 | **17,38** | 106,0 | 0,00 | 79,85 | - | - | 0,00 | 0,00 | - |
| 16 | 2.866 | 2.867 | **16,92** | 106,0 | 0,00 | 80,15 | - | - | 0,00 | 0,00 | - |

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 1.206 | 1.211 | **27,77** | 106,0 | 0,00 | 72,66 | - | - | 0,00 | 0,00 | - |
| 18 | 850 | 857 | **31,77** | 106,0 | 0,00 | 69,65 | - | - | 0,00 | 0,00 | - |
| 19 | 634 | 642 | **34,97** | 106,0 | 0,00 | 67,15 | - | - | 0,00 | 0,00 | - |
| 2 | 9.470 | 9.471 | **1,67** | 106,0 | 0,00 | 90,53 | - | - | 0,00 | 0,00 | - |
| 20 | 1.261 | 1.266 | **27,24** | 106,0 | 0,00 | 73,05 | - | - | 0,00 | 0,00 | - |
| 21 | 836 | 843 | **31,95** | 106,0 | 0,00 | 69,52 | - | - | 0,00 | 0,00 | - |
| 22 | 1.020 | 1.025 | **29,71** | 106,0 | 0,00 | 71,22 | - | - | 0,00 | 0,00 | - |
| 23 | 764 | 771 | **32,95** | 106,0 | 0,00 | 68,74 | - | - | 0,00 | 0,00 | - |
| 24 | 1.404 | 1.408 | **25,97** | 106,0 | 0,00 | 73,97 | - | - | 0,00 | 0,00 | - |
| 25 | 9.769 | 9.769 | **1,51** | 104,5 | 0,00 | 90,80 | - | - | 0,00 | 0,00 | - |
| 26 | 9.427 | 9.427 | **1,91** | 104,5 | 0,00 | 90,49 | - | - | 0,00 | 0,00 | - |
| 27 | 9.147 | 9.148 | **2,26** | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 28 | 9.158 | 9.158 | **2,24** | 104,5 | 0,00 | 90,24 | - | - | 0,00 | 0,00 | - |
| 29 | 9.069 | 9.069 | **2,35** | 104,5 | 0,00 | 90,15 | - | - | 0,00 | 0,00 | - |
| 3 | 8.255 | 8.256 | **3,09** | 106,0 | 0,00 | 89,34 | - | - | 0,00 | 0,00 | - |
| 30 | 8.255 | 8.255 | **3,42** | 104,5 | 0,00 | 89,33 | - | - | 0,00 | 0,00 | - |
| 31 | 7.935 | 7.936 | **3,87** | 104,5 | 0,00 | 88,99 | - | - | 0,00 | 0,00 | - |
| 32 | 6.908 | 6.909 | **5,47** | 104,5 | 0,00 | 87,79 | - | - | 0,00 | 0,00 | - |
| 33 | 6.332 | 6.333 | **6,48** | 104,5 | 0,00 | 87,03 | - | - | 0,00 | 0,00 | - |
| 34 | 5.962 | 5.962 | **7,19** | 104,5 | 0,00 | 86,51 | - | - | 0,00 | 0,00 | - |
| 35 | 3.378 | 3.379 | **13,97** | 104,5 | 0,00 | 81,57 | - | - | 0,00 | 0,00 | - |
| 36 | 2.704 | 2.705 | **16,61** | 104,5 | 0,00 | 79,64 | - | - | 0,00 | 0,00 | - |
| 37 | 4.336 | 4.338 | **11,89** | 106,0 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 38 | 8.631 | 8.632 | **3,94** | 106,0 | 0,00 | 89,72 | - | - | 0,00 | 0,00 | - |
| 39 | 5.041 | 5.043 | **10,07** | 106,0 | 0,00 | 85,05 | - | - | 0,00 | 0,00 | - |
| 4 | 6.719 | 6.720 | **5,26** | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 40 | 5.534 | 5.535 | **8,98** | 106,0 | 0,00 | 85,86 | - | - | 0,00 | 0,00 | - |
| 41 | 5.880 | 5.882 | **8,28** | 106,0 | 0,00 | 86,39 | - | - | 0,00 | 0,00 | - |
| 42 | 8.685 | 8.686 | **3,87** | 106,0 | 0,00 | 89,78 | - | - | 0,00 | 0,00 | - |
| 43 | 429 | 436 | **37,59** | 104,5 | 0,00 | 63,79 | - | - | 0,00 | 0,00 | - |
| 44 | 8.740 | 8.741 | **2,33** | 104,5 | 0,00 | 89,83 | - | - | 0,00 | 0,00 | - |
| 45 | 8.854 | 8.855 | **2,19** | 104,5 | 0,00 | 89,94 | - | - | 0,00 | 0,00 | - |
| 46 | 8.483 | 8.484 | **2,67** | 104,5 | 0,00 | 89,57 | - | - | 0,00 | 0,00 | - |
| 47 | 8.436 | 8.437 | **2,73** | 104,5 | 0,00 | 89,52 | - | - | 0,00 | 0,00 | - |
| 5 | 7.542 | 7.543 | **4,04** | 106,0 | 0,00 | 88,55 | - | - | 0,00 | 0,00 | - |
| 6 | 3.445 | 3.448 | **12,99** | 106,0 | 0,00 | 81,75 | - | - | 0,00 | 0,00 | - |
| 7 | 374 | 395 | **40,08** | 106,0 | 0,00 | 62,93 | - | - | 0,00 | 0,00 | - |
| 8 | 7.210 | 7.211 | **4,98** | 106,0 | 0,00 | 88,16 | - | - | 0,00 | 0,00 | - |
| 9 | 6.878 | 6.878 | **5,58** | 106,0 | 0,00 | 87,75 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,30** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AN Noise sensitive point: User defined (42)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.915 | 9.916 | **1,19** | 106,0 | 0,00 | 90,93 | - | - | 0,00 | 0,00 | - |
| 10 | 6.656 | 6.656 | **6,00** | 106,0 | 0,00 | 87,46 | - | - | 0,00 | 0,00 | - |
| 11 | 5.237 | 5.238 | **9,07** | 106,0 | 0,00 | 85,38 | - | - | 0,00 | 0,00 | - |
| 12 | 4.939 | 4.940 | **9,83** | 106,0 | 0,00 | 84,88 | - | - | 0,00 | 0,00 | - |
| 13 | 4.925 | 4.926 | **9,86** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 14 | 3.191 | 3.193 | **15,47** | 106,0 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 15 | 2.840 | 2.841 | **17,04** | 106,0 | 0,00 | 80,07 | - | - | 0,00 | 0,00 | - |
| 16 | 2.931 | 2.933 | **16,61** | 106,0 | 0,00 | 80,35 | - | - | 0,00 | 0,00 | - |
| 17 | 1.291 | 1.295 | **26,97** | 106,0 | 0,00 | 73,25 | - | - | 0,00 | 0,00 | - |
| 18 | 940 | 946 | **30,64** | 106,0 | 0,00 | 70,52 | - | - | 0,00 | 0,00 | - |
| 19 | 716 | 723 | **33,66** | 106,0 | 0,00 | 68,19 | - | - | 0,00 | 0,00 | - |
| 2 | 9.552 | 9.553 | **1,58** | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 20 | 1.332 | 1.336 | **26,60** | 106,0 | 0,00 | 73,52 | - | - | 0,00 | 0,00 | - |
| 21 | 915 | 922 | **30,94** | 106,0 | 0,00 | 70,29 | - | - | 0,00 | 0,00 | - |
| 22 | 952 | 957 | **30,50** | 106,0 | 0,00 | 70,62 | - | - | 0,00 | 0,00 | - |
| 23 | 678 | 687 | **34,24** | 106,0 | 0,00 | 67,73 | - | - | 0,00 | 0,00 | - |
| 24 | 1.363 | 1.368 | **26,31** | 106,0 | 0,00 | 73,72 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 9.850 | 9.850 | **1,42** | 104,5 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 26 | 9.507 | 9.507 | **1,82** | 104,5 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 27 | 9.227 | 9.227 | **2,16** | 104,5 | 0,00 | 90,30 | - | - | 0,00 | 0,00 | - |
| 28 | 9.239 | 9.239 | **2,14** | 104,5 | 0,00 | 90,31 | - | - | 0,00 | 0,00 | - |
| 29 | 9.152 | 9.152 | **2,25** | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 3 | 8.338 | 8.339 | **2,99** | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 30 | 8.339 | 8.339 | **3,31** | 104,5 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 31 | 8.021 | 8.021 | **3,75** | 104,5 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 32 | 6.995 | 6.996 | **5,32** | 104,5 | 0,00 | 87,90 | - | - | 0,00 | 0,00 | - |
| 33 | 6.419 | 6.419 | **6,32** | 104,5 | 0,00 | 87,15 | - | - | 0,00 | 0,00 | - |
| 34 | 6.026 | 6.026 | **7,06** | 104,5 | 0,00 | 86,60 | - | - | 0,00 | 0,00 | - |
| 35 | 3.449 | 3.450 | **13,71** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 36 | 2.785 | 2.786 | **16,26** | 104,5 | 0,00 | 79,90 | - | - | 0,00 | 0,00 | - |
| 37 | 4.425 | 4.428 | **11,62** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 38 | 8.707 | 8.708 | **3,85** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 39 | 5.121 | 5.123 | **9,88** | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 4 | 6.804 | 6.805 | **5,13** | 106,0 | 0,00 | 87,66 | - | - | 0,00 | 0,00 | - |
| 40 | 5.611 | 5.613 | **8,82** | 106,0 | 0,00 | 85,98 | - | - | 0,00 | 0,00 | - |
| 41 | 5.961 | 5.963 | **8,13** | 106,0 | 0,00 | 86,51 | - | - | 0,00 | 0,00 | - |
| 42 | 8.771 | 8.772 | **3,76** | 106,0 | 0,00 | 89,86 | - | - | 0,00 | 0,00 | - |
| 43 | 484 | 490 | **36,36** | 104,5 | 0,00 | 64,81 | - | - | 0,00 | 0,00 | - |
| 44 | 8.821 | 8.822 | **2,23** | 104,5 | 0,00 | 89,91 | - | - | 0,00 | 0,00 | - |
| 45 | 8.933 | 8.934 | **2,09** | 104,5 | 0,00 | 90,02 | - | - | 0,00 | 0,00 | - |
| 46 | 8.560 | 8.561 | **2,56** | 104,5 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 47 | 8.516 | 8.517 | **2,62** | 104,5 | 0,00 | 89,61 | - | - | 0,00 | 0,00 | - |
| 5 | 7.627 | 7.628 | **3,92** | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 6 | 3.534 | 3.536 | **12,65** | 106,0 | 0,00 | 81,97 | - | - | 0,00 | 0,00 | - |
| 7 | 460 | 478 | **37,96** | 106,0 | 0,00 | 64,59 | - | - | 0,00 | 0,00 | - |
| 8 | 7.277 | 7.278 | **4,86** | 106,0 | 0,00 | 88,24 | - | - | 0,00 | 0,00 | - |
| 9 | 6.942 | 6.942 | **5,46** | 106,0 | 0,00 | 87,83 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,18** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AO Noise sensitive point: User defined (43)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.911 | 9.912 | **1,19** | 106,0 | 0,00 | 90,92 | - | - | 0,00 | 0,00 | - |
| 10 | 6.662 | 6.662 | **5,99** | 106,0 | 0,00 | 87,47 | - | - | 0,00 | 0,00 | - |
| 11 | 5.224 | 5.225 | **9,10** | 106,0 | 0,00 | 85,36 | - | - | 0,00 | 0,00 | - |
| 12 | 4.924 | 4.925 | **9,87** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 13 | 4.913 | 4.914 | **9,90** | 106,0 | 0,00 | 84,83 | - | - | 0,00 | 0,00 | - |
| 14 | 3.191 | 3.193 | **15,47** | 106,0 | 0,00 | 81,08 | - | - | 0,00 | 0,00 | - |
| 15 | 2.842 | 2.844 | **17,02** | 106,0 | 0,00 | 80,08 | - | - | 0,00 | 0,00 | - |
| 16 | 2.938 | 2.939 | **16,58** | 106,0 | 0,00 | 80,37 | - | - | 0,00 | 0,00 | - |
| 17 | 1.265 | 1.270 | **27,20** | 106,0 | 0,00 | 73,07 | - | - | 0,00 | 0,00 | - |
| 18 | 924 | 930 | **30,83** | 106,0 | 0,00 | 70,37 | - | - | 0,00 | 0,00 | - |
| 19 | 711 | 719 | **33,73** | 106,0 | 0,00 | 68,13 | - | - | 0,00 | 0,00 | - |
| 2 | 9.548 | 9.548 | **1,58** | 106,0 | 0,00 | 90,60 | - | - | 0,00 | 0,00 | - |
| 20 | 1.300 | 1.305 | **26,88** | 106,0 | 0,00 | 73,31 | - | - | 0,00 | 0,00 | - |
| 21 | 887 | 893 | **31,29** | 106,0 | 0,00 | 70,02 | - | - | 0,00 | 0,00 | - |
| 22 | 984 | 990 | **30,12** | 106,0 | 0,00 | 70,91 | - | - | 0,00 | 0,00 | - |
| 23 | 686 | 694 | **34,12** | 106,0 | 0,00 | 67,83 | - | - | 0,00 | 0,00 | - |
| 24 | 1.345 | 1.350 | **26,47** | 106,0 | 0,00 | 73,60 | - | - | 0,00 | 0,00 | - |
| 25 | 9.847 | 9.847 | **1,42** | 104,5 | 0,00 | 90,87 | - | - | 0,00 | 0,00 | - |
| 26 | 9.504 | 9.505 | **1,82** | 104,5 | 0,00 | 90,56 | - | - | 0,00 | 0,00 | - |
| 27 | 9.225 | 9.225 | **2,16** | 104,5 | 0,00 | 90,30 | - | - | 0,00 | 0,00 | - |
| 28 | 9.235 | 9.235 | **2,15** | 104,5 | 0,00 | 90,31 | - | - | 0,00 | 0,00 | - |
| 29 | 9.147 | 9.147 | **2,26** | 104,5 | 0,00 | 90,23 | - | - | 0,00 | 0,00 | - |
| 3 | 8.333 | 8.334 | **2,99** | 106,0 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 30 | 8.333 | 8.333 | **3,32** | 104,5 | 0,00 | 89,42 | - | - | 0,00 | 0,00 | - |
| 31 | 8.013 | 8.013 | **3,76** | 104,5 | 0,00 | 89,08 | - | - | 0,00 | 0,00 | - |
| 32 | 6.985 | 6.986 | **5,34** | 104,5 | 0,00 | 87,88 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 6.410 | 6.410 | **6,34** | 104,5 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 34 | 6.033 | 6.033 | **7,05** | 104,5 | 0,00 | 86,61 | - | - | 0,00 | 0,00 | - |
| 35 | 3.453 | 3.453 | **13,70** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 36 | 2.782 | 2.783 | **16,28** | 104,5 | 0,00 | 79,89 | - | - | 0,00 | 0,00 | - |
| 37 | 4.410 | 4.412 | **11,66** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 38 | 8.707 | 8.708 | **3,84** | 106,0 | 0,00 | 89,80 | - | - | 0,00 | 0,00 | - |
| 39 | 5.118 | 5.120 | **9,89** | 106,0 | 0,00 | 85,19 | - | - | 0,00 | 0,00 | - |
| 4 | 6.796 | 6.797 | **5,14** | 106,0 | 0,00 | 87,65 | - | - | 0,00 | 0,00 | - |
| 40 | 5.611 | 5.612 | **8,82** | 106,0 | 0,00 | 85,98 | - | - | 0,00 | 0,00 | - |
| 41 | 5.958 | 5.960 | **8,13** | 106,0 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 42 | 8.763 | 8.764 | **3,77** | 106,0 | 0,00 | 89,85 | - | - | 0,00 | 0,00 | - |
| 43 | 451 | 458 | **37,07** | 104,5 | 0,00 | 64,22 | - | - | 0,00 | 0,00 | - |
| 44 | 8.817 | 8.818 | **2,23** | 104,5 | 0,00 | 89,91 | - | - | 0,00 | 0,00 | - |
| 45 | 8.931 | 8.932 | **2,09** | 104,5 | 0,00 | 90,02 | - | - | 0,00 | 0,00 | - |
| 46 | 8.559 | 8.560 | **2,56** | 104,5 | 0,00 | 89,65 | - | - | 0,00 | 0,00 | - |
| 47 | 8.514 | 8.515 | **2,62** | 104,5 | 0,00 | 89,60 | - | - | 0,00 | 0,00 | - |
| 5 | 7.620 | 7.621 | **3,93** | 106,0 | 0,00 | 88,64 | - | - | 0,00 | 0,00 | - |
| 6 | 3.522 | 3.524 | **12,70** | 106,0 | 0,00 | 81,94 | - | - | 0,00 | 0,00 | - |
| 7 | 437 | 455 | **38,50** | 106,0 | 0,00 | 64,17 | - | - | 0,00 | 0,00 | - |
| 8 | 7.283 | 7.284 | **4,85** | 106,0 | 0,00 | 88,25 | - | - | 0,00 | 0,00 | - |
| 9 | 6.949 | 6.950 | **5,45** | 106,0 | 0,00 | 87,84 | - | - | 0,00 | 0,00 | - |
| Sum | | | **43,52** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AP Noise sensitive point: User defined (48)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.087 | 5.089 | **8,29** | 106,0 | 0,00 | 85,13 | - | - | 0,00 | 0,00 | - |
| 10 | 1.159 | 1.164 | **28,23** | 106,0 | 0,00 | 72,32 | - | - | 0,00 | 0,00 | - |
| 11 | 4.656 | 4.658 | **10,59** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 12 | 4.825 | 4.826 | **10,13** | 106,0 | 0,00 | 84,67 | - | - | 0,00 | 0,00 | - |
| 13 | 4.440 | 4.442 | **11,20** | 106,0 | 0,00 | 83,95 | - | - | 0,00 | 0,00 | - |
| 14 | 3.746 | 3.747 | **13,39** | 106,0 | 0,00 | 82,47 | - | - | 0,00 | 0,00 | - |
| 15 | 3.921 | 3.922 | **12,80** | 106,0 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 16 | 3.707 | 3.709 | **13,52** | 106,0 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 17 | 6.267 | 6.268 | **6,77** | 106,0 | 0,00 | 86,94 | - | - | 0,00 | 0,00 | - |
| 18 | 6.001 | 6.002 | **7,32** | 106,0 | 0,00 | 86,57 | - | - | 0,00 | 0,00 | - |
| 19 | 5.955 | 5.956 | **7,42** | 106,0 | 0,00 | 86,50 | - | - | 0,00 | 0,00 | - |
| 2 | 4.887 | 4.889 | **8,75** | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 20 | 6.679 | 6.680 | **5,95** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 21 | 6.454 | 6.455 | **6,39** | 106,0 | 0,00 | 87,20 | - | - | 0,00 | 0,00 | - |
| 22 | 6.564 | 6.565 | **6,17** | 106,0 | 0,00 | 87,34 | - | - | 0,00 | 0,00 | - |
| 23 | 7.149 | 7.150 | **5,09** | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 24 | 7.901 | 7.902 | **3,82** | 106,0 | 0,00 | 88,96 | - | - | 0,00 | 0,00 | - |
| 25 | 4.848 | 4.848 | **9,64** | 104,5 | 0,00 | 84,71 | - | - | 0,00 | 0,00 | - |
| 26 | 4.492 | 4.493 | **10,54** | 104,5 | 0,00 | 84,05 | - | - | 0,00 | 0,00 | - |
| 27 | 4.199 | 4.200 | **11,35** | 104,5 | 0,00 | 83,46 | - | - | 0,00 | 0,00 | - |
| 28 | 4.489 | 4.490 | **10,55** | 104,5 | 0,00 | 84,04 | - | - | 0,00 | 0,00 | - |
| 29 | 4.715 | 4.716 | **9,97** | 104,5 | 0,00 | 84,47 | - | - | 0,00 | 0,00 | - |
| 3 | 4.017 | 4.019 | **10,99** | 106,0 | 0,00 | 83,08 | - | - | 0,00 | 0,00 | - |
| 30 | 4.314 | 4.315 | **11,03** | 104,5 | 0,00 | 83,70 | - | - | 0,00 | 0,00 | - |
| 31 | 4.426 | 4.427 | **10,72** | 104,5 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 32 | 4.412 | 4.413 | **10,76** | 104,5 | 0,00 | 83,90 | - | - | 0,00 | 0,00 | - |
| 33 | 3.977 | 3.978 | **12,00** | 104,5 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 34 | 1.012 | 1.015 | **28,36** | 104,5 | 0,00 | 71,13 | - | - | 0,00 | 0,00 | - |
| 35 | 3.359 | 3.360 | **14,03** | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 36 | 4.272 | 4.273 | **11,15** | 104,5 | 0,00 | 83,61 | - | - | 0,00 | 0,00 | - |
| 37 | 4.886 | 4.889 | **10,43** | 106,0 | 0,00 | 84,78 | - | - | 0,00 | 0,00 | - |
| 38 | 3.354 | 3.357 | **15,23** | 106,0 | 0,00 | 81,52 | - | - | 0,00 | 0,00 | - |
| 39 | 2.986 | 2.990 | **16,73** | 106,0 | 0,00 | 80,51 | - | - | 0,00 | 0,00 | - |
| 4 | 3.988 | 3.990 | **11,08** | 106,0 | 0,00 | 83,02 | - | - | 0,00 | 0,00 | - |
| 40 | 2.497 | 2.502 | **19,01** | 106,0 | 0,00 | 78,96 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 2.873 | 2.877 | **17,23** | 106,0 | 0,00 | 80,18 | - | - | 0,00 | 0,00 | - |
| 42 | 4.965 | 4.967 | **10,24** | 106,0 | 0,00 | 84,92 | - | - | 0,00 | 0,00 | - |
| 43 | 6.667 | 6.667 | **5,88** | 104,5 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 44 | 4.111 | 4.114 | **11,07** | 104,5 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 45 | 3.861 | 3.864 | **11,89** | 104,5 | 0,00 | 82,74 | - | - | 0,00 | 0,00 | - |
| 46 | 3.449 | 3.452 | **13,36** | 104,5 | 0,00 | 81,76 | - | - | 0,00 | 0,00 | - |
| 47 | 3.738 | 3.741 | **12,32** | 104,5 | 0,00 | 82,46 | - | - | 0,00 | 0,00 | - |
| 5 | 4.149 | 4.151 | **10,62** | 106,0 | 0,00 | 83,36 | - | - | 0,00 | 0,00 | - |
| 6 | 4.519 | 4.521 | **9,63** | 106,0 | 0,00 | 84,10 | - | - | 0,00 | 0,00 | - |
| 7 | 6.395 | 6.397 | **5,79** | 106,0 | 0,00 | 87,12 | - | - | 0,00 | 0,00 | - |
| 8 | 1.454 | 1.458 | **25,54** | 106,0 | 0,00 | 74,28 | - | - | 0,00 | 0,00 | - |
| 9 | 958 | 964 | **30,42** | 106,0 | 0,00 | 70,68 | - | - | 0,00 | 0,00 | - |
| Sum | | | **35,39** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AQ Noise sensitive point: User defined (49)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.051 | 5.052 | **8,38** | 106,0 | 0,00 | 85,07 | - | - | 0,00 | 0,00 | - |
| 10 | 1.117 | 1.123 | **28,65** | 106,0 | 0,00 | 72,01 | - | - | 0,00 | 0,00 | - |
| 11 | 4.622 | 4.623 | **10,68** | 106,0 | 0,00 | 84,30 | - | - | 0,00 | 0,00 | - |
| 12 | 4.792 | 4.793 | **10,22** | 106,0 | 0,00 | 84,61 | - | - | 0,00 | 0,00 | - |
| 13 | 4.407 | 4.409 | **11,30** | 106,0 | 0,00 | 83,89 | - | - | 0,00 | 0,00 | - |
| 14 | 3.731 | 3.733 | **13,44** | 106,0 | 0,00 | 82,44 | - | - | 0,00 | 0,00 | - |
| 15 | 3.910 | 3.912 | **12,84** | 106,0 | 0,00 | 82,85 | - | - | 0,00 | 0,00 | - |
| 16 | 3.700 | 3.701 | **13,55** | 106,0 | 0,00 | 82,37 | - | - | 0,00 | 0,00 | - |
| 17 | 6.256 | 6.258 | **6,79** | 106,0 | 0,00 | 86,93 | - | - | 0,00 | 0,00 | - |
| 18 | 5.994 | 5.995 | **7,33** | 106,0 | 0,00 | 86,56 | - | - | 0,00 | 0,00 | - |
| 19 | 5.950 | 5.952 | **7,43** | 106,0 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 2 | 4.849 | 4.851 | **8,83** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 20 | 6.669 | 6.670 | **5,97** | 106,0 | 0,00 | 87,48 | - | - | 0,00 | 0,00 | - |
| 21 | 6.446 | 6.447 | **6,40** | 106,0 | 0,00 | 87,19 | - | - | 0,00 | 0,00 | - |
| 22 | 6.568 | 6.569 | **6,17** | 106,0 | 0,00 | 87,35 | - | - | 0,00 | 0,00 | - |
| 23 | 7.149 | 7.150 | **5,09** | 106,0 | 0,00 | 88,09 | - | - | 0,00 | 0,00 | - |
| 24 | 7.898 | 7.899 | **3,83** | 106,0 | 0,00 | 88,95 | - | - | 0,00 | 0,00 | - |
| 25 | 4.812 | 4.812 | **9,72** | 104,5 | 0,00 | 84,65 | - | - | 0,00 | 0,00 | - |
| 26 | 4.456 | 4.457 | **10,64** | 104,5 | 0,00 | 83,98 | - | - | 0,00 | 0,00 | - |
| 27 | 4.162 | 4.163 | **11,46** | 104,5 | 0,00 | 83,39 | - | - | 0,00 | 0,00 | - |
| 28 | 4.451 | 4.452 | **10,66** | 104,5 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 29 | 4.676 | 4.676 | **10,07** | 104,5 | 0,00 | 84,40 | - | - | 0,00 | 0,00 | - |
| 3 | 3.977 | 3.979 | **11,11** | 106,0 | 0,00 | 82,99 | - | - | 0,00 | 0,00 | - |
| 30 | 4.273 | 4.274 | **11,14** | 104,5 | 0,00 | 83,62 | - | - | 0,00 | 0,00 | - |
| 31 | 4.384 | 4.385 | **10,84** | 104,5 | 0,00 | 83,84 | - | - | 0,00 | 0,00 | - |
| 32 | 4.371 | 4.372 | **10,87** | 104,5 | 0,00 | 83,81 | - | - | 0,00 | 0,00 | - |
| 33 | 3.937 | 3.938 | **12,13** | 104,5 | 0,00 | 82,91 | - | - | 0,00 | 0,00 | - |
| 34 | 977 | 980 | **28,76** | 104,5 | 0,00 | 70,83 | - | - | 0,00 | 0,00 | - |
| 35 | 3.346 | 3.347 | **14,08** | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 36 | 4.258 | 4.259 | **11,19** | 104,5 | 0,00 | 83,59 | - | - | 0,00 | 0,00 | - |
| 37 | 4.856 | 4.859 | **10,50** | 106,0 | 0,00 | 84,73 | - | - | 0,00 | 0,00 | - |
| 38 | 3.319 | 3.322 | **15,37** | 106,0 | 0,00 | 81,43 | - | - | 0,00 | 0,00 | - |
| 39 | 2.953 | 2.957 | **16,87** | 106,0 | 0,00 | 80,42 | - | - | 0,00 | 0,00 | - |
| 4 | 3.947 | 3.949 | **11,20** | 106,0 | 0,00 | 82,93 | - | - | 0,00 | 0,00 | - |
| 40 | 2.461 | 2.465 | **19,20** | 106,0 | 0,00 | 78,84 | - | - | 0,00 | 0,00 | - |
| 41 | 2.834 | 2.838 | **17,40** | 106,0 | 0,00 | 80,06 | - | - | 0,00 | 0,00 | - |
| 42 | 4.924 | 4.926 | **10,34** | 106,0 | 0,00 | 84,85 | - | - | 0,00 | 0,00 | - |
| 43 | 6.662 | 6.662 | **5,89** | 104,5 | 0,00 | 87,47 | - | - | 0,00 | 0,00 | - |
| 44 | 4.072 | 4.075 | **11,20** | 104,5 | 0,00 | 83,20 | - | - | 0,00 | 0,00 | - |
| 45 | 3.824 | 3.827 | **12,02** | 104,5 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 46 | 3.411 | 3.414 | **13,50** | 104,5 | 0,00 | 81,67 | - | - | 0,00 | 0,00 | - |
| 47 | 3.699 | 3.701 | **12,45** | 104,5 | 0,00 | 82,37 | - | - | 0,00 | 0,00 | - |
| 5 | 4.107 | 4.109 | **10,73** | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 6 | 4.495 | 4.498 | **9,69** | 106,0 | 0,00 | 84,06 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6.391 | 6.392 | **5,80** | 106,0 | 0,00 | 87,11 | - | - | 0,00 | 0,00 | - |
| 8 | 1.417 | 1.421 | **25,85** | 106,0 | 0,00 | 74,05 | - | - | 0,00 | 0,00 | - |
| 9 | 919 | 926 | **30,88** | 106,0 | 0,00 | 70,33 | - | - | 0,00 | 0,00 | - |
| Sum | | | **35,75** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AR Noise sensitive point: User defined (50)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.655 | 4.656 | **9,30** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 10 | 1.013 | 1.019 | **29,79** | 106,0 | 0,00 | 71,16 | - | - | 0,00 | 0,00 | - |
| 11 | 4.758 | 4.760 | **10,31** | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 12 | 4.960 | 4.962 | **9,77** | 106,0 | 0,00 | 84,91 | - | - | 0,00 | 0,00 | - |
| 13 | 4.577 | 4.579 | **10,81** | 106,0 | 0,00 | 84,21 | - | - | 0,00 | 0,00 | - |
| 14 | 4.128 | 4.129 | **12,14** | 106,0 | 0,00 | 83,32 | - | - | 0,00 | 0,00 | - |
| 15 | 4.336 | 4.337 | **11,51** | 106,0 | 0,00 | 83,74 | - | - | 0,00 | 0,00 | - |
| 16 | 4.145 | 4.147 | **12,09** | 106,0 | 0,00 | 83,35 | - | - | 0,00 | 0,00 | - |
| 17 | 6.679 | 6.680 | **5,95** | 106,0 | 0,00 | 87,50 | - | - | 0,00 | 0,00 | - |
| 18 | 6.438 | 6.439 | **6,42** | 106,0 | 0,00 | 87,18 | - | - | 0,00 | 0,00 | - |
| 19 | 6.409 | 6.410 | **6,48** | 106,0 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 2 | 4.477 | 4.479 | **9,74** | 106,0 | 0,00 | 84,02 | - | - | 0,00 | 0,00 | - |
| 20 | 7.089 | 7.090 | **5,19** | 106,0 | 0,00 | 88,01 | - | - | 0,00 | 0,00 | - |
| 21 | 6.884 | 6.885 | **5,57** | 106,0 | 0,00 | 87,76 | - | - | 0,00 | 0,00 | - |
| 22 | 7.064 | 7.065 | **5,24** | 106,0 | 0,00 | 87,98 | - | - | 0,00 | 0,00 | - |
| 23 | 7.629 | 7.630 | **4,27** | 106,0 | 0,00 | 88,65 | - | - | 0,00 | 0,00 | - |
| 24 | 8.359 | 8.360 | **3,12** | 106,0 | 0,00 | 89,44 | - | - | 0,00 | 0,00 | - |
| 25 | 4.401 | 4.402 | **10,79** | 104,5 | 0,00 | 83,87 | - | - | 0,00 | 0,00 | - |
| 26 | 4.054 | 4.054 | **11,78** | 104,5 | 0,00 | 83,16 | - | - | 0,00 | 0,00 | - |
| 27 | 3.767 | 3.768 | **12,66** | 104,5 | 0,00 | 82,52 | - | - | 0,00 | 0,00 | - |
| 28 | 4.082 | 4.083 | **11,69** | 104,5 | 0,00 | 83,22 | - | - | 0,00 | 0,00 | - |
| 29 | 4.339 | 4.339 | **10,96** | 104,5 | 0,00 | 83,75 | - | - | 0,00 | 0,00 | - |
| 3 | 3.688 | 3.690 | **12,09** | 106,0 | 0,00 | 82,34 | - | - | 0,00 | 0,00 | - |
| 30 | 4.009 | 4.010 | **11,91** | 104,5 | 0,00 | 83,06 | - | - | 0,00 | 0,00 | - |
| 31 | 4.172 | 4.173 | **11,43** | 104,5 | 0,00 | 83,41 | - | - | 0,00 | 0,00 | - |
| 32 | 4.294 | 4.295 | **11,09** | 104,5 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 33 | 3.920 | 3.921 | **12,18** | 104,5 | 0,00 | 82,87 | - | - | 0,00 | 0,00 | - |
| 34 | 1.196 | 1.198 | **26,45** | 104,5 | 0,00 | 72,57 | - | - | 0,00 | 0,00 | - |
| 35 | 3.754 | 3.755 | **12,70** | 104,5 | 0,00 | 82,49 | - | - | 0,00 | 0,00 | - |
| 36 | 4.653 | 4.654 | **10,12** | 104,5 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 37 | 5.075 | 5.077 | **9,99** | 106,0 | 0,00 | 85,11 | - | - | 0,00 | 0,00 | - |
| 38 | 2.909 | 2.913 | **17,07** | 106,0 | 0,00 | 80,29 | - | - | 0,00 | 0,00 | - |
| 39 | 3.135 | 3.139 | **16,10** | 106,0 | 0,00 | 80,93 | - | - | 0,00 | 0,00 | - |
| 4 | 3.877 | 3.879 | **11,43** | 106,0 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 40 | 2.583 | 2.587 | **18,59** | 106,0 | 0,00 | 79,26 | - | - | 0,00 | 0,00 | - |
| 41 | 2.876 | 2.880 | **17,21** | 106,0 | 0,00 | 80,19 | - | - | 0,00 | 0,00 | - |
| 42 | 4.656 | 4.658 | **11,00** | 106,0 | 0,00 | 84,36 | - | - | 0,00 | 0,00 | - |
| 43 | 7.116 | 7.117 | **5,13** | 104,5 | 0,00 | 88,05 | - | - | 0,00 | 0,00 | - |
| 44 | 3.724 | 3.726 | **12,36** | 104,5 | 0,00 | 82,43 | - | - | 0,00 | 0,00 | - |
| 45 | 3.435 | 3.438 | **13,41** | 104,5 | 0,00 | 81,73 | - | - | 0,00 | 0,00 | - |
| 46 | 3.035 | 3.038 | **15,02** | 104,5 | 0,00 | 80,65 | - | - | 0,00 | 0,00 | - |
| 47 | 3.358 | 3.361 | **13,71** | 104,5 | 0,00 | 81,53 | - | - | 0,00 | 0,00 | - |
| 5 | 3.931 | 3.933 | **11,25** | 106,0 | 0,00 | 82,89 | - | - | 0,00 | 0,00 | - |
| 6 | 4.804 | 4.806 | **8,94** | 106,0 | 0,00 | 84,64 | - | - | 0,00 | 0,00 | - |
| 7 | 6.847 | 6.848 | **5,06** | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 8 | 1.071 | 1.077 | **29,14** | 106,0 | 0,00 | 71,64 | - | - | 0,00 | 0,00 | - |
| 9 | 656 | 665 | **34,59** | 106,0 | 0,00 | 67,46 | - | - | 0,00 | 0,00 | - |
| Sum | | | **37,61** | | | | | | | | |

*- Data undefined due to calculation with octave data*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

## Noise sensitive area: AS Noise sensitive point: User defined (51)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.631 | 4.633 | **9,35** | 106,0 | 0,00 | 84,32 | - | - | 0,00 | 0,00 | - |
| 10 | 962 | 968 | **30,37** | 106,0 | 0,00 | 70,72 | - | - | 0,00 | 0,00 | - |
| 11 | 4.707 | 4.708 | **10,45** | 106,0 | 0,00 | 84,46 | - | - | 0,00 | 0,00 | - |
| 12 | 4.909 | 4.910 | **9,91** | 106,0 | 0,00 | 84,82 | - | - | 0,00 | 0,00 | - |
| 13 | 4.526 | 4.527 | **10,95** | 106,0 | 0,00 | 84,12 | - | - | 0,00 | 0,00 | - |
| 14 | 4.087 | 4.088 | **12,27** | 106,0 | 0,00 | 83,23 | - | - | 0,00 | 0,00 | - |
| 15 | 4.297 | 4.299 | **11,62** | 106,0 | 0,00 | 83,67 | - | - | 0,00 | 0,00 | - |
| 16 | 4.109 | 4.111 | **12,20** | 106,0 | 0,00 | 83,28 | - | - | 0,00 | 0,00 | - |
| 17 | 6.640 | 6.641 | **6,03** | 106,0 | 0,00 | 87,44 | - | - | 0,00 | 0,00 | - |
| 18 | 6.401 | 6.402 | **6,49** | 106,0 | 0,00 | 87,13 | - | - | 0,00 | 0,00 | - |
| 19 | 6.374 | 6.375 | **6,55** | 106,0 | 0,00 | 87,09 | - | - | 0,00 | 0,00 | - |
| 2 | 4.451 | 4.453 | **9,81** | 106,0 | 0,00 | 83,97 | - | - | 0,00 | 0,00 | - |
| 20 | 7.049 | 7.050 | **5,27** | 106,0 | 0,00 | 87,96 | - | - | 0,00 | 0,00 | - |
| 21 | 6.846 | 6.848 | **5,64** | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 22 | 7.037 | 7.038 | **5,29** | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 23 | 7.599 | 7.600 | **4,32** | 106,0 | 0,00 | 88,62 | - | - | 0,00 | 0,00 | - |
| 24 | 8.325 | 8.326 | **3,17** | 106,0 | 0,00 | 89,41 | - | - | 0,00 | 0,00 | - |
| 25 | 4.380 | 4.381 | **10,85** | 104,5 | 0,00 | 83,83 | - | - | 0,00 | 0,00 | - |
| 26 | 4.031 | 4.032 | **11,84** | 104,5 | 0,00 | 83,11 | - | - | 0,00 | 0,00 | - |
| 27 | 3.744 | 3.744 | **12,73** | 104,5 | 0,00 | 82,47 | - | - | 0,00 | 0,00 | - |
| 28 | 4.055 | 4.056 | **11,77** | 104,5 | 0,00 | 83,16 | - | - | 0,00 | 0,00 | - |
| 29 | 4.308 | 4.308 | **11,05** | 104,5 | 0,00 | 83,69 | - | - | 0,00 | 0,00 | - |
| 3 | 3.652 | 3.654 | **12,22** | 106,0 | 0,00 | 82,26 | - | - | 0,00 | 0,00 | - |
| 30 | 3.971 | 3.972 | **12,02** | 104,5 | 0,00 | 82,98 | - | - | 0,00 | 0,00 | - |
| 31 | 4.130 | 4.131 | **11,55** | 104,5 | 0,00 | 83,32 | - | - | 0,00 | 0,00 | - |
| 32 | 4.245 | 4.246 | **11,22** | 104,5 | 0,00 | 83,56 | - | - | 0,00 | 0,00 | - |
| 33 | 3.869 | 3.870 | **12,33** | 104,5 | 0,00 | 82,75 | - | - | 0,00 | 0,00 | - |
| 34 | 1.148 | 1.150 | **26,93** | 104,5 | 0,00 | 72,22 | - | - | 0,00 | 0,00 | - |
| 35 | 3.714 | 3.715 | **12,83** | 104,5 | 0,00 | 82,40 | - | - | 0,00 | 0,00 | - |
| 36 | 4.612 | 4.613 | **10,23** | 104,5 | 0,00 | 84,28 | - | - | 0,00 | 0,00 | - |
| 37 | 5.024 | 5.027 | **10,11** | 106,0 | 0,00 | 85,03 | - | - | 0,00 | 0,00 | - |
| 38 | 2.887 | 2.891 | **17,16** | 106,0 | 0,00 | 80,22 | - | - | 0,00 | 0,00 | - |
| 39 | 3.084 | 3.087 | **16,31** | 106,0 | 0,00 | 80,79 | - | - | 0,00 | 0,00 | - |
| 4 | 3.828 | 3.830 | **11,60** | 106,0 | 0,00 | 82,66 | - | - | 0,00 | 0,00 | - |
| 40 | 2.531 | 2.535 | **18,84** | 106,0 | 0,00 | 79,08 | - | - | 0,00 | 0,00 | - |
| 41 | 2.824 | 2.828 | **17,45** | 106,0 | 0,00 | 80,03 | - | - | 0,00 | 0,00 | - |
| 42 | 4.618 | 4.621 | **11,09** | 106,0 | 0,00 | 84,29 | - | - | 0,00 | 0,00 | - |
| 43 | 7.081 | 7.082 | **5,18** | 104,5 | 0,00 | 88,00 | - | - | 0,00 | 0,00 | - |
| 44 | 3.694 | 3.697 | **12,47** | 104,5 | 0,00 | 82,36 | - | - | 0,00 | 0,00 | - |
| 45 | 3.410 | 3.413 | **13,51** | 104,5 | 0,00 | 81,66 | - | - | 0,00 | 0,00 | - |
| 46 | 3.008 | 3.012 | **15,13** | 104,5 | 0,00 | 80,58 | - | - | 0,00 | 0,00 | - |
| 47 | 3.328 | 3.331 | **13,83** | 104,5 | 0,00 | 81,45 | - | - | 0,00 | 0,00 | - |
| 5 | 3.886 | 3.889 | **11,40** | 106,0 | 0,00 | 82,80 | - | - | 0,00 | 0,00 | - |
| 6 | 4.757 | 4.759 | **9,05** | 106,0 | 0,00 | 84,55 | - | - | 0,00 | 0,00 | - |
| 7 | 6.812 | 6.813 | **5,11** | 106,0 | 0,00 | 87,67 | - | - | 0,00 | 0,00 | - |
| 8 | 1.037 | 1.043 | **29,52** | 106,0 | 0,00 | 71,36 | - | - | 0,00 | 0,00 | - |
| 9 | 611 | 620 | **35,36** | 106,0 | 0,00 | 66,85 | - | - | 0,00 | 0,00 | - |
| Sum | | | **38,20** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AT Noise sensitive point: User defined (52)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.425 | 4.427 | **9,87** | 106,0 | 0,00 | 83,92 | - | - | 0,00 | 0,00 | - |
| 10 | 585 | 595 | **35,80** | 106,0 | 0,00 | 66,49 | - | - | 0,00 | 0,00 | - |
| 11 | 3.373 | 3.375 | **14,72** | 106,0 | 0,00 | 81,56 | - | - | 0,00 | 0,00 | - |
| 12 | 3.567 | 3.568 | **14,01** | 106,0 | 0,00 | 82,05 | - | - | 0,00 | 0,00 | - |
| 13 | 3.183 | 3.185 | **15,50** | 106,0 | 0,00 | 81,06 | - | - | 0,00 | 0,00 | - |
| 14 | 2.978 | 2.980 | **16,40** | 106,0 | 0,00 | 80,49 | - | - | 0,00 | 0,00 | - |
| 15 | 3.263 | 3.265 | **15,16** | 106,0 | 0,00 | 81,28 | - | - | 0,00 | 0,00 | - |
| 16 | 3.154 | 3.155 | **15,63** | 106,0 | 0,00 | 80,98 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 5.548 | 5.549 | **8,33** | 106,0 | 0,00 | 85,88 | - | - | 0,00 | 0,00 | - |
| 18 | 5.379 | 5.380 | **8,73** | 106,0 | 0,00 | 85,62 | - | - | 0,00 | 0,00 | - |
| 19 | 5.408 | 5.409 | **8,66** | 106,0 | 0,00 | 85,66 | - | - | 0,00 | 0,00 | - |
| 2 | 4.151 | 4.153 | **10,61** | 106,0 | 0,00 | 83,37 | - | - | 0,00 | 0,00 | - |
| 20 | 5.948 | 5.949 | **7,43** | 106,0 | 0,00 | 86,49 | - | - | 0,00 | 0,00 | - |
| 21 | 5.799 | 5.800 | **7,76** | 106,0 | 0,00 | 86,27 | - | - | 0,00 | 0,00 | - |
| 22 | 6.265 | 6.266 | **6,77** | 106,0 | 0,00 | 86,94 | - | - | 0,00 | 0,00 | - |
| 23 | 6.718 | 6.719 | **5,88** | 106,0 | 0,00 | 87,55 | - | - | 0,00 | 0,00 | - |
| 24 | 7.347 | 7.347 | **4,74** | 106,0 | 0,00 | 88,32 | - | - | 0,00 | 0,00 | - |
| 25 | 4.246 | 4.247 | **11,22** | 104,5 | 0,00 | 83,56 | - | - | 0,00 | 0,00 | - |
| 26 | 3.878 | 3.878 | **12,31** | 104,5 | 0,00 | 82,77 | - | - | 0,00 | 0,00 | - |
| 27 | 3.573 | 3.574 | **13,29** | 104,5 | 0,00 | 82,06 | - | - | 0,00 | 0,00 | - |
| 28 | 3.762 | 3.762 | **12,67** | 104,5 | 0,00 | 82,51 | - | - | 0,00 | 0,00 | - |
| 29 | 3.886 | 3.887 | **12,28** | 104,5 | 0,00 | 82,79 | - | - | 0,00 | 0,00 | - |
| 3 | 3.095 | 3.098 | **14,41** | 106,0 | 0,00 | 80,82 | - | - | 0,00 | 0,00 | - |
| 30 | 3.324 | 3.325 | **14,16** | 104,5 | 0,00 | 81,44 | - | - | 0,00 | 0,00 | - |
| 31 | 3.333 | 3.334 | **14,12** | 104,5 | 0,00 | 81,46 | - | - | 0,00 | 0,00 | - |
| 32 | 3.149 | 3.150 | **14,80** | 104,5 | 0,00 | 80,97 | - | - | 0,00 | 0,00 | - |
| 33 | 2.678 | 2.680 | **16,72** | 104,5 | 0,00 | 79,56 | - | - | 0,00 | 0,00 | - |
| 34 | 353 | 362 | **39,51** | 104,5 | 0,00 | 62,17 | - | - | 0,00 | 0,00 | - |
| 35 | 2.652 | 2.653 | **16,84** | 104,5 | 0,00 | 79,48 | - | - | 0,00 | 0,00 | - |
| 36 | 3.485 | 3.486 | **13,59** | 104,5 | 0,00 | 81,85 | - | - | 0,00 | 0,00 | - |
| 37 | 3.684 | 3.687 | **14,01** | 106,0 | 0,00 | 82,33 | - | - | 0,00 | 0,00 | - |
| 38 | 2.841 | 2.845 | **17,37** | 106,0 | 0,00 | 80,08 | - | - | 0,00 | 0,00 | - |
| 39 | 1.740 | 1.747 | **23,48** | 106,0 | 0,00 | 75,85 | - | - | 0,00 | 0,00 | - |
| 4 | 2.724 | 2.727 | **16,10** | 106,0 | 0,00 | 79,71 | - | - | 0,00 | 0,00 | - |
| 40 | 1.197 | 1.207 | **27,88** | 106,0 | 0,00 | 72,63 | - | - | 0,00 | 0,00 | - |
| 41 | 1.560 | 1.567 | **24,79** | 106,0 | 0,00 | 74,90 | - | - | 0,00 | 0,00 | - |
| 42 | 3.964 | 3.966 | **13,06** | 106,0 | 0,00 | 82,97 | - | - | 0,00 | 0,00 | - |
| 43 | 6.090 | 6.091 | **6,94** | 104,5 | 0,00 | 86,69 | - | - | 0,00 | 0,00 | - |
| 44 | 3.341 | 3.344 | **13,77** | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 45 | 3.234 | 3.237 | **14,20** | 104,5 | 0,00 | 81,20 | - | - | 0,00 | 0,00 | - |
| 46 | 2.810 | 2.814 | **16,00** | 104,5 | 0,00 | 79,99 | - | - | 0,00 | 0,00 | - |
| 47 | 2.967 | 2.970 | **15,31** | 104,5 | 0,00 | 80,46 | - | - | 0,00 | 0,00 | - |
| 5 | 3.007 | 3.010 | **14,79** | 106,0 | 0,00 | 80,57 | - | - | 0,00 | 0,00 | - |
| 6 | 3.478 | 3.481 | **12,86** | 106,0 | 0,00 | 81,83 | - | - | 0,00 | 0,00 | - |
| 7 | 5.831 | 5.832 | **6,79** | 106,0 | 0,00 | 86,32 | - | - | 0,00 | 0,00 | - |
| 8 | 1.197 | 1.201 | **27,86** | 106,0 | 0,00 | 72,59 | - | - | 0,00 | 0,00 | - |
| 9 | 951 | 957 | **30,50** | 106,0 | 0,00 | 70,62 | - | - | 0,00 | 0,00 | - |
| Sum | | | **42,18** | | | | | | | | |

*- Data undefined due to calculation with octave data*

## Noise sensitive area: AU Noise sensitive point: User defined (53)

Wind speed: 10,0 m/s

**WTG**

| No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.293 | 4.295 | **10,22** | 106,0 | 0,00 | 83,66 | - | - | 0,00 | 0,00 | - |
| 10 | 690 | 698 | **34,06** | 106,0 | 0,00 | 67,88 | - | - | 0,00 | 0,00 | - |
| 11 | 4.483 | 4.484 | **11,08** | 106,0 | 0,00 | 84,03 | - | - | 0,00 | 0,00 | - |
| 12 | 4.702 | 4.704 | **10,46** | 106,0 | 0,00 | 84,45 | - | - | 0,00 | 0,00 | - |
| 13 | 4.322 | 4.324 | **11,55** | 106,0 | 0,00 | 83,72 | - | - | 0,00 | 0,00 | - |
| 14 | 4.064 | 4.066 | **12,34** | 106,0 | 0,00 | 83,18 | - | - | 0,00 | 0,00 | - |
| 15 | 4.304 | 4.306 | **11,60** | 106,0 | 0,00 | 83,68 | - | - | 0,00 | 0,00 | - |
| 16 | 4.142 | 4.144 | **12,10** | 106,0 | 0,00 | 83,35 | - | - | 0,00 | 0,00 | - |
| 17 | 6.633 | 6.634 | **6,04** | 106,0 | 0,00 | 87,43 | - | - | 0,00 | 0,00 | - |
| 18 | 6.421 | 6.422 | **6,45** | 106,0 | 0,00 | 87,15 | - | - | 0,00 | 0,00 | - |
| 19 | 6.414 | 6.415 | **6,47** | 106,0 | 0,00 | 87,14 | - | - | 0,00 | 0,00 | - |
| 2 | 4.105 | 4.107 | **10,74** | 106,0 | 0,00 | 83,27 | - | - | 0,00 | 0,00 | - |
| 20 | 7.039 | 7.040 | **5,28** | 106,0 | 0,00 | 87,95 | - | - | 0,00 | 0,00 | - |
| 21 | 6.858 | 6.859 | **5,62** | 106,0 | 0,00 | 87,72 | - | - | 0,00 | 0,00 | - |
| 22 | 7.141 | 7.142 | **5,10** | 106,0 | 0,00 | 88,08 | - | - | 0,00 | 0,00 | - |
| 23 | 7.671 | 7.672 | **4,20** | 106,0 | 0,00 | 88,70 | - | - | 0,00 | 0,00 | - |
| 24 | 8.365 | 8.366 | **3,11** | 106,0 | 0,00 | 89,45 | - | - | 0,00 | 0,00 | - |

*To be continued on next page...*

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# DECIBEL - Detailed results

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)**Noise calculation model:** ISO 9613-2 General 10,0 m/s

*...continued from previous page*

| WTG No. | Distance [m] | Sound distance [m] | **Calculated [dB(A)]** | LwA,ref [dB(A)] | Dc [dB] | Adiv [dB] | Aatm [dB] | Agr [dB] | Abar [dB] | Amisc [dB] | A [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 4.048 | 4.048 | **11,79** | 104,5 | 0,00 | 83,15 | - | - | 0,00 | 0,00 | - |
| 26 | 3.695 | 3.696 | **12,89** | 104,5 | 0,00 | 82,35 | - | - | 0,00 | 0,00 | - |
| 27 | 3.405 | 3.405 | **13,87** | 104,5 | 0,00 | 81,64 | - | - | 0,00 | 0,00 | - |
| 28 | 3.708 | 3.709 | **12,85** | 104,5 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 29 | 3.955 | 3.956 | **12,07** | 104,5 | 0,00 | 82,94 | - | - | 0,00 | 0,00 | - |
| 3 | 3.296 | 3.298 | **13,58** | 106,0 | 0,00 | 81,37 | - | - | 0,00 | 0,00 | - |
| 30 | 3.615 | 3.616 | **13,15** | 104,5 | 0,00 | 82,16 | - | - | 0,00 | 0,00 | - |
| 31 | 3.779 | 3.780 | **12,62** | 104,5 | 0,00 | 82,55 | - | - | 0,00 | 0,00 | - |
| 32 | 3.927 | 3.927 | **12,16** | 104,5 | 0,00 | 82,88 | - | - | 0,00 | 0,00 | - |
| 33 | 3.574 | 3.575 | **13,29** | 104,5 | 0,00 | 82,07 | - | - | 0,00 | 0,00 | - |
| 34 | 1.071 | 1.074 | **27,71** | 104,5 | 0,00 | 71,62 | - | - | 0,00 | 0,00 | - |
| 35 | 3.707 | 3.708 | **12,85** | 104,5 | 0,00 | 82,38 | - | - | 0,00 | 0,00 | - |
| 36 | 4.584 | 4.585 | **10,30** | 104,5 | 0,00 | 84,23 | - | - | 0,00 | 0,00 | - |
| 37 | 4.849 | 4.852 | **10,52** | 106,0 | 0,00 | 84,72 | - | - | 0,00 | 0,00 | - |
| 38 | 2.554 | 2.558 | **18,73** | 106,0 | 0,00 | 79,16 | - | - | 0,00 | 0,00 | - |
| 39 | 2.901 | 2.905 | **17,10** | 106,0 | 0,00 | 80,26 | - | - | 0,00 | 0,00 | - |
| 4 | 3.513 | 3.515 | **12,73** | 106,0 | 0,00 | 81,92 | - | - | 0,00 | 0,00 | - |
| 40 | 2.319 | 2.324 | **19,94** | 106,0 | 0,00 | 78,32 | - | - | 0,00 | 0,00 | - |
| 41 | 2.564 | 2.568 | **18,68** | 106,0 | 0,00 | 79,19 | - | - | 0,00 | 0,00 | - |
| 42 | 4.262 | 4.265 | **12,11** | 106,0 | 0,00 | 83,60 | - | - | 0,00 | 0,00 | - |
| 43 | 7.114 | 7.115 | **5,13** | 104,5 | 0,00 | 88,04 | - | - | 0,00 | 0,00 | - |
| 44 | 3.343 | 3.346 | **13,77** | 104,5 | 0,00 | 81,49 | - | - | 0,00 | 0,00 | - |
| 45 | 3.069 | 3.072 | **14,87** | 104,5 | 0,00 | 80,75 | - | - | 0,00 | 0,00 | - |
| 46 | 2.663 | 2.666 | **16,70** | 104,5 | 0,00 | 79,52 | - | - | 0,00 | 0,00 | - |
| 47 | 2.975 | 2.978 | **15,28** | 104,5 | 0,00 | 80,48 | - | - | 0,00 | 0,00 | - |
| 5 | 3.542 | 3.544 | **12,62** | 106,0 | 0,00 | 81,99 | - | - | 0,00 | 0,00 | - |
| 6 | 4.650 | 4.652 | **9,31** | 106,0 | 0,00 | 84,35 | - | - | 0,00 | 0,00 | - |
| 7 | 6.848 | 6.849 | **5,06** | 106,0 | 0,00 | 87,71 | - | - | 0,00 | 0,00 | - |
| 8 | 681 | 690 | **34,19** | 106,0 | 0,00 | 67,78 | - | - | 0,00 | 0,00 | - |
| 9 | 286 | 306 | **42,73** | 106,0 | 0,00 | 60,70 | - | - | 0,00 | 0,00 | - |
| Sum | | | **44,05** | | | | | | | | |

*- Data undefined due to calculation with octave data*

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

**Noise calculation model:**
ISO 9613-2 General
**Wind speed (in 10 m height):**
10,0 m/s
**Ground attenuation:**
General, Ground factor: 0,8
**Meteorological coefficient, C0:**
0,0 dB
**Type of demand in calculation:**
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
**Noise values in calculation:**
All noise values are mean values (Lwa) (Normal)
**Pure tones:**
Fixed penalty added to source noise of WTGs with pure tones
Model: 5,0 dB(A)
**Height above ground level, when no value in NSA object:**
1,5 m; Don't allow override of model height with height from NSA object
**Uncertainty margin:**
0,0 dB; Uncertainty margin in NSA has priority
**Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:**
0,0 dB(A)
**Octave data required**
Frequency dependent air absorption

| 63 | 125 | 250 | 500 | 1.000 | 2.000 | 4.000 | 8.000 |
|---|---|---|---|---|---|---|---|
| [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] | [dB/km] |
| 0,10 | 0,40 | 1,00 | 1,90 | 3,70 | 9,70 | 32,80 | 117,00 |

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

**WTG:** ENERCON E-138 EP3 E2 4200 138.3 !O!
**Noise:** Level 0 - OM 0s - 4200 kW

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Enercon GmbH | 2019.11.08 | EMD | 2020.01.21 11:45 |

The sound power levels do not include uncertainties.
According to manufacturer specification document (D0748822-6/D0748941-3).
Enercon reserves the right to change the above specifications without prior notice.

**Octave data**

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From Windcat | 130,3 | 10,0 | 106,0 | No | 86,9 | 92,3 | 94,8 | 97,4 | 100,1 | 101,7 | 95,9 | 78,2 |

**WTG:** GE WIND ENERGY GE 2.5-120 2500 120.0 !O!
**Noise:** Level 0 - Calculated - NO - 05-2015

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Manufacturer | 2015.05.05 | EMD | 2016.12.01 13:44 |

Based on Document Noise_Emissions-NO_2.x-DFIG-120-xxHz_3MW_EN_r01.

**Octave data**

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Interpolated | 110,0 | 10,0 | 106,0 | No | 84,8 | 94,0 | 98,5 | 100,6 | 100,7 | 97,7 | 89,2 | 72,1 |

**WTG:** NORDEX N131/3000 3000 131.0 !O!

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| NORDEX | 2013.12.03 | EMD | 2015.01.21 15:58 |

F008_246_A03_R00, 21.11.2013

**Octave data**

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From other hub height | 80,0 | 10,0 | 104,5 | No | Generic data | 86,1 | 93,1 | 96,5 | 99,1 | 98,9 | 96,0 | 91,2 | 81,7 |
| From Windcat | 144,0 | 10,0 | 104,5 | No | Generic data | 86,1 | 93,1 | 96,5 | 99,1 | 98,9 | 96,0 | 91,2 | 81,7 |

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Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)
**WTG:** GE WIND ENERGY 5.3-158 Thrust 700 5300 158.0 !O!
**Noise:** 5.3-158 NO

| Source | Source/Date | Creator | Edited |
|---|---|---|---|
| Noise_Emission-NO_5.3-158-50Hz_IEC_EN_r01 | 2018.03.12 | EMD | 2019.02.06 10:21 |

| Status | Hub height [m] | Wind speed [m/s] | LwA,ref [dB(A)] | Pure tones | Octave data | 63 [dB] | 125 [dB] | 250 [dB] | 500 [dB] | 1000 [dB] | 2000 [dB] | 4000 [dB] | 8000 [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Interpolated | 149,0 | 10,0 | 106,0 | No | Generic data | 87,6 | 94,6 | 98,0 | 100,6 | 100,4 | 97,5 | 92,7 | 83,2 |

## Noise sensitive area: A Noise sensitive point: User defined (1)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: B Noise sensitive point: User defined (2)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: C Noise sensitive point: User defined (4)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: D Noise sensitive point: User defined (5)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: E Noise sensitive point: User defined (6)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: F Noise sensitive point: User defined (7)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: G Noise sensitive point: User defined (8)
**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

## Noise sensitive area: H Noise sensitive point: User defined (9)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: I Noise sensitive point: User defined (11)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: J Noise sensitive point: User defined (12)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: K Noise sensitive point: User defined (13)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: L Noise sensitive point: User defined (14)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: M Noise sensitive point: User defined (15)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: N Noise sensitive point: User defined (16)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: O Noise sensitive point: User defined (17)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: P Noise sensitive point: User defined (18)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)
**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: Q Noise sensitive point: User defined (19)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: R Noise sensitive point: User defined (20)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: S Noise sensitive point: User defined (21)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: T Noise sensitive point: User defined (22)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: U Noise sensitive point: User defined (23)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: V Noise sensitive point: User defined (24)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: W Noise sensitive point: User defined (25)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: X Noise sensitive point: User defined (26)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

## Noise sensitive area: Y Noise sensitive point: User defined (27)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: Z Noise sensitive point: User defined (28)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AA Noise sensitive point: User defined (29)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AB Noise sensitive point: User defined (30)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AC Noise sensitive point: User defined (31)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AD Noise sensitive point: User defined (32)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AE Noise sensitive point: User defined (33)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AF Noise sensitive point: User defined (34)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AG Noise sensitive point: User defined (35)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)
**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AH Noise sensitive point: User defined (36)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AI Noise sensitive point: User defined (37)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AJ Noise sensitive point: User defined (38)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AK Noise sensitive point: User defined (39)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AL Noise sensitive point: User defined (40)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AM Noise sensitive point: User defined (41)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AN Noise sensitive point: User defined (42)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AO Noise sensitive point: User defined (43)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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# DECIBEL - Assumptions for noise calculation

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

## Noise sensitive area: AP Noise sensitive point: User defined (48)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AQ Noise sensitive point: User defined (49)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AR Noise sensitive point: User defined (50)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AS Noise sensitive point: User defined (51)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AT Noise sensitive point: User defined (52)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

## Noise sensitive area: AU Noise sensitive point: User defined (53)

**Predefined calculation standard:**
**Immission height(a.g.l.):** Use standard value from calculation model
**Uncertainty margin:** Use default value from calculation model

**Noise demand:** 45,0 dB(A)
**No distance demand**

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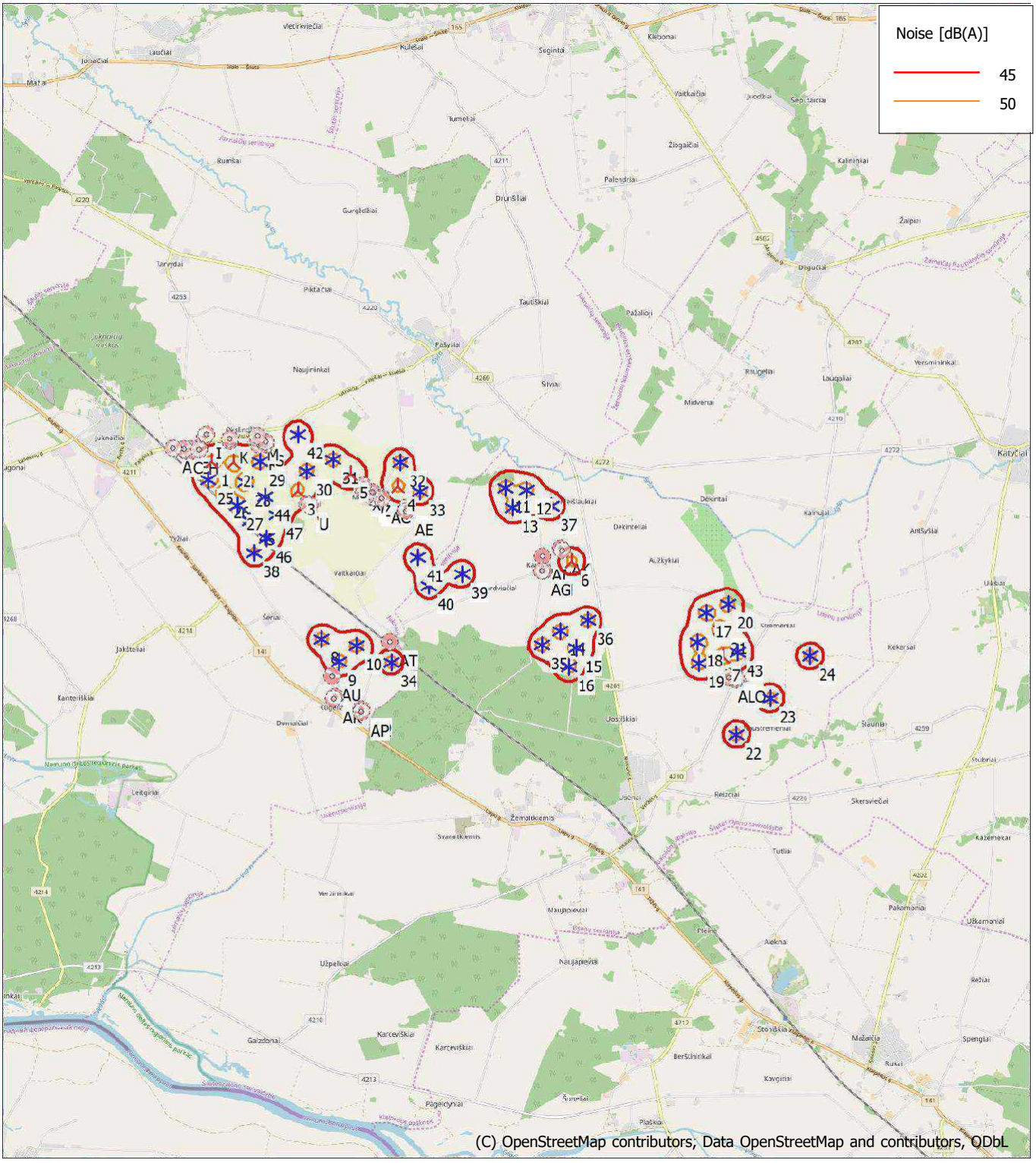
Calculated:
2021.11.30 11:21/3.5.552

# DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 353.094 North: 6.128.105

New WTG  Existing WTG  Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

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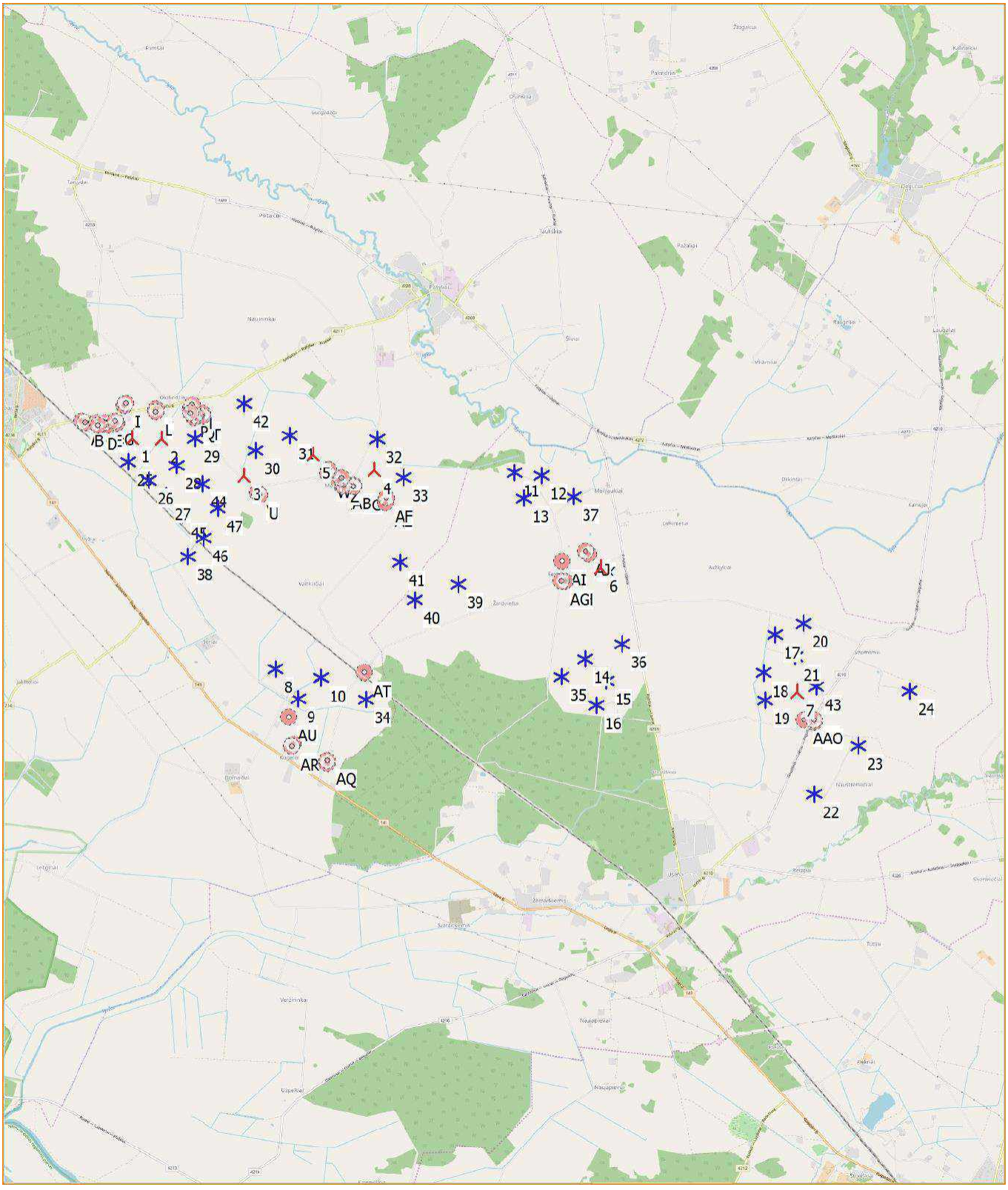
Calculated:
2021.11.30 11:21/3.5.552

## DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

New WTG Existing WTG Noise sensitive area

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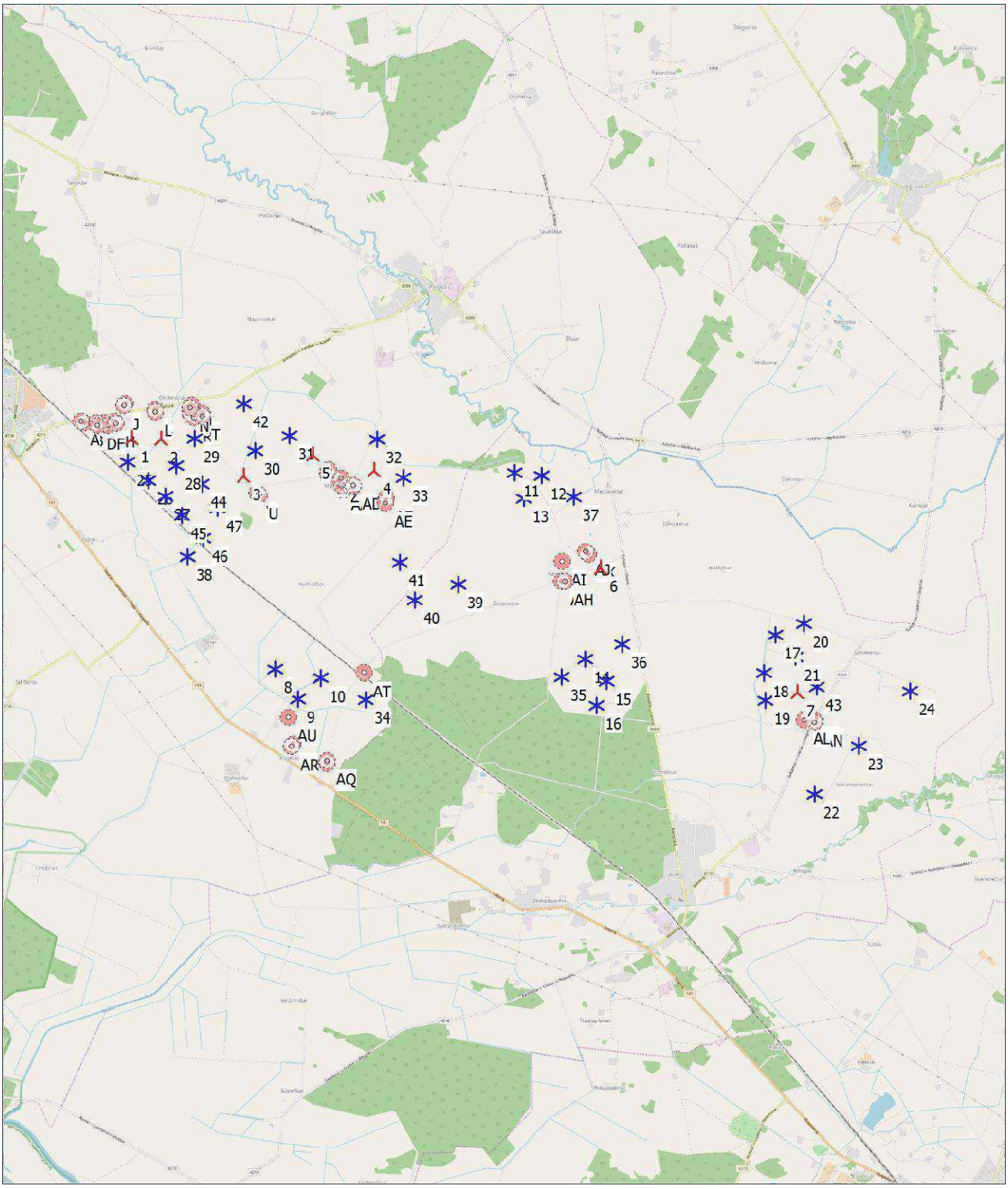
Calculated:
2021.11.30 11:21/3.5.552

## DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)

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0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

New WTG Existing WTG Noise sensitive area

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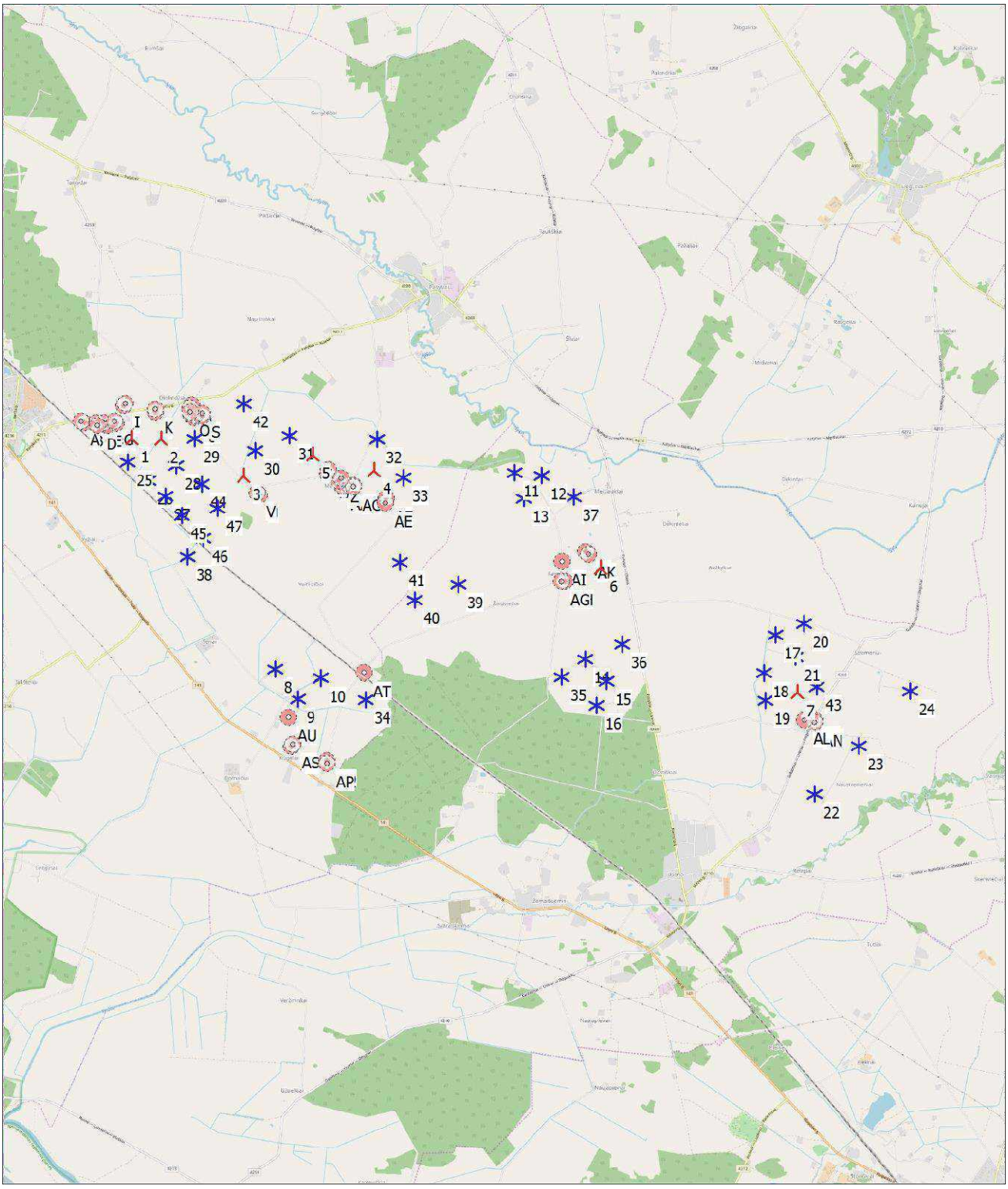
Calculated:
2021.11.30 11:21/3.5.552

## DECIBEL - Map 10,0 m/s

**Calculation:** Suminis poveikis su Enercon E138, stiebas 130, galia 4.2 (be 6 VE)




(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.793 North: 6.128.131

New WTG Existing WTG Noise sensitive area

# 1.5 Priedėlis. Šešėliai

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

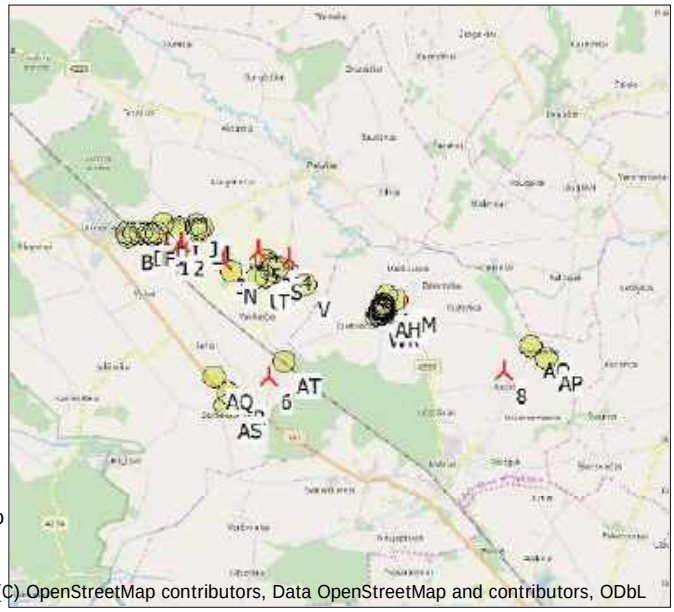
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Đilutės r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

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Scale 1:200.000
New WTG
Shadow receptor

### WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 350.546 | 6.126.757 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 8 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |

### Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

To be continued on next page...

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138

...continued from previous page

| No. | Y | X | Z [m] | Width [m] | Height [m] | Elevation a.g.l. [m] | Slope of window [°] | Direction mode | Eye height (ZVI) a.g.l. [m] |
|---|---|---|---|---|---|---|---|---|---|
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

## Calculation Results

Shadow receptor

Shadow, expected values

| No. | Shadow hours per year [h/year] |
|---|---|
| A | 9:03 |
| B | 6:38 |
| C | 5:52 |
| D | 14:30 |
| E | 25:00 |
| F | 34:27 |
| G | 43:30 |
| H | 10:28 |
| I | 16:55 |
| J | 15:40 |
| K | 21:21 |
| L | 25:36 |
| M | 19:05 |
| N | 13:16 |
| O | 28:01 |
| P | 54:19 |
| Q | 21:57 |
| R | 29:57 |
| S | 2:58 |
| T | 7:42 |
| U | 34:22 |
| V | 6:25 |
| W | 21:11 |
| X | 26:17 |
| Y | 29:08 |
| Z | 33:21 |
| AA | 38:57 |
| AB | 34:08 |
| AC | 31:10 |
| AD | 28:37 |
| AE | 26:23 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Enercon E138

...continued from previous page

Shadow, expected values

| No. | Shadow hours per year [h/year] |
|---|---|
| AF | 24:09 |
| AG | 22:12 |
| AH | 20:29 |
| AI | 18:45 |
| AJ | 24:56 |
| AK | 43:35 |
| AL | 45:58 |
| AM | 36:28 |
| AN | 14:52 |
| AO | 3:39 |
| AP | 3:46 |
| AQ | 2:47 |
| AR | 9:26 |
| AS | 9:40 |
| AT | 9:13 |

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 511:50 | 96:45 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 408:04 | 71:03 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 168:45 | 45:56 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 211:27 | 93:12 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 34:51 | 12:40 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6) | 109:31 | 31:08 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 470:37 | 168:42 |
| 8 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 35:50 | 7:25 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 45 | 08:47 (1) | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | | 08:04 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 42 | 08:46 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | | 08:06 (2) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 39 | 08:45 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | | 08:08 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 36 | 08:44 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 08:10 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 11 | 07:59 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 31 | 08:43 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 07:45 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:45 | | 08:17 (1) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 17 | 08:02 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 19:00 | 24 | 08:41 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 07:42 (1) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | 08:19 (1) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 22 | 08:04 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 20 | 08:39 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 07:39 (1) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | | 08:21 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 26 | 08:05 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 15 | 08:36 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | | 07:32 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | | 08:26 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 35 | 08:07 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 4 | 08:30 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | | 07:29 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 38 | 08:07 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | | 07:27 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 41 | 08:08 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 44 | 08:08 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 47 | 08:09 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | | 07:21 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 08:00 | | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 47 | 08:08 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:40 | | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | | 07:20 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 48 | 08:08 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 18:37 | | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | | 07:20 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 48 | 08:08 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | | 07:19 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:31 (1) | | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 48 | 08:07 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 9 | 08:40 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | | 07:20 (2) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:27 (1) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 47 | 08:07 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 17 | 08:44 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | | 07:20 (2) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:24 (1) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 46 | 08:06 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 21 | 08:45 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | | 07:20 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 08:11 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 45 | 08:05 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 35 | 08:47 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:21 (2) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 08:08 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 43 | 08:04 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 40 | 08:48 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | | 07:22 (2) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 08:06 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 40 | 08:02 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 43 | 08:49 (1) | 18:20 | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | | 07:24 (2) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 08:05 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 37 | 08:01 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 44 | 08:49 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | | 07:37 (1) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 08:04 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 22 | 07:59 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 46 | 08:50 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | | 07:38 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 08:03 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 18 | 07:56 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 47 | 08:50 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | | 07:42 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 08:02 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 11 | 07:53 (1) | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 48 | 08:50 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:02 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 48 | 08:50 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 08:02 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 48 | 08:50 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:01 (2) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 47 | 08:48 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 08:01 (2) | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 47 | 08:48 (1) | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | | 05:03 | | 05:38 | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | | 21:42 | 20:32 | | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 781 | | | | | | | 540 | | 256 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,97 | | | | | | | 0,97 | | 0,97 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,39 | | 0,30 | | |
| Total, real | | | | 259 | | | | | | | 208 | | 76 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 08:11 (1) | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 17 08:28 (1) | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 08:14 (1) | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 11 08:25 (1) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | | 07:39 | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 06:50 | | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | | 20:24 | | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | | 20:26 | | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | | 06:45 | | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 08:07 (1) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:28 | | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 11 08:18 (1) | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 08:04 (1) | 07:54 | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | | 20:30 | | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 17 08:21 (1) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 08:02 (1) | 07:56 | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | | 20:31 | | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 21 08:23 (1) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:59 (1) | 07:58 | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 24 08:23 (1) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 07:58 (1) | 08:00 | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 26 08:24 (1) | 18:40 | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:18 (1) | 06:33 | | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 07:55 (2) | 08:02 | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 14 07:32 (1) | 20:37 | | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 30 08:25 (1) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:14 (2) | 06:30 | | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 07:53 (2) | 08:04 | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 21 07:35 (1) | 20:39 | | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 32 08:25 (1) | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:11 (2) | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 07:51 (2) | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 25 07:36 (1) | 20:41 | | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 35 08:26 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:09 (2) | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 07:50 (2) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 28 07:37 (1) | 20:43 | | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 36 08:26 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:06 (2) | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 07:48 (2) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 32 07:38 (1) | 20:45 | | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 37 08:25 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:03 (2) | 06:21 | | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 07:48 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 35 07:38 (1) | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 36 08:24 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:03 (2) | 06:18 | | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 07:47 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 36 07:39 (1) | 20:49 | | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 37 08:24 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:02 (2) | 06:16 | | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 07:47 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 36 07:38 (1) | 20:51 | | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 36 08:23 (1) | 18:20 | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:02 (2) | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 07:47 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 37 07:39 (1) | 20:53 | | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 36 08:23 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:02 (2) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 07:49 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 36 07:38 (1) | 20:55 | | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 33 08:22 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:02 (2) | 06:09 | | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:51 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 35 07:37 (1) | 20:57 | | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 29 08:20 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:03 (2) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:53 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 34 07:37 (1) | 20:59 | | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 26 08:19 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 07:03 (2) | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 33 07:36 (1) | 21:01 | | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 22 08:17 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 07:05 (2) | 06:02 | | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 31 07:36 (1) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 18 08:15 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 08:08 (1) | 06:00 | | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 08:01 (1) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 26 08:34 (1) | 21:05 | | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 9 08:10 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 08:09 (1) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | 24 08:33 (1) | 21:07 | | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | 08:09 (1) | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | 22 08:31 (1) | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 505 | | 28 | | | | | | 551 | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | | 0,99 | | | | | | 0,99 | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | | 0,39 | | | |
| Total, real | | | | 171 | | 11 | | | | | | 216 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 08:02 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 24 08:26 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 08:04 (1) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 21 08:25 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | | 07:39 | 08:06 (1) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 17 08:23 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:08 (1) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 12 08:20 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | | 07:46 | | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:33 (1) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 7 07:40 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:29 (1) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 15 07:44 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:27 (1) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 19 07:46 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 23 07:47 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:02 | | 18:44 | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 26 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 08:54 | 08:02 | 06:54 | 07:19 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | | 08:00 | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 30 07:49 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:16 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 33 07:49 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:14 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 35 07:49 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:12 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:15 (1) | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 37 07:49 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 11 08:26 (1) | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:12 (2) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:12 (1) | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 37 07:49 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 17 08:29 (1) | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:12 (2) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:04 (2) | 08:10 | | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 36 07:48 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 25 08:29 (1) | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:11 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:01 (2) | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 36 07:47 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 29 08:30 (1) | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:12 (2) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 07:59 (2) | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 35 07:47 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 32 08:31 (1) | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:13 (2) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 07:57 (2) | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 33 07:46 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 35 08:32 (1) | 18:20 | | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:14 (2) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 07:56 (2) | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 31 07:45 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 36 08:32 (1) | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:16 (2) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 07:55 (2) | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 27 07:43 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 37 08:32 (1) | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:23 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:55 (2) | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 17 07:40 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 37 08:32 (1) | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:25 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:55 (2) | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 13 07:38 (1) | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 37 08:32 (1) | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | | 08:29 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 36 08:31 (1) | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 34 08:31 (1) | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:58 (2) | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:59 | 22:19 | 21:46 | 20:37 | 19:17 | 31 08:29 (1) | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:00 (2) | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 28 08:28 (1) | 17:02 | | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 490 | | | | | | | 425 | | 74 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,98 | | | | | | | 0,98 | | 0,98 | | |
| Total reduction | | | | 0,34 | | | | | | | 0,39 | | 0,30 | | |
| Total, real | | | | 165 | | | | | | | 166 | | 22 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:07 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 61 | 09:08 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 08:05 (1) | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:07 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 12 08:17 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 61 | 09:08 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 08:00 (1) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:08 (2) | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 20 08:20 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 59 | 09:07 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 07:58 (1) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:09 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 25 08:23 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 57 | 09:06 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 07:55 (1) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 08:11 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 29 08:24 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 54 | 09:05 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 07:54 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 08:14 (2) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 32 08:26 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 19:00 45 | 09:03 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 07:41 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 08:28 (1) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 38 08:27 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 34 | 09:02 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 07:35 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 08:29 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 50 08:27 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 31 | 09:00 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 07:33 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 08:31 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 55 08:28 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 27 | 08:58 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 07:30 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 08:33 (1) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 58 08:28 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 23 | 08:56 (1) | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 07:29 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 08:35 (1) | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 60 08:29 (1) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 17 | 08:52 (1) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 07:28 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 08:41 (1) | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 61 08:29 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 5 | 08:46 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 07:27 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 63 08:30 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 07:26 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:49 (1) | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 63 08:29 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 6 | 08:55 (1) | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 07:25 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:44 (1) | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 64 08:29 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 17 | 09:01 (1) | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 07:26 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:41 (1) | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 63 08:29 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 22 | 09:03 (1) | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 07:25 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:38 (1) | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 63 08:28 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 27 | 09:05 (1) | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 07:25 (2) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:23 (2) | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 63 08:28 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 35 | 09:07 (1) | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 07:25 (2) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:17 (2) | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 62 08:27 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 47 | 09:07 (1) | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 07:25 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:14 (2) | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 61 08:26 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 54 | 09:08 (1) | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 07:26 (2) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:13 (2) | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 59 08:25 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 56 | 09:09 (1) | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 07:27 (2) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:11 (2) | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 57 08:24 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 59 | 09:10 (1) | | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 07:28 (2) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 08:10 (2) | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 55 08:23 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 60 | 09:10 (1) | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 07:30 (2) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:09 (2) | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 49 08:21 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 62 | 09:11 (1) | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 07:33 (2) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 08:08 (2) | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 39 08:19 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 63 | 09:11 (1) | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 07:49 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 08:08 (2) | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 28 08:17 (1) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 63 | 09:11 (1) | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 07:51 (1) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 08:07 (2) | | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 23 08:14 (1) | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 64 | 09:11 (1) | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 07:54 (1) | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 08:07 (2) | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 18 08:12 (1) | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 64 | 09:11 (1) | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 08:58 (1) | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 08:06 (2) | | 08:32 | 09:01 |
| | 17:02 | | 20:04 8 09:06 (1) | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 63 | 09:09 (1) | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:06 (2) | | 08:34 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 63 | 09:09 (1) | | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | | | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | | 1278 | | | | | | 825 | 474 | | | |
| Sun reduction | | | 0,34 | | | | | | 0,40 | 0,31 | | | |
| Oper. time red. | | | 1,00 | | | | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 0,96 | | | | | | 0,96 | 0,96 | | | |
| Total reduction | | | 0,33 | | | | | | 0,38 | 0,29 | | | |
| Total, real | | | 418 | | | | | | 313 | 139 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:17 (1) 07:08 | 09:08 (1) 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:12 (2) 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 33 | 08:50 (1) 20:10 30 | 09:38 (1) 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 87 | 09:39 (1) 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:15 (1) 07:06 | 09:11 (1) 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:12 (2) 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 38 | 08:53 (1) 20:12 24 | 09:35 (1) 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 86 | 09:38 (1) 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:13 (1) 07:03 | 09:15 (1) 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:13 (2) 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 41 | 08:54 (1) 20:14 15 | 09:30 (1) 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 85 | 09:38 (1) 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:12 (1) 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:14 (2) 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 44 | 08:56 (1) 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 81 | 09:37 (1) 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 08:10 (1) 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 08:15 (2) 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 46 | 08:56 (1) 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 77 | 09:36 (1) 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:47 (2) 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 08:17 (2) 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 57 | 08:58 (1) 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 71 | 09:35 (1) 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:42 (2) 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 08:20 (2) 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 68 | 08:58 (1) 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 62 | 09:33 (1) 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:39 (2) 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 08:44 (1) 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 73 | 08:58 (1) 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 48 | 09:32 (1) 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:38 (2) 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 09:09 (1) | 07:50 | 08:45 (1) 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 79 | 08:59 (1) 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 15 09:24 (1) | 18:52 46 | 09:31 (1) 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:36 (2) 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 09:05 (1) | 07:52 | 08:46 (1) 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 82 | 08:59 (1) 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 23 09:28 (1) | 18:49 43 | 09:29 (1) 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 07:35 (2) 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 09:02 (1) | 07:54 | 08:48 (1) 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 85 | 09:00 (1) 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 29 09:31 (1) | 18:47 39 | 09:27 (1) 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:33 (2) 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 08:59 (1) | 07:56 | 08:49 (1) 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 87 | 09:00 (1) 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 34 09:33 (1) | 18:44 36 | 09:25 (1) 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:33 (2) 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 08:56 (1) | 07:58 | 08:51 (1) 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 87 | 09:00 (1) 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 38 09:34 (1) | 18:42 31 | 09:22 (1) 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:32 (2) 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 08:55 (1) | 08:00 | 08:54 (1) 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 88 | 09:00 (1) 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 41 09:36 (1) | 18:39 26 | 09:20 (1) 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:31 (2) 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 08:53 (1) | 08:02 | 08:58 (1) 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 88 | 08:59 (1) 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 44 09:37 (1) | 18:37 18 | 09:16 (1) 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:31 (2) 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 08:27 (2) | 08:04 | 09:05 (1) 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 89 | 09:00 (1) 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 59 09:38 (1) | 18:35 3 | 09:08 (1) 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:30 (2) 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 08:24 (2) | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 89 | 08:59 (1) 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 67 09:39 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:30 (2) 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 08:22 (2) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 89 | 08:59 (1) 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 74 09:40 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:30 (2) 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:19 (2) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 88 | 08:58 (1) 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 79 09:40 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:30 (2) 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:18 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 87 | 08:57 (1) 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 82 09:41 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:31 (2) 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 08:16 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 86 | 08:57 (1) 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 85 09:41 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:31 (2) 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 08:15 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 85 | 08:56 (1) 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 86 09:41 (1) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:32 (2) 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:15 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 83 | 08:55 (1) 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 87 09:42 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:32 (2) 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:14 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 80 | 08:54 (1) 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 88 09:42 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:33 (2) 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 08:13 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 74 | 08:52 (1) 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 89 09:42 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 08:29 (1) | 06:24 | 07:35 (2) 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 08:13 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 12 08:41 (1) | 18:58 69 | 08:51 (1) 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 89 09:42 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 08:23 (1) | 06:21 | 07:37 (2) 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:13 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 22 08:45 (1) | 19:00 61 | 08:49 (1) 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 89 09:42 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 08:20 (1) | 06:18 | 08:04 (1) 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:11 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 28 08:48 (1) | 19:02 44 | 08:48 (1) 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 89 09:40 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 09:04 (1) 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:12 (2) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 42 | 09:46 (1) 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 88 09:40 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 09:06 (1) 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:12 (2) | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 38 | 09:44 (1) 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 87 09:39 (1) | 17:02 | 16:11 | 16:11 |
| 31 | 08:30 | | 07:11 | 09:07 (1) | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 34 | 09:41 (1) | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 62 | 2134 | 69 | | | | | 1462 | 839 | | |
| Sun reduction | | 0,25 | 0,34 | 0,39 | | | | | 0,40 | 0,31 | | |
| Oper. time red. | | 1,00 | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | |
| Wind dir. red. | | 0,92 | 0,93 | 0,92 | | | | | 0,94 | 0,93 | | |
| Total reduction | | 0,23 | 0,32 | 0,36 | | | | | 0,37 | 0,29 | | |
| Total, real | | 14 | 680 | 25 | | | | | 541 | 240 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:31 (1) 07:08 | 09:23 (1) 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:17 (2) 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 54 | 09:25 (1) 20:10 48 | 10:11 (1) 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 109 | 10:10 (1) 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:30 (1) 07:05 | 09:25 (1) 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:18 (2) 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 56 | 09:26 (1) 20:12 44 | 10:09 (1) 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 106 | 10:09 (1) 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:28 (1) 07:03 | 09:26 (1) 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:18 (2) 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 59 | 09:27 (1) 20:14 40 | 10:06 (1) 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 105 | 10:09 (1) 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:28 (1) 07:00 | 09:28 (1) 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:19 (2) 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 60 | 09:28 (1) 20:16 35 | 10:03 (1) 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 101 | 10:08 (1) 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:51 (2) 06:58 | 09:30 (1) 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 09:40 (1) 07:43 | 08:20 (2) 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 77 | 09:28 (1) 20:18 29 | 09:59 (1) 21:17 | 22:08 | 22:16 | 21:32 | 20:19 1 | 09:41 (1) 19:02 97 | 10:07 (1) 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:49 (2) 06:55 | 09:34 (1) 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 09:31 (1) 07:44 | 08:21 (2) 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 85 | 09:30 (1) 20:20 21 | 09:55 (1) 21:19 | 22:09 | 22:16 | 21:30 | 20:17 20 | 09:51 (1) 18:59 93 | 10:06 (1) 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:46 (2) 06:53 | 09:42 (1) 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 09:26 (1) 07:46 | 08:23 (2) 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 91 | 09:30 (1) 20:22 4 | 09:46 (1) 21:20 | 22:10 | 22:15 | 21:28 | 20:14 28 | 09:54 (1) 18:57 88 | 10:05 (1) 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:44 (2) 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 09:23 (1) 07:48 | 08:25 (2) 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 95 | 09:30 (1) 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 34 | 09:57 (1) 18:54 81 | 10:04 (1) 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:43 (2) 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 09:20 (1) 07:50 | 08:29 (2) 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 99 | 09:31 (1) 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 40 | 10:00 (1) 18:52 72 | 10:03 (1) 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 07:41 (2) 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 09:18 (1) 07:52 | 09:02 (1) 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 101 | 09:30 (1) 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 44 | 10:02 (1) 18:49 60 | 10:02 (1) 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 07:40 (2) 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 09:17 (1) 07:54 | 09:03 (1) 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 106 | 09:31 (1) 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 47 | 10:04 (1) 18:47 57 | 10:00 (1) 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:39 (2) 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 09:15 (1) 07:56 | 09:04 (1) 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 108 | 09:31 (1) 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 50 | 10:05 (1) 18:44 55 | 09:59 (1) 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:39 (2) 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 09:12 (1) 07:58 | 09:05 (1) 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 109 | 09:31 (1) 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 54 | 10:06 (1) 18:42 52 | 09:57 (1) 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:37 (2) 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:41 (2) 08:00 | 09:07 (1) 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 110 | 09:31 (1) 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 58 | 10:07 (1) 18:39 49 | 09:56 (1) 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:36 (2) 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:34 (2) 08:02 | 09:08 (1) 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 111 | 09:30 (1) 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 73 | 10:08 (1) 18:37 46 | 09:54 (1) 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:37 (2) 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:31 (2) 08:04 | 09:10 (1) 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 110 | 09:30 (1) 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 81 | 10:09 (1) 18:35 42 | 09:52 (1) 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:36 (2) 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:29 (2) 08:06 | 09:12 (1) 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 111 | 09:29 (1) 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 87 | 10:10 (1) 18:32 37 | 09:49 (1) 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:36 (2) 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:27 (2) 08:08 | 09:14 (1) 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 111 | 09:30 (1) 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 93 | 10:11 (1) 18:30 32 | 09:46 (1) 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:36 (2) 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:24 (2) 08:10 | 09:17 (1) 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 110 | 09:29 (1) 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 98 | 10:11 (1) 18:27 26 | 09:43 (1) 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:35 (2) 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:23 (2) 08:12 | 09:22 (1) 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 108 | 09:27 (1) 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 101 | 10:11 (1) 18:25 16 | 09:38 (1) 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:36 (2) 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:22 (2) 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 106 | 09:27 (1) 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 102 | 10:11 (1) 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 08:50 (1) | 06:34 | 07:36 (2) 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:21 (2) 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 19 09:09 (1) | 18:50 104 | 09:26 (1) 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 106 | 10:12 (1) 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 08:45 (1) | 06:31 | 07:37 (2) 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:20 (2) 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 28 09:13 (1) | 18:52 101 | 09:26 (1) 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 108 | 10:12 (1) 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 08:42 (1) | 06:29 | 07:38 (2) 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 (2) 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 34 09:16 (1) | 18:54 97 | 09:24 (1) 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 108 | 10:12 (1) 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 08:39 (1) | 06:26 | 07:38 (2) 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 08:19 (2) 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 39 09:18 (1) | 18:56 94 | 09:23 (1) 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 110 | 10:12 (1) 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 08:37 (1) | 06:23 | 07:40 (2) 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 08:19 (2) 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 44 09:21 (1) | 18:58 89 | 09:22 (1) 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 110 | 10:12 (1) 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 08:35 (1) | 06:21 | 07:41 (2) 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 08:18 (2) 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 47 09:22 (1) | 19:00 83 | 09:20 (1) 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 111 | 10:12 (1) 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 08:33 (1) | 06:18 | 07:44 (2) 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 08:17 (2) 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 51 09:24 (1) | 19:02 76 | 09:19 (1) 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 111 | 10:11 (1) 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 08:48 (2) 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 08:17 (2) 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 63 | 10:17 (1) 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 111 | 10:11 (1) 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 09:22 (1) 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:17 (2) 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 54 | 10:16 (1) 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 110 | 10:10 (1) 17:02 | 16:11 | 16:11 |
| 31 | 08:30 | | 07:11 | 09:22 (1) | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 51 | 10:13 (1) | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 262 | 2789 | 221 | | | | | 1996 | 1324 | | |
| Sun reduction | | 0,25 | 0,34 | 0,39 | | | | | 0,40 | 0,31 | | |
| Oper. time red. | | 1,00 | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | |
| Wind dir. red. | | 0,88 | 0,90 | 0,88 | | | | | 0,90 | 0,89 | | |
| Total reduction | | 0,22 | 0,31 | 0,35 | | | | | 0,36 | 0,27 | | |
| Total, real | | 56 | 858 | 76 | | | | | 712 | 364 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 08:07 (2) | 07:08 | 10:21 (1) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | 115 | 10:43 (1) | 20:10 | 47 11:08 (1) | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | 07:24 | | 08:05 (2) | 07:05 | 10:24 (1) | 05:53 | 05:01 |
| | 16:15 | 17:10 | | 18:10 | 119 | 10:43 (1) | 20:12 | 41 11:05 (1) | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | 07:22 | | 08:03 (2) | 07:03 | 10:26 (1) | 05:51 | 05:00 |
| | 16:16 | 17:12 | | 18:12 | 123 | 10:43 (1) | 20:14 | 34 11:00 (1) | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 08:02 (2) | 07:00 | 10:30 (1) | 05:49 | 04:59 |
| | 16:18 | 17:15 | | 18:14 | 127 | 10:44 (1) | 20:16 | 26 10:56 (1) | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | 07:17 | | 08:00 (2) | 06:58 | 10:37 (1) | 05:46 | 04:58 |
| | 16:19 | 17:17 | | 18:16 | 129 | 10:43 (1) | 20:18 | 9 10:46 (1) | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | 07:15 | | 07:59 (2) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:18 | 133 | 10:44 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | 09:54 (1) | 07:12 | | 07:58 (2) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 17:21 | 14 10:08 (1) | 18:20 | 134 | 10:43 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | 08:14 | 09:47 (1) | 07:10 | | 07:57 (2) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 17:23 | 26 10:13 (1) | 18:22 | 135 | 10:43 (1) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | 09:44 (1) | 07:07 | | 07:57 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 17:25 | 33 10:17 (1) | 18:24 | 136 | 10:43 (1) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | 09:41 (1) | 07:04 | | 07:55 (2) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | 17:27 | 39 10:20 (1) | 18:26 | 137 | 10:42 (1) | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | 09:39 (1) | 07:02 | | 07:55 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 17:30 | 44 10:23 (1) | 18:28 | 137 | 10:42 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | 09:36 (1) | 06:59 | | 07:55 (2) | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 17:32 | 49 10:25 (1) | 18:30 | 136 | 10:41 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 09:34 (1) | 06:57 | | 07:55 (2) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 17:34 | 53 10:27 (1) | 18:32 | 137 | 10:41 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 09:32 (1) | 06:54 | | 07:54 (2) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 17:36 | 57 10:29 (1) | 18:34 | 136 | 10:40 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | 09:30 (1) | 06:52 | | 07:54 (2) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 17:38 | 60 10:30 (1) | 18:36 | 135 | 10:39 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 09:29 (1) | 06:49 | | 07:54 (2) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 17:40 | 63 10:32 (1) | 18:38 | 134 | 10:39 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 09:28 (1) | 06:47 | | 07:54 (2) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 66 10:34 (1) | 18:40 | 132 | 10:38 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | 09:26 (1) | 06:44 | | 07:55 (2) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 69 10:35 (1) | 18:42 | 130 | 10:37 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | 09:25 (1) | 06:42 | | 07:54 (2) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 17:47 | 71 10:36 (1) | 18:44 | 128 | 10:36 (1) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | 07:48 | 09:24 (1) | 06:39 | | 07:54 (2) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 17:49 | 74 10:38 (1) | 18:46 | 125 | 10:34 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 09:22 (1) | 06:36 | | 07:56 (2) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 17:51 | 76 10:38 (1) | 18:48 | 120 | 10:33 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | 09:22 (1) | 06:34 | | 07:56 (2) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 17:53 | 77 10:39 (1) | 18:50 | 116 | 10:31 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | 07:41 | 09:20 (1) | 06:31 | | 07:57 (2) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 17:55 | 80 10:40 (1) | 18:52 | 112 | 10:30 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 09:20 (1) | 06:29 | | 07:58 (2) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 17:57 | 81 10:41 (1) | 18:54 | 107 | 10:28 (1) | 20:55 | | 21:51 | 22:19 |
| 25 | 08:40 | 07:37 | 09:18 (1) | 06:26 | | 07:59 (2) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 17:59 | 83 10:41 (1) | 18:56 | 101 | 10:26 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | 09:18 (1) | 06:23 | | 08:02 (2) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 18:01 | 84 10:42 (1) | 18:58 | 94 | 10:25 (1) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 08:13 (2) | 06:21 | | 08:04 (2) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 18:03 | 100 10:42 (1) | 19:00 | 84 | 10:22 (1) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | 07:29 | 08:10 (2) | 06:18 | | 09:16 (1) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 18:05 | 109 10:43 (1) | 19:02 | 64 | 10:20 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:16 | | 10:17 (1) | 06:00 | | 05:05 | 04:55 |
| | 17:02 | | | 20:04 | 61 | 11:18 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | | 07:13 | | 10:19 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:06 | 56 | 11:15 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | | 07:11 | | 10:20 (1) | | | 05:03 | |
| | 17:06 | | | 20:08 | 52 | 11:12 (1) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 1408 | | 3585 | | | 157 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,72 | | 0,78 | | | 0,72 | | |
| Total reduction | | | 0,18 | | 0,27 | | | 0,28 | | |
| Total, real | | | 250 | | 954 | | | 44 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:33 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 137 | 11:20 (1) | | 16:58 | 38 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:33 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 137 | 11:20 (1) | | 16:56 | 32 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:33 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 138 | 11:20 (1) | | 16:54 | 25 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:33 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 137 | 11:20 (1) | | 16:52 | 11 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | 08:34 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 135 | 11:20 (1) | | 16:50 | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:34 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | 134 | 11:19 (1) | | 16:48 | |
| 7 | 05:02 | | 05:51 | | 06:49 | 10:34 (1) | 07:46 | | 08:34 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | 6 10:40 (1) | 18:57 | 133 | 11:19 (1) | | 16:46 | |
| 8 | 05:03 | | 05:53 | | 06:51 | 10:25 (1) | 07:48 | | 08:35 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | 24 10:49 (1) | 18:54 | 131 | 11:19 (1) | | 16:44 | |
| 9 | 05:04 | | 05:54 | | 06:53 | 10:21 (1) | 07:50 | | 08:36 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | 33 10:54 (1) | 18:52 | 128 | 11:18 (1) | | 16:42 | |
| 10 | 05:06 | | 05:56 | | 06:55 | 10:17 (1) | 07:52 | | 08:36 (2) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | 41 10:58 (1) | 18:49 | 126 | 11:18 (1) | | 16:40 | |
| 11 | 05:07 | | 05:58 | | 06:57 | 10:15 (1) | 07:54 | | 08:38 (2) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | 46 11:01 (1) | 18:47 | 122 | 11:17 (1) | | 16:38 | |
| 12 | 05:08 | | 06:00 | | 06:59 | 10:11 (1) | 07:56 | | 08:39 (2) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | 52 11:03 (1) | 18:44 | 118 | 11:16 (1) | | 16:36 | |
| 13 | 05:09 | | 06:02 | | 07:01 | 10:09 (1) | 07:58 | | 08:41 (2) | | 08:01 | |
| | 22:09 | | 21:15 | | 19:59 | 56 11:05 (1) | 18:42 | 111 | 11:15 (1) | | 16:34 | |
| 14 | 05:11 | | 06:04 | | 07:02 | 10:08 (1) | 08:00 | | 08:44 (2) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 60 11:08 (1) | 18:39 | 106 | 11:16 (1) | | 16:33 | |
| 15 | 05:12 | | 06:06 | | 07:04 | 10:06 (1) | 08:02 | | 08:48 (2) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 64 11:10 (1) | 18:37 | 97 | 11:15 (1) | | 16:31 | |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:55 (2) | 08:04 | | 09:50 (1) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 81 11:11 (1) | 18:35 | 84 | 11:14 (1) | | 16:29 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:51 (2) | 08:06 | | 09:51 (1) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:48 | 92 11:13 (1) | 18:32 | 82 | 11:13 (1) | | 16:28 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:48 (2) | 08:08 | | 09:51 (1) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 99 11:14 (1) | 18:30 | 81 | 11:12 (1) | | 16:26 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:45 (2) | 08:10 | | 09:52 (1) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 106 11:15 (1) | 18:27 | 79 | 11:11 (1) | | 16:25 | |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:43 (2) | 08:12 | | 09:52 (1) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 111 11:16 (1) | 18:25 | 77 | 11:09 (1) | | 16:23 | |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:42 (2) | 08:14 | | 09:53 (1) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 116 11:17 (1) | 18:23 | 75 | 11:08 (1) | | 16:22 | |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:41 (2) | 08:16 | | 09:55 (1) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 120 11:18 (1) | 18:20 | 73 | 11:08 (1) | | 16:20 | |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:39 (2) | 08:18 | | 09:56 (1) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 123 11:18 (1) | 18:18 | 70 | 11:06 (1) | | 16:19 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 08:38 (2) | 08:20 | | 09:56 (1) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 127 11:19 (1) | 18:16 | 69 | 11:05 (1) | | 16:18 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 08:37 (2) | 07:22 | | 08:57 (1) | | 08:25 | |
| | 21:52 | | 20:47 | | 19:28 | 130 11:20 (1) | 17:13 | 66 | 10:03 (1) | | 16:16 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:37 (2) | 07:24 | | 08:59 (1) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 131 11:20 (1) | 17:11 | 62 | 10:01 (1) | | 16:15 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:36 (2) | 07:26 | | 09:01 (1) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 134 11:21 (1) | 17:09 | 59 | 10:00 (1) | | 16:14 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:34 (2) | 07:29 | | 09:02 (1) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 136 11:20 (1) | 17:07 | 56 | 09:58 (1) | | 16:13 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:34 (2) | 07:31 | | 09:04 (1) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 136 11:20 (1) | 17:04 | 52 | 09:56 (1) | | 16:12 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:34 (2) | 07:33 | | 09:06 (1) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 137 11:20 (1) | 17:02 | 48 | 09:54 (1) | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 09:09 (1) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 43 | 09:52 (1) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 2161 | | 2966 | | | 106 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,78 | | 0,76 | | | 0,72 | | |
| Total reduction | | | | | 0,31 | | 0,23 | | | 0,11 | | |
| Total, real | | | | | 661 | | 690 | | | 12 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:20 (1) | 08:28 | | 09:23 (2) | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 | 62 | 12:22 (1) | 17:08 | 107 | 12:33 (1) | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 11:20 (1) | 08:26 | | 09:22 (2) | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 | 62 | 12:22 (1) | 17:10 | 108 | 12:33 (1) | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 11:20 (1) | 08:24 | | 09:22 (2) | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 | 63 | 12:23 (1) | 17:12 | 106 | 12:32 (1) | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 11:20 (1) | 08:22 | | 09:22 (2) | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 | 63 | 12:23 (1) | 17:15 | 107 | 12:32 (1) | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 11:21 (1) | 08:20 | | 09:22 (2) | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 | 63 | 12:24 (1) | 17:17 | 107 | 12:32 (1) | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 11:21 (1) | 08:18 | | 09:21 (2) | 07:15 | 06:55 | 05:44 | 04:57 |
| | 16:20 | 64 | 12:25 (1) | 17:19 | 106 | 12:31 (1) | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 11:21 (1) | 08:16 | | 09:22 (2) | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 | 64 | 12:25 (1) | 17:21 | 104 | 12:30 (1) | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 11:21 (1) | 08:14 | | 09:21 (2) | 07:10 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 64 | 12:25 (1) | 17:23 | 103 | 12:29 (1) | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 11:22 (1) | 08:12 | | 09:21 (2) | 07:07 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 65 | 12:27 (1) | 17:25 | 100 | 12:28 (1) | 18:24 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 11:22 (1) | 08:10 | | 09:21 (2) | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 66 | 12:28 (1) | 17:27 | 99 | 12:27 (1) | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 11:22 (1) | 08:08 | | 09:21 (2) | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 66 | 12:28 (1) | 17:30 | 96 | 12:26 (1) | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 11:22 (1) | 08:06 | | 09:21 (2) | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 66 | 12:28 (1) | 17:32 | 91 | 12:23 (1) | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 11:22 (1) | 08:04 | | 09:21 (2) | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 67 | 12:29 (1) | 17:34 | 87 | 12:21 (1) | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 11:22 (1) | 08:02 | | 09:22 (2) | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 67 | 12:29 (1) | 17:36 | 81 | 12:19 (1) | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 11:23 (1) | 08:00 | | 09:22 (2) | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 67 | 12:30 (1) | 17:38 | 75 | 12:16 (1) | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 11:22 (1) | 07:57 | | 09:23 (2) | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 68 | 12:30 (1) | 17:40 | 65 | 12:12 (1) | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 11:23 (1) | 07:55 | | 09:24 (2) | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 68 | 12:31 (1) | 17:42 | 49 | 12:05 (1) | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 11:24 (1) | 07:53 | | 09:24 (2) | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 68 | 12:32 (1) | 17:44 | 41 | 10:05 (2) | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 11:23 (1) | 07:51 | | 09:25 (2) | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 69 | 12:32 (1) | 17:47 | 39 | 10:04 (2) | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:38 (2) | 07:48 | | 09:26 (2) | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 74 | 12:32 (1) | 17:49 | 37 | 10:03 (2) | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:34 (2) | 07:46 | | 09:27 (2) | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 82 | 12:32 (1) | 17:51 | 34 | 10:01 (2) | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:31 (2) | 07:44 | | 09:29 (2) | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 88 | 12:32 (1) | 17:53 | 31 | 10:00 (2) | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:30 (2) | 07:41 | | 09:30 (2) | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 92 | 12:33 (1) | 17:55 | 27 | 09:57 (2) | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:29 (2) | 07:39 | | 09:33 (2) | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 94 | 12:33 (1) | 17:57 | 22 | 09:55 (2) | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | 09:36 (2) | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 98 | 12:33 (1) | 17:59 | 14 | 09:50 (2) | 18:56 | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 100 | 12:34 (1) | 18:01 | | | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 102 | 12:34 (1) | 18:03 | | | 19:00 | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 103 | 12:34 (1) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 | 105 | 12:34 (1) | | | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | 106 | 12:34 (1) | | | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 05:03 | |
| | 17:06 | 106 | 12:33 (1) | | | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 |
| Total, worst case | | 2392 | | | 1836 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,27 | | | 0,48 | | | | | |
| Total reduction | | 0,05 | | | 0,11 | | | | | |
| Total, real | | 109 | | | 201 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | 08:51 (2) | 08:35 | | 11:05 (1) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | | 16:58 | 98 | 11:57 (1) | 16:10 | 65 | 12:10 (1) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | 08:50 (2) | 08:37 | | 11:04 (1) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | 102 | 11:58 (1) | 16:09 | 66 | 12:10 (1) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | 08:50 (2) | 08:39 | | 11:05 (1) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | 103 | 11:58 (1) | 16:08 | 65 | 12:10 (1) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | 08:51 (2) | 08:40 | | 11:06 (1) |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | 16:52 | 104 | 12:00 (1) | 16:08 | 65 | 12:11 (1) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | | 07:45 | | 08:51 (2) | 08:42 | | 11:06 (1) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | 106 | 12:01 (1) | 16:07 | 64 | 12:10 (1) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | 08:51 (2) | 08:43 | | 11:07 (1) |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | 106 | 12:01 (1) | 16:06 | 64 | 12:11 (1) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:51 (2) | 08:44 | | 11:07 (1) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | 108 | 12:02 (1) | 16:06 | 63 | 12:10 (1) |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | 07:51 | | 08:53 (2) | 08:46 | | 11:08 (1) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | 107 | 12:03 (1) | 16:05 | 63 | 12:11 (1) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | 08:53 (2) | 08:47 | | 11:08 (1) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | 107 | 12:04 (1) | 16:05 | 63 | 12:11 (1) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | | 07:55 | | 08:53 (2) | 08:48 | | 11:10 (1) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | | | 16:40 | 108 | 12:04 (1) | 16:04 | 62 | 12:12 (1) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | | 07:57 | | 08:54 (2) | 08:50 | | 11:10 (1) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | 16:38 | 106 | 12:04 (1) | 16:04 | 62 | 12:12 (1) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | | 07:59 | | 08:56 (2) | 08:51 | | 11:10 (1) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | | 16:36 | 105 | 12:05 (1) | 16:04 | 62 | 12:12 (1) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | | 08:01 | | 08:56 (2) | 08:52 | | 11:11 (1) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | | | 16:34 | 105 | 12:06 (1) | 16:04 | 61 | 12:12 (1) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | | 08:04 | | 08:57 (2) | 08:53 | | 11:11 (1) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | | | 16:33 | 104 | 12:06 (1) | 16:04 | 61 | 12:12 (1) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | | 08:06 | | 08:58 (2) | 08:54 | | 11:13 (1) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | | | 16:31 | 102 | 12:06 (1) | 16:04 | 61 | 12:14 (1) |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 10:13 (2) | 08:08 | | 09:00 (2) | 08:55 | | 11:12 (1) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 5 | 10:18 (2) | 16:29 | 100 | 12:07 (1) | 16:04 | 61 | 12:13 (1) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 10:06 (2) | 08:10 | | 09:01 (2) | 08:56 | | 11:13 (1) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 18 | 10:24 (2) | 16:28 | 98 | 12:07 (1) | 16:04 | 60 | 12:13 (1) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 10:03 (2) | 08:12 | | 09:03 (2) | 08:57 | | 11:14 (1) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 24 | 10:27 (2) | 16:26 | 94 | 12:07 (1) | 16:04 | 60 | 12:14 (1) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 10:01 (2) | 08:13 | | 09:04 (2) | 08:57 | | 11:15 (1) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 28 | 10:29 (2) | 16:25 | 92 | 12:07 (1) | 16:04 | 60 | 12:15 (1) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 09:59 (2) | 08:15 | | 09:06 (2) | 08:58 | | 11:14 (1) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 31 | 10:30 (2) | 16:23 | 88 | 12:07 (1) | 16:05 | 60 | 12:14 (1) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 09:57 (2) | 08:17 | | 09:10 (2) | 08:59 | | 11:15 (1) |
| | 21:59 | | 20:57 | | 19:38 | | 18:23 | 35 | 10:32 (2) | 16:22 | 83 | 12:08 (1) | 16:05 | 60 | 12:15 (1) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 09:56 (2) | 08:19 | | 09:14 (2) | 08:59 | | 11:16 (1) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 38 | 10:34 (2) | 16:20 | 75 | 12:08 (1) | 16:05 | 60 | 12:16 (1) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 09:55 (2) | 08:21 | | 11:00 (1) | 09:00 | | 11:16 (1) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 40 | 10:35 (2) | 16:19 | 69 | 12:09 (1) | 16:06 | 60 | 12:16 (1) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 09:54 (2) | 08:23 | | 11:01 (1) | 09:00 | | 11:17 (1) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 41 | 10:35 (2) | 16:18 | 68 | 12:09 (1) | 16:07 | 60 | 12:17 (1) |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:22 | | 08:53 (2) | 08:25 | | 11:01 (1) | 09:00 | | 11:17 (1) |
| | 21:53 | | 20:47 | | 19:28 | | 17:13 | 56 | 11:37 (1) | 16:16 | 68 | 12:09 (1) | 16:07 | 60 | 12:17 (1) |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:24 | | 08:52 (2) | 08:27 | | 11:02 (1) | 09:01 | | 11:18 (1) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 69 | 11:43 (1) | 16:15 | 67 | 12:09 (1) | 16:08 | 60 | 12:18 (1) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 08:52 (2) | 08:28 | | 11:02 (1) | 09:01 | | 11:18 (1) |
| | 21:49 | | 20:42 | | 19:23 | | 17:09 | 77 | 11:47 (1) | 16:14 | 67 | 12:09 (1) | 16:09 | 61 | 12:19 (1) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:29 | | 08:52 (2) | 08:30 | | 11:03 (1) | 09:01 | | 11:19 (1) |
| | 21:47 | | 20:40 | | 19:20 | | 17:07 | 81 | 11:49 (1) | 16:13 | 66 | 12:09 (1) | 16:10 | 60 | 12:19 (1) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 08:51 (2) | 08:32 | | 11:03 (1) | 09:01 | | 11:19 (1) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 88 | 11:51 (1) | 16:12 | 67 | 12:10 (1) | 16:10 | 61 | 12:20 (1) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 08:50 (2) | 08:34 | | 11:04 (1) | 09:01 | | 11:19 (1) |
| | 21:44 | | 20:35 | | 19:15 | | 17:02 | 93 | 11:53 (1) | 16:11 | 66 | 12:10 (1) | 16:11 | 61 | 12:20 (1) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:51 (2) | | | | 09:01 | | 11:19 (1) |
| | 21:42 | | 20:32 | | | | 17:00 | 95 | 11:55 (1) | | | | 16:12 | 62 | 12:21 (1) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 819 | | | 2739 | | | 1913 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,56 | | | 0,35 | | | 0,20 | |
| Total reduction | | | | | | | | 0,16 | | | 0,05 | | | 0,03 | |
| Total, real | | | | | | | | 130 | | | 140 | | | 48 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:26 (2) | 08:28 | | 08:57 (3) | 07:27 | | 15:00 (1) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 59 | 12:25 (2) | 17:08 | 149 | 15:47 (1) | 18:07 | 40 | 15:40 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 11:25 (2) | 08:26 | | 08:55 (3) | 07:24 | | 15:03 (1) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 60 | 12:25 (2) | 17:10 | 153 | 15:47 (1) | 18:10 | 35 | 15:38 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 11:26 (2) | 08:24 | | 08:54 (3) | 07:22 | | 15:06 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 60 | 12:26 (2) | 17:12 | 155 | 15:48 (1) | 18:12 | 29 | 15:35 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 11:26 (2) | 08:22 | | 08:54 (3) | 07:19 | | 15:10 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 60 | 12:26 (2) | 17:15 | 156 | 15:49 (1) | 18:14 | 22 | 15:32 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 11:26 (2) | 08:20 | | 08:54 (3) | 07:17 | | 15:16 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 62 | 12:28 (2) | 17:17 | 158 | 15:50 (1) | 18:16 | 9 | 15:25 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 11:26 (2) | 08:18 | | 08:54 (3) | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 62 | 12:28 (2) | 17:19 | 158 | 15:50 (1) | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 11:26 (2) | 08:16 | | 08:54 (3) | 07:12 | | | 06:53 | 05:42 | 04:56 |
| | 16:22 | 63 | 12:29 (2) | 17:21 | 158 | 15:51 (1) | 18:20 | | | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 11:26 (2) | 08:14 | | 08:54 (3) | 07:09 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 64 | 12:30 (2) | 17:23 | 158 | 15:51 (1) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 11:27 (2) | 08:12 | | 08:55 (3) | 07:07 | | | 06:48 | 05:38 | 04:55 |
| | 16:25 | 64 | 12:31 (2) | 17:25 | 156 | 15:51 (1) | 18:24 | | | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 11:27 (2) | 08:10 | | 08:56 (3) | 07:04 | | | 06:45 | 05:36 | 04:55 |
| | 16:26 | 65 | 12:32 (2) | 17:27 | 154 | 15:52 (1) | 18:26 | | | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 11:27 (2) | 08:08 | | 08:57 (3) | 07:02 | | | 06:43 | 05:34 | 04:54 |
| | 16:28 | 66 | 12:33 (2) | 17:29 | 152 | 15:52 (1) | 18:28 | | | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 11:26 (2) | 08:06 | | 08:58 (3) | 06:59 | | | 06:40 | 05:32 | 04:54 |
| | 16:30 | 67 | 12:33 (2) | 17:32 | 146 | 15:51 (1) | 18:30 | | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 11:26 (2) | 08:04 | | 09:01 (3) | 06:57 | | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 68 | 12:34 (2) | 17:34 | 141 | 15:52 (1) | 18:32 | | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 11:26 (2) | 08:02 | | 11:32 (2) | 06:54 | | | 06:35 | 05:29 | 04:53 |
| | 16:33 | 69 | 12:35 (2) | 17:36 | 131 | 15:52 (1) | 18:34 | | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 11:26 (2) | 07:59 | | 11:32 (2) | 06:52 | | | 06:33 | 05:27 | 04:53 |
| | 16:35 | 70 | 12:36 (2) | 17:38 | 129 | 15:51 (1) | 18:36 | | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 11:26 (2) | 07:57 | | 11:34 (2) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 70 | 12:36 (2) | 17:40 | 126 | 15:51 (1) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 11:26 (2) | 07:55 | | 11:35 (2) | 06:47 | | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 83 | 15:21 (1) | 17:42 | 124 | 15:52 (1) | 18:40 | | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 11:26 (2) | 07:53 | | 11:36 (2) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 90 | 15:25 (1) | 17:44 | 120 | 15:51 (1) | 18:42 | | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 11:26 (2) | 07:51 | | 11:37 (2) | 06:41 | | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 96 | 15:28 (1) | 17:47 | 118 | 15:51 (1) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 11:26 (2) | 07:48 | | 11:39 (2) | 06:39 | | | 06:21 | 05:18 | 04:52 |
| | 16:44 | 100 | 15:30 (1) | 17:49 | 114 | 15:51 (1) | 18:46 | | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 11:26 (2) | 07:46 | | 11:40 (2) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 104 | 15:32 (1) | 17:51 | 108 | 15:49 (1) | 18:48 | | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 11:26 (2) | 07:44 | | 11:43 (2) | 06:34 | | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 109 | 15:34 (1) | 17:53 | 102 | 15:49 (1) | 18:50 | | | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 11:26 (2) | 07:41 | | 11:44 (2) | 06:31 | | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 112 | 15:36 (1) | 17:55 | 96 | 15:48 (1) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 11:26 (2) | 07:39 | | 11:48 (2) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 115 | 15:37 (1) | 17:57 | 87 | 15:47 (1) | 18:54 | | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 11:26 (2) | 07:36 | | 11:51 (2) | 06:26 | | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 118 | 15:39 (1) | 17:59 | 78 | 15:46 (1) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 11:27 (2) | 07:34 | | 12:00 (2) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 120 | 15:41 (1) | 18:01 | 58 | 15:45 (1) | 18:58 | | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 11:26 (2) | 07:32 | | 14:57 (1) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 124 | 15:42 (1) | 18:03 | 46 | 15:43 (1) | 19:00 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 14:59 (1) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 129 | 15:43 (1) | 18:05 | 43 | 15:42 (1) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (3) | | | | 07:16 | | | 06:00 | 05:05 | 04:55 |
| | 17:02 | 134 | 15:44 (1) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (3) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 140 | 15:45 (1) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (3) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 144 | 15:46 (1) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 2747 | | | 3474 | | | 135 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,28 | | | 0,43 | | | 0,62 | | | | |
| Total reduction | | 0,05 | | | 0,10 | | | 0,20 | | | | |
| Total, real | | 132 | | | 347 | | | 27 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | 08:25 (3) | 08:35 | | 11:08 (2) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | | 16:58 | 154 | 15:21 (1) | 16:10 | 66 | 12:14 (2) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | 08:24 (3) | 08:37 | | 11:09 (2) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | 157 | 15:21 (1) | 16:09 | 65 | 12:14 (2) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | 08:24 (3) | 08:38 | | 11:10 (2) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | 157 | 15:20 (1) | 16:08 | 64 | 12:14 (2) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | 08:24 (3) | 08:40 | | 11:11 (2) |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | 16:52 | 159 | 15:21 (1) | 16:08 | 64 | 12:15 (2) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | | 07:45 | | 08:24 (3) | 08:42 | | 11:11 (2) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | 158 | 15:20 (1) | 16:07 | 63 | 12:14 (2) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | 08:23 (3) | 08:43 | | 11:12 (2) |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | 158 | 15:19 (1) | 16:06 | 62 | 12:14 (2) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:23 (3) | 08:44 | | 11:12 (2) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | 158 | 15:19 (1) | 16:06 | 62 | 12:14 (2) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | | 07:51 | | 08:24 (3) | 08:46 | | 11:14 (2) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | 156 | 15:19 (1) | 16:05 | 61 | 12:15 (2) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 15:47 (1) | 07:53 | | 08:26 (3) | 08:47 | | 11:14 (2) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16 | 16:03 (1) | 16:42 | 152 | 15:18 (1) | 16:05 | 60 | 12:14 (2) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 15:42 (1) | 07:55 | | 08:28 (3) | 08:48 | | 11:15 (2) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 25 | 16:07 (1) | 16:40 | 147 | 15:17 (1) | 16:04 | 60 | 12:15 (2) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 15:38 (1) | 07:57 | | 08:30 (3) | 08:50 | | 11:16 (2) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 32 | 16:10 (1) | 16:38 | 144 | 15:16 (1) | 16:04 | 59 | 12:15 (2) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 15:35 (1) | 07:59 | | 08:33 (3) | 08:51 | | 11:16 (2) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 37 | 16:12 (1) | 16:36 | 140 | 15:17 (1) | 16:04 | 59 | 12:15 (2) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 15:33 (1) | 08:01 | | 08:35 (3) | 08:52 | | 11:17 (2) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 40 | 16:13 (1) | 16:34 | 135 | 15:16 (1) | 16:04 | 58 | 12:15 (2) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 15:31 (1) | 08:03 | | 08:37 (3) | 08:53 | | 11:18 (2) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 45 | 16:16 (1) | 16:33 | 129 | 15:15 (1) | 16:04 | 57 | 12:15 (2) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 15:29 (1) | 08:06 | | 10:58 (2) | 08:54 | | 11:18 (2) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 48 | 16:17 (1) | 16:31 | 124 | 15:14 (1) | 16:04 | 57 | 12:15 (2) |
| 16 | 05:13 | | 06:08 | | 07:06 | | 08:04 | | 12:28 (2) | 08:08 | | 11:00 (2) | 08:55 | | 11:19 (2) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 66 | 16:17 (1) | 16:29 | 120 | 15:14 (1) | 16:04 | 56 | 12:15 (2) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 12:22 (2) | 08:09 | | 11:00 (2) | 08:56 | | 11:20 (2) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 81 | 16:18 (1) | 16:28 | 117 | 15:12 (1) | 16:04 | 56 | 12:16 (2) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 12:18 (2) | 08:11 | | 11:00 (2) | 08:57 | | 11:21 (2) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 90 | 16:19 (1) | 16:26 | 115 | 15:11 (1) | 16:04 | 55 | 12:16 (2) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 12:15 (2) | 08:13 | | 11:00 (2) | 08:57 | | 11:21 (2) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 97 | 16:19 (1) | 16:25 | 112 | 15:10 (1) | 16:04 | 56 | 12:17 (2) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 12:12 (2) | 08:15 | | 11:01 (2) | 08:58 | | 11:21 (2) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 105 | 16:20 (1) | 16:23 | 109 | 15:09 (1) | 16:05 | 56 | 12:17 (2) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 12:10 (2) | 08:17 | | 11:02 (2) | 08:59 | | 11:22 (2) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 110 | 16:20 (1) | 16:22 | 104 | 15:08 (1) | 16:05 | 56 | 12:18 (2) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 12:09 (2) | 08:19 | | 11:02 (2) | 08:59 | | 11:22 (2) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 115 | 16:21 (1) | 16:20 | 101 | 15:07 (1) | 16:05 | 55 | 12:17 (2) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 12:07 (2) | 08:21 | | 11:03 (2) | 09:00 | | 11:23 (2) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 118 | 16:21 (1) | 16:19 | 96 | 15:05 (1) | 16:06 | 56 | 12:19 (2) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 12:06 (2) | 08:23 | | 11:03 (2) | 09:00 | | 11:23 (2) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 121 | 16:21 (1) | 16:18 | 90 | 15:02 (1) | 16:07 | 56 | 12:19 (2) |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:22 | | 11:04 (2) | 08:25 | | 11:04 (2) | 09:00 | | 11:23 (2) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 125 | 15:21 (1) | 16:16 | 83 | 14:59 (1) | 16:07 | 56 | 12:19 (2) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 11:03 (2) | 08:27 | | 11:05 (2) | 09:01 | | 11:25 (2) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 127 | 15:21 (1) | 16:15 | 70 | 12:15 (2) | 16:08 | 56 | 12:21 (2) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 11:03 (2) | 08:28 | | 11:05 (2) | 09:01 | | 11:25 (2) |
| | 21:49 | | 20:42 | | 19:23 | | 17:09 | 129 | 15:22 (1) | 16:14 | 70 | 12:15 (2) | 16:09 | 56 | 12:21 (2) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:29 | | 11:02 (2) | 08:30 | | 11:06 (2) | 09:01 | | 11:25 (2) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | 131 | 15:22 (1) | 16:13 | 69 | 12:15 (2) | 16:10 | 57 | 12:22 (2) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 08:29 (3) | 08:32 | | 11:07 (2) | 09:01 | | 11:25 (2) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 143 | 15:21 (1) | 16:12 | 68 | 12:15 (2) | 16:10 | 57 | 12:22 (2) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 08:27 (3) | 08:34 | | 11:08 (2) | 09:01 | | 11:25 (2) |
| | 21:44 | | 20:35 | | 19:15 | | 17:02 | 148 | 15:21 (1) | 16:11 | 67 | 12:15 (2) | 16:11 | 57 | 12:22 (2) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:27 (3) | | | | 09:01 | | 11:25 (2) |
| | 21:42 | | 20:32 | | | | 17:00 | 151 | 15:22 (1) | | | | 16:12 | 58 | 12:23 (2) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 2100 | | | 3619 | | | 1816 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,44 | | | 0,36 | | | 0,19 | |
| Total reduction | | | | | | | | 0,13 | | | 0,05 | | | 0,02 | |
| Total, real | | | | | | | | 269 | | | 197 | | | 43 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 15:13 (2) | 07:27 | | 16:35 (1) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 26 | 10:14 (3) | 17:08 | 47 | 16:00 (2) | 18:07 | 31 | 17:06 (1) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 15:12 (2) | 07:24 | | 16:36 (1) | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 27 | 10:14 (3) | 17:10 | 48 | 16:00 (2) | 18:09 | 29 | 17:05 (1) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | 15:12 (2) | 07:22 | | 16:36 (1) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 27 | 10:15 (3) | 17:12 | 49 | 16:01 (2) | 18:12 | 28 | 17:04 (1) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | 15:12 (2) | 07:19 | | 16:38 (1) | 07:00 | | 05:48 | 04:59 |
| | 16:18 | 28 | 10:16 (3) | 17:15 | 50 | 16:02 (2) | 18:14 | 25 | 17:03 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | 15:12 (2) | 07:17 | | 16:39 (1) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 28 | 10:17 (3) | 17:17 | 50 | 16:02 (2) | 18:16 | 22 | 17:01 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | 15:12 (2) | 07:14 | | 16:42 (1) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 28 | 10:17 (3) | 17:19 | 51 | 16:03 (2) | 18:18 | 17 | 16:59 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | 15:11 (2) | 07:12 | | 16:45 (1) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 28 | 10:17 (3) | 17:21 | 51 | 16:02 (2) | 18:20 | 9 | 16:54 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | 15:11 (2) | 07:09 | | | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 29 | 10:18 (3) | 17:23 | 52 | 16:03 (2) | 18:22 | | | 20:23 | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | 15:11 (2) | 07:07 | | | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 29 | 10:18 (3) | 17:25 | 52 | 16:03 (2) | 18:24 | | | 20:25 | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | 15:12 (2) | 07:04 | | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | 28 | 10:19 (3) | 17:27 | 51 | 16:03 (2) | 18:26 | | | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | 15:12 (2) | 07:02 | | | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 29 | 10:19 (3) | 17:29 | 52 | 16:04 (2) | 18:28 | | | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | 15:12 (2) | 06:59 | | | 06:40 | | 05:32 | 04:54 |
| | 16:29 | 29 | 10:19 (3) | 17:32 | 51 | 16:03 (2) | 18:30 | | | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 15:12 (2) | 06:57 | | | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 29 | 10:20 (3) | 17:34 | 63 | 16:58 (1) | 18:32 | | | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 15:13 (2) | 06:54 | | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 28 | 10:20 (3) | 17:36 | 68 | 17:01 (1) | 18:34 | | | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 15:13 (2) | 06:52 | | | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 29 | 10:21 (3) | 17:38 | 71 | 17:02 (1) | 18:36 | | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 15:14 (2) | 06:49 | | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 28 | 10:20 (3) | 17:40 | 73 | 17:04 (1) | 18:38 | | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 15:15 (2) | 06:47 | | | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 28 | 10:21 (3) | 17:42 | 74 | 17:06 (1) | 18:40 | | | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 15:15 (2) | 06:44 | | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 37 | 15:38 (2) | 17:44 | 74 | 17:06 (1) | 18:42 | | | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 15:16 (2) | 06:41 | | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 44 | 15:41 (2) | 17:46 | 74 | 17:07 (1) | 18:44 | | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 15:17 (2) | 06:39 | | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 46 | 15:44 (2) | 17:49 | 74 | 17:08 (1) | 18:46 | | | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 15:18 (2) | 06:36 | | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 49 | 15:46 (2) | 17:51 | 72 | 17:08 (1) | 18:48 | | | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | 15:20 (2) | 06:34 | | | 06:16 | | 05:15 | 04:52 |
| | 16:48 | 52 | 15:48 (2) | 17:53 | 70 | 17:09 (1) | 18:50 | | | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | 15:21 (2) | 06:31 | | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 52 | 15:50 (2) | 17:55 | 67 | 17:08 (1) | 18:52 | | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | 15:24 (2) | 06:29 | | | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 52 | 15:51 (2) | 17:57 | 63 | 17:09 (1) | 18:54 | | | 20:55 | | 21:51 | 22:19 |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | 15:26 (2) | 06:26 | | | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 51 | 15:52 (2) | 17:59 | 57 | 17:08 (1) | 18:56 | | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | 15:30 (2) | 06:23 | | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 50 | 15:55 (2) | 18:01 | 50 | 17:08 (1) | 18:58 | | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | 16:34 (1) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 46 | 15:56 (2) | 18:03 | 33 | 17:07 (1) | 19:00 | | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 15:15 (2) | 07:29 | | 16:35 (1) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 41 | 15:56 (2) | 18:05 | 32 | 17:07 (1) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 15:14 (2) | | | | 07:16 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 43 | 15:57 (2) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 15:14 (2) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 44 | 15:58 (2) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 15:13 (2) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 46 | 15:59 (2) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 1131 | | | 1619 | | | 161 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,62 | | | 0,72 | | | 0,87 | | | | | |
| Total reduction | | 0,11 | | | 0,17 | | | 0,29 | | | | | |
| Total, real | | 123 | | | 279 | | | 46 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | 14:41 (2) | 08:35 | | 09:32 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | 52 | 15:33 (2) | 16:10 | 29 | 10:01 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | 14:41 (2) | 08:37 | | 09:33 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | 52 | 15:33 (2) | 16:09 | 29 | 10:02 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | 14:41 (2) | 08:38 | | 09:33 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | 51 | 15:32 (2) | 16:08 | 29 | 10:02 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | 14:42 (2) | 08:40 | | 09:34 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | | | 16:52 | 51 | 15:33 (2) | 16:08 | 29 | 10:03 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | | 07:45 | | 14:42 (2) | 08:42 | | 09:34 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | 50 | 15:32 (2) | 16:07 | 28 | 10:02 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | 14:42 (2) | 08:43 | | 09:35 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | 50 | 15:32 (2) | 16:06 | 28 | 10:03 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 17:19 (1) | 07:49 | | 14:42 (2) | 08:44 | | 09:35 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 13 | 17:32 (1) | 16:46 | 49 | 15:31 (2) | 16:06 | 28 | 10:03 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:15 (1) | 07:51 | | 14:43 (2) | 08:46 | | 09:36 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 20 | 17:35 (1) | 16:44 | 49 | 15:32 (2) | 16:05 | 28 | 10:04 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 17:13 (1) | 07:53 | | 14:43 (2) | 08:47 | | 09:36 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 23 | 17:36 (1) | 16:42 | 48 | 15:31 (2) | 16:05 | 28 | 10:04 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 17:11 (1) | 07:55 | | 14:44 (2) | 08:48 | | 09:37 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 26 | 17:37 (1) | 16:40 | 47 | 15:31 (2) | 16:04 | 27 | 10:04 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 17:10 (1) | 07:57 | | 14:44 (2) | 08:50 | | 09:38 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 28 | 17:38 (1) | 16:38 | 46 | 15:30 (2) | 16:04 | 26 | 10:04 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 17:08 (1) | 07:59 | | 14:46 (2) | 08:51 | | 09:38 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 31 | 17:39 (1) | 16:36 | 44 | 15:30 (2) | 16:04 | 27 | 10:05 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 17:07 (1) | 08:01 | | 14:46 (2) | 08:52 | | 09:38 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 32 | 17:39 (1) | 16:34 | 43 | 15:29 (2) | 16:04 | 27 | 10:05 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 17:06 (1) | 08:03 | | 14:47 (2) | 08:53 | | 09:39 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 33 | 17:39 (1) | 16:33 | 41 | 15:28 (2) | 16:04 | 26 | 10:05 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 16:06 (2) | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 43 | 17:41 (1) | 16:31 | 47 | 15:27 (2) | 16:04 | 26 | 10:05 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 16:00 (2) | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 54 | 17:40 (1) | 16:29 | 49 | 15:27 (2) | 16:04 | 26 | 10:06 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 15:57 (2) | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 59 | 17:40 (1) | 16:28 | 51 | 15:26 (2) | 16:04 | 25 | 10:06 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 15:54 (2) | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 65 | 17:40 (1) | 16:26 | 52 | 15:25 (2) | 16:04 | 26 | 10:07 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 15:52 (2) | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 68 | 17:39 (1) | 16:25 | 52 | 15:24 (2) | 16:04 | 25 | 10:07 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 15:50 (2) | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 71 | 17:39 (1) | 16:23 | 52 | 15:23 (2) | 16:05 | 25 | 10:07 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 15:48 (2) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 73 | 17:38 (1) | 16:22 | 49 | 15:22 (2) | 16:05 | 25 | 10:08 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 15:47 (2) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 74 | 17:38 (1) | 16:20 | 47 | 15:21 (2) | 16:05 | 25 | 10:08 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 15:46 (2) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 74 | 17:37 (1) | 16:19 | 44 | 15:19 (2) | 16:06 | 25 | 10:09 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 15:45 (2) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 75 | 17:36 (1) | 16:18 | 38 | 15:16 (2) | 16:06 | 25 | 10:09 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 14:44 (2) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 74 | 16:35 (1) | 16:16 | 28 | 09:59 (3) | 16:07 | 26 | 10:10 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 14:43 (2) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 72 | 16:33 (1) | 16:15 | 28 | 09:59 (3) | 16:08 | 25 | 10:11 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 14:43 (2) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 70 | 16:32 (1) | 16:14 | 28 | 10:00 (3) | 16:09 | 25 | 10:11 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:28 | | 14:42 (2) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | 67 | 16:30 (1) | 16:13 | 29 | 10:01 (3) | 16:10 | 26 | 10:12 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 14:42 (2) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 60 | 16:26 (1) | 16:12 | 29 | 10:01 (3) | 16:10 | 26 | 10:13 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 14:41 (2) | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 51 | 15:32 (2) | 16:11 | 29 | 10:02 (3) | 16:11 | 26 | 10:12 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 14:41 (2) | | | | 09:01 | | 09:47 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | 51 | 15:32 (2) | | | | 16:12 | 26 | 10:13 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 1307 | | | 1325 | | | 822 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,76 | | | 0,64 | | | 0,59 | |
| Total reduction | | | | | | | | 0,23 | | | 0,10 | | | 0,08 | |
| Total, real | | | | | | | | 298 | | | 131 | | | 64 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | 15:27 (2) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 15 | 09:54 (3) | 17:08 | 45 | 16:06 (2) | 18:07 | 87 | 17:24 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | 15:28 (2) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 16 | 09:54 (3) | 17:10 | 45 | 16:08 (2) | 18:09 | 87 | 17:25 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | 15:28 (2) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 18 | 09:56 (3) | 17:12 | 43 | 16:10 (2) | 18:12 | 85 | 17:24 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 15:34 (2) | 07:19 | 15:30 (2) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 18 | 09:56 (3) | 17:15 | 38 | 16:12 (2) | 18:14 | 82 | 17:25 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 15:33 (2) | 07:17 | 15:31 (2) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 20 | 09:58 (3) | 17:17 | 40 | 16:13 (2) | 18:16 | 79 | 17:24 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 15:32 (2) | 07:14 | 15:33 (2) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 21 | 09:59 (3) | 17:19 | 43 | 16:15 (2) | 18:18 | 75 | 17:24 (1) | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 15:30 (2) | 07:12 | 15:35 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 22 | 09:59 (3) | 17:21 | 45 | 16:15 (2) | 18:20 | 71 | 17:23 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 15:29 (2) | 07:09 | 15:36 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 23 | 10:00 (3) | 17:23 | 48 | 16:17 (2) | 18:22 | 66 | 17:22 (1) | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 15:29 (2) | 07:07 | 15:40 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 24 | 10:01 (3) | 17:25 | 49 | 16:18 (2) | 18:24 | 59 | 17:22 (1) | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 15:28 (2) | 07:04 | 15:44 (2) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 25 | 10:03 (3) | 17:27 | 51 | 16:19 (2) | 18:26 | 48 | 17:20 (1) | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 15:28 (2) | 07:02 | 16:50 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 25 | 10:02 (3) | 17:29 | 52 | 16:20 (2) | 18:28 | 30 | 17:20 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 15:26 (2) | 06:59 | 16:50 (1) | 06:40 | 05:32 | 04:54 |
| | 16:29 | 26 | 10:03 (3) | 17:32 | 54 | 16:20 (2) | 18:30 | 28 | 17:18 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 15:26 (2) | 06:57 | 16:51 (1) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 27 | 10:04 (3) | 17:34 | 55 | 16:21 (2) | 18:32 | 25 | 17:16 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | 15:26 (2) | 06:54 | 16:54 (1) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 28 | 10:05 (3) | 17:36 | 56 | 16:22 (2) | 18:34 | 20 | 17:14 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | 15:25 (2) | 06:52 | 16:56 (1) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 28 | 10:06 (3) | 17:38 | 56 | 16:21 (2) | 18:36 | 14 | 17:10 (1) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | 15:25 (2) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 29 | 10:06 (3) | 17:40 | 57 | 16:22 (2) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | 15:25 (2) | 06:47 | | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 30 | 10:07 (3) | 17:42 | 58 | 16:23 (2) | 18:40 | | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | 15:24 (2) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 30 | 10:08 (3) | 17:44 | 58 | 16:22 (2) | 18:42 | | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | 15:24 (2) | 06:41 | | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 30 | 10:08 (3) | 17:46 | 59 | 16:23 (2) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 15:25 (2) | 06:39 | | | 06:20 | 05:18 | 04:52 |
| | 16:44 | 30 | 10:09 (3) | 17:49 | 58 | 16:23 (2) | 18:46 | | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 15:24 (2) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 31 | 10:09 (3) | 17:51 | 72 | 17:14 (1) | 18:48 | | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 15:24 (2) | 06:34 | | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 30 | 10:08 (3) | 17:53 | 78 | 17:17 (1) | 18:50 | | | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 15:24 (2) | 06:31 | | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 30 | 10:09 (3) | 17:55 | 82 | 17:19 (1) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 15:25 (2) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 29 | 10:09 (3) | 17:57 | 84 | 17:21 (1) | 18:54 | | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 15:24 (2) | 06:26 | | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 29 | 10:09 (3) | 17:59 | 86 | 17:21 (1) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 15:25 (2) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 29 | 10:10 (3) | 18:01 | 88 | 17:23 (1) | 18:58 | | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 15:25 (2) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 27 | 10:09 (3) | 18:03 | 88 | 17:23 (1) | 19:00 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 15:26 (2) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 27 | 10:09 (3) | 18:05 | 88 | 17:24 (1) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | 25 | 10:08 (3) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 38 | 15:59 (2) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 43 | 16:03 (2) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 823 | | | 1676 | | | 856 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,65 | | | 0,75 | | | 0,83 | | | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,28 | | | | |
| Total, real | | 95 | | | 301 | | | 236 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | 17:30 (1) | 07:37 | | 14:58 (2) | 08:35 | | 09:19 (3) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 26 | 17:56 (1) | 16:58 | 50 | 15:48 (2) | 16:10 | 26 | 09:45 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | | 07:37 | | 17:28 (1) | 07:39 | | 14:58 (2) | 08:37 | | 09:20 (3) |
| | 22:18 | | 21:38 | | 20:27 | | | 19:10 | 29 | 17:57 (1) | 16:56 | 49 | 15:47 (2) | 16:09 | 25 | 09:45 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | | 07:39 | | 16:25 (2) | 07:41 | | 14:59 (2) | 08:38 | | 09:21 (3) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 41 | 17:58 (1) | 16:54 | 47 | 15:46 (2) | 16:08 | 24 | 09:45 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | | 07:41 | | 16:19 (2) | 07:43 | | 15:01 (2) | 08:40 | | 09:22 (3) |
| | 22:17 | | 21:34 | | 20:22 | | | 19:04 | 54 | 17:59 (1) | 16:52 | 45 | 15:46 (2) | 16:08 | 23 | 09:45 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 16:15 (2) | 07:45 | | 15:02 (2) | 08:42 | | 09:22 (3) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 62 | 17:59 (1) | 16:50 | 42 | 15:44 (2) | 16:07 | 22 | 09:44 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 16:12 (2) | 07:47 | | 15:03 (2) | 08:43 | | 09:24 (3) |
| | 22:15 | | 21:30 | | 20:17 | | | 18:59 | 68 | 17:59 (1) | 16:48 | 40 | 15:43 (2) | 16:06 | 21 | 09:45 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | | 07:46 | | 16:09 (2) | 07:49 | | 15:04 (2) | 08:44 | | 09:24 (3) |
| | 22:15 | | 21:28 | | 20:14 | | | 18:57 | 74 | 17:59 (1) | 16:46 | 37 | 15:41 (2) | 16:06 | 20 | 09:44 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 16:07 (2) | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 22:14 | | 21:26 | | 20:12 | | | 18:54 | 78 | 17:59 (1) | 16:44 | 43 | 15:41 (2) | 16:05 | 18 | 09:44 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 16:05 (2) | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 22:13 | | 21:24 | | 20:09 | | | 18:52 | 81 | 17:59 (1) | 16:42 | 45 | 15:39 (2) | 16:05 | 18 | 09:44 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | | 07:52 | | 16:03 (2) | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 22:12 | | 21:22 | | 20:07 | | | 18:49 | 84 | 17:59 (1) | 16:40 | 44 | 15:36 (2) | 16:04 | 16 | 09:44 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | | 07:54 | | 16:02 (2) | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | 85 | 17:58 (1) | 16:38 | 43 | 15:34 (2) | 16:04 | 15 | 09:44 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | | 07:56 | | 16:00 (2) | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | 87 | 17:57 (1) | 16:36 | 37 | 15:31 (2) | 16:04 | 14 | 09:43 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | | 07:58 | | 15:59 (2) | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 22:09 | | 21:15 | | 19:59 | | | 18:42 | 88 | 17:57 (1) | 16:34 | 25 | 09:40 (3) | 16:04 | 13 | 09:43 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | | 08:00 | | 15:58 (2) | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 22:08 | | 21:13 | | 19:56 | | | 18:39 | 88 | 17:56 (1) | 16:33 | 27 | 09:41 (3) | 16:04 | 12 | 09:43 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | | 08:02 | | 15:58 (2) | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 22:07 | | 21:10 | | 19:54 | | | 18:37 | 88 | 17:56 (1) | 16:31 | 27 | 09:41 (3) | 16:04 | 11 | 09:43 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | 15:57 (2) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 22:06 | | 21:08 | | 19:51 | | | 18:35 | 87 | 17:55 (1) | 16:29 | 28 | 09:42 (3) | 16:04 | 9 | 09:43 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | 15:56 (2) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 22:04 | | 21:06 | | 19:48 | | | 18:32 | 85 | 17:53 (1) | 16:28 | 29 | 09:43 (3) | 16:04 | 8 | 09:43 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | 15:56 (2) | 08:11 | | 09:14 (3) | 08:56 | | 09:36 (3) |
| | 22:03 | | 21:04 | | 19:46 | | | 18:30 | 82 | 17:51 (1) | 16:26 | 29 | 09:43 (3) | 16:04 | 7 | 09:43 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 15:55 (2) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 22:02 | | 21:01 | | 19:43 | | | 18:27 | 80 | 17:49 (1) | 16:25 | 30 | 09:43 (3) | 16:04 | 6 | 09:43 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | | 08:12 | | 15:55 (2) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 22:00 | | 20:59 | | 19:41 | | | 18:25 | 76 | 17:47 (1) | 16:23 | 31 | 09:44 (3) | 16:05 | 5 | 09:42 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | | 08:14 | | 15:54 (2) | 08:17 | | 09:14 (3) | 08:59 | | 09:39 (3) |
| | 21:59 | | 20:56 | | 19:38 | | | 18:23 | 70 | 17:43 (1) | 16:22 | 31 | 09:45 (3) | 16:05 | 4 | 09:43 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | | 08:16 | | 15:55 (2) | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | 58 | 16:53 (2) | 16:20 | 30 | 09:45 (3) | 16:05 | 4 | 09:43 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 15:55 (2) | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 21:56 | | 20:52 | | 19:33 | | | 18:18 | 58 | 16:53 (2) | 16:19 | 30 | 09:45 (3) | 16:06 | 4 | 09:44 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | | 08:20 | | 15:54 (2) | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 21:54 | | 20:49 | | 19:30 | | | 18:16 | 58 | 16:52 (2) | 16:18 | 30 | 09:45 (3) | 16:06 | 6 | 09:45 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | | 07:22 | | 14:54 (2) | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 21:52 | | 20:47 | | 19:28 | | | 17:13 | 58 | 15:52 (2) | 16:16 | 29 | 09:45 (3) | 16:07 | 6 | 09:45 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 14:54 (2) | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 21:51 | | 20:44 | | 19:25 | | | 17:11 | 57 | 15:51 (2) | 16:15 | 29 | 09:45 (3) | 16:08 | 7 | 09:47 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 14:55 (2) | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 21:49 | | 20:42 | | 19:22 | | | 17:09 | 57 | 15:52 (2) | 16:14 | 28 | 09:45 (3) | 16:09 | 8 | 09:48 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 17:39 (1) | 07:28 | | 14:55 (2) | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 21:47 | | 20:39 | | 19:20 | 11 | 17:50 (1) | 17:07 | 56 | 15:51 (2) | 16:13 | 28 | 09:45 (3) | 16:10 | 10 | 09:49 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 17:35 (1) | 07:31 | | 14:56 (2) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 21:46 | | 20:37 | | 19:17 | 18 | 17:53 (1) | 17:04 | 54 | 15:50 (2) | 16:12 | 27 | 09:45 (3) | 16:10 | 11 | 09:50 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 17:32 (1) | 07:33 | | 14:56 (2) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 21:44 | | 20:34 | | 19:15 | 23 | 17:55 (1) | 17:02 | 53 | 15:49 (2) | 16:11 | 26 | 09:45 (3) | 16:11 | 13 | 09:51 (3) |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | 14:56 (2) | | | | 09:01 | | 09:38 (3) |
| | 21:42 | | 20:32 | | | | | 17:00 | 52 | 15:48 (2) | | | | 16:12 | 14 | 09:52 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 52 | | | 2074 | | | 1036 | | | 400 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,91 | | | 0,78 | | | 0,68 | | | 0,65 | |
| Total reduction | | | | | | 0,35 | | | 0,24 | | | 0,11 | | | 0,09 | |
| Total, real | | | | | | 18 | | | 488 | | | 109 | | | 34 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | 07:52 (5) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 09:55 (3) | 17:08 | 26 | 10:11 (3) | 18:07 | 74 | 17:32 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | 07:50 (5) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 15 | 09:56 (3) | 17:10 | 24 | 10:10 (3) | 18:09 | 86 | 17:36 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | 07:47 (5) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 16 | 09:57 (3) | 17:12 | 21 | 10:09 (3) | 18:12 | 95 | 17:38 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | 07:45 (5) | 07:00 | 05:48 | 04:59 |
| | 16:18 | 18 | 09:58 (3) | 17:15 | 19 | 10:08 (3) | 18:14 | 101 | 17:40 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | 07:44 (5) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (3) | 17:17 | 14 | 10:06 (3) | 18:16 | 103 | 17:41 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | 07:44 (5) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 21 | 10:01 (3) | 17:19 | 6 | 10:02 (3) | 18:18 | 106 | 17:42 (1) | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | | 07:12 | 07:44 (5) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 22 | 10:01 (3) | 17:21 | | | 18:20 | 106 | 17:43 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | | 07:09 | 07:44 (5) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 23 | 10:02 (3) | 17:23 | | | 18:22 | 107 | 17:43 (1) | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | | 07:07 | 07:46 (5) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 24 | 10:03 (3) | 17:25 | | | 18:24 | 103 | 17:43 (1) | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | | 07:04 | 07:47 (5) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 25 | 10:05 (3) | 17:27 | | | 18:26 | 99 | 17:43 (1) | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | | 07:02 | 16:02 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 26 | 10:05 (3) | 17:29 | | | 18:28 | 89 | 17:44 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | | 06:59 | 16:02 (2) | 06:40 | 05:32 | 04:54 |
| | 16:29 | 27 | 10:06 (3) | 17:32 | | | 18:30 | 86 | 17:43 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | | 06:57 | 16:02 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 28 | 10:07 (3) | 17:34 | | | 18:32 | 85 | 17:42 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | 16:24 (2) | 06:54 | 16:04 (2) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 29 | 10:08 (3) | 17:36 | 15 | 16:39 (2) | 18:34 | 81 | 17:42 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | 16:19 (2) | 06:52 | 16:04 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 30 | 10:09 (3) | 17:38 | 23 | 16:42 (2) | 18:36 | 80 | 17:41 (1) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | 16:17 (2) | 06:49 | 16:06 (2) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 31 | 10:09 (3) | 17:40 | 28 | 16:45 (2) | 18:38 | 76 | 17:41 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | 16:15 (2) | 06:47 | 16:07 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 31 | 10:10 (3) | 17:42 | 33 | 16:48 (2) | 18:40 | 72 | 17:40 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | 16:12 (2) | 06:44 | 16:08 (2) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 32 | 10:11 (3) | 17:44 | 37 | 16:49 (2) | 18:42 | 65 | 17:38 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | 16:11 (2) | 06:41 | 16:11 (2) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 32 | 10:11 (3) | 17:46 | 40 | 16:51 (2) | 18:44 | 59 | 17:37 (1) | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 16:10 (2) | 06:39 | 16:13 (2) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 33 | 10:12 (3) | 17:49 | 43 | 16:53 (2) | 18:46 | 50 | 17:35 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | 16:08 (2) | 06:36 | 16:17 (2) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 33 | 10:12 (3) | 17:51 | 45 | 16:53 (2) | 18:48 | 38 | 17:33 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 16:07 (2) | 06:34 | 16:25 (2) | 06:16 | 05:15 | 04:52 |
| | 16:48 | 33 | 10:12 (3) | 17:53 | 48 | 16:55 (2) | 18:50 | 16 | 17:30 (1) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 16:06 (2) | 06:31 | | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 33 | 10:13 (3) | 17:55 | 49 | 16:55 (2) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 16:05 (2) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 33 | 10:13 (3) | 17:57 | 51 | 16:56 (2) | 18:54 | | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 16:04 (2) | 06:26 | | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 33 | 10:13 (3) | 17:59 | 52 | 16:56 (2) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 16:04 (2) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 33 | 10:14 (3) | 18:01 | 53 | 16:57 (2) | 18:58 | | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 32 | 10:14 (3) | 18:03 | 56 | 16:57 (2) | 19:00 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 07:55 (5) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 31 | 10:13 (3) | 18:05 | 61 | 16:58 (2) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | 30 | 10:13 (3) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 29 | 10:12 (3) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 28 | 10:12 (3) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 | |
| Total, worst case | | 844 | | | 744 | | | 1777 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,64 | | | 0,81 | | | 0,89 | | | | |
| Total reduction | | 0,11 | | | 0,19 | | | 0,29 | | | | |
| Total, real | | 95 | | | 143 | | | 520 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | 16:42 (2) | 07:37 | | | 08:35 | | 09:21 (3) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 85 | 18:22 (1) | 16:58 | | | 16:10 | 26 | 09:47 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | | 07:37 | | 16:40 (2) | 07:39 | | | 08:37 | | 09:22 (3) |
| | 22:18 | | 21:38 | | 20:27 | | | 19:10 | 88 | 18:22 (1) | 16:56 | | | 16:09 | 25 | 09:47 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | | 07:39 | | 08:26 (5) | 07:41 | | | 08:38 | | 09:23 (3) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 97 | 18:21 (1) | 16:54 | | | 16:08 | 24 | 09:47 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | | 07:41 | | 08:24 (5) | 07:43 | | | 08:40 | | 09:24 (3) |
| | 22:17 | | 21:34 | | 20:22 | | | 19:04 | 102 | 18:21 (1) | 16:52 | | | 16:08 | 23 | 09:47 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 08:22 (5) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 104 | 18:20 (1) | 16:50 | 7 | 09:32 (3) | 16:07 | 22 | 09:47 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 08:21 (5) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | | 21:30 | | 20:17 | | | 18:59 | 105 | 18:19 (1) | 16:48 | 15 | 09:36 (3) | 16:06 | 21 | 09:47 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | | 07:46 | | 08:20 (5) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | | 21:28 | | 20:14 | | | 18:57 | 106 | 18:18 (1) | 16:46 | 19 | 09:38 (3) | 16:06 | 20 | 09:46 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 08:19 (5) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | | 21:26 | | 20:12 | | | 18:54 | 105 | 18:17 (1) | 16:44 | 22 | 09:40 (3) | 16:05 | 18 | 09:46 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 08:19 (5) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | | 21:24 | | 20:09 | | | 18:52 | 103 | 18:15 (1) | 16:42 | 24 | 09:41 (3) | 16:05 | 16 | 09:45 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | | 07:52 | | 08:20 (5) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | | 21:22 | | 20:07 | | | 18:49 | 98 | 18:13 (1) | 16:40 | 26 | 09:42 (3) | 16:04 | 15 | 09:46 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | | 07:54 | | 08:22 (5) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | 91 | 18:11 (1) | 16:38 | 28 | 09:43 (3) | 16:04 | 13 | 09:45 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | | 07:56 | | 08:24 (5) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | 82 | 18:08 (1) | 16:36 | 29 | 09:44 (3) | 16:04 | 12 | 09:45 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | | 07:58 | | 08:26 (5) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | | 21:15 | | 19:59 | | | 18:42 | 65 | 18:01 (1) | 16:34 | 31 | 09:45 (3) | 16:04 | 10 | 09:44 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | | 08:00 | | 08:28 (5) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | | 21:13 | | 19:56 | | | 18:39 | 60 | 17:30 (2) | 16:33 | 31 | 09:45 (3) | 16:04 | 8 | 09:43 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | | 08:02 | | 16:36 (2) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | | 21:10 | | 19:54 | | | 18:37 | 54 | 17:30 (2) | 16:31 | 31 | 09:45 (3) | 16:04 | 6 | 09:43 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | 16:36 (2) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | | 21:08 | | 19:51 | | | 18:35 | 53 | 17:29 (2) | 16:29 | 33 | 09:47 (3) | 16:04 | 3 | 09:42 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | 16:36 (2) | 08:09 | | 09:14 (3) | 08:56 | | |
| | 22:04 | | 21:06 | | 19:48 | | | 18:32 | 52 | 17:28 (2) | 16:28 | 33 | 09:47 (3) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | 16:37 (2) | 08:11 | | 09:14 (3) | 08:56 | | |
| | 22:03 | | 21:04 | | 19:46 | | | 18:30 | 50 | 17:27 (2) | 16:26 | 33 | 09:47 (3) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 16:37 (2) | 08:13 | | 09:14 (3) | 08:57 | | |
| | 22:02 | | 21:01 | | 19:43 | | | 18:27 | 49 | 17:26 (2) | 16:25 | 33 | 09:47 (3) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:14 | | | 08:12 | | 16:38 (2) | 08:15 | | 09:14 (3) | 08:58 | | |
| | 22:00 | | 20:59 | | 19:41 | | | 18:25 | 47 | 17:25 (2) | 16:23 | 33 | 09:47 (3) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 18:02 (1) | 08:14 | | 16:39 (2) | 08:17 | | 09:15 (3) | 08:59 | | |
| | 21:59 | | 20:56 | | 19:38 | 12 | 18:14 (1) | 18:23 | 44 | 17:23 (2) | 16:22 | 33 | 09:48 (3) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 17:03 (2) | 08:16 | | 16:41 (2) | 08:19 | | 09:15 (3) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | 34 | 18:17 (1) | 18:20 | 42 | 17:23 (2) | 16:20 | 33 | 09:48 (3) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 16:59 (2) | 08:18 | | 16:42 (2) | 08:21 | | 09:16 (3) | 09:00 | | |
| | 21:56 | | 20:52 | | 19:33 | 47 | 18:19 (1) | 18:18 | 39 | 17:21 (2) | 16:19 | 32 | 09:48 (3) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 16:56 (2) | 08:20 | | 16:43 (2) | 08:23 | | 09:16 (3) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 56 | 18:20 (1) | 18:16 | 36 | 17:19 (2) | 16:18 | 32 | 09:48 (3) | 16:06 | | |
| 25 | 05:27 | | 06:25 | | 07:23 | | 16:53 (2) | 07:22 | | 15:45 (2) | 08:25 | | 09:17 (3) | 09:00 | | |
| | 21:52 | | 20:47 | | 19:28 | 62 | 18:21 (1) | 17:13 | 31 | 16:16 (2) | 16:16 | 31 | 09:48 (3) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 16:51 (2) | 07:24 | | 15:47 (2) | 08:27 | | 09:17 (3) | 09:01 | | |
| | 21:51 | | 20:44 | | 19:25 | 68 | 18:22 (1) | 17:11 | 27 | 16:14 (2) | 16:15 | 31 | 09:48 (3) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 16:48 (2) | 07:26 | | 15:51 (2) | 08:28 | | 09:18 (3) | 09:01 | | |
| | 21:49 | | 20:42 | | 19:22 | 74 | 18:22 (1) | 17:09 | 21 | 16:12 (2) | 16:14 | 30 | 09:48 (3) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 16:46 (2) | 07:28 | | 15:55 (2) | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | | 20:39 | | 19:20 | 78 | 18:22 (1) | 17:07 | 12 | 16:07 (2) | 16:13 | 29 | 09:48 (3) | 16:10 | 5 | 09:49 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 16:44 (2) | 07:31 | | | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | | 20:37 | | 19:17 | 81 | 18:22 (1) | 17:04 | | | 16:12 | 28 | 09:48 (3) | 16:10 | 8 | 09:51 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 16:43 (2) | 07:33 | | | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | | 20:34 | | 19:15 | 83 | 18:22 (1) | 17:02 | | | 16:11 | 27 | 09:48 (3) | 16:11 | 9 | 09:51 (3) |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | | | | | 09:01 | | 09:42 (3) |
| | 21:42 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 11 | 09:53 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 595 | | | 1848 | | | 734 | | | 295 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,89 | | | 0,87 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | 0,34 | | | 0,26 | | | 0,10 | | | 0,08 | |
| Total, real | | | | | | 203 | | | 479 | | | 72 | | | 25 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | | 07:27 | | 07:55 (5) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 32 | 10:29 (3) | 17:08 | | | 18:07 | 92 | 17:35 (1) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | | 07:24 | | 07:56 (5) | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 31 | 10:28 (3) | 17:10 | | | 18:09 | 93 | 17:37 (1) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | | 07:22 | | 07:55 (5) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 33 | 10:30 (3) | 17:12 | | | 18:12 | 95 | 17:37 (1) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | | 07:19 | | 07:57 (5) | 07:00 | | 05:48 | 04:59 |
| | 16:18 | 33 | 10:30 (3) | 17:15 | | | 18:14 | 92 | 17:38 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | | 07:17 | | 07:57 (5) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 33 | 10:31 (3) | 17:17 | | | 18:16 | 90 | 17:38 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | | 07:14 | | 07:59 (5) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 33 | 10:31 (3) | 17:19 | | | 18:18 | 85 | 17:38 (1) | 20:20 | | 21:18 | 22:09 |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | | 07:12 | | 08:02 (5) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 33 | 10:31 (3) | 17:21 | | | 18:20 | 76 | 17:38 (1) | 20:21 | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | | 07:09 | | 16:11 (2) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 34 | 10:32 (3) | 17:23 | | | 18:22 | 70 | 17:37 (1) | 20:23 | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | | 07:07 | | 16:13 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 33 | 10:32 (3) | 17:25 | | | 18:24 | 67 | 17:37 (1) | 20:25 | | 21:24 | 22:12 |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | | 07:04 | | 16:14 (2) | 06:45 | | 05:36 | 04:54 |
| | 16:26 | 34 | 10:34 (3) | 17:27 | | | 18:26 | 63 | 17:36 (1) | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 16:26 (2) | 07:02 | | 16:17 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 34 | 10:33 (3) | 17:29 | 14 | 16:40 (2) | 18:28 | 57 | 17:36 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 16:22 (2) | 06:59 | | 16:18 (2) | 06:40 | | 05:32 | 04:54 |
| | 16:29 | 34 | 10:34 (3) | 17:32 | 21 | 16:43 (2) | 18:30 | 52 | 17:35 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 16:20 (2) | 06:57 | | 16:21 (2) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 34 | 10:34 (3) | 17:34 | 26 | 16:46 (2) | 18:32 | 43 | 17:33 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 16:19 (2) | 06:54 | | 17:09 (1) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 34 | 10:35 (3) | 17:36 | 29 | 16:48 (2) | 18:34 | 24 | 17:33 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 16:16 (2) | 06:52 | | 17:10 (1) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 33 | 10:35 (3) | 17:38 | 33 | 16:49 (2) | 18:36 | 20 | 17:30 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 16:15 (2) | 06:49 | | 17:12 (1) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 33 | 10:35 (3) | 17:40 | 36 | 16:51 (2) | 18:38 | 17 | 17:29 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 16:14 (2) | 06:47 | | 17:15 (1) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 32 | 10:35 (3) | 17:42 | 39 | 16:53 (2) | 18:40 | 9 | 17:24 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 16:13 (2) | 06:44 | | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 32 | 10:36 (3) | 17:44 | 40 | 16:53 (2) | 18:42 | | | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 16:12 (2) | 06:41 | | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 31 | 10:35 (3) | 17:46 | 42 | 16:54 (2) | 18:44 | | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 16:12 (2) | 06:39 | | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 31 | 10:36 (3) | 17:49 | 43 | 16:55 (2) | 18:46 | | | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 16:10 (2) | 06:36 | | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 30 | 10:35 (3) | 17:51 | 45 | 16:55 (2) | 18:48 | | | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 16:10 (2) | 06:34 | | | 06:16 | | 05:15 | 04:52 |
| | 16:48 | 28 | 10:34 (3) | 17:53 | 46 | 16:56 (2) | 18:50 | | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 08:07 (5) | 06:31 | | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 28 | 10:35 (3) | 17:55 | 52 | 16:56 (2) | 18:52 | | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 08:05 (5) | 06:29 | | | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 26 | 10:34 (3) | 17:57 | 57 | 16:57 (2) | 18:54 | | | 20:55 | | 21:51 | 22:19 |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 08:02 (5) | 06:26 | | | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 24 | 10:33 (3) | 17:59 | 60 | 16:56 (2) | 18:56 | | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 08:00 (5) | 06:23 | | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 22 | 10:33 (3) | 18:01 | 76 | 17:30 (1) | 18:58 | | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 19 | 10:31 (3) | 18:03 | 84 | 17:32 (1) | 19:00 | | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 07:56 (5) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 15 | 10:29 (3) | 18:05 | 89 | 17:34 (1) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 10 | 10:27 (3) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | | | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 859 | | | 832 | | | 1045 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,56 | | | 0,85 | | | 0,89 | | | | | |
| Total reduction | | 0,09 | | | 0,20 | | | 0,29 | | | | | |
| Total, real | | 81 | | | 164 | | | 299 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 16:59 (2) | 07:37 | | | 08:35 | | 09:41 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 49 | 18:14 (1) | 16:58 | | | 16:10 | 34 | 10:15 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 16:56 (2) | 07:39 | | | 08:37 | | 09:42 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 55 | 18:14 (1) | 16:56 | | | 16:09 | 34 | 10:16 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 16:53 (2) | 07:41 | | | 08:38 | | 09:43 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 61 | 18:14 (1) | 16:54 | | | 16:08 | 33 | 10:16 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 16:51 (2) | 07:43 | | | 08:40 | | 09:44 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 65 | 18:14 (1) | 16:52 | | | 16:08 | 33 | 10:17 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 16:49 (2) | 07:45 | | | 08:41 | | 09:43 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 68 | 18:14 (1) | 16:50 | | | 16:07 | 34 | 10:17 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 16:48 (2) | 07:47 | | | 08:43 | | 09:44 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 71 | 18:14 (1) | 16:48 | | | 16:06 | 33 | 10:17 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:36 (5) | 07:49 | | | 08:44 | | 09:44 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 82 | 18:14 (1) | 16:46 | | | 16:06 | 33 | 10:17 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 08:33 (5) | 07:51 | | | 08:46 | | 09:45 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 87 | 18:13 (1) | 16:44 | | | 16:05 | 33 | 10:18 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 08:31 (5) | 07:53 | | | 08:47 | | 09:45 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 91 | 18:12 (1) | 16:42 | | | 16:05 | 33 | 10:18 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:30 (5) | 07:55 | | | 08:48 | | 09:47 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 94 | 18:12 (1) | 16:40 | | | 16:04 | 32 | 10:19 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:29 (5) | 07:57 | | | 08:50 | | 09:47 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 95 | 18:11 (1) | 16:38 | | | 16:04 | 32 | 10:19 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:29 (5) | 07:59 | | | 08:51 | | 09:47 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 94 | 18:09 (1) | 16:36 | | | 16:04 | 32 | 10:19 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:28 (5) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 92 | 18:08 (1) | 16:34 | 10 | 09:59 (3) | 16:04 | 31 | 10:19 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:28 (5) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 88 | 18:06 (1) | 16:33 | 15 | 10:01 (3) | 16:04 | 31 | 10:19 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:31 (5) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 81 | 18:04 (1) | 16:31 | 19 | 10:03 (3) | 16:04 | 30 | 10:19 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 08:33 (5) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 72 | 18:01 (1) | 16:29 | 22 | 10:06 (3) | 16:04 | 31 | 10:20 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 08:35 (5) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 58 | 17:28 (2) | 16:28 | 24 | 10:07 (3) | 16:04 | 30 | 10:20 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 08:37 (5) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 55 | 17:28 (2) | 16:26 | 26 | 10:08 (3) | 16:04 | 30 | 10:21 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 08:39 (5) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 49 | 17:27 (2) | 16:25 | 28 | 10:09 (3) | 16:04 | 30 | 10:22 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 16:41 (2) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 45 | 17:26 (2) | 16:23 | 28 | 10:09 (3) | 16:05 | 30 | 10:21 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 16:41 (2) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 44 | 17:25 (2) | 16:22 | 30 | 10:11 (3) | 16:05 | 30 | 10:22 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 16:42 (2) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 43 | 17:25 (2) | 16:20 | 31 | 10:12 (3) | 16:05 | 30 | 10:22 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 16:43 (2) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 41 | 17:24 (2) | 16:19 | 31 | 10:12 (3) | 16:06 | 30 | 10:23 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 16:43 (2) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 40 | 17:23 (2) | 16:18 | 32 | 10:13 (3) | 16:06 | 31 | 10:24 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 15:44 (2) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 38 | 16:22 (2) | 16:16 | 32 | 10:13 (3) | 16:07 | 30 | 10:24 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | 18:00 (1) | 07:24 | | 15:45 (2) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | | 20:44 | | 19:25 | 5 18:05 (1) | 17:11 | 35 | 16:20 (2) | 16:15 | 33 | 10:14 (3) | 16:08 | 30 | 10:25 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | 17:54 (1) | 07:26 | | 15:47 (2) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | | 20:42 | | 19:22 | 14 18:08 (1) | 17:09 | 32 | 16:19 (2) | 16:14 | 33 | 10:14 (3) | 16:09 | 31 | 10:26 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | 17:51 (1) | 07:28 | | 15:48 (2) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | | 20:39 | | 19:20 | 20 18:11 (1) | 17:07 | 29 | 16:17 (2) | 16:13 | 34 | 10:15 (3) | 16:10 | 30 | 10:26 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | 17:49 (1) | 07:31 | | 15:50 (2) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | | 20:37 | | 19:17 | 23 18:12 (1) | 17:04 | 25 | 16:15 (2) | 16:12 | 33 | 10:15 (3) | 16:10 | 31 | 10:27 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | 17:03 (2) | 07:33 | | 15:52 (2) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | | 20:34 | | 19:15 | 39 18:13 (1) | 17:02 | 20 | 16:12 (2) | 16:11 | 34 | 10:16 (3) | 16:11 | 32 | 10:27 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 15:56 (2) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | 12 | 16:08 (2) | | | | 16:12 | 31 | 10:27 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 101 | | 1811 | | | 495 | | | 975 | |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,92 | | 0,87 | | | 0,56 | | | 0,56 | |
| Total reduction | | | | | | 0,34 | | 0,25 | | | 0,08 | | | 0,07 | |
| Total, real | | | | | | 35 | | 456 | | | 41 | | | 69 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27<br>18:07 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:02 | 20:50 (2)<br>21:07 (2) | 04:57<br>22:18 | 05:39 (5)<br>05:40 (5) | 05:40<br>21:40 | 21:02 (2)<br>21:07 (2) | 06:38<br>20:29 | 07:35<br>19:12 | 07:37<br>16:58 | 08:35<br>16:10 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 | 20:51 (2)<br>21:06 (2) | 04:58<br>22:18 | 05:40 (5)<br>05:56 (5) | 05:41<br>21:38 | | 06:40<br>20:27 | 07:37<br>19:10 | 07:39<br>16:56 | 08:37<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:12 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 | 20:52 (2)<br>21:07 (2) | 04:58<br>22:17 | 05:42 (5)<br>05:55 (5) | 05:43<br>21:36 | | 06:42<br>20:24 | 07:39<br>19:07 | 07:41<br>16:54 | 08:38<br>16:08 |
| 4 | 09:00<br>16:18 | 08:22<br>17:15 | 07:19<br>18:14 | 07:00<br>20:16 | 05:48<br>21:15 | 04:59<br>22:06 | 20:53 (2)<br>21:06 (2) | 04:59<br>22:17 | 05:43 (5)<br>21:08 (2) | 05:45<br>21:34 | | 06:43<br>20:22 | 07:40<br>19:04 | 07:43<br>16:52 | 08:40<br>16:08 |
| 5 | 09:00<br>16:19 | 08:20<br>17:17 | 07:17<br>18:16 | 06:58<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 | 20:53 (2)<br>21:05 (2) | 05:00<br>22:16 | 05:44 (5)<br>21:09 (2) | 05:47<br>21:32 | | 06:45<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:18 | 06:55<br>20:19 | 05:44<br>21:18 | 04:57<br>22:09 | 20:55 (2)<br>21:05 (2) | 05:01<br>22:15 | 05:48 (5)<br>21:10 (2) | 05:49<br>21:30 | | 06:47<br>20:17 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 08:59<br>16:22 | 08:16<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 | 05:40 (5)<br>21:04 (2) | 05:02<br>22:15 | 21:00 (2)<br>21:11 (2) | 05:51<br>21:28 | | 06:49<br>20:14 | 07:46<br>18:57 | 07:49<br>16:46 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 | 05:37 (5)<br>21:02 (2) | 05:03<br>22:14 | 20:59 (2)<br>21:12 (2) | 05:52<br>21:26 | | 06:51<br>20:12 | 07:48<br>18:54 | 07:51<br>16:44 | 08:46<br>16:05 |
| 9 | 08:57<br>16:25 | 08:12<br>17:25 | 07:07<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 | 05:37 (5)<br>05:49 (5) | 05:04<br>22:13 | 20:59 (2)<br>21:13 (2) | 05:54<br>21:24 | | 06:53<br>20:09 | 07:50<br>18:52 | 07:53<br>16:42 | 08:47<br>16:05 |
| 10 | 08:57<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 | 05:35 (5)<br>05:50 (5) | 05:06<br>22:12 | 20:58 (2)<br>21:13 (2) | 05:56<br>21:21 | | 06:55<br>20:06 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 20:54 (2)<br>04:54<br>2 20:56 (2) | 05:35 (5)<br>22:13 | 05:07<br>16 | 20:59 (2)<br>21:15 (2) | 05:58<br>21:19 | | 06:57<br>20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:29 | 08:06<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 07:05 (4)<br>05:32<br>6 07:11 (4)<br>21:30 | 20:51 (2)<br>04:54<br>6 20:57 (2) | 05:35 (5)<br>22:14 | 05:08<br>17 | 20:58 (2)<br>21:16 (2) | 06:00<br>21:17 | | 06:59<br>20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:51<br>16:04 |
| 13 | 08:54<br>16:31 | 08:04<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 07:02 (4)<br>05:30<br>10 07:12 (4)<br>21:32 | 20:50 (2)<br>04:53<br>8 20:58 (2) | 05:35 (5)<br>22:15 | 05:09<br>18 | 20:58 (2)<br>21:16 (2) | 06:02<br>21:15 | | 07:00<br>19:59 | 07:58<br>18:42 | 08:01<br>16:34 | 08:52<br>16:04 |
| 14 | 08:53<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 07:00 (4)<br>05:28<br>13 07:13 (4)<br>21:33 | 20:48 (2)<br>04:53<br>12 21:00 (2) | 05:34 (5)<br>22:16 | 05:11<br>19 | 20:57 (2)<br>21:16 (2) | 06:04<br>21:13 | | 07:02<br>19:56 | 08:00<br>18:39 | 08:03<br>16:33 | 08:53<br>16:04 |
| 15 | 08:52<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 06:58 (4)<br>05:27<br>16 07:14 (4)<br>21:35 | 20:48 (2)<br>04:53<br>14 21:02 (2) | 05:34 (5)<br>22:16 | 05:12<br>20 | 20:57 (2)<br>21:16 (2) | 06:06<br>21:10 | | 07:04<br>19:54 | 08:02<br>18:37 | 08:05<br>16:31 | 08:54<br>16:04 |
| 16 | 08:51<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 06:55 (4)<br>05:25<br>19 07:14 (4)<br>21:37 | 20:47 (2)<br>04:52<br>16 21:03 (2) | 05:34 (5)<br>22:17 | 05:13<br>21 | 20:57 (2)<br>21:18 (2) | 06:07<br>21:08 | | 07:06<br>19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:55<br>16:04 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 06:54 (4)<br>05:23<br>20 07:14 (4)<br>21:39 | 20:47 (2)<br>04:52<br>18 21:05 (2) | 05:34 (5)<br>22:17 | 05:15<br>21 | 20:57 (2)<br>22:04 | 06:09<br>21 | | 07:08<br>19:48 | 08:06<br>18:32 | 08:09<br>16:28 | 08:56<br>16:04 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 06:53 (4)<br>05:21<br>21 07:14 (4)<br>21:41 | 20:47 (2)<br>04:52<br>20 21:07 (2) | 05:34 (5)<br>22:18 | 05:16<br>21 | 20:56 (2)<br>21:18 (2) | 06:11<br>21:03 | 07:04 (4)<br>8 07:12 (4) | 07:10<br>19:46 | 08:08<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:48<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 06:53 (4)<br>05:20<br>21 07:14 (4)<br>21:42 | 20:47 (2)<br>04:52<br>22 21:09 (2) | 05:34 (5)<br>22:18 | 05:18<br>22 | 20:57 (2)<br>22:02 | 06:13<br>22 | 07:02 (4)<br>13 07:15 (4) | 07:12<br>19:43 | 08:10<br>18:27 | 08:13<br>16:25 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 06:54 (4)<br>05:18<br>19 07:13 (4)<br>21:44 | 20:46 (2)<br>04:52<br>22 21:08 (2) | 05:34 (5)<br>22:19 | 05:19<br>22 | 20:56 (2)<br>22:00 | 06:15<br>22 | 07:01 (4)<br>15 07:16 (4) | 07:14<br>19:41 | 08:12<br>18:25 | 08:15<br>16:23 | 08:58<br>16:05 |
| 21 | 08:45<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 06:54 (4)<br>05:16<br>19 07:13 (4)<br>21:46 | 20:47 (2)<br>04:52<br>22 21:09 (2) | 05:34 (5)<br>22:19 | 05:21<br>22 | 20:57 (2)<br>22:02 | 06:17<br>22 | 07:00 (4)<br>17 07:17 (4) | 07:16<br>19:38 | 08:14<br>18:23 | 08:17<br>16:22 | 08:58<br>16:05 |
| 22 | 08:44<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 06:54 (4)<br>05:15<br>17 07:11 (4)<br>21:47 | 20:46 (2)<br>04:52<br>22 21:08 (2) | 05:35 (5)<br>22:19 | 05:23<br>22 | 20:56 (2)<br>21:57 | 06:19<br>23 | 06:58 (4)<br>19 07:17 (4) | 07:17<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 06:55 (4)<br>05:13<br>15 07:10 (4)<br>21:49 | 20:46 (2)<br>04:53<br>23 21:09 (2) | 05:35 (5)<br>22:19 | 05:24<br>22 | 20:57 (2)<br>21:56 | 06:21<br>22 | 06:57 (4)<br>20 07:17 (4) | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:52 | 07:39<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 | 06:57 (4)<br>05:12<br>12 07:09 (4)<br>21:51 | 20:47 (2)<br>04:53<br>22 21:09 (2) | 05:35 (5)<br>22:19 | 05:26<br>22 | 20:57 (2)<br>21:54 | 06:23<br>22 | 06:57 (4)<br>20 07:17 (4) | 07:21<br>19:30 | 08:20<br>18:16 | 08:23<br>16:18 | 09:00<br>16:06 |
| 25 | 08:39<br>16:54 | 07:36<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 | 06:59 (4)<br>05:10<br>7 07:06 (4)<br>21:52 | 20:47 (2)<br>04:53<br>22 21:09 (2) | 05:36 (5)<br>22:19 | 05:27<br>21 | 20:57 (2)<br>21:52 | 06:25<br>21 | 06:57 (4)<br>20 07:17 (4) | 07:23<br>19:28 | 07:22<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 08:38<br>16:56 | 07:34<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 20:47 (2)<br>04:54<br>21 21:08 (2) | 05:36 (5)<br>22:19 | 05:29<br>21 | 20:57 (2)<br>21:51 | 06:26<br>19 | 06:57 (4)<br>20 07:17 (4) | 07:25<br>19:25 | 07:24<br>17:11 | 08:26<br>16:15 | 09:01<br>16:08 |
| 27 | 08:36<br>16:58 | 07:32<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 20:47 (2)<br>04:54<br>21 21:08 (2) | 05:37 (5)<br>22:19 | 05:31<br>20 | 20:58 (2)<br>21:49 | 06:28<br>17 | 06:57 (4)<br>19 07:16 (4) | 07:27<br>19:22 | 07:26<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 08:35<br>17:00 | 07:29<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 20:48 (2)<br>04:55<br>20 21:08 (2) | 05:37 (5)<br>22:19 | 05:33<br>20 | 20:58 (2)<br>21:47 | 06:30<br>15 | 06:59 (4)<br>16 07:15 (4) | 07:29<br>19:20 | 07:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:10 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 | 20:48 (2)<br>04:55<br>20 21:08 (2) | 05:38 (5)<br>22:19 | 05:34<br>19 | 20:59 (2)<br>21:45 | 06:32<br>13 | 07:01 (4)<br>13 07:14 (4) | 07:31<br>19:17 | 07:30<br>17:04 | 08:32<br>16:12 | 09:01<br>16:10 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 20:49 (2)<br>04:56<br>19 21:08 (2) | 05:38 (5)<br>22:18 | 05:36<br>18 | 05:56 (5) | 21:00 (2)<br>21:44 | 06:34<br>10 | 07:03 (4)<br>21:10 (2) | 07:33<br>20:34 | 07:33<br>10 07:13 (4) | 19:15 | 07:02<br>16:11 | 08:33<br>09:01<br>16:11 |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | 20:49 (2)<br>18 21:07 (2) | | | 05:38<br>21:42 | 21:00 (2)<br>8 21:08 (2) | 06:36<br>20:32 | 07:05 (4)<br>6 07:11 (4) | | 07:35<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 215 | 370 | 542 | 529 | 221 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | 0,88 | 0,81 | 0,87 | 0,97 | | | | |
| Total reduction | | | | 0,38 | 0,45 | 0,39 | 0,42 | 0,50 | | | | |
| Total, real | | | | 83 | 168 | 212 | 223 | 111 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 19:03 (3) | 05:55 | 07:21 (4) | 05:02 | 04:57 | 05:40 | 07:46 (4) | 06:38 | 07:27 (4) | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 28 | 19:31 (3) | 21:09 44 | 08:05 (4) | 22:02 | 22:18 | 21:40 12 | 07:58 (4) | 20:29 39 | 08:06 (4) | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:03 (3) | 05:53 | 07:22 (4) | 05:01 | 04:57 | 05:41 | 07:42 (4) | 06:40 | 07:28 (4) | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 29 | 19:32 (3) | 21:11 42 | 08:04 (4) | 22:04 | 22:18 | 21:38 18 | 08:00 (4) | 20:27 43 | 19:16 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:03 (3) | 05:51 | 07:22 (4) | 05:00 | 04:58 | 05:43 | 07:40 (4) | 06:42 | 07:29 (4) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 28 | 19:31 (3) | 21:13 41 | 08:03 (4) | 22:05 | 22:17 | 21:36 23 | 08:03 (4) | 20:24 48 | 19:20 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:04 (3) | 05:48 | 07:23 (4) | 04:59 | 04:59 | 05:45 | 07:38 (4) | 06:43 | 07:31 (4) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 26 | 19:30 (3) | 21:14 39 | 08:02 (4) | 22:06 | 22:17 | 21:34 27 | 08:05 (4) | 20:22 48 | 19:22 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45 (4) | 05:46 | 07:24 (4) | 04:58 | 05:00 | 05:47 | 07:37 (4) | 06:45 | 07:33 (4) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 35 | 19:29 (3) | 21:16 37 | 08:01 (4) | 22:07 | 22:16 | 21:32 30 | 08:07 (4) | 20:19 47 | 19:23 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40 (4) | 05:44 | 07:25 (4) | 04:57 | 05:01 | 05:49 | 07:35 (4) | 06:47 | 07:35 (4) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 42 | 19:28 (3) | 21:18 34 | 07:59 (4) | 22:08 | 22:15 | 21:30 33 | 08:08 (4) | 20:17 42 | 19:23 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36 (4) | 05:42 | 07:26 (4) | 04:56 | 05:02 | 05:51 | 07:34 (4) | 06:49 | 07:40 (4) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 46 | 19:26 (3) | 21:20 32 | 07:58 (4) | 22:10 | 22:15 | 21:28 35 | 08:09 (4) | 20:14 34 | 19:24 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34 (4) | 05:40 | 07:27 (4) | 04:56 | 05:03 | 05:52 | 07:33 (4) | 06:51 | 18:58 (3) | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 48 | 19:25 (3) | 21:22 29 | 07:56 (4) | 22:11 | 22:14 | 21:26 38 | 08:11 (4) | 20:12 26 | 19:24 (3) | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 07:31 (4) | 05:38 | 07:28 (4) | 04:55 | 05:04 | 05:54 | 07:31 (4) | 06:53 | 18:57 (3) | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 48 | 19:22 (3) | 21:24 26 | 07:54 (4) | 22:12 | 22:13 | 21:24 40 | 08:11 (4) | 20:09 28 | 19:25 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30 (4) | 05:36 | 07:30 (4) | 04:54 | 05:06 | 05:56 | 07:30 (4) | 06:55 | 18:57 (3) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 42 | 19:18 (3) | 21:26 22 | 07:52 (4) | 22:12 | 22:12 | 21:21 42 | 08:12 (4) | 20:06 28 | 19:25 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 07:28 (4) | 05:34 | 07:32 (4) | 04:54 | 05:07 | 05:58 | 07:30 (4) | 06:57 | 18:55 (3) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 39 | 08:07 (4) | 21:28 17 | 07:49 (4) | 22:13 | 22:11 | 21:19 43 | 08:13 (4) | 20:04 29 | 19:24 (3) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (4) | 05:32 | 07:37 (4) | 04:53 | 05:08 | 06:00 | 07:29 (4) | 06:59 | 18:55 (3) | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 41 | 08:08 (4) | 21:30 8 | 07:45 (4) | 22:14 | 22:10 | 21:17 45 | 08:14 (4) | 20:01 28 | 19:23 (3) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 07:25 (4) | 05:30 | | 04:53 | 05:09 | 06:02 | 07:28 (4) | 07:00 | 18:55 (3) | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 43 | 08:08 (4) | 21:32 | | 22:15 | 22:09 | 21:15 45 | 08:13 (4) | 19:59 28 | 19:23 (3) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 07:24 (4) | 05:28 | | 04:53 | 05:11 | 06:04 | 07:27 (4) | 07:02 | 18:55 (3) | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 45 | 08:09 (4) | 21:33 | | 22:16 | 22:08 | 21:13 47 | 08:14 (4) | 19:56 27 | 19:22 (3) | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 07:24 (4) | 05:27 | | 04:52 | 05:12 | 06:06 | 07:27 (4) | 07:04 | 18:56 (3) | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 46 | 08:10 (4) | 21:35 | | 22:16 | 22:07 | 21:10 48 | 08:15 (4) | 19:53 26 | 19:22 (3) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:22 (4) | 05:25 | | 04:52 | 05:13 | 06:07 | 07:27 (4) | 07:06 | 18:56 (3) | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 48 | 08:10 (4) | 21:37 | | 22:17 | 22:05 | 21:08 48 | 08:15 (4) | 19:51 25 | 19:21 (3) | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 07:22 (4) | 05:23 | | 04:52 | 05:15 | 06:09 | 07:25 (4) | 07:08 | 18:57 (3) | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 48 | 08:10 (4) | 21:39 | | 22:17 | 22:04 | 21:06 50 | 08:15 (4) | 19:48 22 | 19:19 (3) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 07:21 (4) | 05:21 | | 04:52 | 05:16 | 06:11 | 07:25 (4) | 07:10 | 18:57 (3) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 49 | 08:10 (4) | 21:41 | | 22:18 | 22:03 | 21:03 50 | 08:15 (4) | 19:46 19 | 19:16 (3) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 07:20 (4) | 05:20 | | 04:52 | 05:18 | 06:13 | 07:25 (4) | 07:12 | 18:59 (3) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 50 | 08:10 (4) | 21:42 | | 22:18 | 22:01 | 21:01 50 | 08:15 (4) | 19:43 15 | 19:14 (3) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:20 (4) | 05:18 | | 04:52 | 05:19 | 06:15 | 07:25 (4) | 07:14 | 19:02 (3) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 51 | 08:11 (4) | 21:44 | | 22:19 | 22:00 | 20:59 50 | 08:15 (4) | 19:41 9 | 19:11 (3) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:19 (4) | 05:16 | | 04:52 | 05:21 | 06:17 | 07:25 (4) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 51 | 08:10 (4) | 21:46 | | 22:19 | 21:59 | 20:56 50 | 08:15 (4) | 19:38 | | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 07:19 (4) | 05:15 | | 04:52 | 05:22 | 06:19 | 07:24 (4) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 51 | 08:10 (4) | 21:47 | | 22:19 | 21:57 | 20:54 50 | 08:14 (4) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:17 (3) | 06:13 | 07:19 (4) | 05:13 | | 04:53 | 05:24 | 06:21 | 07:24 (4) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 6 18:23 (3) | 20:53 51 | 08:10 (4) | 21:49 | | 22:19 | 21:56 | 20:52 50 | 08:14 (4) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 18:13 (3) | 06:11 | 07:19 (4) | 05:12 | | 04:53 | 05:26 | 06:23 | 07:24 (4) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 14 18:27 (3) | 20:55 51 | 08:10 (4) | 21:51 | | 22:19 | 21:54 | 20:49 50 | 08:14 (4) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:10 (3) | 06:09 | 07:19 (4) | 05:10 | | 04:53 | 05:27 | 06:24 | 07:24 (4) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 18 18:28 (3) | 20:57 49 | 08:08 (4) | 21:52 | | 22:19 | 21:52 | 20:47 50 | 08:14 (4) | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 18:09 (3) | 06:06 | 07:19 (4) | 05:09 | | 04:54 | 05:29 | 06:26 | 07:25 (4) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 22 18:31 (3) | 20:59 49 | 08:08 (4) | 21:54 | | 22:19 | 21:51 | 20:44 48 | 08:13 (4) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 18:07 (3) | 06:04 | 07:19 (4) | 05:08 | | 04:54 | 05:31 | 06:28 | 07:24 (4) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 24 18:31 (3) | 21:01 49 | 08:08 (4) | 21:55 | | 22:19 | 21:49 | 20:42 48 | 08:12 (4) | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 18:05 (3) | 06:02 | 07:20 (4) | 05:06 | | 04:55 | 05:33 | 06:30 | 07:25 (4) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 26 18:31 (3) | 21:03 47 | 08:07 (4) | 21:57 | | 22:19 | 21:47 | 20:39 46 | 08:11 (4) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 19:05 (3) | 05:59 | 07:20 (4) | 05:05 | | 04:55 | 05:34 | 06:32 | 07:25 (4) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 27 19:32 (3) | 21:05 47 | 08:07 (4) | 21:58 | | 22:19 | 21:45 | 20:37 45 | 08:10 (4) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 19:04 (3) | 05:57 | 07:20 (4) | 05:04 | | 04:56 | 05:36 | 06:34 | 07:26 (4) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 28 19:32 (3) | 21:07 46 | 08:06 (4) | 22:00 | | 22:18 | 21:44 | 20:34 43 | 08:09 (4) | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 19:04 (3) | | | 05:03 | | | 05:38 | 06:36 | 07:27 (4) | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 28 19:32 (3) | | | 22:01 | | | 21:42 | 20:32 41 | 08:08 (4) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 193 | 1323 | 371 | | | 1295 | 611 | | | |
| Sun reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Total reduction | | | 0,34 | 0,39 | 0,51 | | | 0,51 | 0,40 | | | |
| Total, real | | | 66 | 519 | 191 | | | 664 | 242 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | | 07:08 | | 19:25 (3) | 05:55 | | 06:52 (4) | 05:02 | | 06:35 (4) |
| | 16:14 | 17:08 | 18:07 | | | 20:10 | 17 | 19:42 (3) | 21:09 | 32 | 07:24 (4) | 22:02 | 65 | 07:40 (4) |
| 2 | 09:01 | 08:26 | 07:24 | | | 07:05 | | 19:24 (3) | 05:53 | | 06:50 (4) | 05:01 | | 06:35 (4) |
| | 16:15 | 17:10 | 18:09 | | | 20:12 | 20 | 19:44 (3) | 21:11 | 36 | 07:26 (4) | 22:04 | 65 | 07:40 (4) |
| 3 | 09:00 | 08:24 | 07:22 | | | 07:03 | | 19:22 (3) | 05:51 | | 06:48 (4) | 05:00 | | 06:36 (4) |
| | 16:16 | 17:12 | 18:11 | | | 20:13 | 24 | 19:46 (3) | 21:13 | 40 | 07:28 (4) | 22:05 | 65 | 07:41 (4) |
| 4 | 09:00 | 08:22 | 07:19 | | | 07:00 | | 19:22 (3) | 05:48 | | 06:46 (4) | 04:59 | | 06:36 (4) |
| | 16:17 | 17:14 | 18:14 | | | 20:15 | 24 | 19:46 (3) | 21:14 | 43 | 07:29 (4) | 22:06 | 65 | 07:41 (4) |
| 5 | 09:00 | 08:20 | 07:17 | | | 06:58 | | 19:21 (3) | 05:46 | | 06:45 (4) | 04:58 | | 06:36 (4) |
| | 16:19 | 17:17 | 18:16 | | | 20:17 | 25 | 19:46 (3) | 21:16 | 45 | 07:30 (4) | 22:07 | 65 | 07:41 (4) |
| 6 | 08:59 | 08:18 | 07:14 | | | 06:55 | | 19:21 (3) | 05:44 | | 06:43 (4) | 04:57 | | 06:35 (4) |
| | 16:20 | 17:19 | 18:18 | | | 20:19 | 25 | 19:46 (3) | 21:18 | 48 | 07:31 (4) | 22:08 | 65 | 07:40 (4) |
| 7 | 08:59 | 08:16 | 07:12 | | | 06:53 | | 19:20 (3) | 05:42 | | 06:42 (4) | 04:56 | | 06:36 (4) |
| | 16:22 | 17:21 | 18:20 | | | 20:21 | 25 | 19:45 (3) | 21:20 | 50 | 07:32 (4) | 22:10 | 65 | 07:41 (4) |
| 8 | 08:58 | 08:14 | 07:09 | | | 06:50 | | 19:21 (3) | 05:40 | | 06:41 (4) | 04:56 | | 06:36 (4) |
| | 16:23 | 17:23 | 18:22 | | | 20:23 | 24 | 19:45 (3) | 21:22 | 52 | 07:33 (4) | 22:11 | 65 | 07:41 (4) |
| 9 | 08:57 | 08:12 | 07:07 | | | 06:48 | | 19:20 (3) | 05:38 | | 06:40 (4) | 04:55 | | 06:37 (4) |
| | 16:25 | 17:25 | 18:24 | | | 20:25 | 24 | 19:44 (3) | 21:24 | 54 | 07:34 (4) | 22:12 | 64 | 07:41 (4) |
| 10 | 08:57 | 08:10 | 07:04 | | | 06:45 | | 19:21 (3) | 05:36 | | 06:39 (4) | 04:54 | | 06:36 (4) |
| | 16:26 | 17:27 | 18:26 | | | 20:27 | 23 | 19:44 (3) | 21:26 | 55 | 07:34 (4) | 22:12 | 65 | 07:41 (4) |
| 11 | 08:56 | 08:08 | 07:02 | | | 06:42 | | 19:21 (3) | 05:34 | | 06:38 (4) | 04:54 | | 06:37 (4) |
| | 16:28 | 17:29 | 18:28 | | | 20:29 | 21 | 19:42 (3) | 21:28 | 57 | 07:35 (4) | 22:13 | 64 | 07:41 (4) |
| 12 | 08:55 | 08:06 | 06:59 | | | 06:40 | | 19:23 (3) | 05:32 | | 06:38 (4) | 04:53 | | 06:38 (4) |
| | 16:29 | 17:31 | 18:30 | | | 20:31 | 18 | 19:41 (3) | 21:30 | 58 | 07:36 (4) | 22:14 | 64 | 07:42 (4) |
| 13 | 08:54 | 08:04 | 06:57 | | | 06:38 | | 19:24 (3) | 05:30 | | 06:37 (4) | 04:53 | | 06:37 (4) |
| | 16:31 | 17:34 | 18:32 | | | 20:33 | 14 | 19:38 (3) | 21:32 | 59 | 07:36 (4) | 22:15 | 64 | 07:41 (4) |
| 14 | 08:53 | 08:02 | 06:54 | | | 06:35 | | 19:26 (3) | 05:28 | | 06:36 (4) | 04:53 | | 06:38 (4) |
| | 16:33 | 17:36 | 18:34 | | | 20:35 | 10 | 19:36 (3) | 21:33 | 60 | 07:36 (4) | 22:16 | 64 | 07:42 (4) |
| 15 | 08:52 | 07:59 | 06:52 | | | 06:33 | | | 05:27 | | 06:37 (4) | 04:52 | | 06:38 (4) |
| | 16:35 | 17:38 | 18:36 | | | 20:37 | | | 21:35 | 60 | 07:37 (4) | 22:16 | 64 | 07:42 (4) |
| 16 | 08:51 | 07:57 | 06:49 | | | 06:30 | | | 05:25 | | 06:36 (4) | 04:52 | | 06:38 (4) |
| | 16:36 | 17:40 | 18:38 | | | 20:39 | | | 21:37 | 61 | 07:37 (4) | 22:17 | 64 | 07:42 (4) |
| 17 | 08:50 | 07:55 | 06:46 | | | 06:28 | | | 05:23 | | 06:36 (4) | 04:52 | | 06:39 (4) |
| | 16:38 | 17:42 | 18:40 | | | 20:41 | | | 21:39 | 62 | 07:38 (4) | 22:17 | 63 | 07:42 (4) |
| 18 | 08:49 | 07:53 | 06:44 | | | 06:25 | | | 05:21 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:40 | 17:44 | 18:42 | | | 20:43 | | | 21:41 | 63 | 07:38 (4) | 22:18 | 64 | 07:43 (4) |
| 19 | 08:48 | 07:50 | 06:41 | | | 06:23 | | | 05:20 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:42 | 17:46 | 18:44 | | | 20:45 | | | 21:42 | 64 | 07:39 (4) | 22:18 | 64 | 07:43 (4) |
| 20 | 08:46 | 07:48 | 06:39 | | | 06:20 | | | 05:18 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:44 | 17:48 | 18:46 | | | 20:47 | | | 21:44 | 64 | 07:39 (4) | 22:19 | 64 | 07:43 (4) |
| 21 | 08:45 | 07:46 | 06:36 | | | 06:18 | | | 05:16 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:46 | 17:51 | 18:48 | | | 20:49 | | | 21:46 | 64 | 07:39 (4) | 22:19 | 64 | 07:43 (4) |
| 22 | 08:44 | 07:43 | 06:34 | | | 06:16 | | | 05:15 | | 06:34 (4) | 04:52 | | 06:40 (4) |
| | 16:48 | 17:53 | 18:50 | | | 20:51 | | | 21:47 | 65 | 07:39 (4) | 22:19 | 64 | 07:44 (4) |
| 23 | 08:42 | 07:41 | 06:31 | | | 06:13 | | | 05:13 | | 06:34 (4) | 04:53 | | 06:40 (4) |
| | 16:50 | 17:55 | 18:52 | | | 20:53 | | | 21:49 | 65 | 07:39 (4) | 22:19 | 64 | 07:44 (4) |
| 24 | 08:41 | 07:39 | 06:28 | | | 06:11 | | | 05:12 | | 06:35 (4) | 04:53 | | 06:40 (4) |
| | 16:52 | 17:57 | 18:54 | | | 20:55 | | | 21:51 | 65 | 07:40 (4) | 22:19 | 64 | 07:44 (4) |
| 25 | 08:39 | 07:36 | 06:26 | | | 06:09 | | | 05:10 | | 06:34 (4) | 04:53 | | 06:41 (4) |
| | 16:54 | 17:59 | 18:56 | | | 20:57 | | | 21:52 | 65 | 07:39 (4) | 22:19 | 63 | 07:44 (4) |
| 26 | 08:38 | 07:34 | 06:23 | | | 06:06 | | | 05:09 | | 06:34 (4) | 04:54 | | 06:40 (4) |
| | 16:56 | 18:01 | 18:58 | | | 20:59 | | | 21:54 | 65 | 07:39 (4) | 22:19 | 64 | 07:44 (4) |
| 27 | 08:36 | 07:32 | 06:21 | | | 06:04 | | | 05:08 | | 06:34 (4) | 04:54 | | 06:41 (4) |
| | 16:58 | 18:03 | 19:00 | | | 21:01 | | | 21:55 | 66 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 28 | 08:35 | 07:29 | 06:18 | | | 06:02 | | 07:03 (4) | 05:06 | | 06:34 (4) | 04:55 | | 06:41 (4) |
| | 17:00 | 18:05 | 19:02 | | | 21:03 | 10 | 07:13 (4) | 21:57 | 66 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 29 | 08:33 | | 07:16 | | | 05:59 | | 06:58 (4) | 05:05 | | 06:35 (4) | 04:55 | | 06:41 (4) |
| | 17:02 | | 20:04 | | | 21:05 | 21 | 07:19 (4) | 21:58 | 65 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 30 | 08:31 | | 07:13 | | 19:29 (3) | 05:57 | | 06:54 (4) | 05:04 | | 06:35 (4) | 04:56 | | 06:41 (4) |
| | 17:04 | | 20:06 | 9 | 19:38 (3) | 21:07 | 28 | 07:22 (4) | 22:00 | 65 | 07:40 (4) | 22:18 | 64 | 07:45 (4) |
| 31 | 08:29 | | 07:10 | | 19:27 (3) | | | | 05:03 | | 06:35 (4) | | | |
| | 17:06 | | 20:08 | 13 | 19:40 (3) | | | | 22:01 | 65 | 07:40 (4) | | | |
| Potential sun hours | 242 | 269 | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | 22 | | | 353 | | | 1779 | | | 1927 | |
| Sun reduction | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,95 | | | 0,95 | |
| Total reduction | | | | 0,34 | | | 0,39 | | | 0,49 | | | 0,46 | |
| Total, real | | | | 8 | | | 138 | | | 876 | | | 887 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:41 (4) | 05:40 | | 06:49 (4) | 06:38 | | 19:20 (3) | 07:35 | | 07:37 | 08:35 |
| | 22:18 | 65 | 07:46 (4) | 21:40 | 57 | 07:46 (4) | 20:29 | 21 | 19:41 (3) | 19:12 | | 16:58 | 16:10 |
| 2 | 04:57 | | 06:42 (4) | 05:41 | | 06:49 (4) | 06:40 | | 19:19 (3) | 07:37 | | 07:39 | 08:37 |
| | 22:18 | 64 | 07:46 (4) | 21:38 | 56 | 07:45 (4) | 20:27 | 23 | 19:42 (3) | 19:09 | | 16:56 | 16:09 |
| 3 | 04:58 | | 06:42 (4) | 05:43 | | 06:50 (4) | 06:42 | | 19:18 (3) | 07:38 | | 07:41 | 08:38 |
| | 22:17 | 65 | 07:47 (4) | 21:36 | 54 | 07:44 (4) | 20:24 | 24 | 19:42 (3) | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | | 06:41 (4) | 05:45 | | 06:51 (4) | 06:43 | | 19:18 (3) | 07:40 | | 07:43 | 08:40 |
| | 22:17 | 65 | 07:46 (4) | 21:34 | 53 | 07:44 (4) | 20:22 | 24 | 19:42 (3) | 19:04 | | 16:51 | 16:07 |
| 5 | 05:00 | | 06:42 (4) | 05:47 | | 06:52 (4) | 06:45 | | 19:17 (3) | 07:42 | | 07:45 | 08:41 |
| | 22:16 | 64 | 07:46 (4) | 21:32 | 51 | 07:43 (4) | 20:19 | 25 | 19:42 (3) | 19:02 | | 16:49 | 16:07 |
| 6 | 05:01 | | 06:42 (4) | 05:49 | | 06:52 (4) | 06:47 | | 19:16 (3) | 07:44 | | 07:47 | 08:43 |
| | 22:15 | 65 | 07:47 (4) | 21:30 | 49 | 07:41 (4) | 20:17 | 25 | 19:41 (3) | 18:59 | | 16:47 | 16:06 |
| 7 | 05:02 | | 06:42 (4) | 05:51 | | 06:53 (4) | 06:49 | | 19:16 (3) | 07:46 | | 07:49 | 08:44 |
| | 22:15 | 65 | 07:47 (4) | 21:28 | 47 | 07:40 (4) | 20:14 | 25 | 19:41 (3) | 18:57 | | 16:45 | 16:06 |
| 8 | 05:03 | | 06:42 (4) | 05:52 | | 06:55 (4) | 06:51 | | 19:16 (3) | 07:48 | | 07:51 | 08:46 |
| | 22:14 | 65 | 07:47 (4) | 21:26 | 44 | 07:39 (4) | 20:12 | 25 | 19:41 (3) | 18:54 | | 16:43 | 16:05 |
| 9 | 05:04 | | 06:42 (4) | 05:54 | | 06:55 (4) | 06:53 | | 19:17 (3) | 07:50 | | 07:53 | 08:47 |
| | 22:13 | 65 | 07:47 (4) | 21:24 | 42 | 07:37 (4) | 20:09 | 23 | 19:40 (3) | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | | 06:42 (4) | 05:56 | | 06:57 (4) | 06:55 | | 19:17 (3) | 07:52 | | 07:55 | 08:48 |
| | 22:12 | 66 | 07:48 (4) | 21:21 | 39 | 07:36 (4) | 20:06 | 21 | 19:38 (3) | 18:49 | | 16:40 | 16:04 |
| 11 | 05:07 | | 06:43 (4) | 05:58 | | 06:59 (4) | 06:57 | | 19:17 (3) | 07:54 | | 07:57 | 08:49 |
| | 22:11 | 66 | 07:49 (4) | 21:19 | 35 | 07:34 (4) | 20:04 | 17 | 19:34 (3) | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | | 06:43 (4) | 06:00 | | 07:01 (4) | 06:59 | | 19:18 (3) | 07:56 | | 07:59 | 08:51 |
| | 22:10 | 66 | 07:49 (4) | 21:17 | 31 | 07:32 (4) | 20:01 | 14 | 19:32 (3) | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | | 06:43 (4) | 06:02 | | 07:03 (4) | 07:00 | | 19:20 (3) | 07:58 | | 08:01 | 08:52 |
| | 22:09 | 66 | 07:49 (4) | 21:15 | 26 | 07:29 (4) | 19:59 | 9 | 19:29 (3) | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | | 06:43 (4) | 06:04 | | 07:06 (4) | 07:02 | | 19:24 (3) | 08:00 | | 08:03 | 08:53 |
| | 22:08 | 66 | 07:49 (4) | 21:13 | 19 | 07:25 (4) | 19:56 | 3 | 19:27 (3) | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | | 06:43 (4) | 06:06 | | 07:13 (4) | 07:04 | | | 08:02 | | 08:05 | 08:54 |
| | 22:07 | 66 | 07:49 (4) | 21:10 | 5 | 07:18 (4) | 19:53 | | | 18:37 | | 16:31 | 16:04 |
| 16 | 05:13 | | 06:44 (4) | 06:07 | | | 07:06 | | | 08:04 | | 08:07 | 08:55 |
| | 22:05 | 65 | 07:49 (4) | 21:08 | | | 19:51 | | | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | | 06:44 (4) | 06:09 | | | 07:08 | | | 08:06 | | 08:09 | 08:55 |
| | 22:04 | 65 | 07:49 (4) | 21:06 | | | 19:48 | | | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | | 06:43 (4) | 06:11 | | | 07:10 | | | 08:08 | | 08:11 | 08:56 |
| | 22:03 | 66 | 07:49 (4) | 21:03 | | | 19:46 | | | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | | 06:44 (4) | 06:13 | | | 07:12 | | | 08:10 | | 08:13 | 08:57 |
| | 22:01 | 65 | 07:49 (4) | 21:01 | | | 19:43 | | | 18:27 | | 16:24 | 16:04 |
| 20 | 05:19 | | 06:44 (4) | 06:15 | | | 07:14 | | | 08:12 | | 08:15 | 08:58 |
| | 22:00 | 65 | 07:49 (4) | 20:59 | | | 19:41 | | | 18:25 | | 16:23 | 16:04 |
| 21 | 05:21 | | 06:45 (4) | 06:17 | | | 07:15 | | | 08:14 | | 08:17 | 08:58 |
| | 21:59 | 65 | 07:50 (4) | 20:56 | | | 19:38 | | | 18:22 | | 16:22 | 16:05 |
| 22 | 05:22 | | 06:45 (4) | 06:19 | | | 07:17 | | | 08:16 | | 08:19 | 08:59 |
| | 21:57 | 64 | 07:49 (4) | 20:54 | | | 19:35 | | | 18:20 | | 16:20 | 16:05 |
| 23 | 05:24 | | 06:45 (4) | 06:21 | | | 07:19 | | | 08:18 | | 08:21 | 08:59 |
| | 21:56 | 64 | 07:49 (4) | 20:52 | | | 19:33 | | | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | | 06:45 (4) | 06:23 | | | 07:21 | | | 08:20 | | 08:23 | 09:00 |
| | 21:54 | 64 | 07:49 (4) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | 16:06 |
| 25 | 05:27 | | 06:46 (4) | 06:24 | | | 07:23 | | | 07:22 | | 08:25 | 09:00 |
| | 21:52 | 63 | 07:49 (4) | 20:47 | | | 19:28 | | | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | | 06:46 (4) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | 09:00 |
| | 21:51 | 62 | 07:48 (4) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | | 06:47 (4) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | 09:01 |
| | 21:49 | 61 | 07:48 (4) | 20:42 | | | 19:22 | | | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | | 06:46 (4) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | 09:01 |
| | 21:47 | 62 | 07:48 (4) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | 16:09 |
| 29 | 05:34 | | 06:47 (4) | 06:32 | | 19:27 (3) | 07:31 | | | 07:30 | | 08:32 | 09:01 |
| | 21:45 | 61 | 07:48 (4) | 20:37 | 10 | 19:37 (3) | 19:17 | | | 17:04 | | 16:12 | 16:10 |
| 30 | 05:36 | | 06:48 (4) | 06:34 | | 19:24 (3) | 07:33 | | | 07:32 | | 08:33 | 09:01 |
| | 21:44 | 59 | 07:47 (4) | 20:34 | 15 | 19:39 (3) | 19:15 | | | 17:02 | | 16:11 | 16:11 |
| 31 | 05:38 | | 06:48 (4) | 06:36 | | 19:23 (3) | | | | 07:35 | | | 09:01 |
| | 21:42 | 58 | 07:46 (4) | 20:32 | 18 | 19:41 (3) | | | | 17:00 | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | 224 |
| Total, worst case | | 1988 | | | 651 | | | 279 | | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,95 | | | 0,96 | | | 1,00 | | | | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,40 | | | | | |
| Total, real | | 920 | | | 321 | | | 110 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | | 05:55 | | | 05:02 | | 05:59 (4) |
| | 16:14 | 17:08 | 18:07 | 20:10 | | | 21:09 | | | 22:02 | 38 | 06:37 (4) |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | | 05:53 | | | 05:01 | | 05:58 (4) |
| | 16:15 | 17:10 | 18:09 | 20:12 | | | 21:11 | | | 22:04 | 39 | 06:37 (4) |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | | 05:51 | | | 05:00 | | 05:58 (4) |
| | 16:16 | 17:12 | 18:11 | 20:13 | | | 21:13 | | | 22:05 | 41 | 06:39 (4) |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | | 05:48 | | | 04:59 | | 05:58 (4) |
| | 16:17 | 17:14 | 18:14 | 20:15 | | | 21:14 | | | 22:06 | 41 | 06:39 (4) |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | | 05:46 | | | 04:58 | | 05:57 (4) |
| | 16:19 | 17:17 | 18:16 | 20:17 | | | 21:16 | | | 22:07 | 43 | 06:40 (4) |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | | 05:44 | | | 04:57 | | 05:57 (4) |
| | 16:20 | 17:19 | 18:18 | 20:19 | | | 21:18 | | | 22:08 | 43 | 06:40 (4) |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | | 05:42 | | | 04:56 | | 05:57 (4) |
| | 16:22 | 17:21 | 18:20 | 20:21 | | | 21:20 | | | 22:10 | 44 | 06:41 (4) |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | | 05:40 | | | 04:56 | | 05:56 (4) |
| | 16:23 | 17:23 | 18:22 | 20:23 | | | 21:22 | | | 22:11 | 45 | 06:41 (4) |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 19:50 (3) | 05:38 | | | 04:55 | | 05:57 (4) |
| | 16:25 | 17:25 | 18:24 | 20:25 | 7 | 19:57 (3) | 21:24 | | | 22:12 | 45 | 06:42 (4) |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 19:48 (3) | 05:36 | | | 04:54 | | 05:56 (4) |
| | 16:26 | 17:27 | 18:26 | 20:27 | 11 | 19:59 (3) | 21:26 | | | 22:12 | 46 | 06:42 (4) |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 19:45 (3) | 05:34 | | | 04:54 | | 05:56 (4) |
| | 16:28 | 17:29 | 18:28 | 20:29 | 16 | 20:01 (3) | 21:28 | | | 22:13 | 47 | 06:43 (4) |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 19:44 (3) | 05:32 | | | 04:53 | | 05:57 (4) |
| | 16:29 | 17:32 | 18:30 | 20:31 | 19 | 20:03 (3) | 21:30 | | | 22:14 | 47 | 06:44 (4) |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 19:42 (3) | 05:30 | | | 04:53 | | 05:56 (4) |
| | 16:31 | 17:34 | 18:32 | 20:33 | 22 | 20:04 (3) | 21:32 | | | 22:15 | 47 | 06:43 (4) |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | 19:42 (3) | 05:28 | | | 04:53 | | 05:56 (4) |
| | 16:33 | 17:36 | 18:34 | 20:35 | 24 | 20:06 (3) | 21:33 | | | 22:16 | 48 | 06:44 (4) |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 19:41 (3) | 05:27 | | | 04:52 | | 05:56 (4) |
| | 16:35 | 17:38 | 18:36 | 20:37 | 25 | 20:06 (3) | 21:35 | | | 22:16 | 48 | 06:44 (4) |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 19:40 (3) | 05:25 | | | 04:52 | | 05:57 (4) |
| | 16:36 | 17:40 | 18:38 | 20:39 | 26 | 20:06 (3) | 21:37 | | | 22:17 | 48 | 06:45 (4) |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 19:40 (3) | 05:23 | | | 04:52 | | 05:57 (4) |
| | 16:38 | 17:42 | 18:40 | 20:41 | 26 | 20:06 (3) | 21:39 | | | 22:17 | 48 | 06:45 (4) |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 19:39 (3) | 05:21 | | | 04:52 | | 05:57 (4) |
| | 16:40 | 17:44 | 18:42 | 20:43 | 26 | 20:05 (3) | 21:41 | | | 22:18 | 48 | 06:45 (4) |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 19:40 (3) | 05:20 | | | 04:52 | | 05:57 (4) |
| | 16:42 | 17:46 | 18:44 | 20:45 | 25 | 20:05 (3) | 21:42 | | | 22:18 | 49 | 06:46 (4) |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 19:40 (3) | 05:18 | | | 04:52 | | 05:57 (4) |
| | 16:44 | 17:49 | 18:46 | 20:47 | 25 | 20:05 (3) | 21:44 | | | 22:19 | 49 | 06:46 (4) |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 19:40 (3) | 05:16 | | | 04:52 | | 05:57 (4) |
| | 16:46 | 17:51 | 18:48 | 20:49 | 23 | 20:03 (3) | 21:46 | | | 22:19 | 49 | 06:46 (4) |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 19:41 (3) | 05:15 | | | 04:52 | | 05:58 (4) |
| | 16:48 | 17:53 | 18:50 | 20:51 | 22 | 20:03 (3) | 21:47 | | | 22:19 | 49 | 06:47 (4) |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 19:42 (3) | 05:13 | | 06:11 (4) | 04:53 | | 05:58 (4) |
| | 16:50 | 17:55 | 18:52 | 20:53 | 20 | 20:02 (3) | 21:49 | 12 | 06:23 (4) | 22:19 | 49 | 06:47 (4) |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | 19:43 (3) | 05:12 | | 06:08 (4) | 04:53 | | 05:58 (4) |
| | 16:52 | 17:57 | 18:54 | 20:55 | 18 | 20:01 (3) | 21:51 | 18 | 06:26 (4) | 22:19 | 48 | 06:46 (4) |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | 19:44 (3) | 05:10 | | 06:05 (4) | 04:53 | | 05:59 (4) |
| | 16:54 | 17:59 | 18:56 | 20:57 | 14 | 19:58 (3) | 21:52 | 23 | 06:28 (4) | 22:19 | 48 | 06:47 (4) |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 19:46 (3) | 05:09 | | 06:04 (4) | 04:54 | | 05:59 (4) |
| | 16:56 | 18:01 | 18:58 | 20:59 | 9 | 19:55 (3) | 21:54 | 26 | 06:30 (4) | 22:19 | 48 | 06:47 (4) |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | | 05:08 | | 06:03 (4) | 04:54 | | 05:59 (4) |
| | 16:58 | 18:03 | 19:00 | 21:01 | | | 21:55 | 28 | 06:31 (4) | 22:19 | 49 | 06:48 (4) |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | | 05:06 | | 06:02 (4) | 04:55 | | 05:59 (4) |
| | 17:00 | 18:05 | 19:02 | 21:03 | | | 21:57 | 31 | 06:33 (4) | 22:19 | 48 | 06:47 (4) |
| 29 | 08:33 | | 07:16 | 05:59 | | | 05:05 | | 06:01 (4) | 04:55 | | 06:00 (4) |
| | 17:02 | | 20:04 | 21:05 | | | 21:58 | 33 | 06:34 (4) | 22:19 | 48 | 06:48 (4) |
| 30 | 08:31 | | 07:13 | 05:57 | | | 05:04 | | 06:00 (4) | 04:56 | | 06:00 (4) |
| | 17:04 | | 20:06 | 21:07 | | | 22:00 | 35 | 06:35 (4) | 22:18 | 47 | 06:47 (4) |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:59 (4) | | | |
| | 17:06 | | 20:08 | | | | 22:01 | 37 | 06:36 (4) | | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | | 358 | | | 243 | | | 1387 | |
| Sun reduction | | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | 0,99 | | | 0,86 | | | 0,86 | |
| Total reduction | | | | | 0,39 | | | 0,45 | | | 0,42 | |
| Total, real | | | | | 139 | | | 109 | | | 579 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:01 (4) | 05:40 | | | 06:38 | | 19:44 (3) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 46 | 06:47 (4) | 21:40 | | | 20:29 | 16 | 20:00 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | | 06:01 (4) | 05:41 | | | 06:40 | | 19:46 (3) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 46 | 06:47 (4) | 21:38 | | | 20:27 | 11 | 19:57 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 06:02 (4) | 05:43 | | | 06:42 | | 19:48 (3) | 07:38 | 07:41 | 08:38 |
| | 22:17 | 46 | 06:48 (4) | 21:36 | | | 20:24 | 7 | 19:55 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 06:02 (4) | 05:45 | | | 06:43 | | | 07:40 | 07:43 | 08:40 |
| | 22:17 | 45 | 06:47 (4) | 21:34 | | | 20:22 | | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 06:02 (4) | 05:47 | | | 06:45 | | | 07:42 | 07:45 | 08:41 |
| | 22:16 | 45 | 06:47 (4) | 21:32 | | | 20:19 | | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 06:03 (4) | 05:49 | | | 06:47 | | | 07:44 | 07:47 | 08:43 |
| | 22:15 | 43 | 06:46 (4) | 21:30 | | | 20:17 | | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 06:03 (4) | 05:51 | | | 06:49 | | | 07:46 | 07:49 | 08:44 |
| | 22:15 | 43 | 06:46 (4) | 21:28 | | | 20:14 | | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 06:04 (4) | 05:52 | | | 06:51 | | | 07:48 | 07:51 | 08:46 |
| | 22:14 | 42 | 06:46 (4) | 21:26 | | | 20:12 | | | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | | 06:05 (4) | 05:54 | | | 06:53 | | | 07:50 | 07:53 | 08:47 |
| | 22:13 | 41 | 06:46 (4) | 21:24 | | | 20:09 | | | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 06:05 (4) | 05:56 | | | 06:55 | | | 07:52 | 07:55 | 08:48 |
| | 22:12 | 40 | 06:45 (4) | 21:21 | | | 20:06 | | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 06:07 (4) | 05:58 | | | 06:57 | | | 07:54 | 07:57 | 08:49 |
| | 22:11 | 39 | 06:46 (4) | 21:19 | | | 20:04 | | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:08 (4) | 06:00 | | | 06:59 | | | 07:56 | 07:59 | 08:51 |
| | 22:10 | 37 | 06:45 (4) | 21:17 | | | 20:01 | | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:08 (4) | 06:02 | | | 07:00 | | | 07:58 | 08:01 | 08:52 |
| | 22:09 | 36 | 06:44 (4) | 21:15 | | | 19:59 | | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:09 (4) | 06:04 | | | 07:02 | | | 08:00 | 08:03 | 08:53 |
| | 22:08 | 34 | 06:43 (4) | 21:13 | | | 19:56 | | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 06:10 (4) | 06:06 | | | 07:04 | | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 32 | 06:42 (4) | 21:10 | | | 19:53 | | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | | 06:12 (4) | 06:07 | | | 07:06 | | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 30 | 06:42 (4) | 21:08 | | | 19:51 | | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:13 (4) | 06:09 | | 19:52 (3) | 07:08 | | | 08:06 | 08:09 | 08:55 |
| | 22:04 | 27 | 06:40 (4) | 21:06 | 11 | 20:03 (3) | 19:48 | | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | | 06:14 (4) | 06:11 | | 19:50 (3) | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 22:03 | 24 | 06:38 (4) | 21:03 | 15 | 20:05 (3) | 19:46 | | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:17 (4) | 06:13 | | 19:48 (3) | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 22:01 | 20 | 06:37 (4) | 21:01 | 18 | 20:06 (3) | 19:43 | | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:19 (4) | 06:15 | | 19:47 (3) | 07:14 | | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 16 | 06:35 (4) | 20:59 | 21 | 20:08 (3) | 19:41 | | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:23 (4) | 06:17 | | 19:46 (3) | 07:16 | | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 8 | 06:31 (4) | 20:56 | 22 | 20:08 (3) | 19:38 | | | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | | | 06:19 | | 19:44 (3) | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | | 20:54 | 24 | 20:08 (3) | 19:35 | | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | | 06:21 | | 19:44 (3) | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | | 20:52 | 25 | 20:09 (3) | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | | 06:23 | | 19:43 (3) | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | | 20:49 | 26 | 20:09 (3) | 19:30 | | | 18:15 | 16:18 | 16:06 |
| 25 | 05:27 | | | 06:24 | | 19:43 (3) | 07:23 | | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | | 20:47 | 26 | 20:09 (3) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | | 06:26 | | 19:43 (3) | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | | 20:44 | 26 | 20:09 (3) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | | 19:42 (3) | 07:27 | | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 26 | 20:08 (3) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | | 19:42 (3) | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 25 | 20:07 (3) | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | | | 06:32 | | 19:43 (3) | 07:31 | | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 24 | 20:07 (3) | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | | | 06:34 | | 19:43 (3) | 07:33 | | | 07:32 | 08:33 | 09:01 |
| | 21:44 | | | 20:34 | 22 | 20:05 (3) | 19:15 | | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | | | 06:36 | | 19:44 (3) | | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 19 | 20:03 (3) | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | 740 | | | 330 | | | 34 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,86 | | | 0,99 | | | 0,99 | | | | |
| Total reduction | | 0,42 | | | 0,51 | | | 0,39 | | | | |
| Total, real | | 311 | | | 168 | | | 13 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | | 05:55 | | | 05:02 | | 06:11 (4) |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | | 21:09 | | | 22:02 | 53 | 07:04 (4) |
| 2 | 09:01 | | 08:26 | | 07:24 | | 07:05 | | 19:42 (3) | 05:53 | | | 05:01 | | 06:11 (4) |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 2 | 19:44 (3) | 21:11 | | | 22:04 | 54 | 07:05 (4) |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 19:37 (3) | 05:51 | | | 05:00 | | 06:11 (4) |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 9 | 19:46 (3) | 21:13 | | | 22:05 | 55 | 07:06 (4) |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 19:35 (3) | 05:48 | | | 04:59 | | 06:11 (4) |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 13 | 19:48 (3) | 21:14 | | | 22:06 | 56 | 07:07 (4) |
| 5 | 09:00 | | 08:20 | | 07:17 | | 06:58 | | 19:33 (3) | 05:46 | | | 04:58 | | 06:10 (4) |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | 16 | 19:49 (3) | 21:16 | | | 22:07 | 57 | 07:07 (4) |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 19:32 (3) | 05:44 | | | 04:57 | | 06:10 (4) |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | 20 | 19:52 (3) | 21:18 | | | 22:08 | 57 | 07:07 (4) |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | 19:31 (3) | 05:42 | | | 04:56 | | 06:10 (4) |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | 22 | 19:53 (3) | 21:20 | | | 22:10 | 58 | 07:08 (4) |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | 19:31 (3) | 05:40 | | | 04:56 | | 06:09 (4) |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | 23 | 19:54 (3) | 21:22 | | | 22:11 | 59 | 07:08 (4) |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:48 | | 19:30 (3) | 05:38 | | | 04:55 | | 06:10 (4) |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | 24 | 19:54 (3) | 21:24 | | | 22:12 | 59 | 07:09 (4) |
| 10 | 08:57 | | 08:10 | | 07:04 | | 06:45 | | 19:30 (3) | 05:36 | | | 04:54 | | 06:09 (4) |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | 24 | 19:54 (3) | 21:26 | | | 22:12 | 60 | 07:09 (4) |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 19:29 (3) | 05:34 | | | 04:54 | | 06:10 (4) |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | 24 | 19:53 (3) | 21:28 | | | 22:13 | 60 | 07:10 (4) |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 19:30 (3) | 05:32 | | | 04:53 | | 06:10 (4) |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | 23 | 19:53 (3) | 21:30 | | | 22:14 | 60 | 07:10 (4) |
| 13 | 08:54 | | 08:04 | | 06:57 | | 06:38 | | 19:29 (3) | 05:30 | | | 04:53 | | 06:09 (4) |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | 23 | 19:52 (3) | 21:32 | | | 22:15 | 61 | 07:10 (4) |
| 14 | 08:53 | | 08:02 | | 06:54 | | 06:35 | | 19:30 (3) | 05:28 | | | 04:53 | | 06:09 (4) |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | 21 | 19:51 (3) | 21:33 | | | 22:16 | 62 | 07:11 (4) |
| 15 | 08:52 | | 07:59 | | 06:52 | | 06:33 | | 19:31 (3) | 05:27 | | | 04:52 | | 06:10 (4) |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | 19 | 19:50 (3) | 21:35 | | | 22:16 | 61 | 07:11 (4) |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 19:32 (3) | 05:25 | | | 04:52 | | 06:10 (4) |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | 16 | 19:48 (3) | 21:37 | | | 22:17 | 61 | 07:11 (4) |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:28 | | 19:34 (3) | 05:23 | | | 04:52 | | 06:10 (4) |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | 12 | 19:46 (3) | 21:39 | | | 22:17 | 62 | 07:12 (4) |
| 18 | 08:49 | | 07:53 | | 06:44 | | 06:25 | | 19:37 (3) | 05:21 | | 06:29 (4) | 04:52 | | 06:10 (4) |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | 4 | 19:41 (3) | 21:41 | 16 | 06:45 (4) | 22:18 | 62 | 07:12 (4) |
| 19 | 08:48 | | 07:50 | | 06:41 | | 06:23 | | | 05:20 | | 06:26 (4) | 04:52 | | 06:10 (4) |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | | 21:42 | 23 | 06:49 (4) | 22:18 | 62 | 07:12 (4) |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:20 | | | 05:18 | | 06:23 (4) | 04:52 | | 06:10 (4) |
| | 16:44 | | 17:48 | | 18:46 | | 20:47 | | | 21:44 | 27 | 06:50 (4) | 22:19 | 62 | 07:12 (4) |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | | | 05:16 | | 06:21 (4) | 04:52 | | 06:10 (4) |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | | 21:46 | 32 | 06:53 (4) | 22:19 | 62 | 07:12 (4) |
| 22 | 08:44 | | 07:43 | | 06:34 | | 06:16 | | | 05:15 | | 06:19 (4) | 04:52 | | 06:11 (4) |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | | 21:47 | 35 | 06:54 (4) | 22:19 | 62 | 07:13 (4) |
| 23 | 08:42 | | 07:41 | | 06:31 | | 06:13 | | | 05:13 | | 06:18 (4) | 04:53 | | 06:11 (4) |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | | 21:49 | 38 | 06:56 (4) | 22:19 | 62 | 07:13 (4) |
| 24 | 08:41 | | 07:39 | | 06:28 | | 06:11 | | | 05:12 | | 06:17 (4) | 04:53 | | 06:11 (4) |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | | 21:51 | 40 | 06:57 (4) | 22:19 | 62 | 07:13 (4) |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:09 | | | 05:10 | | 06:15 (4) | 04:53 | | 06:12 (4) |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | | 21:52 | 43 | 06:58 (4) | 22:19 | 62 | 07:14 (4) |
| 26 | 08:38 | | 07:34 | | 06:23 | | 06:06 | | | 05:09 | | 06:15 (4) | 04:54 | | 06:12 (4) |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | | 21:54 | 44 | 06:59 (4) | 22:19 | 62 | 07:14 (4) |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:04 | | | 05:08 | | 06:14 (4) | 04:54 | | 06:13 (4) |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | | 21:55 | 46 | 07:00 (4) | 22:19 | 61 | 07:14 (4) |
| 28 | 08:34 | | 07:29 | | 06:18 | | 06:02 | | | 05:06 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | | 21:57 | 48 | 07:01 (4) | 22:19 | 61 | 07:14 (4) |
| 29 | 08:33 | | | | 07:16 | | 05:59 | | | 05:05 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:02 | | | | 20:04 | | 21:05 | | | 21:58 | 49 | 07:02 (4) | 22:19 | 61 | 07:14 (4) |
| 30 | 08:31 | | | | 07:13 | | 05:57 | | | 05:04 | | 06:12 (4) | 04:56 | | 06:13 (4) |
| | 17:04 | | | | 20:06 | | 21:07 | | | 22:00 | 51 | 07:03 (4) | 22:18 | 61 | 07:14 (4) |
| 31 | 08:29 | | | | 07:10 | | | | | 05:03 | | 06:12 (4) | | | |
| | 17:06 | | | | 20:08 | | | | | 22:01 | 52 | 07:04 (4) | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | | | | 295 | | | 544 | | | 1797 | | |
| Sun reduction | | | | | | | 0,39 | | | 0,52 | | | 0,48 | | |
| Oper. time red. | | | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | | | 1,00 | | | 0,89 | | | 0,89 | | |
| Total reduction | | | | | | | 0,39 | | | 0,46 | | | 0,43 | | |
| Total, real | | | | | | | 116 | | | 251 | | | 775 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:14 (4) | 05:40 | | | 06:38 | | 19:28 (3) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 60 | 07:14 (4) | 21:40 | | | 20:29 | 24 | 19:52 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 06:14 (4) | 05:41 | | | 06:40 | | 19:28 (3) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 60 | 07:14 (4) | 21:38 | | | 20:27 | 24 | 19:52 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 06:15 (4) | 05:43 | | | 06:42 | | 19:28 (3) | 07:38 | 07:41 | 08:38 |
| | 22:17 | 59 | 07:14 (4) | 21:36 | | | 20:24 | 24 | 19:52 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 06:15 (4) | 05:45 | | | 06:43 | | 19:28 (3) | 07:40 | 07:43 | 08:40 |
| | 22:17 | 58 | 07:13 (4) | 21:34 | | | 20:22 | 23 | 19:51 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 06:15 (4) | 05:47 | | | 06:45 | | 19:28 (3) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 58 | 07:13 (4) | 21:32 | | | 20:19 | 22 | 19:50 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 06:16 (4) | 05:49 | | | 06:47 | | 19:28 (3) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 57 | 07:13 (4) | 21:30 | | | 20:17 | 19 | 19:47 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 06:16 (4) | 05:51 | | | 06:49 | | 19:28 (3) | 07:46 | 07:49 | 08:44 |
| | 22:15 | 57 | 07:13 (4) | 21:28 | | | 20:14 | 17 | 19:45 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 06:17 (4) | 05:52 | | | 06:51 | | 19:29 (3) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 56 | 07:13 (4) | 21:26 | | | 20:12 | 13 | 19:42 (3) | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 06:17 (4) | 05:54 | | | 06:53 | | 19:31 (3) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 56 | 07:13 (4) | 21:24 | | | 20:09 | 9 | 19:40 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 06:18 (4) | 05:56 | | | 06:55 | | 19:34 (3) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 54 | 07:12 (4) | 21:21 | | | 20:06 | 4 | 19:38 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 06:19 (4) | 05:58 | | | 06:57 | | | 07:54 | 07:57 | 08:49 |
| | 22:11 | 54 | 07:13 (4) | 21:19 | | | 20:04 | | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:20 (4) | 06:00 | | | 06:59 | | | 07:56 | 07:59 | 08:51 |
| | 22:10 | 52 | 07:12 (4) | 21:17 | | | 20:01 | | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:21 (4) | 06:02 | | | 07:00 | | | 07:58 | 08:01 | 08:52 |
| | 22:09 | 51 | 07:12 (4) | 21:15 | | | 19:59 | | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:21 (4) | 06:04 | | | 07:02 | | | 08:00 | 08:03 | 08:53 |
| | 22:08 | 50 | 07:11 (4) | 21:13 | | | 19:56 | | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 06:22 (4) | 06:05 | | | 07:04 | | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 48 | 07:10 (4) | 21:10 | | | 19:53 | | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | | 06:23 (4) | 06:07 | | | 07:06 | | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 47 | 07:10 (4) | 21:08 | | | 19:51 | | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:24 (4) | 06:09 | | | 07:08 | | | 08:06 | 08:09 | 08:55 |
| | 22:04 | 45 | 07:09 (4) | 21:06 | | | 19:48 | | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | | 06:25 (4) | 06:11 | | | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 22:03 | 43 | 07:08 (4) | 21:03 | | | 19:46 | | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:26 (4) | 06:13 | | | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 22:01 | 42 | 07:08 (4) | 21:01 | | | 19:43 | | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:27 (4) | 06:15 | | | 07:14 | | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 39 | 07:06 (4) | 20:59 | | | 19:41 | | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:29 (4) | 06:17 | | | 07:15 | | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 36 | 07:05 (4) | 20:56 | | | 19:38 | | | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | | 06:30 (4) | 06:19 | | | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 34 | 07:04 (4) | 20:54 | | | 19:35 | | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:33 (4) | 06:21 | | | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 29 | 07:02 (4) | 20:52 | | | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:34 (4) | 06:23 | | | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 26 | 07:00 (4) | 20:49 | | | 19:30 | | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:37 (4) | 06:24 | | 19:40 (3) | 07:23 | | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 21 | 06:58 (4) | 20:47 | 5 | 19:45 (3) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:41 (4) | 06:26 | | 19:37 (3) | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 12 | 06:53 (4) | 20:44 | 12 | 19:49 (3) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | | 19:34 (3) | 07:27 | | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 16 | 19:50 (3) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | | 19:32 (3) | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 19 | 19:51 (3) | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | | | 06:32 | | 19:31 (3) | 07:31 | | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 21 | 19:52 (3) | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | | | 06:34 | | 19:30 (3) | 07:33 | | | 07:32 | 08:33 | 09:01 |
| | 21:44 | | | 20:34 | 22 | 19:52 (3) | 19:15 | | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | | | 06:36 | | 19:29 (3) | | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 24 | 19:53 (3) | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | 1204 | | | 119 | | | 179 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,89 | | | 1,00 | | | 1,00 | | | | |
| Total reduction | | 0,43 | | | 0,51 | | | 0,39 | | | | |
| Total, real | | 523 | | | 61 | | | 71 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 19:41 (3) | 05:55 | 05:02 | 04:57 | 05:40 | | 06:38 | 19:30 (3) | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 1 19:42 (3) | 21:09 | 22:02 | 22:18 | 21:40 | | 20:29 | 20 19:50 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:38 (3) | 05:53 | 05:01 | 04:57 | 05:41 | | 06:40 | 19:30 (3) | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 6 19:44 (3) | 21:11 | 22:04 | 22:18 | 21:38 | | 20:27 | 20 19:50 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:36 (3) | 05:51 | 05:00 | 04:58 | 05:43 | | 06:42 | 19:29 (3) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 10 19:46 (3) | 21:13 | 22:05 | 22:17 | 21:36 | | 20:24 | 22 19:51 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:35 (3) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 19:29 (3) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 13 19:48 (3) | 21:14 | 22:06 | 22:17 | 21:34 | | 20:22 | 22 19:51 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 19:33 (3) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 19:29 (3) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 16 19:49 (3) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 21 19:50 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 19:33 (3) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 19:28 (3) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 19 19:52 (3) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:17 | 19 19:47 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 19:32 (3) | 05:42 | 04:56 | 05:02 | 05:51 | | 06:49 | 19:28 (3) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21 19:53 (3) | 21:20 | 22:10 | 22:15 | 21:28 | | 20:14 | 17 19:45 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 19:32 (3) | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 19:29 (3) | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 22 19:54 (3) | 21:22 | 22:11 | 22:14 | 21:26 | | 20:12 | 13 19:42 (3) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 19:31 (3) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 19:30 (3) | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 22 19:53 (3) | 21:24 | 22:12 | 22:13 | 21:24 | | 20:09 | 10 19:40 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 19:32 (3) | 05:36 | 04:54 | 05:06 | 05:56 | | 06:55 | 19:31 (3) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 20 19:52 (3) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 7 19:38 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 19:31 (3) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:57 | 19:33 (3) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 20 19:51 (3) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 1 19:34 (3) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 19:33 (3) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:59 | | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 17 19:50 (3) | 21:30 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 19:33 (3) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 15 19:48 (3) | 21:32 | 22:15 | 22:09 | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 19:35 (3) | 05:28 | 04:53 | 05:11 | 06:04 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 12 19:47 (3) | 21:33 | 22:16 | 22:08 | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 19:39 (3) | 05:27 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 4 19:43 (3) | 21:35 | 22:16 | 22:07 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 05:18 | 04:52 | 05:19 | 06:15 | | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 22:19 | 21:59 | 20:56 | | 19:38 | | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 22:19 | 21:55 | 20:52 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 22:19 | 21:54 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 22:19 | 21:52 | 20:47 | | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 22:19 | 21:51 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 05:06 | 04:55 | 05:32 | 06:30 | 19:39 (3) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 | 5 19:44 (3) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 | 19:36 (3) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 22:19 | 21:45 | 20:37 | 12 19:48 (3) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 19:34 (3) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 22:18 | 21:43 | 20:34 | 15 19:49 (3) | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 19:32 (3) | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | 18 19:50 (3) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | | 218 | | | | | 50 | | 172 | | | |
| Sun reduction | | | | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Total reduction | | | | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | | 85 | | | | | 26 | | 68 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | | May | | | June | July | | | August | | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | | 05:55 | | 20:08 (3) | 05:02 | 04:57 | | | 05:40 | | 20:20 (3) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | | 21:09 | 26 | 20:34 (3) | 22:02 | 22:18 | | | 21:40 | 21 | 20:41 (3) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | | 05:53 | | 20:07 (3) | 05:01 | 04:58 | | | 05:41 | | 20:18 (3) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | | | 21:11 | 27 | 20:34 (3) | 22:04 | 22:18 | | | 21:38 | 23 | 20:41 (3) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | | 05:51 | | 20:07 (3) | 05:00 | 04:58 | | | 05:43 | | 20:18 (3) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | | 21:13 | 27 | 20:34 (3) | 22:05 | 22:17 | | | 21:36 | 24 | 20:42 (3) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | | 05:48 | | 20:07 (3) | 04:59 | 04:59 | | | 05:45 | | 20:18 (3) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | | | 21:14 | 27 | 20:34 (3) | 22:06 | 22:17 | | | 21:34 | 25 | 20:43 (3) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | | 05:46 | | 20:07 (3) | 04:58 | 05:00 | | | 05:47 | | 20:17 (3) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | | 21:16 | 27 | 20:34 (3) | 22:07 | 22:16 | | | 21:32 | 26 | 20:43 (3) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | | 05:44 | | 20:07 (3) | 04:57 | 05:01 | | | 05:49 | | 20:16 (3) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | | 21:18 | 27 | 20:34 (3) | 22:08 | 22:15 | | | 21:30 | 27 | 20:43 (3) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | | 05:42 | | 20:07 (3) | 04:56 | 05:02 | | | 05:51 | | 20:16 (3) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | | 21:20 | 26 | 20:33 (3) | 22:10 | 22:15 | | | 21:28 | 27 | 20:43 (3) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | | 05:40 | | 20:07 (3) | 04:56 | 05:03 | | | 05:52 | | 20:16 (3) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | | 21:22 | 26 | 20:33 (3) | 22:11 | 22:14 | | | 21:26 | 28 | 20:44 (3) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | | 05:38 | | 20:07 (3) | 04:55 | 05:04 | | | 05:54 | | 20:15 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | | 21:24 | 25 | 20:32 (3) | 22:12 | 22:13 | | | 21:24 | 28 | 20:43 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | | 05:36 | | 20:08 (3) | 04:54 | 05:06 | | | 05:56 | | 20:15 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | | 21:26 | 23 | 20:31 (3) | 22:12 | 22:12 | | | 21:21 | 28 | 20:43 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | | | 05:34 | | 20:08 (3) | 04:54 | 05:07 | | | 05:58 | | 20:16 (3) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | | 21:28 | 22 | 20:30 (3) | 22:13 | 22:11 | | | 21:19 | 27 | 20:43 (3) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | | 05:32 | | 20:10 (3) | 04:53 | 05:08 | | | 06:00 | | 20:16 (3) | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | | | 21:30 | 20 | 20:30 (3) | 22:14 | 22:10 | | | 21:17 | 27 | 20:43 (3) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | | 05:30 | | 20:11 (3) | 04:53 | 05:09 | | | 06:02 | | 20:16 (3) | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | | 21:32 | 18 | 20:29 (3) | 22:15 | 22:09 | | | 21:15 | 25 | 20:41 (3) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | | 05:28 | | 20:12 (3) | 04:53 | 05:11 | | | 06:04 | | 20:16 (3) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | | 21:33 | 15 | 20:27 (3) | 22:16 | 22:08 | | | 21:13 | 25 | 20:41 (3) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | | 05:27 | | 20:14 (3) | 04:52 | 05:12 | | | 06:06 | | 20:17 (3) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | | 21:35 | 12 | 20:26 (3) | 22:16 | 22:07 | | | 21:10 | 22 | 20:39 (3) | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | | 05:25 | | 20:16 (3) | 04:52 | 05:13 | | | 06:07 | | 20:18 (3) | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | | 21:37 | 7 | 20:23 (3) | 22:17 | 22:05 | | | 21:08 | 19 | 20:37 (3) | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | | 05:23 | | | 04:52 | 05:15 | | | 06:09 | | 20:18 (3) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | | 21:39 | | | 22:17 | 22:04 | | | 21:06 | 16 | 20:34 (3) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | | 05:21 | | | 04:52 | 05:16 | | | 06:11 | | 20:20 (3) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | | 21:41 | | | 22:18 | 22:03 | | | 21:03 | 12 | 20:32 (3) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | | 05:20 | | | 04:52 | 05:18 | | | 06:13 | | 20:23 (3) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | 21:42 | | | 22:18 | 22:01 | | | 21:01 | 7 | 20:30 (3) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | | 05:18 | | | 04:52 | 05:19 | | | 06:15 | | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | | | 21:44 | | | 22:19 | 22:00 | | | 20:59 | | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | | 05:16 | | | 04:52 | 05:21 | | | 06:17 | | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | | 21:46 | | | 22:19 | 21:59 | | | 20:56 | | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | | 05:15 | | | 04:52 | 05:23 | | | 06:19 | | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | | 21:47 | | | 22:19 | 21:57 | | | 20:54 | | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | | 05:13 | | | 04:53 | 05:24 | | | 06:21 | | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | | 21:49 | | | 22:19 | 21:55 | | | 20:52 | | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | 20:17 (3) | 05:12 | | | 04:53 | 05:26 | | | 06:23 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 8 | 20:25 (3) | 21:51 | | | 22:19 | 21:54 | | | 20:49 | | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | 20:13 (3) | 05:10 | | | 04:53 | 05:27 | | | 06:24 | | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 13 | 20:26 (3) | 21:52 | | | 22:19 | 21:52 | | | 20:47 | | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 20:12 (3) | 05:09 | | | 04:54 | 05:29 | | | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 16 | 20:28 (3) | 21:54 | | | 22:19 | 21:51 | | | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | 20:10 (3) | 05:08 | | | 04:54 | 05:31 | | | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 20 | 20:30 (3) | 21:55 | | | 22:19 | 21:49 | | | 20:42 | | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 20:09 (3) | 05:06 | | | 04:55 | 05:33 | | 20:25 (3) | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 23 | 20:32 (3) | 21:57 | | | 22:19 | 21:47 | 10 | 20:35 (3) | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 20:09 (3) | 05:05 | | | 04:55 | 05:34 | | 20:24 (3) | 06:32 | | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 24 | 20:33 (3) | 21:58 | | | 22:19 | 21:45 | 13 | 20:37 (3) | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 20:08 (3) | 05:04 | | | 04:56 | 05:36 | | 20:22 (3) | 06:34 | | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 26 | 20:34 (3) | 22:00 | | | 22:18 | 21:44 | 17 | 20:39 (3) | 20:34 | | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | | | 05:38 | | 20:21 (3) | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | | | | 21:42 | 19 | 20:40 (3) | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | | | 520 | 521 | | | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 130 | | | 355 | | | | 59 | | | 437 | | | | | |
| Sun reduction | | | | | 0,39 | | | 0,52 | | | | 0,49 | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,95 | | | 0,95 | | | | 0,95 | | | 0,95 | | | | | |
| Total reduction | | | | | 0,37 | | | 0,49 | | | | 0,46 | | | 0,49 | | | | | |
| Total, real | | | | | 48 | | | 174 | | | | 27 | | | 213 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 05:51 (4) | 04:57 | 05:57 (4) | 05:40 | 20:27 (3) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 61 | 20:46 (3) | 22:18 49 | 20:46 (3) | 21:40 31 | 20:58 (3) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 05:51 (4) | 04:58 | 05:57 (4) | 05:41 | 20:26 (3) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 60 | 20:46 (3) | 22:18 51 | 20:47 (3) | 21:38 31 | 20:57 (3) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 20:28 (3) 05:00 | 05:52 (4) | 04:58 | 05:58 (4) | 05:43 | 20:27 (3) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 10 | 20:38 (3) 22:05 59 | 20:46 (3) | 22:17 51 | 20:48 (3) | 21:36 30 | 20:57 (3) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 20:25 (3) 04:59 | 05:52 (4) | 04:59 | 05:57 (4) | 05:45 | 20:28 (3) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:14 | 18:14 | 20:15 | 21:14 16 | 20:41 (3) 22:06 58 | 20:46 (3) | 22:17 52 | 20:48 (3) | 21:34 28 | 20:56 (3) | 20:22 | 19:04 | 16:51 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 20:23 (3) 04:58 | 05:51 (4) | 05:00 | 05:57 (4) | 05:47 | 20:29 (3) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 19 | 20:42 (3) 22:07 58 | 20:45 (3) | 22:16 55 | 20:49 (3) | 21:32 27 | 20:56 (3) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 20:21 (3) 04:57 | 05:51 (4) | 05:01 | 05:58 (4) | 05:49 | 20:29 (3) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 23 | 20:44 (3) 22:08 57 | 20:44 (3) | 22:15 55 | 20:50 (3) | 21:30 25 | 20:54 (3) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 20:20 (3) 04:56 | 05:52 (4) | 05:02 | 05:58 (4) | 05:51 | 20:31 (3) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 25 | 20:45 (3) 22:10 54 | 20:44 (3) | 22:15 56 | 20:51 (3) | 21:28 22 | 20:53 (3) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 20:19 (3) 04:56 | 05:52 (4) | 05:03 | 05:58 (4) | 05:52 | 20:33 (3) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 27 | 20:46 (3) 22:11 53 | 20:43 (3) | 22:14 58 | 20:52 (3) | 21:26 18 | 20:51 (3) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 20:18 (3) 04:55 | 05:52 (4) | 05:04 | 05:58 (4) | 05:54 | 20:34 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 28 | 20:46 (3) 22:12 53 | 20:43 (3) | 22:13 58 | 20:52 (3) | 21:24 14 | 20:48 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 20:17 (3) 04:54 | 05:52 (4) | 05:06 | 05:58 (4) | 05:56 | 20:38 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 30 | 20:47 (3) 22:12 50 | 20:42 (3) | 22:12 60 | 20:53 (3) | 21:21 7 | 20:45 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 20:16 (3) 04:54 | 05:52 (4) | 05:07 | 05:59 (4) | 05:58 | | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 31 | 20:47 (3) 22:13 50 | 20:42 (3) | 22:11 60 | 20:54 (3) | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 20:16 (3) 04:53 | 05:53 (4) | 05:08 | 06:00 (4) | 06:00 | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 32 | 20:48 (3) 22:14 48 | 20:42 (3) | 22:10 61 | 20:55 (3) | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 20:15 (3) 04:53 | 05:52 (4) | 05:09 | 06:00 (4) | 06:02 | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 33 | 20:48 (3) 22:15 48 | 20:41 (3) | 22:09 61 | 20:55 (3) | 21:15 | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 20:15 (3) 04:53 | 05:53 (4) | 05:11 | 06:00 (4) | 06:04 | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 33 | 20:48 (3) 22:16 46 | 20:41 (3) | 22:08 63 | 20:56 (3) | 21:13 | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:04 (4) 04:53 | 05:53 (4) | 05:12 | 06:00 (4) | 06:06 | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 41 | 20:49 (3) 22:16 46 | 20:41 (3) | 22:07 62 | 20:56 (3) | 21:10 | | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:00 (4) 04:52 | 05:54 (4) | 05:13 | 06:01 (4) | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 48 | 20:49 (3) 22:17 43 | 20:40 (3) | 22:05 63 | 20:57 (3) | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 05:59 (4) 04:52 | 05:54 (4) | 05:15 | 06:01 (4) | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 51 | 20:49 (3) 22:17 42 | 20:40 (3) | 22:04 63 | 20:57 (3) | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 05:57 (4) 04:52 | 05:54 (4) | 05:16 | 06:01 (4) | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 54 | 20:49 (3) 22:18 41 | 20:40 (3) | 22:03 63 | 20:57 (3) | 21:03 | | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 05:56 (4) 04:52 | 05:54 (4) | 05:18 | 06:02 (4) | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 57 | 20:49 (3) 22:18 40 | 20:39 (3) | 22:01 63 | 20:58 (3) | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 05:55 (4) 04:52 | 05:54 (4) | 05:19 | 06:02 (4) | 06:15 | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 59 | 20:49 (3) 22:19 39 | 20:39 (3) | 22:00 62 | 20:58 (3) | 20:59 | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 05:54 (4) 04:52 | 05:54 (4) | 05:21 | 06:04 (4) | 06:17 | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 60 | 20:49 (3) 22:19 40 | 20:39 (3) | 21:59 61 | 20:59 (3) | 20:56 | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 05:53 (4) 04:52 | 05:55 (4) | 05:23 | 06:04 (4) | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 61 | 20:48 (3) 22:19 39 | 20:40 (3) | 21:57 61 | 20:59 (3) | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 05:53 (4) 04:53 | 05:55 (4) | 05:24 | 06:05 (4) | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 62 | 20:49 (3) 22:19 39 | 20:40 (3) | 21:56 59 | 20:59 (3) | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 05:53 (4) 04:53 | 05:55 (4) | 05:26 | 06:06 (4) | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 63 | 20:49 (3) 22:19 40 | 20:40 (3) | 21:54 58 | 20:59 (3) | 20:49 | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 05:53 (4) 04:53 | 05:56 (4) | 05:27 | 06:07 (4) | 06:24 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 63 | 20:49 (3) 22:19 42 | 20:42 (3) | 21:52 56 | 21:00 (3) | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 05:52 (4) 04:54 | 05:56 (4) | 05:29 | 06:08 (4) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 62 | 20:48 (3) 22:19 42 | 20:42 (3) | 21:51 53 | 20:59 (3) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 05:51 (4) 04:54 | 05:56 (4) | 05:31 | 06:10 (4) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 64 | 20:48 (3) 22:19 45 | 20:44 (3) | 21:49 50 | 21:00 (3) | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 05:51 (4) 04:55 | 05:56 (4) | 05:33 | 06:12 (4) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 62 | 20:47 (3) 22:19 45 | 20:44 (3) | 21:47 45 | 20:59 (3) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 05:51 (4) 04:55 | 05:57 (4) | 05:34 | 20:26 (3) | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 63 | 20:47 (3) 22:19 46 | 20:45 (3) | 21:45 33 | 20:59 (3) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 05:51 (4) 04:56 | 05:56 (4) | 05:36 | 20:26 (3) | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 62 | 20:47 (3) 22:18 48 | 20:45 (3) | 21:44 33 | 20:59 (3) | 20:34 | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 05:51 (4) | | 05:38 | 20:26 (3) | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 61 | 20:47 (3) | | 21:42 32 | 20:58 (3) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 1300 | 1432 | 1707 | 233 | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | | 0,90 | 0,88 | 0,89 | 0,92 | | | | |
| Total reduction | | | | | 0,47 | 0,42 | 0,43 | 0,47 | | | | |
| Total, real | | | | | 605 | 608 | 740 | 110 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | | June | | July | | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | | 05:02 | | 04:57 | | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:09 | | 22:02 | 15 | 21:26 (5) | 23 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | | 05:01 | | 21:11 (5) | | 21:39 (5) | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | | 22:04 | 16 | 21:27 (5) | 22 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | | 05:00 | | 21:11 (5) | | 21:39 (5) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | | 22:05 | 17 | 21:28 (5) | 23 | 21:40 (5) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | | 04:59 | | 21:12 (5) | | 21:17 (5) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | | 22:06 | 17 | 21:29 (5) | 21 | 21:38 (5) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | | 04:58 | | 21:11 (5) | | 21:17 (5) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | | 22:07 | 19 | 21:30 (5) | 21 | 21:38 (5) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | | 04:57 | | 21:11 (5) | | 21:17 (5) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | | 22:08 | 20 | 21:31 (5) | 21 | 21:38 (5) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | | 04:56 | | 21:12 (5) | | 21:18 (5) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | | 22:09 | 20 | 21:32 (5) | 19 | 21:37 (5) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | | 04:56 | | 21:11 (5) | | 21:18 (5) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | | 22:10 | 22 | 21:33 (5) | 18 | 21:36 (5) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | | 04:55 | | 21:12 (5) | | 21:18 (5) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | | 22:11 | 22 | 21:34 (5) | 17 | 21:35 (5) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | | 04:54 | | 21:12 (5) | | 21:19 (5) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | | 22:12 | 22 | 21:34 (5) | 16 | 21:35 (5) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | | 04:54 | | 21:12 (5) | | 21:19 (5) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | | 22:13 | 23 | 21:35 (5) | 15 | 21:34 (5) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | | 04:53 | | 21:13 (5) | | 21:20 (5) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | | 22:14 | 22 | 21:35 (5) | 14 | 21:34 (5) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | | 04:53 | | 21:12 (5) | | 21:20 (5) | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | | 22:15 | 23 | 21:35 (5) | 13 | 21:33 (5) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | | 04:53 | | 21:13 (5) | | 21:21 (5) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | | 22:16 | 22 | 21:35 (5) | 10 | 21:31 (5) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | | 04:52 | | 21:13 (5) | | 21:21 (5) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | | 22:16 | 22 | 21:35 (5) | 9 | 21:30 (5) | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | | 04:52 | | 21:13 (5) | | 21:22 (5) | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | | 22:17 | 23 | 21:36 (5) | 8 | 21:30 (5) | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | | 04:52 | | 21:14 (5) | | 21:23 (5) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | | 22:17 | 22 | 21:36 (5) | 5 | 21:28 (5) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | | 04:52 | | 21:14 (5) | | 21:24 (5) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | | 22:18 | 22 | 21:36 (5) | 3 | 21:27 (5) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | | 04:52 | | 21:14 (5) | | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | | 22:18 | 22 | 21:36 (5) | | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | | 04:52 | | 21:14 (5) | | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | | 22:18 | 22 | 21:36 (5) | | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | | 04:52 | | 21:14 (5) | | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | | 22:19 | 22 | 21:36 (5) | | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | | 04:52 | | 21:15 (5) | | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | | 22:19 | 22 | 21:37 (5) | | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | | 04:53 | | 21:15 (5) | | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | | 22:19 | 22 | 21:37 (5) | | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | | 04:53 | | 21:15 (5) | | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | | 22:19 | 22 | 21:37 (5) | | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 21:15 (5) | 04:53 | | 21:16 (5) | | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 1 21:16 (5) | 22:19 | 22 | 21:38 (5) | | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 21:14 (5) | 04:54 | | 21:15 (5) | | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 4 21:18 (5) | 22:19 | 23 | 21:38 (5) | | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 21:13 (5) | 04:54 | | 21:16 (5) | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 6 21:19 (5) | 22:19 | 23 | 21:39 (5) | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 21:13 (5) | 04:55 | | 21:16 (5) | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 8 21:21 (5) | 22:19 | 22 | 21:38 (5) | | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 21:12 (5) | 04:55 | | 21:16 (5) | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 10 21:22 (5) | 22:19 | 23 | 21:39 (5) | | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 21:12 (5) | 04:56 | | 21:16 (5) | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 12 21:24 (5) | 22:18 | 22 | 21:38 (5) | | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 21:12 (5) | | | 05:38 | | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | 13 21:25 (5) | | | 21:42 | | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | | 520 | | 521 | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 54 | | 636 | | 278 | | | | | | |
| Sun reduction | | | | | 0,52 | | 0,48 | | 0,49 | | | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | 1,00 | | | | | | |
| Wind dir. red. | | | | | 0,82 | | 0,82 | | 0,82 | | | | | | |
| Total reduction | | | | | 0,42 | | 0,40 | | 0,40 | | | | | | |
| Total, real | | | | | 23 | | 252 | | 111 | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:41 (7) | 05:02 | 04:57 | 05:39 | 06:51 (7) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 42 | 07:23 (7) | 22:02 | 22:18 | 21:40 41 | 07:32 (7) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:40 (7) | 05:01 | 04:57 | 05:41 | 06:50 (7) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 42 | 07:22 (7) | 22:03 | 22:17 | 21:38 42 | 07:32 (7) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:40 (7) | 05:00 | 04:58 | 05:43 | 06:50 (7) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 42 | 07:22 (7) | 22:05 | 22:17 | 21:36 42 | 07:32 (7) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:39 (7) | 04:59 | 04:59 | 05:45 | 06:50 (7) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 43 | 07:22 (7) | 22:06 | 22:16 | 21:34 43 | 07:33 (7) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:39 (7) | 04:58 | 05:00 | 05:47 | 06:49 (7) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 43 | 07:22 (7) | 22:07 | 22:16 | 21:32 43 | 07:32 (7) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:40 (7) | 04:57 | 05:01 | 05:49 | 06:49 (7) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 43 | 07:23 (7) | 22:08 | 22:15 | 21:30 43 | 07:32 (7) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:40 (7) | 04:56 | 05:02 | 05:50 | 06:49 (7) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 43 | 07:23 (7) | 22:09 | 22:14 | 21:28 44 | 07:33 (7) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:40 (7) | 04:56 | 05:03 | 05:52 | 06:50 (7) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 43 | 07:23 (7) | 22:10 | 22:14 | 21:25 43 | 07:33 (7) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:39 (7) | 04:55 | 05:04 | 05:54 | 06:49 (7) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 43 | 07:22 (7) | 22:11 | 22:13 | 21:23 43 | 07:32 (7) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:39 (7) | 04:54 | 05:05 | 05:56 | 06:49 (7) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 43 | 07:22 (7) | 22:12 | 22:12 | 21:21 43 | 07:32 (7) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:39 (7) | 04:54 | 05:07 | 05:58 | 06:50 (7) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 42 | 07:21 (7) | 22:13 | 22:11 | 21:19 42 | 07:32 (7) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:40 (7) | 04:53 | 05:08 | 06:00 | 06:49 (7) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 42 | 07:22 (7) | 22:14 | 22:10 | 21:17 41 | 07:30 (7) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | 05:30 | 06:40 (7) | 04:53 | 05:09 | 06:02 | 06:50 (7) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 41 | 07:21 (7) | 22:15 | 22:09 | 21:15 40 | 07:30 (7) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:40 (7) | 04:53 | 05:11 07:08 (7) | 06:03 | 06:50 (7) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 40 | 07:20 (7) | 22:15 | 22:08 3 07:11 (7) | 21:12 39 | 07:29 (7) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (7) | 04:52 | 05:12 07:04 (7) | 06:05 | 06:51 (7) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 38 | 07:20 (7) | 22:16 | 22:06 11 07:15 (7) | 21:10 38 | 07:29 (7) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (7) | 04:52 | 05:13 07:03 (7) | 06:07 | 06:52 (7) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 37 | 07:19 (7) | 22:17 | 22:05 15 07:18 (7) | 21:08 36 | 07:28 (7) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (7) | 04:52 | 05:15 07:01 (7) | 06:09 | 06:52 (7) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 36 | 07:18 (7) | 22:17 | 22:04 18 07:19 (7) | 21:05 34 | 07:26 (7) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (7) | 04:52 | 05:16 06:59 (7) | 06:11 | 06:53 (7) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 35 | 07:18 (7) | 22:18 | 22:03 22 07:21 (7) | 21:03 32 | 07:25 (7) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (7) | 04:52 | 05:18 06:59 (7) | 06:13 | 06:54 (7) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 34 | 07:17 (7) | 22:18 | 22:01 24 07:23 (7) | 21:01 30 | 07:24 (7) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 06:59 (7) | 05:18 | 06:44 (7) | 04:52 | 05:19 06:57 (7) | 06:15 | 06:56 (7) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 10 07:09 (7) | 21:44 33 | 07:17 (7) | 22:18 | 22:00 26 07:23 (7) | 20:58 26 | 07:22 (7) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:54 (7) | 05:16 | 06:46 (7) | 04:52 | 05:21 06:56 (7) | 06:17 | 06:57 (7) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 18 07:12 (7) | 21:45 30 | 07:16 (7) | 22:19 | 21:58 28 07:24 (7) | 20:56 22 | 07:19 (7) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 06:52 (7) | 05:15 | 06:46 (7) | 04:52 | 05:22 06:56 (7) | 06:19 | 06:59 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 23 07:15 (7) | 21:47 29 | 07:15 (7) | 22:19 | 21:57 30 07:26 (7) | 20:54 18 | 07:17 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:50 (7) | 05:13 | 06:47 (7) | 04:53 | 05:24 06:55 (7) | 06:21 | 07:04 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 27 07:17 (7) | 21:49 27 | 07:14 (7) | 22:19 | 21:55 31 07:26 (7) | 20:51 8 | 07:12 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 06:48 (7) | 05:12 | 06:49 (7) | 04:53 | 05:26 06:54 (7) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 30 07:18 (7) | 21:50 25 | 07:14 (7) | 22:19 | 21:54 33 07:27 (7) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:46 (7) | 05:10 | 06:49 (7) | 04:53 | 05:27 06:53 (7) | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 33 07:19 (7) | 21:52 23 | 07:12 (7) | 22:19 | 21:52 35 07:28 (7) | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:45 (7) | 05:09 | 06:51 (7) | 04:54 | 05:29 06:53 (7) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 35 07:20 (7) | 21:53 20 | 07:11 (7) | 22:19 | 21:50 36 07:29 (7) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:44 (7) | 05:08 | 06:52 (7) | 04:54 | 05:31 06:53 (7) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 37 07:21 (7) | 21:55 17 | 07:09 (7) | 22:19 | 21:49 37 07:30 (7) | 20:42 | | 19:22 | 17:09 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:43 (7) | 05:06 | 06:54 (7) | 04:55 | 05:32 06:52 (7) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 38 07:21 (7) | 21:57 14 | 07:08 (7) | 22:19 | 21:47 38 07:30 (7) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:43 (7) | 05:05 | 06:57 (7) | 04:55 | 05:34 06:52 (7) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 39 07:22 (7) | 21:58 8 | 07:05 (7) | 22:18 | 21:45 39 07:31 (7) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:42 (7) | 05:04 | | 04:56 | 05:36 06:51 (7) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 41 07:23 (7) | 21:59 | | 22:18 | 21:43 40 07:31 (7) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 06:51 (7) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | | 21:41 41 07:32 (7) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 331 | 998 | | 507 | 833 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,96 | 0,96 | | 0,96 | 0,96 | | | | |
| Total reduction | | | | 0,38 | 0,50 | | 0,47 | 0,50 | | | | |
| Total, real | | | | 125 | 496 | | 237 | 413 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:43 (7) 05:02 | 06:55 (7) 04:57 | 05:39 | 06:52 (7) 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 44 | 07:27 (7) 22:02 19 | 07:14 (7) 22:18 | 21:40 46 | 07:38 (7) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:42 (7) 05:01 | 06:56 (7) 04:57 | 05:41 | 06:51 (7) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 45 | 07:27 (7) 22:03 17 | 07:13 (7) 22:17 | 21:38 46 | 07:37 (7) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:41 (7) 05:00 | 06:58 (7) 04:58 | 05:43 | 06:51 (7) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 46 | 07:27 (7) 22:05 13 | 07:11 (7) 22:17 | 21:36 47 | 07:38 (7) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:41 (7) 04:59 | 07:01 (7) 04:59 | 05:45 | 06:51 (7) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 46 | 07:27 (7) 22:06 9 | 07:10 (7) 22:16 | 21:34 47 | 07:38 (7) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:41 (7) 04:58 | 05:00 | 05:47 | 06:50 (7) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 46 | 07:27 (7) 22:07 | 22:16 | 21:32 47 | 07:37 (7) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:41 (7) 04:57 | 05:01 | 05:49 | 06:51 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 47 | 07:28 (7) 22:08 | 22:15 | 21:30 46 | 07:37 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:41 (7) 04:56 | 05:02 | 05:50 | 06:51 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 47 | 07:28 (7) 22:09 | 22:14 | 21:28 47 | 07:38 (7) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:41 (7) 04:56 | 05:03 07:08 (7) | 05:52 | 06:51 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 47 | 07:28 (7) 22:10 | 22:14 7 07:15 (7) | 21:25 47 | 07:38 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:41 (7) 04:55 | 05:04 07:06 (7) | 05:54 | 06:51 (7) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 47 | 07:28 (7) 22:11 | 22:13 12 07:18 (7) | 21:23 46 | 07:37 (7) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:41 (7) 04:54 | 05:05 07:04 (7) | 05:56 | 06:51 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 46 | 07:27 (7) 22:12 | 22:12 15 07:19 (7) | 21:21 45 | 07:36 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:40 (7) 04:54 | 05:07 07:03 (7) | 05:58 | 06:51 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 47 | 07:27 (7) 22:13 | 22:11 18 07:21 (7) | 21:19 45 | 07:36 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:41 (7) 04:53 | 05:08 07:03 (7) | 06:00 | 06:51 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 46 | 07:27 (7) 22:14 | 22:10 20 07:23 (7) | 21:17 44 | 07:35 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | 05:30 | 06:41 (7) 04:53 | 05:09 07:01 (7) | 06:02 | 06:52 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 46 | 07:27 (7) 22:15 | 22:09 23 07:24 (7) | 21:15 42 | 07:34 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:41 (7) 04:53 | 05:11 07:00 (7) | 06:03 | 06:52 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 45 | 07:26 (7) 22:15 | 22:08 25 07:25 (7) | 21:12 42 | 07:34 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (7) 04:52 | 05:12 06:59 (7) | 06:05 | 06:53 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 44 | 07:26 (7) 22:16 | 22:06 27 07:26 (7) | 21:10 40 | 07:33 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (7) 04:52 | 05:13 06:59 (7) | 06:07 | 06:54 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 44 | 07:26 (7) 22:17 | 22:05 29 07:28 (7) | 21:08 38 | 07:32 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (7) 04:52 | 05:15 06:58 (7) | 06:09 | 06:54 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 43 | 07:25 (7) 22:17 | 22:04 31 07:29 (7) | 21:05 36 | 07:30 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (7) 04:52 | 05:16 06:57 (7) | 06:11 | 06:55 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 42 | 07:25 (7) 22:18 | 22:03 32 07:29 (7) | 21:03 34 | 07:29 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (7) 04:52 | 05:18 06:57 (7) | 06:13 | 06:57 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 41 | 07:24 (7) 22:18 | 22:01 34 07:31 (7) | 21:01 31 | 07:28 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:02 (7) | 05:18 | 06:44 (7) 04:52 | 05:19 06:56 (7) | 06:15 | 06:59 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 10 07:12 (7) | 21:44 40 | 07:24 (7) 22:18 | 22:00 35 07:31 (7) | 20:58 27 | 07:26 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:57 (7) | 05:16 | 06:45 (7) 04:52 | 05:21 06:55 (7) | 06:17 | 07:00 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 19 07:16 (7) | 21:45 38 | 07:23 (7) 22:19 | 21:58 37 07:32 (7) | 20:56 23 | 07:23 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 06:55 (7) | 05:15 | 06:45 (7) 04:52 | 05:22 06:55 (7) | 06:19 | 07:02 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 24 07:19 (7) | 21:47 37 | 07:22 (7) 22:19 | 21:57 38 07:33 (7) | 20:54 18 | 07:20 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:53 (7) | 05:13 | 06:46 (7) 04:53 | 05:24 06:54 (7) | 06:21 | 07:07 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 28 07:21 (7) | 21:49 36 | 07:22 (7) 22:19 | 21:55 39 07:33 (7) | 20:51 8 | 07:15 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 06:51 (7) | 05:12 | 06:47 (7) 04:53 | 05:26 06:54 (7) | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 31 07:22 (7) | 21:50 34 | 07:21 (7) 22:19 | 21:54 40 07:34 (7) | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:49 (7) | 05:10 | 06:47 (7) 04:53 | 05:27 06:53 (7) | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 34 07:23 (7) | 21:52 33 | 07:20 (7) 22:19 | 21:52 41 07:34 (7) | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:47 (7) | 05:09 | 06:48 (7) 04:54 | 05:29 06:53 (7) | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 37 07:24 (7) | 21:53 31 | 07:19 (7) 22:19 | 21:50 42 07:35 (7) | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:46 (7) | 05:08 | 06:49 (7) 04:54 | 05:31 06:53 (7) | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 39 07:25 (7) | 21:55 30 | 07:19 (7) 22:19 | 21:49 43 07:36 (7) | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:45 (7) | 05:06 | 06:50 (7) 04:55 | 05:32 06:52 (7) | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 41 07:26 (7) | 21:57 28 | 07:18 (7) 22:19 | 21:47 44 07:36 (7) | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:45 (7) | 05:05 | 06:51 (7) 04:55 | 05:34 06:52 (7) | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 41 07:26 (7) | 21:58 26 | 07:17 (7) 22:18 | 21:45 45 07:37 (7) | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:44 (7) | 05:04 | 06:52 (7) 04:56 | 05:36 06:51 (7) | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 43 07:27 (7) | 21:59 24 | 07:16 (7) 22:18 | 21:43 46 07:37 (7) | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:54 (7) | 05:38 06:51 (7) | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 21 | 07:15 (7) | 21:41 46 07:37 (7) | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 347 | 1237 | 58 | 769 | 892 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,96 | 0,96 | 0,96 | 0,96 | 0,96 | | | | |
| Total reduction | | | | 0,38 | 0,50 | 0,47 | 0,47 | 0,50 | | | | |
| Total, real | | | | 132 | 616 | 27 | 360 | 443 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
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+8 621 66746
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:52 (7) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 45 | 07:29 (7) 22:02 26 | 06:53 (7) 07:19 (7) 22:18 | 21:40 48 | 07:40 (7) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:43 (7) 05:01 | 06:54 (7) 04:57 | 05:41 | 06:51 (7) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 46 | 07:29 (7) 22:03 24 | 07:18 (7) 22:17 | 21:38 49 | 07:40 (7) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:42 (7) 05:00 | 06:55 (7) 04:58 | 05:43 | 06:51 (7) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 47 | 07:29 (7) 22:05 22 | 07:17 (7) 22:17 | 21:36 49 | 07:40 (7) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:42 (7) 04:59 | 06:57 (7) 04:59 | 07:09 (7) 05:45 | 06:52 (7) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 47 | 07:29 (7) 22:06 20 | 07:17 (7) 22:16 6 | 07:15 (7) 21:34 48 | 07:40 (7) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:41 (7) 04:58 | 06:58 (7) 05:00 | 07:07 (7) 05:47 | 06:51 (7) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 48 | 07:29 (7) 22:07 17 | 07:15 (7) 22:16 11 | 07:18 (7) 21:32 48 | 07:39 (7) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:42 (7) 04:57 | 06:59 (7) 05:01 | 07:05 (7) 05:49 | 06:51 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 48 | 07:30 (7) 22:08 15 | 07:14 (7) 22:15 14 | 07:19 (7) 21:30 49 | 07:40 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:42 (7) 04:56 | 07:01 (7) 05:02 | 07:04 (7) 05:50 | 06:51 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 48 | 07:30 (7) 22:09 12 | 07:13 (7) 22:14 17 | 07:21 (7) 21:28 49 | 07:40 (7) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:41 (7) 04:56 | 07:02 (7) 05:03 | 07:03 (7) 05:52 | 06:52 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 49 | 07:30 (7) 22:10 9 | 07:11 (7) 22:14 19 | 07:22 (7) 21:25 48 | 07:40 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:41 (7) 04:55 | 07:06 (7) 05:04 | 07:02 (7) 05:54 | 06:51 (7) 06:53 | 07:50 | 07:53 | 08:47 |
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| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 49 | 07:30 (7) 22:12 | 22:12 23 | 07:25 (7) 21:21 46 | 07:38 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:41 (7) 04:54 | 05:07 | 07:01 (7) 05:58 | 06:52 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 48 | 07:29 (7) 22:13 | 22:11 25 | 07:26 (7) 21:19 46 | 07:38 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:42 (7) 04:53 | 05:08 | 07:01 (7) 06:00 | 06:52 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 48 | 07:30 (7) 22:14 | 22:10 27 | 07:28 (7) 21:17 45 | 07:37 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | 05:30 | 06:41 (7) 04:53 | 05:09 | 07:00 (7) 06:02 | 06:53 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 48 | 07:29 (7) 22:15 | 22:09 29 | 07:29 (7) 21:15 43 | 07:36 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:41 (7) 04:53 | 05:11 | 06:59 (7) 06:03 | 06:53 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 48 | 07:29 (7) 22:15 | 22:08 30 | 07:29 (7) 21:12 43 | 07:36 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (7) 04:52 | 05:12 | 06:58 (7) 06:05 | 06:54 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 47 | 07:29 (7) 22:16 | 22:06 32 | 07:30 (7) 21:10 41 | 07:35 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (7) 04:52 | 05:13 | 06:58 (7) 06:07 | 06:55 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 46 | 07:28 (7) 22:17 | 22:05 34 | 07:32 (7) 21:08 39 | 07:34 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (7) 04:52 | 05:15 | 06:57 (7) 06:09 | 06:55 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 45 | 07:27 (7) 22:17 | 22:04 35 | 07:32 (7) 21:05 37 | 07:32 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (7) 04:52 | 05:16 | 06:56 (7) 06:11 | 06:56 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 44 | 07:27 (7) 22:18 | 22:03 37 | 07:33 (7) 21:03 35 | 07:31 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (7) 04:52 | 05:18 | 06:57 (7) 06:13 | 06:58 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 43 | 07:26 (7) 22:18 | 22:01 37 | 07:34 (7) 21:01 31 | 07:29 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:04 (7) | 05:18 | 06:44 (7) 04:52 | 05:19 | 06:56 (7) 06:15 | 07:00 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 9 07:13 (7) | 21:44 42 | 07:26 (7) 22:18 | 22:00 38 | 07:34 (7) 20:58 27 | 07:27 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:59 (7) | 05:16 | 06:45 (7) 04:52 | 05:21 | 06:55 (7) 06:17 | 07:01 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 18 07:17 (7) | 21:45 41 | 07:26 (7) 22:19 | 21:58 40 | 07:35 (7) 20:56 23 | 07:24 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 06:56 (7) | 05:15 | 06:45 (7) 04:52 | 05:22 | 06:55 (7) 06:19 | 07:04 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 24 07:20 (7) | 21:47 40 | 07:25 (7) 22:19 | 21:57 41 | 07:36 (7) 20:54 17 | 07:21 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:54 (7) | 05:13 | 06:46 (7) 04:53 | 05:24 | 06:54 (7) 06:21 | 07:09 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 28 07:22 (7) | 21:49 39 | 07:25 (7) 22:19 | 21:55 42 | 07:36 (7) 20:51 7 | 07:16 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 06:52 (7) | 05:12 | 06:47 (7) 04:53 | 05:26 | 06:54 (7) 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 32 07:24 (7) | 21:50 38 | 07:25 (7) 22:19 | 21:54 43 | 07:37 (7) 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:50 (7) | 05:10 | 06:46 (7) 04:53 | 05:27 | 06:53 (7) 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 34 07:24 (7) | 21:52 37 | 07:23 (7) 22:19 | 21:52 44 | 07:37 (7) 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:48 (7) | 05:09 | 06:47 (7) 04:54 | 05:29 | 06:53 (7) 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 38 07:26 (7) | 21:53 36 | 07:23 (7) 22:19 | 21:50 45 | 07:38 (7) 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:47 (7) | 05:08 | 06:48 (7) 04:54 | 05:31 | 06:53 (7) 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 40 07:27 (7) | 21:55 34 | 07:22 (7) 22:19 | 21:49 46 | 07:39 (7) 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:46 (7) | 05:06 | 06:49 (7) 04:55 | 05:32 | 06:52 (7) 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 41 07:27 (7) | 21:57 33 | 07:22 (7) 22:19 | 21:47 47 | 07:39 (7) 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:46 (7) | 05:05 | 06:50 (7) 04:55 | 05:34 | 06:52 (7) 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 42 07:28 (7) | 21:58 31 | 07:21 (7) 22:18 | 21:45 47 | 07:39 (7) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:45 (7) | 05:04 | 06:51 (7) 04:56 | 05:36 | 06:52 (7) 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 44 07:29 (7) | 21:59 29 | 07:20 (7) 22:18 | 21:43 47 | 07:39 (7) 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:52 (7) | 05:38 | 06:52 (7) 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 28 | 07:20 (7) | 21:41 48 | 07:40 (7) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 350 | 1321 | 147 | 926 | 916 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,96 | 0,96 | 0,96 | 0,96 | 0,96 | | | | |
| Total reduction | | | | 0,38 | 0,50 | 0,47 | 0,47 | 0,50 | | | | |
| Total, real | | | | 133 | 658 | 68 | 434 | 455 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:52 (7) | 06:38 | 07:34 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 46 | 07:31 (7) 22:02 32 | 06:51 (7) 22:18 16 | 07:05 (7) 21:40 51 | 07:43 (7) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:44 (7) 05:01 | 06:52 (7) 04:57 | 07:05 (7) 05:41 | 06:52 (7) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 47 | 07:31 (7) 22:03 30 | 07:22 (7) 22:17 17 | 07:22 (7) 21:38 50 | 07:42 (7) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:43 (7) 05:00 | 06:53 (7) 04:58 | 07:04 (7) 05:43 | 06:52 (7) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 48 | 07:31 (7) 22:05 29 | 07:22 (7) 22:17 18 | 07:22 (7) 21:36 50 | 07:42 (7) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:42 (7) 04:59 | 06:54 (7) 04:59 | 07:03 (7) 05:45 | 06:52 (7) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 49 | 07:31 (7) 22:06 28 | 07:22 (7) 22:16 21 | 07:24 (7) 21:34 51 | 07:43 (7) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:42 (7) 04:58 | 06:55 (7) 05:00 | 07:03 (7) 05:47 | 06:51 (7) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 49 | 07:31 (7) 22:07 26 | 07:21 (7) 22:16 22 | 07:25 (7) 21:32 51 | 07:42 (7) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:43 (7) 04:57 | 06:55 (7) 05:01 | 07:02 (7) 05:49 | 06:52 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 50 | 07:33 (7) 22:08 25 | 07:20 (7) 22:15 24 | 07:26 (7) 21:30 50 | 07:42 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:42 (7) 04:56 | 06:57 (7) 05:02 | 07:02 (7) 05:50 | 06:52 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 50 | 07:32 (7) 22:09 23 | 07:20 (7) 22:14 25 | 07:27 (7) 21:28 50 | 07:42 (7) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:42 (7) 04:56 | 06:57 (7) 05:03 | 07:01 (7) 05:52 | 06:53 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 50 | 07:32 (7) 22:10 22 | 07:19 (7) 22:14 27 | 07:28 (7) 21:25 49 | 07:42 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:42 (7) 04:55 | 06:59 (7) 05:04 | 07:00 (7) 05:54 | 06:52 (7) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 50 | 07:32 (7) 22:11 19 | 07:18 (7) 22:13 29 | 07:29 (7) 21:23 49 | 07:41 (7) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:41 (7) 04:54 | 06:59 (7) 05:05 | 07:00 (7) 05:56 | 06:53 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 51 | 07:32 (7) 22:12 18 | 07:17 (7) 22:12 30 | 07:30 (7) 21:21 47 | 07:40 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:41 (7) 04:54 | 07:01 (7) 05:07 | 06:59 (7) 05:58 | 06:53 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 51 | 07:32 (7) 22:13 16 | 07:17 (7) 22:11 31 | 07:30 (7) 21:19 47 | 07:40 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:42 (7) 04:53 | 07:02 (7) 05:08 | 06:59 (7) 06:00 | 06:53 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 50 | 07:32 (7) 22:14 14 | 07:16 (7) 22:10 33 | 07:32 (7) 21:17 46 | 07:39 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 06:42 (7) 04:53 | 07:03 (7) 05:09 | 06:59 (7) 06:02 | 06:53 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 50 | 07:32 (7) 22:15 12 | 07:15 (7) 22:09 34 | 07:33 (7) 21:15 45 | 07:38 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:42 (7) 04:53 | 07:04 (7) 05:11 | 06:58 (7) 06:03 | 06:54 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 49 | 07:31 (7) 22:15 10 | 07:14 (7) 22:08 35 | 07:33 (7) 21:12 43 | 07:37 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (7) 04:52 | 07:05 (7) 05:12 | 06:57 (7) 06:05 | 06:55 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 50 | 07:32 (7) 22:16 9 | 07:14 (7) 22:06 37 | 07:34 (7) 21:10 42 | 07:37 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (7) 04:52 | 07:07 (7) 05:13 | 06:57 (7) 06:07 | 06:56 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 49 | 07:31 (7) 22:17 6 | 07:13 (7) 22:05 38 | 07:35 (7) 21:08 40 | 07:36 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (7) 04:52 | 07:08 (7) 05:15 | 06:57 (7) 06:09 | 06:56 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 48 | 07:30 (7) 22:17 4 | 07:12 (7) 22:04 39 | 07:36 (7) 21:05 38 | 07:34 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (7) 04:52 | 05:16 | 06:56 (7) 06:11 | 06:58 (7) 07:10 | 08:08 | 08:11 | 08:56 |
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| | 16:48 | 17:53 | 18:50 | 20:51 24 | 07:21 (7) 21:47 | 07:28 (7) 22:19 | 21:57 44 | 07:39 (7) 20:54 16 | 07:22 (7) 19:35 | 18:20 | 16:20 | 16:05 |
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| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 06:53 (7) 05:12 | 06:46 (7) 04:53 | 05:26 | 06:54 (7) 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 33 | 07:26 (7) 21:50 | 07:28 (7) 22:19 | 21:54 46 | 07:40 (7) 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 06:51 (7) 05:10 | 06:46 (7) 04:53 | 07:11 (7) 05:27 | 06:53 (7) 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 35 | 07:26 (7) 21:52 | 07:27 (7) 22:19 2 | 07:13 (7) 21:52 47 | 07:40 (7) 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 06:50 (7) 05:09 | 06:47 (7) 04:54 | 07:09 (7) 05:29 | 06:53 (7) 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 37 | 07:27 (7) 21:53 | 07:26 (7) 22:19 6 | 07:15 (7) 21:50 48 | 07:41 (7) 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 06:48 (7) 05:08 | 06:48 (7) 04:54 | 07:08 (7) 05:31 | 06:53 (7) 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 40 | 07:28 (7) 21:55 | 07:26 (7) 22:19 7 | 07:15 (7) 21:49 49 | 07:42 (7) 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:47 (7) 05:06 | 06:48 (7) 04:55 | 07:07 (7) 05:32 | 06:52 (7) 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 42 | 07:29 (7) 21:57 | 07:26 (7) 22:19 10 | 07:17 (7) 21:47 49 | 07:41 (7) 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 06:47 (7) 05:05 | 06:49 (7) 04:55 | 07:07 (7) 05:34 | 06:53 (7) 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 43 | 07:30 (7) 21:58 | 07:25 (7) 22:18 12 | 07:19 (7) 21:45 49 | 07:42 (7) 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:46 (7) 05:04 | 06:50 (7) 04:56 | 07:06 (7) 05:36 | 06:52 (7) 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 45 | 07:31 (7) 21:59 | 07:25 (7) 22:18 13 | 07:19 (7) 21:43 50 | 07:42 (7) 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:51 (7) | 05:38 | 06:52 (7) 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 33 | 07:24 (7) | 21:41 50 | 07:42 (7) 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 353 | 1408 | 373 | 1121 | 937 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,97 | 0,97 | 0,97 | 0,97 | 0,97 | | | | |
| Total reduction | | | | 0,38 | 0,50 | 0,47 | 0,47 | 0,50 | | | | |
| Total, real | | | | 134 | 702 | 174 | 525 | 466 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 57 | 07:55 (7) 22:02 30 | 07:10 (7) 22:18 | 07:40 (7) 21:40 55 | 08:03 (7) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:57 (7) 05:01 | 07:11 (7) 04:57 | 07:29 (7) 05:41 | 07:07 (7) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 57 | 07:54 (7) 22:03 28 | 07:39 (7) 22:17 4 | 07:33 (7) 21:38 56 | 08:03 (7) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:57 (7) 05:00 | 07:12 (7) 04:58 | 07:26 (7) 05:43 | 07:07 (7) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 57 | 07:54 (7) 22:05 26 | 07:38 (7) 22:17 9 | 07:35 (7) 21:36 56 | 08:03 (7) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:56 (7) 04:59 | 07:14 (7) 04:59 | 07:24 (7) 05:45 | 07:07 (7) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 58 | 07:54 (7) 22:06 24 | 07:38 (7) 22:16 13 | 07:37 (7) 21:34 57 | 08:04 (7) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:56 (7) 04:58 | 07:15 (7) 05:00 | 07:23 (7) 05:47 | 07:06 (7) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 57 | 07:53 (7) 22:07 21 | 07:36 (7) 22:16 16 | 07:39 (7) 21:32 57 | 08:03 (7) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:57 (7) 04:57 | 07:15 (7) 05:01 | 07:22 (7) 05:49 | 07:06 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 57 | 07:54 (7) 22:08 20 | 07:35 (7) 22:15 19 | 07:41 (7) 21:30 57 | 08:03 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:57 (7) 04:56 | 07:17 (7) 05:02 | 07:21 (7) 05:50 | 07:06 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 57 | 07:54 (7) 22:09 17 | 07:34 (7) 22:14 21 | 07:42 (7) 21:28 58 | 08:04 (7) 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:57 (7) 04:56 | 07:19 (7) 05:03 | 07:20 (7) 05:52 | 07:07 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 57 | 07:54 (7) 22:10 14 | 07:33 (7) 22:14 23 | 07:43 (7) 21:25 57 | 08:04 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:57 (7) 04:55 | 07:21 (7) 05:04 | 07:20 (7) 05:54 | 07:06 (7) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 56 | 07:53 (7) 22:11 11 | 07:32 (7) 22:13 25 | 07:45 (7) 21:23 57 | 08:03 (7) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:57 (7) 04:54 | 07:22 (7) 05:05 | 07:19 (7) 05:56 | 07:06 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 56 | 07:53 (7) 22:12 7 | 07:29 (7) 22:12 27 | 07:46 (7) 21:21 57 | 08:03 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:57 (7) 04:54 | 05:07 | 07:18 (7) 05:58 | 07:06 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 55 | 07:52 (7) 22:13 | 22:11 29 | 07:47 (7) 21:19 57 | 08:03 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:58 (7) 04:53 | 05:08 | 07:18 (7) 06:00 | 07:06 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 55 | 07:53 (7) 22:14 | 22:10 31 | 07:49 (7) 21:17 56 | 08:02 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 06:57 (7) 04:53 | 05:09 | 07:17 (7) 06:02 | 07:06 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 55 | 07:52 (7) 22:15 | 22:09 33 | 07:50 (7) 21:15 56 | 08:02 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:57 (7) 04:53 | 05:11 | 07:16 (7) 06:03 | 07:07 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 54 | 07:51 (7) 22:15 | 22:08 34 | 07:50 (7) 21:12 54 | 08:01 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 07:21 (7) | 05:26 | 06:58 (7) 04:52 | 05:12 | 07:15 (7) 06:05 | 07:07 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 16 07:37 (7) | 21:35 53 | 07:51 (7) 22:16 | 22:06 36 | 07:51 (7) 21:10 54 | 08:01 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:17 (7) | 05:25 | 06:58 (7) 04:52 | 05:13 | 07:15 (7) 06:07 | 07:08 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 24 07:41 (7) | 21:37 52 | 07:50 (7) 22:17 | 22:05 38 | 07:53 (7) 21:08 53 | 08:01 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 07:14 (7) | 05:23 | 06:58 (7) 04:52 | 05:15 | 07:14 (7) 06:09 | 07:07 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 30 07:44 (7) | 21:39 52 | 07:50 (7) 22:17 | 22:04 39 | 07:53 (7) 21:05 52 | 07:59 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 07:11 (7) | 05:21 | 06:59 (7) 04:52 | 05:16 | 07:13 (7) 06:11 | 07:08 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 34 07:45 (7) | 21:40 51 | 07:50 (7) 22:18 | 22:03 41 | 07:54 (7) 21:03 50 | 07:58 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 07:10 (7) | 05:19 | 06:59 (7) 04:52 | 05:18 | 07:13 (7) 06:13 | 07:09 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 37 07:47 (7) | 21:42 49 | 07:48 (7) 22:18 | 22:01 43 | 07:56 (7) 21:01 49 | 07:58 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:08 (7) | 05:18 | 07:00 (7) 04:52 | 05:19 | 07:12 (7) 06:15 | 07:10 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 41 07:49 (7) | 21:44 48 | 07:48 (7) 22:18 | 22:00 44 | 07:56 (7) 20:58 47 | 07:57 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 07:06 (7) | 05:16 | 07:01 (7) 04:52 | 05:21 | 07:12 (7) 06:17 | 07:10 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 43 07:49 (7) | 21:45 47 | 07:48 (7) 22:19 | 21:58 44 | 07:56 (7) 20:56 45 | 07:55 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 07:05 (7) | 05:15 | 07:01 (7) 04:52 | 05:22 | 07:12 (7) 06:19 | 07:11 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 45 07:50 (7) | 21:47 46 | 07:47 (7) 22:19 | 21:57 46 | 07:58 (7) 20:54 43 | 07:54 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 07:04 (7) | 05:13 | 07:02 (7) 04:53 | 05:24 | 07:11 (7) 06:21 | 07:12 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 47 07:51 (7) | 21:49 45 | 07:47 (7) 22:19 | 21:55 47 | 07:58 (7) 20:51 40 | 07:52 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 07:03 (7) | 05:12 | 07:03 (7) 04:53 | 05:26 | 07:11 (7) 06:22 | 07:14 (7) 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 49 07:52 (7) | 21:50 43 | 07:46 (7) 22:19 | 21:54 48 | 07:59 (7) 20:49 37 | 07:51 (7) 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 07:01 (7) | 05:10 | 07:03 (7) 04:53 | 05:27 | 07:10 (7) 06:24 | 07:15 (7) 07:23 | 08:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 51 07:52 (7) | 21:52 42 | 07:45 (7) 22:19 | 21:52 49 | 07:59 (7) 20:46 34 | 07:49 (7) 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 07:01 (7) | 05:09 | 07:04 (7) 04:54 | 05:29 | 07:10 (7) 06:26 | 07:17 (7) 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 52 07:53 (7) | 21:53 40 | 07:44 (7) 22:19 | 21:50 50 | 08:00 (7) 20:44 28 | 07:45 (7) 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 07:00 (7) | 05:08 | 07:05 (7) 04:54 | 05:31 | 07:10 (7) 06:28 | 07:19 (7) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 53 07:53 (7) | 21:55 39 | 07:44 (7) 22:19 | 21:49 51 | 08:01 (7) 20:42 24 | 07:43 (7) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 07:00 (7) | 05:06 | 07:06 (7) 04:55 | 05:32 | 07:09 (7) 06:30 | 07:23 (7) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 54 07:54 (7) | 21:57 37 | 07:43 (7) 22:19 | 21:47 52 | 08:01 (7) 20:39 16 | 07:39 (7) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:59 (7) | 05:05 | 07:07 (7) 04:55 | 05:34 | 07:09 (7) 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 55 07:54 (7) | 21:58 35 | 07:42 (7) 22:18 | 21:45 53 | 08:02 (7) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:59 (7) | 05:04 | 07:08 (7) 04:56 | 05:36 | 07:08 (7) 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 55 07:54 (7) | 21:59 34 | 07:42 (7) 22:18 | 21:43 54 | 08:02 (7) 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 07:09 (7) | 05:38 | 07:08 (7) 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 32 | 07:41 (7) | 21:41 54 | 08:02 (7) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 686 | 1533 | 198 | 1073 | 1362 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 | | | | |
| Total reduction | | | | 0,39 | 0,51 | 0,47 | 0,48 | 0,51 | | | | |
| Total, real | | | | 265 | 778 | 94 | 512 | 689 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 07:07 (7) 05:02 | 04:57 | 05:39 | 07:19 (7) 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 57 | 08:04 (7) 22:02 | 22:18 | 21:40 50 | 08:09 (7) 20:29 17 | 07:30 (7) 07:47 (7) 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 07:06 (7) 05:01 | 04:57 | 05:41 | 07:18 (7) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 56 | 08:02 (7) 22:03 | 22:17 | 21:38 51 | 08:09 (7) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 07:05 (7) 05:00 | 04:58 | 05:43 | 07:17 (7) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 57 | 08:02 (7) 22:05 | 22:17 | 21:36 53 | 08:10 (7) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 07:06 (7) 04:59 | 04:59 | 05:45 | 07:17 (7) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 56 | 08:02 (7) 22:06 | 22:16 | 21:34 53 | 08:10 (7) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 07:06 (7) 04:58 | 05:00 | 05:47 | 07:16 (7) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 55 | 08:01 (7) 22:07 | 22:16 | 21:32 54 | 08:10 (7) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 07:07 (7) 04:57 | 05:01 | 05:49 | 07:16 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 55 | 08:02 (7) 22:08 | 22:15 | 21:30 55 | 08:11 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 07:07 (7) 04:56 | 05:02 | 05:50 | 07:16 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 54 | 08:01 (7) 22:09 | 22:14 | 21:28 55 | 08:11 (7) 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 07:07 (7) 04:56 | 05:03 | 05:52 | 07:16 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 54 | 08:01 (7) 22:10 | 22:14 | 21:25 56 | 08:12 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 07:07 (7) 04:55 | 05:04 | 05:54 | 07:15 (7) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 53 | 08:00 (7) 22:11 | 22:13 | 21:23 56 | 08:11 (7) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 07:07 (7) 04:54 | 05:05 | 05:56 | 07:15 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 52 | 07:59 (7) 22:12 | 22:12 | 21:21 57 | 08:12 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:31 (7) | 05:34 | 07:07 (7) 04:54 | 05:07 | 05:58 | 07:15 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 17 07:48 (7) | 21:28 51 | 07:58 (7) 22:13 | 22:11 | 21:19 57 | 08:12 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:27 (7) | 05:32 | 07:09 (7) 04:53 | 05:08 | 06:00 | 07:14 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 25 07:52 (7) | 21:29 49 | 07:58 (7) 22:14 | 22:10 | 21:17 57 | 08:11 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 07:23 (7) | 05:30 | 07:09 (7) 04:53 | 05:09 | 06:02 | 07:14 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 31 07:54 (7) | 21:31 48 | 07:57 (7) 22:15 | 22:09 | 21:15 57 | 08:11 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:21 (7) | 05:28 | 07:09 (7) 04:53 | 05:10 | 06:03 | 07:14 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 35 07:56 (7) | 21:33 47 | 07:56 (7) 22:15 | 22:08 | 21:12 57 | 08:11 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 07:19 (7) | 05:26 | 07:10 (7) 04:52 | 05:12 07:37 (7) | 06:05 | 07:15 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 38 07:57 (7) | 21:35 46 | 07:56 (7) 22:16 | 22:06 9 07:46 (7) | 21:10 56 | 08:11 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:17 (7) | 05:25 | 07:11 (7) 04:52 | 05:13 07:35 (7) | 06:07 | 07:15 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 41 07:58 (7) | 21:37 44 | 07:55 (7) 22:17 | 22:05 15 07:50 (7) | 21:08 56 | 08:11 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 07:16 (7) | 05:23 | 07:11 (7) 04:52 | 05:15 07:32 (7) | 06:09 | 07:14 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 44 08:00 (7) | 21:39 43 | 07:54 (7) 22:17 | 22:04 20 07:52 (7) | 21:05 56 | 08:10 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 07:14 (7) | 05:21 | 07:12 (7) 04:52 | 05:16 07:30 (7) | 06:11 | 07:14 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 46 08:00 (7) | 21:40 41 | 07:53 (7) 22:18 | 22:03 23 07:53 (7) | 21:03 56 | 08:10 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 07:13 (7) | 05:19 | 07:13 (7) 04:52 | 05:18 07:30 (7) | 06:13 | 07:15 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 48 08:01 (7) | 21:42 39 | 07:52 (7) 22:18 | 22:01 26 07:56 (7) | 21:01 54 | 08:09 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:12 (7) | 05:18 | 07:14 (7) 04:52 | 05:19 07:28 (7) | 06:15 | 07:15 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 50 08:02 (7) | 21:44 37 | 07:51 (7) 22:18 | 22:00 29 07:57 (7) | 20:58 54 | 08:09 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 07:11 (7) | 05:16 | 07:16 (7) 04:52 | 05:21 07:26 (7) | 06:17 | 07:15 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 51 08:02 (7) | 21:45 35 | 07:51 (7) 22:19 | 21:58 32 07:58 (7) | 20:56 52 | 08:07 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 07:10 (7) | 05:15 | 07:16 (7) 04:52 | 05:22 07:26 (7) | 06:19 | 07:15 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 53 08:03 (7) | 21:47 33 | 07:49 (7) 22:19 | 21:57 34 08:00 (7) | 20:54 51 | 08:06 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 07:10 (7) | 05:13 | 07:18 (7) 04:53 | 05:24 07:25 (7) | 06:21 | 07:16 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 53 08:03 (7) | 21:49 30 | 07:48 (7) 22:19 | 21:55 35 08:00 (7) | 20:51 50 | 08:06 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 07:09 (7) | 05:12 | 07:19 (7) 04:53 | 05:26 07:24 (7) | 06:22 | 07:17 (7) 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 55 08:04 (7) | 21:50 28 | 07:47 (7) 22:19 | 21:54 38 08:02 (7) | 20:49 48 | 08:05 (7) 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 07:08 (7) | 05:10 | 07:20 (7) 04:53 | 05:27 07:23 (7) | 06:24 | 07:18 (7) 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 55 08:03 (7) | 21:52 25 | 07:45 (7) 22:19 | 21:52 40 08:03 (7) | 20:46 46 | 08:04 (7) 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 07:07 (7) | 05:09 | 07:22 (7) 04:54 | 05:29 07:22 (7) | 06:26 | 07:18 (7) 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 56 08:03 (7) | 21:53 21 | 07:43 (7) 22:19 | 21:50 42 08:04 (7) | 20:44 43 | 08:01 (7) 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 07:07 (7) | 05:08 | 07:24 (7) 04:54 | 05:31 07:22 (7) | 06:28 | 07:19 (7) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 56 08:03 (7) | 21:55 17 | 07:41 (7) 22:19 | 21:49 43 08:05 (7) | 20:42 41 | 08:00 (7) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 07:07 (7) | 05:06 | 07:27 (7) 04:55 | 05:32 07:21 (7) | 06:30 | 07:21 (7) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 57 08:04 (7) | 21:57 12 | 07:39 (7) 22:19 | 21:47 45 08:06 (7) | 20:39 37 | 07:58 (7) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 07:07 (7) | 05:05 | 07:32 (7) 04:55 | 05:34 07:21 (7) | 06:32 | 07:22 (7) 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 57 08:04 (7) | 21:58 2 | 07:34 (7) 22:18 | 21:45 46 08:07 (7) | 20:37 35 | 07:57 (7) 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 07:07 (7) | 05:04 | 04:56 | 05:36 07:19 (7) | 06:34 | 07:24 (7) 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 57 08:04 (7) | 21:59 | 22:18 | 21:43 48 08:07 (7) | 20:34 30 | 07:54 (7) 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 07:19 (7) | 06:36 | 07:26 (7) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 49 08:08 (7) | 20:32 25 | 07:51 (7) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 925 | 1197 | | 574 | 1558 | 17 | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | 0,99 | | 0,99 | 0,99 | 0,99 | | | |
| Total reduction | | | | 0,39 | 0,51 | | 0,48 | 0,51 | 0,39 | | | |
| Total, real | | | | 360 | 612 | | 276 | 794 | 7 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 07:15 (7) 05:02 | 04:57 | 05:39 | 07:30 (7) 06:38 | 07:28 (7) 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 55 | 08:10 (7) 22:02 | 22:18 | 21:40 42 | 08:12 (7) 20:29 36 | 08:04 (7) 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 07:14 (7) 05:01 | 04:57 | 05:41 | 07:29 (7) 06:39 | 07:29 (7) 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 55 | 08:09 (7) 22:03 | 22:17 | 21:38 44 | 08:13 (7) 20:27 33 | 08:02 (7) 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 07:14 (7) 05:00 | 04:58 | 05:43 | 07:28 (7) 06:41 | 07:31 (7) 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 54 | 08:08 (7) 22:05 | 22:17 | 21:36 46 | 08:14 (7) 20:24 29 | 08:00 (7) 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 07:15 (7) 04:59 | 04:59 | 05:45 | 07:28 (7) 06:43 | 07:34 (7) 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 53 | 08:08 (7) 22:06 | 22:16 | 21:34 47 | 08:15 (7) 20:22 22 | 07:56 (7) 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 07:15 (7) 04:58 | 05:00 | 05:47 | 07:26 (7) 06:45 | 07:38 (7) 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 52 | 08:07 (7) 22:07 | 22:16 | 21:32 49 | 08:15 (7) 20:19 13 | 07:51 (7) 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 07:16 (7) 04:57 | 05:01 | 05:49 | 07:26 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 51 | 08:07 (7) 22:08 | 22:15 | 21:30 50 | 08:16 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 07:42 (7) | 05:42 | 07:17 (7) 04:56 | 05:02 | 05:50 | 07:26 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 12 07:54 (7) | 21:20 49 | 08:06 (7) 22:09 | 22:14 | 21:28 51 | 08:17 (7) 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 07:36 (7) | 05:40 | 07:17 (7) 04:56 | 05:03 | 05:52 | 07:25 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 22 07:58 (7) | 21:22 48 | 08:05 (7) 22:10 | 22:14 | 21:25 52 | 08:17 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 07:33 (7) | 05:38 | 07:18 (7) 04:55 | 05:04 | 05:54 | 07:24 (7) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 29 08:02 (7) | 21:24 46 | 08:04 (7) 22:11 | 22:13 | 21:23 53 | 08:17 (7) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 07:30 (7) | 05:36 | 07:18 (7) 04:54 | 05:05 | 05:56 | 07:24 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 33 08:03 (7) | 21:26 45 | 08:03 (7) 22:12 | 22:12 | 21:21 54 | 08:18 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:29 (7) | 05:34 | 07:19 (7) 04:54 | 05:07 | 05:58 | 07:24 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 36 08:05 (7) | 21:28 43 | 08:02 (7) 22:13 | 22:11 | 21:19 54 | 08:18 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:27 (7) | 05:32 | 07:20 (7) 04:53 | 05:08 | 06:00 | 07:22 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 40 08:07 (7) | 21:29 42 | 08:02 (7) 22:14 | 22:10 | 21:17 56 | 08:18 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 07:25 (7) | 05:30 | 07:21 (7) 04:53 | 05:09 | 06:02 | 07:22 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 43 08:08 (7) | 21:31 39 | 08:00 (7) 22:15 | 22:09 | 21:15 56 | 08:18 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:24 (7) | 05:28 | 07:21 (7) 04:53 | 05:10 | 06:03 | 07:22 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 45 08:09 (7) | 21:33 38 | 07:59 (7) 22:15 | 22:08 | 21:12 56 | 08:18 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 07:22 (7) | 05:26 | 07:23 (7) 04:52 | 05:12 | 06:05 | 07:22 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 47 08:09 (7) | 21:35 35 | 07:58 (7) 22:16 | 22:06 | 21:10 57 | 08:19 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:21 (7) | 05:25 | 07:24 (7) 04:52 | 05:13 | 06:07 | 07:22 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 49 08:10 (7) | 21:37 32 | 07:56 (7) 22:17 | 22:05 | 21:08 57 | 08:19 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 07:20 (7) | 05:23 | 07:25 (7) 04:52 | 05:15 | 06:09 | 07:21 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 51 08:11 (7) | 21:39 29 | 07:54 (7) 22:17 | 22:04 | 21:05 57 | 08:18 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 07:19 (7) | 05:21 | 07:27 (7) 04:52 | 05:16 | 06:11 | 07:21 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 52 08:11 (7) | 21:40 26 | 07:53 (7) 22:18 | 22:03 | 21:03 57 | 08:18 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 07:18 (7) | 05:19 | 07:29 (7) 04:52 | 05:18 | 06:13 | 07:21 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 53 08:11 (7) | 21:42 22 | 07:51 (7) 22:18 | 22:01 | 21:01 57 | 08:18 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:18 (7) | 05:18 | 07:31 (7) 04:52 | 05:19 | 06:15 | 07:22 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 54 08:12 (7) | 21:44 18 | 07:49 (7) 22:18 | 22:00 | 20:58 56 | 08:18 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 07:16 (7) | 05:16 | 07:35 (7) 04:52 | 05:21 | 06:17 | 07:21 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 55 08:11 (7) | 21:45 11 | 07:46 (7) 22:19 | 21:58 | 20:56 55 | 08:16 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 07:16 (7) | 05:15 | 04:52 | 05:22 07:48 (7) | 06:19 | 07:21 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 56 08:12 (7) | 21:47 | 22:19 | 21:57 4 07:52 (7) | 20:54 55 | 08:16 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 07:16 (7) | 05:13 | 04:53 | 05:24 07:43 (7) | 06:21 | 07:22 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 56 08:12 (7) | 21:49 | 22:19 | 21:55 14 07:57 (7) | 20:51 54 | 08:16 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 07:16 (7) | 05:12 | 04:53 | 05:26 07:40 (7) | 06:22 | 07:22 (7) 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 56 08:12 (7) | 21:50 | 22:19 | 21:54 20 08:00 (7) | 20:49 53 | 08:15 (7) 19:30 | 18:15 | 16:17 | 16:06 |
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| 26 | 08:37 | 07:34 | 06:23 | 06:06 07:15 (7) | 05:09 | 04:54 | 05:29 07:37 (7) | 06:26 | 07:22 (7) 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 56 08:11 (7) | 21:53 | 22:19 | 21:50 27 08:04 (7) | 20:44 51 | 08:13 (7) 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 07:15 (7) | 05:08 | 04:54 | 05:31 07:36 (7) | 06:28 | 07:23 (7) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 56 08:11 (7) | 21:55 | 22:19 | 21:49 30 08:06 (7) | 20:42 49 | 08:12 (7) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 07:15 (7) | 05:06 | 04:55 | 05:32 07:34 (7) | 06:30 | 07:24 (7) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 56 08:11 (7) | 21:57 | 22:19 | 21:47 33 08:07 (7) | 20:39 47 | 08:11 (7) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 07:15 (7) | 05:05 | 04:55 | 05:34 07:33 (7) | 06:32 | 07:25 (7) 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 56 08:11 (7) | 21:58 | 22:18 | 21:45 36 08:09 (7) | 20:37 45 | 08:10 (7) 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 07:15 (7) | 05:04 | 04:56 | 05:36 07:31 (7) | 06:34 | 07:26 (7) 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 56 08:11 (7) | 21:59 | 22:18 | 21:43 38 08:09 (7) | 20:34 42 | 08:08 (7) 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 07:31 (7) | 06:36 | 07:26 (7) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 40 08:11 (7) | 20:32 40 | 08:06 (7) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 1125 | 843 | | 266 | 1593 | 133 | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | 0,99 | | 0,99 | 0,99 | 0,99 | | | |
| Total reduction | | | | 0,39 | 0,51 | | 0,48 | 0,51 | 0,39 | | | |
| Total, real | | | | 440 | 433 | | 128 | 816 | 52 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 07:26 (7) 05:02 | 04:57 | 05:39 | 07:47 (7) 06:38 | 07:31 (7) 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 50 | 08:16 (7) 22:02 | 22:18 | 21:40 26 | 08:13 (7) 20:29 48 | 08:19 (7) 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 07:26 (7) 05:01 | 04:57 | 05:41 | 07:44 (7) 06:39 | 07:32 (7) 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 49 | 08:15 (7) 22:03 | 22:17 | 21:38 30 | 08:14 (7) 20:27 45 | 08:17 (7) 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 07:52 (7) | 05:50 | 07:26 (7) 05:00 | 04:58 | 05:43 | 07:43 (7) 06:41 | 07:33 (7) 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 13 08:05 (7) | 21:12 48 | 08:14 (7) 22:05 | 22:17 | 21:36 33 | 08:16 (7) 20:24 43 | 08:16 (7) 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 07:46 (7) | 05:48 | 07:27 (7) 04:59 | 04:59 | 05:45 | 07:42 (7) 06:43 | 07:34 (7) 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 23 08:09 (7) | 21:14 46 | 08:13 (7) 22:06 | 22:16 | 21:34 36 | 08:18 (7) 20:22 41 | 08:15 (7) 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 07:43 (7) | 05:46 | 07:28 (7) 04:58 | 05:00 | 05:47 | 07:40 (7) 06:45 | 07:35 (7) 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 29 08:12 (7) | 21:16 44 | 08:12 (7) 22:07 | 22:16 | 21:32 38 | 08:18 (7) 20:19 37 | 08:12 (7) 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 07:40 (7) | 05:44 | 07:29 (7) 04:57 | 05:01 | 05:49 | 07:39 (7) 06:47 | 07:36 (7) 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 34 08:14 (7) | 21:18 42 | 08:11 (7) 22:08 | 22:15 | 21:30 41 | 08:20 (7) 20:16 34 | 08:10 (7) 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 07:39 (7) | 05:42 | 07:30 (7) 04:56 | 05:02 | 05:50 | 07:38 (7) 06:49 | 07:38 (7) 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 37 08:16 (7) | 21:20 40 | 08:10 (7) 22:09 | 22:14 | 21:28 43 | 08:21 (7) 20:14 29 | 08:07 (7) 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 07:36 (7) | 05:40 | 07:31 (7) 04:56 | 05:03 | 05:52 | 07:38 (7) 06:51 | 07:41 (7) 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 41 08:17 (7) | 21:22 37 | 08:08 (7) 22:10 | 22:14 | 21:25 44 | 08:22 (7) 20:11 23 | 08:04 (7) 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 07:35 (7) | 05:38 | 07:32 (7) 04:55 | 05:04 | 05:54 | 07:36 (7) 06:53 | 07:45 (7) 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 43 08:18 (7) | 21:24 35 | 08:07 (7) 22:11 | 22:13 | 21:23 46 | 08:22 (7) 20:09 15 | 08:00 (7) 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 07:33 (7) | 05:36 | 07:33 (7) 04:54 | 05:05 | 05:56 | 07:35 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 45 08:18 (7) | 21:26 32 | 08:05 (7) 22:12 | 22:12 | 21:21 48 | 08:23 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:32 (7) | 05:34 | 07:35 (7) 04:54 | 05:07 | 05:58 | 07:35 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 48 08:20 (7) | 21:28 28 | 08:03 (7) 22:13 | 22:11 | 21:19 49 | 08:24 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:31 (7) | 05:32 | 07:37 (7) 04:53 | 05:08 | 06:00 | 07:33 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 50 08:21 (7) | 21:29 25 | 08:02 (7) 22:14 | 22:10 | 21:17 51 | 08:24 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 07:30 (7) | 05:30 | 07:39 (7) 04:53 | 05:09 | 06:02 | 07:33 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 51 08:21 (7) | 21:31 20 | 07:59 (7) 22:15 | 22:09 | 21:15 52 | 08:25 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:29 (7) | 05:28 | 07:42 (7) 04:53 | 05:10 | 06:03 | 07:33 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 52 08:21 (7) | 21:33 13 | 07:55 (7) 22:15 | 22:08 | 21:12 53 | 08:26 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 07:28 (7) | 05:26 | 04:52 | 05:12 | 06:05 | 07:32 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 53 08:21 (7) | 21:35 | 22:16 | 22:06 | 21:10 54 | 08:26 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:27 (7) | 05:25 | 04:52 | 05:13 | 06:07 | 07:32 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 55 08:22 (7) | 21:37 | 22:17 | 22:05 | 21:08 55 | 08:27 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 07:27 (7) | 05:23 | 04:52 | 05:15 | 06:09 | 07:31 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 55 08:22 (7) | 21:39 | 22:17 | 22:04 | 21:05 55 | 08:26 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 07:26 (7) | 05:21 | 04:52 | 05:16 | 06:11 | 07:31 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 56 08:22 (7) | 21:40 | 22:18 | 22:03 | 21:03 55 | 08:26 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 07:26 (7) | 05:19 | 04:52 | 05:18 | 06:13 | 07:30 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 56 08:22 (7) | 21:42 | 22:18 | 22:01 | 21:01 57 | 08:27 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:26 (7) | 05:18 | 04:52 | 05:19 | 06:15 | 07:30 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 56 08:22 (7) | 21:44 | 22:18 | 22:00 | 20:58 57 | 08:27 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 07:25 (7) | 05:16 | 04:52 | 05:21 | 06:17 | 07:29 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 56 08:21 (7) | 21:45 | 22:19 | 21:58 | 20:56 57 | 08:26 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 07:25 (7) | 05:15 | 04:52 | 05:22 | 06:19 | 07:29 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 56 08:21 (7) | 21:47 | 22:19 | 21:57 | 20:54 57 | 08:26 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 07:25 (7) | 05:13 | 04:53 | 05:24 | 06:21 | 07:29 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 56 08:21 (7) | 21:49 | 22:19 | 21:55 | 20:51 57 | 08:26 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 07:25 (7) | 05:12 | 04:53 | 05:26 | 06:22 | 07:29 (7) 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 56 08:21 (7) | 21:50 | 22:19 | 21:54 | 20:49 57 | 08:26 (7) 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 07:24 (7) | 05:10 | 04:53 | 05:27 | 06:24 | 07:30 (7) 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 56 08:20 (7) | 21:52 | 22:19 | 21:52 | 20:46 55 | 08:25 (7) 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 07:24 (7) | 05:09 | 04:54 | 05:29 | 06:26 | 07:29 (7) 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 55 08:19 (7) | 21:53 | 22:19 | 21:50 | 20:44 55 | 08:24 (7) 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 07:24 (7) | 05:08 | 04:54 | 05:31 | 06:28 | 07:29 (7) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 55 08:19 (7) | 21:55 | 22:19 | 21:49 | 20:42 54 | 08:23 (7) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 07:25 (7) | 05:06 | 04:55 | 05:32 | 06:30 | 07:30 (7) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 53 08:18 (7) | 21:57 | 22:19 | 21:47 | 20:39 53 | 08:23 (7) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 07:25 (7) | 05:05 | 04:55 | 05:34 07:56 (7) | 06:32 | 07:30 (7) 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 53 08:18 (7) | 21:58 | 22:18 | 21:45 6 08:02 (7) | 20:37 52 | 08:22 (7) 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 07:26 (7) | 05:04 | 04:56 | 05:36 07:51 (7) | 06:34 | 07:31 (7) 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 51 08:17 (7) | 21:59 | 22:18 | 21:43 16 08:07 (7) | 20:34 51 | 08:22 (7) 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 07:49 (7) | 06:36 | 07:30 (7) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 21 08:10 (7) | 20:32 50 | 08:20 (7) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 1344 | 509 | | 43 | 1521 | 315 | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Total reduction | | | | 0,39 | 0,52 | | 0,48 | 0,51 | 0,40 | | | |
| Total, real | | | | 528 | 263 | | 21 | 782 | 125 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 07:54 (7) 05:55 | 07:38 (7) 05:02 | 04:57 | 05:39 | 06:38 | 07:36 (7) 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 26 | 08:20 (7) 21:08 42 | 08:20 (7) 22:02 | 22:18 | 21:40 | 20:29 53 | 08:29 (7) 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 07:51 (7) 05:53 | 07:38 (7) 05:01 | 04:57 | 05:41 | 06:39 | 07:37 (7) 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 32 | 08:23 (7) 21:10 40 | 08:18 (7) 22:03 | 22:17 | 21:38 | 20:27 52 | 08:29 (7) 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:48 (7) 05:50 | 07:39 (7) 05:00 | 04:58 | 05:43 | 06:41 | 07:37 (7) 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 36 | 08:24 (7) 21:12 37 | 08:16 (7) 22:05 | 22:17 | 21:36 | 20:24 51 | 08:28 (7) 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:46 (7) 05:48 | 07:40 (7) 04:59 | 04:59 | 05:45 | 08:02 (7) 06:43 | 07:38 (7) 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 39 | 08:25 (7) 21:14 34 | 08:14 (7) 22:06 | 22:16 | 21:34 11 | 08:13 (7) 20:22 49 | 08:27 (7) 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:45 (7) 05:46 | 07:42 (7) 04:58 | 05:00 | 05:47 | 07:57 (7) 06:45 | 07:38 (7) 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 42 | 08:27 (7) 21:16 31 | 08:13 (7) 22:07 | 22:16 | 21:32 19 | 08:16 (7) 20:19 47 | 08:25 (7) 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:43 (7) 05:44 | 07:44 (7) 04:57 | 05:01 | 05:49 | 07:55 (7) 06:47 | 07:39 (7) 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 44 | 08:27 (7) 21:18 27 | 08:11 (7) 22:08 | 22:15 | 21:30 24 | 08:19 (7) 20:16 44 | 08:23 (7) 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:42 (7) 05:42 | 07:46 (7) 04:56 | 05:02 | 05:50 | 07:53 (7) 06:49 | 07:40 (7) 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 47 | 08:29 (7) 21:20 23 | 08:09 (7) 22:09 | 22:14 | 21:28 29 | 08:22 (7) 20:14 42 | 08:22 (7) 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:40 (7) 05:40 | 07:49 (7) 04:56 | 05:03 | 05:52 | 07:51 (7) 06:51 | 07:41 (7) 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 49 | 08:29 (7) 21:22 17 | 08:06 (7) 22:10 | 22:14 | 21:25 33 | 08:24 (7) 20:11 39 | 08:20 (7) 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:39 (7) 05:38 | 07:53 (7) 04:55 | 05:04 | 05:54 | 07:49 (7) 06:53 | 07:42 (7) 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 51 | 08:30 (7) 21:24 7 | 08:00 (7) 22:11 | 22:13 | 21:23 35 | 08:24 (7) 20:09 37 | 08:19 (7) 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:38 (7) 05:36 | 04:54 | 05:05 | 05:56 | 07:48 (7) 06:55 | 07:43 (7) 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 52 | 08:30 (7) 21:26 | 22:12 | 22:12 | 21:21 38 | 08:26 (7) 20:06 32 | 08:15 (7) 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:37 (7) 05:34 | 04:54 | 05:07 | 05:58 | 07:47 (7) 06:56 | 07:46 (7) 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 53 | 08:30 (7) 21:28 | 22:13 | 22:11 | 21:19 40 | 08:27 (7) 20:04 27 | 08:13 (7) 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:37 (7) 05:32 | 04:53 | 05:08 | 06:00 | 07:45 (7) 06:58 | 07:49 (7) 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 54 | 08:31 (7) 21:29 | 22:14 | 22:10 | 21:17 43 | 08:28 (7) 20:01 20 | 08:09 (7) 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:36 (7) 05:30 | 04:53 | 05:09 | 06:02 | 07:44 (7) 07:00 | 07:54 (7) 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 54 | 08:30 (7) 21:31 | 22:15 | 22:09 | 21:15 45 | 08:29 (7) 19:58 10 | 08:04 (7) 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:35 (7) 05:28 | 04:53 | 05:10 | 06:03 | 07:43 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 56 | 08:31 (7) 21:33 | 22:15 | 22:08 | 21:12 47 | 08:30 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:34 (7) 05:26 | 04:52 | 05:12 | 06:05 | 07:43 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 56 | 08:30 (7) 21:35 | 22:16 | 22:06 | 21:10 48 | 08:31 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:34 (7) 05:25 | 04:52 | 05:13 | 06:07 | 07:42 (7) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 56 | 08:30 (7) 21:37 | 22:17 | 22:05 | 21:08 50 | 08:32 (7) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:34 (7) 05:23 | 04:52 | 05:15 | 06:09 | 07:41 (7) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 57 | 08:31 (7) 21:39 | 22:17 | 22:04 | 21:05 51 | 08:32 (7) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:33 (7) 05:21 | 04:52 | 05:16 | 06:11 | 07:40 (7) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 57 | 08:30 (7) 21:40 | 22:18 | 22:03 | 21:03 52 | 08:32 (7) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:33 (7) 05:19 | 04:52 | 05:18 | 06:13 | 07:40 (7) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 57 | 08:30 (7) 21:42 | 22:18 | 22:01 | 21:01 53 | 08:33 (7) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:34 (7) 05:18 | 04:52 | 05:19 | 06:15 | 07:39 (7) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 55 | 08:29 (7) 21:44 | 22:18 | 22:00 | 20:58 54 | 08:33 (7) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:33 (7) 05:16 | 04:52 | 05:21 | 06:17 | 07:38 (7) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 55 | 08:28 (7) 21:45 | 22:19 | 21:58 | 20:56 55 | 08:33 (7) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:33 (7) 05:15 | 04:52 | 05:22 | 06:19 | 07:38 (7) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 55 | 08:28 (7) 21:47 | 22:19 | 21:57 | 20:54 55 | 08:33 (7) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:34 (7) 05:13 | 04:53 | 05:24 | 06:21 | 07:37 (7) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 54 | 08:28 (7) 21:49 | 22:19 | 21:55 | 20:51 56 | 08:33 (7) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:34 (7) 05:12 | 04:53 | 05:26 | 06:22 | 07:37 (7) 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 53 | 08:27 (7) 21:50 | 22:19 | 21:54 | 20:49 56 | 08:33 (7) 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:34 (7) 05:10 | 04:53 | 05:27 | 06:24 | 07:37 (7) 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 51 | 08:25 (7) 21:52 | 22:19 | 21:52 | 20:46 56 | 08:33 (7) 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:34 (7) 05:09 | 04:54 | 05:29 | 06:26 | 07:36 (7) 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 51 | 08:25 (7) 21:53 | 22:19 | 21:50 | 20:44 56 | 08:32 (7) 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:35 (7) 05:08 | 04:54 | 05:31 | 06:28 | 07:36 (7) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 49 | 08:24 (7) 21:55 | 22:19 | 21:49 | 20:42 56 | 08:32 (7) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:35 (7) 05:06 | 04:55 | 05:32 | 06:30 | 07:36 (7) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 48 | 08:23 (7) 21:57 | 22:19 | 21:47 | 20:39 56 | 08:32 (7) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:36 (7) 05:05 | 04:55 | 05:34 | 06:32 | 07:36 (7) 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 46 | 08:22 (7) 21:58 | 22:18 | 21:45 | 20:37 56 | 08:32 (7) 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 08:04 (7) | 05:57 | 07:37 (7) 05:04 | 04:56 | 05:36 | 06:34 | 07:37 (7) 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 7 08:11 (7) | 21:06 44 | 08:21 (7) 21:59 | 22:18 | 21:43 | 20:34 54 | 08:31 (7) 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 07:58 (7) | | 05:03 | | 05:38 | 06:36 | 07:36 (7) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 19 08:17 (7) | | 22:01 | | 21:41 | 20:32 54 | 08:30 (7) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 26 | 1479 | 258 | | | 1282 | 503 | | | |
| Sun reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Total reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | |
| Total, real | | | 9 | 582 | 133 | | | 660 | 199 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 07:54 (7) / 05:55 | 07:54 (7) / 05:02 | 04:57 | 05:39 | 06:38 | 07:43 (7) / 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 42 | 08:36 (7) / 21:08 26 | 08:20 (7) / 22:02 | 22:18 | 21:40 | 20:29 56 | 08:39 (7) / 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 07:53 (7) / 05:53 | 07:55 (7) / 05:01 | 04:57 | 05:41 | 06:39 | 07:43 (7) / 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 45 | 08:38 (7) / 21:10 21 | 08:16 (7) / 22:03 | 22:17 | 21:38 | 20:27 56 | 08:39 (7) / 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:51 (7) / 05:50 | 07:59 (7) / 05:00 | 04:58 | 05:43 | 06:41 | 07:44 (7) / 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 47 | 08:38 (7) / 21:12 13 | 08:12 (7) / 22:05 | 22:17 | 21:36 | 20:24 54 | 08:38 (7) / 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:50 (7) / 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:44 (7) / 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 48 | 08:38 (7) / 21:14 | 22:06 | 22:16 | 21:34 | 20:22 54 | 08:38 (7) / 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:49 (7) / 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 (7) / 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 50 | 08:39 (7) / 21:16 | 22:07 | 22:16 | 21:32 | 20:19 53 | 08:36 (7) / 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:48 (7) / 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 (7) / 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 51 | 08:39 (7) / 21:18 | 22:08 | 22:15 | 21:30 | 20:16 51 | 08:35 (7) / 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:47 (7) / 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:44 (7) / 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 53 | 08:40 (7) / 21:20 | 22:09 | 22:14 | 21:28 | 20:14 50 | 08:34 (7) / 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:46 (7) / 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:45 (7) / 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 54 | 08:40 (7) / 21:22 | 22:10 | 22:14 | 21:25 | 20:11 48 | 08:33 (7) / 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:46 (7) / 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:46 (7) / 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 54 | 08:40 (7) / 21:24 | 22:11 | 22:13 | 21:23 | 20:09 46 | 08:32 (7) / 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:44 (7) / 05:36 | 04:54 | 05:05 | 05:56 | 08:07 (7) / 06:55 | 07:45 (7) / 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 56 | 08:40 (7) / 21:26 | 22:12 | 22:12 | 21:21 16 | 08:23 (7) / 20:06 45 | 08:30 (7) / 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:44 (7) / 05:34 | 04:54 | 05:07 | 05:58 | 08:04 (7) / 06:56 | 07:47 (7) / 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 56 | 08:40 (7) / 21:28 | 22:13 | 22:11 | 21:19 22 | 08:26 (7) / 20:04 42 | 08:29 (7) / 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:44 (7) / 05:32 | 04:53 | 05:08 | 06:00 | 08:01 (7) / 06:58 | 07:48 (7) / 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 56 | 08:40 (7) / 21:29 | 22:14 | 22:10 | 21:17 27 | 08:28 (7) / 20:01 39 | 08:27 (7) / 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:43 (7) / 05:30 | 04:53 | 05:09 | 06:02 | 07:59 (7) / 07:00 | 07:49 (7) / 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 56 | 08:39 (7) / 21:31 | 22:15 | 22:09 | 21:15 31 | 08:30 (7) / 19:58 36 | 08:25 (7) / 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:44 (7) / 05:28 | 04:53 | 05:10 | 06:03 | 07:57 (7) / 07:02 | 07:51 (7) / 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 55 | 08:39 (7) / 21:33 | 22:15 | 22:08 | 21:12 35 | 08:32 (7) / 19:56 32 | 08:23 (7) / 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:43 (7) / 05:26 | 04:52 | 05:12 | 06:05 | 07:56 (7) / 07:04 | 07:53 (7) / 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 55 | 08:38 (7) / 21:35 | 22:16 | 22:06 | 21:10 38 | 08:34 (7) / 19:53 27 | 08:20 (7) / 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:43 (7) / 05:25 | 04:52 | 05:13 | 06:07 | 07:55 (7) / 07:06 | 07:56 (7) / 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 55 | 08:38 (7) / 21:37 | 22:17 | 22:05 | 21:08 40 | 08:35 (7) / 19:51 20 | 08:16 (7) / 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:43 (7) / 05:23 | 04:52 | 05:15 | 06:09 | 07:53 (7) / 07:08 | 08:01 (7) / 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 55 | 08:38 (7) / 21:39 | 22:17 | 22:04 | 21:05 42 | 08:35 (7) / 19:48 8 | 08:09 (7) / 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:43 (7) / 05:21 | 04:52 | 05:16 | 06:11 | 07:52 (7) / 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 54 | 08:37 (7) / 21:40 | 22:18 | 22:03 | 21:03 45 | 08:37 (7) / 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:43 (7) / 05:19 | 04:52 | 05:18 | 06:13 | 07:51 (7) / 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 53 | 08:36 (7) / 21:42 | 22:18 | 22:01 | 21:01 47 | 08:38 (7) / 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:44 (7) / 05:18 | 04:52 | 05:19 | 06:15 | 07:50 (7) / 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 52 | 08:36 (7) / 21:44 | 22:18 | 22:00 | 20:58 49 | 08:39 (7) / 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:43 (7) / 05:16 | 04:52 | 05:21 | 06:17 | 07:49 (7) / 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 51 | 08:34 (7) / 21:45 | 22:19 | 21:58 | 20:56 49 | 08:38 (7) / 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:44 (7) / 05:15 | 04:52 | 05:22 | 06:19 | 07:48 (7) / 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 50 | 08:34 (7) / 21:47 | 22:19 | 21:57 | 20:54 51 | 08:39 (7) / 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:45 (7) / 05:13 | 04:53 | 05:24 | 06:21 | 07:47 (7) / 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 48 | 08:33 (7) / 21:49 | 22:19 | 21:55 | 20:51 53 | 08:40 (7) / 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:46 (7) / 05:12 | 04:53 | 05:26 | 06:22 | 07:47 (7) / 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 46 | 08:32 (7) / 21:50 | 22:19 | 21:54 | 20:49 53 | 08:40 (7) / 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:46 (7) / 05:10 | 04:53 | 05:27 | 06:24 | 07:46 (7) / 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 44 | 08:30 (7) / 21:52 | 22:19 | 21:52 | 20:46 55 | 08:41 (7) / 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:47 (7) / 05:09 | 04:54 | 05:29 | 06:26 | 07:45 (7) / 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 42 | 08:29 (7) / 21:53 | 22:19 | 21:50 | 20:44 55 | 08:40 (7) / 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 07:08 (7) | 06:04 | 07:48 (7) / 05:07 | 04:54 | 05:31 | 06:28 | 07:45 (7) / 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 18 | 07:26 (7) / 21:01 39 | 08:27 (7) / 21:55 | 22:19 | 21:49 | 20:42 55 | 08:40 (7) / 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (7) / 06:01 | 07:49 (7) / 05:06 | 04:55 | 05:32 | 06:30 | 07:45 (7) / 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 25 | 07:29 (7) / 21:03 37 | 08:26 (7) / 21:57 | 22:19 | 21:47 | 20:39 55 | 08:40 (7) / 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:01 (7) / 05:59 | 07:50 (7) / 05:05 | 04:55 | 05:34 | 06:32 | 07:44 (7) / 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 31 | 08:32 (7) / 21:05 34 | 08:24 (7) / 21:58 | 22:18 | 21:45 | 20:37 56 | 08:40 (7) / 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 07:58 (7) / 05:57 | 07:52 (7) / 05:04 | 04:56 | 05:36 | 06:34 | 07:44 (7) / 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 35 | 08:33 (7) / 21:06 30 | 08:22 (7) / 21:59 | 22:18 | 21:43 | 20:34 56 | 08:40 (7) / 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 07:57 (7) | 05:03 | | 05:38 | 06:36 | 07:43 (7) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 39 | 08:36 (7) | 22:01 | | 21:41 | 20:32 56 | 08:39 (7) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 148 | 1468 | 60 | | | 986 | 717 | | | |
| Sun reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Total reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | |
| Total, real | | | 50 | 577 | 31 | | | 507 | 284 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | | 07:59 (7) | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:52 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 50 | 08:49 (7) | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 55 08:47 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | | 07:59 (7) | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:52 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 51 | 08:50 (7) | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 55 08:47 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 07:57 (7) | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:52 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 53 | 08:50 (7) | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 55 08:47 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 07:56 (7) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:52 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 54 | 08:50 (7) | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 55 08:47 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | | 07:56 (7) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:51 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 54 | 08:50 (7) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 55 08:46 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 07:55 (7) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:51 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 55 | 08:50 (7) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 55 08:46 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | | 07:55 (7) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:51 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 55 | 08:50 (7) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 54 08:45 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 07:54 (7) | 05:40 | 04:55 | 05:03 | 05:52 | | 06:51 | 07:51 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 55 | 08:49 (7) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 54 08:45 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 07:54 (7) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:51 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 55 | 08:49 (7) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 53 08:44 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | | 07:53 (7) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:51 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 55 | 08:48 (7) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 51 08:42 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 07:53 (7) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:51 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 55 | 08:48 (7) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 51 08:42 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 07:54 (7) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:52 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 54 | 08:48 (7) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 49 08:41 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | | 07:53 (7) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:53 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 54 | 08:47 (7) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 47 08:40 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 07:54 (7) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | 07:53 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 53 | 08:47 (7) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 45 08:38 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 07:53 (7) | 05:26 | 04:52 | 05:12 | 06:05 | 08:18 (7) | 07:04 | 07:54 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 52 | 08:45 (7) | 21:35 | 22:16 | 22:06 | 21:10 | 10 08:28 (7) | 19:53 | 43 08:37 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 07:54 (7) | 05:25 | 04:52 | 05:13 | 06:07 | 08:14 (7) | 07:06 | 07:55 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 51 | 08:45 (7) | 21:37 | 22:17 | 22:05 | 21:08 | 19 08:33 (7) | 19:51 | 39 08:34 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 07:55 (7) | 05:23 | 04:52 | 05:15 | 06:09 | 08:10 (7) | 07:08 | 07:56 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 49 | 08:44 (7) | 21:39 | 22:17 | 22:04 | 21:05 | 25 08:35 (7) | 19:48 | 36 08:32 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 07:55 (7) | 05:21 | 04:52 | 05:16 | 06:11 | 08:08 (7) | 07:10 | 07:58 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 47 | 08:42 (7) | 21:40 | 22:18 | 22:03 | 21:03 | 29 08:37 (7) | 19:46 | 32 08:30 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 07:55 (7) | 05:19 | 04:52 | 05:18 | 06:13 | 08:06 (7) | 07:12 | 08:00 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | 46 | 08:41 (7) | 21:42 | 22:18 | 22:01 | 21:01 | 33 08:39 (7) | 19:43 | 27 08:27 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 07:56 (7) | 05:18 | 04:52 | 05:19 | 06:15 | 08:05 (7) | 07:13 | 08:03 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | 44 | 08:40 (7) | 21:44 | 22:18 | 22:00 | 20:58 | 36 08:41 (7) | 19:40 | 21 08:24 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 07:57 (7) | 05:16 | 04:52 | 05:21 | 06:17 | 08:02 (7) | 07:15 | 08:08 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | 41 | 08:38 (7) | 21:45 | 22:19 | 21:58 | 20:56 | 40 08:42 (7) | 19:38 | 11 08:19 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 07:25 (7) | 06:15 | | 07:58 (7) | 05:15 | 04:52 | 05:22 | 06:19 | 08:01 (7) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 5 07:30 (7) | 20:51 | 39 | 08:37 (7) | 21:47 | 22:19 | 21:57 | 20:54 | 42 08:43 (7) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:17 (7) | 06:13 | | 07:59 (7) | 05:13 | 04:53 | 05:24 | 06:21 | 08:00 (7) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 19 07:36 (7) | 20:53 | 36 | 08:35 (7) | 21:49 | 22:19 | 21:55 | 20:51 | 44 08:44 (7) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:14 (7) | 06:11 | | 08:01 (7) | 05:12 | 04:53 | 05:26 | 06:22 | 07:59 (7) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 26 07:40 (7) | 20:55 | 32 | 08:33 (7) | 21:50 | 22:19 | 21:54 | 20:49 | 46 08:45 (7) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:11 (7) | 06:08 | | 08:02 (7) | 05:10 | 04:53 | 05:27 | 06:24 | 07:58 (7) | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 31 07:42 (7) | 20:57 | 28 | 08:30 (7) | 21:52 | 22:19 | 21:52 | 20:46 | 48 08:46 (7) | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 07:08 (7) | 06:06 | | 08:04 (7) | 05:09 | 04:54 | 05:29 | 06:26 | 07:56 (7) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 35 07:43 (7) | 20:59 | 24 | 08:28 (7) | 21:53 | 22:19 | 21:50 | 20:44 | 50 08:46 (7) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:07 (7) | 06:04 | | 08:07 (7) | 05:07 | 04:54 | 05:31 | 06:28 | 07:56 (7) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 38 07:45 (7) | 21:01 | 17 | 08:24 (7) | 21:55 | 22:19 | 21:49 | 20:42 | 50 08:46 (7) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (7) | 06:01 | | 08:13 (7) | 05:06 | 04:55 | 05:32 | 06:30 | 07:55 (7) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 42 07:46 (7) | 21:03 | 5 | 08:18 (7) | 21:57 | 22:19 | 21:47 | 20:39 | 52 08:47 (7) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:03 (7) | 05:59 | | | 05:05 | 04:55 | 05:34 | 06:32 | 07:55 (7) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 45 08:48 (7) | 21:05 | | | 21:58 | 22:18 | 21:45 | 20:37 | 52 08:47 (7) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:01 (7) | 05:57 | | | 05:04 | 04:56 | 05:36 | 06:34 | 07:54 (7) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 47 08:48 (7) | 21:06 | | | 21:59 | 22:18 | 21:43 | 20:34 | 54 08:48 (7) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:01 (7) | | | | 05:03 | | 05:38 | 06:36 | 07:53 (7) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 48 08:49 (7) | | | | 22:01 | | 21:41 | 20:32 | 54 08:47 (7) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 336 | | 1264 | | | | | 684 | | 943 | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | 1,00 | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | 114 | | 496 | | | | | 351 | | 372 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | | 08:06 (7) | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | | 08:04 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 54 | 09:00 (7) | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 50 | 08:54 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | | 08:06 (7) | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | | 08:03 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 55 | 09:01 (7) | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 52 | 08:55 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 08:05 (7) | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | | 08:02 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 55 | 09:00 (7) | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 53 | 08:55 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 08:04 (7) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | | 08:02 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 55 | 08:59 (7) | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 53 | 08:55 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | | 08:05 (7) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | | 08:00 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 54 | 08:59 (7) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 54 | 08:54 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 08:04 (7) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | | 08:00 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 54 | 08:58 (7) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 55 | 08:55 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | | 08:04 (7) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | | 08:00 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 54 | 08:58 (7) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 55 | 08:55 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 08:04 (7) | 05:40 | 04:55 | 05:03 | 05:52 | | 06:51 | | 08:00 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 53 | 08:57 (7) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 54 | 08:54 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 08:04 (7) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | | 08:00 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 53 | 08:57 (7) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 54 | 08:54 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | | 08:04 (7) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | | 07:59 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 52 | 08:56 (7) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 54 | 08:53 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 08:05 (7) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | | 07:59 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 50 | 08:55 (7) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 54 | 08:53 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 08:05 (7) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | | 07:59 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 49 | 08:54 (7) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 53 | 08:52 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | | 08:05 (7) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:59 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 48 | 08:53 (7) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 53 | 08:52 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 08:06 (7) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | | 07:59 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 46 | 08:52 (7) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 52 | 08:51 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 08:06 (7) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:00 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 44 | 08:50 (7) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 50 | 08:50 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 08:07 (7) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 07:59 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 42 | 08:49 (7) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 49 | 08:48 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 08:09 (7) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:00 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 38 | 08:47 (7) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 47 | 08:47 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 07:34 (7) | 06:25 | | 08:09 (7) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:01 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 8 07:42 (7) | 20:43 | 36 | 08:45 (7) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 45 | 08:46 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 07:28 (7) | 06:23 | | 08:11 (7) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:02 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20 07:48 (7) | 20:45 | 32 | 08:43 (7) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 42 | 08:44 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 07:24 (7) | 06:20 | | 08:13 (7) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | | 08:03 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 27 07:51 (7) | 20:47 | 28 | 08:41 (7) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 40 | 08:43 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 07:21 (7) | 06:18 | | 08:15 (7) | 05:16 | 04:52 | 05:21 | 06:17 | 08:22 (7) | 07:15 | | 08:04 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 32 07:53 (7) | 20:49 | 22 | 08:37 (7) | 21:45 | 22:19 | 21:58 | 20:56 | 17 08:39 (7) | 19:38 | 37 | 08:41 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 07:19 (7) | 06:15 | | 08:18 (7) | 05:15 | 04:52 | 05:22 | 06:19 | 08:19 (7) | 07:17 | | 08:06 (7) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 36 07:55 (7) | 20:51 | 15 | 08:33 (7) | 21:47 | 22:19 | 21:57 | 20:54 | 23 08:42 (7) | 19:35 | 33 | 08:39 (7) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:17 (7) | 06:13 | | | 05:13 | 04:52 | 05:24 | 06:21 | 08:17 (7) | 07:19 | | 08:08 (7) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 39 07:56 (7) | 20:53 | | | 21:49 | 22:19 | 21:55 | 20:51 | 28 08:45 (7) | 19:33 | 28 | 08:36 (7) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:15 (7) | 06:11 | | | 05:12 | 04:53 | 05:26 | 06:22 | 08:15 (7) | 07:21 | | 08:10 (7) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 42 07:57 (7) | 20:55 | | | 21:50 | 22:19 | 21:54 | 20:49 | 32 08:47 (7) | 19:30 | 22 | 08:32 (7) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:13 (7) | 06:08 | | | 05:10 | 04:53 | 05:27 | 06:24 | 08:13 (7) | 07:23 | | 08:14 (7) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 45 07:58 (7) | 20:57 | | | 21:52 | 22:19 | 21:52 | 20:46 | 36 08:49 (7) | 19:27 | 13 | 08:27 (7) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 07:12 (7) | 06:06 | | | 05:09 | 04:54 | 05:29 | 06:26 | 08:10 (7) | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 46 07:58 (7) | 20:59 | | | 21:53 | 22:19 | 21:50 | 20:44 | 39 08:49 (7) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:11 (7) | 06:04 | | | 05:07 | 04:54 | 05:31 | 06:28 | 08:09 (7) | 07:27 | | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 48 07:59 (7) | 21:01 | | | 21:55 | 22:19 | 21:49 | 20:42 | 42 08:51 (7) | 19:22 | | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:09 (7) | 06:01 | | | 05:06 | 04:55 | 05:32 | 06:30 | 08:08 (7) | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 50 07:59 (7) | 21:03 | | | 21:57 | 22:19 | 21:47 | 20:39 | 44 08:52 (7) | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:09 (7) | 05:59 | | | 05:05 | 04:55 | 05:34 | 06:32 | 08:07 (7) | 07:31 | | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 51 09:00 (7) | 21:05 | | | 21:58 | 22:18 | 21:45 | 20:37 | 46 08:53 (7) | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:08 (7) | 05:57 | | | 05:04 | 04:56 | 05:36 | 06:34 | 08:06 (7) | 07:32 | | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 52 09:00 (7) | 21:06 | | | 21:59 | 22:18 | 21:43 | 20:34 | 48 08:54 (7) | 19:14 | | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:07 (7) | | | | 05:03 | | 05:38 | 06:36 | 08:04 (7) | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 54 09:01 (7) | | | | 22:01 | | 21:41 | 20:32 | 49 08:53 (7) | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | | 501 | 520 | 521 | 465 | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | | | 550 | | 989 | | | | | | 404 | | 1152 | | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | | 0,51 | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | | 0,99 | | 0,99 | | | | | | 0,99 | | 0,99 | | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | | 0,51 | | 0,39 | | | | |
| Total, real | | | | 186 | | 386 | | | | | | 206 | | 452 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 08:16 (7) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:18 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 53 | 09:09 (7) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 40 | 08:58 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 08:16 (7) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:16 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 53 | 09:09 (7) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 43 | 08:59 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 08:15 (7) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 08:15 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 53 | 09:08 (7) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 45 | 09:00 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 08:15 (7) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 08:14 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 52 | 09:07 (7) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 47 | 09:01 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 08:16 (7) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 08:12 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 51 | 09:07 (7) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 49 | 09:01 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 08:15 (7) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 08:11 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 50 | 09:05 (7) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 50 | 09:01 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 08:16 (7) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 08:11 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 49 | 09:05 (7) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 51 | 09:02 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 08:16 (7) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 08:10 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 47 | 09:03 (7) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 52 | 09:02 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 08:17 (7) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 08:10 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 45 | 09:02 (7) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 52 | 09:02 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 08:17 (7) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 08:08 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 43 | 09:00 (7) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 54 | 09:02 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 08:19 (7) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 08:08 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 40 | 08:59 (7) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 54 | 09:02 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 08:20 (7) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 08:08 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 38 | 08:58 (7) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 54 | 09:02 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 08:21 (7) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 08:07 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 34 | 08:55 (7) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 54 | 09:01 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 07:42 (7) | 06:35 | 08:23 (7) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:07 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 13 | 07:55 (7) 20:35 30 | 08:53 (7) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 54 | 09:01 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 07:37 (7) 06:32 | 08:24 (7) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:07 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 22 | 07:59 (7) 20:37 26 | 08:50 (7) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 54 | 09:01 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 07:33 (7) 06:30 | 08:27 (7) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:06 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 28 | 08:01 (7) 20:39 20 | 08:47 (7) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 53 | 08:59 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 07:31 (7) 06:27 | 08:32 (7) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 33 | 08:04 (7) 20:41 10 | 08:42 (7) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 53 | 08:59 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 07:29 (7) 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:07 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 36 | 08:05 (7) 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 51 | 08:58 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 07:27 (7) 06:23 | | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:07 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 40 | 08:07 (7) 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 50 | 08:57 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 07:25 (7) 06:20 | | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:08 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 43 | 08:08 (7) 20:47 | | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 48 | 08:56 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 07:23 (7) 06:18 | | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:08 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 45 | 08:08 (7) 20:49 | | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 47 | 08:55 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 07:23 (7) 06:15 | | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:09 (7) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 47 | 08:10 (7) 20:51 | | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 45 | 08:54 (7) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:21 (7) 06:13 | | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:10 (7) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 49 | 08:10 (7) 20:53 | | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 43 | 08:53 (7) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:21 (7) 06:11 | | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:10 (7) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 50 | 08:11 (7) 20:55 | | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 40 | 08:50 (7) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:19 (7) 06:08 | | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 08:11 (7) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 52 | 08:11 (7) 20:57 | | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 38 | 08:49 (7) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 07:18 (7) 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 08:33 (7) | 07:25 | 08:12 (7) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 52 | 08:10 (7) 20:59 | | 21:53 | 22:19 | 21:50 | 20:44 11 08:44 (7) | 19:25 35 | 08:47 (7) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:18 (7) 06:04 | | 05:07 | 04:54 | 05:31 | 06:28 08:29 (7) | 07:27 | 08:14 (7) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 53 | 08:11 (7) 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 20 08:49 (7) | 19:22 30 | 08:44 (7) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:17 (7) 06:01 | | 05:06 | 04:55 | 05:32 | 06:30 08:26 (7) | 07:29 | 08:17 (7) | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 53 | 08:10 (7) 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 26 08:52 (7) | 19:20 24 | 08:41 (7) | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:17 (7) 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 08:23 (7) | 07:31 | 08:20 (7) | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 54 | 09:11 (7) 21:05 | | 21:58 | 22:18 | 21:45 | 20:37 31 08:54 (7) | 19:17 17 | 08:37 (7) | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:16 (7) 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 08:22 (7) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 54 | 09:10 (7) 21:06 | | 21:59 | 22:18 | 21:43 | 20:34 34 08:56 (7) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:16 (7) | | 05:03 | | 05:38 | 06:36 08:19 (7) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 54 | 09:10 (7) | | 22:01 | | 21:41 | 20:32 37 08:56 (7) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 778 | 694 | | | | | 159 | 1327 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | 0,51 | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | 0,98 | 0,98 | | | | | 0,98 | 0,98 | | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | 0,51 | 0,39 | | | | |
| Total, real | | | 261 | 268 | | | | | 80 | 516 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 08:12 (7) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:09 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 60 | 09:12 (7) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 57 | 09:06 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 08:12 (7) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:09 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 60 | 09:12 (7) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 57 | 09:06 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 08:11 (7) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 08:08 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 61 | 09:12 (7) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 59 | 09:07 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 08:11 (7) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 08:08 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 60 | 09:11 (7) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 59 | 09:07 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 08:11 (7) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 08:06 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 60 | 09:11 (7) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 60 | 09:06 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 08:10 (7) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 08:06 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 60 | 09:10 (7) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 60 | 09:06 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 08:10 (7) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 08:06 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 60 | 09:10 (7) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 60 | 09:06 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 08:10 (7) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 08:06 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 59 | 09:09 (7) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 60 | 09:06 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 08:10 (7) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 08:06 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 59 | 09:09 (7) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 60 | 09:06 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 08:10 (7) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 08:05 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 57 | 09:07 (7) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 60 | 09:05 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 08:10 (7) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 08:05 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 57 | 09:07 (7) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 59 | 09:04 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 08:11 (7) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 08:05 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 55 | 09:06 (7) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 59 | 09:04 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 08:11 (7) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 08:05 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 54 | 09:05 (7) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 58 | 09:03 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 08:12 (7) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:05 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 52 | 09:04 (7) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 58 | 09:03 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 08:11 (7) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:06 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 51 | 09:02 (7) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 56 | 09:02 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 08:12 (7) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:05 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 49 | 09:01 (7) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 55 | 09:00 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 07:39 (7) | 06:27 | 08:14 (7) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 16 07:55 (7) | 20:41 46 | 09:00 (7) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 53 | 08:59 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:34 (7) | 06:25 | 08:14 (7) | 05:21 | 04:52 | 05:16 | 06:11 08:35 (7) | 07:10 | 08:06 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 25 07:59 (7) | 20:43 44 | 08:58 (7) | 21:40 | 22:18 | 22:03 | 21:03 9 08:44 (7) | 19:46 52 | 08:58 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:31 (7) | 06:23 | 08:15 (7) | 05:19 | 04:52 | 05:18 | 06:13 08:30 (7) | 07:12 | 08:07 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 31 08:02 (7) | 20:45 41 | 08:56 (7) | 21:42 | 22:18 | 22:01 | 21:01 20 08:50 (7) | 19:43 49 | 08:56 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:28 (7) | 06:20 | 08:17 (7) | 05:18 | 04:52 | 05:19 | 06:15 08:27 (7) | 07:13 | 08:08 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 36 08:04 (7) | 20:47 38 | 08:55 (7) | 21:44 | 22:18 | 22:00 | 20:58 26 08:53 (7) | 19:40 47 | 08:55 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:26 (7) | 06:18 | 08:17 (7) | 05:16 | 04:52 | 05:21 | 06:17 08:24 (7) | 07:15 | 08:09 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 39 08:05 (7) | 20:49 35 | 08:52 (7) | 21:45 | 22:19 | 21:58 | 20:56 31 08:55 (7) | 19:38 44 | 08:53 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 07:24 (7) | 06:15 | 08:20 (7) | 05:15 | 04:52 | 05:22 | 06:19 08:22 (7) | 07:17 | 08:11 (7) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 43 08:07 (7) | 20:51 30 | 08:50 (7) | 21:47 | 22:19 | 21:57 | 20:54 35 08:57 (7) | 19:35 41 | 08:52 (7) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:22 (7) | 06:13 | 08:22 (7) | 05:13 | 04:52 | 05:24 | 06:20 08:20 (7) | 07:19 | 08:12 (7) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 46 08:08 (7) | 20:53 25 | 08:47 (7) | 21:49 | 22:19 | 21:55 | 20:51 39 08:59 (7) | 19:33 37 | 08:49 (7) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 07:21 (7) | 06:11 | 08:25 (7) | 05:12 | 04:53 | 05:26 | 06:22 08:19 (7) | 07:21 | 08:13 (7) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 49 08:10 (7) | 20:55 18 | 08:43 (7) | 21:50 | 22:19 | 21:54 | 20:49 41 09:00 (7) | 19:30 33 | 08:46 (7) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 07:19 (7) | 06:08 | 08:31 (7) | 05:10 | 04:53 | 05:27 | 06:24 08:17 (7) | 07:23 | 08:16 (7) | 08:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 51 08:10 (7) | 20:57 4 | 08:35 (7) | 21:52 | 22:19 | 21:52 | 20:46 45 09:02 (7) | 19:27 27 | 08:43 (7) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 07:17 (7) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 08:15 (7) | 07:25 | 08:19 (7) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 53 08:10 (7) | 20:59 | | 21:53 | 22:19 | 21:50 | 20:44 47 09:02 (7) | 19:25 20 | 08:39 (7) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 07:17 (7) | 06:04 | | 05:07 | 04:54 | 05:31 | 06:28 08:14 (7) | 07:27 | 08:27 (7) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 54 08:11 (7) | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 49 09:03 (7) | 19:22 4 | 08:31 (7) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 07:15 (7) | 06:01 | | 05:06 | 04:55 | 05:32 | 06:30 08:13 (7) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 56 08:11 (7) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 51 09:04 (7) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 08:15 (7) | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 08:12 (7) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 57 09:12 (7) | 21:05 | | 21:58 | 22:18 | 21:45 | 20:37 53 09:05 (7) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 08:14 (7) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 08:12 (7) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 58 09:12 (7) | 21:06 | | 21:59 | 22:18 | 21:43 | 20:34 54 09:06 (7) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 08:14 (7) | | | 05:03 | | 05:38 | 06:36 08:10 (7) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 58 09:12 (7) | | | 22:01 | | 21:41 | 20:32 55 09:05 (7) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 672 | 1195 | | | | | 555 | 1344 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | 0,51 | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | 0,99 | 0,99 | | | | | 0,99 | 0,99 | | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | 0,51 | 0,39 | | | | |
| Total, real | | | 226 | 464 | | | | | 282 | 525 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26<br>18:07 | 07:08<br>20:09 | 05:55<br>21:08 37 | 06:43 (7) \| 05:02<br>07:20 (7) \| 22:02 53 | 06:34 (7) \| 04:57<br>07:27 (7) \| 22:18 49 | 06:42 (7) \| 05:39<br>07:31 (7) \| 21:40 54 | 06:44 (7) \| 06:38<br>07:38 (7) \| 20:29 | 07:34<br>19:12 | 07:36<br>16:58 | 08:35<br>16:10 |
| 2 | 09:00<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05<br>20:11 | 05:53<br>21:10 40 | 06:40 (7) \| 05:01<br>07:20 (7) \| 22:03 52 | 06:35 (7) \| 04:57<br>07:27 (7) \| 22:17 49 | 06:43 (7) \| 05:41<br>07:32 (7) \| 21:38 53 | 06:44 (7) \| 06:39<br>07:37 (7) \| 20:27 | 07:36<br>19:09 | 07:38<br>16:55 | 08:36<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:11 | 07:03<br>20:13 | 05:50<br>21:12 42 | 06:39 (7) \| 05:00<br>07:21 (7) \| 22:05 52 | 06:35 (7) \| 04:58<br>07:27 (7) \| 22:17 50 | 06:42 (7) \| 05:43<br>07:32 (7) \| 21:36 52 | 06:44 (7) \| 06:41<br>07:36 (7) \| 20:24 | 07:38<br>19:07 | 07:41<br>16:53 | 08:38<br>16:08 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19<br>18:13 | 07:00<br>20:15 | 05:48<br>21:14 44 | 06:38 (7) \| 04:59<br>07:22 (7) \| 22:06 52 | 06:36 (7) \| 04:59<br>07:28 (7) \| 22:16 50 | 06:42 (7) \| 05:45<br>07:32 (7) \| 21:34 51 | 06:45 (7) \| 06:43<br>07:36 (7) \| 20:22 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17<br>18:15 | 06:57<br>20:17 | 05:46<br>21:16 46 | 06:37 (7) \| 04:58<br>07:23 (7) \| 22:07 51 | 06:36 (7) \| 05:00<br>07:27 (7) \| 22:16 51 | 06:42 (7) \| 05:47<br>07:33 (7) \| 21:32 50 | 06:45 (7) \| 06:45<br>07:35 (7) \| 20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:17 | 06:55<br>20:19 | 05:44<br>21:18 48 | 06:37 (7) \| 04:57<br>07:25 (7) \| 22:08 51 | 06:36 (7) \| 05:01<br>07:27 (7) \| 22:15 51 | 06:42 (7) \| 05:49<br>07:33 (7) \| 21:30 48 | 06:46 (7) \| 06:47<br>07:34 (7) \| 20:16 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 08:58<br>16:21 | 08:16<br>17:21 | 07:12<br>18:19 | 06:52<br>20:21 | 05:42<br>21:20 49 | 06:36 (7) \| 04:56<br>07:25 (7) \| 22:09 50 | 06:37 (7) \| 05:02<br>07:27 (7) \| 22:14 51 | 06:42 (7) \| 05:50<br>07:33 (7) \| 21:28 47 | 06:47 (7) \| 06:49<br>07:34 (7) \| 20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 51 | 06:35 (7) \| 04:56<br>07:26 (7) \| 22:10 50 | 06:37 (7) \| 05:03<br>07:27 (7) \| 22:14 52 | 06:42 (7) \| 05:52<br>07:34 (7) \| 21:25 45 | 06:48 (7) \| 06:51<br>07:33 (7) \| 20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:24 | 08:12<br>17:25 | 07:07<br>18:24 | 06:47<br>20:25 | 05:38<br>21:24 51 | 06:35 (7) \| 04:55<br>07:26 (7) \| 22:11 50 | 06:37 (7) \| 05:04<br>07:27 (7) \| 22:13 52 | 06:42 (7) \| 05:54<br>07:34 (7) \| 21:23 43 | 06:48 (7) \| 06:53<br>07:31 (7) \| 20:09 | 07:50<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 08:56<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 52 | 06:34 (7) \| 04:54<br>07:26 (7) \| 22:12 50 | 06:37 (7) \| 05:05<br>07:27 (7) \| 22:12 53 | 06:42 (7) \| 05:56<br>07:35 (7) \| 21:21 42 | 06:49 (7) \| 06:55<br>07:31 (7) \| 20:06 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:42<br>20:29 | 05:34<br>21:28 53 | 06:33 (7) \| 04:54<br>07:26 (7) \| 22:13 49 | 06:38 (7) \| 05:07<br>07:27 (7) \| 22:11 53 | 06:42 (7) \| 05:58<br>07:35 (7) \| 21:19 40 | 06:50 (7) \| 06:56<br>07:30 (7) \| 20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:29 | 08:06<br>17:31 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:29 53 | 06:34 (7) \| 04:53<br>07:27 (7) \| 22:14 48 | 06:39 (7) \| 05:08<br>07:27 (7) \| 22:10 53 | 06:43 (7) \| 06:00<br>07:36 (7) \| 21:17 36 | 06:51 (7) \| 06:58<br>07:27 (7) \| 20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 08:54<br>16:31 | 08:03<br>17:33 | 06:56<br>18:32 | 06:37<br>20:33 | 05:30<br>21:31 54 | 06:33 (7) \| 04:53<br>07:27 (7) \| 22:15 49 | 06:38 (7) \| 05:09<br>07:27 (7) \| 22:09 54 | 06:42 (7) \| 06:02<br>07:36 (7) \| 21:15 34 | 06:52 (7) \| 07:00<br>07:26 (7) \| 19:58 | 07:58<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 08:53<br>16:33 | 08:01<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 55 | 06:32 (7) \| 04:53<br>07:27 (7) \| 22:15 48 | 06:39 (7) \| 05:11<br>07:27 (7) \| 22:08 54 | 06:42 (7) \| 06:03<br>07:36 (7) \| 21:12 30 | 06:54 (7) \| 07:02<br>07:24 (7) \| 19:56 | 08:00<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 08:52<br>16:34 | 07:59<br>17:38 | 06:51<br>18:36 | 06:32<br>20:37 | 05:26<br>21:35 55 | 06:33 (7) \| 04:52<br>07:28 (7) \| 22:16 48 | 06:39 (7) \| 05:12<br>07:27 (7) \| 22:06 54 | 06:42 (7) \| 06:05<br>07:36 (7) \| 21:10 25 | 06:57 (7) \| 07:04<br>07:22 (7) \| 19:53 | 08:02<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 08:51<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 56 | 06:32 (7) \| 04:52<br>07:28 (7) \| 22:17 47 | 06:40 (7) \| 05:13<br>07:27 (7) \| 22:05 54 | 06:43 (7) \| 06:07<br>07:37 (7) \| 21:08 19 | 07:00 (7) \| 07:06<br>07:19 (7) \| 19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:46<br>18:40 | 06:27<br>20:41 | 05:23<br>21:39 55 | 06:32 (7) \| 04:52<br>07:27 (7) \| 22:17 48 | 06:40 (7) \| 05:15<br>07:28 (7) \| 22:04 55 | 06:42 (7) \| 06:09<br>07:37 (7) \| 21:05 9 | 07:04 (7) \| 07:08<br>07:13 (7) \| 19:48 | 08:06<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 08:49<br>16:40 | 07:52<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 56 | 06:32 (7) \| 04:52<br>07:28 (7) \| 22:18 48 | 06:40 (7) \| 05:16<br>07:28 (7) \| 22:03 55 | 06:42 (7) \| 06:11<br>07:37 (7) \| 21:03 | 07:10<br>19:46 | 08:08<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:47<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:19<br>21:42 56 | 06:32 (7) \| 04:52<br>07:28 (7) \| 22:18 48 | 06:40 (7) \| 05:18<br>07:28 (7) \| 22:01 56 | 06:42 (7) \| 06:13<br>07:38 (7) \| 21:01 | 07:12<br>19:43 | 08:10<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:48 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 56 | 06:32 (7) \| 04:52<br>07:28 (7) \| 22:18 47 | 06:41 (7) \| 05:19<br>07:28 (7) \| 22:00 56 | 06:42 (7) \| 06:15<br>07:38 (7) \| 20:58 | 07:13<br>19:40 | 08:12<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 08:45<br>16:46 | 07:46<br>17:50 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 57 | 06:32 (7) \| 04:52<br>07:29 (7) \| 22:19 47 | 06:41 (7) \| 05:21<br>07:28 (7) \| 21:58 56 | 06:42 (7) \| 06:17<br>07:38 (7) \| 20:56 | 07:15<br>19:38 | 08:14<br>18:22 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 08:43<br>16:48 | 07:43<br>17:53 | 06:33<br>18:50 | 06:15<br>20:51 | 05:15<br>21:47 56 | 06:32 (7) \| 04:52<br>07:28 (7) \| 22:19 47 | 06:41 (7) \| 05:22<br>07:28 (7) \| 21:57 56 | 06:42 (7) \| 06:19<br>07:38 (7) \| 20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 56 | 06:32 (7) \| 04:53<br>07:28 (7) \| 22:19 47 | 06:42 (7) \| 05:24<br>07:29 (7) \| 21:55 56 | 06:42 (7) \| 06:21<br>07:38 (7) \| 20:51 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:51 | 07:38<br>17:57 | 06:28<br>18:54 | 06:11<br>20:55 | 05:12<br>21:50 55 | 06:33 (7) \| 04:53<br>07:28 (7) \| 22:19 48 | 06:41 (7) \| 05:26<br>07:29 (7) \| 21:54 56 | 06:42 (7) \| 06:22<br>07:38 (7) \| 20:49 | 07:21<br>19:30 | 08:20<br>18:15 | 08:23<br>16:17 | 09:00<br>16:06 |
| 25 | 08:39<br>16:53 | 07:36<br>17:59 | 06:26<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 56 | 06:32 (7) \| 04:53<br>07:28 (7) \| 22:19 48 | 06:42 (7) \| 05:27<br>07:30 (7) \| 21:52 56 | 06:42 (7) \| 06:24<br>07:38 (7) \| 20:46 | 07:23<br>19:27 | 08:22<br>17:13 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 08:37<br>16:56 | 07:34<br>18:01 | 06:23<br>18:57 | 06:06<br>20:59 12 | 06:56 (7) \| 05:09<br>07:08 (7) \| 21:53 55 | 06:33 (7) \| 04:54<br>07:28 (7) \| 22:19 48 | 06:42 (7) \| 05:29<br>07:30 (7) \| 21:50 56 | 06:42 (7) \| 06:26<br>07:38 (7) \| 20:44 | 07:25<br>19:25 | 08:24<br>17:11 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 08:36<br>16:58 | 07:31<br>18:03 | 06:21<br>18:59 | 06:04<br>21:01 21 | 06:51 (7) \| 05:08<br>07:12 (7) \| 21:55 55 | 06:33 (7) \| 04:54<br>07:28 (7) \| 22:19 48 | 06:41 (7) \| 05:31<br>07:29 (7) \| 21:49 56 | 06:43 (7) \| 06:28<br>07:39 (7) \| 20:42 | 07:27<br>19:22 | 08:26<br>17:08 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:01 | 06:02<br>21:03 26 | 06:49 (7) \| 05:06<br>07:15 (7) \| 21:56 55 | 06:33 (7) \| 04:55<br>07:28 (7) \| 22:19 48 | 06:42 (7) \| 05:32<br>07:30 (7) \| 21:47 55 | 06:43 (7) \| 06:30<br>07:38 (7) \| 20:39 | 07:29<br>19:20 | 08:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 08:33<br>17:02 | | 07:15<br>20:03 | 05:59<br>21:05 31 | 06:46 (7) \| 05:05<br>07:17 (7) \| 21:58 54 | 06:34 (7) \| 04:55<br>07:28 (7) \| 22:18 48 | 06:43 (7) \| 05:34<br>07:31 (7) \| 21:45 55 | 06:43 (7) \| 06:32<br>07:38 (7) \| 20:37 | 07:31<br>19:17 | 08:30<br>17:04 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:05 | 05:57<br>21:06 35 | 06:44 (7) \| 05:04<br>07:19 (7) \| 21:59 54 | 06:34 (7) \| 04:56<br>07:28 (7) \| 22:18 49 | 06:42 (7) \| 05:36<br>07:31 (7) \| 21:43 54 | 06:43 (7) \| 06:34<br>07:37 (7) \| 20:34 | 07:32<br>19:14 | 07:32<br>17:02 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 08:29<br>17:06 | | 07:10<br>20:07 | | 05:03<br>22:01 54 | 06:34 (7) \|<br>07:28 (7) \| | 05:38<br>21:41 55 | 06:43 (7) \| 06:36<br>07:38 (7) \| 20:32 | | 07:34<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 125 | 1616 | 1469 | 1663 | 678 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | 0,95 | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | 0,46 | 0,46 | 0,49 | | | | |
| Total, real | | | | 47 | 794 | 674 | 768 | 332 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 31 | 07:17 (7) 22:02 60 | 07:31 (7) 22:18 57 | 07:35 (7) 21:40 55 | 07:38 (7) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:43 (7) 05:01 | 06:31 (7) 04:57 | 06:38 (7) 05:41 | 06:43 (7) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 35 | 07:18 (7) 22:03 60 | 07:31 (7) 22:17 58 | 07:36 (7) 21:38 53 | 07:36 (7) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:41 (7) 05:00 | 06:31 (7) 04:58 | 06:37 (7) 05:43 | 06:44 (7) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 38 | 07:19 (7) 22:05 59 | 07:30 (7) 22:17 59 | 07:36 (7) 21:36 52 | 07:36 (7) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:39 (7) 04:59 | 06:32 (7) 04:59 | 06:38 (7) 05:45 | 06:45 (7) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 41 | 07:20 (7) 22:06 59 | 07:31 (7) 22:16 58 | 07:36 (7) 21:34 51 | 07:36 (7) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:38 (7) 04:58 | 06:32 (7) 05:00 | 06:38 (7) 05:47 | 06:45 (7) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 44 | 07:22 (7) 22:07 59 | 07:31 (7) 22:16 58 | 07:36 (7) 21:32 49 | 07:34 (7) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:38 (7) 04:57 | 06:32 (7) 05:01 | 06:38 (7) 05:49 | 06:46 (7) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 45 | 07:23 (7) 22:08 59 | 07:31 (7) 22:15 59 | 07:37 (7) 21:30 47 | 07:33 (7) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:37 (7) 04:56 | 06:33 (7) 05:02 | 06:38 (7) 05:50 | 06:47 (7) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 47 | 07:24 (7) 22:09 58 | 07:31 (7) 22:14 59 | 07:37 (7) 21:28 46 | 07:33 (7) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:36 (7) 04:56 | 06:32 (7) 05:03 | 06:38 (7) 05:52 | 06:49 (7) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 49 | 07:25 (7) 22:10 59 | 07:31 (7) 22:14 59 | 07:37 (7) 21:25 43 | 07:32 (7) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:35 (7) 04:55 | 06:33 (7) 05:04 | 06:38 (7) 05:54 | 06:49 (7) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 50 | 07:25 (7) 22:11 58 | 07:31 (7) 22:13 60 | 07:38 (7) 21:23 40 | 07:29 (7) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:34 (7) 04:54 | 06:33 (7) 05:05 | 06:38 (7) 05:56 | 06:51 (7) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 52 | 07:26 (7) 22:12 58 | 07:31 (7) 22:12 60 | 07:38 (7) 21:21 37 | 07:28 (7) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:33 (7) 04:54 | 06:33 (7) 05:07 | 06:38 (7) 05:58 | 06:53 (7) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 53 | 07:26 (7) 22:13 58 | 07:31 (7) 22:11 60 | 07:38 (7) 21:19 34 | 07:27 (7) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:33 (7) 04:53 | 06:34 (7) 05:08 | 06:39 (7) 06:00 | 06:54 (7) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 55 | 07:28 (7) 22:14 58 | 07:32 (7) 22:10 60 | 07:39 (7) 21:17 30 | 07:24 (7) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 06:32 (7) 04:53 | 06:34 (7) 05:09 | 06:39 (7) 06:02 | 06:56 (7) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 56 | 07:28 (7) 22:15 57 | 07:31 (7) 22:09 60 | 07:39 (7) 21:15 25 | 07:21 (7) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:31 (7) 04:53 | 06:34 (7) 05:11 | 06:39 (7) 06:03 | 07:00 (7) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 57 | 07:28 (7) 22:15 57 | 07:31 (7) 22:08 60 | 07:39 (7) 21:12 18 | 07:18 (7) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:32 (7) 04:52 | 06:34 (7) 05:12 | 06:39 (7) 06:05 | 07:06 (7) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 57 | 07:29 (7) 22:16 58 | 07:32 (7) 22:06 60 | 07:39 (7) 21:10 6 | 07:12 (7) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:31 (7) 04:52 | 06:35 (7) 05:13 | 06:40 (7) 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 58 | 07:29 (7) 22:17 57 | 07:32 (7) 22:05 60 | 07:40 (7) 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:30 (7) 04:52 | 06:35 (7) 05:15 | 06:39 (7) 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 59 | 07:29 (7) 22:17 57 | 07:32 (7) 22:04 61 | 07:40 (7) 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:30 (7) 04:52 | 06:35 (7) 05:16 | 06:39 (7) 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 59 | 07:29 (7) 22:18 57 | 07:32 (7) 22:03 61 | 07:40 (7) 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:30 (7) 04:52 | 06:36 (7) 05:18 | 06:40 (7) 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 59 | 07:29 (7) 22:18 56 | 07:32 (7) 22:01 60 | 07:40 (7) 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 06:30 (7) 04:52 | 06:36 (7) 05:19 | 06:40 (7) 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 60 | 07:30 (7) 22:18 56 | 07:32 (7) 22:00 60 | 07:40 (7) 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 06:30 (7) 04:52 | 06:36 (7) 05:21 | 06:39 (7) 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 60 | 07:30 (7) 22:19 57 | 07:33 (7) 21:58 61 | 07:40 (7) 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 06:30 (7) 04:52 | 06:36 (7) 05:22 | 06:40 (7) 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 60 | 07:30 (7) 22:19 56 | 07:32 (7) 21:57 60 | 07:40 (7) 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 06:30 (7) 04:53 | 06:37 (7) 05:24 | 06:40 (7) 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 60 | 07:30 (7) 22:19 56 | 07:33 (7) 21:55 60 | 07:40 (7) 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 06:30 (7) 04:53 | 06:36 (7) 05:26 | 06:40 (7) 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 61 | 07:31 (7) 22:19 57 | 07:33 (7) 21:54 60 | 07:40 (7) 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 06:29 (7) 04:53 | 06:37 (7) 05:27 | 06:40 (7) 06:24 | 07:23 | 08:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 61 | 07:30 (7) 22:19 57 | 07:34 (7) 21:52 59 | 07:39 (7) 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 06:30 (7) 04:54 | 06:37 (7) 05:29 | 06:41 (7) 06:26 | 07:25 | 08:26 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 60 | 07:30 (7) 22:19 57 | 07:34 (7) 21:50 59 | 07:40 (7) 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 06:30 (7) 04:54 | 06:37 (7) 05:31 | 06:42 (7) 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 60 | 07:30 (7) 22:19 57 | 07:34 (7) 21:49 58 | 07:40 (7) 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:56 (7) | 05:06 | 06:30 (7) 04:55 | 06:37 (7) 05:32 | 06:41 (7) 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 11 07:07 (7) | 21:56 61 | 07:31 (7) 22:19 58 | 07:35 (7) 21:47 58 | 07:39 (7) 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:51 (7) | 05:05 | 06:30 (7) 04:55 | 06:38 (7) 05:34 | 06:42 (7) 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 21 07:12 (7) | 21:58 61 | 07:31 (7) 22:18 57 | 07:35 (7) 21:45 57 | 07:39 (7) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:48 (7) | 05:04 | 06:31 (7) 04:56 | 06:37 (7) 05:36 | 06:42 (7) 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 27 07:15 (7) | 21:59 60 | 07:31 (7) 22:18 58 | 07:35 (7) 21:43 56 | 07:38 (7) 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:31 (7) | 05:38 | 06:43 (7) 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 60 | 07:31 (7) | 21:41 55 | 07:38 (7) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 59 | 1669 | 1730 | 1832 | 586 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | 0,95 | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | 0,46 | 0,46 | 0,49 | | | | |
| Total, real | | | | 22 | 817 | 791 | 843 | 286 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | | 09:25 (7) | 07:08 | 10:23 (7) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | 93 | 10:58 (7) | 20:09 | 70 | 11:33 (7) | 21:08 | 22:02 |
| 2 | 09:00 | 08:26 | | 07:24 | | 09:24 (7) | 07:05 | 10:23 (7) | 05:53 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | 94 | 10:58 (7) | 20:11 | 67 | 11:30 (7) | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | | 09:24 (7) | 07:03 | 10:25 (7) | 05:50 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | 95 | 10:59 (7) | 20:13 | 63 | 11:28 (7) | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 09:23 (7) | 07:00 | 10:26 (7) | 05:48 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | 96 | 10:59 (7) | 20:15 | 58 | 11:24 (7) | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | | 09:23 (7) | 06:57 | 10:28 (7) | 05:46 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | 96 | 10:59 (7) | 20:17 | 54 | 11:22 (7) | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 09:22 (7) | 06:55 | 10:29 (7) | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | 97 | 10:59 (7) | 20:19 | 49 | 11:18 (7) | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 10:11 (7) | 07:12 | | 09:22 (7) | 06:52 | 10:32 (7) | 05:42 | 04:56 |
| | 16:21 | 17:21 | 2 10:13 (7) | 18:19 | 98 | 11:00 (7) | 20:21 | 42 | 11:14 (7) | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 10:01 (7) | 07:09 | | 09:21 (7) | 06:50 | 10:34 (7) | 05:40 | 04:55 |
| | 16:23 | 17:23 | 23 10:24 (7) | 18:21 | 98 | 10:59 (7) | 20:23 | 35 | 11:09 (7) | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 09:57 (7) | 07:07 | | 09:20 (7) | 06:47 | 10:39 (7) | 05:38 | 04:55 |
| | 16:24 | 17:25 | 32 10:29 (7) | 18:24 | 99 | 10:59 (7) | 20:25 | 25 | 11:04 (7) | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 | 09:53 (7) | 07:04 | | 09:20 (7) | 06:45 | 10:47 (7) | 05:36 | 04:54 |
| | 16:26 | 17:27 | 39 10:32 (7) | 18:26 | 99 | 10:59 (7) | 20:27 | 5 | 10:52 (7) | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 09:50 (7) | 07:02 | | 09:19 (7) | 06:42 | | 05:34 | 04:54 |
| | 16:28 | 17:29 | 45 10:35 (7) | 18:28 | 99 | 10:58 (7) | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 09:48 (7) | 06:59 | | 09:19 (7) | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 17:31 | 50 10:38 (7) | 18:30 | 100 | 10:59 (7) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 | 09:46 (7) | 06:56 | | 09:19 (7) | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 17:33 | 54 10:40 (7) | 18:32 | 99 | 10:58 (7) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 09:43 (7) | 06:54 | | 09:19 (7) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 17:36 | 59 10:42 (7) | 18:34 | 99 | 10:58 (7) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 09:42 (7) | 06:51 | | 09:18 (7) | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 17:38 | 62 10:44 (7) | 18:36 | 99 | 10:57 (7) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 09:40 (7) | 06:49 | | 09:18 (7) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 17:40 | 66 10:46 (7) | 18:38 | 98 | 10:56 (7) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 09:38 (7) | 06:46 | | 09:18 (7) | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 69 10:47 (7) | 18:40 | 98 | 10:56 (7) | 20:41 | | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 | 09:37 (7) | 06:44 | | 09:18 (7) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 72 10:49 (7) | 18:42 | 97 | 10:55 (7) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | 09:36 (7) | 06:41 | | 09:18 (7) | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 17:46 | 74 10:50 (7) | 18:44 | 96 | 10:54 (7) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 09:34 (7) | 06:39 | | 09:18 (7) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 17:48 | 77 10:51 (7) | 18:46 | 95 | 10:53 (7) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 09:33 (7) | 06:36 | | 09:17 (7) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 17:50 | 79 10:52 (7) | 18:48 | 95 | 10:52 (7) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 | 09:32 (7) | 06:33 | | 09:18 (7) | 06:15 | | 05:15 | 04:52 |
| | 16:47 | 17:53 | 81 10:53 (7) | 18:50 | 93 | 10:51 (7) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 09:31 (7) | 06:31 | | 09:18 (7) | 06:13 | | 05:13 | 04:52 |
| | 16:49 | 17:55 | 83 10:54 (7) | 18:52 | 91 | 10:49 (7) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 | 09:29 (7) | 06:28 | | 09:19 (7) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 17:57 | 86 10:55 (7) | 18:54 | 90 | 10:49 (7) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 09:29 (7) | 06:26 | | 09:19 (7) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 17:59 | 87 10:56 (7) | 18:55 | 88 | 10:47 (7) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 | 09:27 (7) | 06:23 | | 09:18 (7) | 06:06 | | 05:09 | 04:54 |
| | 16:55 | 18:01 | 89 10:56 (7) | 18:57 | 87 | 10:45 (7) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 | 09:27 (7) | 06:21 | | 09:19 (7) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | 18:03 | 90 10:57 (7) | 18:59 | 85 | 10:44 (7) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 09:25 (7) | 06:18 | | 09:20 (7) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | 18:05 | 92 10:57 (7) | 19:01 | 82 | 10:42 (7) | 21:03 | | 21:56 | 22:19 |
| 29 | 08:33 | | | 07:15 | | 10:21 (7) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 79 | 11:40 (7) | 21:04 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | | 10:21 (7) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 77 | 11:38 (7) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | | 10:22 (7) | | | 05:03 | |
| | 17:06 | | | 20:07 | 74 | 11:36 (7) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 1411 | | 2886 | | | 468 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,69 | | 0,69 | | | 0,69 | | |
| Total reduction | | | 0,17 | | 0,23 | | | 0,27 | | |
| Total, real | | | 238 | | 677 | | | 127 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 09:58 (7) | 07:36 | | 09:23 (7) | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 100 | 11:38 (7) | 16:58 | 38 | 10:01 (7) | 16:10 |
| 2 | 04:57 | | 05:41 | | 06:39 | | 10:46 (7) | 07:36 | | 09:58 (7) | 07:38 | | 09:27 (7) | 08:36 |
| | 22:17 | | 21:38 | | 20:27 | 5 | 10:51 (7) | 19:09 | 99 | 11:37 (7) | 16:55 | 31 | 09:58 (7) | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:41 | | 10:37 (7) | 07:38 | | 09:58 (7) | 07:40 | | 09:32 (7) | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | 25 | 11:02 (7) | 19:07 | 99 | 11:37 (7) | 16:53 | 21 | 09:53 (7) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:43 | | 10:32 (7) | 07:40 | | 09:58 (7) | 07:43 | | | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | 35 | 11:07 (7) | 19:04 | 99 | 11:37 (7) | 16:51 | | | 16:07 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 10:28 (7) | 07:42 | | 09:58 (7) | 07:45 | | | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | 42 | 11:10 (7) | 19:02 | 98 | 11:36 (7) | 16:49 | | | 16:07 |
| 6 | 05:01 | | 05:48 | | 06:47 | | 10:25 (7) | 07:44 | | 09:57 (7) | 07:47 | | | 08:43 |
| | 22:15 | | 21:30 | | 20:16 | 49 | 11:14 (7) | 18:59 | 99 | 11:36 (7) | 16:47 | | | 16:06 |
| 7 | 05:02 | | 05:50 | | 06:49 | | 10:23 (7) | 07:46 | | 09:57 (7) | 07:49 | | | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | 54 | 11:17 (7) | 18:57 | 98 | 11:35 (7) | 16:45 | | | 16:05 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 10:21 (7) | 07:48 | | 09:58 (7) | 07:51 | | | 08:45 |
| | 22:14 | | 21:25 | | 20:11 | 58 | 11:19 (7) | 18:54 | 97 | 11:35 (7) | 16:43 | | | 16:05 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 10:19 (7) | 07:50 | | 09:58 (7) | 07:53 | | | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | 63 | 11:22 (7) | 18:52 | 96 | 11:34 (7) | 16:41 | | | 16:05 |
| 10 | 05:05 | | 05:56 | | 06:55 | | 10:17 (7) | 07:52 | | 09:58 (7) | 07:55 | | | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | 66 | 11:23 (7) | 18:49 | 95 | 11:33 (7) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:58 | | 06:56 | | 10:15 (7) | 07:54 | | 09:58 (7) | 07:57 | | | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | 70 | 11:25 (7) | 18:47 | 95 | 11:33 (7) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | | 10:14 (7) | 07:56 | | 09:58 (7) | 07:59 | | | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | 73 | 11:27 (7) | 18:44 | 94 | 11:32 (7) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | | 10:12 (7) | 07:58 | | 09:58 (7) | 08:01 | | | 08:51 |
| | 22:09 | | 21:15 | | 19:58 | 77 | 11:29 (7) | 18:42 | 93 | 11:31 (7) | 16:34 | | | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 10:11 (7) | 08:00 | | 09:59 (7) | 08:03 | | | 08:52 |
| | 22:08 | | 21:12 | | 19:56 | 79 | 11:30 (7) | 18:39 | 91 | 11:30 (7) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 10:10 (7) | 08:02 | | 09:59 (7) | 08:05 | | | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | 82 | 11:32 (7) | 18:37 | 90 | 11:29 (7) | 16:31 | | | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 10:08 (7) | 08:04 | | 10:00 (7) | 08:07 | | | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | 84 | 11:32 (7) | 18:34 | 88 | 11:28 (7) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 10:07 (7) | 08:06 | | 10:00 (7) | 08:09 | | | 08:55 |
| | 22:04 | | 21:05 | | 19:48 | 86 | 11:33 (7) | 18:32 | 87 | 11:27 (7) | 16:27 | | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 10:06 (7) | 08:08 | | 10:02 (7) | 08:11 | | | 08:56 |
| | 22:03 | | 21:03 | | 19:45 | 88 | 11:34 (7) | 18:29 | 84 | 11:26 (7) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 10:05 (7) | 08:10 | | 10:02 (7) | 08:13 | | | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | 90 | 11:35 (7) | 18:27 | 83 | 11:25 (7) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 10:05 (7) | 08:12 | | 10:03 (7) | 08:15 | | | 08:57 |
| | 22:00 | | 20:58 | | 19:40 | 91 | 11:36 (7) | 18:25 | 81 | 11:24 (7) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 10:04 (7) | 08:14 | | 10:04 (7) | 08:17 | | | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | 92 | 11:36 (7) | 18:22 | 78 | 11:22 (7) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 10:03 (7) | 08:16 | | 10:05 (7) | 08:19 | | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | 94 | 11:37 (7) | 18:20 | 76 | 11:21 (7) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:20 | | 07:19 | | 10:02 (7) | 08:18 | | 10:06 (7) | 08:21 | | | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | 96 | 11:38 (7) | 18:18 | 73 | 11:19 (7) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 10:01 (7) | 08:20 | | 10:08 (7) | 08:23 | | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 96 | 11:37 (7) | 18:15 | 70 | 11:18 (7) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 10:00 (7) | 07:22 | | 09:09 (7) | 08:24 | | | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | 97 | 11:37 (7) | 17:13 | 68 | 10:17 (7) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 10:00 (7) | 07:24 | | 09:10 (7) | 08:26 | | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | 98 | 11:38 (7) | 17:11 | 65 | 10:15 (7) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 09:59 (7) | 07:26 | | 09:12 (7) | 08:28 | | | 09:00 |
| | 21:49 | | 20:42 | | 19:22 | 99 | 11:38 (7) | 17:08 | 61 | 10:13 (7) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 06:30 | | 07:29 | | 09:59 (7) | 07:28 | | 09:13 (7) | 08:30 | | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | 99 | 11:38 (7) | 17:06 | 58 | 10:11 (7) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 06:32 | | 07:31 | | 09:59 (7) | 07:30 | | 09:16 (7) | 08:31 | | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | 99 | 11:38 (7) | 17:04 | 53 | 10:09 (7) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 06:34 | | 07:32 | | 09:58 (7) | 07:32 | | 09:18 (7) | 08:33 | | | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | 100 | 11:38 (7) | 17:02 | 49 | 10:07 (7) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | 09:20 (7) | | | | 09:01 |
| | 21:41 | | 20:32 | | | | | 17:00 | 44 | 10:04 (7) | | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | | | | | 2187 | | | 2561 | | | 90 | | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | | 0,69 | | | 0,69 | | | 0,69 | | |
| Total reduction | | | | | | 0,27 | | | 0,21 | | | 0,11 | | |
| Total, real | | | | | | 596 | | | 541 | | | 10 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 08:39 (7) | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 09:19 (7) | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 57 | 09:36 (7) | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 49 | 10:08 (7) | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 08:38 (7) | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 09:17 (7) | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 58 | 09:36 (7) | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 52 | 10:09 (7) | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 08:38 (7) | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 09:17 (7) | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 58 | 09:36 (7) | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 52 | 10:09 (7) | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 08:37 (7) | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 09:16 (7) | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 58 | 09:35 (7) | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 54 | 10:10 (7) | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 08:38 (7) | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 09:15 (7) | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 57 | 09:35 (7) | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 55 | 10:10 (7) | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 08:37 (7) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 09:14 (7) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 58 | 09:35 (7) | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 56 | 10:10 (7) | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 08:38 (7) | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 09:14 (7) | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 57 | 09:35 (7) | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 57 | 10:11 (7) | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 08:38 (7) | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 09:13 (7) | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 55 | 09:33 (7) | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 58 | 10:11 (7) | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 08:37 (7) | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 09:13 (7) | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 55 | 09:32 (7) | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 57 | 10:10 (7) | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 08:38 (7) | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 09:12 (7) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 54 | 09:32 (7) | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 58 | 10:10 (7) | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 08:38 (7) | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 09:12 (7) | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 52 | 09:30 (7) | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 58 | 10:10 (7) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 09:03 (7) 06:59 | 08:39 (7) | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 09:12 (7) | 07:59 | 08:50 |
| | 16:29 | 17:31 12 | 09:15 (7) 18:30 51 | 09:30 (7) | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 58 | 10:10 (7) | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 08:59 (7) 06:56 | 08:40 (7) | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 09:12 (7) | 08:01 | 08:51 |
| | 16:31 | 17:33 21 | 09:20 (7) 18:32 48 | 09:28 (7) | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 57 | 10:09 (7) | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 08:55 (7) 06:54 | 08:41 (7) | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 09:12 (7) | 08:03 | 08:52 |
| | 16:33 | 17:36 27 | 09:22 (7) 18:34 46 | 09:27 (7) | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 57 | 10:09 (7) | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 08:53 (7) 06:51 | 08:41 (7) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 09:12 (7) | 08:05 | 08:53 |
| | 16:34 | 17:38 32 | 09:25 (7) 18:36 44 | 09:25 (7) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 56 | 10:08 (7) | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 08:51 (7) 06:49 | 08:42 (7) | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 09:12 (7) | 08:07 | 08:54 |
| | 16:36 | 17:40 36 | 09:27 (7) 18:38 41 | 09:23 (7) | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 55 | 10:07 (7) | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 08:49 (7) 06:46 | 08:44 (7) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 09:12 (7) | 08:09 | 08:55 |
| | 16:38 | 17:42 39 | 09:28 (7) 18:40 37 | 09:21 (7) | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 54 | 10:06 (7) | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 08:48 (7) 06:44 | 08:45 (7) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 09:13 (7) | 08:11 | 08:56 |
| | 16:40 | 17:44 42 | 09:30 (7) 18:42 33 | 09:18 (7) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 54 | 10:07 (7) | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 08:47 (7) 06:41 | 08:48 (7) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 09:14 (7) | 08:13 | 08:57 |
| | 16:42 | 17:46 44 | 09:31 (7) 18:44 27 | 09:15 (7) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 51 | 10:05 (7) | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 08:45 (7) 06:39 | 08:51 (7) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 09:14 (7) | 08:15 | 08:57 |
| | 16:44 | 17:48 47 | 09:32 (7) 18:46 20 | 09:11 (7) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 50 | 10:04 (7) | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 08:44 (7) 06:36 | 08:56 (7) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 09:15 (7) | 08:17 | 08:58 |
| | 16:46 | 17:50 49 | 09:33 (7) 18:48 8 | 09:04 (7) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 48 | 10:03 (7) | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 08:43 (7) 06:33 | | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 09:15 (7) | 08:19 | 08:59 |
| | 16:48 | 17:53 50 | 09:33 (7) 18:50 | | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 47 | 10:02 (7) | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 08:42 (7) 06:31 | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 09:37 (7) 08:18 | 09:16 (7) | 08:21 | 08:59 |
| | 16:49 | 17:55 53 | 09:35 (7) 18:52 | | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 17 | 09:54 (7) 18:18 44 | 10:00 (7) | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 08:41 (7) 06:28 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 09:32 (7) 08:20 | 09:18 (7) | 08:23 | 09:00 |
| | 16:51 | 17:57 54 | 09:35 (7) 18:54 | | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 25 | 09:57 (7) 18:15 42 | 10:00 (7) | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 08:41 (7) 06:26 | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 09:29 (7) 07:22 | 08:20 (7) | 08:24 | 09:00 |
| | 16:53 | 17:59 54 | 09:35 (7) 18:56 | | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 31 | 10:00 (7) 17:13 38 | 08:58 (7) | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:39 (7) 06:23 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 09:26 (7) 07:24 | 08:21 (7) | 08:26 | 09:00 |
| | 16:55 | 18:01 56 | 09:35 (7) 18:57 | | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 36 | 10:02 (7) 17:11 35 | 08:56 (7) | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 08:39 (7) 06:21 | | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 09:24 (7) 07:26 | 08:23 (7) | 08:28 | 09:00 |
| | 16:58 | 18:03 57 | 09:36 (7) 18:59 | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 40 | 10:04 (7) 17:08 31 | 08:54 (7) | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 08:38 (7) 06:18 | | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 09:23 (7) 07:28 | 08:25 (7) | 08:30 | 09:01 |
| | 17:00 | 18:05 58 | 09:36 (7) 19:01 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 42 | 10:05 (7) 17:06 26 | 08:51 (7) | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 09:21 (7) 07:30 | 08:29 (7) | 08:31 | 09:01 |
| | 17:02 | | 20:03 | | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 45 | 10:06 (7) 17:04 19 | 08:48 (7) | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 09:20 (7) 07:32 | 08:34 (7) | 08:33 | 09:01 |
| | 17:04 | | 20:05 | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 47 | 10:07 (7) 17:02 9 | 08:43 (7) | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | | 07:34 | | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 | | 17:00 | | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | 731 | 974 | | | | | | 283 | 1437 | | | |
| Sun reduction | | 0,25 | 0,34 | | | | | | 0,40 | 0,31 | | | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | 0,84 | 0,84 | | | | | | 0,84 | 0,84 | | | |
| Total reduction | | 0,21 | 0,29 | | | | | | 0,33 | 0,26 | | | |
| Total, real | | 150 | 278 | | | | | | 94 | 370 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 15:49 (8) | 07:26 | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | | | 07:36 | | 15:20 (8) | 08:35 |
| | 16:13 | | | 17:08 | 32 | 16:21 (8) | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | | | 16:57 | 31 | 15:51 (8) | 16:10 |
| 2 | 09:00 | | | 08:25 | | 15:48 (8) | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | | | 07:38 | | 15:19 (8) | 08:36 |
| | 16:15 | | | 17:10 | 33 | 16:21 (8) | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | | | 16:55 | 32 | 15:51 (8) | 16:09 |
| 3 | 09:00 | | | 08:23 | | 15:48 (8) | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | | | 07:40 | | 15:19 (8) | 08:38 |
| | 16:16 | | | 17:12 | 34 | 16:22 (8) | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | | | 16:53 | 33 | 15:52 (8) | 16:08 |
| 4 | 08:59 | | | 08:22 | | 15:48 (8) | 07:19 | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | | | 07:42 | | 15:19 (8) | 08:39 |
| | 16:17 | | | 17:14 | 34 | 16:22 (8) | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | | | 16:51 | 33 | 15:52 (8) | 16:07 |
| 5 | 08:59 | | | 08:20 | | 15:49 (8) | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 | | | 07:44 | | 15:19 (8) | 08:41 |
| | 16:18 | | | 17:16 | 33 | 16:22 (8) | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | | | 16:49 | 33 | 15:52 (8) | 16:06 |
| 6 | 08:59 | | | 08:18 | | 15:49 (8) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | | | 07:46 | | 15:18 (8) | 08:42 |
| | 16:20 | | | 17:18 | 34 | 16:23 (8) | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | | | 16:47 | 34 | 15:52 (8) | 16:06 |
| 7 | 08:58 | | | 08:16 | | 15:49 (8) | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | | | 07:48 | | 15:19 (8) | 08:44 |
| | 16:21 | | | 17:20 | 34 | 16:23 (8) | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | | | 16:45 | 34 | 15:53 (8) | 16:05 |
| 8 | 08:57 | | | 08:14 | | 15:50 (8) | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | 15:19 (8) | 08:45 |
| | 16:23 | | | 17:23 | 33 | 16:23 (8) | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | | | 16:43 | 33 | 15:52 (8) | 16:05 |
| 9 | 08:57 | | | 08:12 | | 15:49 (8) | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | | | 07:53 | | 15:19 (8) | 08:46 |
| | 16:24 | | | 17:25 | 33 | 16:22 (8) | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | | | 16:41 | 33 | 15:52 (8) | 16:04 |
| 10 | 08:56 | | | 08:10 | | 15:50 (8) | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | | | 07:55 | | 15:19 (8) | 08:48 |
| | 16:26 | | | 17:27 | 31 | 16:21 (8) | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | | | 16:39 | 32 | 15:51 (8) | 16:04 |
| 11 | 08:55 | | | 08:07 | | 15:51 (8) | 07:01 | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | | | 07:57 | | 15:21 (8) | 08:49 |
| | 16:27 | | | 17:29 | 30 | 16:21 (8) | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | | | 16:38 | 31 | 15:52 (8) | 16:04 |
| 12 | 08:55 | | | 08:05 | | 15:52 (8) | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 | | | 07:59 | | 15:21 (8) | 08:50 |
| | 16:29 | | | 17:31 | 29 | 16:21 (8) | 18:29 | 20:31 | 21:29 | 22:14 | 22:09 | 21:17 | 20:01 | 18:44 | | | 16:36 | 30 | 15:51 (8) | 16:04 |
| 13 | 08:54 | | | 08:03 | | 15:53 (8) | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | | | 08:01 | | 15:22 (8) | 08:51 |
| | 16:31 | | | 17:33 | 26 | 16:19 (8) | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | | | 16:34 | 28 | 15:50 (8) | 16:03 |
| 14 | 08:53 | | | 08:01 | | 15:54 (8) | 06:54 | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | | | 08:03 | | 15:22 (8) | 08:52 |
| | 16:32 | | | 17:35 | 24 | 16:18 (8) | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | | | 16:32 | 28 | 15:50 (8) | 16:03 |
| 15 | 08:52 | | | 07:59 | | 15:56 (8) | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | | | 08:05 | | 15:24 (8) | 08:53 |
| | 16:34 | | | 17:38 | 21 | 16:17 (8) | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | | | 16:30 | 26 | 15:50 (8) | 16:03 |
| 16 | 08:51 | | | 07:57 | | 15:58 (8) | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | | 08:07 | | 15:25 (8) | 08:54 |
| | 16:36 | | | 17:40 | 16 | 16:14 (8) | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | | | 16:29 | 24 | 15:49 (8) | 16:03 |
| 17 | 08:49 | | | 07:54 | | 16:01 (8) | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | | 08:09 | | 15:26 (8) | 08:55 |
| | 16:38 | | | 17:42 | 10 | 16:11 (8) | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | | | 16:27 | 22 | 15:48 (8) | 16:03 |
| 18 | 08:48 | | | 07:52 | | | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | | | 08:11 | | 15:28 (8) | 08:56 |
| | 16:40 | | | 17:44 | | | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | | | 16:26 | 18 | 15:46 (8) | 16:04 |
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| 20 | 08:46 | | | 07:48 | | | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | | | 08:15 | | 15:33 (8) | 08:57 |
| | 16:43 | | | 17:48 | | | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | | | 16:23 | 10 | 15:43 (8) | 16:04 |
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| | 16:47 | 10 | 16:08 (8) | 17:52 | | | 18:49 | 20:50 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | | | 16:20 | | | 16:05 |
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| | 16:51 | 18 | 16:12 (8) | 17:57 | | | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | | | 16:17 | | | 16:06 |
| 25 | 08:39 | | 15:53 (8) | 07:36 | | | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | | 15:30 (8) | 08:24 | | | 09:00 |
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| 28 | 08:34 | | 15:50 (8) | 07:29 | | | 06:18 | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 07:28 | | 15:23 (8) | 08:29 | | | 09:00 |
| | 16:59 | 28 | 16:18 (8) | 18:05 | | | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 25 | 15:48 (8) | 16:12 | | | 16:09 |
| 29 | 08:32 | | 15:50 (8) | | | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | | 15:22 (8) | 08:31 | | | 09:00 |
| | 17:01 | 29 | 16:19 (8) | | | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 27 | 15:49 (8) | 16:11 | | | 16:10 |
| 30 | 08:31 | | 15:49 (8) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | | 15:22 (8) | 08:33 | | | 09:00 |
| | 17:04 | 30 | 16:19 (8) | | | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 28 | 15:50 (8) | 16:10 | | | 16:11 |
| 31 | 08:29 | | 15:49 (8) | | | | 07:10 | | 05:02 | | 05:37 | 06:35 | | 07:34 | | 15:21 (8) | | | | 09:00 |
| | 17:06 | 31 | 16:20 (8) | | | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 16:59 | 30 | 15:51 (8) | | | | 16:12 |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 233 | | | 487 | | | | | | | | | | 161 | | | 560 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,73 | | | 0,73 | | | | | | | | | | 0,73 | | | 0,73 | | |
| Total reduction | | 0,13 | | | 0,18 | | | | | | | | | | 0,23 | | | 0,12 | | |
| Total, real | | 31 | | | 88 | | | | | | | | | | 36 | | | 65 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | | 17:32 (8) | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | | | 07:34 | 18:01 (8) | 07:36 | 08:34 |
| | 16:13 | 17:08 | 18:07 | 7 | 17:39 (8) | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | | | 19:12 | 18:25 (8) | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | | 17:28 (8) | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | | | 07:36 | 18:00 (8) | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 13 | 17:41 (8) | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | | | 19:09 | 18:26 (8) | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | | 17:27 (8) | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | | | 07:38 | 17:59 (8) | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 16 | 17:43 (8) | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | | | 19:06 | 18:26 (8) | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | | 17:25 (8) | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | | | 07:40 | 17:59 (8) | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20 | 17:45 (8) | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | | | 19:04 | 18:25 (8) | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | | 17:23 (8) | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | | | 07:42 | 17:57 (8) | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 23 | 17:46 (8) | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | | | 19:01 | 18:24 (8) | 16:49 | 16:06 |
| 6 | 08:59 | 08:18 | 07:14 | | 17:23 (8) | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | | | 07:44 | 17:57 (8) | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 24 | 17:47 (8) | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | | | 18:59 | 18:23 (8) | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | | 17:21 (8) | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | | 07:46 | 17:57 (8) | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 26 | 17:47 (8) | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | | | 18:56 | 18:23 (8) | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | | 17:21 (8) | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | | 07:48 | 17:59 (8) | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 27 | 17:48 (8) | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | | | 18:54 | 18:23 (8) | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | | 17:21 (8) | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | | | 07:50 | 17:59 (8) | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 26 | 17:47 (8) | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:08 | | | 18:51 | 18:22 (8) | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | | 17:21 (8) | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | | | 07:52 | 18:00 (8) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 27 | 17:48 (8) | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | | | 18:49 | 18:19 (8) | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | | 17:21 (8) | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | | | 07:54 | 18:01 (8) | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 26 | 17:47 (8) | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | | | 18:46 | 18:16 (8) | 16:37 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | | 17:20 (8) | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | | | 07:56 | 18:03 (8) | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 26 | 17:46 (8) | 20:31 | 21:29 | 22:14 | 22:09 | 21:16 | 20:01 | | | 18:44 | 18:14 (8) | 16:36 | 16:03 |
| 13 | 08:54 | 08:03 | 06:56 | | 17:21 (8) | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | | | 07:58 | | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 24 | 17:45 (8) | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | | | 18:41 | | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | | 17:22 (8) | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | | | 07:59 | | 08:03 | 08:52 |
| | 16:32 | 17:35 | 18:33 | 22 | 17:44 (8) | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | | | 18:39 | | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 17:23 (8) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | | 08:01 | | 08:05 | 08:53 |
| | 16:34 | 17:37 | 18:35 | 20 | 17:43 (8) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | | | 18:36 | | 16:30 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 17:25 (8) | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | | | 08:03 | | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 15 | 17:40 (8) | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | | | 18:34 | | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | | 17:27 (8) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:07 | | | 08:05 | | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 10 | 17:37 (8) | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | | | 18:32 | | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | | | 08:07 | | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | | | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | | | 18:29 | | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | | | 08:09 | | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | | | 18:27 | | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | | 08:12 | | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | | | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | | | 18:24 | | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | | | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | | | 08:14 | | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | | | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | | | 18:22 | | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | | | 08:16 | | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | | | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | | | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | | | 08:18 | | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | | | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | | | 18:17 | | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | | | 06:10 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | | | 08:20 | | 08:22 | 08:59 |
| | 16:51 | 17:56 | 18:53 | | | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | | | 18:15 | | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | | 07:22 | | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | | | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | | 17:13 | | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | | | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | | 18:11 (8) | 07:24 | | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | | | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:24 | 7 | 18:18 (8) | 17:10 | | 16:15 | 16:07 |
| 27 | 08:36 | 07:31 | 06:20 | | | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | | 18:07 (8) | 07:26 | | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | | | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 14 | 18:21 (8) | 17:08 | | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | | 18:05 (8) | 07:28 | | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | | | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 18 | 18:23 (8) | 17:06 | | 16:12 | 16:09 |
| 29 | 08:32 | | 07:15 | | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | | 18:03 (8) | 07:30 | | 08:31 | 09:00 |
| | 17:01 | | 20:03 | | | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 21 | 18:24 (8) | 17:04 | | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 18:02 (8) | 07:32 | | 08:33 | 09:00 |
| | 17:04 | | 20:05 | | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 23 | 18:25 (8) | 17:02 | | 16:10 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:02 | | 05:37 | 06:35 | | | | 07:34 | | | 09:00 |
| | 17:06 | | 20:07 | | | | 22:00 | | 21:41 | 20:31 | | | | 16:59 | | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | | | 224 |
| Total, worst case | | | | 352 | | | | | | | 83 | | 274 | | | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | | | | | | | 0,95 | | 0,95 | | | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,29 | | | | |
| Total, real | | | | 115 | | | | | | | 31 | | 80 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 07:41 (6) | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 20 | 08:01 (6) | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 07:41 (6) | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 20 | 08:01 (6) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:42 (6) | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 17 | 07:59 (6) | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:43 (6) | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 15 | 07:58 (6) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:44 (6) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 11 | 07:55 (6) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:40 (6) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 10 | 07:50 (6) | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:37 (6) | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 15 | 07:52 (6) | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:36 (6) | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:24 | 20:09 17 | 07:53 (6) | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:35 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 19 | 07:54 (6) | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:34 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 21 | 07:55 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:32 (6) | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 22 | 07:54 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 05:30 | 04:53 | 05:10 | 06:02 | 07:01 | 07:32 (6) | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 22 | 07:54 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 07:32 (6) | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 21 | 07:53 (6) | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 07:32 (6) | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 21 | 07:53 (6) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 07:34 (6) | 08:04 | 08:07 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 18 | 07:52 (6) | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 07:36 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 15 | 07:51 (6) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 07:37 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 12 | 07:49 (6) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 07:39 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 8 | 07:47 (6) | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 07:41 (6) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 3 | 07:44 (6) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:53 (6) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 7 | 07:00 (6) | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:50 (6) | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 11 | 07:01 (6) | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:48 (6) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 15 | 07:03 (6) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:45 (6) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 18 | 07:03 (6) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:43 (6) | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 20 | 07:03 (6) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 07:41 (6) | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 22 | 08:03 (6) | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 07:41 (6) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 21 | 08:02 (6) | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | 07:41 (6) | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 21 | 08:02 (6) | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 135 | 83 | | | | | | 224 | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | | 1,00 | | | |
| Wind dir. red. | | | 1,00 | 1,00 | | | | | | 1,00 | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | | 0,40 | | | |
| Total, real | | | 46 | 33 | | | | | | 89 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 06:23 (6) | 05:02 | 04:57 | 05:40 | 06:30 (6) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 23 | 06:46 (6) | 22:02 | 22:18 | 21:40 28 | 06:58 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:22 (6) | 05:01 | 04:58 | 05:42 | 06:30 (6) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 25 | 06:47 (6) | 22:04 | 22:17 | 21:38 29 | 06:59 (6) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 06:21 (6) | 05:00 | 04:59 | 05:43 | 06:29 (6) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:12 27 | 06:48 (6) | 22:05 | 22:17 | 21:36 29 | 06:58 (6) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 06:21 (6) | 04:59 | 04:59 | 05:45 | 06:29 (6) | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 27 | 06:48 (6) | 22:06 | 22:16 | 21:34 29 | 06:58 (6) | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 06:20 (6) | 04:58 | 05:00 | 05:47 | 06:30 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 28 | 06:48 (6) | 22:07 | 22:16 | 21:32 29 | 06:59 (6) | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:20 (6) | 04:57 | 05:01 | 05:49 | 06:29 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 28 | 06:48 (6) | 22:08 | 22:15 | 21:30 29 | 06:58 (6) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 06:19 (6) | 04:57 | 05:02 | 05:51 | 06:29 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 29 | 06:48 (6) | 22:09 | 22:14 | 21:28 29 | 06:58 (6) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:19 (6) | 04:56 | 05:04 | 05:53 | 06:30 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 29 | 06:48 (6) | 22:10 | 22:14 | 21:26 28 | 06:58 (6) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 06:19 (6) | 04:55 | 05:05 | 05:54 | 06:30 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 29 | 06:48 (6) | 22:11 | 22:13 | 21:23 27 | 06:57 (6) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 06:19 (6) | 04:55 | 05:06 | 05:56 | 06:30 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 29 | 06:48 (6) | 22:12 | 22:12 | 21:21 26 | 06:56 (6) | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 06:20 (6) | 04:54 | 05:07 | 05:58 | 06:31 (6) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 28 | 06:48 (6) | 22:13 | 22:11 | 21:19 24 | 06:55 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:20 (6) | 04:54 | 05:08 | 06:00 | 06:32 (6) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 28 | 06:48 (6) | 22:14 | 22:10 | 21:17 22 | 06:54 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 06:20 (6) | 04:53 | 05:10 | 06:02 | 06:33 (6) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 27 | 06:47 (6) | 22:15 | 22:09 | 21:15 20 | 06:53 (6) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 06:21 (6) | 04:53 | 05:11 | 06:04 | 06:34 (6) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 26 | 06:47 (6) | 22:15 | 22:08 | 21:13 17 | 06:51 (6) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:21 (6) | 04:53 | 05:12 | 06:06 | 06:36 (6) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 25 | 06:46 (6) | 22:16 | 22:07 | 21:10 13 | 06:49 (6) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:21 (6) | 04:53 | 05:14 | 06:08 | 06:40 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 24 | 06:45 (6) | 22:17 | 22:05 | 21:08 5 | 06:45 (6) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 06:22 (6) | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 23 | 06:45 (6) | 22:17 | 22:04 | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 06:23 (6) | 04:52 | 05:17 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 21 | 06:44 (6) | 22:18 | 22:03 | 21:03 | | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 06:24 (6) | 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 19 | 06:43 (6) | 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 06:25 (6) | 04:52 | 05:20 | 06:15 | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 17 | 06:42 (6) | 22:18 | 22:00 | 20:59 | | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 06:27 (6) | 04:52 | 05:21 06:40 (6) | 06:17 | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 14 | 06:41 (6) | 22:19 | 21:58 8 06:48 (6) | 20:56 | | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 06:28 (6) | 04:53 | 05:23 06:37 (6) | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 10 | 06:38 (6) | 22:19 | 21:57 13 06:50 (6) | 20:54 | | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 06:31 (6) | 04:53 | 05:24 06:36 (6) | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 4 | 06:35 (6) | 22:19 | 21:55 16 06:52 (6) | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | | 04:53 | 05:26 06:35 (6) | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | | 22:19 | 21:54 17 06:52 (6) | 20:49 | | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | | 04:54 | 05:28 06:34 (6) | 06:25 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | | 22:19 | 21:52 20 06:54 (6) | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | | 04:54 | 05:29 06:33 (6) | 06:27 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | | 22:19 | 21:51 21 06:54 (6) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 06:31 (6) | 05:08 | | 04:54 | 05:31 06:32 (6) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 8 06:39 (6) | 21:55 | | 22:19 | 21:49 24 06:56 (6) | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:28 (6) | 05:07 | | 04:55 | 05:33 06:31 (6) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 14 06:42 (6) | 21:57 | | 22:19 | 21:47 25 06:56 (6) | 20:39 | | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 06:26 (6) | 05:05 | | 04:56 | 05:34 06:31 (6) | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 18 06:44 (6) | 21:58 | | 22:19 | 21:45 26 06:57 (6) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 06:24 (6) | 05:04 | | 04:56 | 05:36 06:31 (6) | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 21 06:45 (6) | 22:00 | | 22:18 | 21:43 27 06:58 (6) | 20:34 | | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | | 05:38 06:30 (6) | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 27 06:57 (6) | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 61 | 540 | | 224 | 384 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,93 | 0,93 | | 0,93 | 0,93 | | | | |
| Total reduction | | | | 0,37 | 0,48 | | 0,45 | 0,48 | | | | |
| Total, real | | | | 22 | 260 | | 101 | 184 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | | July | | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | 05:55 | | 05:02 | | 05:37 (6) | 04:57 | | 05:42 (6) | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | 21:09 | | 22:02 | 24 | 06:01 (6) | 22:18 | 26 | 06:08 (6) | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | | 08:26 | | 07:24 | | 07:05 | | 05:53 | | 05:01 | | 05:38 (6) | 04:58 | | 05:43 (6) | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | | 17:10 | | 18:10 | | 20:12 | | 21:11 | | 22:04 | 24 | 06:02 (6) | 22:17 | 25 | 06:08 (6) | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 05:51 | | 05:00 | | 05:37 (6) | 04:59 | | 05:43 (6) | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | | 17:13 | | 18:12 | | 20:14 | | 21:12 | | 22:05 | 25 | 06:02 (6) | 22:17 | 26 | 06:09 (6) | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:49 | | 04:59 | | 05:37 (6) | 05:00 | | 05:44 (6) | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | | 17:15 | | 18:14 | | 20:15 | | 21:14 | | 22:06 | 25 | 06:02 (6) | 22:16 | 25 | 06:09 (6) | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:58 | | 05:46 | | 04:58 | | 05:37 (6) | 05:00 | | 05:44 (6) | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | | 21:16 | | 22:07 | 25 | 06:02 (6) | 22:16 | 25 | 06:09 (6) | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 05:44 | | 04:57 | | 05:38 (6) | 05:01 | | 05:44 (6) | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | | 21:18 | | 22:08 | 25 | 06:03 (6) | 22:15 | 26 | 06:10 (6) | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | 05:42 | | 04:57 | | 05:38 (6) | 05:02 | | 05:43 (6) | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | | 21:20 | | 22:09 | 25 | 06:03 (6) | 22:14 | 26 | 06:09 (6) | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | 05:40 | | 04:56 | | 05:38 (6) | 05:04 | | 05:44 (6) | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | | 21:22 | | 22:10 | 26 | 06:04 (6) | 22:14 | 25 | 06:09 (6) | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:48 | | 05:38 | | 04:55 | | 05:38 (6) | 05:05 | | 05:45 (6) | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | | 21:24 | | 22:11 | 25 | 06:03 (6) | 22:13 | 25 | 06:10 (6) | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | | 04:55 | | 05:39 (6) | 05:06 | | 05:45 (6) | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | | 22:12 | 25 | 06:04 (6) | 22:12 | 25 | 06:10 (6) | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:43 | | 05:34 | | 04:54 | | 05:38 (6) | 05:07 | | 05:45 (6) | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | | 17:30 | | 18:28 | | 20:29 | | 21:28 | | 22:13 | 25 | 06:03 (6) | 22:11 | 25 | 06:10 (6) | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | | 04:54 | | 05:39 (6) | 05:08 | | 05:45 (6) | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | | 17:32 | | 18:30 | | 20:31 | | 21:30 | | 22:14 | 25 | 06:04 (6) | 22:10 | 25 | 06:10 (6) | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | | 08:04 | | 06:57 | | 06:38 | | 05:31 | | 04:53 | | 05:39 (6) | 05:10 | | 05:45 (6) | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | | 21:31 | | 22:15 | 25 | 06:04 (6) | 22:09 | 24 | 06:09 (6) | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:29 | | 04:53 | | 05:40 (6) | 05:11 | | 05:46 (6) | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | | 22:15 | 25 | 06:05 (6) | 22:08 | 23 | 06:09 (6) | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | | 07:59 | | 06:52 | | 06:33 | | 05:27 | | 04:53 | | 05:39 (6) | 05:12 | | 05:47 (6) | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | | 22:16 | 25 | 06:04 (6) | 22:07 | 22 | 06:09 (6) | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | | 04:53 | | 05:39 (6) | 05:14 | | 05:48 (6) | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | | 22:17 | 25 | 06:04 (6) | 22:05 | 21 | 06:09 (6) | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | | 07:55 | | 06:47 | | 06:28 | | 05:23 | | 04:52 | | 05:40 (6) | 05:15 | | 05:49 (6) | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | | 22:17 | 25 | 06:05 (6) | 22:04 | 19 | 06:08 (6) | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | | 07:53 | | 06:44 | | 06:25 | | 05:22 | | 04:52 | | 05:40 (6) | 05:17 | | 05:51 (6) | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | | 22:18 | 25 | 06:05 (6) | 22:03 | 17 | 06:08 (6) | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | | 07:50 | | 06:41 | | 06:23 | | 05:20 | | 04:52 | | 05:40 (6) | 05:18 | | 05:52 (6) | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | | 17:47 | | 18:44 | | 20:45 | | 21:42 | | 22:18 | 25 | 06:05 (6) | 22:01 | 16 | 06:08 (6) | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:21 | | 05:18 | | 05:48 (6) | 04:52 | 05:40 (6) | 05:20 | | 05:53 (6) | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | | 17:49 | | 18:46 | | 20:47 | | 21:44 | 3 | 05:51 (6) | 22:18 | 25 | 06:05 (6) | 22:00 | 13 | 06:06 (6) | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | | 05:17 | | 05:47 (6) | 04:53 | 05:41 (6) | 05:21 | | 05:55 (6) | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | 21:46 | 7 | 05:54 (6) | 22:19 | 25 | 06:06 (6) | 21:58 | 11 | 06:06 (6) | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | | 07:43 | | 06:34 | | 06:16 | | 05:15 | | 05:46 (6) | 04:53 | 05:41 (6) | 05:23 | | 05:56 (6) | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | 21:47 | 10 | 05:56 (6) | 22:19 | 25 | 06:06 (6) | 21:57 | 8 | 06:04 (6) | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | | 07:41 | | 06:31 | | 06:13 | | 05:14 | | 05:44 (6) | 04:53 | 05:41 (6) | 05:24 | | 05:58 (6) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | 21:49 | 12 | 05:56 (6) | 22:19 | 25 | 06:06 (6) | 21:55 | 5 | 06:03 (6) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | | 07:39 | | 06:29 | | 06:11 | | 05:12 | | 05:43 (6) | 04:53 | 05:41 (6) | 05:26 | | | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | 21:50 | 14 | 05:57 (6) | 22:19 | 25 | 06:06 (6) | 21:54 | | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:09 | | 05:11 | | 05:42 (6) | 04:54 | 05:42 (6) | 05:28 | | | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | 21:52 | 17 | 05:59 (6) | 22:19 | 25 | 06:07 (6) | 21:52 | | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | | 07:34 | | 06:23 | | 06:06 | | 05:09 | | 05:41 (6) | 04:54 | 05:41 (6) | 05:29 | | | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | 21:54 | 18 | 05:59 (6) | 22:19 | 25 | 06:06 (6) | 21:50 | | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:04 | | 05:08 | | 05:39 (6) | 04:55 | 05:42 (6) | 05:31 | | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:55 | 20 | 05:59 (6) | 22:19 | 25 | 06:07 (6) | 21:49 | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | | 07:29 | | 06:18 | | 06:02 | | 05:07 | | 05:38 (6) | 04:55 | 05:42 (6) | 05:33 | | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | 22 | 06:00 (6) | 22:19 | 25 | 06:07 (6) | 21:47 | | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | | | 07:16 | | 06:00 | | 05:05 | | 05:37 (6) | 04:56 | 05:42 (6) | 05:34 | | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:58 | 23 | 06:00 (6) | 22:19 | 26 | 06:08 (6) | 21:45 | | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | | | 07:13 | | 05:57 | | 05:04 | | 05:37 (6) | 04:56 | 05:43 (6) | 05:36 | | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | | | 20:06 | | 21:07 | | 22:00 | 24 | 06:01 (6) | 22:18 | 25 | 06:08 (6) | 21:43 | | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | | | 07:11 | | | | 05:03 | | 05:37 (6) | | | 05:38 | | | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | | | 20:08 | | | | 22:01 | 24 | 06:01 (6) | | | 21:42 | | | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | | 520 | | 521 | | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | 194 | | | 750 | | 483 | | | | | | |
| Sun reduction | | | | | | | | | | 0,52 | | | 0,48 | | 0,49 | | | | | | |
| Oper. time red. | | | | | | | | | | 1,00 | | | 1,00 | | 1,00 | | | | | | |
| Wind dir. red. | | | | | | | | | | 0,83 | | | 0,83 | | 0,83 | | | | | | |
| Total reduction | | | | | | | | | | 0,43 | | | 0,40 | | 0,40 | | | | | | |
| Total, real | | | | | | | | | | 83 | | | 301 | | 195 | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June | July | August | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 15:16 (6) | 07:27 | | 15:28 (6) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | | 07:37 | | 14:42 (6) | 08:35 |
| | 16:14 | | | 17:08 | 46 | 16:02 (6) | 18:07 | 23 | 15:51 (6) | 20:09 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | | | 16:58 | 54 | 15:36 (6) | 16:10 |
| 2 | 09:00 | | | 08:26 | | 15:15 (6) | 07:24 | | 15:33 (6) | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:36 | | | 07:39 | | 14:42 (6) | 08:37 |
| | 16:15 | | | 17:10 | 48 | 16:03 (6) | 18:09 | 14 | 15:47 (6) | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | | | 16:56 | 54 | 15:36 (6) | 16:09 |
| 3 | 09:00 | | | 08:24 | | 15:15 (6) | 07:22 | | | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | | | 07:41 | | 14:43 (6) | 08:38 |
| | 16:16 | | | 17:12 | 48 | 16:03 (6) | 18:11 | | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | | 16:54 | 53 | 15:36 (6) | 16:08 |
| 4 | 09:00 | | | 08:22 | | 15:15 (6) | 07:19 | | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | | | 07:43 | | 14:43 (6) | 08:40 |
| | 16:18 | | | 17:14 | 49 | 16:04 (6) | 18:14 | | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | | | 16:52 | 52 | 15:35 (6) | 16:08 |
| 5 | 08:59 | | | 08:20 | | 15:13 (6) | 07:17 | | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | | 07:45 | | 14:44 (6) | 08:41 |
| | 16:19 | | | 17:17 | 51 | 16:04 (6) | 18:16 | | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | | | 16:49 | 51 | 15:35 (6) | 16:07 |
| 6 | 08:59 | | | 08:18 | | 15:13 (6) | 07:14 | | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | | 07:47 | | 14:44 (6) | 08:43 |
| | 16:20 | | | 17:19 | 52 | 16:05 (6) | 18:18 | | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | | | 16:47 | 51 | 15:35 (6) | 16:06 |
| 7 | 08:58 | | | 08:16 | | 15:13 (6) | 07:12 | | | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | | 07:49 | | 14:44 (6) | 08:44 |
| | 16:22 | | | 17:21 | 52 | 16:05 (6) | 18:20 | | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | | | 16:46 | 50 | 15:34 (6) | 16:06 |
| 8 | 08:58 | | | 08:14 | | 15:13 (6) | 07:09 | | | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | 14:45 (6) | 08:45 |
| | 16:23 | | | 17:23 | 53 | 16:06 (6) | 18:22 | | | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:11 | 18:54 | | | 16:44 | 48 | 15:33 (6) | 16:05 |
| 9 | 08:57 | | | 08:12 | | 15:13 (6) | 07:07 | | | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | | 07:53 | | 14:46 (6) | 08:47 |
| | 16:25 | | | 17:25 | 54 | 16:07 (6) | 18:24 | | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | | | 16:42 | 47 | 15:33 (6) | 16:05 |
| 10 | 08:57 | | | 08:10 | | 15:13 (6) | 07:04 | | | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | | 14:47 (6) | 08:48 |
| | 16:26 | | | 17:27 | 54 | 16:07 (6) | 18:26 | | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | | | 16:40 | 45 | 15:32 (6) | 16:04 |
| 11 | 08:56 | | | 08:08 | | 15:12 (6) | 07:02 | | | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | 16:11 (6) | 07:57 | | 14:48 (6) | 08:49 |
| | 16:28 | | | 17:29 | 55 | 16:07 (6) | 18:28 | | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 5 | 16:16 (6) | 16:38 | 43 | 15:31 (6) | 16:04 |
| 12 | 08:55 | | | 08:06 | | 15:12 (6) | 06:59 | | | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | 16:04 (6) | 07:59 | | 14:48 (6) | 08:50 |
| | 16:30 | | | 17:32 | 55 | 16:07 (6) | 18:30 | | | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 18 | 16:22 (6) | 16:36 | 42 | 15:30 (6) | 16:04 |
| 13 | 08:54 | | | 08:04 | | 15:13 (6) | 06:57 | | | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | | 16:00 (6) | 08:01 | | 14:50 (6) | 08:51 |
| | 16:31 | | | 17:34 | 54 | 16:07 (6) | 18:32 | | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 25 | 16:25 (6) | 16:34 | 40 | 15:30 (6) | 16:04 |
| 14 | 08:53 | | | 08:01 | | 15:12 (6) | 06:54 | | | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | 15:57 (6) | 08:03 | | 14:51 (6) | 08:53 |
| | 16:33 | | | 17:36 | 55 | 16:07 (6) | 18:34 | | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 31 | 16:28 (6) | 16:33 | 38 | 15:29 (6) | 16:04 |
| 15 | 08:52 | | | 07:59 | | 15:13 (6) | 06:52 | | | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | 15:54 (6) | 08:05 | | 14:52 (6) | 08:54 |
| | 16:35 | | | 17:38 | 54 | 16:07 (6) | 18:36 | | | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 35 | 16:29 (6) | 16:31 | 36 | 15:28 (6) | 16:04 |
| 16 | 08:51 | | | 07:57 | | 15:13 (6) | 06:49 | | | 06:30 | 05:25 | 04:52 | 05:14 | 06:07 | 07:06 | 08:04 | | 15:52 (6) | 08:07 | | 14:54 (6) | 08:54 |
| | 16:36 | | | 17:40 | 54 | 16:07 (6) | 18:38 | | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 38 | 16:30 (6) | 16:29 | 32 | 15:26 (6) | 16:04 |
| 17 | 08:50 | | | 07:55 | | 15:13 (6) | 06:46 | | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 15:51 (6) | 08:09 | | 14:56 (6) | 08:55 |
| | 16:38 | | | 17:42 | 53 | 16:06 (6) | 18:40 | | | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 41 | 16:32 (6) | 16:28 | 30 | 15:26 (6) | 16:04 |
| 18 | 08:49 | | | 07:53 | | 15:14 (6) | 06:44 | | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | 15:49 (6) | 08:11 | | 14:58 (6) | 08:56 |
| | 16:40 | | | 17:44 | 52 | 16:06 (6) | 18:42 | | | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 44 | 16:33 (6) | 16:26 | 26 | 15:24 (6) | 16:04 |
| 19 | 08:48 | | | 07:50 | | 15:14 (6) | 06:41 | | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | 15:48 (6) | 08:13 | | 15:00 (6) | 08:57 |
| | 16:42 | | | 17:46 | 52 | 16:06 (6) | 18:44 | | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 46 | 16:34 (6) | 16:25 | 22 | 15:22 (6) | 16:04 |
| 20 | 08:46 | | | 07:48 | | 15:14 (6) | 06:39 | | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | 15:47 (6) | 08:15 | | 15:03 (6) | 08:58 |
| | 16:44 | | | 17:49 | 51 | 16:05 (6) | 18:46 | | | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 47 | 16:34 (6) | 16:23 | 17 | 15:20 (6) | 16:05 |
| 21 | 08:45 | | 15:31 (6) | 07:46 | | 15:16 (6) | 06:36 | | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | | 15:46 (6) | 08:17 | | 15:06 (6) | 08:58 |
| | 16:46 | 10 | 15:41 (6) | 17:51 | 48 | 16:04 (6) | 18:48 | | | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 49 | 16:35 (6) | 16:22 | 10 | 15:16 (6) | 16:05 |
| 22 | 08:44 | | 15:28 (6) | 07:43 | | 15:16 (6) | 06:34 | | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | | 15:45 (6) | 08:19 | | | 08:59 |
| | 16:48 | 17 | 15:45 (6) | 17:53 | 47 | 16:03 (6) | 18:50 | | | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 50 | 16:35 (6) | 16:20 | | | 16:05 |
| 23 | 08:42 | | 15:25 (6) | 07:41 | | 15:17 (6) | 06:31 | | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 15:44 (6) | 08:21 | | | 08:59 |
| | 16:50 | 22 | 15:47 (6) | 17:55 | 45 | 16:02 (6) | 18:52 | | | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 51 | 16:35 (6) | 16:19 | | | 16:06 |
| 24 | 08:41 | | 15:24 (6) | 07:39 | | 15:18 (6) | 06:28 | | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 15:44 (6) | 08:23 | | | 09:00 |
| | 16:52 | 26 | 15:50 (6) | 17:57 | 43 | 16:01 (6) | 18:54 | | | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 52 | 16:36 (6) | 16:18 | | | 16:07 |
| 25 | 08:39 | | 15:22 (6) | 07:36 | | 15:20 (6) | 06:26 | | | 06:09 | 05:10 | 04:53 | 05:28 | 06:24 | 07:23 | 07:22 | | 14:43 (6) | 08:24 | | | 09:00 |
| | 16:54 | 30 | 15:52 (6) | 17:59 | 40 | 16:00 (6) | 18:56 | | | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 53 | 15:36 (6) | 16:16 | | | 16:07 |
| 26 | 08:38 | | 15:21 (6) | 07:34 | | 15:22 (6) | 06:23 | | | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | 14:42 (6) | 08:26 | | | 09:00 |
| | 16:56 | 33 | 15:54 (6) | 18:01 | 37 | 15:59 (6) | 18:58 | | | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 54 | 15:36 (6) | 16:15 | | | 16:08 |
| 27 | 08:36 | | 15:19 (6) | 07:31 | | 15:23 (6) | 06:21 | | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | 14:42 (6) | 08:28 | | | 09:01 |
| | 16:58 | 36 | 15:55 (6) | 18:03 | 33 | 15:56 (6) | 19:00 | | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 54 | 15:36 (6) | 16:14 | | | 16:09 |
| 28 | 08:34 | | 15:19 (6) | 07:29 | | 15:26 (6) | 06:18 | | | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | | 14:41 (6) | 08:30 | | | 09:01 |
| | 17:00 | 38 | 15:57 (6) | 18:05 | 29 | 15:55 (6) | 19:02 | | | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 55 | 15:36 (6) | 16:13 | | | 16:10 |
| 29 | 08:33 | | 15:18 (6) | | | | 07:16 | | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | | 14:42 (6) | 08:32 | | | 09:01 |
| | 17:02 | 40 | 15:58 (6) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 55 | 15:37 (6) | 16:12 | | | 16:10 |
| 30 | 08:31 | | 15:17 (6) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | | 14:42 (6) | 08:33 | | | 09:01 |
| | 17:04 | 43 | 16:00 (6) | | | | 20:06 | | | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 55 | 15:37 (6) | 16:11 | | | 16:11 |
| 31 | 08:29 | | 15:17 (6) | | | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 14:42 (6) | | | | 09:01 |
| | 17:06 | 44 | 16:01 (6) | | | | 20:08 | | | | 22:01 | | 21:42 | 20:32 | | 17:00 | 54 | 15:36 (6) | | | | 16:12 |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 339 | | | 1364 | | | 37 | | | | | | | | | 912 | | | 841 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,67 | | | 0,67 | | | 0,67 | | | | | | | | | 0,67 | | | 0,67 | | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,23 | | | | | | | | | 0,21 | | | 0,11 | | |
| Total, real | | 41 | | | 226 | | | 9 | | | | | | | | | 189 | | | 89 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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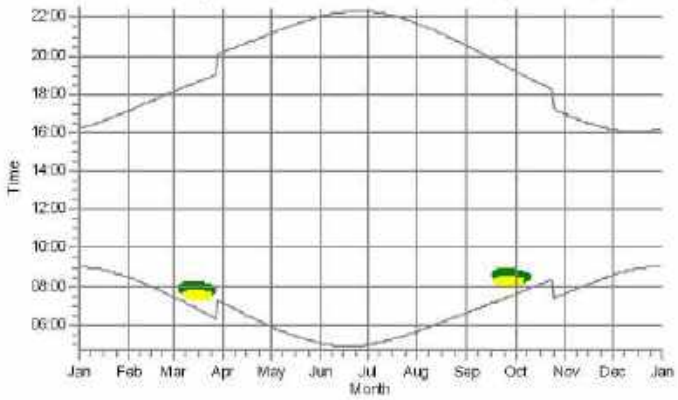
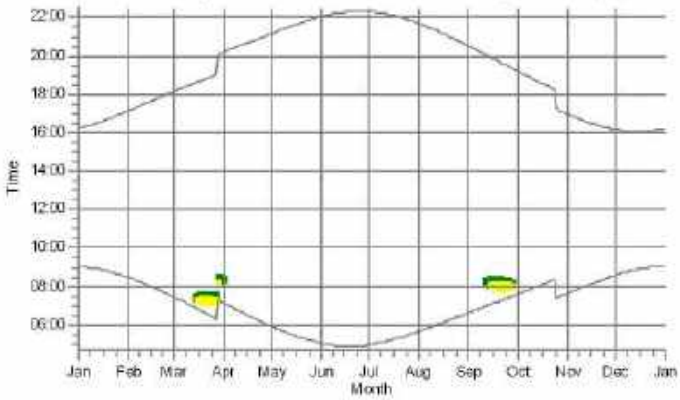
# SHADOW - Calendar, graphical

## Calculation: Enercon E138

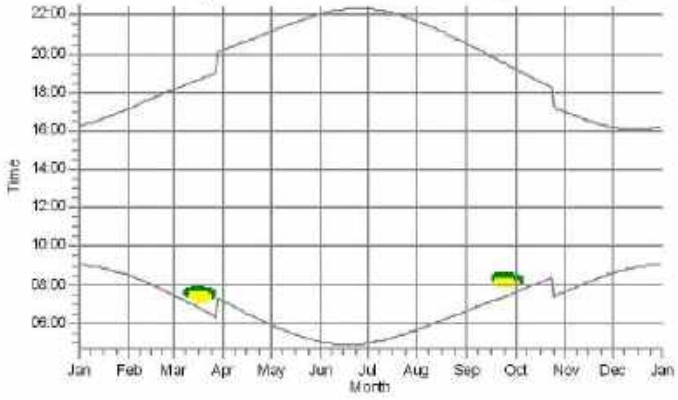
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)



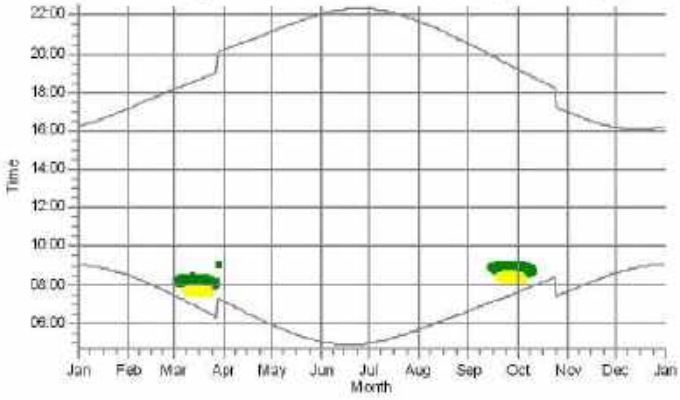

B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)



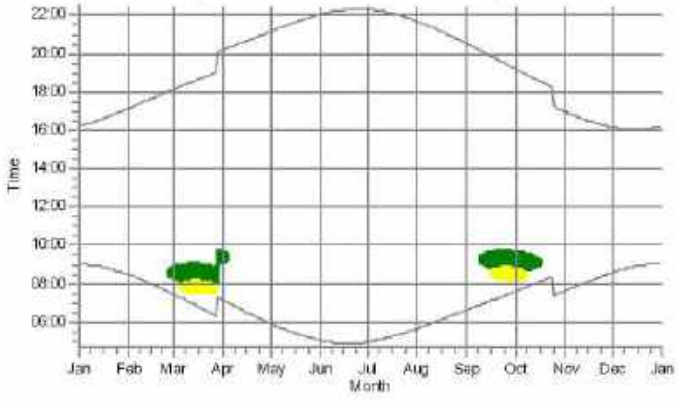

C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)



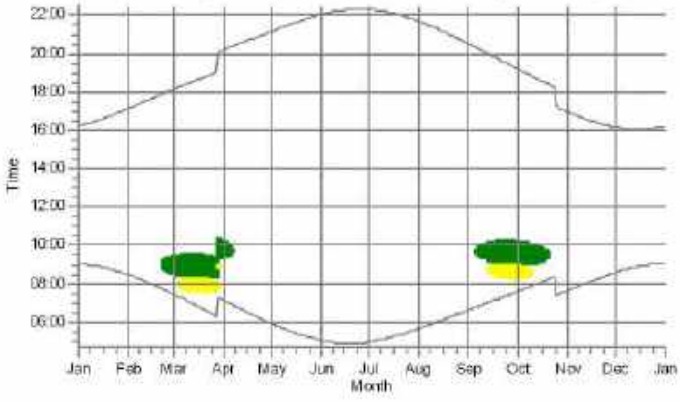

D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)




E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)




F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

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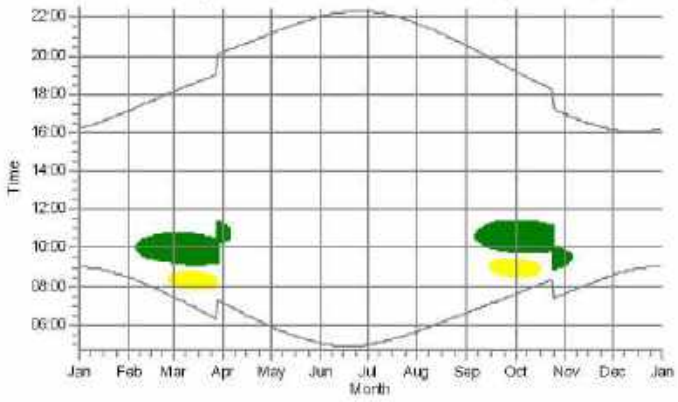
Calculated:
2021.11.30 10:39/3.5.552

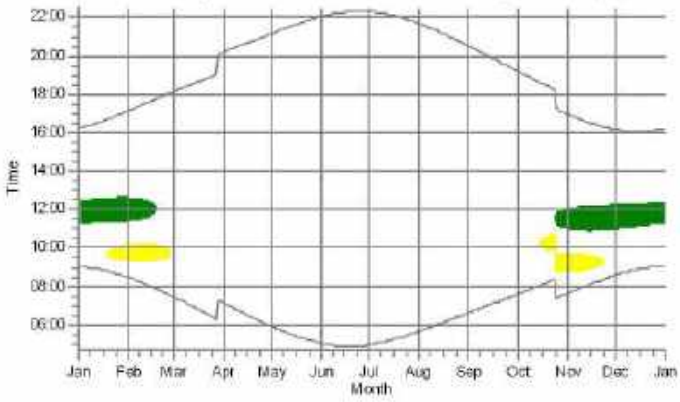
# SHADOW - Calendar, graphical

## Calculation: Enercon E138

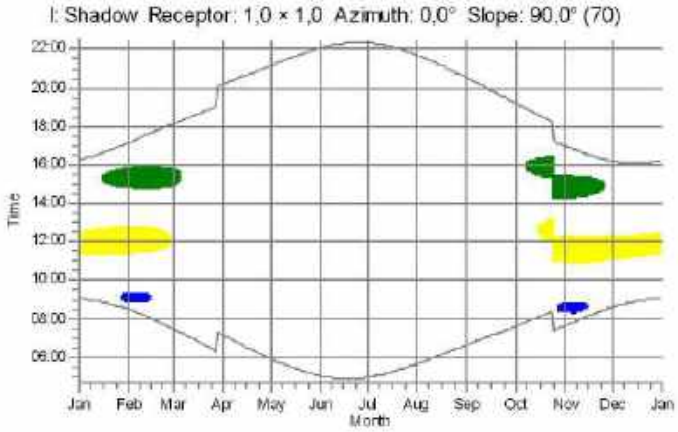
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)



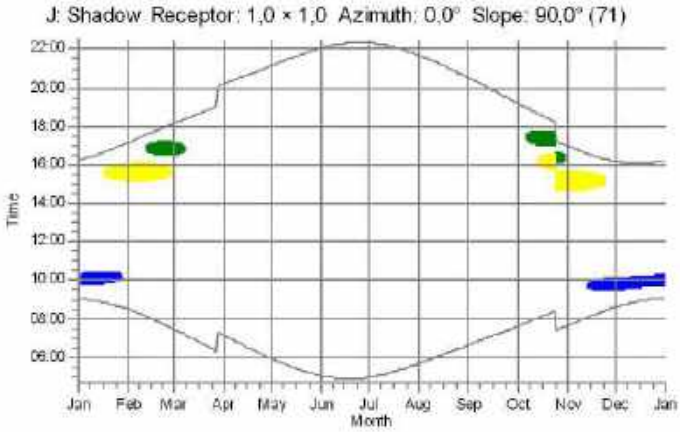

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)



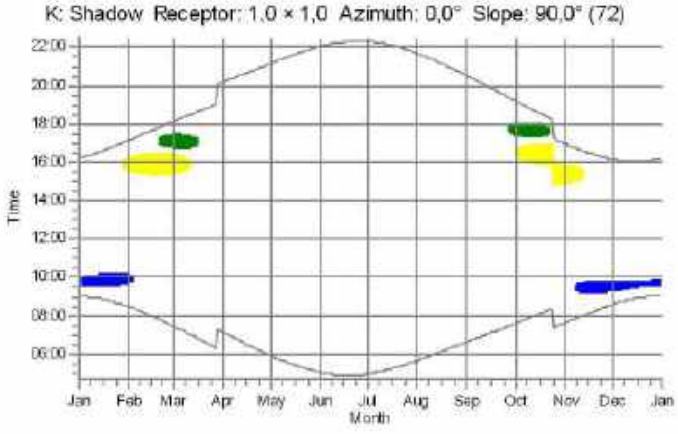

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)



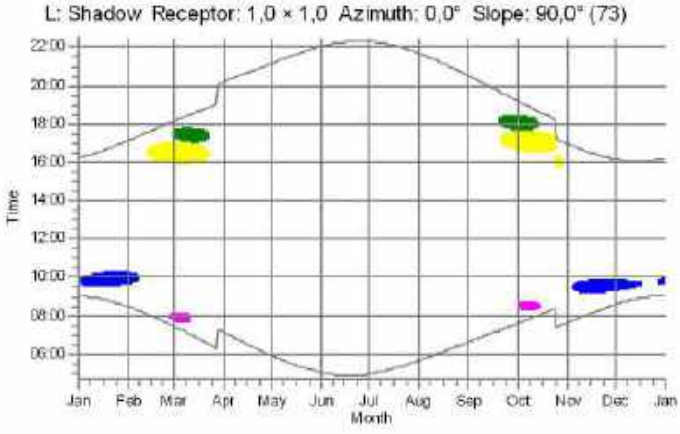

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

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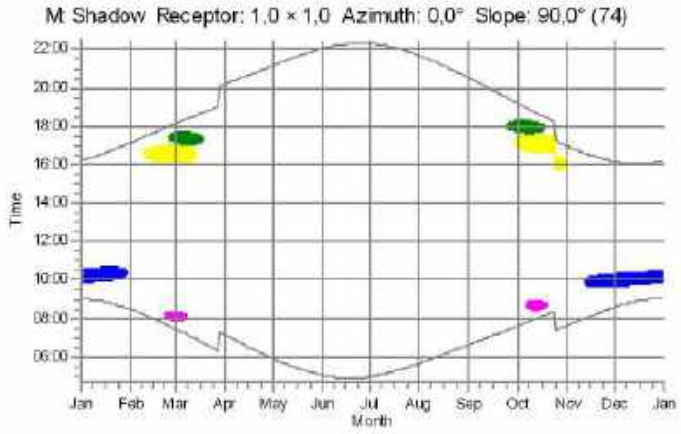
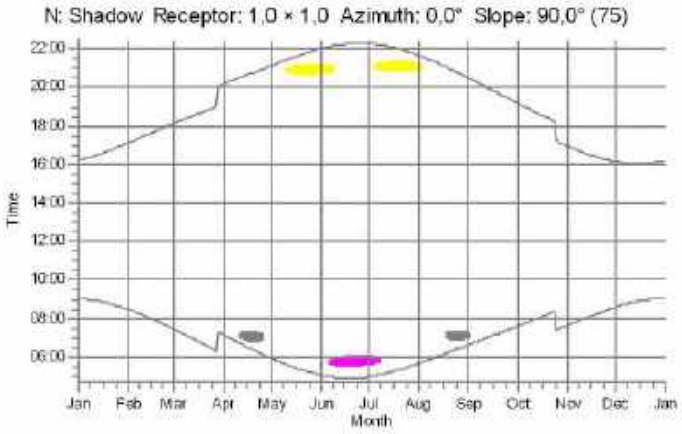
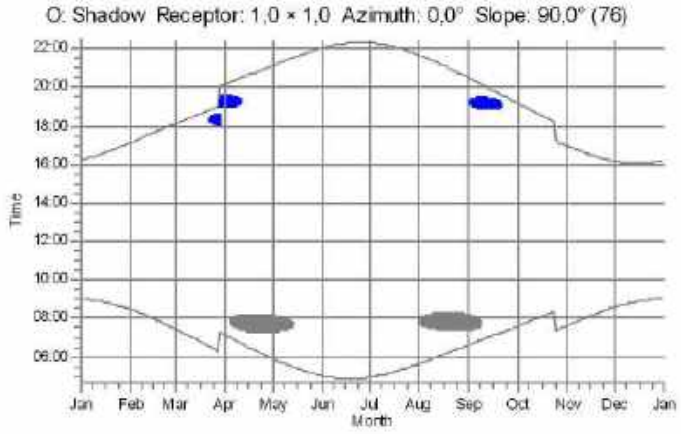
Calculated:
2021.11.30 10:39/3.5.552

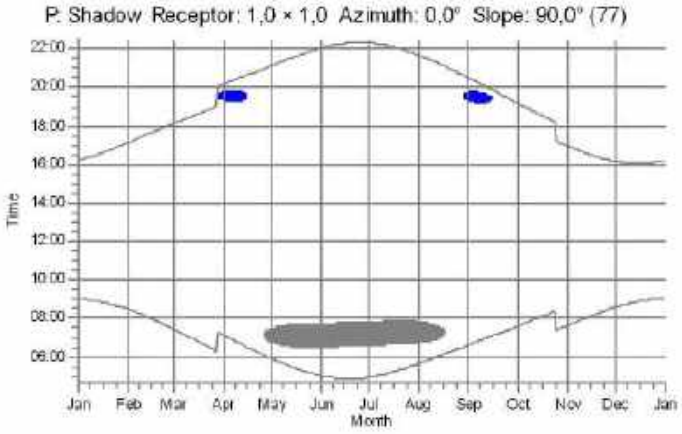
# SHADOW - Calendar, graphical

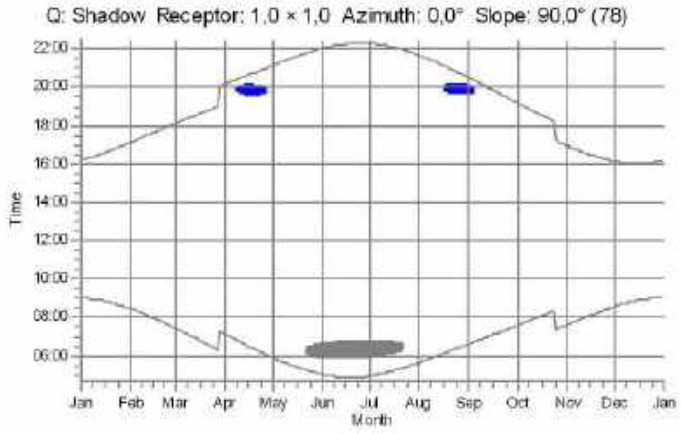
## Calculation: Enercon E138

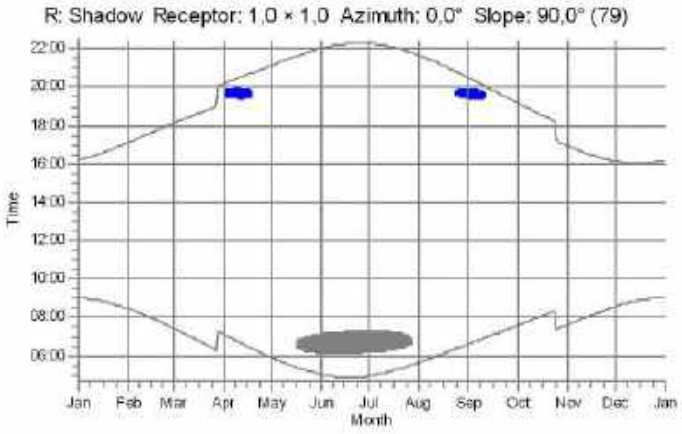



WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

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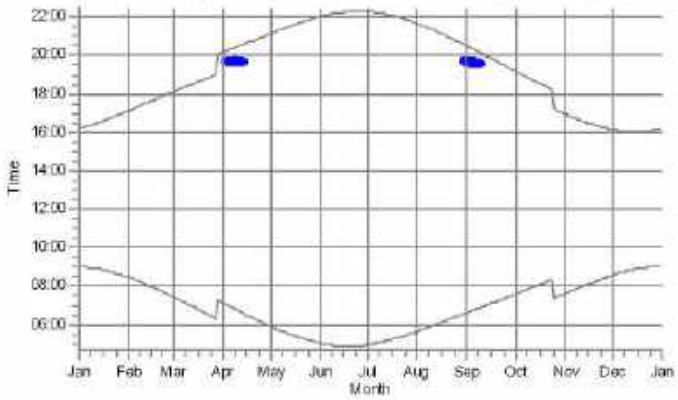
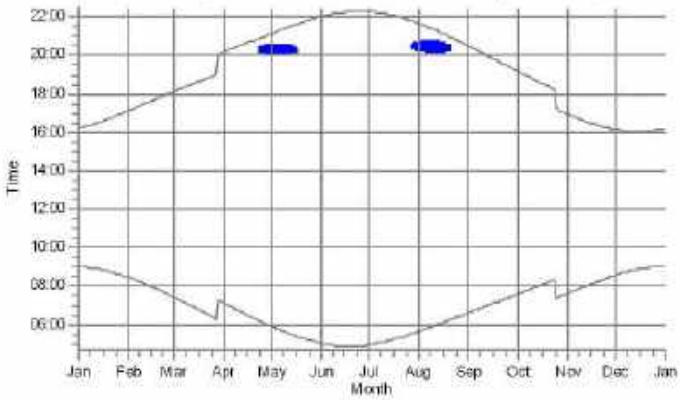
# SHADOW - Calendar, graphical

## Calculation: Enercon E138

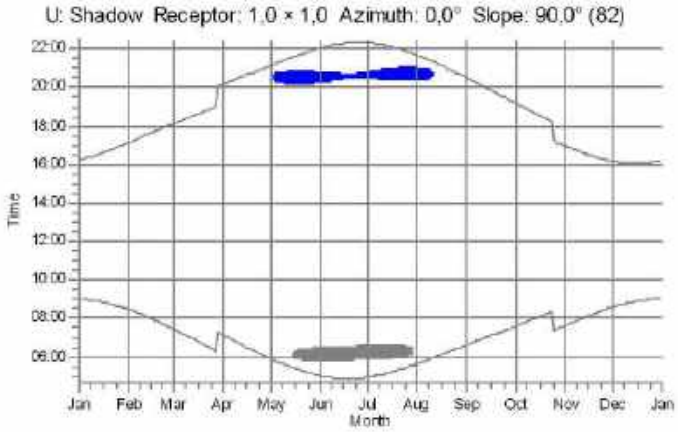
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)



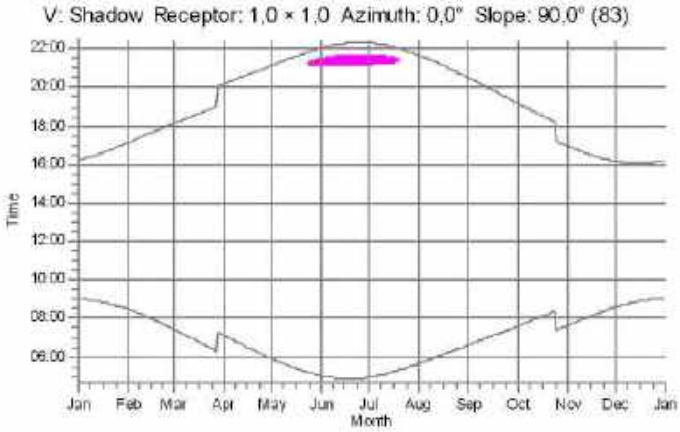

T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)



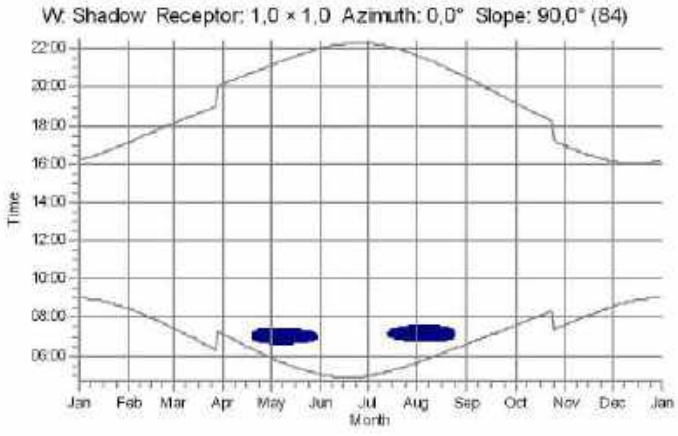

U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)



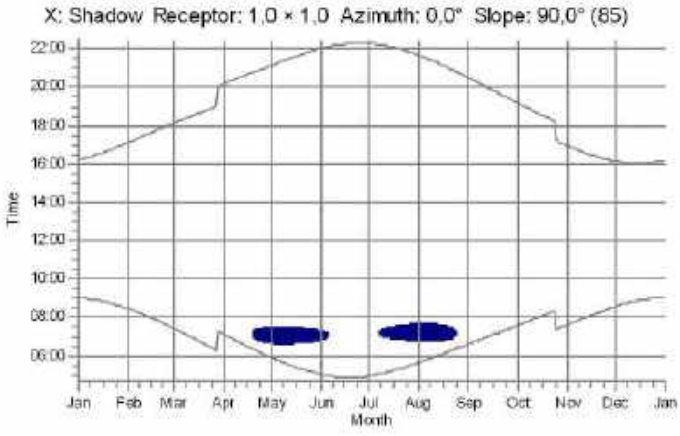

V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)




W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)




X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)




WTGs

- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
- 7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

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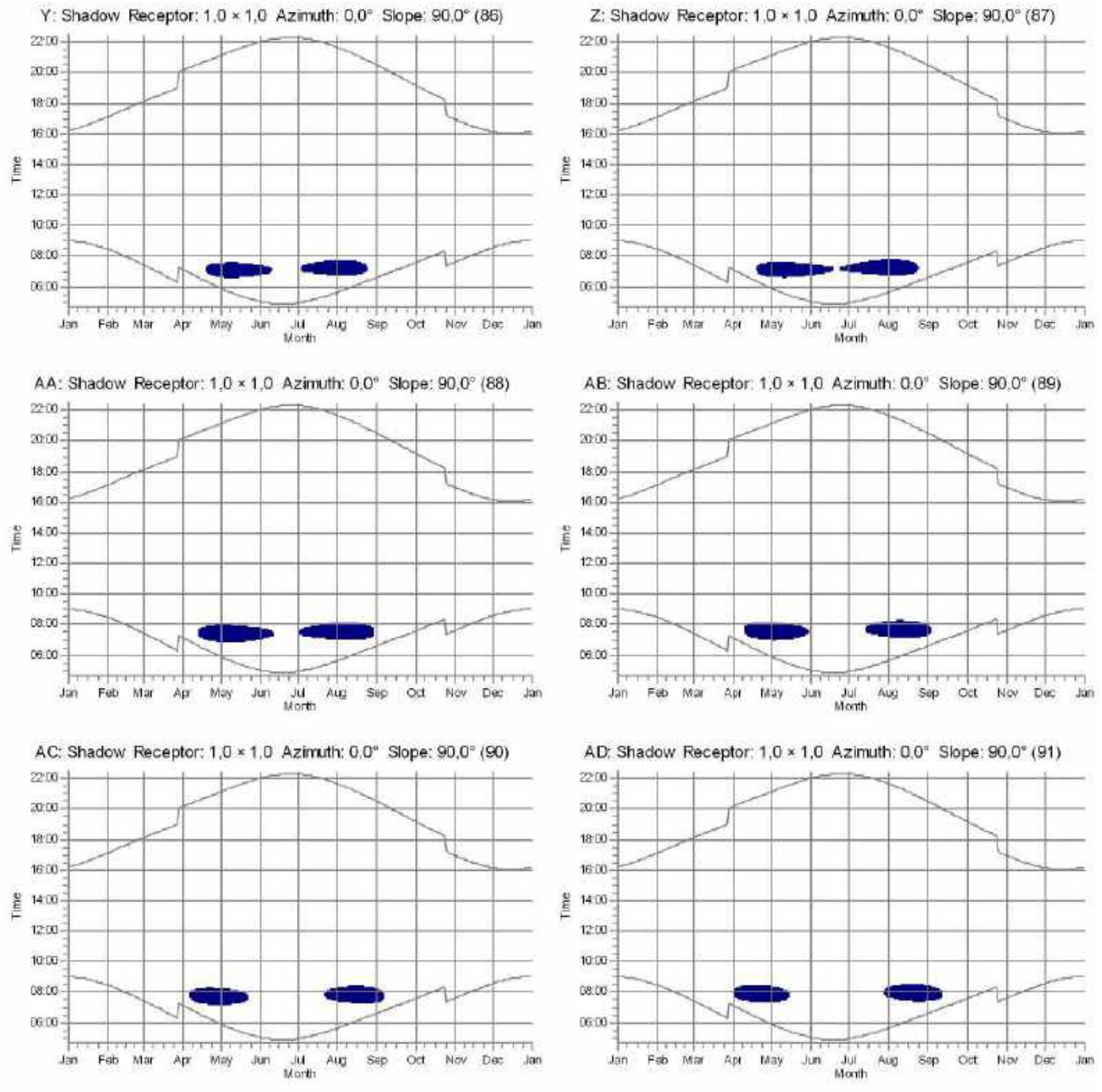
Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar, graphical

## Calculation: Enercon E138




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

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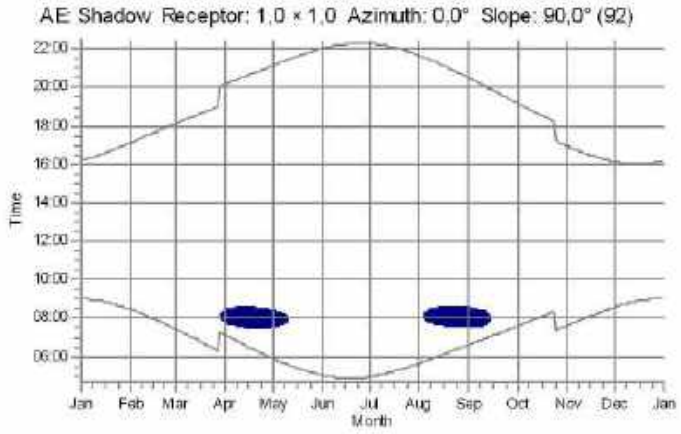
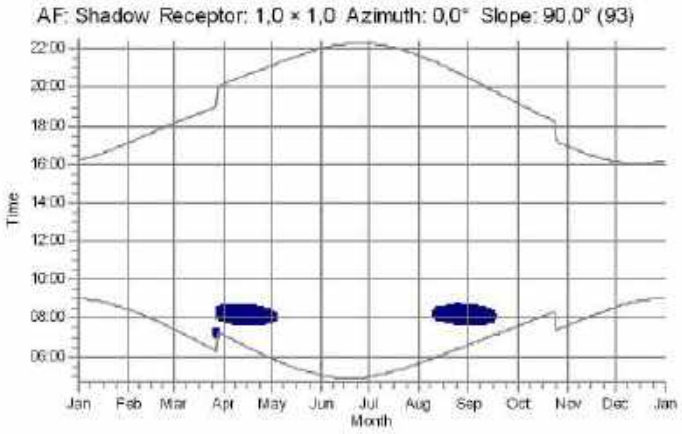
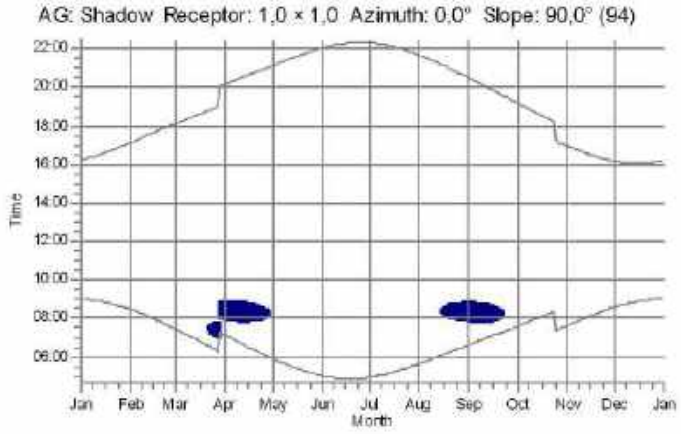
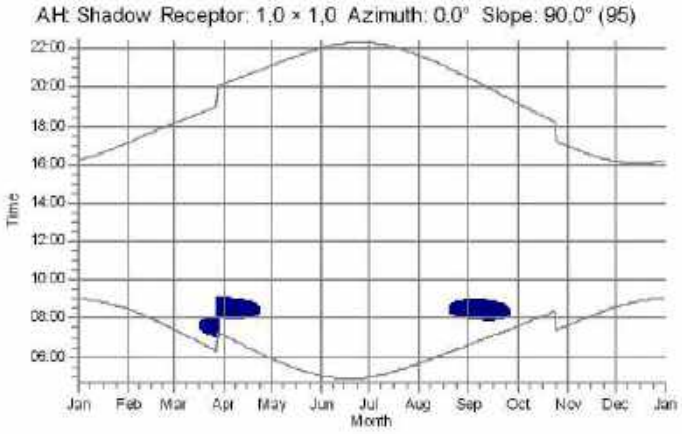
# SHADOW - Calendar, graphical

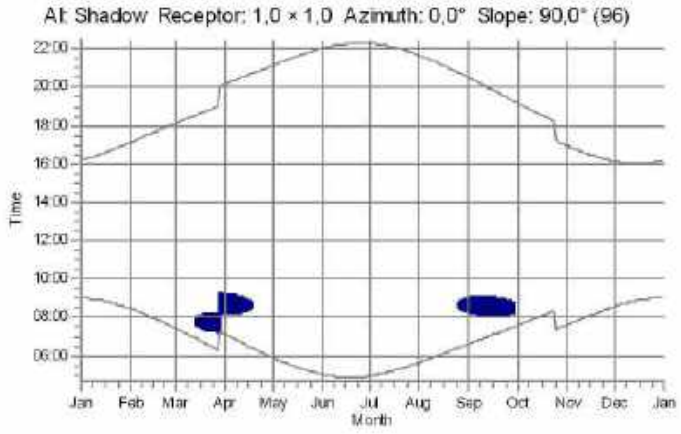
## Calculation: Enercon E138

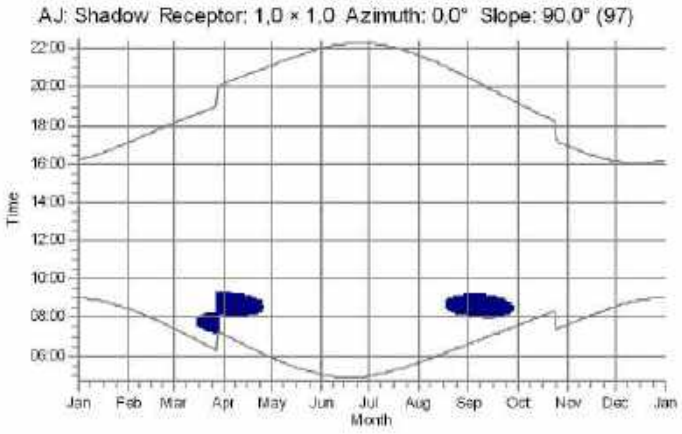



WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

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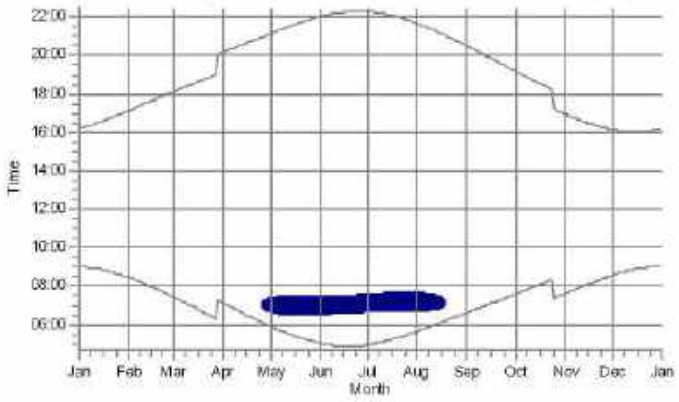
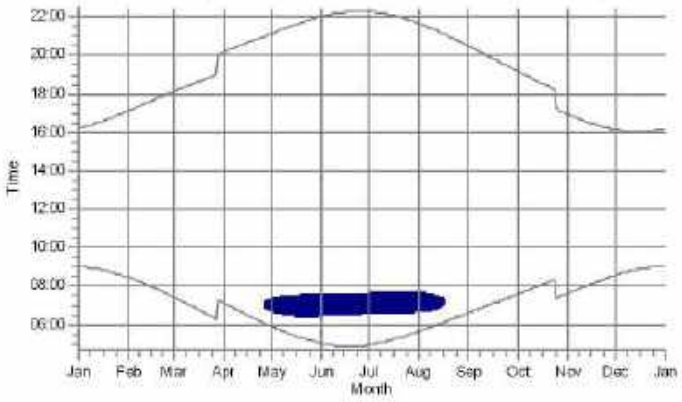
# SHADOW - Calendar, graphical

## Calculation: Enercon E138

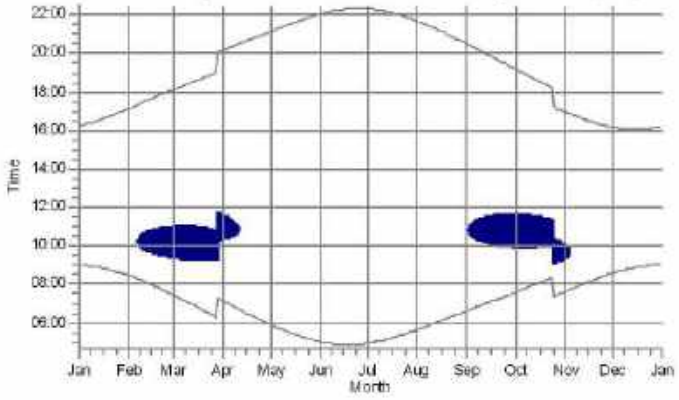
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)



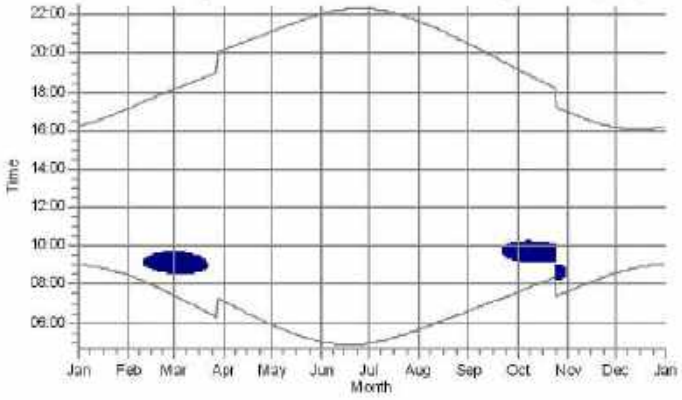

AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)



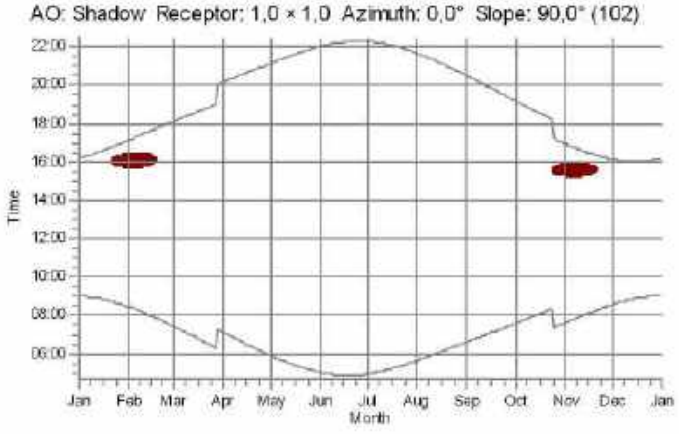

AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)



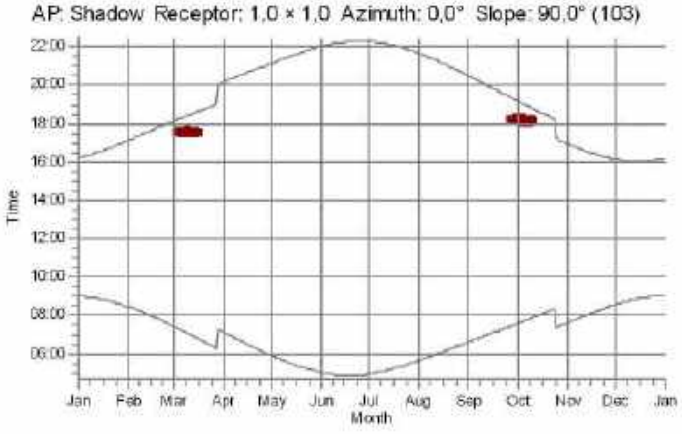

AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)




AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)




AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

8: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

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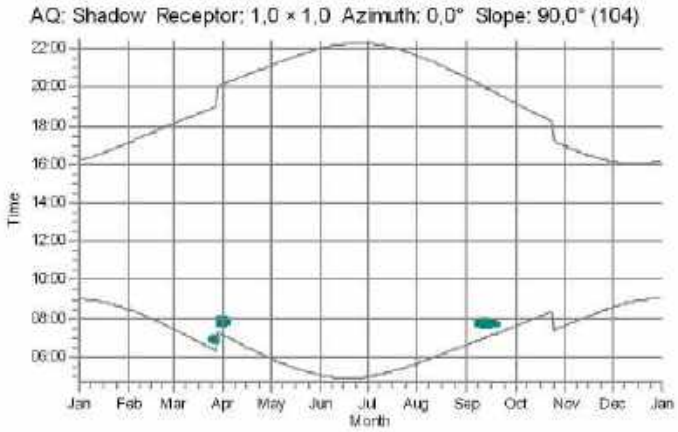
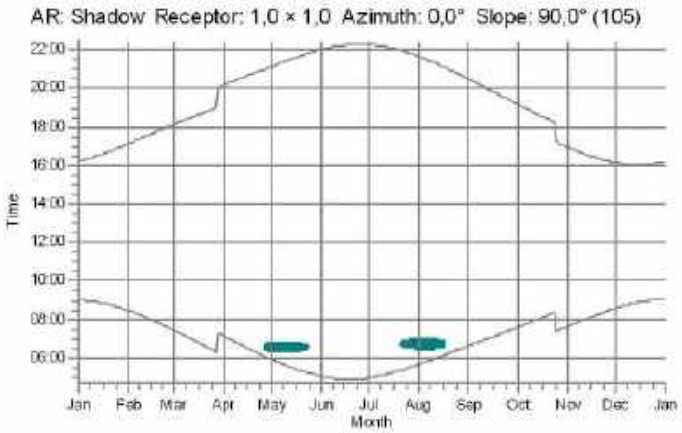
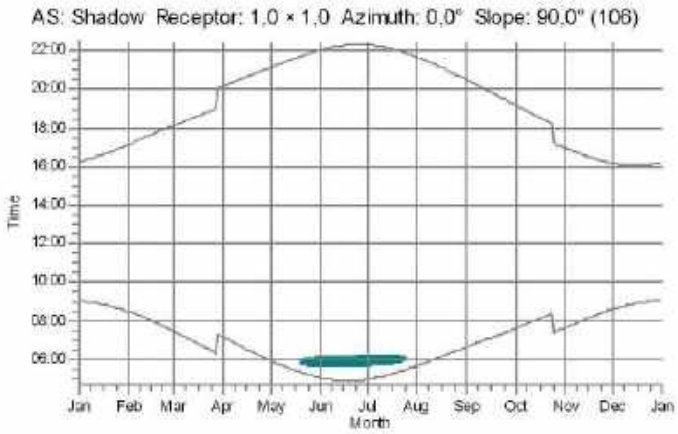
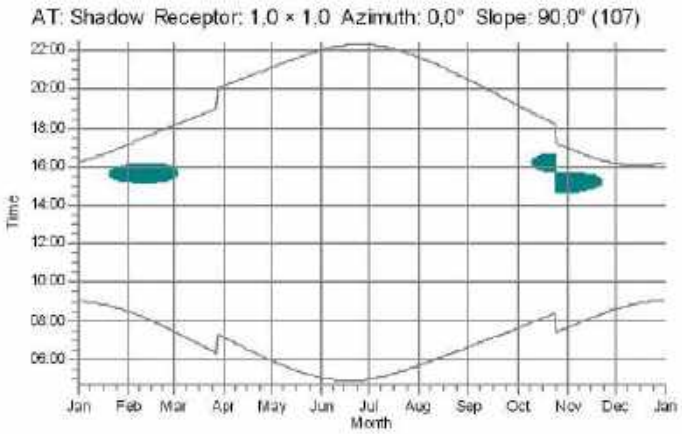
## SHADOW - Calendar, graphical

Calculation: Enercon E138




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62 | 08:28 14:52-15:47/55 | 07:27 16:35-17:35/60 08:17-10:43/146 | 07:08 10:21-11:08/47 08:11-08:28/17 | 05:55 | 05:02 |
| | 16:14 | 17:08 11:28-12:33/65 | 18:07 15:00-15:40/40 | 20:10 09:08-10:11/63 | 21:09 | 22:03 |
| 2 | 09:01 11:20-12:22/62 | 08:26 14:51-15:47/56 | 07:24 16:36-17:37/61 08:05-10:43/158 | 07:05 10:24-11:05/41 08:14-08:25/11 | 05:53 | 05:01 |
| | 16:15 | 17:10 11:29-12:33/64 | 18:10 15:03-15:38/35 | 20:12 09:11-10:09/58 | 21:11 | 22:04 |
| 3 | 09:01 11:20-12:23/63 | 08:24 14:51-15:48/57 | 07:22 16:36-17:38/62 08:00-10:43/163 | 07:03 10:26-11:00/34 | 05:51 | 05:00 |
| | 16:16 | 17:12 11:30-12:32/62 | 18:12 15:06-15:35/29 | 20:14 09:15-10:06/51 | 21:13 | 22:05 |
| 4 | 09:00 11:20-12:23/63 | 08:22 14:51-15:49/58 | 07:19 16:38-17:40/62 07:58-10:44/166 | 07:00 10:30-10:56/26 | 05:49 | 04:59 |
| | 16:18 | 17:15 11:30-12:32/62 | 18:14 15:10-15:32/22 | 20:16 09:28-10:03/35 | 21:15 | 22:06 |
| 5 | 09:00 11:21-12:24/63 | 08:20 14:50-15:50/60 | 07:17 16:39-17:41/62 07:48-10:43/175 | 06:58 10:37-10:46/9 | 05:46 | 04:58 |
| | 16:19 | 17:17 11:31-12:32/61 | 18:16 15:16-15:25/9 | 20:18 09:30-09:59/29 | 21:17 | 22:08 |
| 6 | 08:59 11:21-12:25/64 | 08:18 14:50-15:50/60 | 07:15 16:42-17:42/60 | 06:55 09:34-09:55/21 | 05:44 | 04:57 |
| | 16:20 | 17:19 11:32-12:31/59 | 18:18 07:45-10:44/179 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 11:21-12:25/64 | 08:16 14:50-15:51/61 09:54-10:08/14 | 07:12 16:45-17:43/58 | 06:53 09:42-09:46/4 | 05:42 | 04:56 |
| | 16:22 | 17:21 11:33-12:30/57 | 18:20 07:42-10:43/181 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 11:21-12:25/64 | 08:14 14:49-15:51/62 09:47-10:13/26 | 07:10 16:47-17:43/56 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 11:33-12:29/56 | 18:22 07:39-10:43/184 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 11:22-12:27/65 | 08:12 14:49-15:51/62 09:44-10:17/33 | 07:07 16:48-17:43/55 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 11:35-12:28/53 | 18:24 07:33-10:43/190 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 11:22-12:28/66 | 08:10 14:49-15:52/63 09:41-10:20/39 | 07:04 16:48-17:43/55 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 11:36-12:27/51 | 18:26 07:29-10:42/193 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 11:22-12:28/66 | 08:08 14:49-15:52/63 09:39-10:23/44 | 07:02 16:50-17:44/54 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 11:38-12:26/48 | 18:28 07:27-10:42/195 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 11:22-12:28/66 | 08:06 14:49-15:51/62 09:36-10:25/49 | 06:59 16:50-17:43/53 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 11:39-12:23/44 | 18:30 07:25-10:41/196 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 11:22-12:29/67 | 08:04 16:46-16:58/12 11:41-12:21/40 | 06:57 16:51-17:42/51 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 14:49-15:52/63 09:34-10:27/53 | 18:32 07:24-10:41/197 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 11:22-12:29/67 | 08:02 16:43-17:01/18 11:44-12:19/35 | 06:54 16:54-17:42/48 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 14:49-15:52/63 09:32-10:29/57 | 18:34 07:22-10:40/198 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 11:23-12:30/67 | 08:00 16:40-17:02/22 11:46-12:16/30 | 06:52 16:56-17:41/45 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 14:49-15:51/62 09:30-10:30/60 | 18:36 07:18-10:39/201 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 11:22-12:30/68 | 07:57 16:39-17:04/25 11:50-12:12/22 | 06:49 17:08-17:41/33 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 14:49-15:51/62 09:29-10:32/63 | 18:38 07:16-10:39/203 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 15:09-15:21/12 | 07:55 16:38-17:06/28 11:58-12:05/7 | 06:47 17:08-17:40/32 | 06:28 | 05:23 | 04:52 |
| | 16:38 11:23-12:31/68 | 17:42 14:50-15:52/62 09:28-10:34/66 | 18:40 07:13-10:38/205 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 15:07-15:25/18 | 07:53 16:37-17:06/29 09:26-10:35/69 | 06:44 17:09-17:38/29 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:24-12:32/68 | 17:44 14:50-15:51/61 | 18:42 07:12-10:37/205 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 15:04-15:28/24 | 07:51 16:36-17:07/31 09:25-10:36/71 | 06:42 17:10-17:37/27 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:23-12:32/69 | 17:47 14:50-15:51/61 | 18:44 07:11-10:36/205 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 15:03-15:30/27 | 07:48 16:36-17:08/32 09:24-10:38/74 | 06:39 17:11-17:35/24 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:24-12:32/68 | 17:49 14:51-15:51/60 | 18:46 07:09-10:34/205 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 15:01-15:32/31 | 07:46 16:35-17:14/39 09:22-10:38/76 | 06:36 17:14-17:33/19 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:24-12:32/68 | 17:51 14:51-15:49/58 | 18:48 07:09-10:33/204 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:59-15:34/35 | 07:44 16:35-17:17/42 09:22-10:39/77 | 06:34 17:16-17:30/14 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:24-12:32/68 | 17:53 14:52-15:49/57 08:50-09:09/19 | 18:50 07:08-10:31/203 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:59-15:36/37 | 07:41 16:34-17:19/45 09:20-10:40/80 | 06:31 07:08-10:30/202 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:25-12:33/68 | 17:55 14:53-15:48/55 08:45-09:13/28 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:57-15:37/40 | 07:39 16:34-17:21/47 09:20-10:41/81 | 06:29 07:07-10:28/201 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:25-12:33/68 | 17:57 14:54-15:47/53 08:42-09:16/34 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:56-15:39/43 | 07:36 16:34-17:21/47 08:39-10:41/122 | 06:26 07:06-10:26/200 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:25-12:33/68 | 17:59 14:54-15:46/52 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 14:56-15:41/45 | 07:34 16:34-17:30/56 08:29-10:42/133 | 06:23 07:42-10:25/163 | 06:06 | 05:09 | 04:54 |
| | 16:56 11:26-12:34/68 | 18:01 14:56-15:45/49 | 18:58 07:07-07:38/31 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 14:55-15:42/47 | 07:32 16:34-17:32/58 08:23-10:42/139 | 06:21 07:51-10:22/151 | 06:04 | 05:08 | 04:54 |
| | 16:58 11:26-12:34/68 | 18:03 14:57-15:43/46 | 19:00 07:07-07:36/29 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:54-15:43/49 | 07:29 16:35-17:34/59 08:20-10:43/143 | 06:18 07:54-10:20/146 | 06:02 | 05:06 | 04:55 |
| | 17:00 11:27-12:34/67 | 18:05 14:59-15:42/43 | 19:02 07:07-07:36/29 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:54-15:44/50 | | 07:16 08:58-11:18/140 | 06:00 | 05:05 | 04:55 |
| | 17:02 11:27-12:34/67 | | 20:04 08:08-08:34/26 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:53-15:45/52 | | 07:13 10:19-11:15/56 08:09-08:33/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 11:27-12:34/67 | | 20:06 09:06-10:16/70 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:52-15:46/54 | | 07:11 10:20-11:12/52 08:09-08:31/22 | | 05:03 | |
| | 17:06 11:28-12:33/65 | | 20:08 09:07-10:13/66 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 4682 | 6915 | 446 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 17:30-18:22/52 | 07:37 14:19-15:21/62 09:11-09:49/38 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 08:03-11:20/197 | 16:58 11:06-11:57/51 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 17:28-18:22/54 | 07:39 14:19-15:21/62 09:14-09:46/32 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-11:20/196 | 16:56 11:04-11:58/54 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 17:27-18:21/54 | 07:41 14:19-15:20/61 09:17-09:42/25 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-11:20/194 | 16:54 11:03-11:58/55 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 17:26-18:21/55 | 07:43 14:20-15:21/61 09:25-09:36/11 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-11:20/192 | 16:52 11:03-12:00/57 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 09:40-09:41/1 | 07:43 17:25-18:20/55 | 07:45 14:20-15:20/60 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-11:20/184 | 16:50 11:02-12:01/59 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 09:31-09:51/20 | 07:44 17:24-18:19/55 | 07:47 14:20-15:19/59 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-11:19/182 | 16:48 11:01-12:01/60 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 10:34-10:40/6 | 07:46 17:19-18:18/59 | 07:49 14:20-15:19/59 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 09:26-09:54/28 | 18:57 08:19-11:19/180 | 16:46 11:00-12:02/62 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 10:25-10:49/24 | 07:48 17:15-18:17/62 | 07:51 14:22-15:19/57 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 09:23-09:57/34 | 18:54 08:21-11:19/178 | 16:44 11:00-12:03/63 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 10:21-10:54/33 | 07:50 17:13-18:15/62 08:31-11:18/167 | 07:53 14:22-15:18/56 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 09:09-10:00/51 | 18:52 15:47-16:03/16 08:26-08:30/4 | 16:42 11:00-12:04/64 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 10:17-10:58/41 08:07-08:18/11 | 07:52 17:11-18:13/62 08:33-11:18/165 | 07:55 14:23-15:17/54 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 09:05-10:02/57 | 18:49 15:42-16:07/25 | 16:40 10:59-12:04/65 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 10:15-11:01/46 08:04-08:21/17 | 07:54 17:10-18:11/61 08:35-11:17/162 | 07:57 14:23-15:16/53 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 09:02-10:04/62 | 18:47 15:38-16:10/32 | 16:38 10:59-12:04/65 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 10:11-11:03/52 08:02-08:23/21 | 07:56 17:08-18:09/61 08:49-11:16/147 | 07:59 14:25-15:17/52 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 08:59-10:05/66 | 18:44 15:35-16:12/37 08:41-08:46/5 | 16:36 10:59-12:05/66 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 10:09-11:05/56 07:59-08:23/24 | 07:58 17:07-18:08/61 08:51-11:15/144 | 08:01 14:25-15:16/51 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 08:56-10:06/70 | 18:42 15:33-16:13/40 | 16:34 10:59-12:06/67 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 10:08-11:08/60 07:58-08:24/26 | 08:00 17:06-18:06/60 08:54-11:16/142 | 08:03 14:26-15:15/49 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 08:49-10:07/78 | 18:39 15:31-16:16/45 | 16:33 10:58-12:06/68 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 08:44-11:10/146 | 08:02 17:07-18:04/57 08:58-11:15/137 | 08:06 14:27-15:14/47 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 07:57-08:25/28 | 18:37 15:29-16:17/48 | 16:31 10:58-12:06/68 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 08:41-11:11/150 | 08:04 17:06-18:01/55 09:10-11:14/124 | 08:08 14:29-15:14/45 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 07:56-08:25/29 | 18:35 15:28-16:17/49 09:05-09:08/3 | 16:29 10:59-12:07/68 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 08:31-11:13/162 | 08:06 17:06-17:53/47 09:51-11:13/82 | 08:10 14:30-15:12/42 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 07:55-08:26/31 | 18:32 15:26-16:18/52 09:12-09:49/37 | 16:28 10:59-12:07/68 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-11:14/199 | 08:08 17:05-17:51/46 09:51-11:12/81 | 08:11 14:31-15:11/40 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 15:25-16:19/54 09:14-09:46/32 | 16:26 10:59-12:07/68 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-11:15/201 | 08:10 17:05-17:49/44 09:52-11:11/79 | 08:13 14:33-15:10/37 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 15:24-16:19/55 09:17-09:43/26 | 16:25 10:59-12:07/68 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-11:16/203 | 08:12 17:05-17:47/42 09:52-11:09/77 | 08:15 14:34-15:09/35 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 15:22-16:20/58 09:22-09:38/16 | 16:23 10:59-12:07/68 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:02-18:14/12 | 08:14 17:05-17:43/38 09:53-11:08/75 | 08:17 14:37-15:08/31 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 07:53-11:17/204 | 18:23 15:21-16:20/59 | 16:22 11:00-12:08/68 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 17:59-18:17/18 | 08:16 17:06-17:38/32 09:55-11:08/73 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 07:53-11:18/205 | 18:20 15:21-16:21/60 | 16:20 11:00-12:08/68 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 17:56-18:19/23 | 08:18 17:07-17:37/30 09:56-11:06/70 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 07:54-11:18/204 | 18:18 15:21-16:21/60 | 16:19 11:00-12:09/69 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 17:54-18:20/26 | 08:20 17:07-17:36/29 09:56-11:05/69 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 07:54-11:19/205 | 18:16 15:20-16:21/61 | 16:18 11:01-12:09/68 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 17:53-18:21/28 | 07:22 16:08-16:35/27 11:24-11:37/13 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 07:55-11:20/205 | 17:13 14:19-15:21/62 08:57-10:03/66 | 16:16 11:01-12:09/68 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 17:52-18:22/30 | 07:24 16:09-16:33/24 11:18-11:43/25 | 08:27 11:02-12:09/67 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 07:56-11:20/204 | 17:11 14:19-15:21/62 08:59-10:01/62 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 17:49-18:22/33 | 07:26 16:11-16:32/21 11:15-11:47/32 | 08:28 11:02-12:09/67 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 07:57-11:21/204 | 17:09 14:19-15:22/63 09:01-10:00/59 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 17:39-18:22/43 | 07:29 16:13-16:30/17 11:13-11:49/36 | 08:30 11:03-12:09/66 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 07:59-11:20/201 | 17:07 14:19-15:22/63 09:02-09:58/56 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 17:35-18:22/47 | 07:31 16:16-16:26/10 11:10-11:51/41 | 08:32 11:03-12:10/67 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 08:01-11:20/199 | 17:04 14:18-15:21/63 09:04-09:56/52 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 17:32-18:22/50 | 07:33 14:18-15:21/63 09:06-09:54/48 | 08:34 11:04-12:10/66 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 08:03-11:20/197 | 17:02 11:08-11:53/45 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 14:19-15:22/63 09:09-09:52/43 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 11:07-11:55/48 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 4371 | 6568 | 3199 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:13-16:06/53 09:23-10:05/42<br>17:08 11:27-12:44/77 | 07:27 15:27-16:57/90<br>18:07 08:07-08:34/27 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02 20:50-21:07/17<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:12-16:08/56 09:22-10:06/44<br>17:10 11:27-12:44/77 | 07:24 15:28-16:58/90<br>18:10 08:05-08:36/31 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01 20:51-21:06/15<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 15:12-16:10/58 09:22-10:06/44<br>17:12 11:27-12:44/77 | 07:22 15:28-16:58/90<br>18:12 08:03-08:37/34 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00 20:52-21:07/15<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 15:12-16:12/60 09:22-10:07/45<br>17:15 11:28-12:44/76 | 07:19 15:30-16:58/88<br>18:14 08:02-08:39/37 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59 20:53-21:06/13<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 15:12-16:13/61 09:22-10:08/46<br>17:17 11:28-12:44/76 | 07:17 15:31-16:57/86<br>18:16 07:51-08:39/48 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58 20:53-21:05/12<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 15:12-16:15/63 09:21-10:08/47<br>17:19 11:28-12:44/76 | 07:14 15:33-16:58/85<br>18:18 07:47-08:41/54 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57 20:55-21:05/10<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 15:11-16:15/64 09:22-10:09/47<br>17:21 11:29-12:44/75 | 07:12 15:35-16:57/82<br>18:20 07:41-08:41/60 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56 20:56-21:04/8<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 15:11-16:17/66 09:21-10:08/47<br>17:23 11:28-12:43/75 | 07:09 15:36-16:56/80<br>18:22 07:35-08:41/66 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56 20:57-21:02/5<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 15:11-16:18/67 09:21-10:08/47<br>17:25 11:29-12:43/74 | 07:07 15:40-16:56/76<br>18:24 07:32-08:42/70 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 15:12-16:19/67 09:21-10:09/48<br>17:27 11:30-12:43/73 | 07:04 16:01-16:55/54 07:29-08:41/72<br>18:26 15:44-16:00/16 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14 11:31-12:43/72<br>17:29 15:12-16:20/68 09:21-10:09/48 | 07:02 16:02-16:55/53<br>18:28 07:27-08:42/75 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:22-16:43/21 11:30-12:41/71<br>17:32 15:12-16:20/68 09:21-10:08/47 | 06:59 16:02-16:53/51<br>18:30 07:24-08:41/77 | 06:40<br>20:31 | 05:32 20:51-20:57/6<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 15:12-16:46/94 09:21-10:08/47<br>17:34 11:31-12:41/70 | 06:57 16:02-16:52/50<br>18:32 07:22-08:42/80 | 06:38<br>20:33 | 05:30 20:50-20:58/8<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 15:13-16:48/95 09:22-10:08/46<br>17:36 11:32-12:40/68 | 06:54 16:04-16:51/47<br>18:34 07:19-08:41/82 | 06:35<br>20:35 | 05:29 20:48-21:00/12<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 15:13-16:49/96 09:22-10:07/45<br>17:38 11:32-12:39/67 | 06:52 16:04-16:50/46<br>18:36 07:16-08:40/84 | 06:33<br>20:37 | 05:27 20:48-21:02/14<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 15:14-16:51/97 09:23-10:06/43<br>17:40 11:34-12:38/64 | 06:49 16:06-16:49/43<br>18:38 07:14-08:40/86 | 06:30<br>20:39 | 05:25 20:47-21:03/16<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 15:15-16:53/98 09:24-10:06/42<br>17:42 11:35-12:37/62 | 06:47 16:07-16:47/40<br>18:40 07:11-08:39/88 | 06:28<br>20:41 | 05:23 20:47-21:05/18<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 15:15-16:53/98 09:24-10:05/41<br>17:44 11:36-12:35/59 | 06:44 16:08-16:44/36<br>18:42 07:09-08:39/90 | 06:25<br>20:43 | 05:21 20:47-21:07/20<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 15:16-16:54/98 09:25-10:04/39<br>17:47 11:37-12:34/57 | 06:41 16:11-16:43/32<br>18:44 07:06-08:37/91 | 06:23<br>20:45 | 05:20 20:47-21:09/22<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 15:17-16:55/98 09:26-10:03/37<br>17:49 11:39-12:33/54 | 06:39 16:13-16:39/26<br>18:46 07:03-08:36/93 | 06:21<br>20:47 | 05:18 20:46-21:08/22<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 15:18-16:55/97 09:27-10:01/34<br>17:51 11:40-12:30/50 | 06:36 16:17-16:36/19<br>18:48 07:03-08:35/92 | 06:18<br>20:49 | 05:16 20:47-21:09/22<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 15:20-16:56/96 09:29-10:00/31<br>17:53 11:43-12:28/45 | 06:34 16:25-16:27/2<br>18:50 07:02-08:33/91 | 06:16<br>20:51 | 05:15 20:46-21:08/22<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 15:21-16:56/95 09:30-09:57/27<br>17:55 11:44-12:25/41 | 06:31 07:02-08:32/90<br>18:52 | 06:13<br>20:53 | 05:13 20:46-21:09/23<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 15:24-16:57/93 09:33-09:55/22<br>17:57 11:48-12:22/34 | 06:29 07:30-08:30/60<br>18:54 07:02-07:25/23 | 06:11<br>20:55 | 05:12 20:47-21:09/22<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 15:24-16:56/92 09:36-09:50/14<br>17:59 11:51-12:17/26 | 06:26 07:33-08:27/54<br>18:56 07:02-07:22/20 | 06:09<br>20:57 | 05:10 20:47-21:09/22<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 15:25-16:57/92<br>18:01 12:00-12:09/9 | 06:23 07:35-08:25/50<br>18:58 07:03-07:22/19 | 06:06<br>20:59 | 05:09 20:47-21:08/21<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 15:25-16:57/92<br>18:03 08:13-08:28/15 | 06:21 08:04-08:21/17 07:03-07:20/17<br>19:00 07:37-08:03/26 | 06:04<br>21:01 | 05:08 20:47-21:08/21<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 15:26-16:58/92<br>18:05 08:10-08:32/22 | 06:18 07:44-08:01/17<br>19:02 07:05-07:18/13 | 06:02<br>21:03 | 05:06 20:48-21:08/20<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 08:08-08:14/6 | 06:00<br>21:05 | 05:05 20:48-21:08/20<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04 20:49-21:08/19<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03 20:49-21:07/18<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 4971 | 3229 | 0 | 370 | 95 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
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+8 621 66746
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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:07/5<br>21:40 | 06:38<br>20:30 | 07:35 16:42-17:32/50<br>19:12 08:02-09:20/78 | 07:37 14:41-15:48/67 08:51-09:38/47<br>16:58 10:59-12:12/73 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 16:40-17:32/52<br>19:10 08:04-09:20/76 | 07:39 14:41-15:47/66 08:50-09:38/48<br>16:56 10:59-12:13/74 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 16:39-17:33/54 08:06-09:20/74<br>19:07 16:25-16:35/10 | 07:41 14:41-15:46/65 08:50-09:38/48<br>16:54 10:58-12:13/75 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59 21:04-21:08/4<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 16:19-17:33/74<br>19:05 08:08-09:19/71 | 07:43 14:42-15:46/64 08:51-09:38/47<br>16:52 10:58-12:14/76 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00 21:02-21:09/7<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 16:15-17:33/78<br>19:02 08:10-09:18/68 | 07:45 14:42-15:44/62 08:51-09:38/47<br>16:50 10:58-12:14/76 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01 21:01-21:10/9<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 16:12-17:33/81<br>18:59 08:14-09:17/63 | 07:47 14:42-15:43/61 08:51-09:37/46<br>16:48 10:58-12:14/76 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02 21:00-21:11/11<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 16:09-17:33/84<br>18:57 08:20-09:16/56 | 07:49 14:42-15:41/59 08:51-09:37/46<br>16:46 10:57-12:14/77 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03 20:59-21:12/13<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 16:07-17:33/86<br>18:54 08:25-09:15/50 | 07:51 14:43-15:41/58 08:53-09:37/44<br>16:44 10:58-12:15/77 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04 20:59-21:13/14<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 16:05-17:32/87<br>18:52 08:29-09:14/45 | 07:53 14:43-15:39/56 08:53-09:36/43<br>16:42 10:58-12:15/77 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06 20:58-21:13/15<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 16:03-17:32/89<br>18:49 08:36-09:12/36 | 07:55 14:44-15:36/52 08:53-09:36/43<br>16:40 10:58-12:14/76 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07 20:59-21:15/16<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 16:02-17:31/89<br>18:47 08:38-09:11/33 | 07:57 14:44-15:34/50 08:54-09:35/41<br>16:38 10:57-12:14/77 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08 20:58-21:16/18<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 16:00-17:31/91<br>18:44 08:39-09:09/30 | 07:59 14:46-15:31/45 08:56-09:35/39<br>16:36 10:58-12:15/77 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09 20:58-21:16/18<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 15:59-17:30/91<br>18:42 08:41-09:06/25 | 08:01 14:46-15:29/43 08:56-09:34/38<br>16:34 10:58-12:15/77 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11 20:57-21:16/19<br>22:08 | 06:04<br>21:13 | 07:02 08:41-08:43/2<br>19:56 07:59-08:04/5 | 08:00 15:58-17:30/92<br>18:39 08:44-09:04/20 | 08:03 14:47-15:28/41 08:57-09:33/36<br>16:33 10:58-12:15/77 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12 20:57-21:16/19<br>22:07 | 06:06<br>21:10 | 07:04 08:34-08:49/15<br>19:54 07:55-08:07/12 | 08:02 15:58-17:30/92<br>18:37 08:48-09:00/12 | 08:05 14:48-15:27/39 08:58-09:32/34<br>16:31 10:58-12:15/77 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14 20:57-21:18/21<br>22:06 | 06:08<br>21:08 | 07:06 08:55-09:09/14 07:53-08:09/16<br>19:51 08:27-08:52/25 | 08:04 15:57-17:29/92 10:13-10:18/5<br>18:35 12:28-12:45/17 | 08:07 14:50-15:27/37 09:00-09:32/32<br>16:29 11:00-12:15/75 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15 20:57-21:18/21<br>22:04 | 06:09<br>21:06 | 07:08 08:24-09:13/49<br>19:48 07:51-08:10/19 | 08:06 15:56-17:28/92 10:06-10:24/18<br>18:32 12:22-12:51/29 | 08:09 14:51-15:26/35 09:01-09:31/30<br>16:28 11:00-12:15/75 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16 20:56-21:18/22<br>22:03 | 06:11<br>21:04 | 07:10 08:22-09:15/53<br>19:46 07:50-08:11/21 | 08:08 15:54-17:28/94 10:03-10:27/24<br>18:30 12:18-12:54/36 | 08:11 14:52-15:25/33 09:03-09:29/26<br>16:26 11:00-12:15/75 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18 20:57-21:19/22<br>22:02 | 06:13<br>21:01 | 07:12 08:17-09:16/59<br>19:43 07:48-08:10/22 | 08:10 15:52-17:27/95 10:01-10:29/28<br>18:27 12:15-12:57/42 | 08:13 14:53-15:24/31 09:04-09:28/24<br>16:25 11:00-12:15/75 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19 20:56-21:18/22<br>22:00 | 06:15<br>20:59 | 07:14 07:48-09:17/89<br>19:41 | 08:12 15:50-17:26/96 09:59-10:30/31<br>18:25 12:12-12:59/47 | 08:15 14:54-15:23/29 09:06-09:26/20<br>16:23 11:01-12:15/74 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21 20:57-21:19/22<br>21:59 | 06:17<br>20:56 | 07:16 07:47-09:19/92<br>19:38 | 08:14 15:48-17:25/97 09:57-10:32/35<br>18:23 12:10-13:01/51 | 08:17 14:57-15:22/25 09:10-09:25/15<br>16:22 11:02-12:15/73 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 20:56-21:19/23<br>21:57 | 06:19<br>20:54 | 07:18 17:03-17:19/16<br>19:35 07:47-09:20/93 | 08:16 15:47-17:25/98 09:56-10:34/38<br>18:20 12:09-13:04/55 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-12:15/73 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24 20:57-21:19/22<br>21:56 | 06:21<br>20:52 | 07:19 16:59-17:23/24<br>19:33 07:47-09:20/93 | 08:18 15:46-17:24/98 09:55-10:35/40<br>18:18 12:07-13:05/58 | 08:21 15:01-15:19/18<br>16:19 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 20:57-21:19/22<br>21:54 | 06:23<br>20:49 | 07:21 16:56-17:26/30<br>19:30 07:49-09:21/92 | 08:20 15:45-17:23/98 09:54-10:35/41<br>18:16 12:06-13:06/60 | 08:23 15:05-15:16/11<br>16:18 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28 20:57-21:18/21<br>21:52 | 06:25<br>20:47 | 07:23 16:53-17:27/34<br>19:28 07:51-09:21/90 | 08:22 14:44-16:22/98 08:53-09:36/43<br>17:13 11:04-12:07/63 | 08:25 11:04-12:15/71<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29 20:57-21:16/19<br>21:51 | 06:26<br>20:44 | 07:25 16:51-17:29/38<br>19:25 07:53-09:22/89 | 08:24 14:43-16:20/97 08:52-09:36/44<br>17:11 11:03-12:08/65 | 08:27 11:05-12:15/70<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31 20:58-21:15/17<br>21:49 | 06:28<br>20:42 | 07:27 16:48-17:29/41<br>19:23 07:55-09:22/87 | 08:26 14:43-16:19/96 08:52-09:37/45<br>17:09 11:03-12:09/66 | 08:28 11:05-12:15/70<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33 20:58-21:13/15<br>21:47 | 06:30<br>20:39 | 07:29 16:46-17:30/44<br>19:20 07:57-09:21/84 | 08:29 14:42-16:17/95 08:52-09:37/45<br>17:07 11:02-12:10/68 | 08:30 11:06-12:15/69<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34 20:59-21:12/13<br>21:46 | 06:32<br>20:37 | 07:31 16:44-17:31/47<br>19:17 07:58-09:21/83 | 08:31 14:42-16:15/93 08:51-09:38/47<br>17:04 11:01-12:10/69 | 08:32 11:07-12:15/68<br>16:12 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36 21:00-21:10/10<br>21:44 | 06:34<br>20:35 | 07:33 16:43-17:31/48<br>19:15 08:00-09:21/81 | 08:33 15:52-16:12/20 11:00-12:11/71<br>17:02 14:41-15:49/68 08:50-09:38/48 | 08:34 11:08-12:15/67<br>16:11 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38 21:00-21:08/8<br>21:42 | 06:36<br>20:32 | | 07:35 15:56-16:08/12 11:00-12:12/72<br>17:00 14:41-15:48/67 08:51-09:38/47 | | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 463 | 5 | 1607 | 4891 | 4091 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:11/26<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:42/39<br>20:10 | 05:55 20:08-20:34/26<br>21:09 | 05:02 20:20-20:46/26<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:03-19:44/41<br>20:12 | 05:53 20:07-20:34/27<br>21:11 | 05:01 20:21-20:46/25<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:03-19:46/43<br>20:14 | 05:51 20:07-20:38/31<br>21:13 | 05:00 20:22-20:46/24<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:04-19:48/44<br>20:16 | 05:48 20:07-20:41/34<br>21:15 | 04:59 20:23-20:46/23<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:03-19:49/46<br>20:18 | 05:46 20:07-20:42/35<br>21:16 | 04:58 20:23-20:45/22<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:05-19:52/47<br>20:19 | 05:44 20:07-20:44/37<br>21:18 | 04:57 20:23-20:44/21<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:05-19:53/48<br>20:21 | 05:42 20:07-20:45/38<br>21:20 | 04:56 20:25-20:44/19<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:07-19:54/47<br>20:23 | 05:40 20:07-20:46/39<br>21:22 | 04:56 20:25-20:43/18<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:08-19:57/49<br>20:25 | 05:38 20:07-20:46/39<br>21:24 | 04:55 20:26-20:43/17<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:21-19:59/38<br>20:27 19:13-19:18/5 | 05:36 20:08-20:47/39<br>21:26 | 04:54 20:27-20:42/15<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:21-20:01/40<br>20:29 | 05:34 20:08-20:47/39<br>21:28 | 04:54 20:28-20:42/14<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:23-20:03/40<br>20:31 | 05:32 20:10-20:48/38<br>21:30 | 04:54 20:29-20:42/13<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:24-20:04/40<br>20:33 | 05:30 20:11-20:48/37<br>21:32 | 04:53 20:29-20:41/12<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:26-20:06/40<br>20:35 | 05:28 20:12-20:48/36<br>21:33 | 04:53 20:30-20:41/11<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:31-20:06/35<br>20:37 | 05:27 20:14-20:49/35<br>21:35 | 04:53 20:31-20:41/10<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:32-20:06/34<br>20:39 | 05:25 20:15-20:49/34<br>21:37 | 04:52 20:32-20:40/8<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:34-20:06/32<br>20:41 | 05:23 20:15-20:49/34<br>21:39 | 04:52 20:33-20:40/7<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:15-20:49/34<br>21:41 | 04:52 20:34-20:40/6<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20 20:15-20:49/34<br>21:42 | 04:52 20:34-20:39/5<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18 20:15-20:49/34<br>21:44 | 04:52 20:35-20:39/4<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16 20:16-20:49/33<br>21:46 | 04:52 20:35-20:39/4<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15 20:15-20:48/33<br>21:47 | 04:52 20:36-20:40/4<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13 20:16-20:49/33<br>21:49 | 04:53 20:36-20:40/4<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12 20:16-20:49/33<br>21:51 | 04:53 20:35-20:40/5<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:13-20:26/13<br>20:57 19:44-19:58/14 | 05:10 20:17-20:49/32<br>21:52 | 04:53 20:35-20:42/7<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 20:12-20:28/16<br>20:59 19:46-19:55/9 | 05:09 20:17-20:48/31<br>21:54 | 04:54 20:35-20:42/7<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:10-20:30/20<br>21:01 | 05:08 20:17-20:48/31<br>21:55 | 04:54 20:35-20:44/9<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:09-20:32/23<br>21:03 | 05:06 20:18-20:47/29<br>21:57 | 04:55 20:34-20:44/10<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:09-20:33/24<br>21:05 | 05:05 20:18-20:47/29<br>21:58 | 04:55 20:34-20:45/11<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:38/34<br>20:06 | 05:57 20:08-20:34/26<br>21:07 | 05:04 20:19-20:47/28<br>22:00 | 04:56 20:33-20:45/12<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:40/36<br>20:08 | | 05:03 20:20-20:47/27<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 353 | 207 | 1022 | 1039 | 373 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 20:32-20:46/14<br>22:18 | 05:40 20:20-20:58/38<br>21:40 | 06:38 19:20-20:00/40<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58 20:32-20:47/15<br>22:18 | 05:41 20:18-20:57/39<br>21:38 | 06:40 19:19-19:57/38<br>20:27 19:10-19:16/6 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58 20:32-20:48/16<br>22:17 | 05:43 20:18-20:57/39<br>21:36 | 06:42 19:06-19:55/49<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59 20:31-20:48/17<br>22:17 | 05:45 20:18-20:56/38<br>21:34 | 06:43 19:04-19:51/47<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00 20:30-20:49/19<br>22:16 | 05:47 20:17-20:56/39<br>21:32 | 06:45 19:02-19:50/48<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01 20:30-20:50/20<br>22:15 | 05:49 20:16-20:54/38<br>21:30 | 06:47 19:00-19:47/47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02 20:30-20:51/21<br>22:15 | 05:51 20:16-20:53/37<br>21:28 | 06:49 18:59-19:45/46<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03 20:29-20:52/23<br>22:14 | 05:52 20:16-20:51/35<br>21:26 | 06:51 18:58-19:42/44<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04 20:29-20:52/23<br>22:13 | 05:54 20:15-20:48/33<br>21:24 | 06:53 18:57-19:40/43<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06 20:28-20:53/25<br>22:12 | 05:56 20:15-20:45/30<br>21:21 | 06:55 18:57-19:38/41<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07 20:29-20:54/25<br>22:11 | 05:58 20:16-20:43/27<br>21:19 | 06:57 18:55-19:34/39<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08 20:28-20:55/27<br>22:10 | 06:00 20:16-20:43/27<br>21:17 | 06:59 18:55-19:32/37<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09 20:28-20:55/27<br>22:09 | 06:02 20:16-20:41/25<br>21:15 | 07:00 18:55-19:29/34<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11 20:27-20:56/29<br>22:08 | 06:04 20:16-20:41/25<br>21:13 | 07:02 19:24-19:27/3<br>19:56 18:55-19:22/27 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12 20:27-20:56/29<br>22:07 | 06:06 20:17-20:39/22<br>21:10 | 07:04 18:56-19:22/26<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13 20:27-20:57/30<br>22:06 | 06:07 20:18-20:37/19<br>21:08 | 07:06 18:56-19:21/25<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15 20:26-20:57/31<br>22:04 | 06:09 20:18-20:34/16<br>21:06 19:52-20:03/11 | 07:08 18:57-19:19/22<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16 20:26-20:57/31<br>22:03 | 06:11 20:20-20:32/12<br>21:03 19:50-20:05/15 | 07:10 18:57-19:16/19<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18 20:26-20:58/32<br>22:02 | 06:13 20:23-20:30/7<br>21:01 19:48-20:06/18 | 07:12 18:59-19:14/15<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19 20:26-20:58/32<br>22:00 | 06:15 19:47-20:08/21<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21 20:26-20:59/33<br>21:59 | 06:17 19:46-20:08/22<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23 20:25-20:59/34<br>21:57 | 06:19 19:44-20:08/24<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24 20:26-20:59/33<br>21:56 | 06:21 19:44-20:09/25<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26 20:25-20:59/34<br>21:54 | 06:23 19:43-20:09/26<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:26-21:00/34<br>21:52 | 06:25 19:40-20:09/29<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29 20:25-20:59/34<br>21:51 | 06:26 19:37-20:09/32<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:26-21:00/34<br>21:49 | 06:28 19:34-20:08/34<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:25-20:59/34<br>21:47 | 06:30 19:32-20:07/35<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:24-20:59/35<br>21:45 | 06:32 19:27-20:07/40<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:22-20:59/37<br>21:44 | 06:34 19:24-20:05/41<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:21-20:58/37<br>21:42 | 06:36 19:23-20:03/40<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 865 | 959 | 705 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:52-08:05/73 | 05:02 | 05:51-07:40/109 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:50-08:04/74 | 05:01 | 05:51-07:40/109 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:48-08:03/75 | 05:00 | 05:52-07:41/109 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 06:46-08:02/76 | 04:59 | 05:52-07:41/109 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | 06:45-08:01/76 | 04:58 | 05:51-07:41/110 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-07:59/76 | 04:57 | 05:51-07:40/109 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-07:58/76 | 04:56 | 05:52-07:41/109 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-07:56/75 | 04:56 | 05:52-07:41/109 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-07:54/74 | 04:55 | 05:52-07:41/109 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-07:52/73 | 04:54 | 05:52-07:41/109 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:49/71 | 04:54 | 05:52-07:41/109 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:36/58 | 04:53 | 05:53-07:42/109 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | 07:37-07:45/8 | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:36/59 | 04:53 | 05:52-07:41/109 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:36/60 | 04:53 | 05:53-07:42/109 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 07:24-08:10/46 | 05:27 | 06:04-06:11/7 | 04:52 | 05:53-07:42/109 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 06:58-07:14/16 | 21:35 | 06:37-07:37/60 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:22-08:10/48 | 05:25 | 06:00-06:14/14 | 04:52 | 05:54-07:42/108 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 06:55-07:14/19 | 21:37 | 06:36-07:37/61 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 07:22-08:10/48 | 05:23 | 05:59-06:16/17 | 04:52 | 05:54-07:42/108 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 06:54-07:14/20 | 21:39 | 06:36-07:38/62 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 07:21-08:10/49 | 05:21 | 05:57-06:17/20 | 04:52 | 05:54-07:43/109 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 06:53-07:14/21 | 21:40 | 06:29-07:38/69 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 07:20-08:10/50 | 05:20 | 05:56-06:19/23 | 04:52 | 05:54-07:43/109 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 06:53-07:14/21 | 21:42 | 06:26-07:39/73 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:20-08:11/51 | 05:18 | 05:55-06:20/25 | 04:52 | 05:54-07:43/109 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 06:54-07:13/19 | 21:44 | 06:23-07:39/76 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:19-08:10/51 | 05:16 | 05:54-07:39/105 | 04:52 | 05:54-07:43/109 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 06:54-07:13/19 | 21:46 | | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 07:19-08:10/51 | 05:15 | 05:53-07:39/106 | 04:52 | 05:55-07:44/109 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 06:54-07:11/17 | 21:47 | | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:19-08:10/51 | 05:13 | 05:53-07:39/106 | 04:53 | 05:55-07:44/109 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 06:55-07:10/15 | 21:49 | | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 07:19-08:10/51 | 05:12 | 05:53-07:40/107 | 04:53 | 05:55-07:44/109 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 06:57-07:09/12 | 21:51 | | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 07:19-08:08/49 | 05:10 | 05:53-07:39/106 | 04:53 | 05:56-07:44/108 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 06:59-07:06/7 | 21:52 | | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 07:19-08:08/49 | 05:09 | 05:52-07:39/107 | 04:54 | 05:56-07:44/108 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:19-08:08/49 | 05:08 | 05:51-07:40/109 | 04:54 | 05:56-07:45/109 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-07:40/109 | 04:55 | 05:56-07:45/109 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 07:20-08:07/47 | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:19/21 | 05:05 | 05:51-07:40/109 | 04:55 | 05:57-07:45/108 |
| | 17:02 | | 20:04 | 21:05 | 07:20-08:07/47 | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-08:06/72 | 05:04 | 05:51-07:40/109 | 04:56 | 05:56-07:45/109 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-07:40/109 | | |
| | 17:06 | | 20:08 | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 1377 | | 2693 | | 3266 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:57-07:46/109 | 05:40 06:49-07:58/69 | 06:38 07:27-08:06/39 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 05:57-07:46/109 | 05:41 06:49-08:00/71 | 06:40 07:28-08:05/37 | 07:36 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 05:58-07:47/109 | 05:43 06:50-08:03/73 | 06:41 07:29-08:03/34 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 05:57-07:46/109 | 05:45 06:51-08:05/74 | 06:43 07:31-08:01/30 | 07:40 | 07:43 | 08:40 |
| | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 05:57-07:46/109 | 05:47 06:52-08:07/75 | 06:45 07:33-07:59/26 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 05:58-07:47/109 | 05:49 06:52-08:08/76 | 06:47 07:35-07:54/19 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 05:58-07:47/109 | 05:50 06:53-08:09/76 | 06:49 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 05:58-07:47/109 | 05:52 06:55-08:11/76 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 05:58-07:47/109 | 05:54 06:55-08:11/76 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 05:58-07:48/110 | 05:56 06:57-08:12/75 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 05:59-07:49/110 | 05:58 06:59-08:13/74 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 06:00-07:49/109 | 06:00 07:01-08:14/73 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 06:00-07:49/109 | 06:02 07:03-08:13/70 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 06:00-07:49/109 | 06:04 07:06-07:25/19 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 07:27-08:14/47 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 06:00-07:49/109 | 06:05 07:13-07:18/5 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 07:27-08:15/48 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 06:01-07:49/108 | 06:07 07:27-08:15/48 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 06:01-07:49/108 | 06:09 07:25-08:15/50 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 06:01-07:49/108 | 06:11 07:25-08:15/50 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 07:04-07:12/8 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 06:02-07:49/107 | 06:13 07:25-08:15/50 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 07:02-07:15/13 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 06:02-07:49/107 | 06:15 07:25-08:15/50 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 07:01-07:16/15 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 06:04-07:50/106 | 06:17 07:25-08:15/50 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:59 | 20:56 07:00-07:17/17 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 06:04-07:49/105 | 06:19 07:24-08:14/50 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 06:58-07:17/19 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 06:05-06:31/26 | 06:21 07:24-08:14/50 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 06:33-07:49/76 | 20:52 06:57-07:17/20 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:06-06:30/24 | 06:23 07:24-08:14/50 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 06:34-07:49/75 | 20:49 06:57-07:17/20 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 06:07-06:29/22 | 06:24 07:24-08:14/50 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 06:37-07:49/72 | 20:47 06:57-07:17/20 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:08-06:27/19 | 06:26 07:25-08:13/48 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 06:41-07:48/67 | 20:44 06:57-07:17/20 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:10-06:26/16 | 06:28 07:24-08:12/48 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 06:47-07:48/61 | 20:42 06:57-07:16/19 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 06:12-06:23/11 | 06:30 07:25-08:11/46 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 06:46-07:48/62 | 20:39 06:59-07:15/16 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 06:47-07:48/61 | 06:32 07:25-08:10/45 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 07:01-07:14/13 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 06:48-07:47/59 | 06:34 07:26-08:09/43 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 07:03-07:13/10 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 06:48-07:46/58 | 06:36 07:27-08:08/41 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 07:05-07:11/6 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 3095 | 2062 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:52-08:15/23 | 07:08 | 05:55 | 05:02 21:11-21:26/15 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 07:50-08:15/25 | 07:05 | 05:53 | 05:01 21:11-21:27/16 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 07:47-08:14/27 | 07:03 | 05:51 | 05:00 21:11-21:28/17 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 07:45-08:14/29 | 07:00 | 05:48 | 04:59 21:12-21:29/17 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 07:44-08:12/28 | 06:58 | 05:46 | 04:58 21:11-21:30/19 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:11/27 | 06:55 | 05:44 | 04:57 21:11-21:31/20 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 |
| 7 | 08:59 | 08:16 | 07:12 07:44-08:06/22 | 06:53 | 05:42 | 04:56 21:12-21:32/20 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 |
| 8 | 08:58 | 08:14 | 07:09 07:44-08:01/17 | 06:50 | 05:40 | 04:56 21:11-21:33/22 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 |
| 9 | 08:57 | 08:12 | 07:07 07:46-08:00/14 | 06:48 | 05:38 | 04:55 21:12-21:34/22 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 |
| 10 | 08:57 | 08:10 | 07:04 07:47-07:57/10 | 06:45 | 05:36 | 04:54 21:12-21:34/22 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:35-05:52/17 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:35-05:53/18 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:34-05:53/19 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:34-05:54/20 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:34-05:55/21 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:55/21 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:55/21 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:56/22 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:56/22 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:56/22 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:57/22 |
| 23 | 08:42 | 07:41 08:07-08:12/5 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:57/22 |
| 24 | 08:41 | 07:39 08:05-08:14/9 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:35-05:57/22 |
| 25 | 08:39 | 07:36 08:02-08:14/12 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:57/21 |
| 26 | 08:38 | 07:34 08:00-08:16/16 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:36-05:57/21 |
| 27 | 08:36 | 07:32 07:57-08:15/18 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:57/20 |
| 28 | 08:35 | 07:29 07:55-08:16/21 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:37-05:57/20 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:38-05:57/19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:38-05:56/18 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 81 | 222 | 0 | 54 | 1083 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:16-21:39/23 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 22:18 05:39-05:56/17 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 21:17-21:39/22 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 22:18 05:40-05:56/16 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:17-21:40/23 | 05:43 | 06:42 | 07:38 08:26-08:34/8 | 07:41 | 08:38 |
| | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:17-21:38/21 | 05:45 | 06:43 | 07:40 08:24-08:36/12 | 07:43 | 08:40 |
| | 22:17 05:43-05:54/11 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 21:17-21:38/21 | 05:47 | 06:45 | 07:42 08:22-08:37/15 | 07:45 | 08:41 |
| | 22:16 05:44-05:52/8 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 21:17-21:38/21 | 05:49 | 06:47 | 07:44 08:21-08:38/17 | 07:47 | 08:43 |
| | 22:15 05:48-05:49/1 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 21:18-21:37/19 | 05:51 | 06:49 | 07:46 08:20-08:44/24 | 07:49 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 21:18-21:36/18 | 05:52 | 06:51 | 07:48 08:19-08:46/27 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 21:18-21:35/17 | 05:54 | 06:53 | 07:50 08:19-08:48/29 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 21:19-21:35/16 | 05:56 | 06:55 | 07:52 08:20-08:48/28 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 21:19-21:34/15 | 05:58 | 06:57 | 07:54 08:22-08:49/27 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 21:20-21:34/14 | 06:00 | 06:59 | 07:56 08:24-08:49/25 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 21:20-21:33/13 | 06:02 | 07:00 | 07:58 08:26-08:48/22 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 21:21-21:31/10 | 06:04 | 07:02 | 08:00 08:28-08:48/20 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 21:21-21:30/9 | 06:06 | 07:04 | 08:02 08:31-08:48/17 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 21:22-21:30/8 | 06:07 | 07:06 | 08:04 08:33-08:47/14 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 21:23-21:28/5 | 06:09 | 07:08 | 08:06 08:35-08:46/11 | 08:09 | 08:56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 21:24-21:27/3 | 06:11 | 07:10 | 08:08 08:37-08:45/8 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 08:39-08:42/3 | 08:13 | 08:57 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 344 | 0 | 0 | 307 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 15:16-16:02/46 | 07:27 | 15:28-15:51/23 | 07:08 | 07:41-08:01/20 | 05:55 | 06:23-06:46/23 | 05:02 | 05:37-06:01/24 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | 21:09 | | 22:02 | |
| 2 | 09:00 | | 08:26 | 15:15-16:03/48 | 07:24 | 15:33-15:47/14 | 07:05 | 07:41-08:01/20 | 05:53 | 06:22-06:47/25 | 05:01 | 05:38-06:02/24 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | | 21:10 | | 22:04 | |
| 3 | 09:00 | | 08:24 | 15:15-16:03/48 | 07:22 | | 07:03 | 07:42-07:59/17 | 05:51 | 06:21-06:48/27 | 05:00 | 05:37-06:02/25 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | | 22:05 | |
| 4 | 09:00 | | 08:22 | 15:15-16:04/49 | 07:19 | | 07:00 | 07:43-07:58/15 | 05:49 | 06:21-06:48/27 | 04:59 | 05:37-06:02/25 |
| | 16:18 | | 17:15 | | 18:14 | | 20:15 | | 21:14 | | 22:06 | |
| 5 | 08:59 | | 08:20 | 15:13-16:04/51 | 07:17 | | 06:58 | 07:44-07:55/11 | 05:46 | 06:20-06:48/28 | 04:58 | 05:37-06:02/25 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | | 08:18 | 15:13-16:05/52 | 07:14 | | 06:55 | | 05:44 | 06:20-06:48/28 | 04:57 | 05:38-06:03/25 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:58 | | 08:16 | 15:13-16:05/52 | 07:12 | | 06:53 | | 05:42 | 06:19-06:48/29 | 04:56 | 05:38-06:03/25 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | | 21:20 | | 22:09 | |
| 8 | 08:58 | | 08:14 | 15:13-16:06/53 | 07:09 | | 06:50 | | 05:40 | 06:19-06:48/29 | 04:56 | 05:38-06:04/26 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | | 21:22 | | 22:10 | |
| 9 | 08:57 | | 08:12 | 15:13-16:07/54 | 07:07 | | 06:48 | | 05:38 | 06:19-06:48/29 | 04:55 | 05:38-06:03/25 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | | 21:24 | | 22:11 | |
| 10 | 08:57 | | 08:10 | 15:13-16:07/54 | 07:04 | | 06:45 | | 05:36 | 06:19-06:48/29 | 04:55 | 05:39-06:04/25 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | | 08:08 | 15:12-16:07/55 | 07:02 | | 06:43 | | 05:34 | 06:20-06:48/28 | 04:54 | 05:38-06:03/25 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | | 08:06 | 15:12-16:07/55 | 06:59 | | 06:40 | | 05:32 | 06:20-06:48/28 | 04:54 | 05:39-06:04/25 |
| | 16:30 | | 17:32 | | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | | 08:04 | 15:13-16:07/54 | 06:57 | | 06:38 | | 05:30 | 06:20-06:47/27 | 04:53 | 05:39-06:04/25 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | | 21:31 | | 22:15 | |
| 14 | 08:53 | | 08:01 | 15:12-16:07/55 | 06:54 | | 06:35 | | 05:29 | 06:21-06:47/26 | 04:53 | 05:40-06:05/25 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | | 22:15 | |
| 15 | 08:52 | | 07:59 | 15:13-16:07/54 | 06:52 | | 06:33 | | 05:27 | 06:21-06:46/25 | 04:53 | 05:39-06:04/25 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | | 22:16 | |
| 16 | 08:51 | | 07:57 | 15:13-16:07/54 | 06:49 | | 06:30 | | 05:25 | 06:21-06:45/24 | 04:52 | 05:39-06:04/25 |
| | 16:37 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | | 22:17 | |
| 17 | 08:50 | | 07:55 | 15:13-16:06/53 | 06:46 | | 06:28 | | 05:23 | 06:22-06:45/23 | 04:52 | 05:40-06:05/25 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | | 22:17 | |
| 18 | 08:49 | | 07:53 | 15:14-16:06/52 | 06:44 | | 06:25 | | 05:21 | 06:23-06:44/21 | 04:52 | 05:40-06:05/25 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | | 22:18 | |
| 19 | 08:48 | | 07:50 | 15:14-16:06/52 | 06:41 | | 06:23 | | 05:20 | 06:24-06:43/19 | 04:52 | 05:40-06:05/25 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 | | 22:18 | |
| 20 | 08:46 | | 07:48 | 15:14-16:05/51 | 06:39 | | 06:20 | | 05:18 | 05:48-05:51/3 | 04:52 | 05:40-06:05/25 |
| | 16:44 | | 17:49 | | 18:46 | | 20:47 | | 21:44 | 06:25-06:42/17 | 22:18 | |
| 21 | 08:45 | 15:31-15:41/10 | 07:46 | 15:16-16:04/48 | 06:36 | | 06:18 | | 05:17 | 05:47-05:54/7 | 04:52 | 05:41-06:06/25 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | 21:46 | 06:27-06:41/14 | 22:19 | |
| 22 | 08:44 | 15:28-15:45/17 | 07:43 | 15:16-16:03/47 | 06:34 | | 06:16 | | 05:15 | 05:46-05:56/10 | 04:53 | 05:41-06:06/25 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | 21:47 | 06:28-06:38/10 | 22:19 | |
| 23 | 08:42 | 15:25-15:47/22 | 07:41 | 15:17-16:02/45 | 06:31 | | 06:13 | | 05:13 | 05:44-05:56/12 | 04:53 | 05:41-06:06/25 |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | 21:49 | 06:31-06:35/4 | 22:19 | |
| 24 | 08:41 | 15:24-15:50/26 | 07:39 | 15:18-16:01/43 | 06:28 | 06:53-07:00/7 | 06:11 | | 05:12 | 05:43-05:57/14 | 04:53 | 05:41-06:06/25 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | 21:50 | | 22:19 | |
| 25 | 08:39 | 15:22-15:52/30 | 07:36 | 15:20-16:00/40 | 06:26 | 06:50-07:01/11 | 06:09 | | 05:11 | 05:42-05:59/17 | 04:53 | 05:42-06:07/25 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | 21:52 | | 22:19 | |
| 26 | 08:38 | 15:21-15:54/33 | 07:34 | 15:22-15:59/37 | 06:23 | 06:48-07:03/15 | 06:06 | | 05:09 | 05:41-05:59/18 | 04:54 | 05:41-06:06/25 |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 15:19-15:55/36 | 07:31 | 15:23-15:56/33 | 06:21 | 06:45-07:03/18 | 06:04 | 06:31-06:39/8 | 05:08 | 05:39-05:59/20 | 04:54 | 05:42-06:07/25 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 15:19-15:57/38 | 07:29 | 15:26-15:55/29 | 06:18 | 06:43-07:03/20 | 06:02 | 06:28-06:42/14 | 05:07 | 05:38-06:00/22 | 04:55 | 05:42-06:07/25 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | 15:18-15:58/40 | | | 07:16 | 07:41-08:03/22 | 05:59 | 06:26-06:44/18 | 05:05 | 05:37-06:00/23 | 04:56 | 05:42-06:08/26 |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | 15:17-16:00/43 | | | 07:13 | 07:41-08:02/21 | 05:57 | 06:24-06:45/21 | 05:04 | 05:37-06:01/24 | 04:56 | 05:43-06:08/25 |
| | 17:04 | | | | 20:06 | | 21:07 | | 21:59 | | 22:18 | |
| 31 | 08:29 | 15:17-16:01/44 | | | 07:10 | 07:41-08:02/21 | | | 05:03 | 05:37-06:01/24 | | |
| | 17:06 | | | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | | 339 | | 1364 | | 172 | | 144 | | 734 | | 750 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:42-06:08/26 | 05:40 06:30-06:58/28 | 06:38 | 07:35 | 07:37 14:42-15:36/54 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:43-06:08/25 | 05:41 06:30-06:59/29 | 06:40 | 07:37 | 07:39 14:42-15:36/54 | 08:37 |
| | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:43-06:09/26 | 05:43 06:29-06:58/29 | 06:42 | 07:38 | 07:41 14:43-15:36/53 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:44-06:09/25 | 05:45 06:29-06:58/29 | 06:43 | 07:40 | 07:43 14:43-15:35/52 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:44-06:09/25 | 05:47 06:30-06:59/29 | 06:45 | 07:42 | 07:45 14:44-15:35/51 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:44-06:10/26 | 05:49 06:29-06:58/29 | 06:47 | 07:44 | 07:47 14:44-15:35/51 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:43-06:09/26 | 05:51 06:29-06:58/29 | 06:49 07:40-07:50/10 | 07:46 | 07:49 14:44-15:34/50 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:44-06:09/25 | 05:52 06:30-06:58/28 | 06:51 07:37-07:52/15 | 07:48 | 07:51 14:45-15:33/48 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:45-06:10/25 | 05:54 06:30-06:57/27 | 06:53 07:36-07:53/17 | 07:50 | 07:53 14:46-15:33/47 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:45-06:10/25 | 05:56 06:30-06:56/26 | 06:55 07:35-07:54/19 | 07:52 | 07:55 14:47-15:32/45 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:10/25 | 05:58 06:31-06:55/24 | 06:57 07:34-07:55/21 | 07:54 16:11-16:16/5 | 07:57 14:48-15:31/43 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:45-06:10/25 | 06:00 06:32-06:54/22 | 06:59 07:32-07:54/22 | 07:56 16:04-16:22/18 | 07:59 14:48-15:30/42 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:45-06:09/24 | 06:02 06:33-06:53/20 | 07:00 07:32-07:54/22 | 07:58 16:00-16:25/25 | 08:01 14:50-15:30/40 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:46-06:09/23 | 06:04 06:34-06:51/17 | 07:02 07:32-07:53/21 | 08:00 15:57-16:28/31 | 08:03 14:51-15:29/38 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:47-06:09/22 | 06:06 06:36-06:49/13 | 07:04 07:32-07:53/21 | 08:02 15:54-16:29/35 | 08:05 14:52-15:28/36 | 08:54 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:48-06:09/21 | 06:07 06:40-06:45/5 | 07:06 07:34-07:52/18 | 08:04 15:52-16:30/38 | 08:07 14:54-15:26/32 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 05:49-06:08/19 | 06:09 | 07:08 07:36-07:51/15 | 08:06 15:51-16:32/41 | 08:09 14:56-15:26/30 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 05:51-06:08/17 | 06:11 | 07:10 07:37-07:49/12 | 08:08 15:49-16:33/44 | 08:11 14:58-15:24/26 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 05:52-06:08/16 | 06:13 | 07:12 07:39-07:47/8 | 08:10 15:48-16:34/46 | 08:13 15:00-15:22/22 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:19 05:53-06:06/13 | 06:15 | 07:14 07:41-07:44/3 | 08:12 15:47-16:34/47 | 08:15 15:03-15:20/17 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 05:55-06:06/11 | 06:17 | 07:16 | 08:14 15:46-16:35/49 | 08:17 15:06-15:16/10 | 08:58 |
| | 21:58 06:40-06:48/8 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 05:56-06:04/8 | 06:19 | 07:17 | 08:16 15:45-16:35/50 | 08:19 | 08:59 |
| | 21:57 06:37-06:50/13 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 05:58-06:03/5 | 06:21 | 07:19 | 08:18 15:44-16:35/51 | 08:21 | 08:59 |
| | 21:55 06:36-06:52/16 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:35-06:52/17 | 06:23 | 07:21 | 08:20 15:44-16:36/52 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 06:34-06:54/20 | 06:25 | 07:23 | 07:22 14:43-15:36/53 | 08:24 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:33-06:54/21 | 06:26 | 07:25 | 07:24 14:42-15:36/54 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:32-06:56/24 | 06:28 | 07:27 | 07:26 14:42-15:36/54 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 06:31-06:56/25 | 06:30 | 07:29 | 07:28 14:41-15:36/55 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 05:34 06:31-06:57/26 | 06:32 | 07:31 | 07:30 14:42-15:37/55 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 06:31-06:58/27 | 06:34 | 07:33 | 07:32 14:42-15:37/55 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 06:30-06:57/27 | 06:36 | | 07:34 14:42-15:36/54 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 707 | 384 | 224 | 912 | 841 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26 08:39-10:58/139<br>18:07 | 07:08 10:23-11:33/70<br>20:09 07:54-09:12/78 | 05:55 06:41-08:20/99<br>21:08 | 05:02 06:31-07:40/69<br>22:02 |
| 2 | 09:00<br>16:15 | 08:25<br>17:10 | 07:24 08:38-10:58/140<br>18:09 | 07:05 10:23-11:30/67<br>20:11 07:51-09:12/81 | 05:53 06:40-08:18/98<br>21:10 | 05:00 06:31-07:39/68<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:38-10:59/141<br>18:11 | 07:03 10:25-11:28/63<br>20:13 07:48-09:12/84 | 05:50 06:39-08:16/97<br>21:12 | 05:00 06:31-07:38/67<br>22:05 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19 08:37-10:59/142<br>18:13 | 07:00 10:26-11:24/58<br>20:15 07:46-09:11/85 | 05:48 06:38-08:14/96<br>21:14 | 04:59 06:32-07:38/66<br>22:06 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17 08:38-10:59/141<br>18:15 | 06:57 10:28-11:22/54<br>20:17 07:43-09:11/88 | 05:46 06:37-08:13/96<br>21:16 | 04:58 06:32-07:36/64<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14 08:37-10:59/142<br>18:17 | 06:55 10:29-11:18/49<br>20:19 07:40-09:10/90 | 05:44 06:37-08:11/94<br>21:18 | 04:57 06:32-07:35/63<br>22:08 |
| 7 | 08:58<br>16:21 | 08:16 10:11-10:13/2<br>17:21 | 07:12 08:38-11:00/142<br>18:19 | 06:52 10:32-11:14/42<br>20:21 07:39-09:10/91 | 05:42 06:36-08:10/94<br>21:20 | 04:56 06:33-07:34/61<br>22:09 |
| 8 | 08:58<br>16:23 | 08:14 10:01-10:24/23<br>17:23 | 07:09 08:38-10:59/141<br>18:21 | 06:50 10:34-11:09/35<br>20:23 07:36-09:09/93 | 05:40 06:35-08:08/93<br>21:22 | 04:55 06:32-07:33/61<br>22:10 |
| 9 | 08:57<br>16:24 | 08:12 09:57-10:29/32<br>17:25 | 07:07 08:37-10:59/142<br>18:24 | 06:47 10:39-11:04/25<br>20:25 07:33-09:09/96 | 05:38 06:35-08:07/92<br>21:24 | 04:55 06:33-07:32/59<br>22:11 |
| 10 | 08:56<br>16:26 | 08:10 09:53-10:32/39<br>17:27 | 07:04 08:38-10:59/141<br>18:26 | 06:45 10:47-10:52/5<br>20:27 07:30-09:07/97 | 05:36 06:34-08:05/91<br>21:26 | 04:54 06:33-07:31/58<br>22:12 |
| 11 | 08:56<br>16:28 | 08:08 09:50-10:35/45<br>17:29 | 07:02 08:38-10:58/140<br>18:28 | 06:42 07:29-09:07/98<br>20:29 | 05:34 06:33-08:03/90<br>21:28 | 04:54 06:33-07:31/58<br>22:13 |
| 12 | 08:55<br>16:29 | 08:06 09:03-09:15/12<br>17:31 09:48-10:38/50 | 06:59 08:39-10:59/140<br>18:30 | 06:40 07:27-09:06/99<br>20:31 | 05:32 06:33-08:02/89<br>21:29 | 04:53 06:34-07:32/58<br>22:14 |
| 13 | 08:54<br>16:31 | 08:03 08:59-09:20/21<br>17:33 09:46-10:40/54 | 06:56 08:40-10:58/138<br>18:32 | 06:37 07:23-09:05/102<br>20:33 | 05:30 06:32-08:00/88<br>21:31 | 04:53 06:34-07:31/57<br>22:15 |
| 14 | 08:53<br>16:33 | 08:01 08:55-09:22/27<br>17:36 09:43-10:42/59 | 06:54 08:41-10:58/137<br>18:34 07:42-07:55/13 | 06:35 07:21-09:04/103<br>20:35 | 05:28 06:31-07:59/88<br>21:33 | 04:53 06:34-07:31/57<br>22:15 |
| 15 | 08:52<br>16:34 | 07:59 08:53-09:25/32<br>17:38 09:42-10:44/62 | 06:51 08:41-10:57/136<br>18:36 07:37-07:59/22 | 06:32 07:19-09:02/103<br>20:37 | 05:26 06:32-07:58/86<br>21:35 | 04:52 06:34-07:32/58<br>22:16 |
| 16 | 08:51<br>16:36 | 07:57 08:51-09:27/36<br>17:40 09:40-10:46/66 | 06:49 08:42-10:56/134<br>18:38 07:33-08:01/28 | 06:30 07:17-09:01/104<br>20:39 | 05:25 06:31-07:56/85<br>21:37 | 04:52 06:35-07:32/57<br>22:17 |
| 17 | 08:50<br>16:38 | 07:55 08:49-09:28/39<br>17:42 09:38-10:47/69 | 06:46 08:44-10:56/132<br>18:40 07:31-08:04/33 | 06:27 07:14-09:00/106<br>20:41 | 05:23 06:30-07:54/84<br>21:38 | 04:52 06:35-07:32/57<br>22:17 |
| 18 | 08:49<br>16:40 | 07:52 08:48-09:30/42<br>17:44 09:37-10:49/72 | 06:44 08:45-10:55/130<br>18:42 07:29-08:05/36 | 06:25 07:11-08:58/107<br>20:43 | 05:21 06:30-07:53/83<br>21:40 | 04:52 06:35-07:32/57<br>22:18 |
| 19 | 08:47<br>16:42 | 07:50 08:47-09:31/44<br>17:46 09:36-10:50/74 | 06:41 08:48-09:15/27 07:27-08:07/40<br>18:44 09:18-10:54/96 | 06:23 07:10-08:56/106<br>20:45 | 05:19 06:30-07:52/82<br>21:42 | 04:52 06:36-07:32/56<br>22:18 |
| 20 | 08:46<br>16:44 | 07:48 08:45-09:32/47<br>17:48 09:34-10:51/77 | 06:39 08:51-09:11/20 07:24-08:08/44<br>18:46 09:18-10:53/95 | 06:20 06:59-08:55/116<br>20:47 | 05:18 06:30-07:51/81<br>21:44 | 04:52 06:36-07:32/56<br>22:18 |
| 21 | 08:45<br>16:46 | 07:45 08:44-10:52/128<br>17:50 | 06:36 08:56-09:04/8 07:21-08:08/47<br>18:48 09:17-10:52/95 | 06:18 06:54-08:52/118<br>20:49 | 05:16 06:30-07:51/81<br>21:45 | 04:52 06:36-07:33/57<br>22:19 |
| 22 | 08:43<br>16:47 | 07:43 08:43-10:53/130<br>17:53 | 06:33 09:18-10:51/93<br>18:50 07:19-08:10/51 | 06:15 06:52-08:50/118<br>20:51 | 05:15 06:30-07:49/79<br>21:47 | 04:52 06:36-07:32/56<br>22:19 |
| 23 | 08:42<br>16:49 | 07:41 08:42-10:54/132<br>17:55 | 06:31 09:18-10:49/91<br>18:52 07:17-08:10/53 | 06:13 06:50-08:47/117<br>20:53 | 05:13 06:30-07:48/78<br>21:49 | 04:52 06:37-07:33/56<br>22:19 |
| 24 | 08:41<br>16:51 | 07:38 08:41-10:55/134<br>17:57 | 06:28 09:19-10:49/90<br>18:54 07:14-08:11/57 | 06:11 06:48-08:43/115<br>20:55 | 05:12 06:30-07:47/77<br>21:50 | 04:53 06:36-07:33/57<br>22:19 |
| 25 | 08:39<br>16:53 | 07:36 08:41-10:56/135<br>17:59 | 06:26 09:19-10:47/88<br>18:55 07:11-08:11/60 | 06:08 08:31-08:35/4<br>20:57 06:46-08:30/104 | 05:10 06:29-07:45/76<br>21:52 | 04:53 06:37-07:34/57<br>22:19 |
| 26 | 08:37<br>16:55 | 07:34 08:39-10:56/137<br>18:01 | 06:23 09:18-10:45/87<br>18:57 07:08-08:10/62 | 06:06 06:45-08:29/104<br>20:59 | 05:09 06:30-07:44/74<br>21:53 | 04:54 06:37-07:34/57<br>22:19 |
| 27 | 08:36<br>16:58 | 07:31 08:39-10:57/138<br>18:03 | 06:21 09:19-10:44/85<br>18:59 07:07-08:11/64 | 06:04 06:44-08:27/103<br>21:01 | 05:07 06:30-07:44/74<br>21:55 | 04:54 06:37-07:34/57<br>22:19 |
| 28 | 08:34<br>17:00 | 07:29 08:38-10:57/139<br>18:05 | 06:18 09:20-10:42/82<br>19:01 07:04-08:11/67 | 06:01 06:43-08:26/103<br>21:03 | 05:06 06:30-07:43/73<br>21:56 | 04:55 06:37-07:35/58<br>22:19 |
| 29 | 08:33<br>17:02 | | 07:15 10:21-11:40/79<br>20:03 08:01-09:12/71 | 05:59 06:43-08:24/101<br>21:04 | 05:05 06:30-07:42/72<br>21:58 | 04:55 06:38-07:35/57<br>22:18 |
| 30 | 08:31<br>17:04 | | 07:13 10:21-11:38/77<br>20:05 07:58-09:12/74 | 05:57 06:42-08:22/100<br>21:06 | 05:04 06:31-07:42/71<br>21:59 | 04:56 06:37-07:35/58<br>22:18 |
| 31 | 08:29<br>17:06 | | 07:10 10:22-11:36/74<br>20:07 07:57-09:12/75 | | 05:03 06:31-07:41/70<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 2097 | 4582 | 3482 | 2631 | 1777 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 06:38-07:35/57<br>22:18 | 05:39 06:43-08:13/90<br>21:39 | 06:38 07:28-09:06/98<br>20:29 | 07:34 09:19-11:38/139<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57 06:38-07:36/58<br>22:17 | 05:41 06:43-08:14/91<br>21:38 | 06:39 10:46-10:51/5<br>20:27 07:29-09:06/97 | 07:36 09:17-11:37/140<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58 06:37-07:36/59<br>22:17 | 05:43 06:44-08:16/92<br>21:36 | 06:41 10:37-11:02/25<br>20:24 07:31-09:07/96 | 07:38 09:17-11:37/140<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59 06:38-07:37/59<br>22:16 | 05:45 06:45-08:18/93<br>21:34 | 06:43 10:32-11:07/35<br>20:22 07:34-09:07/93 | 07:40 09:16-11:37/141<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00 06:38-07:39/61<br>22:16 | 05:47 06:45-08:18/93<br>21:32 | 06:45 10:28-11:10/42<br>20:19 07:35-09:06/91 | 07:42 09:15-11:36/141<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01 06:38-07:41/63<br>22:15 | 05:48 06:46-08:20/94<br>21:30 | 06:47 10:25-11:14/49<br>20:16 07:36-09:06/90 | 07:44 09:14-11:36/142<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02 06:38-07:42/64<br>22:14 | 05:50 06:47-08:22/95<br>21:27 | 06:49 10:23-11:17/54<br>20:14 07:38-09:06/88 | 07:46 09:14-11:35/141<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03 06:38-07:43/65<br>22:13 | 05:52 06:48-08:24/96<br>21:25 | 06:51 10:21-11:19/58<br>20:11 07:41-09:06/85 | 07:48 09:13-11:35/142<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04 06:38-07:45/67<br>22:13 | 05:54 06:48-08:24/96<br>21:23 | 06:53 10:19-11:22/63<br>20:09 07:42-09:06/84 | 07:50 09:13-11:34/141<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05 06:38-07:46/68<br>22:12 | 05:56 06:49-08:26/97<br>21:21 | 06:55 10:17-11:23/66<br>20:06 07:43-09:05/82 | 07:52 09:12-11:33/141<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07 06:38-07:47/69<br>22:11 | 05:58 06:50-08:27/97<br>21:19 | 06:56 10:15-11:25/70<br>20:04 07:46-09:04/78 | 07:54 09:12-11:33/141<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-07:49/70<br>22:10 | 06:00 06:49-08:28/99<br>21:17 | 06:58 10:14-11:27/73<br>20:01 07:48-09:04/76 | 07:56 09:12-11:32/140<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-07:50/71<br>22:09 | 06:02 06:50-08:30/100<br>21:15 | 07:00 10:12-11:29/77<br>19:58 07:49-09:03/74 | 07:58 09:12-11:31/139<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-07:50/71<br>22:08 | 06:03 06:50-08:32/102<br>21:12 | 07:02 10:11-11:30/79<br>19:56 07:51-09:03/72 | 08:00 09:12-11:30/138<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12 06:39-07:51/72<br>22:06 | 06:05 06:51-08:34/103<br>21:10 | 07:04 10:10-11:32/82<br>19:53 07:53-09:02/69 | 08:02 09:12-11:29/137<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13 06:40-07:53/73<br>22:05 | 06:07 06:52-08:35/103<br>21:08 | 07:06 10:08-11:32/84<br>19:51 07:55-09:00/65 | 08:04 09:12-11:28/136<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-07:53/74<br>22:04 | 06:09 06:52-08:35/103<br>21:05 | 07:08 10:07-11:33/86<br>19:48 07:56-08:59/63 | 08:06 09:12-11:27/135<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-07:54/75<br>22:03 | 06:11 06:53-08:44/111<br>21:03 | 07:10 10:06-11:34/88<br>19:45 07:58-08:58/60 | 08:08 09:13-11:26/133<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-07:56/76<br>22:01 | 06:13 06:54-08:50/116<br>21:01 | 07:11 10:05-11:35/90<br>19:43 08:00-08:57/57 | 08:10 09:14-11:25/131<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-07:57/77<br>22:00 | 06:15 06:56-08:53/117<br>20:58 | 07:13 10:05-11:36/91<br>19:40 08:03-08:56/53 | 08:12 09:14-11:24/130<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-07:58/79<br>21:58 | 06:17 06:57-08:55/118<br>20:56 | 07:15 10:04-11:36/92<br>19:38 08:04-08:55/51 | 08:14 09:15-10:03/48<br>18:22 10:04-11:22/78 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-08:00/80<br>21:57 | 06:19 06:59-08:57/118<br>20:54 | 07:17 10:03-11:37/94<br>19:35 08:06-08:54/48 | 08:16 09:15-10:02/47<br>18:20 10:05-11:21/76 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-08:00/80<br>21:55 | 06:20 07:04-08:59/115<br>20:51 | 07:19 09:37-09:54/17 08:08-08:53/45<br>19:32 10:02-11:38/96 | 08:18 09:16-10:00/44<br>18:18 10:06-11:19/73 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-08:02/82<br>21:54 | 06:22 07:14-09:00/106<br>20:49 | 07:21 09:32-09:57/25 08:10-08:50/40<br>19:30 10:01-11:37/96 | 08:20 09:18-10:00/42<br>18:15 10:08-11:18/70 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-08:03/83<br>21:52 | 06:24 07:15-09:02/107<br>20:46 | 07:23 09:29-11:37/128<br>19:27 08:11-08:49/38 | 07:22 08:20-08:58/38<br>17:13 09:09-10:17/68 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-08:04/83<br>21:50 | 06:26 07:17-09:02/105<br>20:44 | 07:25 09:26-11:38/132<br>19:25 08:12-08:47/35 | 07:24 08:21-08:56/35<br>17:11 09:10-10:15/65 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-08:06/84<br>21:49 | 06:28 07:19-09:03/104<br>20:42 | 07:27 09:24-11:38/134<br>19:22 08:14-08:44/30 | 07:26 08:23-08:54/31<br>17:08 09:12-10:13/61 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-08:07/86<br>21:47 | 06:30 07:21-09:04/103<br>20:39 | 07:29 09:23-11:38/135<br>19:20 08:17-08:41/24 | 07:28 08:25-08:51/26<br>17:06 09:13-10:11/58 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-08:09/87<br>21:45 | 06:32 07:22-09:05/103<br>20:37 | 07:31 09:21-11:38/137<br>19:17 08:20-08:37/17 | 07:30 08:29-08:48/19<br>17:04 09:16-10:09/53 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-08:09/87<br>21:43 | 06:34 07:24-09:06/102<br>20:34 | 07:32 09:20-11:38/138<br>19:14 | 07:32 08:34-08:43/9<br>17:02 09:18-10:07/49 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-08:11/88<br>21:41 | 06:36 07:26-09:05/99<br>20:32 | | 07:34 09:20-10:04/44<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2268 | 3168 | 4340 | 3802 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.11.30 10:39/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138WTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 15:20-15:51/31 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 15:19-15:51/32 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 15:19-15:52/33 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 15:19-15:52/33 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 15:19-15:52/33 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 15:18-15:52/34 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:19-15:53/34 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 15:19-15:52/33 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:19-15:52/33 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:19-15:51/32 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:21-15:52/31 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:21-15:51/30 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:22-15:50/28 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:22-15:50/28 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:24-15:50/26 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:25-15:49/24 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:26-15:48/22 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:28-15:46/18 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:29-15:44/15 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 15:21-15:51/30 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 435 | 560 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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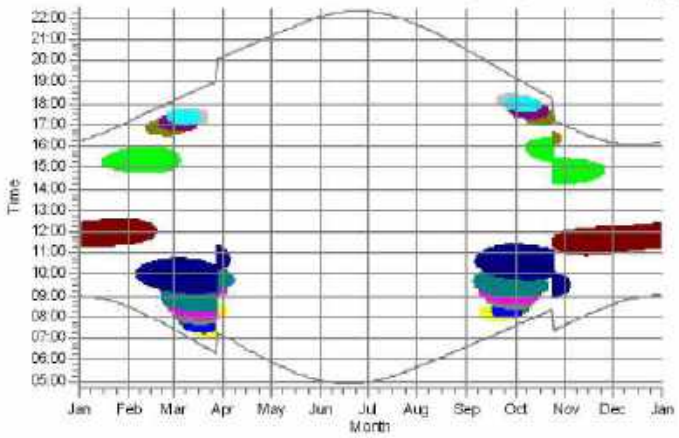
Calculated:
2021.11.30 10:39/3.5.552

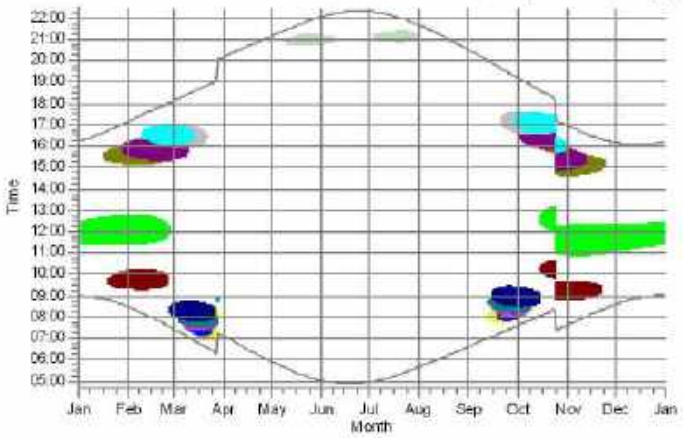
# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138

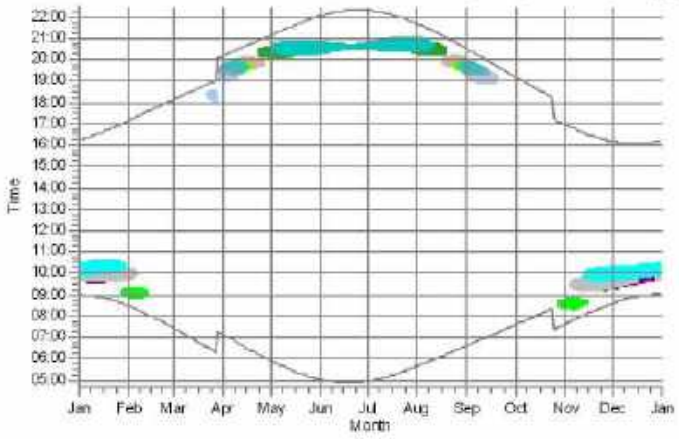
1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1



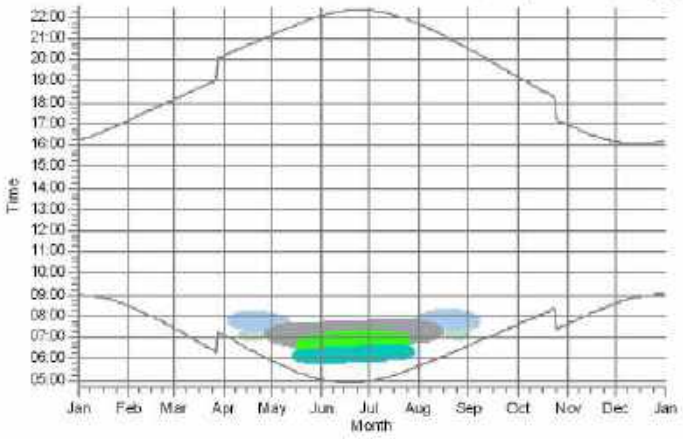

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2



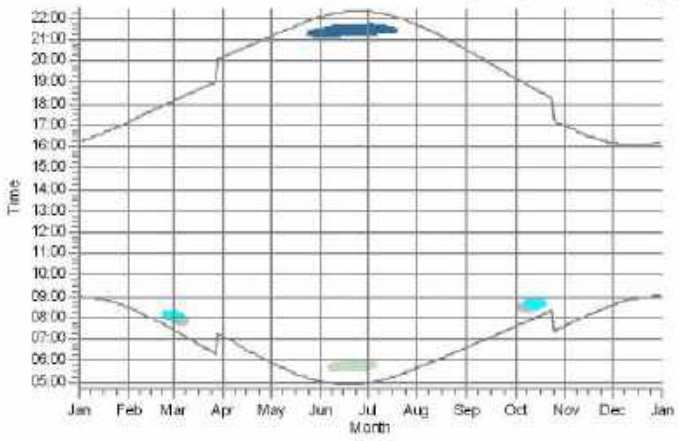

3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3



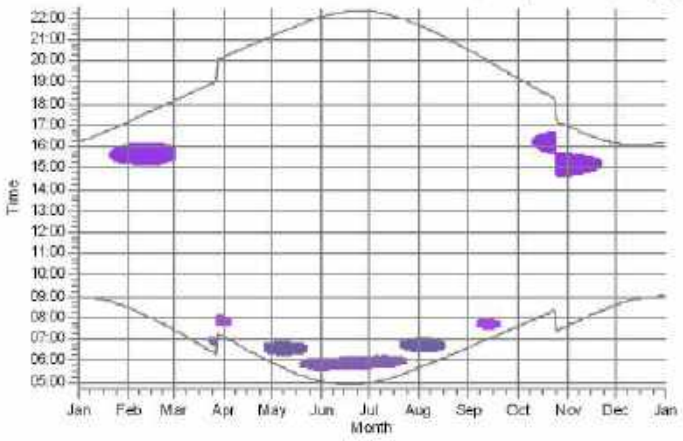

4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4




5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5




6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)
AS: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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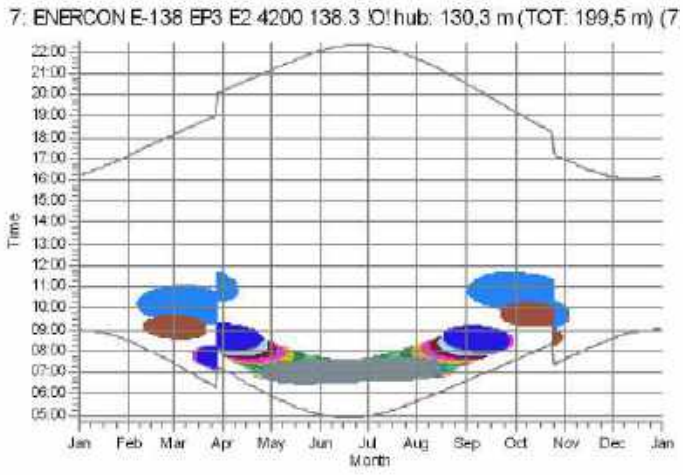
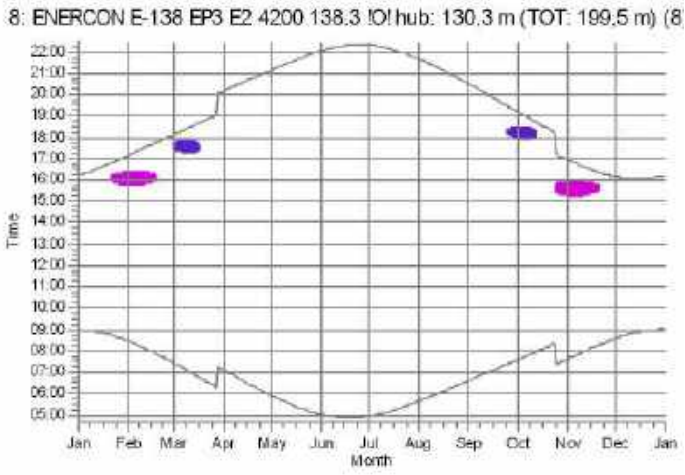
# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138




Shadow receptors

- W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
- X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
- Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
- Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
- AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
- AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
- AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
- AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
- AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
- AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
- AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
- AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
- AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
- AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
- AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
- AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
- AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
- AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)
- AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
- AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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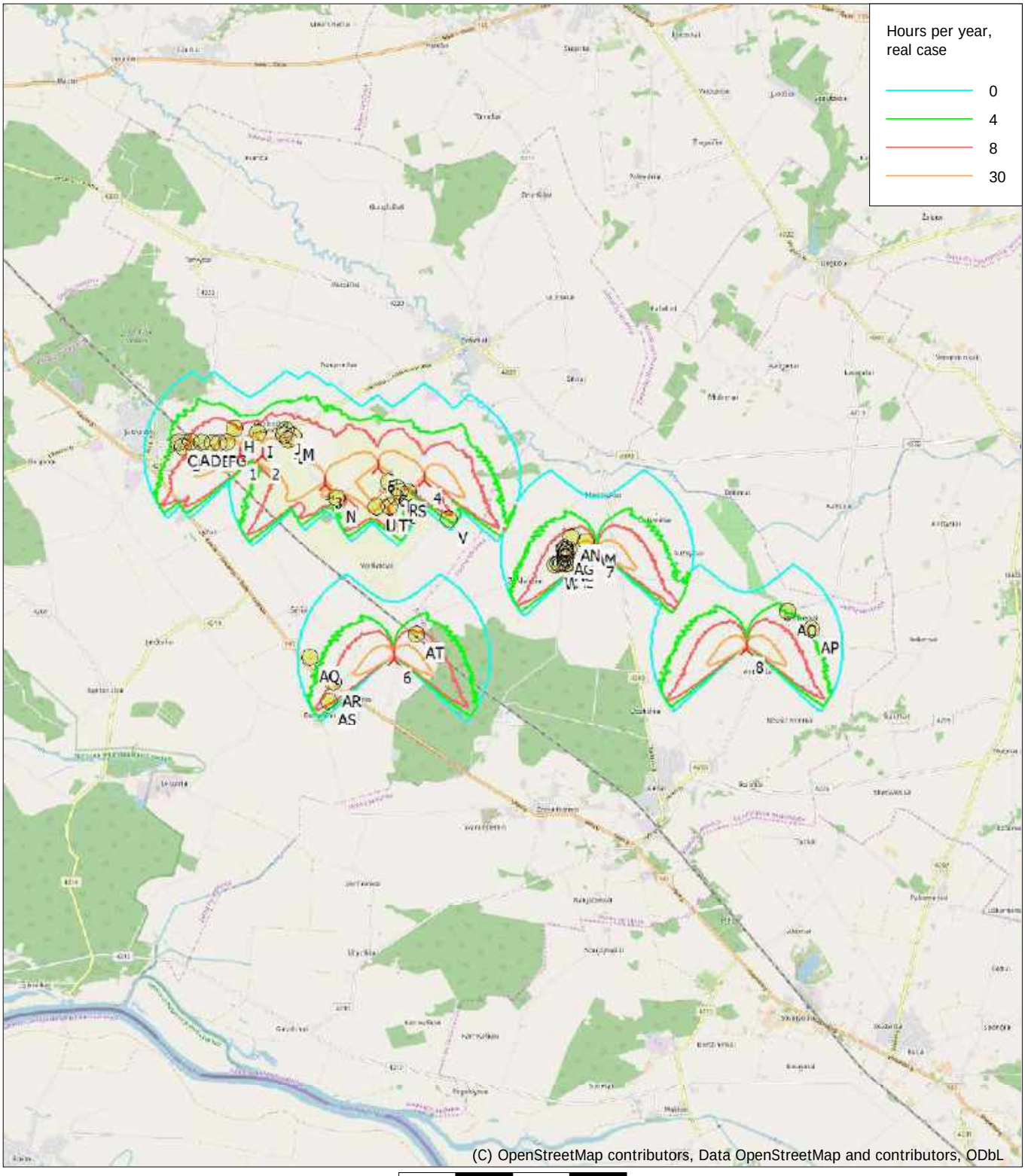
# SHADOW - Map

## Calculation: Enercon E138




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.580 North: 6.127.900

New WTG  Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

Time step: 3 minutes, Day step: 7 days, Map resolution: 20 m, Visibility resolution: 10 m, Eye height: 1,5 m

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138 shut down

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

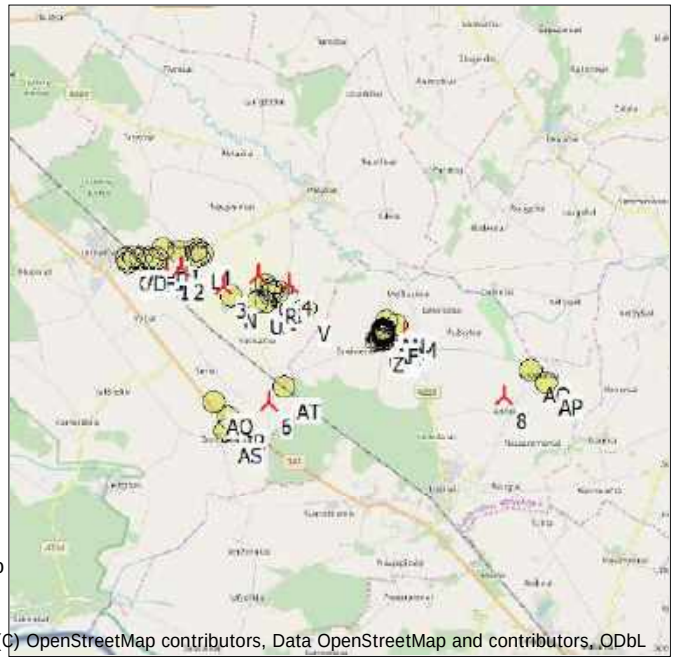
Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

Flicker curtailment according to specified plan

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Đilutės r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200.000

New WTG  Shadow receptor

### WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 350.546 | 6.126.757 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 8 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |

### Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

To be continued on next page...

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138 shut down

...continued from previous page

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

## Calculation Results

Shadow receptor

| No. | Shadow, expected values: Shadow hours per year [h/year] | Avoided hours per year [h/year] |
|---|---|---|
| A* | 3:43 | 5:20 |
| AA* | 4:23 | 34:33 |
| AB* | 5:27 | 28:40 |
| AC* | 5:38 | 25:31 |
| AD* | 5:46 | 22:51 |
| AE* | 5:16 | 21:06 |
| AF* | 4:30 | 19:39 |
| AG* | 3:48 | 18:23 |
| AH* | 4:29 | 16:00 |
| AI* | 5:38 | 13:07 |
| AJ* | 4:28 | 20:27 |
| AK* | 1:01 | 42:34 |
| AL* | 0:59 | 44:58 |
| AM* | 6:29 | 29:59 |
| AN* | 2:52 | 12:00 |
| AO* | 2:34 | 1:05 |
| AP | 3:46 | |
| AQ | 2:47 | |
| AR* | 6:36 | 2:50 |
| AS* | 6:30 | 3:09 |
| AT* | 7:03 | 2:09 |
| B* | 3:45 | 2:52 |
| C* | 3:57 | 1:54 |
| D* | 1:45 | 12:44 |
| E* | 5:26 | 19:33 |
| F* | 7:47 | 26:40 |
| G* | 5:29 | 38:06 |
| H* | 3:00 | 7:48 |
| I* | 4:41 | 12:28 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Enercon E138 shut down

...continued from previous page

Shadow, expected values

| No. | Shadow hours per year [h/year] | Avoided hours per year [h/year] |
|---|---|---|
| J* | 4:14 | 11:40 |
| K* | 3:52 | 17:48 |
| L* | 3:52 | 22:32 |
| M* | 4:06 | 15:59 |
| N* | 4:52 | 8:22 |
| O* | 7:10 | 20:50 |
| P* | 7:57 | 46:21 |
| Q* | 2:21 | 19:32 |
| R* | 2:15 | 27:40 |
| S* | 0:50 | 2:07 |
| T* | 0:14 | 7:27 |
| U* | 1:33 | 32:49 |
| V* | 4:35 | 1:50 |
| W* | 2:15 | 18:55 |
| X* | 2:00 | 24:16 |
| Y* | 1:56 | 27:11 |
| Z* | 1:53 | 31:27 |

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Stopped due to flicker curtailment [h/year] | Expected [h/year] |
|---|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 158:11 | 353:39 | 23:40 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 99:08 | 308:56 | 8:39 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 96:42 | 72:03 | 13:45 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 38:58 | 172:29 | 17:56 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 15:46 | 19:05 | 6:13 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6) | 85:19 | 24:12 | 22:58 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 90:24 | 380:13 | 27:31 |
| 8 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 26:53 | 8:57 | 6:20 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 42 | 08:44 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | | 08:04 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 40 | 08:44 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | | 08:06 (2) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 39 | 08:45 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | | 08:08 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 36 | 08:44 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:48 (1) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 08:10 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 11 07:59 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 31 | 08:43 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:45 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | | 08:17 (1) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 13 07:58 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 24 | 08:41 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:42 (1) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | | 07:46 | | 08:19 (1) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 13 07:55 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 20 | 08:39 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:39 (1) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | | 08:21 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 14 07:53 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 15 | 08:36 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:32 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | | 08:26 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 18 07:52 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 4 | 08:30 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:29 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 17 07:50 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:27 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 19 07:50 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 19 07:48 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:21 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | | 08:00 | | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 19 07:47 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:20 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 19 07:46 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:21 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 16 07:46 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:24 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:31 (1) | | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 9 07:45 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 3 | 08:34 (1) | | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:39 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:27 (1) | | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 6 07:45 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 6 | 08:33 (1) | | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:40 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:24 (1) | | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 4 07:44 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 7 | 08:31 (1) | | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:41 (1) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 08:22 (1) | | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 3 07:44 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 8 | 08:30 (1) | | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:42 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 08:08 (2) | | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 2 07:44 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 11 | 08:29 (1) | | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:42 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 08:06 (2) | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 2 07:44 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 14 | 08:29 (1) | | 18:20 | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | 07:43 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 08:05 (2) | | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 1 07:44 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 14 | 08:28 (1) | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:42 (1) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 08:04 (2) | | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 2 07:44 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 15 | 08:28 (1) | | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:42 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 08:03 (2) | | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 2 07:44 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17 | 08:28 (1) | | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:42 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 08:02 (2) | | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 3 07:45 (1) | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 17 | 08:27 (1) | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:02 (2) | | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 18 | 08:27 (1) | | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 08:02 (2) | | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 18 | 08:27 (1) | | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:01 (2) | | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 18 | 08:26 (1) | | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 08:01 (2) | | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 20 | 08:27 (1) | | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 | |
| Total, worst case | | | | 232 | | | | | | | 186 | | 251 | | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | 0,97 | | | | | | | 0,97 | | 0,97 | | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,30 | | | |
| Total, real | | | | 77 | | | | | | | 72 | | 75 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:45 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 19:00 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 08:07 (1) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 11 08:18 (1) | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 08:04 (1) | 07:54 | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 17 08:21 (1) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 08:02 (1) | 07:56 | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 21 08:23 (1) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:59 (1) | 07:58 | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 24 08:23 (1) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 07:58 (1) | 08:00 | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 26 08:24 (1) | 18:40 | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:18 (1) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 07:55 (2) | 08:02 | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 8 07:32 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 30 08:25 (1) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:16 (1) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 07:53 (2) | 08:04 | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 4 07:20 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 32 08:25 (1) | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:13 (1) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 07:51 (2) | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 3 07:16 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 35 08:26 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:12 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 07:50 (2) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 3 07:15 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 36 08:26 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:11 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 07:48 (2) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 2 07:13 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 37 08:25 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:03 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 07:48 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 3 07:11 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 36 08:24 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:09 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 07:47 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 1 07:10 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 37 08:24 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:08 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 07:47 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 1 07:09 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 36 08:23 (1) | 18:20 | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:08 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 07:47 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 1 07:09 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 36 08:23 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 07:49 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 33 08:22 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:06 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:51 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 1 07:07 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 29 08:20 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:53 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 26 08:19 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 22 08:17 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 18 08:15 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 08:01 (1) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 9 08:10 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 27 | | | | | | 551 | | | | |
| Sun reduction | | | 0,34 | | | | | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | | | | | | 1,00 | | | | |
| Wind dir. red. | | | 0,99 | | | | | | 0,99 | | | | |
| Total reduction | | | 0,34 | | | | | | 0,39 | | | | |
| Total, real | | | 9 | | | | | | 216 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | 05:55 | | 05:02 | | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | | 07:37 | | 08:35 | |
| | 16:14 | | 17:08 | | 18:08 | | 20:10 | | 21:09 | | 22:03 | | 22:18 | | 21:40 | | 20:30 | | 19:12 | 24 | 08:26 (1) | | 16:58 | | 16:10 | |
| 2 | 09:01 | | 08:26 | | 07:24 | | 07:06 | | 05:53 | | 05:01 | | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (1) | | 07:39 | | 08:37 | |
| | 16:15 | | 17:10 | | 18:10 | | 20:12 | | 21:11 | | 22:04 | | 22:18 | | 21:38 | | 20:27 | | 19:10 | 21 | 08:25 (1) | | 16:56 | | 16:09 | |
| 3 | 09:01 | | 08:24 | | 07:22 | | 07:03 | | 05:51 | | 05:00 | | 04:59 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (1) | | 07:41 | | 08:39 | |
| | 16:16 | | 17:13 | | 18:12 | | 20:14 | | 21:13 | | 22:05 | | 22:17 | | 21:36 | | 20:25 | | 19:07 | 17 | 08:23 (1) | | 16:54 | | 16:08 | |
| 4 | 09:00 | | 08:22 | | 07:20 | | 07:00 | | 05:49 | | 04:59 | | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (1) | | 07:43 | | 08:40 | |
| | 16:18 | | 17:15 | | 18:14 | | 20:16 | | 21:15 | | 22:06 | | 22:17 | | 21:34 | | 20:22 | | 19:05 | 12 | 08:20 (1) | | 16:52 | | 16:08 | |
| 5 | 09:00 | | 08:20 | | 07:17 | | 06:58 | | 05:46 | | 04:58 | | 05:00 | | 05:47 | | 06:46 | | 07:43 | | | | 07:45 | | 08:42 | |
| | 16:19 | | 17:17 | | 18:16 | | 20:18 | | 21:17 | | 22:08 | | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | | 16:50 | | 16:07 | |
| 6 | 08:59 | | 08:18 | | 07:15 | | 06:55 | | 05:44 | | 04:57 | | 05:01 | | 05:49 | | 06:47 | | 07:45 | | | | 07:47 | | 08:43 | |
| | 16:20 | | 17:19 | | 18:18 | | 20:20 | | 21:19 | | 22:09 | | 22:16 | | 21:30 | | 20:17 | | 19:00 | | | | 16:48 | | 16:06 | |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | 05:42 | | 04:57 | | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | | 07:49 | | 08:44 | |
| | 16:22 | | 17:21 | | 18:20 | | 20:22 | | 21:21 | | 22:10 | | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | | 16:46 | | 16:06 | |
| 8 | 08:58 | | 08:14 | | 07:10 | | 06:50 | | 05:40 | | 04:56 | | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | | 07:51 | | 08:46 | |
| | 16:23 | | 17:23 | | 18:22 | | 20:24 | | 21:22 | | 22:11 | | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | | 16:44 | | 16:05 | |
| 9 | 08:58 | | 08:12 | | 07:07 | 07:33 (1) | 06:48 | | 05:38 | | 04:55 | | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | | 07:53 | | 08:47 | |
| | 16:25 | | 17:25 | | 18:24 | 7 07:40 (1) | 20:26 | | 21:24 | | 22:12 | | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | | 16:42 | | 16:05 | |
| 10 | 08:57 | | 08:10 | | 07:05 | 07:29 (1) | 06:45 | | 05:36 | | 04:55 | | 05:06 | | 05:56 | | 06:55 | | 07:52 | | | | 07:55 | | 08:48 | |
| | 16:26 | | 17:27 | | 18:26 | 15 07:44 (1) | 20:28 | | 21:26 | | 22:13 | | 22:12 | | 21:22 | | 20:07 | | 18:49 | | | | 16:40 | | 16:05 | |
| 11 | 08:56 | | 08:08 | | 07:02 | 07:27 (1) | 06:43 | | 05:34 | | 04:54 | | 05:07 | | 05:58 | | 06:57 | | 07:54 | | | | 07:57 | | 08:50 | |
| | 16:28 | | 17:30 | | 18:28 | 19 07:46 (1) | 20:30 | | 21:28 | | 22:14 | | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | | 16:38 | | 16:04 | |
| 12 | 08:55 | | 08:06 | | 06:59 | 07:24 (2) | 06:40 | | 05:32 | | 04:54 | | 05:08 | | 06:00 | | 06:59 | | 07:56 | | | | 08:00 | | 08:51 | |
| | 16:30 | | 17:32 | | 18:30 | 23 07:47 (1) | 20:31 | | 21:30 | | 22:14 | | 22:10 | | 21:17 | | 20:02 | | 18:44 | | | | 16:36 | | 16:04 | |
| 13 | 08:54 | | 08:04 | | 06:57 | 07:22 (2) | 06:38 | | 05:30 | | 04:53 | | 05:09 | | 06:02 | | 07:01 | | 07:58 | | | | 08:02 | | 08:52 | |
| | 16:31 | | 17:34 | | 18:32 | 26 07:48 (1) | 20:33 | | 21:32 | | 22:15 | | 22:09 | | 21:15 | | 19:59 | | 18:42 | | | | 16:34 | | 16:04 | |
| 14 | 08:54 | | 08:02 | | 06:54 | 07:19 (2) | 06:35 | | 05:29 | | 04:53 | | 05:11 | | 06:04 | | 07:03 | | 08:00 | | | | 08:04 | | 08:53 | |
| | 16:33 | | 17:36 | | 18:34 | 28 07:47 (1) | 20:35 | | 21:34 | | 22:16 | | 22:08 | | 21:13 | | 19:56 | | 18:40 | | | | 16:33 | | 16:04 | |
| 15 | 08:52 | | 08:00 | | 06:52 | 07:16 (2) | 06:33 | | 05:27 | | 04:53 | | 05:12 | | 06:06 | | 07:04 | | 08:02 | | | | 08:06 | | 08:54 | |
| | 16:35 | | 17:38 | | 18:36 | 26 07:46 (1) | 20:37 | | 21:35 | | 22:17 | | 22:07 | | 21:11 | | 19:54 | | 18:37 | | | | 16:31 | | 16:04 | |
| 16 | 08:51 | | 07:57 | | 06:49 | 07:21 (2) | 06:30 | | 05:25 | | 04:52 | | 05:14 | | 06:08 | | 07:06 | | 08:04 | | | | 08:08 | | 08:55 | |
| | 16:37 | | 17:40 | | 18:38 | 16 07:46 (1) | 20:39 | | 21:37 | | 22:17 | | 22:06 | | 21:08 | | 19:51 | | 18:35 | | | | 16:29 | | 16:04 | |
| 17 | 08:50 | | 07:55 | | 06:47 | 07:24 (2) | 06:28 | | 05:23 | | 04:52 | | 05:15 | | 06:09 | | 07:08 | 08:15 (1) | 08:06 | | | | 08:10 | | 08:56 | |
| | 16:38 | | 17:42 | | 18:40 | 9 07:45 (1) | 20:41 | | 21:39 | | 22:18 | | 22:04 | | 21:06 | | 19:49 | 11 08:26 (1) | 18:32 | | | | 16:28 | | 16:04 | |
| 18 | 08:49 | | 07:53 | | 06:44 | 07:39 (1) | 06:25 | | 05:21 | | 04:52 | | 05:16 | | 06:11 | | 07:10 | 08:12 (1) | 08:08 | | | | 08:12 | | 08:57 | |
| | 16:40 | | 17:44 | | 18:42 | 6 07:45 (1) | 20:43 | | 21:41 | | 22:18 | | 22:03 | | 21:04 | | 19:46 | 17 08:29 (1) | 18:30 | | | | 16:26 | | 16:04 | |
| 19 | 08:48 | | 07:51 | | 06:42 | 07:40 (1) | 06:23 | | 05:20 | | 04:52 | | 05:18 | | 06:13 | | 07:12 | 08:04 (2) | 08:10 | | | | 08:14 | | 08:57 | |
| | 16:42 | | 17:47 | | 18:44 | 4 07:44 (1) | 20:45 | | 21:43 | | 22:18 | | 22:02 | | 21:01 | | 19:43 | 25 08:29 (1) | 18:27 | | | | 16:25 | | 16:04 | |
| 20 | 08:47 | | 07:48 | | 06:39 | 07:41 (1) | 06:21 | | 05:18 | | 04:52 | | 05:20 | | 06:15 | | 07:14 | 08:01 (2) | 08:12 | | | | 08:15 | | 08:58 | |
| | 16:44 | | 17:49 | | 18:46 | 3 07:44 (1) | 20:47 | | 21:44 | | 22:19 | | 22:00 | | 20:59 | | 19:41 | 29 08:30 (1) | 18:25 | | | | 16:23 | | 16:05 | |
| 21 | 08:45 | | 07:46 | | 06:36 | 07:42 (1) | 06:18 | | 05:17 | | 04:52 | | 05:21 | | 06:17 | | 07:16 | 07:59 (2) | 08:14 | | | | 08:17 | | 08:59 | |
| | 16:46 | | 17:51 | | 18:48 | 2 07:44 (1) | 20:49 | | 21:46 | | 22:19 | | 21:59 | | 20:57 | | 19:38 | 30 08:29 (1) | 18:23 | | | | 16:22 | | 16:05 | |
| 22 | 08:44 | | 07:44 | | 06:34 | 07:42 (1) | 06:16 | | 05:15 | | 04:53 | | 05:23 | | 06:19 | | 07:18 | 07:57 (2) | 08:16 | | | | 08:19 | | 08:59 | |
| | 16:48 | | 17:53 | | 18:50 | 2 07:44 (1) | 20:51 | | 21:48 | | 22:19 | | 21:57 | | 20:54 | | 19:36 | 32 08:29 (1) | 18:20 | | | | 16:20 | | 16:06 | |
| 23 | 08:43 | | 07:41 | | 06:31 | 07:43 (1) | 06:13 | | 05:13 | | 04:53 | | 05:24 | | 06:21 | | 07:20 | 07:56 (2) | 08:18 | | | | 08:21 | | 09:00 | |
| | 16:50 | | 17:55 | | 18:52 | 1 07:44 (1) | 20:53 | | 21:49 | | 22:19 | | 21:56 | | 20:52 | | 19:33 | 32 08:28 (1) | 18:18 | | | | 16:19 | | 16:06 | |
| 24 | 08:41 | | 07:39 | | 06:29 | 07:42 (1) | 06:11 | | 05:12 | | 04:53 | | 05:26 | | 06:23 | | 07:21 | 07:55 (2) | 08:20 | | | | 08:23 | | 09:00 | |
| | 16:52 | | 17:57 | | 18:54 | 1 07:43 (1) | 20:55 | | 21:51 | | 22:20 | | 21:54 | | 20:49 | | 19:30 | 33 08:28 (1) | 18:16 | | | | 16:18 | | 16:07 | |
| 25 | 08:40 | | 07:37 | | 06:26 | | 06:09 | | 05:11 | | 04:53 | | 05:28 | | 06:25 | | 07:23 | 07:55 (2) | 07:22 | | | | 08:25 | | 09:00 | |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | 21:52 | | 22:20 | | 21:53 | | 20:47 | | 19:28 | 33 08:28 (1) | 17:13 | | | | 16:16 | | 16:07 | |
| 26 | 08:38 | | 07:34 | | 06:24 | | 06:06 | | 05:09 | | 04:54 | | 05:29 | | 06:27 | | 07:25 | 07:55 (2) | 07:24 | | | | 08:27 | | 09:01 | |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | 21:54 | | 22:20 | | 21:51 | | 20:44 | | 19:25 | 32 08:27 (1) | 17:11 | | | | 16:15 | | 16:08 | |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:04 | | 05:08 | | 04:54 | | 05:31 | | 06:28 | | 07:27 | 07:55 (2) | 07:27 | | | | 08:29 | | 09:01 | |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:56 | | 22:19 | | 21:49 | | 20:42 | | 19:23 | 32 08:27 (1) | 17:09 | | | | 16:14 | | 16:09 | |
| 28 | 08:35 | | 07:29 | | 06:18 | | 06:02 | | 05:07 | | 04:55 | | 05:33 | | 06:30 | | 07:29 | 07:57 (2) | 07:29 | | | | 08:30 | | 09:01 | |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | | 22:19 | | 21:47 | | 20:40 | | 19:20 | 30 08:27 (1) | 17:07 | | | | 16:13 | | 16:10 | |
| 29 | 08:33 | | | | 07:16 | | 06:00 | | 05:05 | | 04:56 | | 05:34 | | 06:32 | | 07:31 | 07:58 (2) | 07:31 | | | | 08:32 | | 09:01 | |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:59 | | 22:19 | | 21:46 | | 20:37 | | 19:17 | 28 08:26 (1) | 17:04 | | | | 16:12 | | 16:11 | |
| 30 | 08:31 | | | | 07:13 | | 05:57 | | 05:04 | | 04:56 | | 05:36 | | 06:34 | | 07:33 | 08:00 (2) | 07:33 | | | | 08:34 | | 09:01 | |
| | 17:04 | | | | 20:06 | | 21:07 | | 22:00 | | 22:19 | | 21:44 | | 20:35 | | 19:15 | 27 08:27 (1) | 17:02 | | | | 16:11 | | 16:12 | |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | | | | 05:38 | | 06:36 | | | | 07:35 | | | | | | 09:01 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | | | | 21:42 | | 20:32 | | | | 17:00 | | | | | | 16:13 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | | 521 | | 465 | | 383 | | 326 | | | | 253 | | 224 | |
| Total, worst case | | | | | | 188 | | | | | | | | | | | | 391 | | | 74 | | | | | |
| Sun reduction | | | | | | 0,34 | | | | | | | | | | | | 0,40 | | | 0,31 | | | | | |
| Oper. time red. | | | | | | 1,00 | | | | | | | | | | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | | | | | 0,98 | | | | | | | | | | | | 0,98 | | | 0,98 | | | | | |
| Total reduction | | | | | | 0,34 | | | | | | | | | | | | 0,39 | | | 0,30 | | | | | |
| Total, real | | | | | | 63 | | | | | | | | | | | | 152 | | | 22 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 26 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:05 (1) | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 12 08:17 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 27 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:00 (1) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 | 10 08:20 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 27 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 07:58 (1) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 6 08:04 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 27 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:55 (1) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 5 08:00 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 27 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:54 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:44 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 4 07:58 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 27 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:41 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | | 07:46 | | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 6 07:55 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 20 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:35 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 9 07:53 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 20 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:33 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 6 07:52 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 19 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:30 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 5 07:50 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | 19 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:29 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 5 07:50 (1) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | 17 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:28 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 3 07:48 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | 5 | 08:46 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:27 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 3 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:26 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | | 08:00 | | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 2 07:47 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:25 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 2 07:46 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:45 (1) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 1 07:46 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:06 | | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | | 18:32 | | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:08 | | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | | 18:30 | | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:10 | | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | | 18:27 | | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 08:12 | | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | | 18:25 | | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 08:14 | | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | | 18:23 | | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 08:16 | | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | | 18:20 | | | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 08:18 | | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | | 18:18 | | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 08:20 | | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | | 18:16 | | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 07:22 | | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | | 17:13 | | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 07:24 | | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | | 17:11 | | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:07 (2) | | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 1 | 08:08 (2) | | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 08:07 (2) | | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 1 | 08:08 (2) | | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:06 (2) | | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 2 | 08:26 (1) | | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 08:06 (2) | | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 4 | 08:27 (1) | | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 79 | | | | | | | 8 | | 261 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,96 | | | | | | | 0,97 | | 0,95 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,29 | | |
| Total, real | | | | 26 | | | | | | | 3 | | 77 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:17 (1) | 07:08 | 09:08 (1) | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:12 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 33 | 08:50 (1) | 20:10 9 | 09:17 (1) | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 5 | 08:44 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:15 (1) | 07:06 | 09:11 (1) | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:12 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 38 | 08:53 (1) | 20:12 7 | 09:18 (1) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 5 | 08:44 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:18 (1) | 07:03 | 09:15 (1) | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:13 (2) | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 36 | 08:54 (1) | 20:14 3 | 09:18 (1) | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 6 | 08:45 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:23 (1) | 07:00 | | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:14 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 33 | 08:56 (1) | 20:16 | | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 6 | 08:45 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 08:26 (1) | 06:58 | | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 08:15 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 30 | 08:56 (1) | 20:18 | | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 8 | 08:46 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:47 (2) | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 08:17 (2) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 38 | 08:58 (1) | 20:20 | | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 8 | 08:47 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:42 (2) | 06:53 | | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 08:20 (2) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 46 | 08:58 (1) | 20:22 | | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 7 | 08:48 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:39 (2) | 06:50 | | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 08:44 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 41 | 08:58 (1) | 20:24 | | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 5 | 08:49 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:52 (2) | 06:48 | | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 08:45 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 34 | 08:59 (1) | 20:26 | | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 5 | 08:50 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:54 (2) | 06:45 | | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 08:46 (1) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 30 | 08:59 (1) | 20:28 | | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 6 | 08:52 (1) | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 07:56 (2) | 06:43 | | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 08:48 (1) | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 27 | 09:00 (1) | 20:29 | | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 6 | 08:54 (1) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 08:34 (1) | 06:40 | | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 08:49 (1) | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 26 | 09:00 (1) | 20:31 | | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 7 | 08:56 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 08:35 (1) | 06:38 | | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:51 (1) | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 25 | 09:00 (1) | 20:33 | | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 9 | 09:00 (1) | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 08:35 (1) | 06:35 | | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:54 (1) | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 25 | 09:00 (1) | 20:35 | | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 13 | 09:07 (1) | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 08:34 (1) | 06:33 | | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:58 (1) | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 25 | 08:59 (1) | 20:37 | | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 | 18:37 10 | 09:08 (1) | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 08:35 (1) | 06:30 | | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 09:05 (1) | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 25 | 09:00 (1) | 20:39 | | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 3 | 09:08 (1) | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 08:34 (1) | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 25 | 08:59 (1) | 20:41 | | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 08:35 (1) | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 24 | 08:59 (1) | 20:43 | | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 08:34 (1) | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 24 | 08:58 (1) | 20:45 | | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 08:33 (1) | 06:21 | | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 24 | 08:57 (1) | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 08:33 (1) | 06:18 | | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 24 | 08:57 (1) | 20:49 | | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 08:32 (1) | 06:16 | | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 24 | 08:56 (1) | 20:51 | | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 08:32 (1) | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 23 | 08:55 (1) | 20:53 | | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:53 (2) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 24 | 08:54 (1) | 20:55 | | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:51 (2) | 06:09 | | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 26 | 08:52 (1) | 20:57 | | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:29 (1) | 06:24 | 07:50 (2) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 12 | 08:41 (1) | 18:58 28 | 08:51 (1) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 08:23 (1) | 06:21 | 07:47 (2) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:27 | | 08:28 | 09:01 |
| | 16:58 | 18:03 22 | 08:45 (1) | 19:00 26 | 08:49 (1) | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 08:20 (1) | 06:18 | 08:26 (1) | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 28 | 08:48 (1) | 19:02 22 | 08:48 (1) | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | | 07:16 | 09:24 (1) | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | | 20:04 22 | 09:46 (1) | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | | 07:13 | 09:22 (1) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | | 20:06 22 | 09:44 (1) | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | | 16:11 | 16:11 |
| 31 | 08:30 | | | 07:11 | 09:19 (1) | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | 09:01 |
| | 17:06 | | | 20:08 22 | 09:41 (1) | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | 62 | 872 | 19 | | | | | | | | 109 | | | |
| Sun reduction | | 0,25 | 0,34 | 0,39 | | | | | | | | 0,31 | | | |
| Oper. time red. | | 1,00 | 1,00 | 1,00 | | | | | | | | 1,00 | | | |
| Wind dir. red. | | 0,92 | 0,92 | 0,92 | | | | | | | | 0,93 | | | |
| Total reduction | | 0,23 | 0,32 | 0,36 | | | | | | | | 0,29 | | | |
| Total, real | | 14 | 275 | 7 | | | | | | | | 31 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 08:31 (1) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | | 18:07 | 48 | 09:19 (1) | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | | 07:24 | | 08:30 (1) | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | | 18:10 | 48 | 09:18 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | | 07:22 | | 08:28 (1) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 | 08:39 |
| | 16:16 | 17:12 | | 18:12 | 49 | 09:17 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | | 07:20 | | 08:28 (1) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | 08:40 |
| | 16:18 | 17:15 | | 18:14 | 49 | 09:17 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | | 07:17 | | 07:51 (2) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 | 07:45 | 08:42 |
| | 16:19 | 17:17 | | 18:16 | 62 | 09:15 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | | 07:15 | | 07:49 (2) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | | 18:18 | 61 | 09:15 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | | 07:12 | | 07:46 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | | 18:20 | 60 | 09:14 (1) | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | | 07:10 | | 07:47 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | | 18:22 | 55 | 09:13 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | | 07:07 | | 07:52 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | | 18:24 | 48 | 09:13 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | | 07:04 | | 07:54 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | | 18:26 | 43 | 09:12 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | | 07:02 | | 07:56 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:50 |
| | 16:28 | 17:30 | | 18:28 | 39 | 09:12 (1) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | | 06:59 | | 08:34 (1) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:30 | 17:32 | | 18:30 | 37 | 09:11 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | | 06:57 | | 08:35 (1) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:02 | 08:52 |
| | 16:31 | 17:34 | | 18:32 | 36 | 09:11 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | | 06:54 | | 08:35 (1) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:04 | 08:53 |
| | 16:33 | 17:36 | | 18:34 | 35 | 09:10 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | | 06:52 | | 08:34 (1) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:06 | 08:54 |
| | 16:35 | 17:38 | | 18:36 | 35 | 09:09 (1) | 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | | 06:49 | | 08:35 (1) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:08 | 08:55 |
| | 16:37 | 17:40 | | 18:38 | 34 | 09:09 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | | 06:47 | | 08:34 (1) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | | 18:40 | 35 | 09:09 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | | 06:44 | | 08:35 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | | 18:42 | 34 | 09:09 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | | 06:42 | | 08:34 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | | 18:44 | 34 | 09:08 (1) | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | | 06:39 | | 08:33 (1) | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | | 18:46 | 35 | 09:08 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | | 06:36 | | 08:33 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | | 18:48 | 35 | 09:08 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 08:50 (1) | 06:34 | | 08:32 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 19 09:09 (1) | 18:50 | 36 | 09:08 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 08:45 (1) | 06:31 | | 08:32 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 28 09:13 (1) | 18:52 | 36 | 09:08 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 08:42 (1) | 06:29 | | 07:53 (2) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 34 09:16 (1) | 18:54 | 38 | 09:08 (1) | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 08:39 (1) | 06:26 | | 07:51 (2) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 39 09:18 (1) | 18:56 | 42 | 09:08 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:37 (1) | 06:23 | | 07:50 (2) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 44 09:21 (1) | 18:58 | 45 | 09:08 (1) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 08:35 (1) | 06:21 | | 07:47 (2) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 47 09:22 (1) | 19:00 | 50 | 09:08 (1) | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 08:33 (1) | 06:18 | | 07:44 (2) | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 51 09:24 (1) | 19:02 | 56 | 09:09 (1) | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | | 07:16 | | 08:48 (2) | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 08:32 | 09:01 |
| | 17:02 | | | 20:04 | 52 | 10:09 (1) | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | | 07:13 | | 09:22 (1) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 08:34 | 09:01 |
| | 17:04 | | | 20:06 | 48 | 10:10 (1) | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:30 | | | 07:11 | | 09:22 (1) | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | | 20:08 | 47 | 10:09 (1) | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 262 | | 1362 | | | | | | | | | | | |
| Sun reduction | | 0,25 | | 0,34 | | | | | | | | | | | |
| Oper. time red. | | 1,00 | | 1,00 | | | | | | | | | | | |
| Wind dir. red. | | 0,88 | | 0,89 | | | | | | | | | | | |
| Total reduction | | 0,22 | | 0,30 | | | | | | | | | | | |
| Total, real | | 56 | | 411 | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:07 (2) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 09:11 (1) | 08:35 |
| | 16:14 | 17:08 | 18:07 10 | 09:19 (1) | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 38 | 09:49 (1) | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:05 (2) | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 09:14 (1) | 08:37 |
| | 16:15 | 17:10 | 18:10 8 | 09:18 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 32 | 09:46 (1) | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:03 (2) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 | 09:17 (1) | 08:39 |
| | 16:16 | 17:12 | 18:12 7 | 09:17 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 | 16:54 25 | 09:42 (1) | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 08:02 (2) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | 09:25 (1) | 08:40 |
| | 16:18 | 17:15 | 18:14 7 | 09:17 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 11 | 09:36 (1) | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 08:00 (2) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 | 07:45 | | 08:42 |
| | 16:19 | 17:17 | 18:16 6 | 09:15 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:59 (2) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | | 08:43 |
| | 16:20 | 17:19 | 18:18 6 | 09:15 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | 16:48 | | 16:06 |
| 7 | 08:59 | 08:16 09:54 (1) | 07:12 | 07:58 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | | 08:44 |
| | 16:22 | 17:21 14 10:08 (1) | 18:20 5 | 09:14 (1) | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | | 16:06 |
| 8 | 08:58 | 08:14 09:47 (1) | 07:10 | 07:57 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | | 08:46 |
| | 16:23 | 17:23 26 10:13 (1) | 18:22 3 | 09:13 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | | 16:05 |
| 9 | 08:58 | 08:12 09:44 (1) | 07:07 | 07:57 (2) | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | | 08:47 |
| | 16:25 | 17:25 33 10:17 (1) | 18:24 3 | 09:13 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | | 16:05 |
| 10 | 08:57 | 08:10 09:41 (1) | 07:04 | 07:55 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 08:36 (2) | 07:55 | | 08:48 |
| | 16:26 | 17:27 39 10:20 (1) | 18:26 3 | 09:12 (1) | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 5 08:41 (2) | 16:40 | | 16:04 |
| 11 | 08:56 | 08:08 09:39 (1) | 07:02 | 07:56 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:38 (2) | 07:57 | | 08:50 |
| | 16:28 | 17:30 44 10:23 (1) | 18:28 1 | 07:57 (2) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 4 08:42 (2) | 16:38 | | 16:04 |
| 12 | 08:55 | 08:06 09:36 (1) | 06:59 | | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 08:39 (2) | 07:59 | | 08:51 |
| | 16:30 | 17:32 49 10:25 (1) | 18:30 | | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 6 08:45 (2) | 16:36 | | 16:04 |
| 13 | 08:54 | 08:04 09:34 (1) | 06:57 | | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 08:41 (2) | 08:01 | | 08:52 |
| | 16:31 | 17:34 53 10:27 (1) | 18:32 | | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 7 08:48 (2) | 16:34 | | 16:04 |
| 14 | 08:53 | 08:02 09:32 (1) | 06:54 | | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 08:44 (2) | 08:04 | | 08:53 |
| | 16:33 | 17:36 57 10:29 (1) | 18:34 | | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 15 09:04 (2) | 16:33 | | 16:04 |
| 15 | 08:52 | 08:00 09:30 (1) | 06:52 | | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 08:48 (2) | 08:06 | | 08:54 |
| | 16:35 | 17:38 60 10:30 (1) | 18:36 | | 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 | 18:37 12 09:00 (2) | 16:31 | | 16:04 |
| 16 | 08:51 | 07:57 09:29 (1) | 06:49 | | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 09:52 (1) | 08:08 | | 08:55 |
| | 16:37 | 17:40 63 10:32 (1) | 18:38 | | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 3 09:55 (1) | 16:29 | | 16:04 |
| 17 | 08:50 | 07:55 09:28 (1) | 06:47 | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 09:51 (1) | 08:10 | | 08:56 |
| | 16:38 | 17:42 66 10:34 (1) | 18:40 | | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 5 09:56 (1) | 16:28 | | 16:04 |
| 18 | 08:49 | 07:53 09:26 (1) | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 09:51 (1) | 08:12 | | 08:57 |
| | 16:40 | 17:44 69 10:35 (1) | 18:42 | | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 6 09:57 (1) | 16:26 | | 16:04 |
| 19 | 08:48 | 07:51 09:25 (1) | 06:42 | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 09:52 (1) | 08:13 | | 08:57 |
| | 16:42 | 17:47 71 10:36 (1) | 18:44 | | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 5 09:57 (1) | 16:25 | | 16:04 |
| 20 | 08:47 | 07:48 09:24 (1) | 06:39 | | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 09:52 (1) | 08:15 | | 08:58 |
| | 16:44 | 17:49 74 10:38 (1) | 18:46 | | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 7 09:59 (1) | 16:23 | | 16:05 |
| 21 | 08:45 | 07:46 09:22 (1) | 06:36 | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 09:53 (1) | 08:17 | | 08:59 |
| | 16:46 | 17:51 76 10:38 (1) | 18:48 | | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 7 10:00 (1) | 16:22 | | 16:05 |
| 22 | 08:44 | 07:44 09:22 (1) | 06:34 | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 09:55 (1) | 08:19 | | 08:59 |
| | 16:48 | 17:53 77 10:39 (1) | 18:50 | | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 7 10:02 (1) | 16:20 | | 16:05 |
| 23 | 08:42 | 07:41 09:20 (1) | 06:31 | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 09:56 (1) | 08:21 | | 09:00 |
| | 16:50 | 17:55 80 10:40 (1) | 18:52 | | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 7 10:03 (1) | 16:19 | | 16:06 |
| 24 | 08:41 | 07:39 09:20 (1) | 06:29 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 09:56 (1) | 08:23 | | 09:00 |
| | 16:52 | 17:57 81 10:41 (1) | 18:54 | | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 9 10:05 (1) | 16:18 | | 16:07 |
| 25 | 08:40 | 07:37 09:18 (1) | 06:26 | | 06:09 | 05:10 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 08:57 (1) | 08:25 | | 09:00 |
| | 16:54 | 17:59 83 10:41 (1) | 18:56 | | 20:57 | 21:52 | 22:20 | 21:52 | 20:47 | 19:28 | 17:13 9 09:06 (1) | 16:16 | | 16:07 |
| 26 | 08:38 | 07:34 09:18 (1) | 06:23 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 08:59 (1) | 08:27 | | 09:01 |
| | 16:56 | 18:01 84 10:42 (1) | 18:58 | | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 9 09:08 (1) | 16:15 | | 16:08 |
| 27 | 08:36 | 07:32 08:13 (2) | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 09:01 (1) | 08:28 | | 09:01 |
| | 16:58 | 18:03 100 10:42 (1) | 19:00 | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 12 10:00 (1) | 16:14 | | 16:09 |
| 28 | 08:35 | 07:29 08:10 (2) | 06:18 | | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 09:02 (1) | 08:30 | | 09:01 |
| | 17:00 | 18:05 109 10:43 (1) | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 14 09:58 (1) | 16:13 | | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 09:04 (1) | 08:32 | | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 17 09:56 (1) | 16:12 | | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 09:06 (1) | 08:34 | | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 22 09:54 (1) | 16:11 | | 16:11 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | 07:35 09:09 (1) | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | 17:00 31 09:52 (1) | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 1408 | 59 | | | | | | | 219 | 106 | |
| Sun reduction | | 0,25 | 0,34 | | | | | | | 0,31 | 0,16 | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | | 1,00 | 1,00 | |
| Wind dir. red. | | 0,72 | 0,85 | | | | | | | 0,77 | 0,72 | |
| Total reduction | | 0,18 | 0,29 | | | | | | | 0,23 | 0,11 | |
| Total, real | | 249 | 17 | | | | | | | 51 | 12 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:20 (1) | 08:28 | | 09:23 (2) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | | | 08:35 | | 11:05 (1) |
| | 16:14 | 62 | 12:22 (1) | 17:08 | 2 | 09:25 (2) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | | | 16:10 | 65 | 12:10 (1) |
| 2 | 09:01 | | 11:20 (1) | 08:26 | | 09:22 (2) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | 07:39 | | 08:50 (2) | 08:37 | | 11:04 (1) |
| | 16:15 | 62 | 12:22 (1) | 17:10 | 2 | 09:24 (2) | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 1 | 08:51 (2) | 16:09 | 66 | 12:10 (1) |
| 3 | 09:01 | | 11:20 (1) | 08:24 | | 09:22 (2) | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 | | 08:50 (2) | 08:39 | | 11:05 (1) |
| | 16:16 | 63 | 12:23 (1) | 17:12 | 2 | 09:24 (2) | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 1 | 08:51 (2) | 16:08 | 65 | 12:10 (1) |
| 4 | 09:00 | | 11:20 (1) | 08:22 | | 09:22 (2) | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | | 08:51 (2) | 08:40 | | 11:06 (1) |
| | 16:18 | 63 | 12:23 (1) | 17:15 | 1 | 09:23 (2) | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 1 | 08:52 (2) | 16:08 | 65 | 12:11 (1) |
| 5 | 09:00 | | 11:21 (1) | 08:20 | | 09:22 (2) | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 | 07:45 | | 08:51 (2) | 08:42 | | 11:06 (1) |
| | 16:19 | 63 | 12:24 (1) | 17:17 | 1 | 09:23 (2) | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 1 | 08:52 (2) | 16:07 | 64 | 12:10 (1) |
| 6 | 08:59 | | 11:21 (1) | 08:18 | | 09:21 (2) | 07:15 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | | 08:51 (2) | 08:43 | | 11:07 (1) |
| | 16:20 | 64 | 12:25 (1) | 17:19 | 2 | 09:23 (2) | 18:18 | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | 16:48 | 2 | 08:53 (2) | 16:06 | 64 | 12:11 (1) |
| 7 | 08:59 | | 11:21 (1) | 08:16 | | | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | | 08:51 (2) | 08:44 | | 11:07 (1) |
| | 16:22 | 64 | 12:25 (1) | 17:21 | | | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 2 | 08:53 (2) | 16:06 | 63 | 12:10 (1) |
| 8 | 08:58 | | 11:21 (1) | 08:14 | | | 07:10 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | | 08:53 (2) | 08:46 | | 11:08 (1) |
| | 16:23 | 64 | 12:25 (1) | 17:23 | | | 18:22 | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 2 | 08:55 (2) | 16:05 | 63 | 12:11 (1) |
| 9 | 08:58 | | 11:22 (1) | 08:12 | | | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | | 08:53 (2) | 08:47 | | 11:08 (1) |
| | 16:25 | 65 | 12:27 (1) | 17:25 | | | 18:24 | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 2 | 08:55 (2) | 16:05 | 63 | 12:11 (1) |
| 10 | 08:57 | | 11:22 (1) | 08:10 | | | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | | 08:53 (2) | 08:48 | | 11:10 (1) |
| | 16:26 | 66 | 12:28 (1) | 17:27 | | | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 3 | 08:56 (2) | 16:04 | 62 | 12:12 (1) |
| 11 | 08:56 | | 11:22 (1) | 08:08 | | | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | | 08:54 (2) | 08:50 | | 11:10 (1) |
| | 16:28 | 66 | 12:28 (1) | 17:30 | | | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 3 | 08:57 (2) | 16:04 | 62 | 12:12 (1) |
| 12 | 08:55 | | 11:22 (1) | 08:06 | | | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | | 08:56 (2) | 08:51 | | 11:10 (1) |
| | 16:30 | 66 | 12:28 (1) | 17:32 | | | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 3 | 08:59 (2) | 16:04 | 62 | 12:12 (1) |
| 13 | 08:54 | | 11:22 (1) | 08:04 | | | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | | 08:56 (2) | 08:52 | | 11:11 (1) |
| | 16:31 | 67 | 12:29 (1) | 17:34 | | | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 4 | 09:00 (2) | 16:04 | 61 | 12:12 (1) |
| 14 | 08:53 | | 11:22 (1) | 08:02 | | | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:04 | | 08:57 (2) | 08:53 | | 11:11 (1) |
| | 16:33 | 67 | 12:29 (1) | 17:36 | | | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 4 | 09:01 (2) | 16:04 | 61 | 12:12 (1) |
| 15 | 08:52 | | 11:23 (1) | 08:00 | | | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:06 | | 08:58 (2) | 08:54 | | 11:13 (1) |
| | 16:35 | 67 | 12:30 (1) | 17:38 | | | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 5 | 09:03 (2) | 16:04 | 61 | 12:14 (1) |
| 16 | 08:51 | | 11:22 (1) | 07:57 | | | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:08 | | 09:00 (2) | 08:55 | | 11:12 (1) |
| | 16:36 | 68 | 12:30 (1) | 17:40 | | | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 5 | 09:05 (2) | 16:04 | 61 | 12:13 (1) |
| 17 | 08:50 | | 11:23 (1) | 07:55 | | | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:10 | | 09:01 (2) | 08:56 | | 11:13 (1) |
| | 16:38 | 68 | 12:31 (1) | 17:42 | | | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 7 | 09:31 (2) | 16:04 | 60 | 12:13 (1) |
| 18 | 08:49 | | 11:24 (1) | 07:53 | | | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:12 | | 09:03 (2) | 08:57 | | 11:14 (1) |
| | 16:40 | 68 | 12:32 (1) | 17:44 | | | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 | 9 | 09:29 (2) | 16:04 | 60 | 12:14 (1) |
| 19 | 08:48 | | 11:23 (1) | 07:51 | | | 06:42 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | | 09:04 (2) | 08:57 | | 11:15 (1) |
| | 16:42 | 69 | 12:32 (1) | 17:47 | | | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 13 | 09:28 (2) | 16:04 | 60 | 12:15 (1) |
| 20 | 08:47 | | 09:38 (2) | 07:48 | | | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | | 09:06 (2) | 08:58 | | 11:14 (1) |
| | 16:44 | 74 | 12:32 (1) | 17:49 | | | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 20 | 09:26 (2) | 16:05 | 60 | 12:14 (1) |
| 21 | 08:45 | | 09:34 (2) | 07:46 | | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | | 09:10 (2) | 08:59 | | 11:15 (1) |
| | 16:46 | 82 | 12:32 (1) | 17:51 | | | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | 16:22 | 15 | 09:25 (2) | 16:05 | 60 | 12:15 (1) |
| 22 | 08:44 | | 09:31 (2) | 07:44 | | | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | | 09:14 (2) | 08:59 | | 11:16 (1) |
| | 16:48 | 88 | 12:32 (1) | 17:53 | | | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 7 | 09:21 (2) | 16:05 | 60 | 12:16 (1) |
| 23 | 08:42 | | 09:30 (2) | 07:41 | | | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | | | 09:00 | | 11:16 (1) |
| | 16:50 | 92 | 12:33 (1) | 17:55 | | | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | | | 16:06 | 60 | 12:16 (1) |
| 24 | 08:41 | | 09:29 (2) | 07:39 | | | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | | | 09:00 | | 11:17 (1) |
| | 16:52 | 94 | 12:33 (1) | 17:57 | | | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | | | 16:07 | 60 | 12:17 (1) |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | | 06:26 | 06:09 | 05:10 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | | | 09:00 | | 11:17 (1) |
| | 16:54 | 98 | 12:33 (1) | 17:59 | | | 18:56 | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 | 16:16 | | | 16:07 | 60 | 12:17 (1) |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:27 | | | 09:01 | | 11:18 (1) |
| | 16:56 | 100 | 12:34 (1) | 18:01 | | | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | | | 16:08 | 60 | 12:18 (1) |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | | | 09:01 | | 11:18 (1) |
| | 16:58 | 102 | 12:34 (1) | 18:03 | | | 19:00 | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | | | 16:09 | 61 | 12:19 (1) |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | 08:30 | | | 09:01 | | 11:19 (1) |
| | 17:00 | 103 | 12:34 (1) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | 16:13 | | | 16:10 | 60 | 12:19 (1) |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 08:32 | | | 09:01 | | 11:19 (1) |
| | 17:02 | 105 | 12:34 (1) | | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 16:12 | | | 16:10 | 61 | 12:20 (1) |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 08:34 | | | 09:01 | | 11:19 (1) |
| | 17:04 | 106 | 12:34 (1) | | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 16:11 | | | 16:11 | 61 | 12:20 (1) |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | | 09:01 | | 11:19 (1) |
| | 17:06 | 106 | 12:33 (1) | | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | | 16:12 | 62 | 12:21 (1) |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | | | 224 | | |
| Total, worst case | | 2392 | | | 10 | | | | | | | | | | | 110 | | | 1913 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,27 | | | 0,71 | | | | | | | | | | | 0,71 | | | 0,20 | |
| Total reduction | | 0,05 | | | 0,17 | | | | | | | | | | | 0,11 | | | 0,03 | |
| Total, real | | 115 | | | 2 | | | | | | | | | | | 12 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | April | May | June | July | August | September | October | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:26 (2) | 08:28 | 08:57 (3) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | | 08:25 (3) | 08:35 | 11:08 (2) |
| | 16:14 | 59 | 12:25 (2) | 17:08 | 21 15:47 (1) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | 20 | 15:21 (1) | 16:10 | 66 12:14 (2) |
| 2 | 09:01 | | 11:25 (2) | 08:26 | 08:55 (3) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | 07:39 | | 08:24 (3) | 08:37 | 11:09 (2) |
| | 16:15 | 60 | 12:25 (2) | 17:10 | 23 15:47 (1) | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 23 | 15:21 (1) | 16:09 | 65 12:14 (2) |
| 3 | 09:01 | | 11:26 (2) | 08:24 | 08:54 (3) | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 | | 08:24 (3) | 08:38 | 11:10 (2) |
| | 16:16 | 60 | 12:26 (2) | 17:12 | 24 15:48 (1) | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 22 | 15:20 (1) | 16:08 | 64 12:14 (2) |
| 4 | 09:00 | | 11:26 (2) | 08:22 | 08:54 (3) | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | | 08:24 (3) | 08:40 | 11:11 (2) |
| | 16:18 | 60 | 12:26 (2) | 17:15 | 25 15:49 (1) | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 24 | 15:21 (1) | 16:08 | 64 12:15 (2) |
| 5 | 09:00 | | 11:26 (2) | 08:20 | 08:54 (3) | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | | 08:24 (3) | 08:42 | 11:11 (2) |
| | 16:19 | 62 | 12:28 (2) | 17:17 | 25 15:50 (1) | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 24 | 15:20 (1) | 16:07 | 63 12:14 (2) |
| 6 | 08:59 | | 11:26 (2) | 08:18 | 08:54 (3) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | | 08:23 (3) | 08:43 | 11:12 (2) |
| | 16:20 | 62 | 12:28 (2) | 17:19 | 24 15:50 (1) | 18:18 | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | 16:48 | 25 | 15:19 (1) | 16:06 | 62 12:14 (2) |
| 7 | 08:59 | | 11:26 (2) | 08:16 | 08:54 (3) | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | | 08:23 (3) | 08:44 | 11:12 (2) |
| | 16:22 | 63 | 12:29 (2) | 17:21 | 24 15:51 (1) | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 25 | 15:19 (1) | 16:06 | 62 12:14 (2) |
| 8 | 08:58 | | 11:26 (2) | 08:14 | 08:54 (3) | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | | 08:24 (3) | 08:46 | 11:14 (2) |
| | 16:23 | 64 | 12:30 (2) | 17:23 | 23 15:51 (1) | 18:22 | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 25 | 15:19 (1) | 16:05 | 61 12:15 (2) |
| 9 | 08:58 | | 11:27 (2) | 08:12 | 08:55 (3) | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | | 08:26 (3) | 08:47 | 11:14 (2) |
| | 16:25 | 64 | 12:31 (2) | 17:25 | 21 15:51 (1) | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 22 | 15:18 (1) | 16:05 | 60 12:14 (2) |
| 10 | 08:57 | | 11:27 (2) | 08:10 | 08:56 (3) | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | | 08:28 (3) | 08:48 | 11:15 (2) |
| | 16:26 | 65 | 12:32 (2) | 17:27 | 19 15:52 (1) | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 20 | 15:17 (1) | 16:04 | 60 12:15 (2) |
| 11 | 08:56 | | 11:27 (2) | 08:08 | 08:57 (3) | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | | 08:30 (3) | 08:50 | 11:16 (2) |
| | 16:28 | 66 | 12:33 (2) | 17:29 | 18 15:52 (1) | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 18 | 15:16 (1) | 16:04 | 59 12:15 (2) |
| 12 | 08:55 | | 11:26 (2) | 08:06 | 08:58 (3) | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | | 08:33 (3) | 08:51 | 11:16 (2) |
| | 16:30 | 67 | 12:33 (2) | 17:32 | 13 09:11 (3) | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16 | 15:17 (1) | 16:04 | 59 12:15 (2) |
| 13 | 08:54 | | 11:26 (2) | 08:04 | 09:01 (3) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | | 08:35 (3) | 08:52 | 11:17 (2) |
| | 16:31 | 68 | 12:34 (2) | 17:34 | 8 09:09 (3) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 12 | 15:16 (1) | 16:04 | 58 12:15 (2) |
| 14 | 08:53 | | 11:26 (2) | 08:02 | | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | | 08:37 (3) | 08:53 | 11:18 (2) |
| | 16:33 | 69 | 12:35 (2) | 17:36 | | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 9 | 15:15 (1) | 16:04 | 57 12:15 (2) |
| 15 | 08:52 | | 11:26 (2) | 07:59 | | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:06 | | 15:08 (1) | 08:54 | 11:18 (2) |
| | 16:35 | 70 | 12:36 (2) | 17:38 | | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 6 | 15:14 (1) | 16:04 | 57 12:15 (2) |
| 16 | 08:51 | | 11:26 (2) | 07:57 | | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:08 | 07:06 | 08:04 | 08:08 | | 15:07 (1) | 08:55 | 11:19 (2) |
| | 16:36 | 70 | 12:36 (2) | 17:40 | | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 7 | 15:14 (1) | 16:04 | 56 12:15 (2) |
| 17 | 08:50 | | 11:26 (2) | 07:55 | | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | | 14:30 (1) | 08:56 | 11:20 (2) |
| | 16:38 | 83 | 15:21 (1) | 17:42 | | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 7 | 15:12 (1) | 16:04 | 56 12:16 (2) |
| 18 | 08:49 | | 11:26 (2) | 07:53 | | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | | 14:31 (1) | 08:57 | 11:21 (2) |
| | 16:40 | 90 | 15:25 (1) | 17:44 | | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 | 9 | 15:11 (1) | 16:04 | 55 12:16 (2) |
| 19 | 08:48 | | 11:26 (2) | 07:51 | | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | | 14:33 (1) | 08:57 | 11:21 (2) |
| | 16:42 | 96 | 15:28 (1) | 17:47 | | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 12 | 15:10 (1) | 16:04 | 56 12:17 (2) |
| 20 | 08:47 | | 11:26 (2) | 07:48 | | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | | 14:34 (1) | 08:58 | 11:21 (2) |
| | 16:44 | 100 | 15:30 (1) | 17:49 | | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 14 | 15:09 (1) | 16:05 | 56 12:17 (2) |
| 21 | 08:45 | | 11:26 (2) | 07:46 | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | | 11:02 (2) | 08:59 | 11:22 (2) |
| | 16:46 | 104 | 15:32 (1) | 17:51 | | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 20 | 15:08 (1) | 16:05 | 56 12:18 (2) |
| 22 | 08:44 | | 11:26 (2) | 07:44 | | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | | 11:02 (2) | 08:59 | 11:22 (2) |
| | 16:48 | 109 | 15:34 (1) | 17:53 | | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 29 | 15:07 (1) | 16:05 | 55 12:17 (2) |
| 23 | 08:42 | | 11:26 (2) | 07:41 | | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | | 11:03 (2) | 09:00 | 11:23 (2) |
| | 16:50 | 112 | 15:36 (1) | 17:55 | | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 25 | 15:05 (1) | 16:06 | 56 12:19 (2) |
| 24 | 08:41 | | 11:26 (2) | 07:39 | | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | | 11:03 (2) | 09:00 | 11:23 (2) |
| | 16:52 | 115 | 15:37 (1) | 17:57 | | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 20 | 15:02 (1) | 16:07 | 56 12:19 (2) |
| 25 | 08:39 | | 11:26 (2) | 07:36 | | 06:26 | 06:09 | 05:10 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | | 11:04 (2) | 09:00 | 11:23 (2) |
| | 16:54 | 118 | 15:39 (1) | 17:59 | | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 14 | 14:59 (1) | 16:07 | 56 12:19 (2) |
| 26 | 08:38 | | 11:27 (2) | 07:34 | | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:27 | | 11:05 (2) | 09:01 | 11:25 (2) |
| | 16:56 | 120 | 15:41 (1) | 18:01 | | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 1 | 11:06 (2) | 16:08 | 56 12:21 (2) |
| 27 | 08:36 | | 11:26 (2) | 07:32 | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | | 11:05 (2) | 09:01 | 11:25 (2) |
| | 16:58 | 124 | 15:42 (1) | 18:03 | | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 2 | 11:07 (2) | 16:09 | 56 12:21 (2) |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | 08:30 | | 11:06 (2) | 09:01 | 11:25 (2) |
| | 17:00 | 129 | 15:43 (1) | 18:05 | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 2 | 11:08 (2) | 16:10 | 57 12:22 (2) |
| 29 | 08:33 | | 09:03 (3) | | | 07:16 | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 08:32 | | 11:07 (2) | 09:01 | 11:25 (2) |
| | 17:02 | 134 | 15:44 (1) | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 11 08:40 (3) | 16:12 | 3 | 12:15 (2) | 16:10 | 57 12:22 (2) |
| 30 | 08:31 | | 09:01 (3) | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 08:27 (3) | 08:34 | | 11:08 (2) | 09:01 | 11:25 (2) |
| | 17:04 | 140 | 15:45 (1) | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 14 08:41 (3) | 16:11 | 3 | 12:15 (2) | 16:11 | 57 12:22 (2) |
| 31 | 08:30 | | 08:59 (3) | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | 08:27 (3) | | | | 09:01 | 11:25 (2) |
| | 17:06 | 144 | 15:46 (1) | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | 17 15:22 (1) | | | | 16:12 | 58 12:23 (2) |
| Potential sun hours | 242 | | 269 | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | | | 224 | | |
| Total, worst case | | 2747 | | 268 | | | | | | | | | 42 | | 459 | | | 1816 | |
| Sun reduction | | 0,18 | | 0,25 | | | | | | | | | 0,31 | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | 1,00 | | | | | | | | | 1,00 | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,28 | | 0,78 | | | | | | | | | 0,80 | | 0,70 | | | 0,19 | |
| Total reduction | | 0,05 | | 0,18 | | | | | | | | | 0,23 | | 0,10 | | | 0,02 | |
| Total, real | | 132 | | 49 | | | | | | | | | 10 | | 48 | | | 43 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 15:57 (2) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | | 07:37 | | | 08:35 | | 09:32 (3) |
| | 16:14 | 26 | 10:14 (3) | 17:08 | 3 | 16:00 (2) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:29 | 19:12 | | | 16:58 | | | 16:10 | 29 | 10:01 (3) |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 15:59 (2) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | | | 07:39 | | | 08:37 | | 09:33 (3) |
| | 16:15 | 27 | 10:14 (3) | 17:10 | 1 | 16:00 (2) | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | | | 16:56 | | | 16:09 | 29 | 10:02 (3) |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | | | 07:41 | | | 08:38 | | 09:33 (3) |
| | 16:16 | 27 | 10:15 (3) | 17:12 | | | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | | 16:54 | | | 16:08 | 29 | 10:02 (3) |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | | | 07:43 | | | 08:40 | | 09:34 (3) |
| | 16:18 | 28 | 10:16 (3) | 17:15 | | | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | | | 16:52 | | | 16:08 | 29 | 10:03 (3) |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | | 07:45 | | | 08:42 | | 09:34 (3) |
| | 16:19 | 28 | 10:17 (3) | 17:17 | | | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | | | 16:50 | | | 16:07 | 28 | 10:02 (3) |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | | 07:47 | | | 08:43 | | 09:35 (3) |
| | 16:20 | 28 | 10:17 (3) | 17:19 | | | 18:18 | 20:20 | 21:19 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | | | 16:48 | | | 16:06 | 28 | 10:03 (3) |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | | 07:49 | | | 08:44 | | 09:35 (3) |
| | 16:22 | 28 | 10:17 (3) | 17:21 | | | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | | | 16:46 | | | 16:06 | 28 | 10:03 (3) |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | | 08:46 | | 09:36 (3) |
| | 16:23 | 29 | 10:18 (3) | 17:23 | | | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | | | 16:44 | | | 16:05 | 28 | 10:04 (3) |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | | 07:53 | | 15:29 (2) | 08:47 | | 09:36 (3) |
| | 16:25 | 29 | 10:18 (3) | 17:25 | | | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | | | 16:42 | 2 | 15:31 (2) | 16:05 | 28 | 10:04 (3) |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | | 07:04 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | | 15:28 (2) | 08:48 | | 09:37 (3) |
| | 16:26 | 28 | 10:19 (3) | 17:27 | | | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | | 16:40 | 3 | 15:31 (2) | 16:04 | 27 | 10:04 (3) |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | | 07:57 | | 15:27 (2) | 08:50 | | 09:38 (3) |
| | 16:28 | 29 | 10:19 (3) | 17:29 | | | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | | 16:38 | 3 | 15:30 (2) | 16:04 | 26 | 10:04 (3) |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | | 07:59 | | 15:27 (2) | 08:51 | | 09:38 (3) |
| | 16:29 | 29 | 10:19 (3) | 17:32 | | | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | | 16:36 | 3 | 15:30 (2) | 16:04 | 27 | 10:05 (3) |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 16:46 (1) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | | 08:01 | | 15:26 (2) | 08:52 | | 09:38 (3) |
| | 16:31 | 29 | 10:20 (3) | 17:34 | 12 | 16:58 (1) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | | 16:34 | 3 | 15:29 (2) | 16:04 | 27 | 10:05 (3) |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 16:43 (1) | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | | 08:03 | | 15:25 (2) | 08:53 | | 09:39 (3) |
| | 16:33 | 28 | 10:20 (3) | 17:36 | 7 | 17:01 (1) | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | | | 16:33 | 3 | 15:28 (2) | 16:04 | 26 | 10:05 (3) |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 16:58 (1) | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 16:35 | 29 | 10:21 (3) | 17:38 | 4 | 17:02 (1) | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | | | 16:31 | 12 | 15:27 (2) | 16:04 | 26 | 10:05 (3) |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 17:01 (1) | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 16:36 | 28 | 10:20 (3) | 17:40 | 3 | 17:04 (1) | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | | | 16:29 | 16 | 15:27 (2) | 16:04 | 26 | 10:06 (3) |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 17:03 (1) | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 16:38 | 28 | 10:21 (3) | 17:42 | 3 | 17:06 (1) | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | | | 16:28 | 21 | 15:26 (2) | 16:04 | 25 | 10:06 (3) |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 17:04 (1) | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 16:40 | 37 | 15:38 (2) | 17:44 | 2 | 17:06 (1) | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | | | 16:26 | 25 | 15:25 (2) | 16:04 | 26 | 10:07 (3) |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 17:05 (1) | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 16:42 | 44 | 15:41 (2) | 17:46 | 2 | 17:07 (1) | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | | | 16:25 | 29 | 15:24 (2) | 16:04 | 25 | 10:07 (3) |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 17:07 (1) | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 16:44 | 46 | 15:44 (2) | 17:49 | 1 | 17:08 (1) | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | | | 16:23 | 34 | 15:23 (2) | 16:05 | 25 | 10:07 (3) |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 17:07 (1) | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | | 17:37 (1) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 16:46 | 49 | 15:46 (2) | 17:51 | 1 | 17:08 (1) | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 1 | 17:38 (1) | 16:22 | 39 | 15:22 (2) | 16:05 | 25 | 10:08 (3) |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | | 17:37 (1) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 16:48 | 52 | 15:48 (2) | 17:53 | | | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 1 | 17:38 (1) | 16:20 | 47 | 15:21 (2) | 16:05 | 25 | 10:08 (3) |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 17:35 (1) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 16:50 | 52 | 15:50 (2) | 17:55 | | | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 2 | 17:37 (1) | 16:19 | 44 | 15:19 (2) | 16:06 | 25 | 10:09 (3) |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 17:34 (1) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 16:52 | 52 | 15:51 (2) | 17:57 | | | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 2 | 17:36 (1) | 16:18 | 38 | 15:16 (2) | 16:06 | 25 | 10:09 (3) |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:25 | 07:23 | 07:22 | | 16:32 (1) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 16:54 | 51 | 15:52 (2) | 17:59 | | | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 3 | 16:35 (1) | 16:16 | 28 | 09:59 (3) | 16:07 | 26 | 10:10 (3) |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | 16:30 (1) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 16:56 | 50 | 15:55 (2) | 18:01 | | | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 3 | 16:33 (1) | 16:15 | 28 | 09:59 (3) | 16:08 | 25 | 10:11 (3) |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | 16:28 (1) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 16:58 | 46 | 15:56 (2) | 18:03 | | | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 4 | 16:32 (1) | 16:14 | 28 | 10:00 (3) | 16:09 | 25 | 10:11 (3) |
| 28 | 08:35 | | 15:15 (2) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | | 16:13 (1) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 17:00 | 41 | 15:56 (2) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 8 | 16:30 (1) | 16:13 | 29 | 10:01 (3) | 16:10 | 26 | 10:12 (3) |
| 29 | 08:33 | | 15:14 (2) | | | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | | 16:16 (1) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 17:02 | 43 | 15:57 (2) | | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 10 | 16:26 (1) | 16:12 | 29 | 10:01 (3) | 16:10 | 26 | 10:13 (3) |
| 30 | 08:31 | | 15:14 (2) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | | | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 17:04 | 44 | 15:58 (2) | | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:34 | 19:15 | 17:02 | | | 16:11 | 29 | 10:02 (3) | 16:11 | 26 | 10:12 (3) |
| 31 | 08:30 | | 15:13 (2) | | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | | | | 09:01 | | 09:47 (3) |
| | 17:06 | 46 | 15:59 (2) | | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | | | | 16:12 | 26 | 10:13 (3) |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1131 | | | 39 | | | | | | | | | | 34 | | | 493 | | | 822 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,62 | | | 0,85 | | | | | | | | | | 0,87 | | | 0,61 | | | 0,59 | |
| Total reduction | | 0,11 | | | 0,21 | | | | | | | | | | 0,26 | | | 0,10 | | | 0,08 | |
| Total, real | | 125 | | | 8 | | | | | | | | | | 9 | | | 47 | | | 65 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | April | May | June | July | August | September | October | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | | 15:45 (2) | 08:35 | | 09:19 (3) |
| | 16:14 | 15 | 09:54 (3) | 17:08 | 27 | 16:06 (2) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 3 | 15:48 (2) | 16:10 | 26 | 09:45 (3) |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | | 07:39 | | 15:43 (2) | 08:37 | | 09:20 (3) |
| | 16:15 | 16 | 09:54 (3) | 17:10 | 23 | 16:08 (2) | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | | 16:56 | 4 | 15:47 (2) | 16:09 | 25 | 09:45 (3) |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | | 07:41 | | 15:42 (2) | 08:38 | | 09:21 (3) |
| | 16:16 | 18 | 09:56 (3) | 17:12 | 16 | 16:10 (2) | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | 16:54 | 4 | 15:46 (2) | 16:08 | 24 | 09:45 (3) |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 16:05 (2) | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | | 07:43 | | 15:41 (2) | 08:40 | | 09:22 (3) |
| | 16:18 | 18 | 09:56 (3) | 17:15 | 7 | 16:12 (2) | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | | 16:52 | 5 | 15:46 (2) | 16:08 | 23 | 09:45 (3) |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 16:07 (2) | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | | 15:39 (2) | 08:42 | | 09:22 (3) |
| | 16:19 | 20 | 09:58 (3) | 17:17 | 6 | 16:13 (2) | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | | 16:50 | 5 | 15:44 (2) | 16:07 | 22 | 09:44 (3) |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 16:10 (2) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | | 15:37 (2) | 08:43 | | 09:24 (3) |
| | 16:20 | 21 | 09:59 (3) | 17:19 | 5 | 16:15 (2) | 18:18 | 20:20 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | | 16:48 | 6 | 15:43 (2) | 16:06 | 21 | 09:45 (3) |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 16:10 (2) | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | | 15:34 (2) | 08:44 | | 09:24 (3) |
| | 16:22 | 22 | 09:59 (3) | 17:21 | 5 | 16:15 (2) | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | | 16:46 | 7 | 15:41 (2) | 16:06 | 20 | 09:44 (3) |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 16:12 (2) | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 16:23 | 23 | 10:00 (3) | 17:23 | 5 | 16:17 (2) | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | | 16:44 | 16 | 15:41 (2) | 16:05 | 18 | 09:44 (3) |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 16:14 (2) | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 16:25 | 24 | 10:01 (3) | 17:25 | 4 | 16:18 (2) | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | | 16:42 | 24 | 15:39 (2) | 16:05 | 18 | 09:44 (3) |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 16:15 (2) | 07:04 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 | | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 16:26 | 25 | 10:03 (3) | 17:27 | 4 | 16:19 (2) | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | 16:40 | 26 | 15:36 (2) | 16:04 | 16 | 09:44 (3) |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 16:17 (2) | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 16:28 | 25 | 10:02 (3) | 17:29 | 3 | 16:20 (2) | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | 16:38 | 28 | 15:34 (2) | 16:04 | 15 | 09:44 (3) |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 16:17 (2) | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 16:29 | 26 | 10:03 (3) | 17:32 | 3 | 16:20 (2) | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | 16:36 | 27 | 15:31 (2) | 16:04 | 14 | 09:43 (3) |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 16:18 (2) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 16:31 | 27 | 10:04 (3) | 17:34 | 3 | 16:21 (2) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 25 | 09:40 (3) | 16:04 | 13 | 09:43 (3) |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 16:33 | 28 | 10:05 (3) | 17:36 | | | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | | 16:33 | 27 | 09:41 (3) | 16:04 | 12 | 09:43 (3) |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 16:35 | 28 | 10:06 (3) | 17:38 | | | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | | 16:31 | 27 | 09:41 (3) | 16:04 | 11 | 09:43 (3) |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 17:52 (1) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 16:36 | 29 | 10:06 (3) | 17:40 | | | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 3 17:55 (1) | 16:29 | 28 | 09:42 (3) | 16:04 | 9 | 09:43 (3) |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 17:50 (1) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 16:38 | 30 | 10:07 (3) | 17:42 | | | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 3 17:53 (1) | 16:28 | 29 | 09:43 (3) | 16:04 | 8 | 09:43 (3) |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 17:48 (1) | 08:11 | | 09:14 (3) | 08:56 | | 09:36 (3) |
| | 16:40 | 30 | 10:08 (3) | 17:44 | | | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 3 17:51 (1) | 16:26 | 29 | 09:43 (3) | 16:04 | 7 | 09:43 (3) |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 17:45 (1) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 16:42 | 30 | 10:08 (3) | 17:46 | | | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 4 17:49 (1) | 16:25 | 30 | 09:43 (3) | 16:04 | 6 | 09:43 (3) |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 17:41 (1) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 16:44 | 30 | 10:09 (3) | 17:49 | | | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 6 17:47 (1) | 16:23 | 31 | 09:44 (3) | 16:05 | 5 | 09:42 (3) |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 17:07 (1) | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 17:37 (1) | 08:17 | | 09:14 (3) | 08:59 | | 09:39 (3) |
| | 16:46 | 31 | 10:09 (3) | 17:51 | 7 | 17:14 (1) | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 6 17:43 (1) | 16:22 | 31 | 09:45 (3) | 16:05 | 4 | 09:43 (3) |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 17:12 (1) | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 16:48 | 30 | 10:08 (3) | 17:53 | 5 | 17:17 (1) | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | | 16:20 | 30 | 09:45 (3) | 16:05 | 4 | 09:43 (3) |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 17:15 (1) | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 16:50 | 30 | 10:09 (3) | 17:55 | 4 | 17:19 (1) | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | | 16:19 | 30 | 09:45 (3) | 16:06 | 4 | 09:44 (3) |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 17:17 (1) | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 16:52 | 29 | 10:09 (3) | 17:57 | 4 | 17:21 (1) | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | | 16:18 | 30 | 09:45 (3) | 16:06 | 6 | 09:45 (3) |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 17:18 (1) | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:25 | 07:23 | 07:22 | | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 16:54 | 29 | 10:09 (3) | 17:59 | 3 | 17:21 (1) | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | | 16:16 | 29 | 09:45 (3) | 16:07 | 6 | 09:45 (3) |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 17:20 (1) | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 16:56 | 29 | 10:10 (3) | 18:01 | 3 | 17:23 (1) | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | | 16:15 | 29 | 09:45 (3) | 16:08 | 7 | 09:47 (3) |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 16:58 | 27 | 10:09 (3) | 18:03 | | | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | | 16:14 | 28 | 09:45 (3) | 16:09 | 8 | 09:48 (3) |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 17:00 | 27 | 10:09 (3) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | | 16:13 | 28 | 09:45 (3) | 16:10 | 10 | 09:49 (3) |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 15:48 (2) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 17:02 | 25 | 10:08 (3) | | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 2 15:50 (2) | 16:12 | 27 | 09:45 (3) | 16:10 | 11 | 09:50 (3) |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 15:46 (2) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 17:04 | 38 | 15:59 (2) | | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:34 | 19:15 | 17:02 | 3 15:49 (2) | 16:11 | 26 | 09:45 (3) | 16:11 | 13 | 09:51 (3) |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | 15:45 (2) | | | | 09:01 | | 09:38 (3) |
| | 17:06 | 43 | 16:03 (2) | | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | 3 15:48 (2) | | | | 16:12 | 14 | 09:52 (3) |
| Potential sun hours | 242 | | | 269 | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | | | 224 | | |
| Total, worst case | | 823 | | | 137 | | | | | | | | | | 33 | | 669 | | | 400 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,65 | | | 0,74 | | | | | | | | | | 0,86 | | 0,65 | | | 0,65 | |
| Total reduction | | 0,12 | | | 0,18 | | | | | | | | | | 0,26 | | 0,10 | | | 0,09 | |
| Total, real | | 96 | | | 25 | | | | | | | | | | 9 | | 69 | | | 35 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | 16:56 (2) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 09:55 (3) | 17:08 | 25 | 10:10 (3) | 18:07 | 1 | 16:57 (2) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | 16:57 (2) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 15 | 09:56 (3) | 17:10 | 24 | 10:10 (3) | 18:09 | 2 | 17:36 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | 16:57 (2) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 16 | 09:57 (3) | 17:12 | 21 | 10:09 (3) | 18:12 | 4 | 17:38 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | 16:57 (2) | 07:00 | 05:48 | 04:59 |
| | 16:18 | 18 | 09:58 (3) | 17:15 | 19 | 10:08 (3) | 18:14 | 4 | 17:40 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | 17:38 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (3) | 17:17 | 14 | 10:06 (3) | 18:16 | 3 | 17:41 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | 17:40 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 21 | 10:01 (3) | 17:19 | 6 | 10:02 (3) | 18:18 | 2 | 17:42 (1) | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | | 07:12 | 17:40 (1) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 22 | 10:01 (3) | 17:21 | | | 18:20 | 3 | 17:43 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | | 07:09 | 17:41 (1) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 23 | 10:02 (3) | 17:23 | | | 18:22 | 2 | 17:43 (1) | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | | 07:07 | 17:42 (1) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 24 | 10:03 (3) | 17:25 | | | 18:24 | 1 | 17:43 (1) | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | | 07:04 | 17:42 (1) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 25 | 10:05 (3) | 17:27 | | | 18:26 | 1 | 17:43 (1) | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | | 07:02 | 17:43 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 26 | 10:05 (3) | 17:29 | | | 18:28 | 1 | 17:44 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | | 06:59 | 17:42 (1) | 06:40 | 05:32 | 04:54 |
| | 16:29 | 27 | 10:06 (3) | 17:32 | | | 18:30 | 1 | 17:43 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | | 06:57 | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 28 | 10:07 (3) | 17:34 | | | 18:32 | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | | 06:54 | | 06:35 | 05:28 | 04:53 |
| | 16:33 | 29 | 10:08 (3) | 17:36 | | | 18:34 | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | | 06:52 | | 06:33 | 05:27 | 04:53 |
| | 16:35 | 30 | 10:09 (3) | 17:38 | | | 18:36 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | | 06:49 | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 31 | 10:09 (3) | 17:40 | | | 18:38 | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | | 06:47 | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 31 | 10:10 (3) | 17:42 | | | 18:40 | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 32 | 10:11 (3) | 17:44 | | | 18:42 | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | | 06:41 | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 32 | 10:11 (3) | 17:46 | | | 18:44 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | | 06:39 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | 33 | 10:12 (3) | 17:49 | | | 18:46 | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 33 | 10:12 (3) | 17:51 | | | 18:48 | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 16:54 (2) | 06:34 | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 33 | 10:12 (3) | 17:53 | 1 | 16:55 (2) | 18:50 | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 16:54 (2) | 06:31 | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 33 | 10:13 (3) | 17:55 | 1 | 16:55 (2) | 18:52 | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 16:55 (2) | 06:29 | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 33 | 10:13 (3) | 17:57 | 1 | 16:56 (2) | 18:54 | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 16:55 (2) | 06:26 | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 33 | 10:13 (3) | 17:59 | 1 | 16:56 (2) | 18:56 | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 16:56 (2) | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 33 | 10:14 (3) | 18:01 | 1 | 16:57 (2) | 18:58 | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 16:56 (2) | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 32 | 10:14 (3) | 18:03 | 1 | 16:57 (2) | 19:00 | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 16:56 (2) | 06:18 | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 31 | 10:13 (3) | 18:05 | 2 | 16:58 (2) | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | 30 | 10:13 (3) | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 29 | 10:12 (3) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | 05:03 | |
| | 17:06 | 28 | 10:12 (3) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 844 | | | 117 | | | 25 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,64 | | | 0,66 | | | 0,93 | | | |
| Total reduction | | 0,11 | | | 0,16 | | | 0,31 | | | |
| Total, real | | 97 | | | 19 | | | 8 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | | 08:35 | | 09:21 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | | 16:10 | 26 | 09:47 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 18:21 (1) | 07:39 | | | 08:37 | | 09:22 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 1 | 18:22 (1) | 16:56 | | | 16:09 | 25 | 09:47 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 18:20 (1) | 07:41 | | | 08:38 | | 09:23 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 1 | 18:21 (1) | 16:54 | | | 16:08 | 24 | 09:47 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 18:19 (1) | 07:43 | | | 08:40 | | 09:24 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 2 | 18:21 (1) | 16:52 | | | 16:08 | 23 | 09:47 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 18:18 (1) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 2 | 18:20 (1) | 16:50 | 7 | 09:32 (3) | 16:07 | 22 | 09:47 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 18:17 (1) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 2 | 18:19 (1) | 16:48 | 15 | 09:36 (3) | 16:06 | 21 | 09:47 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 18:16 (1) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 2 | 18:18 (1) | 16:46 | 19 | 09:38 (3) | 16:06 | 20 | 09:46 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:32 (2) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 4 | 18:17 (1) | 16:44 | 22 | 09:40 (3) | 16:05 | 18 | 09:46 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 18:12 (1) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 3 | 18:15 (1) | 16:42 | 24 | 09:41 (3) | 16:05 | 16 | 09:45 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 17:31 (2) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 4 | 18:13 (1) | 16:40 | 26 | 09:42 (3) | 16:04 | 15 | 09:46 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 17:30 (2) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 3 | 18:11 (1) | 16:38 | 28 | 09:43 (3) | 16:04 | 13 | 09:45 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 17:29 (2) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 3 | 18:08 (1) | 16:36 | 29 | 09:44 (3) | 16:04 | 12 | 09:45 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 17:29 (2) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 1 | 17:30 (2) | 16:34 | 31 | 09:45 (3) | 16:04 | 10 | 09:44 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 17:28 (2) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 2 | 17:30 (2) | 16:33 | 31 | 09:45 (3) | 16:04 | 8 | 09:43 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 17:29 (2) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 1 | 17:30 (2) | 16:31 | 31 | 09:45 (3) | 16:04 | 6 | 09:43 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 17:28 (2) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 1 | 17:29 (2) | 16:29 | 33 | 09:47 (3) | 16:04 | 3 | 09:42 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 17:27 (2) | 08:09 | | 09:14 (3) | 08:56 | | |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 1 | 17:28 (2) | 16:28 | 33 | 09:47 (3) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 17:26 (2) | 08:11 | | 09:14 (3) | 08:56 | | |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 1 | 17:27 (2) | 16:26 | 33 | 09:47 (3) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 17:25 (2) | 08:13 | | 09:14 (3) | 08:57 | | |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 1 | 17:26 (2) | 16:25 | 33 | 09:47 (3) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 17:24 (2) | 08:15 | | 09:14 (3) | 08:58 | | |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 1 | 17:25 (2) | 16:23 | 33 | 09:47 (3) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | | 08:17 | | 09:15 (3) | 08:59 | | |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | | | 16:22 | 33 | 09:48 (3) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | | 08:19 | | 09:15 (3) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | | | 16:20 | 33 | 09:48 (3) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | | 08:21 | | 09:16 (3) | 09:00 | | |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | | | 16:19 | 32 | 09:48 (3) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | | 08:23 | | 09:16 (3) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | | | 16:18 | 32 | 09:48 (3) | 16:06 | | |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | | 08:25 | | 09:17 (3) | 09:00 | | |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | | | 16:16 | 31 | 09:48 (3) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | | 08:27 | | 09:17 (3) | 09:01 | | |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | | | 16:15 | 31 | 09:48 (3) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | | 08:28 | | 09:18 (3) | 09:01 | | |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | | | 16:14 | 30 | 09:48 (3) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:28 | | | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | | | 16:13 | 29 | 09:48 (3) | 16:10 | 5 | 09:49 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | | | 16:12 | 28 | 09:48 (3) | 16:10 | 8 | 09:51 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | | | 16:11 | 27 | 09:48 (3) | 16:11 | 9 | 09:51 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | | | | | 09:01 | | 09:42 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | | | | | | 16:12 | 11 | 09:53 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 36 | | | 734 | | | 295 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,91 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | | | 0,28 | | | 0,10 | | | 0,09 | |
| Total, real | | | | | | | | 10 | | | 74 | | | 25 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | | 07:27 | | 17:33 (1) | 07:08 | | | 05:55 | | 05:02 | |
| | 16:14 | 32 | 10:29 (3) | 17:08 | | | 18:07 | 2 | 17:35 (1) | 20:10 | | | 21:09 | | 22:03 | |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | | 07:24 | | 17:35 (1) | 07:05 | | | 05:53 | | 05:01 | |
| | 16:15 | 31 | 10:28 (3) | 17:10 | | | 18:09 | 2 | 17:37 (1) | 20:12 | | | 21:11 | | 22:04 | |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | | 07:22 | | 17:35 (1) | 07:03 | | | 05:51 | | 05:00 | |
| | 16:16 | 33 | 10:30 (3) | 17:12 | | | 18:12 | 2 | 17:37 (1) | 20:14 | | | 21:13 | | 22:05 | |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | | 07:19 | | 17:37 (1) | 07:00 | | | 05:48 | | 04:59 | |
| | 16:18 | 33 | 10:30 (3) | 17:15 | | | 18:14 | 1 | 17:38 (1) | 20:16 | | | 21:15 | | 22:06 | |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | | 07:17 | | | 06:58 | | | 05:46 | | 04:58 | |
| | 16:19 | 33 | 10:31 (3) | 17:17 | | | 18:16 | | | 20:18 | | | 21:17 | | 22:08 | |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 04:57 | |
| | 16:20 | 33 | 10:31 (3) | 17:19 | | | 18:18 | | | 20:20 | | | 21:18 | | 22:09 | |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | | 07:12 | | | 06:53 | | | 05:42 | | 04:56 | |
| | 16:22 | 33 | 10:31 (3) | 17:21 | | | 18:20 | | | 20:21 | | | 21:20 | | 22:10 | |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | | 04:56 | |
| | 16:23 | 34 | 10:32 (3) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | | 22:11 | |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | | 07:07 | | | 06:48 | | | 05:38 | | 04:55 | |
| | 16:25 | 33 | 10:32 (3) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | | 22:12 | |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 04:54 | |
| | 16:26 | 34 | 10:34 (3) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | | 22:13 | |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 16:26 (2) | 07:02 | | | 06:43 | | | 05:34 | | 04:54 | |
| | 16:28 | 34 | 10:33 (3) | 17:29 | 14 | 16:40 (2) | 18:28 | | | 20:29 | | | 21:28 | | 22:14 | |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 16:22 (2) | 06:59 | | | 06:40 | | | 05:32 | | 04:54 | |
| | 16:29 | 34 | 10:34 (3) | 17:32 | 17 | 16:43 (2) | 18:30 | | | 20:31 | | | 21:30 | | 22:14 | |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 16:20 (2) | 06:57 | | | 06:38 | | | 05:30 | | 04:53 | |
| | 16:31 | 34 | 10:34 (3) | 17:34 | 8 | 16:46 (2) | 18:32 | | | 20:33 | | | 21:32 | | 22:15 | |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 16:42 (2) | 06:54 | | | 06:35 | | | 05:28 | | 04:53 | |
| | 16:33 | 34 | 10:35 (3) | 17:36 | 6 | 16:48 (2) | 18:34 | | | 20:35 | | | 21:34 | | 22:16 | |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 16:44 (2) | 06:52 | | | 06:33 | | | 05:27 | | 04:53 | |
| | 16:35 | 33 | 10:35 (3) | 17:38 | 5 | 16:49 (2) | 18:36 | | | 20:37 | | | 21:35 | | 22:16 | |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 16:47 (2) | 06:49 | | | 06:30 | | | 05:25 | | 04:52 | |
| | 16:36 | 33 | 10:35 (3) | 17:40 | 4 | 16:51 (2) | 18:38 | | | 20:39 | | | 21:37 | | 22:17 | |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 16:49 (2) | 06:47 | | | 06:28 | | | 05:23 | | 04:52 | |
| | 16:38 | 32 | 10:35 (3) | 17:42 | 4 | 16:53 (2) | 18:40 | | | 20:41 | | | 21:39 | | 22:18 | |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 16:49 (2) | 06:44 | | | 06:25 | | | 05:21 | | 04:52 | |
| | 16:40 | 32 | 10:36 (3) | 17:44 | 4 | 16:53 (2) | 18:42 | | | 20:43 | | | 21:41 | | 22:18 | |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 16:51 (2) | 06:41 | | | 06:23 | | | 05:20 | | 04:52 | |
| | 16:42 | 31 | 10:35 (3) | 17:46 | 3 | 16:54 (2) | 18:44 | | | 20:45 | | | 21:42 | | 22:18 | |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 16:53 (2) | 06:39 | | | 06:20 | | | 05:18 | | 04:52 | |
| | 16:44 | 31 | 10:36 (3) | 17:49 | 2 | 16:55 (2) | 18:46 | | | 20:47 | | | 21:44 | | 22:19 | |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 16:53 (2) | 06:36 | | | 06:18 | | | 05:16 | | 04:52 | |
| | 16:46 | 30 | 10:35 (3) | 17:51 | 2 | 16:55 (2) | 18:48 | | | 20:49 | | | 21:46 | | 22:19 | |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 16:54 (2) | 06:34 | | | 06:16 | | | 05:15 | | 04:52 | |
| | 16:48 | 28 | 10:34 (3) | 17:53 | 2 | 16:56 (2) | 18:50 | | | 20:51 | | | 21:47 | | 22:19 | |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 16:54 (2) | 06:31 | | | 06:13 | | | 05:13 | | 04:53 | |
| | 16:50 | 28 | 10:35 (3) | 17:55 | 2 | 16:56 (2) | 18:52 | | | 20:53 | | | 21:49 | | 22:19 | |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 16:55 (2) | 06:29 | | | 06:11 | | | 05:12 | | 04:53 | |
| | 16:52 | 26 | 10:34 (3) | 17:57 | 2 | 16:57 (2) | 18:54 | | | 20:55 | | | 21:51 | | 22:19 | |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 16:55 (2) | 06:26 | | | 06:09 | | | 05:10 | | 04:53 | |
| | 16:54 | 24 | 10:33 (3) | 17:59 | 1 | 16:56 (2) | 18:56 | | | 20:57 | | | 21:52 | | 22:19 | |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 16:56 (2) | 06:23 | | | 06:06 | | | 05:09 | | 04:54 | |
| | 16:56 | 22 | 10:33 (3) | 18:01 | 11 | 17:30 (1) | 18:58 | | | 20:59 | | | 21:54 | | 22:19 | |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 17:28 (1) | 06:21 | | | 06:04 | | | 05:08 | | 04:54 | |
| | 16:58 | 19 | 10:31 (3) | 18:03 | 4 | 17:32 (1) | 19:00 | | | 21:01 | | | 21:55 | | 22:19 | |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 17:31 (1) | 06:18 | | | 06:02 | | | 05:06 | | 04:55 | |
| | 17:00 | 15 | 10:29 (3) | 18:05 | 3 | 17:34 (1) | 19:02 | | | 21:03 | | | 21:57 | | 22:19 | |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | | 05:05 | | 04:55 | |
| | 17:02 | 10 | 10:27 (3) | | | | 20:04 | | | 21:05 | | | 21:58 | | 22:19 | |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | | | 05:04 | | 04:56 | |
| | 17:04 | | | | | | 20:06 | | | 21:07 | | | 22:00 | | 22:19 | |
| 31 | 08:30 | | | | | | 07:11 | | | | | | 05:03 | | | |
| | 17:06 | | | | | | 20:08 | | | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | 520 | |
| Total, worst case | | 859 | | | 94 | | | 7 | | | | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | | | | |
| Wind dir. red. | | 0,56 | | | 0,85 | | | 0,94 | | | | | | | | |
| Total reduction | | 0,10 | | | 0,20 | | | 0,31 | | | | | | | | |
| Total, real | | 84 | | | 19 | | | 2 | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | | 08:35 | | 09:41 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | | 16:10 | 34 | 10:15 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | | 08:37 | | 09:42 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | | | 16:09 | 34 | 10:16 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | | 08:38 | | 09:43 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | | | 16:08 | 33 | 10:16 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | | 08:40 | | 09:44 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | | | 16:52 | | | 16:08 | 33 | 10:17 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | | 07:45 | | | 08:41 | | 09:43 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | | | 16:07 | 34 | 10:17 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | | 08:43 | | 09:44 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | | | 16:06 | 33 | 10:17 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | | 08:44 | | 09:44 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | | | 16:06 | 33 | 10:17 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | | 07:51 | | | 08:46 | | 09:45 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | | | 16:05 | 33 | 10:18 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | | 08:47 | | 09:45 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | | | 16:05 | 33 | 10:18 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 18:10 (1) | 07:55 | | | 08:48 | | 09:47 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 2 | 18:12 (1) | 16:40 | | | 16:04 | 32 | 10:19 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 18:09 (1) | 07:57 | | | 08:50 | | 09:47 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 2 | 18:11 (1) | 16:38 | | | 16:04 | 32 | 10:19 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 18:07 (1) | 07:59 | | | 08:51 | | 09:47 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 2 | 18:09 (1) | 16:36 | | | 16:04 | 32 | 10:19 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 18:05 (1) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 3 | 18:08 (1) | 16:34 | 10 | 09:59 (3) | 16:04 | 31 | 10:19 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 18:02 (1) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 4 | 18:06 (1) | 16:33 | 15 | 10:01 (3) | 16:04 | 31 | 10:19 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 17:59 (1) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 5 | 18:04 (1) | 16:31 | 19 | 10:03 (3) | 16:04 | 30 | 10:19 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 17:28 (2) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 10 | 18:01 (1) | 16:29 | 22 | 10:06 (3) | 16:04 | 31 | 10:20 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 17:27 (2) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 1 | 17:28 (2) | 16:28 | 24 | 10:07 (3) | 16:04 | 30 | 10:20 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 17:26 (2) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 2 | 17:28 (2) | 16:26 | 26 | 10:08 (3) | 16:04 | 30 | 10:21 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 17:25 (2) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 2 | 17:27 (2) | 16:25 | 28 | 10:09 (3) | 16:04 | 30 | 10:22 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 17:24 (2) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 2 | 17:26 (2) | 16:23 | 28 | 10:09 (3) | 16:05 | 30 | 10:21 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 17:23 (2) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 2 | 17:25 (2) | 16:22 | 30 | 10:11 (3) | 16:05 | 30 | 10:22 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 17:23 (2) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 2 | 17:25 (2) | 16:20 | 31 | 10:12 (3) | 16:05 | 30 | 10:22 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 17:21 (2) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 3 | 17:24 (2) | 16:19 | 31 | 10:12 (3) | 16:06 | 30 | 10:23 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 17:19 (2) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 4 | 17:23 (2) | 16:18 | 32 | 10:13 (3) | 16:06 | 31 | 10:24 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 16:18 (2) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 4 | 16:22 (2) | 16:16 | 32 | 10:13 (3) | 16:07 | 30 | 10:24 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 16:16 (2) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 4 | 16:20 (2) | 16:15 | 33 | 10:14 (3) | 16:08 | 30 | 10:25 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 16:14 (2) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 5 | 16:19 (2) | 16:14 | 33 | 10:14 (3) | 16:09 | 31 | 10:26 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:28 | | 16:11 (2) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | 6 | 16:17 (2) | 16:13 | 34 | 10:15 (3) | 16:10 | 30 | 10:26 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 15:50 (2) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 10 | 16:15 (2) | 16:12 | 33 | 10:15 (3) | 16:10 | 31 | 10:27 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 15:52 (2) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 20 | 16:12 (2) | 16:11 | 34 | 10:16 (3) | 16:11 | 32 | 10:27 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 15:56 (2) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | 12 | 16:08 (2) | | | | 16:12 | 31 | 10:27 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 107 | | | 495 | | | 975 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,86 | | | 0,56 | | | 0,56 | |
| Total reduction | | | | | | | | 0,26 | | | 0,09 | | | 0,07 | |
| Total, real | | | | | | | | 28 | | | 42 | | | 71 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 (5) | 05:40 | 21:02 (2) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 13 | 05:56 (5) | 21:40 1 | 21:03 (2) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:40 (5) | 05:41 | | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 16 | 05:56 (5) | 21:38 | | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:42 (5) | 05:43 | | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 13 | 05:55 (5) | 21:36 | | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:43 (5) | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 11 | 05:54 (5) | 21:34 | | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:44 (5) | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 8 | 05:52 (5) | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 (5) | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 1 | 05:49 (5) | 21:30 | | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 05:40 (5) | 05:02 | | 05:51 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 6 05:46 (5) | 22:15 | | 21:28 | | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 05:37 (5) | 05:03 | | 05:52 | | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 10 05:47 (5) | 22:14 | | 21:26 | | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 05:37 (5) | 05:04 | | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 12 05:49 (5) | 22:13 | | 21:24 | | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 05:35 (5) | 05:06 | | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 15 05:50 (5) | 22:12 | | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 20:54 (2) | 04:54 05:35 (5) | 05:07 | | 05:58 | | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 2 20:56 (2) | 22:13 16 05:51 (5) | 22:11 | | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05 (4) | 05:32 | 04:54 05:35 (5) | 05:08 | | 06:00 | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 6 07:11 (4) | 21:30 | 22:14 10 05:52 (5) | 22:10 | | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 07:02 (4) | 05:30 | 04:53 05:35 (5) | 05:09 | | 06:02 | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 10 07:12 (4) | 21:32 | 22:15 8 05:53 (5) | 22:09 | | 21:15 | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 07:00 (4) | 05:28 | 04:53 05:34 (5) | 05:11 | | 06:04 | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 13 07:13 (4) | 21:33 | 22:16 8 05:53 (5) | 22:08 | | 21:13 | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 06:58 (4) | 05:27 | 04:53 05:34 (5) | 05:12 | | 06:06 | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 16 07:14 (4) | 21:35 | 22:16 7 05:54 (5) | 22:07 | | 21:10 | | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:55 (4) | 05:25 | 04:52 05:34 (5) | 05:13 | | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 19 07:14 (4) | 21:37 | 22:17 7 05:55 (5) | 22:05 | | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 06:54 (4) | 05:23 | 04:52 05:34 (5) | 05:15 | | 06:09 | | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 20 07:14 (4) | 21:39 | 22:17 6 05:40 (5) | 22:04 | | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 06:53 (4) | 05:21 | 04:52 05:34 (5) | 05:16 | | 06:11 | 07:04 (4) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 21 07:14 (4) | 21:41 | 22:18 6 05:40 (5) | 22:03 | | 21:03 8 | 07:12 (4) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:53 (4) | 05:20 21:08 (2) | 04:52 05:34 (5) | 05:18 | | 06:13 | 07:02 (4) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 21 07:14 (4) | 21:42 1 21:09 (2) | 22:18 6 05:40 (5) | 22:02 | | 21:01 13 | 07:15 (4) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 06:54 (4) | 05:18 | 04:52 05:34 (5) | 05:19 | | 06:15 | 07:01 (4) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 19 07:13 (4) | 21:44 | 22:19 6 05:40 (5) | 22:00 | | 20:59 15 | 07:16 (4) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:54 (4) | 05:16 | 04:52 05:34 (5) | 05:21 | | 06:17 | 07:00 (4) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 19 07:13 (4) | 21:46 | 22:19 6 05:40 (5) | 21:59 | | 20:56 17 | 07:17 (4) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 06:54 (4) | 05:15 | 04:52 05:35 (5) | 05:23 21:18 (2) | | 06:19 | 06:58 (4) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 17 07:11 (4) | 21:47 | 22:19 6 05:41 (5) | 21:57 1 21:19 (2) | | 20:54 19 | 07:17 (4) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:55 (4) | 05:13 | 04:53 05:35 (5) | 05:24 | | 06:21 | 06:57 (4) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 15 07:10 (4) | 21:49 | 22:19 6 05:41 (5) | 21:56 | | 20:52 20 | 07:17 (4) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 06:57 (4) | 05:12 | 04:53 05:35 (5) | 05:26 21:18 (2) | | 06:23 | 06:57 (4) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 12 07:09 (4) | 21:51 | 22:19 7 05:57 (5) | 21:54 1 21:19 (2) | | 20:49 20 | 07:17 (4) | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 06:59 (4) | 05:10 | 04:53 05:36 (5) | 05:27 | | 06:25 | 06:57 (4) | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 7 07:06 (4) | 21:52 | 22:19 6 05:42 (5) | 21:52 | | 20:47 20 | 07:17 (4) | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 05:36 (5) | 05:29 | | 06:26 | 06:57 (4) | 07:25 | 07:24 | 08:26 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 7 05:57 (5) | 21:51 | | 20:44 20 | 07:17 (4) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 05:37 (5) | 05:31 | | 06:28 | 06:57 (4) | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 6 05:43 (5) | 21:49 | | 20:42 19 | 07:16 (4) | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 05:37 (5) | 05:33 | | 06:30 | 06:59 (4) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 7 05:57 (5) | 21:47 | | 20:39 16 | 07:15 (4) | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 05:38 (5) | 05:34 | | 06:32 | 07:01 (4) | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 9 05:57 (5) | 21:45 | | 20:37 13 | 07:14 (4) | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 05:38 (5) | 05:36 | | 06:34 | 07:03 (4) | 07:33 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 10 05:56 (5) | 21:44 | | 20:34 10 | 07:13 (4) | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | | 06:36 | 07:05 (4) | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | | 20:32 6 | 07:11 (4) | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 215 | 3 | 193 | 64 | 217 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | 0,88 | 0,79 | 0,80 | 0,98 | | | | |
| Total reduction | | | | 0,39 | 0,45 | 0,38 | 0,39 | 0,50 | | | | |
| Total, real | | | | 83 | 1 | 74 | 25 | 109 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 19:03 (3) | 05:55 | 05:02 | 04:57 | 05:40 | 07:52 (4) | 06:38 | 07:27 (4) | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 12 | 19:15 (3) | 21:09 | 22:02 | 22:18 | 21:40 6 | 07:58 (4) | 20:29 4 | 07:31 (4) | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:03 (3) | 05:53 | 05:01 | 04:57 | 05:41 | 07:50 (4) | 06:40 | 07:28 (4) | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 12 | 19:15 (3) | 21:11 | 22:04 | 22:18 | 21:38 10 | 08:00 (4) | 20:27 5 | 07:33 (4) | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:03 (3) | 05:51 | 05:00 | 04:58 | 05:43 | 07:50 (4) | 06:42 | 07:29 (4) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 12 | 19:15 (3) | 21:13 | 22:05 | 22:17 | 21:36 13 | 08:03 (4) | 20:24 6 | 07:35 (4) | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:04 (3) | 05:48 | 04:59 | 04:59 | 05:45 | 07:49 (4) | 06:43 | 07:31 (4) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 11 | 19:15 (3) | 21:14 | 22:06 | 22:17 | 21:34 16 | 08:05 (4) | 20:22 6 | 07:37 (4) | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45 (4) | 05:46 | 04:58 | 05:00 | 05:47 | 07:48 (4) | 06:45 | 07:33 (4) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 21 | 19:15 (3) | 21:16 | 22:07 | 22:16 | 21:32 19 | 08:07 (4) | 20:19 8 | 07:41 (4) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40 (4) | 05:44 | 04:57 | 05:01 | 05:49 | 07:46 (4) | 06:47 | 07:35 (4) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 29 | 19:15 (3) | 21:18 | 22:08 | 22:15 | 21:30 22 | 08:08 (4) | 20:17 18 | 07:54 (4) | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36 (4) | 05:42 | 04:56 | 05:02 | 05:51 | 07:44 (4) | 06:49 | 07:40 (4) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 35 | 19:15 (3) | 21:20 | 22:10 | 22:15 | 21:28 25 | 08:09 (4) | 20:14 9 | 07:49 (4) | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34 (4) | 05:40 | 04:56 | 05:03 | 05:52 | 07:43 (4) | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 38 | 19:15 (3) | 21:22 | 22:11 | 22:14 | 21:26 28 | 08:11 (4) | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 07:31 (4) | 05:38 | 04:55 | 05:04 | 05:54 | 07:40 (4) | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 41 | 19:15 (3) | 21:24 | 22:12 | 22:13 | 21:24 31 | 08:11 (4) | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30 (4) | 05:36 | 04:54 | 05:06 | 05:56 | 07:38 (4) | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 39 | 19:15 (3) | 21:26 | 22:12 | 22:12 | 21:21 34 | 08:12 (4) | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 07:28 (4) | 05:34 | 04:54 | 05:07 | 05:58 | 07:35 (4) | 06:57 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 39 | 08:07 (4) | 21:28 | 22:13 | 22:11 | 21:19 38 | 08:13 (4) | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (4) | 05:32 | 04:53 | 05:08 | 06:00 | 07:32 (4) | 06:59 | | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 41 | 08:08 (4) | 21:30 | 22:14 | 22:10 | 21:17 42 | 08:14 (4) | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 07:25 (4) | 05:30 | 04:53 | 05:09 | 06:02 | 07:29 (4) | 07:00 | | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 43 | 08:08 (4) | 21:32 | 22:15 | 22:09 | 21:15 44 | 08:13 (4) | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 07:24 (4) | 05:28 | 04:53 | 05:11 | 06:04 | | 07:02 | 19:21 (3) | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 45 | 08:09 (4) | 21:33 | 22:16 | 22:08 | 21:13 | | 19:56 1 | 19:22 (3) | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 05:27 | 04:52 | 05:12 | 06:06 | | 07:04 | 19:20 (3) | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:07 | 21:10 | | 19:53 2 | 19:22 (3) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 19:19 (3) | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 2 | 19:21 (3) | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 19:17 (3) | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:06 | | 19:48 2 | 19:19 (3) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 19:14 (3) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:41 | 22:18 | 22:03 | 21:03 | | 19:46 2 | 19:16 (3) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | | 07:12 | 19:10 (3) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 4 | 19:14 (3) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 05:18 | 04:52 | 05:19 | 06:15 | 07:25 (4) | 07:14 | 19:02 (3) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 1 | 07:26 (4) | 19:41 9 | 19:11 (3) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:16 | 04:52 | 05:21 | 06:17 | 07:25 (4) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 22:19 | 21:59 | 20:56 1 | 07:26 (4) | 19:38 | | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 05:15 | 04:52 | 05:22 | 06:19 | 07:24 (4) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 22:19 | 21:57 | 20:54 1 | 07:25 (4) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:17 (3) | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:24 (4) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 6 18:23 (3) | 20:53 | | 21:49 | 22:19 | 21:56 | 20:52 2 | 07:26 (4) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 18:13 (3) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:24 (4) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 14 18:27 (3) | 20:55 | | 21:51 | 22:19 | 21:54 | 20:49 2 | 07:26 (4) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:10 (3) | 06:09 | | 05:10 | 04:53 | 05:27 | 06:24 | 07:24 (4) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 18 18:28 (3) | 20:57 | | 21:52 | 22:19 | 21:52 | 20:47 2 | 07:26 (4) | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 18:09 (3) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 (4) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 22 18:31 (3) | 20:59 | | 21:54 | 22:19 | 21:51 | 20:44 2 | 07:27 (4) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 18:07 (3) | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 07:24 (4) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 24 18:31 (3) | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 3 | 07:27 (4) | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 18:05 (3) | 06:02 | | 05:06 | 04:55 | 05:33 | 06:30 | 07:25 (4) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 26 18:31 (3) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 2 | 07:27 (4) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 19:05 (3) | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 | 07:25 (4) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 27 19:32 (3) | 21:05 | | 21:58 | 22:19 | 21:45 | 20:37 3 | 07:28 (4) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 19:04 (3) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 07:26 (4) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 11 19:15 (3) | 21:07 | | 22:00 | 22:18 | 21:44 | 20:34 3 | 07:29 (4) | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 19:04 (3) | | | 05:03 | | 05:38 | 06:36 | 07:27 (4) | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 11 19:15 (3) | | | 22:01 | | 21:42 | 20:32 4 | 07:31 (4) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 159 | 418 | | | | | 354 | | 78 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | 0,51 | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | 1,00 | | | | | 1,00 | | 1,00 | | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | 0,51 | | 0,39 | | | | |
| Total, real | | | 54 | 164 | | | | | 182 | | 31 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | | May | | | June | July | | | August | | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | | 05:55 | | | 05:02 | 04:57 | | | 05:40 | | 06:49 (4) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | | 21:09 | | | 22:02 | 22:18 | | | 21:40 | 4 | 06:53 (4) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 19:40 (3) | 05:53 | | | 05:01 | 04:57 | | | 05:41 | | 06:49 (4) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 4 | 19:44 (3) | 21:11 | | | 22:04 | 22:18 | | | 21:38 | 4 | 06:53 (4) | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 19:40 (3) | 05:51 | | | 05:00 | 04:58 | | | 05:43 | | 06:50 (4) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 6 | 19:46 (3) | 21:13 | | | 22:05 | 22:17 | | | 21:36 | 5 | 06:55 (4) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 19:40 (3) | 05:48 | | | 04:59 | 04:59 | | | 05:45 | | 06:51 (4) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 6 | 19:46 (3) | 21:14 | | | 22:06 | 22:17 | | | 21:34 | 5 | 06:56 (4) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 19:40 (3) | 05:46 | | | 04:58 | 05:00 | | | 05:47 | | 06:52 (4) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 6 | 19:46 (3) | 21:16 | | | 22:07 | 22:16 | | | 21:32 | 5 | 06:57 (4) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 19:40 (3) | 05:44 | | 06:43 (4) | 04:57 | 05:01 | | | 05:49 | | 06:52 (4) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 6 | 19:46 (3) | 21:18 | 2 | 06:45 (4) | 22:08 | 22:15 | | | 21:30 | 6 | 06:58 (4) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 19:40 (3) | 05:42 | | 06:42 (4) | 04:56 | 05:02 | | | 05:51 | | 06:53 (4) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 5 | 19:45 (3) | 21:20 | 3 | 06:45 (4) | 22:10 | 22:15 | | | 21:28 | 7 | 07:00 (4) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 19:40 (3) | 05:40 | | 06:41 (4) | 04:56 | 05:03 | | | 05:52 | | 06:55 (4) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 5 | 19:45 (3) | 21:22 | 4 | 06:45 (4) | 22:11 | 22:14 | | | 21:26 | 6 | 07:01 (4) | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 19:40 (3) | 05:38 | | 06:40 (4) | 04:55 | 05:04 | | | 05:54 | | 06:55 (4) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 4 | 19:44 (3) | 21:24 | 5 | 06:45 (4) | 22:12 | 22:13 | | | 21:24 | 7 | 07:02 (4) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 19:40 (3) | 05:36 | | 06:39 (4) | 04:54 | 05:06 | | | 05:56 | | 06:57 (4) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 4 | 19:44 (3) | 21:26 | 6 | 06:45 (4) | 22:12 | 22:12 | | | 21:21 | 8 | 07:05 (4) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 19:40 (3) | 05:34 | | 06:38 (4) | 04:54 | 05:07 | | | 05:58 | | 06:59 (4) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 2 | 19:42 (3) | 21:28 | 37 | 07:15 (4) | 22:13 | 22:11 | | | 21:19 | 9 | 07:08 (4) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 19:40 (3) | 05:32 | | 06:38 (4) | 04:53 | 05:08 | | | 06:00 | | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 1 | 19:41 (3) | 21:30 | 37 | 07:15 (4) | 22:14 | 22:10 | | | 21:17 | | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | | 05:30 | | 06:37 (4) | 04:53 | 05:09 | | | 06:02 | | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | | 21:32 | 38 | 07:15 (4) | 22:15 | 22:09 | | | 21:15 | | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | | 05:28 | | 06:36 (4) | 04:53 | 05:11 | | | 06:04 | | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | | 21:33 | 39 | 07:15 (4) | 22:16 | 22:08 | | | 21:13 | | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | | 05:27 | | 06:37 (4) | 04:52 | 05:12 | | | 06:06 | | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | | 21:35 | 38 | 07:15 (4) | 22:16 | 22:07 | | | 21:10 | | | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | | 05:25 | | 06:36 (4) | 04:52 | 05:13 | | | 06:07 | | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | | 21:37 | 39 | 07:15 (4) | 22:17 | 22:05 | | | 21:08 | | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | | 05:23 | | 06:36 (4) | 04:52 | 05:15 | | | 06:09 | | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | | 21:39 | 39 | 07:15 (4) | 22:17 | 22:04 | | | 21:06 | | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | | 05:21 | | 06:35 (4) | 04:52 | 05:16 | | | 06:11 | | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | | 21:41 | 40 | 07:15 (4) | 22:18 | 22:03 | | | 21:03 | | | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | | 05:20 | | 06:35 (4) | 04:52 | 05:18 | | | 06:13 | | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | 21:42 | 40 | 07:15 (4) | 22:18 | 22:01 | | | 21:01 | | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | | 05:18 | | 06:35 (4) | 04:52 | 05:19 | | | 06:15 | | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | | 21:44 | 40 | 07:15 (4) | 22:19 | 22:00 | | | 20:59 | | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | | 05:16 | | 06:51 (4) | 04:52 | 05:21 | | | 06:17 | | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | | 21:46 | 24 | 07:15 (4) | 22:19 | 21:59 | | | 20:56 | | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | | 05:15 | | 06:54 (4) | 04:52 | 05:22 | | | 06:19 | | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | | 21:47 | 45 | 07:39 (4) | 22:19 | 21:57 | | | 20:54 | | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | | 05:13 | | 06:57 (4) | 04:53 | 05:24 | | 06:45 (4) | 06:21 | | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | | 21:49 | 42 | 07:39 (4) | 22:19 | 21:56 | 2 | 06:47 (4) | 20:52 | | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | | 05:12 | | 06:59 (4) | 04:53 | 05:26 | | 06:45 (4) | 06:23 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | | 21:51 | 41 | 07:40 (4) | 22:19 | 21:54 | 3 | 06:48 (4) | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | | 05:10 | | 07:00 (4) | 04:53 | 05:27 | | 06:46 (4) | 06:24 | | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | | 21:52 | 39 | 07:39 (4) | 22:19 | 21:52 | 3 | 06:49 (4) | 20:47 | | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | | 05:09 | | 07:02 (4) | 04:54 | 05:29 | | 06:46 (4) | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | | 21:54 | 37 | 07:39 (4) | 22:19 | 21:51 | 3 | 06:49 (4) | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | | 05:08 | | 07:03 (4) | 04:54 | 05:31 | | 06:47 (4) | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | | 21:55 | 37 | 07:40 (4) | 22:19 | 21:49 | 3 | 06:50 (4) | 20:42 | | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | | 07:03 (4) | 05:06 | | 07:05 (4) | 04:55 | 05:33 | | 06:46 (4) | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 10 | 07:13 (4) | 21:57 | 35 | 07:40 (4) | 22:19 | 21:47 | 4 | 06:50 (4) | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 06:58 (4) | 05:05 | | 07:06 (4) | 04:55 | 05:34 | | 06:47 (4) | 06:32 | | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 17 | 07:15 (4) | 21:58 | 34 | 07:40 (4) | 22:19 | 21:45 | 4 | 06:51 (4) | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:54 (4) | 05:04 | | 07:07 (4) | 04:56 | 05:36 | | 06:48 (4) | 06:34 | | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 13 | 07:07 (4) | 22:00 | 33 | 07:40 (4) | 22:18 | 21:44 | 4 | 06:52 (4) | 20:34 | | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 07:08 (4) | | 05:38 | | 06:48 (4) | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | 32 | 07:40 (4) | | 21:42 | 4 | 06:52 (4) | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | | | 520 | 521 | | | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 89 | | | 806 | | | | 30 | | | 66 | | | | | |
| Sun reduction | | | | | 0,39 | | | 0,52 | | | | 0,49 | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,98 | | | 0,95 | | | | 0,95 | | | 0,95 | | | | | |
| Total reduction | | | | | 0,39 | | | 0,49 | | | | 0,46 | | | 0,49 | | | | | |
| Total, real | | | | | 34 | | | 397 | | | | 14 | | | 32 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | | May | | June | | July | | August | | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | | 05:55 | | 05:02 | | 04:57 | | 05:40 | | | 06:38 | | 07:35 | | 07:37 | | 08:35 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | | 21:09 | | 22:02 | | 22:18 | | 21:40 | | | 20:29 | | 19:12 | | 16:58 | | 16:10 |
| 2 | 09:01 | | 08:26 | | 07:24 | | 07:05 | | | 05:53 | | 05:01 | | 04:58 | | 05:41 | | | 06:40 | | 07:37 | | 07:39 | | 08:37 |
| | 16:15 | | 17:10 | | 18:09 | | 20:12 | | | 21:11 | | 22:04 | | 22:18 | | 21:38 | | | 20:27 | | 19:09 | | 16:56 | | 16:09 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | | 05:51 | | 05:00 | | 04:58 | | 05:43 | | | 06:42 | | 07:38 | | 07:41 | | 08:38 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | | 21:13 | | 22:05 | | 22:17 | | 21:36 | | | 20:24 | | 19:07 | | 16:54 | | 16:08 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | | 05:48 | | 04:59 | | 04:59 | | 05:45 | | | 06:43 | | 07:40 | | 07:43 | | 08:40 |
| | 16:17 | | 17:14 | | 18:14 | | 20:15 | | | 21:14 | | 22:06 | | 22:17 | | 21:34 | | | 20:22 | | 19:04 | | 16:51 | | 16:07 |
| 5 | 09:00 | | 08:20 | | 07:17 | | 06:58 | | | 05:46 | | 04:58 | | 05:00 | | 05:47 | | | 06:45 | | 07:42 | | 07:45 | | 08:41 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | | | 21:16 | | 22:07 | | 22:16 | | 21:32 | | | 20:19 | | 19:02 | | 16:49 | | 16:07 |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | | 05:44 | | 04:57 | | 05:01 | | 05:49 | | | 06:47 | | 07:44 | | 07:47 | | 08:43 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | | | 21:18 | | 22:08 | | 22:15 | | 21:30 | | | 20:17 | | 18:59 | | 16:47 | | 16:06 |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | | 05:42 | | 04:56 | | 05:02 | | 05:51 | | | 06:49 | | 07:46 | | 07:49 | | 08:44 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | | | 21:20 | | 22:10 | | 22:15 | | 21:28 | | | 20:14 | | 18:57 | | 16:45 | | 16:06 |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | | 05:40 | | 04:56 | | 05:03 | | 05:52 | | | 06:51 | | 07:48 | | 07:51 | | 08:46 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | | | 21:22 | | 22:11 | | 22:14 | | 21:26 | | | 20:12 | | 18:54 | | 16:44 | | 16:05 |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:48 | | 19:50 (3) | 05:38 | | 04:55 | | 05:04 | | 05:54 | | | 06:53 | | 07:50 | | 07:53 | | 08:47 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | 7 | 19:57 (3) | 21:24 | | 22:12 | | 22:13 | | 21:24 | | | 20:09 | | 18:52 | | 16:42 | | 16:05 |
| 10 | 08:57 | | 08:10 | | 07:04 | | 06:45 | | 19:48 (3) | 05:36 | | 04:54 | | 05:06 | | 05:56 | | | 06:55 | | 07:52 | | 07:55 | | 08:48 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | 11 | 19:59 (3) | 21:26 | | 22:12 | | 22:12 | | 21:21 | | | 20:06 | | 18:49 | | 16:40 | | 16:04 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 19:45 (3) | 05:34 | | 04:54 | | 05:07 | | 05:58 | | | 06:57 | | 07:54 | | 07:57 | | 08:49 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | 16 | 20:01 (3) | 21:28 | | 22:13 | | 22:11 | | 21:19 | | | 20:04 | | 18:47 | | 16:38 | | 16:04 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 19:44 (3) | 05:32 | | 04:53 | | 05:08 | | 06:00 | | | 06:59 | | 07:56 | | 07:59 | | 08:51 |
| | 16:29 | | 17:32 | | 18:30 | | 20:31 | 19 | 20:03 (3) | 21:30 | | 22:14 | | 22:10 | | 21:17 | | | 20:01 | | 18:44 | | 16:36 | | 16:04 |
| 13 | 08:54 | | 08:04 | | 06:57 | | 06:38 | | 19:42 (3) | 05:30 | | 04:53 | | 05:09 | | 06:02 | | | 07:00 | | 07:58 | | 08:01 | | 08:52 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | 22 | 20:04 (3) | 21:32 | | 22:15 | | 22:09 | | 21:15 | | | 19:59 | | 18:42 | | 16:34 | | 16:04 |
| 14 | 08:53 | | 08:02 | | 06:54 | | 06:35 | | 19:42 (3) | 05:28 | | 04:53 | | 05:11 | | 06:04 | | | 07:02 | | 08:00 | | 08:03 | | 08:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | 24 | 20:06 (3) | 21:33 | | 22:16 | | 22:08 | | 21:13 | | | 19:56 | | 18:39 | | 16:33 | | 16:04 |
| 15 | 08:52 | | 07:59 | | 06:52 | | 06:33 | | 19:41 (3) | 05:27 | | 04:52 | | 05:12 | | 06:06 | | | 07:04 | | 08:02 | | 08:05 | | 08:54 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | 25 | 20:06 (3) | 21:35 | | 22:16 | | 22:07 | | 21:10 | | | 19:53 | | 18:37 | | 16:31 | | 16:04 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 19:40 (3) | 05:25 | | 04:52 | | 05:13 | | 06:07 | | | 07:06 | | 08:04 | | 08:07 | | 08:55 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | 26 | 20:06 (3) | 21:37 | | 22:17 | | 22:05 | | 21:08 | | | 19:51 | | 18:34 | | 16:29 | | 16:04 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:28 | | 19:40 (3) | 05:23 | | 04:52 | | 05:15 | | 06:09 | | | 07:08 | | 08:06 | | 08:09 | | 08:55 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | 26 | 20:06 (3) | 21:39 | | 22:17 | | 22:04 | | 21:06 | | | 19:48 | | 18:32 | | 16:28 | | 16:04 |
| 18 | 08:49 | | 07:53 | | 06:44 | | 06:25 | | 19:39 (3) | 05:21 | | 04:52 | | 05:16 | | 06:11 | | | 07:10 | | 08:08 | | 08:11 | | 08:56 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | 26 | 20:05 (3) | 21:41 | | 22:18 | | 22:03 | | 21:03 | | | 19:46 | | 18:30 | | 16:26 | | 16:04 |
| 19 | 08:48 | | 07:50 | | 06:41 | | 06:23 | | 19:40 (3) | 05:20 | | 04:52 | | 05:18 | | 06:13 | | | 07:12 | | 08:10 | | 08:13 | | 08:57 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | 25 | 20:05 (3) | 21:42 | | 22:18 | | 22:01 | | 21:01 | | | 19:43 | | 18:27 | | 16:24 | | 16:04 |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:20 | | 19:40 (3) | 05:18 | | 04:52 | | 05:19 | | 06:15 | | | 07:14 | | 08:12 | | 08:15 | | 08:58 |
| | 16:44 | | 17:49 | | 18:46 | | 20:47 | 25 | 20:05 (3) | 21:44 | | 22:19 | | 22:00 | | 20:59 | | | 19:41 | | 18:25 | | 16:23 | | 16:04 |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | | 19:40 (3) | 05:16 | | 04:52 | | 05:21 | | 06:17 | | | 07:16 | | 08:14 | | 08:17 | | 08:58 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | 23 | 20:03 (3) | 21:46 | | 22:19 | | 21:59 | | 20:56 | | | 19:38 | | 18:22 | | 16:22 | | 16:05 |
| 22 | 08:44 | | 07:43 | | 06:34 | | 06:16 | | 19:41 (3) | 05:15 | | 04:52 | | 05:22 | | 06:19 | | | 07:17 | | 08:16 | | 08:19 | | 08:59 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | 22 | 20:03 (3) | 21:47 | | 22:19 | | 21:57 | | 20:54 | | | 19:35 | | 18:20 | | 16:20 | | 16:05 |
| 23 | 08:42 | | 07:41 | | 06:31 | | 06:13 | | 19:42 (3) | 05:13 | | 04:53 | | 05:24 | | 06:21 | | | 07:19 | | 08:18 | | 08:21 | | 08:59 |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | 20 | 20:02 (3) | 21:49 | | 22:19 | | 21:55 | | 20:52 | | | 19:33 | | 18:18 | | 16:19 | | 16:06 |
| 24 | 08:41 | | 07:39 | | 06:28 | | 06:11 | | 19:43 (3) | 05:12 | | 04:53 | | 05:26 | | 06:23 | | | 07:21 | | 08:20 | | 08:23 | | 09:00 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | 18 | 20:01 (3) | 21:51 | | 22:19 | | 21:54 | | 20:49 | | | 19:30 | | 18:15 | | 16:18 | | 16:06 |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:09 | | 19:44 (3) | 05:10 | | 04:53 | | 05:27 | | 06:24 | | | 07:23 | | 07:22 | | 08:25 | | 09:00 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | 14 | 19:58 (3) | 21:52 | | 22:19 | | 21:52 | | 20:47 | | | 19:28 | | 17:13 | | 16:16 | | 16:07 |
| 26 | 08:38 | | 07:34 | | 06:23 | | 06:06 | | 19:46 (3) | 05:09 | | 04:54 | | 05:29 | | 06:26 | | | 20:08 (3) | | 07:25 | | 07:24 | | 08:26 | | 09:00 |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | 9 | 19:55 (3) | 21:54 | | 22:19 | | 21:51 | | 20:44 | 1 | | 20:09 (3) | | 19:25 | | 17:11 | | 16:15 | | 16:08 |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:04 | | | 05:08 | | 04:54 | | 05:31 | | 06:28 | | | 20:07 (3) | | 07:27 | | 07:26 | | 08:28 | | 09:01 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | | 21:55 | | 22:19 | | 21:49 | | 20:42 | 1 | | 20:08 (3) | | 19:22 | | 17:09 | | 16:14 | | 16:09 |
| 28 | 08:34 | | 07:29 | | 06:18 | | 06:02 | | | 05:06 | | 04:55 | | 05:33 | | 06:30 | | | 20:06 (3) | | 07:29 | | 07:28 | | 08:30 | | 09:01 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | | 21:57 | | 22:19 | | 21:47 | | 20:39 | 1 | | 20:07 (3) | | 19:20 | | 17:06 | | 16:13 | | 16:09 |
| 29 | 08:33 | | | | 07:16 | | 05:59 | | | 05:05 | | 04:55 | | 05:34 | | 06:32 | | | 20:05 (3) | | 07:31 | | 07:30 | | 08:32 | | 09:01 |
| | 17:02 | | | | 20:04 | | 21:05 | | | 21:58 | | 22:19 | | 21:45 | | 20:37 | 2 | | 20:07 (3) | | 19:17 | | 17:04 | | 16:12 | | 16:10 |
| 30 | 08:31 | | | | 07:13 | | 05:57 | | | 05:04 | | 04:56 | | 05:36 | | 06:34 | | | 20:04 (3) | | 07:33 | | 07:32 | | 08:33 | | 09:01 |
| | 17:04 | | | | 20:06 | | 21:07 | | | 22:00 | | 22:18 | | 21:44 | | 20:34 | 1 | | 20:05 (3) | | 19:15 | | 17:02 | | 16:11 | | 16:11 |
| 31 | 08:29 | | | | 07:10 | | | | | 05:03 | | | | 05:38 | | 06:36 | | | | | | | 07:35 | | | | 09:01 |
| | 17:06 | | | | 20:08 | | | | | 22:01 | | | | 21:42 | | 20:32 | | | | | | | 17:00 | | | | 16:12 |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | | 501 | | 520 | | 521 | | 465 | | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | | | | | | | | | 358 | | | | | | | | | 6 | | | | | | | |
| Sun reduction | | | | | | | | | 0,39 | | | | | | | | | 0,51 | | | | | | | |
| Oper. time red. | | | | | | | | | 1,00 | | | | | | | | | 1,00 | | | | | | | |
| Wind dir. red. | | | | | | | | | 0,99 | | | | | | | | | 0,99 | | | | | | | |
| Total reduction | | | | | | | | | 0,39 | | | | | | | | | 0,51 | | | | | | | |
| Total, real | | | | | | | | | 139 | | | | | | | | | 3 | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | 04:57 | | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | | 22:02 | 22:18 | | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 19:42 (3) | | 05:01 | 04:57 | | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 2 | 19:44 (3) | | 22:04 | 22:18 | | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 19:40 (3) | | 05:00 | 04:58 | | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 6 | 19:46 (3) | | 22:05 | 22:17 | | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 19:40 (3) | | 04:59 | 04:59 | | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 8 | 19:48 (3) | | 22:06 | 22:17 | | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 19:40 (3) | | 04:58 | 05:00 | | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 9 | 19:49 (3) | | 22:07 | 22:16 | | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 19:40 (3) | | 04:57 | 05:01 | | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 12 | 19:52 (3) | | 22:08 | 22:15 | | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 19:40 (3) | | 04:56 | 05:02 | | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 13 | 19:53 (3) | | 22:10 | 22:15 | | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 19:40 (3) | | 04:56 | 05:03 | | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 14 | 19:54 (3) | | 22:11 | 22:14 | | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 19:40 (3) | | 04:55 | 05:04 | | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 14 | 19:54 (3) | | 22:12 | 22:13 | | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 19:40 (3) | | 04:54 | 05:06 | | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 14 | 19:54 (3) | | 22:12 | 22:12 | | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 19:40 (3) | | 04:54 | 05:07 | | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 13 | 19:53 (3) | | 22:13 | 22:11 | | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 19:40 (3) | | 04:53 | 05:08 | | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 13 | 19:53 (3) | | 22:14 | 22:10 | | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 19:40 (3) | | 04:53 | 05:09 | | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 12 | 19:52 (3) | | 22:15 | 22:09 | | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | 19:40 (3) | | 04:53 | 05:11 | | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 11 | 19:51 (3) | | 22:16 | 22:08 | | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 19:40 (3) | | 04:52 | 05:12 | | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 10 | 19:50 (3) | | 22:16 | 22:07 | | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 19:40 (3) | | 04:52 | 05:13 | | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 8 | 19:48 (3) | | 22:17 | 22:05 | | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 19:40 (3) | | 04:52 | 05:15 | | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 6 | 19:46 (3) | | 22:17 | 22:04 | | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 19:37 (3) | | 06:29 (4) | 04:52 | | 05:16 | | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 4 | 19:41 (3) | | 06:45 (4) | 22:18 | | 22:03 | | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | | | 06:26 (4) | 04:52 | | 05:18 | | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | | 06:49 (4) | 22:18 | | 22:01 | | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | | | 06:23 (4) | 04:52 | | 05:19 | 06:35 (4) | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | | | 06:50 (4) | 22:19 | | 22:00 | 06:37 (4) | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | | | 06:23 (4) | 04:52 | | 05:21 | 06:35 (4) | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | | | 06:53 (4) | 22:19 | | 21:59 | 06:40 (4) | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | | | 06:23 (4) | 04:52 | | 05:22 | 06:33 (4) | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | | | 06:30 (4) | 22:19 | | 21:57 | 06:42 (4) | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | | | 06:25 (4) | 04:53 | | 05:24 | 06:33 (4) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | | | 06:28 (4) | 22:19 | | 21:55 | 06:47 (4) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | | | | 04:53 | | 05:26 | 06:34 (4) | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | | | | 22:19 | | 21:54 | 06:48 (4) | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | | | | 04:53 | | 05:27 | 06:37 (4) | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | | | | 22:19 | | 21:52 | 06:49 (4) | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | | | | 04:54 | | 05:29 | 06:41 (4) | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | | | | 22:19 | | 21:51 | 06:49 (4) | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | | | | 04:54 | | 05:31 | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | | | | 22:19 | | 21:49 | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | | | | 04:55 | | 05:33 | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | | | | 22:19 | | 21:47 | | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | | | | 04:55 | | 05:34 | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | | | | 22:19 | | 21:45 | | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | | | | 04:56 | | 05:36 | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | | | | 22:18 | | 21:44 | | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | | | | | 05:38 | | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | | | | | 21:42 | | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 169 | | 89 | | | 64 | | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | 0,49 | | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 1,00 | | 0,89 | | | 0,89 | | | | | |
| Total reduction | | | | | 0,39 | | 0,46 | | | 0,44 | | | | | |
| Total, real | | | | | 67 | | 41 | | | 28 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 19:40 (3) | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 4 | 19:44 (3) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 19:40 (3) | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 6 | 19:46 (3) | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 19:40 (3) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 8 | 19:48 (3) | 21:14 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 19:40 (3) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 9 | 19:49 (3) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 19:40 (3) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 12 | 19:52 (3) | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 19:40 (3) | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 13 | 19:53 (3) | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 19:40 (3) | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 14 | 19:54 (3) | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 19:40 (3) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 13 | 19:53 (3) | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 19:40 (3) | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 12 | 19:52 (3) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 19:40 (3) | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 11 | 19:51 (3) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 19:40 (3) | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 10 | 19:50 (3) | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | | 19:40 (3) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 8 | 19:48 (3) | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 19:40 (3) | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 7 | 19:47 (3) | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 19:40 (3) | 05:27 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 3 | 19:43 (3) | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | | 21:44 | 22:19 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 130 | | | | | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | | | | |
| Wind dir. red. | | | | | 1,00 | | | | | | | | | |
| Total reduction | | | | | 0,39 | | | | | | | | | |
| Total, real | | | | | 51 | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 20:33 (3) | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 1 | 20:34 (3) | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 20:33 (3) | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 1 | 20:34 (3) | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:14 | | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | | 04:55 | 05:04 | 05:54 | 20:42 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | | 22:12 | 22:13 | 21:24 1 | 20:43 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | | 04:54 | 05:06 | 05:56 | 20:42 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | | 22:12 | 22:12 | 21:21 1 | 20:43 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | | 04:54 | 05:07 | 05:58 | 20:42 (3) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | | 22:13 | 22:11 | 21:19 1 | 20:43 (3) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | | 04:53 | 05:08 | 06:00 | 20:41 (3) | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | | 22:14 | 22:10 | 21:17 2 | 20:43 (3) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | | 04:53 | 05:09 | 06:02 | 20:40 (3) | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | | 22:15 | 22:09 | 21:15 1 | 20:41 (3) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | | 04:53 | 05:11 | 06:04 | 20:39 (3) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | | 22:16 | 22:08 | 21:13 2 | 20:41 (3) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | | 04:52 | 05:12 | 06:06 | 20:38 (3) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | | 22:16 | 22:07 | 21:10 1 | 20:39 (3) | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | | 22:17 | 22:04 | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | | 04:52 | 05:16 | 06:11 | 20:31 (3) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | | 22:18 | 22:03 | 21:03 1 | 20:32 (3) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | | 04:52 | 05:18 | 06:13 | 20:23 (3) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | | 22:18 | 22:01 | 21:01 7 | 20:30 (3) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | | 04:52 | 05:19 | 06:15 | | 07:14 | 08:12 | 08:15 | 08:58 |
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| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | | 04:52 | 05:21 | 06:17 | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | | 22:19 | 21:59 | 20:56 | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | | 04:52 | 05:23 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | | 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | | 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | | 22:19 | 21:55 | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 20:17 (3) | 05:12 | | 04:53 | 05:26 | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 8 20:25 (3) | 21:51 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 20:25 (3) | 05:10 | | 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 1 20:26 (3) | 21:52 | | 22:19 | 21:52 | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | | 04:54 | 05:29 | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | | 22:19 | 21:51 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 20:29 (3) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 1 20:30 (3) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 20:31 (3) | 05:06 | | 04:55 | 05:33 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 1 20:32 (3) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 20:32 (3) | 05:05 | | 04:55 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 1 20:33 (3) | 21:58 | | 22:19 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:32 (3) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 2 20:34 (3) | 22:00 | | 22:18 | 21:44 | 20:34 | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 14 | 2 | | | 17 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | | | 0,49 | | | | |
| Total, real | | | | 5 | 1 | | | 8 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | | July | | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | 05:55 | | 05:02 | | 05:51 (4) | 04:57 | | | 05:40 | | 20:56 (3) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | 21:09 | | 22:02 | 1 | 05:52 (4) | 22:18 | | | 21:40 | 2 | 20:58 (3) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | | 08:26 | | 07:24 | | 07:05 | | 05:53 | | 05:01 | | 05:51 (4) | 04:58 | | | 05:41 | | 20:55 (3) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | | 17:10 | | 18:09 | | 20:12 | | 21:11 | | 22:04 | 1 | 05:52 (4) | 22:18 | | | 21:38 | 2 | 20:57 (3) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 05:51 | 20:34 (3) | 05:00 | | 05:52 (4) | 04:58 | | | 05:43 | | 20:54 (3) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 4 | 21:13 | 20:38 (3) | 22:05 | 1 | 05:53 (4) | 22:17 | | | 21:36 | 3 | 20:57 (3) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:48 | 20:35 (3) | 04:59 | | | 04:59 | | | 05:45 | | 20:54 (3) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | | 17:14 | | 18:14 | | 20:15 | 6 | 21:14 | 20:41 (3) | 22:06 | | | 22:17 | | | 21:34 | 2 | 20:56 (3) | 20:22 | 19:04 | 16:51 | 16:08 |
| 5 | 09:00 | | 08:20 | | 07:17 | | 06:58 | | 05:46 | 20:38 (3) | 04:58 | | 05:51 (4) | 05:00 | 05:57 (4) | | 05:47 | | 20:53 (3) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | 4 | 21:16 | 20:42 (3) | 22:07 | 1 | 05:52 (4) | 22:16 | 05:58 (4) | 1 | 21:32 | 3 | 20:56 (3) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 05:44 | 20:40 (3) | 04:57 | | 05:51 (4) | 05:01 | | | 05:49 | | 20:51 (3) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | 4 | 21:18 | 20:44 (3) | 22:08 | 1 | 05:52 (4) | 22:15 | | | 21:30 | 3 | 20:54 (3) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | 05:42 | 20:42 (3) | 04:56 | | | 05:02 | | | 05:51 | | 20:49 (3) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | 3 | 21:20 | 20:45 (3) | 22:10 | | | 22:15 | | | 21:28 | 4 | 20:53 (3) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | 05:40 | 20:43 (3) | 04:56 | | | 05:03 | 05:58 (4) | | 05:52 | | 20:47 (3) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | 3 | 21:22 | 20:46 (3) | 22:11 | | | 22:14 | 05:59 (4) | 1 | 21:26 | 4 | 20:51 (3) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:48 | | 05:38 | 20:44 (3) | 04:55 | | 05:52 (4) | 05:04 | 05:58 (4) | | 05:54 | | 20:42 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | 2 | 21:24 | 20:46 (3) | 22:12 | 1 | 05:53 (4) | 22:13 | 05:59 (4) | 1 | 21:24 | 6 | 20:48 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 20:44 (3) | 04:54 | | | 05:06 | 05:58 (4) | | 05:56 | | 20:42 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | 3 | 21:26 | 20:47 (3) | 22:12 | | | 22:12 | 05:59 (4) | 1 | 21:21 | 3 | 20:45 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:43 | | 05:34 | 20:45 (3) | 04:54 | | 05:52 (4) | 05:07 | 05:59 (4) | | 05:58 | | | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | 2 | 21:28 | 20:47 (3) | 22:13 | 1 | 05:53 (4) | 22:11 | 06:01 (4) | 2 | 21:19 | | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 20:46 (3) | 04:53 | | | 05:08 | 06:00 (4) | | 06:00 | | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | | 17:32 | | 18:30 | | 20:31 | 2 | 21:30 | 20:48 (3) | 22:14 | | | 22:10 | 06:01 (4) | 1 | 21:17 | | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | | 08:04 | | 06:57 | | 06:38 | | 05:30 | 20:47 (3) | 04:53 | | 05:52 (4) | 05:09 | 06:00 (4) | | 06:02 | | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | 1 | 21:32 | 20:48 (3) | 22:15 | 1 | 05:53 (4) | 22:09 | 06:01 (4) | 1 | 21:15 | | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | | 08:02 | | 06:54 | | 06:35 | | 05:28 | 20:47 (3) | 04:53 | | | 05:11 | 06:00 (4) | | 06:04 | | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | 1 | 21:33 | 20:48 (3) | 22:16 | | | 22:08 | 06:01 (4) | 1 | 21:13 | | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | | 07:59 | | 06:52 | | 06:33 | | 05:27 | 06:04 (4) | 04:53 | | | 05:12 | 06:00 (4) | | 06:06 | | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | 8 | 21:35 | 20:49 (3) | 22:16 | | | 22:07 | 06:01 (4) | 1 | 21:10 | | | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 06:00 (4) | 04:52 | | | 05:13 | 06:01 (4) | | 06:07 | | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | 15 | 21:37 | 20:49 (3) | 22:17 | | | 22:05 | 06:03 (4) | 2 | 21:08 | | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:28 | | 05:23 | 05:59 (4) | 04:52 | | | 05:15 | 06:01 (4) | | 06:09 | | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | 6 | 21:39 | 06:05 (4) | 22:17 | | | 22:04 | 06:03 (4) | 2 | 21:06 | | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | | 07:53 | | 06:44 | | 06:25 | | 05:21 | 05:57 (4) | 04:52 | | | 05:16 | 06:01 (4) | | 06:11 | | | 07:10 | 08:08 | 08:11 | 08:56 |
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| 19 | 08:48 | | 07:50 | | 06:41 | | 06:23 | | 05:20 | 05:56 (4) | 04:52 | | | 05:18 | 06:02 (4) | | 06:13 | | | 07:12 | 08:10 | 08:13 | 08:57 |
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| | 16:44 | | 17:49 | | 18:46 | | 20:47 | 3 | 21:44 | 05:58 (4) | 22:19 | | | 22:00 | 06:05 (4) | 3 | 20:59 | | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | | 05:16 | 05:54 (4) | 04:52 | | | 05:21 | 06:04 (4) | | 06:17 | | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | 4 | 21:46 | 05:58 (4) | 22:19 | | | 21:59 | 06:06 (4) | 2 | 20:56 | | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | | 07:43 | | 06:34 | | 06:16 | | 05:15 | 05:53 (4) | 04:52 | | | 05:23 | 06:04 (4) | | 06:19 | | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | 3 | 21:47 | 05:56 (4) | 22:19 | | | 21:57 | 06:07 (4) | 3 | 20:54 | | | 19:35 | 18:20 | 16:20 | 16:05 |
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| 24 | 08:41 | | 07:39 | | 06:28 | | 06:11 | | 05:12 | 05:53 (4) | 04:53 | | | 05:26 | 06:06 (4) | | 06:23 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | 2 | 21:51 | 05:55 (4) | 22:19 | | | 21:54 | 06:09 (4) | 3 | 20:49 | | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:09 | | 05:10 | 05:53 (4) | 04:53 | | | 05:27 | 06:07 (4) | | 06:24 | | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | 2 | 21:52 | 05:55 (4) | 22:19 | | | 21:52 | 06:04 (4) | 5 | 21:00 (3) | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
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| | 16:56 | | 18:01 | | 18:58 | | 20:59 | 2 | 21:54 | 05:54 (4) | 22:19 | | | 21:51 | 06:13 (4) | 5 | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:04 | | 05:08 | 05:51 (4) | 04:54 | | | 05:31 | 06:10 (4) | | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:55 | 05:53 (4) | 22:19 | | | 21:49 | 21:00 (3) | 9 | 20:42 | | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | | 07:29 | | 06:18 | | 06:02 | | 05:06 | 05:51 (4) | 04:55 | | | 05:33 | 06:12 (4) | | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | 05:53 (4) | 22:19 | | | 21:47 | 20:59 (3) | 12 | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | | | 07:16 | | 05:59 | | 05:05 | 05:51 (4) | 04:55 | | | 05:34 | 20:58 (3) | | 06:32 | | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:58 | 05:53 (4) | 22:19 | | | 21:45 | 20:59 (3) | 1 | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | | | 07:13 | | 05:57 | | 05:04 | 05:51 (4) | 04:56 | | | 05:36 | 20:58 (3) | | 06:34 | | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | | | 20:06 | | 21:07 | | 22:00 | 05:53 (4) | 22:18 | | | 21:44 | 20:59 (3) | 1 | 20:34 | | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | 05:51 (4) | | | | 05:38 | 20:57 (3) | | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | | | 20:08 | | | | 22:01 | 05:52 (4) | | | | 21:42 | 20:58 (3) | 1 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | | | 521 | | | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | 102 | | 8 | | | | 66 | | 32 | | | | | |
| Sun reduction | | | | | | | | | | 0,52 | | 0,48 | | | | 0,49 | | 0,51 | | | | | |
| Oper. time red. | | | | | | | | | | 1,00 | | 1,00 | | | | 1,00 | | 1,00 | | | | | |
| Wind dir. red. | | | | | | | | | | 0,89 | | 0,87 | | | | 0,87 | | 0,92 | | | | | |
| Total reduction | | | | | | | | | | 0,46 | | 0,42 | | | | 0,42 | | 0,47 | | | | | |
| Total, real | | | | | | | | | | 47 | | 3 | | | | 28 | | 15 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 21:11 (5) 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 15 | 21:26 (5) 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 21:11 (5) 04:57 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 16 | 21:27 (5) 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 21:11 (5) 04:58 | 21:39 (5) 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 17 | 21:28 (5) 22:17 | 1 21:40 (5) 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 21:12 (5) 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 17 | 21:29 (5) 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 21:11 (5) 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 19 | 21:30 (5) 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 21:11 (5) 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 20 | 21:31 (5) 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | 21:12 (5) 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 20 | 21:32 (5) 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 21:11 (5) 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 22 | 21:33 (5) 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 21:12 (5) 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 22 | 21:34 (5) 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 21:12 (5) 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 22 | 21:34 (5) 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 21:12 (5) 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 23 | 21:35 (5) 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 21:13 (5) 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 22 | 21:35 (5) 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 21:12 (5) 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 23 | 21:35 (5) 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 21:13 (5) 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 22 | 21:35 (5) 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 21:13 (5) 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 22 | 21:35 (5) 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 21:13 (5) 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 23 | 21:36 (5) 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 21:14 (5) 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 22 | 21:36 (5) 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 21:14 (5) 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 22 | 21:36 (5) 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 21:14 (5) 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 22 | 21:36 (5) 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 21:14 (5) 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 22 | 21:36 (5) 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 21:14 (5) 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 22 | 21:36 (5) 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 21:15 (5) 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 22 | 21:37 (5) 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 21:15 (5) 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 22 | 21:37 (5) 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 21:15 (5) 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 22 | 21:37 (5) 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 21:15 (5) 04:53 | 21:16 (5) 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 1 | 21:16 (5) 22:19 22 | 21:38 (5) 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 21:14 (5) 04:54 | 21:15 (5) 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 4 | 21:18 (5) 22:19 23 | 21:38 (5) 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 21:13 (5) 04:54 | 21:16 (5) 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 6 | 21:19 (5) 22:19 23 | 21:39 (5) 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 21:13 (5) 04:55 | 21:16 (5) 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 8 | 21:21 (5) 22:19 22 | 21:38 (5) 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 21:12 (5) 04:55 | 21:16 (5) 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 10 | 21:22 (5) 22:19 23 | 21:39 (5) 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 21:12 (5) 04:56 | 21:16 (5) 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 12 | 21:24 (5) 22:18 22 | 21:38 (5) 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 21:12 (5) | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 13 | 21:25 (5) | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 54 | 636 | 1 | | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,82 | 0,82 | 0,82 | | | | | |
| Total reduction | | | | | 0,42 | 0,40 | 0,40 | | | | | |
| Total, real | | | | | 23 | 252 | 0 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 06:41 (7) | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 2 06:43 (7) | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:40 (7) | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 2 06:42 (7) | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 06:40 (7) | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 1 06:41 (7) | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 06:39 (7) | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 2 06:41 (7) | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 06:39 (7) | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 1 06:40 (7) | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 06:40 (7) | 04:57 | 05:01 | 05:49 | 06:49 (7) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 1 06:41 (7) | 22:08 | 22:15 | 21:30 | 1 06:50 (7) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | | 04:56 | 05:02 | 05:50 | 06:49 (7) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | | 22:09 | 22:14 | 21:28 | 1 06:50 (7) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | | 04:56 | 05:03 | 05:52 | 06:50 (7) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:10 | 22:14 | 21:25 | 1 06:51 (7) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | | 04:55 | 05:04 | 05:54 | 06:49 (7) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:11 | 22:13 | 21:23 | 1 06:50 (7) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | | 04:54 | 05:05 | 05:56 | 06:49 (7) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | 22:12 | 21:21 | 2 06:51 (7) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | | 04:54 | 05:07 | 05:58 | 06:50 (7) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | 22:11 | 21:19 | 1 06:51 (7) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | | 04:53 | 05:08 | 06:00 | 06:49 (7) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | | 22:14 | 22:10 | 21:17 | 2 06:51 (7) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | | 05:30 | | 04:53 | 05:09 | 06:02 | 06:50 (7) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | | 22:15 | 22:09 | 21:15 | 2 06:52 (7) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | | 04:53 | 05:11 | 06:03 | 06:50 (7) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | | 22:15 | 22:08 | 21:12 | 3 06:53 (7) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | | 04:52 | 05:12 | 06:05 | 06:51 (7) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | | 22:16 | 22:06 | 21:10 | 3 06:54 (7) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | | 04:52 | 05:13 | 06:07 | 06:52 (7) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | | 22:17 | 22:05 | 21:08 | 3 06:55 (7) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | | 04:52 | 05:15 | 06:09 | 06:52 (7) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | | 22:17 | 22:04 | 21:05 | 3 06:55 (7) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | | 04:52 | 05:16 | 06:11 | 06:53 (7) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | | 22:18 | 22:03 | 21:03 | 4 06:57 (7) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | | 04:52 | 05:18 | 06:13 | 06:54 (7) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | | 22:18 | 22:01 | 21:01 | 5 06:59 (7) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 06:59 (7) | 05:18 | | 04:52 | 05:19 | 06:15 | 06:56 (7) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 10 07:09 (7) | 21:44 | | 22:18 | 22:00 | 20:58 | 5 07:01 (7) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 06:54 (7) | 05:16 | | 04:52 | 05:21 | 06:17 | 06:57 (7) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 18 07:12 (7) | 21:45 | | 22:19 | 21:58 | 20:56 | 6 07:03 (7) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 06:52 (7) | 05:15 | | 04:52 | 05:22 | 06:19 | 06:59 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 23 07:15 (7) | 21:47 | | 22:19 | 21:57 | 20:54 | 14 07:16 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:50 (7) | 05:13 | | 04:53 | 05:24 | 06:21 | 07:04 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 27 07:17 (7) | 21:49 | | 22:19 | 21:55 | 20:51 | 8 07:12 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 06:48 (7) | 05:12 | | 04:53 | 05:26 | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 30 07:18 (7) | 21:50 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 06:46 (7) | 05:10 | | 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 33 07:19 (7) | 21:52 | | 22:19 | 21:52 | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 06:45 (7) | 05:09 | | 04:54 | 05:29 | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 35 07:20 (7) | 21:53 | | 22:19 | 21:50 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 06:44 (7) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 37 07:21 (7) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:43 (7) | 05:06 | | 04:55 | 05:32 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 22 07:21 (7) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 06:43 (7) | 05:05 | | 04:55 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 15 07:22 (7) | 21:58 | | 22:18 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:42 (7) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 11 07:23 (7) | 21:59 | | 22:18 | 21:43 | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 261 | | 9 | | | | 65 | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,96 | | 0,96 | | | | 0,96 | | | | |
| Total reduction | | | | | 0,38 | | 0,50 | | | | 0,50 | | | | |
| Total, real | | | | | 99 | | 4 | | | | 32 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | | May | June | July | August | | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | | 05:55 | 05:02 | 04:57 | 05:39 | | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | | 21:08 | 22:02 | 22:18 | 21:40 | | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | | 05:53 | 05:01 | 04:57 | 05:41 | | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | | 21:10 | 22:03 | 22:17 | 21:38 | | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | | 05:50 | 05:00 | 04:58 | 05:43 | | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | | 21:12 | 22:05 | 22:17 | 21:36 | | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | | 05:48 | 04:59 | 04:59 | 05:45 | | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | | 21:14 | 22:06 | 22:16 | 21:34 | | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | | 05:46 | 04:58 | 05:00 | 05:47 | | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | | 21:16 | 22:07 | 22:16 | 21:32 | | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | | 05:44 | 04:57 | 05:01 | 05:49 | | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | | 21:18 | 22:08 | 22:15 | 21:30 | | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | | 05:42 | 04:56 | 05:02 | 05:50 | | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | | 21:20 | 22:09 | 22:14 | 21:28 | | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | | 05:40 | 04:56 | 05:03 | 05:52 | | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | | 21:22 | 22:10 | 22:14 | 21:25 | | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | | 05:38 | 04:55 | 05:04 | 05:54 | | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | | 21:24 | 22:11 | 22:13 | 21:23 | | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | | 05:36 | 04:54 | 05:05 | 05:56 | | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | | 21:26 | 22:12 | 22:12 | 21:21 | | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | | 05:34 | 04:54 | 05:07 | 05:58 | | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | | 21:28 | 22:13 | 22:11 | 21:19 | | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | | 05:32 | 04:53 | 05:08 | 06:00 | | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | | 21:29 | 22:14 | 22:10 | 21:17 | | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | | | 05:30 | 04:53 | 05:09 | 06:02 | | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | | 21:31 | 22:15 | 22:09 | 21:15 | | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | | 05:28 | 04:53 | 05:11 | 06:03 | | 06:52 (7) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | | 21:33 | 22:15 | 22:08 | 21:12 | 1 | 06:53 (7) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | | 05:26 | 04:52 | 05:12 | 06:05 | | 06:53 (7) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | | 21:35 | 22:16 | 22:06 | 21:10 | 1 | 06:54 (7) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | | 05:25 | 04:52 | 05:13 | 06:07 | | 06:54 (7) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | | 21:37 | 22:17 | 22:05 | 21:08 | 1 | 06:55 (7) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | | 05:23 | 04:52 | 05:15 | 06:09 | | 06:54 (7) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | | 21:39 | 22:17 | 22:04 | 21:05 | 1 | 06:55 (7) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | | 05:21 | 04:52 | 05:16 | 06:11 | | 06:55 (7) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | | 21:40 | 22:18 | 22:03 | 21:03 | 2 | 06:57 (7) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | | 05:19 | 04:52 | 05:18 | 06:13 | | 06:57 (7) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | 21:42 | 22:18 | 22:01 | 21:01 | 2 | 06:59 (7) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:02 (7) | 05:18 | 04:52 | 05:19 | 06:15 | | 06:59 (7) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 10 | 07:12 (7) | 21:44 | 22:18 | 22:00 | 20:58 | 2 | 07:01 (7) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 06:57 (7) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:00 (7) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 19 | 07:16 (7) | 21:45 | 22:19 | 21:58 | 20:56 | 3 | 07:03 (7) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 06:55 (7) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:02 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 24 | 07:19 (7) | 21:47 | 22:19 | 21:57 | 20:54 | 11 | 07:16 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 06:53 (7) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:07 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 28 | 07:21 (7) | 21:49 | 22:19 | 21:55 | 20:51 | 8 | 07:15 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 06:51 (7) | 05:12 | 04:53 | 05:26 | 06:22 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 31 | 07:22 (7) | 21:50 | 22:19 | 21:54 | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 06:49 (7) | 05:10 | 04:53 | 05:27 | 06:24 | | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 34 | 07:23 (7) | 21:52 | 22:19 | 21:52 | 20:46 | | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 06:47 (7) | 05:09 | 04:54 | 05:29 | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 37 | 07:24 (7) | 21:53 | 22:19 | 21:50 | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 06:46 (7) | 05:08 | 04:54 | 05:31 | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 39 | 07:25 (7) | 21:55 | 22:19 | 21:49 | 20:42 | | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 06:45 (7) | 05:06 | 04:55 | 05:32 | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 25 | 07:26 (7) | 21:57 | 22:19 | 21:47 | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 06:45 (7) | 05:05 | 04:55 | 05:34 | 06:32 | | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 17 | 07:26 (7) | 21:58 | 22:18 | 21:45 | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:44 (7) | 05:04 | 04:56 | 05:36 | 06:34 | | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 13 | 07:27 (7) | 21:59 | 22:18 | 21:43 | 20:34 | | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 277 | | | | | | 32 | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,96 | | | | | | 0,96 | | | | | |
| Total reduction | | | | | 0,38 | | | | | | 0,50 | | | | | |
| Total, real | | | | | 105 | | | | | | 16 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 06:56 (7) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | 1 | 06:57 (7) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | 04:52 | 05:18 | 06:13 | | 06:58 (7) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | 1 | 06:59 (7) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:04 (7) | 05:18 | 04:52 | 05:19 | | 06:15 | 07:00 (7) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 9 | 07:13 (7) | 21:44 | 22:18 | 22:00 | | 20:58 | 1 | 07:01 (7) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 06:59 (7) | 05:16 | 04:52 | 05:21 | | 06:17 | | 07:01 (7) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 18 | 07:17 (7) | 21:45 | 22:19 | 21:58 | | 20:56 | 2 | 07:03 (7) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 06:56 (7) | 05:15 | 04:52 | 05:22 | | 06:19 | | 07:04 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 24 | 07:20 (7) | 21:47 | 22:19 | 21:57 | | 20:54 | 9 | 07:16 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 06:54 (7) | 05:13 | 04:53 | 05:24 | | 06:21 | | 07:09 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 28 | 07:22 (7) | 21:49 | 22:19 | 21:55 | | 20:51 | 7 | 07:16 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 06:52 (7) | 05:12 | 04:53 | 05:26 | | 06:22 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 32 | 07:24 (7) | 21:50 | 22:19 | 21:54 | | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 06:50 (7) | 05:10 | 04:53 | 05:27 | | 06:24 | | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 34 | 07:24 (7) | 21:52 | 22:19 | 21:52 | | 20:46 | | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 06:48 (7) | 05:09 | 04:54 | 05:29 | | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 38 | 07:26 (7) | 21:53 | 22:19 | 21:50 | | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 06:47 (7) | 05:08 | 04:54 | 05:31 | | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 40 | 07:27 (7) | 21:55 | 22:19 | 21:49 | | 20:42 | | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 06:46 (7) | 05:06 | 04:55 | 05:32 | | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 25 | 07:27 (7) | 21:57 | 22:19 | 21:47 | | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 06:46 (7) | 05:05 | 04:55 | 05:34 | | 06:32 | | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 18 | 07:28 (7) | 21:58 | 22:18 | 21:45 | | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:45 (7) | 05:04 | 04:56 | 05:36 | | 06:34 | | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 14 | 07:29 (7) | 21:59 | 22:18 | 21:43 | | 20:34 | | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 280 | | | | | | | 21 | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,96 | | | | | | | 0,96 | | | | | |
| Total reduction | | | | | 0,38 | | | | | | | 0,50 | | | | | |
| Total, real | | | | | 106 | | | | | | | 10 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:07 (7) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 7 | 07:14 (7) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 07:00 (7) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 18 | 07:18 (7) | 21:45 | 22:19 | 21:58 | 20:56 | 1 | 07:03 (7) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 06:57 (7) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:06 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 24 | 07:21 (7) | 21:47 | 22:19 | 21:57 | 20:54 | 7 | 07:16 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 06:55 (7) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:12 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 29 | 07:24 (7) | 21:49 | 22:19 | 21:55 | 20:51 | 4 | 07:16 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 06:53 (7) | 05:12 | 04:53 | 05:26 | 06:22 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 33 | 07:26 (7) | 21:50 | 22:19 | 21:54 | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 06:51 (7) | 05:10 | 04:53 | 05:27 | 06:24 | | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 35 | 07:26 (7) | 21:52 | 22:19 | 21:52 | 20:46 | | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 06:50 (7) | 05:09 | 04:54 | 05:29 | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 37 | 07:27 (7) | 21:53 | 22:19 | 21:50 | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 06:48 (7) | 05:08 | 04:54 | 05:31 | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 40 | 07:28 (7) | 21:55 | 22:19 | 21:49 | 20:42 | | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 06:47 (7) | 05:06 | 04:55 | 05:32 | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 26 | 07:29 (7) | 21:57 | 22:19 | 21:47 | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 06:47 (7) | 05:05 | 04:55 | 05:34 | 06:32 | | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 19 | 07:30 (7) | 21:58 | 22:18 | 21:45 | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:46 (7) | 05:04 | 04:56 | 05:36 | 06:34 | | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 15 | 07:31 (7) | 21:59 | 22:18 | 21:43 | 20:34 | | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 283 | | | | | | 12 | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,97 | | | | | | 0,97 | | | | | |
| Total reduction | | | | | 0,38 | | | | | | 0,50 | | | | | |
| Total, real | | | | | 107 | | | | | | 6 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Enercon E138 shut downShadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 07:21 (7) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 16 | 07:37 (7) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 07:17 (7) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 24 | 07:41 (7) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 07:14 (7) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 30 | 07:44 (7) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 07:11 (7) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 34 | 07:45 (7) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 07:10 (7) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 37 | 07:47 (7) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:08 (7) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 41 | 07:49 (7) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 07:06 (7) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 43 | 07:49 (7) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 07:05 (7) | 05:15 | 04:52 | 05:22 | 06:19 | 07:13 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 45 | 07:50 (7) | 21:47 | 22:19 | 21:57 | 20:54 | 3 07:16 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 07:04 (7) | 05:13 | 04:53 | 05:24 | 06:21 | 07:12 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 47 | 07:51 (7) | 21:49 | 22:19 | 21:55 | 20:51 | 6 07:18 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 07:03 (7) | 05:12 | 04:53 | 05:26 | 06:22 | 07:14 (7) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 49 | 07:52 (7) | 21:50 | 22:19 | 21:54 | 20:49 | 6 07:20 (7) | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 07:01 (7) | 05:10 | 04:53 | 05:27 | 06:24 | 07:15 (7) | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 51 | 07:52 (7) | 21:52 | 22:19 | 21:52 | 20:46 | 8 07:23 (7) | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 07:01 (7) | 05:09 | 04:54 | 05:29 | 06:26 | 07:17 (7) | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 52 | 07:53 (7) | 21:53 | 22:19 | 21:50 | 20:44 | 6 07:23 (7) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 07:00 (7) | 05:08 | 04:54 | 05:31 | 06:28 | 07:19 (7) | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 53 | 07:53 (7) | 21:55 | 22:19 | 21:49 | 20:42 | 6 07:25 (7) | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | | 07:14 (7) | 05:06 | 04:55 | 05:32 | 06:30 | 07:23 (7) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 40 | 07:54 (7) | 21:57 | 22:19 | 21:47 | 20:39 | 4 07:27 (7) | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 07:18 (7) | 05:05 | 04:55 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 36 | 07:54 (7) | 21:58 | 22:18 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 07:21 (7) | 05:04 | 04:56 | 05:36 | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 33 | 07:54 (7) | 21:59 | 22:18 | 21:43 | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 631 | | | | | | 39 | | | | |
| Sun reduction | | | | | 0,39 | | | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,98 | | | | | | 0,98 | | | | |
| Total reduction | | | | | 0,39 | | | | | | 0,51 | | | | |
| Total, real | | | | | 244 | | | | | | 20 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 4 07:34 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:31 (7) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 17 07:48 (7) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:27 (7) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 25 07:52 (7) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 07:23 (7) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 30 07:53 (7) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:21 (7) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 32 07:53 (7) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 07:19 (7) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 33 07:52 (7) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:17 (7) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 36 07:53 (7) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 07:16 (7) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 37 07:53 (7) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 07:14 (7) | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 38 07:52 (7) | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 07:13 (7) | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 40 07:53 (7) | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:12 (7) | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 41 07:53 (7) | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 07:11 (7) | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 42 07:53 (7) | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 07:10 (7) | 05:15 | 04:52 | 05:22 | 06:19 07:15 (7) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 44 07:54 (7) | 21:47 | 22:19 | 21:57 | 20:54 1 07:16 (7) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 07:10 (7) | 05:13 | 04:53 | 05:24 | 06:21 07:16 (7) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 44 07:54 (7) | 21:49 | 22:19 | 21:55 | 20:51 2 07:18 (7) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 07:09 (7) | 05:12 | 04:53 | 05:26 | 06:22 07:17 (7) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 46 07:55 (7) | 21:50 | 22:19 | 21:54 | 20:49 3 07:20 (7) | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 07:08 (7) | 05:10 | 04:53 | 05:27 | 06:24 07:18 (7) | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 47 07:55 (7) | 21:52 | 22:19 | 21:52 | 20:46 5 07:23 (7) | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 07:07 (7) | 05:09 | 04:54 | 05:29 | 06:26 07:18 (7) | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 49 07:56 (7) | 21:53 | 22:19 | 21:50 | 20:44 5 07:23 (7) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 07:07 (7) | 05:08 | 04:54 | 05:31 | 06:28 07:19 (7) | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 50 07:57 (7) | 21:55 | 22:19 | 21:49 | 20:42 6 07:25 (7) | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 07:14 (7) | 05:06 | 04:55 | 05:32 | 06:30 07:21 (7) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 44 07:58 (7) | 21:57 | 22:19 | 21:47 | 20:39 6 07:27 (7) | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 07:18 (7) | 05:05 | 04:55 | 05:34 | 06:32 07:22 (7) | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 41 07:59 (7) | 21:58 | 22:18 | 21:45 | 20:37 7 07:29 (7) | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 07:21 (7) | 05:04 | 04:56 | 05:36 | 06:34 07:24 (7) | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 39 08:00 (7) | 21:59 | 22:18 | 21:43 | 20:34 7 07:31 (7) | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 07:26 (7) | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 6 07:32 (7) | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 775 | | | | 48 | 4 | | | |
| Sun reduction | | | | 0,39 | | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | | | | 0,99 | 0,99 | | | |
| Total reduction | | | | 0,39 | | | | 0,51 | 0,39 | | | |
| Total, real | | | | 302 | | | | 24 | 2 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 shut downShadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:28 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 6 07:34 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:29 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 7 07:36 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:31 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 9 07:40 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:34 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 20 07:56 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:38 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 13 07:51 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:42 (7) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 12 07:54 (7) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:36 (7) | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 19 07:55 (7) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:33 (7) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 22 07:55 (7) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:30 (7) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 24 07:54 (7) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:29 (7) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 25 07:54 (7) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (7) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 27 07:54 (7) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:25 (7) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 28 07:53 (7) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24 (7) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 29 07:53 (7) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:22 (7) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 30 07:52 (7) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:21 (7) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 32 07:53 (7) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:20 (7) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 33 07:53 (7) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:19 (7) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 33 07:52 (7) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:18 (7) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 35 07:53 (7) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:18 (7) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 35 07:53 (7) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:16 (7) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 37 07:53 (7) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:16 (7) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 38 07:54 (7) | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:16 (7) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 38 07:54 (7) | 21:49 | 22:19 | 21:55 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:16 (7) | 05:12 | 04:53 | 05:26 | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 39 07:55 (7) | 21:50 | 22:19 | 21:54 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:15 (7) | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 40 07:55 (7) | 21:52 | 22:19 | 21:52 | 20:46 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:15 (7) | 05:09 | 04:54 | 05:29 | 06:26 | 07:22 (7) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 41 07:56 (7) | 21:53 | 22:19 | 21:50 | 20:44 | 1 07:23 (7) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:15 (7) | 05:08 | 04:54 | 05:31 | 06:28 | 07:23 (7) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 42 07:57 (7) | 21:55 | 22:19 | 21:49 | 20:42 | 2 07:25 (7) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:15 (7) | 05:06 | 04:55 | 05:32 | 06:30 | 07:24 (7) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 43 07:58 (7) | 21:57 | 22:19 | 21:47 | 20:39 | 3 07:27 (7) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:18 (7) | 05:05 | 04:55 | 05:34 | 06:32 | 07:25 (7) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 41 07:59 (7) | 21:58 | 22:18 | 21:45 | 20:37 | 4 07:29 (7) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:21 (7) | 05:04 | 04:56 | 05:36 | 06:34 | 07:26 (7) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 39 08:00 (7) | 21:59 | 22:18 | 21:43 | 20:34 | 5 07:31 (7) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 07:26 (7) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 | 6 07:32 (7) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | | 782 | | | | | 21 | | 55 | | | |
| Sun reduction | | | | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | | 0,99 | | | | | 0,99 | | 0,99 | | | |
| Total reduction | | | | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | | 306 | | | | | 11 | | 22 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:31 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 4 | 08:08 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:32 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 8 | 08:08 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:52 (7) | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:33 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 8 | 08:00 (7) | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 15 | 08:08 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:46 (7) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:34 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 12 | 07:58 (7) | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 32 | 08:08 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:43 (7) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:35 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 15 | 07:58 (7) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 32 | 08:07 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40 (7) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:36 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 17 | 07:57 (7) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 31 | 08:07 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:39 (7) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:38 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 17 | 07:56 (7) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 29 | 08:07 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:36 (7) | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:41 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 19 | 07:55 (7) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 23 | 08:04 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:35 (7) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:45 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 20 | 07:55 (7) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 15 | 08:00 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:33 (7) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 21 | 07:54 (7) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:32 (7) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 22 | 07:54 (7) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:31 (7) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 23 | 07:54 (7) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:30 (7) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 23 | 07:53 (7) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:29 (7) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 24 | 07:53 (7) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:28 (7) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 24 | 07:52 (7) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:27 (7) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 26 | 07:53 (7) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:27 (7) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 26 | 07:53 (7) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:26 (7) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 26 | 07:52 (7) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:26 (7) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 27 | 07:53 (7) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:26 (7) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 27 | 07:53 (7) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:25 (7) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 28 | 07:53 (7) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:25 (7) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 29 | 07:54 (7) | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:25 (7) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 29 | 07:54 (7) | 21:49 | 22:19 | 21:55 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:25 (7) | 05:12 | 04:53 | 05:26 | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 30 | 07:55 (7) | 21:50 | 22:19 | 21:54 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:24 (7) | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 31 | 07:55 (7) | 21:52 | 22:19 | 21:52 | 20:46 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:24 (7) | 05:09 | 04:54 | 05:29 | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 32 | 07:56 (7) | 21:53 | 22:19 | 21:50 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:24 (7) | 05:08 | 04:54 | 05:31 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 33 | 07:57 (7) | 21:55 | 22:19 | 21:49 | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:25 (7) | 05:06 | 04:55 | 05:32 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 33 | 07:58 (7) | 21:57 | 22:19 | 21:47 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:25 (7) | 05:05 | 04:55 | 05:34 | 06:32 | | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 34 | 07:59 (7) | 21:58 | 22:18 | 21:45 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:26 (7) | 05:04 | 04:56 | 05:36 | 06:34 | | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 34 | 08:00 (7) | 21:59 | 22:18 | 21:43 | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 07:30 (7) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 2 | 07:32 (7) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | | 690 | | | | | 2 | | 189 | | | |
| Sun reduction | | | | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Total reduction | | | | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Total, real | | | | | 271 | | | | | 1 | | 75 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 07:54 (7) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:07 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 8 08:02 (7) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 1 08:08 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 07:51 (7) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:04 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 11 08:02 (7) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 4 08:08 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:48 (7) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:37 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 12 08:00 (7) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 11 08:08 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:46 (7) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:38 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 12 07:58 (7) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 28 08:08 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:45 (7) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:38 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 13 07:58 (7) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 29 08:07 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:43 (7) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:39 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 14 07:57 (7) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 28 08:07 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:42 (7) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:40 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 14 07:56 (7) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 27 08:07 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:40 (7) | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:41 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 15 07:55 (7) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 26 08:07 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:39 (7) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:42 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 16 07:55 (7) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 25 08:07 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:38 (7) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:43 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 16 07:54 (7) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 23 08:06 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:37 (7) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:46 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 17 07:54 (7) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 21 08:07 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:37 (7) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:49 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 17 07:54 (7) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18 08:07 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:36 (7) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:54 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 17 07:53 (7) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 10 08:04 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:35 (7) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 18 07:53 (7) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:34 (7) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 18 07:52 (7) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:34 (7) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 19 07:53 (7) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:34 (7) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 19 07:53 (7) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:33 (7) | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 19 07:52 (7) | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:33 (7) | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 20 07:53 (7) | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:34 (7) | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 19 07:53 (7) | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:33 (7) | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 20 07:53 (7) | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:33 (7) | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21 07:54 (7) | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:34 (7) | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 20 07:54 (7) | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:34 (7) | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21 07:55 (7) | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:34 (7) | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21 07:55 (7) | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:34 (7) | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 22 07:56 (7) | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:35 (7) | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 22 07:57 (7) | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:35 (7) | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 23 07:58 (7) | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:36 (7) | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 23 07:59 (7) | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:04 (7) 05:57 | 07:37 (7) | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 7 08:11 (7) 21:06 | 23 08:00 (7) | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 07:58 (7) | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 19 08:17 (7) | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 26 | 530 | | | | | | 251 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | 1,00 | | | | | | 1,00 | | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | | 0,40 | | | | |
| Total, real | | | 9 | 209 | | | | | | 99 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | | May | | June | | July | | August | | September | | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 07:26 | | 07:08 | | 07:54 (7) | 05:55 | | 05:02 | | 04:57 | | 05:39 | | 06:38 | | 08:07 (7) | 07:34 | | 07:36 | | 08:35 | |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 8 | 08:02 (7) | 21:08 | | 22:02 | | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (7) | 19:12 | | 16:58 | | 16:10 | |
| 2 | 09:00 | | 08:26 | | 07:24 | | 07:05 | | 07:53 (7) | 05:53 | | 05:01 | | 04:57 | | 05:41 | | 06:39 | | 08:04 (7) | 07:36 | | 07:38 | | 08:36 | |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 9 | 08:02 (7) | 21:10 | | 22:03 | | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (7) | 19:09 | | 16:55 | | 16:09 | |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 07:51 (7) | 05:50 | | 05:00 | | 04:58 | | 05:43 | | 06:41 | | 08:00 (7) | 07:38 | | 07:41 | | 08:38 | |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 9 | 08:00 (7) | 21:12 | | 22:05 | | 22:17 | | 21:36 | | 20:24 | 8 | 08:08 (7) | 19:07 | | 16:53 | | 16:08 | |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 07:50 (7) | 05:48 | | 04:59 | | 04:59 | | 05:45 | | 06:43 | | 07:44 (7) | 07:40 | | 07:43 | | 08:40 | |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 8 | 07:58 (7) | 21:14 | | 22:06 | | 22:16 | | 21:34 | | 20:22 | 22 | 08:08 (7) | 19:04 | | 16:51 | | 16:07 | |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:57 | | 07:49 (7) | 05:46 | | 04:58 | | 05:00 | | 05:47 | | 06:45 | | 07:43 (7) | 07:42 | | 07:45 | | 08:41 | |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 9 | 07:58 (7) | 21:16 | | 22:07 | | 22:16 | | 21:32 | | 20:19 | 24 | 08:07 (7) | 19:02 | | 16:49 | | 16:07 | |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 07:48 (7) | 05:44 | | 04:57 | | 05:01 | | 05:49 | | 06:47 | | 07:44 (7) | 07:44 | | 07:47 | | 08:43 | |
| | 16:20 | | 17:19 | | 18:17 | | 20:19 | 9 | 07:57 (7) | 21:18 | | 22:08 | | 22:15 | | 21:30 | | 20:16 | 23 | 08:07 (7) | 18:59 | | 16:47 | | 16:06 | |
| 7 | 08:58 | | 08:16 | | 07:12 | | 06:52 | | 07:47 (7) | 05:42 | | 04:56 | | 05:02 | | 05:50 | | 06:49 | | 07:44 (7) | 07:46 | | 07:49 | | 08:44 | |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 9 | 07:56 (7) | 21:20 | | 22:09 | | 22:14 | | 21:28 | | 20:14 | 23 | 08:07 (7) | 18:57 | | 16:45 | | 16:05 | |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | 07:46 (7) | 05:40 | | 04:55 | | 05:03 | | 05:52 | | 06:51 | | 07:45 (7) | 07:48 | | 07:51 | | 08:45 | |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | 9 | 07:55 (7) | 21:22 | | 22:10 | | 22:14 | | 21:25 | | 20:11 | 22 | 08:07 (7) | 18:54 | | 16:43 | | 16:05 | |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:47 | | 07:46 (7) | 05:38 | | 04:55 | | 05:04 | | 05:54 | | 06:53 | | 07:46 (7) | 07:50 | | 07:53 | | 08:47 | |
| | 16:24 | | 17:25 | | 18:24 | | 20:25 | 9 | 07:55 (7) | 21:24 | | 22:11 | | 22:13 | | 21:23 | | 20:09 | 21 | 08:07 (7) | 18:52 | | 16:41 | | 16:05 | |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 07:44 (7) | 05:36 | | 04:54 | | 05:05 | | 05:56 | | 06:55 | | 07:45 (7) | 07:52 | | 07:55 | | 08:48 | |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | 10 | 07:54 (7) | 21:26 | | 22:12 | | 22:12 | | 21:21 | | 20:06 | 21 | 08:06 (7) | 18:49 | | 16:40 | | 16:04 | |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 07:44 (7) | 05:34 | | 04:54 | | 05:07 | | 05:58 | | 06:56 | | 07:47 (7) | 07:54 | | 07:57 | | 08:49 | |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | 10 | 07:54 (7) | 21:28 | | 22:13 | | 22:11 | | 21:19 | | 20:04 | 20 | 08:07 (7) | 18:47 | | 16:38 | | 16:04 | |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 07:44 (7) | 05:32 | | 04:53 | | 05:08 | | 06:00 | | 06:58 | | 07:48 (7) | 07:56 | | 07:59 | | 08:50 | |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | 10 | 07:54 (7) | 21:29 | | 22:14 | | 22:10 | | 21:17 | | 20:01 | 19 | 08:07 (7) | 18:44 | | 16:36 | | 16:04 | |
| 13 | 08:54 | | 08:03 | | 06:56 | | 06:37 | | 07:43 (7) | 05:30 | | 04:53 | | 05:09 | | 06:02 | | 07:00 | | 07:49 (7) | 07:58 | | 08:01 | | 08:51 | |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | 10 | 07:53 (7) | 21:31 | | 22:15 | | 22:09 | | 21:15 | | 19:58 | 19 | 08:08 (7) | 18:42 | | 16:34 | | 16:04 | |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 07:44 (7) | 05:28 | | 04:53 | | 05:10 | | 06:03 | | 07:02 | | 07:51 (7) | 08:00 | | 08:03 | | 08:52 | |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | 9 | 07:53 (7) | 21:33 | | 22:15 | | 22:08 | | 21:12 | | 19:56 | 17 | 08:08 (7) | 18:39 | | 16:32 | | 16:03 | |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 07:43 (7) | 05:26 | | 04:52 | | 05:12 | | 06:05 | | 07:04 | | 07:53 (7) | 08:02 | | 08:05 | | 08:53 | |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | 9 | 07:52 (7) | 21:35 | | 22:16 | | 22:06 | | 21:10 | | 19:53 | 16 | 08:09 (7) | 18:37 | | 16:31 | | 16:03 | |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 07:43 (7) | 05:25 | | 04:52 | | 05:13 | | 06:07 | | 07:06 | | 07:56 (7) | 08:04 | | 08:07 | | 08:54 | |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | 10 | 07:53 (7) | 21:37 | | 22:17 | | 22:05 | | 21:08 | | 19:51 | 13 | 08:09 (7) | 18:34 | | 16:29 | | 16:03 | |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 07:43 (7) | 05:23 | | 04:52 | | 05:15 | | 06:09 | | 07:08 | | 08:01 (7) | 08:06 | | 08:09 | | 08:55 | |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | 10 | 07:53 (7) | 21:39 | | 22:17 | | 22:04 | | 21:05 | | 19:48 | 8 | 08:09 (7) | 18:32 | | 16:27 | | 16:04 | |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 07:43 (7) | 05:21 | | 04:52 | | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | 08:11 | | 08:56 | |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | 9 | 07:52 (7) | 21:40 | | 22:18 | | 22:03 | | 21:03 | | 19:46 | | | 18:29 | | 16:26 | | 16:04 | |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:23 | | 07:43 (7) | 05:19 | | 04:52 | | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 08:13 | | 08:57 | |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | 10 | 07:53 (7) | 21:42 | | 22:18 | | 22:01 | | 21:01 | | 19:43 | | | 18:27 | | 16:24 | | 16:04 | |
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| 22 | 08:43 | | 07:43 | | 06:33 | | 06:15 | | 07:44 (7) | 05:15 | | 04:52 | | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 08:19 | | 08:59 | |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | 10 | 07:54 (7) | 21:47 | | 22:19 | | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | 16:20 | | 16:05 | |
| 23 | 08:42 | | 07:41 | | 06:31 | | 06:13 | | 07:45 (7) | 05:13 | | 04:53 | | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:21 | | 08:59 | |
| | 16:49 | | 17:55 | | 18:52 | | 20:53 | 9 | 07:54 (7) | 21:49 | | 22:19 | | 21:55 | | 20:51 | | 19:33 | | | 18:18 | | 16:19 | | 16:06 | |
| 24 | 08:41 | | 07:38 | | 06:28 | | 06:11 | | 07:46 (7) | 05:12 | | 04:53 | | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | 08:23 | | 09:00 | |
| | 16:51 | | 17:57 | | 18:54 | | 20:55 | 9 | 07:55 (7) | 21:50 | | 22:19 | | 21:54 | | 20:49 | | 19:30 | | | 18:15 | | 16:17 | | 16:06 | |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:08 | | 07:46 (7) | 05:10 | | 04:53 | | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | 08:24 | | 09:00 | |
| | 16:53 | | 17:59 | | 18:56 | | 20:57 | 9 | 07:55 (7) | 21:52 | | 22:19 | | 21:52 | | 20:46 | | 19:27 | | | 17:13 | | 16:16 | | 16:07 | |
| 26 | 08:37 | | 07:34 | | 06:23 | | 06:06 | | 07:47 (7) | 05:09 | | 04:54 | | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 08:26 | | 09:00 | |
| | 16:56 | | 18:01 | | 18:57 | | 20:59 | 9 | 07:56 (7) | 21:53 | | 22:19 | | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | | 16:08 | |
| 27 | 08:36 | | 07:31 | | 06:21 | 07:08 (7) | 06:04 | | 07:48 (7) | 05:07 | | 04:54 | | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | 09:00 | |
| | 16:58 | | 18:03 | | 18:59 | 18 | 07:26 (7) | 21:01 | 9 | 07:57 (7) | 21:55 | | 22:19 | | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | 16:14 | | 16:08 | |
| 28 | 08:34 | | 07:29 | | 06:18 | | 07:04 (7) | 06:01 | | 07:49 (7) | 05:06 | | 04:55 | | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | 09:01 | |
| | 17:00 | | 18:05 | | 19:01 | 25 | 07:29 (7) | 21:03 | 9 | 07:58 (7) | 21:57 | | 22:19 | | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | 16:13 | | 16:09 | |
| 29 | 08:33 | | | | 07:15 | | 08:01 (7) | 05:59 | | 07:50 (7) | 05:05 | | 04:55 | | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:31 | | 09:01 | |
| | 17:02 | | | | 20:03 | 31 | 08:32 (7) | 21:05 | 9 | 07:59 (7) | 21:58 | | 22:18 | | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | | 16:10 | |
| 30 | 08:31 | | | | 07:13 | | 07:58 (7) | 05:57 | | 07:52 (7) | 05:04 | | 04:56 | | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | 09:01 | |
| | 17:04 | | | | 20:05 | 35 | 08:33 (7) | 21:06 | 8 | 08:00 (7) | 21:59 | | 22:18 | | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | | 16:11 | |
| 31 | 08:29 | | | | 07:10 | | 07:57 (7) | | | | 05:03 | | | | 05:38 | | 06:36 | | | | | 07:34 | | | | 09:01 | |
| | 17:06 | | | | 20:07 | 39 | 08:36 (7) | | | | 22:01 | | | | 21:41 | | 20:32 | | | | | 17:00 | | | | 16:12 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | | 501 | | 520 | | 521 | | 465 | | 383 | | | 326 | | 253 | | 224 | |
| Total, worst case | | | | | | 148 | | | 276 | | | | | | | | | | 281 | | | | | | | | |
| Sun reduction | | | | | | 0,34 | | | 0,39 | | | | | | | | | | 0,40 | | | | | | | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | | | | | | |
| Wind dir. red. | | | | | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | | | | | | |
| Total reduction | | | | | | 0,34 | | | 0,39 | | | | | | | | | | 0,40 | | | | | | | | |
| Total, real | | | | | | 50 | | | 109 | | | | | | | | | | 111 | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | | 07:59 (7) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:07 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 3 | 08:02 (7) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 1 | 08:08 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | | 07:59 (7) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:04 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 3 | 08:02 (7) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 4 | 08:08 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 07:57 (7) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 08:00 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 3 | 08:00 (7) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 8 | 08:08 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 07:56 (7) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:52 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 2 | 07:58 (7) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 16 | 08:08 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | | 07:56 (7) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:51 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 2 | 07:58 (7) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 16 | 08:07 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 07:55 (7) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:51 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 2 | 07:57 (7) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 16 | 08:07 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | | 07:55 (7) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:51 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 1 | 07:56 (7) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 16 | 08:07 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 07:54 (7) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:51 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 1 | 07:55 (7) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 16 | 08:07 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 07:54 (7) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:51 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 1 | 07:55 (7) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 16 | 08:07 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | | 07:53 (7) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:51 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 1 | 07:54 (7) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 15 | 08:06 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 07:53 (7) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:51 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 1 | 07:54 (7) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 16 | 08:07 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:52 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 15 | 08:07 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | | | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:53 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | | | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 15 | 08:08 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 07:53 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 15 | 08:08 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 07:54 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | | | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 15 | 08:09 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 07:55 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 14 | 08:09 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 07:56 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 14 | 08:10 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 07:58 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 13 | 08:11 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:00 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 12 | 08:12 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:03 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 11 | 08:14 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:08 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | | | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 7 | 08:15 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 07:25 (7) | 06:15 | | | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 5 | 07:30 (7) | 20:51 | | | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:17 (7) | 06:13 | | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 19 | 07:36 (7) | 20:53 | | | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:14 (7) | 06:11 | | | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 26 | 07:40 (7) | 20:55 | | | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:11 (7) | 06:08 | | | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 31 | 07:42 (7) | 20:57 | | | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 07:08 (7) | 06:06 | | | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 35 | 07:43 (7) | 20:59 | | | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:07 (7) | 06:04 | | | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 38 | 07:45 (7) | 21:01 | | | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (7) | 06:01 | | | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 42 | 07:46 (7) | 21:03 | | | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:03 (7) | 05:59 | | | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 45 | 08:48 (7) | 21:05 | | | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:01 (7) | 05:57 | | | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 47 | 08:48 (7) | 21:06 | | | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:01 (7) | | | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 48 | 08:49 (7) | | | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 336 | | 20 | | | | | | | 271 | | | | |
| Sun reduction | | | 0,34 | | 0,39 | | | | | | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | | 1,00 | | | | | | | 1,00 | | | | |
| Total reduction | | | 0,34 | | 0,39 | | | | | | | 0,39 | | | | |
| Total, real | | | 114 | | 8 | | | | | | | 107 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 08:07 (7) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 1 | 08:08 (7) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 08:04 (7) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 4 | 08:08 (7) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 08:02 (7) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 6 | 08:08 (7) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 08:02 (7) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 6 | 08:08 (7) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | | 08:00 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 7 | 08:07 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 08:00 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 7 | 08:07 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 08:00 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 7 | 08:07 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 08:00 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 7 | 08:07 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 08:00 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 7 | 08:07 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 07:59 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 7 | 08:06 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 07:59 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 8 | 08:07 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 07:59 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 8 | 08:07 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | | 07:59 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 9 | 08:08 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 07:59 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 9 | 08:08 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:00 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 9 | 08:09 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 07:59 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 10 | 08:09 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:00 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 10 | 08:10 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 07:34 (7) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:01 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 8 | 07:42 (7) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 10 | 08:11 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 07:28 (7) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:02 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20 | 07:48 (7) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 10 | 08:12 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 07:24 (7) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:03 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 27 | 07:51 (7) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 11 | 08:14 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:21 (7) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | 08:04 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 32 | 07:53 (7) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 11 | 08:15 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 07:19 (7) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:06 (7) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 36 | 07:55 (7) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 11 | 08:17 (7) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 07:17 (7) | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 | 07:19 | | 08:08 (7) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 39 | 07:56 (7) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 12 | 08:20 (7) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 07:15 (7) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:10 (7) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 42 | 07:57 (7) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 12 | 08:22 (7) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 07:13 (7) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 08:14 (7) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 45 | 07:58 (7) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 13 | 08:27 (7) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | | 07:12 (7) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 46 | 07:58 (7) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 07:11 (7) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 48 | 07:59 (7) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 07:09 (7) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 50 | 07:59 (7) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 08:09 (7) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 51 | 09:00 (7) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 08:08 (7) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 52 | 09:00 (7) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 08:07 (7) | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 54 | 09:01 (7) | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | | | 326 | 253 | 224 |
| Total, worst case | | | | 550 | | | | | | | | 212 | | | | |
| Sun reduction | | | | 0,34 | | | | | | | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,99 | | | | | | | | 0,99 | | | | |
| Total reduction | | | | 0,34 | | | | | | | | 0,39 | | | | |
| Total, real | | | | 186 | | | | | | | | 83 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 08:07 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 1 08:08 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 07:42 (7) | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:07 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 13 | 07:55 (7) | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 1 08:08 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 07:37 (7) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:07 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 22 | 07:59 (7) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 2 08:09 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 07:33 (7) | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:06 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 28 | 08:01 (7) | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 3 08:09 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 07:31 (7) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 33 | 08:04 (7) | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 4 08:10 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 07:29 (7) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:07 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 36 | 08:05 (7) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 4 08:11 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 07:27 (7) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:07 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 40 | 08:07 (7) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 5 08:12 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 07:25 (7) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:08 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 43 | 08:08 (7) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 6 08:14 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:23 (7) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:08 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 45 | 08:08 (7) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 7 08:15 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 07:23 (7) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:09 (7) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 47 | 08:10 (7) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 8 08:17 (7) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 07:21 (7) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:10 (7) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 49 | 08:10 (7) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 12 08:53 (7) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 07:21 (7) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:10 (7) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 50 | 08:11 (7) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 16 08:50 (7) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 07:19 (7) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 08:11 (7) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 52 | 08:11 (7) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 24 08:49 (7) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | | 07:18 (7) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 08:12 (7) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 52 | 08:10 (7) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 35 08:47 (7) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 07:18 (7) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 08:14 (7) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 53 | 08:11 (7) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 30 08:44 (7) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 07:17 (7) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 08:17 (7) | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 53 | 08:10 (7) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 24 08:41 (7) | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 08:17 (7) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 08:20 (7) | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 54 | 09:11 (7) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17 08:37 (7) | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 08:16 (7) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 54 | 09:10 (7) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 08:16 (7) | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 54 | 09:10 (7) | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 778 | | | | | | | 199 | | | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | | | | | | | 0,98 | | | | |
| Total reduction | | | | 0,34 | | | | | | | 0,39 | | | | |
| Total, real | | | | 261 | | | | | | | 77 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 08:06 (7) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 1 | 08:07 (7) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 08:06 (7) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 1 | 08:07 (7) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 08:06 (7) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 1 | 08:07 (7) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 08:06 (7) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 1 | 08:07 (7) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 08:06 (7) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 1 | 08:07 (7) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 08:05 (7) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 1 | 08:06 (7) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 08:05 (7) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 2 | 08:07 (7) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 08:05 (7) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 2 | 08:07 (7) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | | 08:05 (7) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 3 | 08:08 (7) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 08:05 (7) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 3 | 08:08 (7) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:06 (7) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 3 | 08:09 (7) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 08:05 (7) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 4 | 08:09 (7) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 07:39 (7) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:06 (7) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 16 | 07:55 (7) | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 4 | 08:10 (7) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 07:34 (7) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:06 (7) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 25 | 07:59 (7) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 5 | 08:11 (7) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 07:31 (7) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:07 (7) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 31 | 08:02 (7) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 5 | 08:12 (7) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 07:28 (7) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:08 (7) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 36 | 08:04 (7) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 6 | 08:14 (7) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:26 (7) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | 08:09 (7) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 39 | 08:05 (7) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 6 | 08:15 (7) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 07:24 (7) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:11 (7) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 43 | 08:07 (7) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 6 | 08:17 (7) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 07:22 (7) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | | 08:12 (7) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 46 | 08:08 (7) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 8 | 08:20 (7) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 07:21 (7) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:13 (7) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 49 | 08:10 (7) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 9 | 08:22 (7) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 07:19 (7) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 08:16 (7) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 51 | 08:10 (7) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 13 | 08:43 (7) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | | 07:17 (7) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | 08:19 (7) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 53 | 08:10 (7) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 20 | 08:39 (7) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 07:17 (7) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:27 (7) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 54 | 08:11 (7) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 4 | 08:31 (7) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 07:15 (7) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 56 | 08:11 (7) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 08:15 (7) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 57 | 09:12 (7) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 08:14 (7) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 58 | 09:12 (7) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 08:14 (7) | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 58 | 09:12 (7) | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 672 | | | | | | | | 109 | | | |
| Sun reduction | | | | 0,34 | | | | | | | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | | | | | | | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | | | | | | | | 0,99 | | | |
| Total reduction | | | | 0,34 | | | | | | | | 0,39 | | | |
| Total, real | | | | 226 | | | | | | | | 43 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:44 (7) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 3 | 06:47 (7) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 06:40 (7) | 05:01 | 04:57 | 05:41 | 06:44 (7) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 2 06:42 (7) | 22:03 | 22:17 | 21:38 2 | 06:46 (7) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 06:39 (7) | 05:00 | 04:58 | 05:43 | 06:44 (7) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 2 06:41 (7) | 22:05 | 22:17 | 21:36 3 | 06:47 (7) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 06:38 (7) | 04:59 | 04:59 | 05:45 | 06:45 (7) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 3 06:41 (7) | 22:06 | 22:16 | 21:34 3 | 06:48 (7) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 06:37 (7) | 04:58 | 05:00 | 05:47 | 06:45 (7) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 3 06:40 (7) | 22:07 | 22:16 | 21:32 3 | 06:48 (7) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 06:37 (7) | 04:57 | 05:01 | 05:49 | 06:46 (7) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 4 06:41 (7) | 22:08 | 22:15 | 21:30 4 | 06:50 (7) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 06:36 (7) | 04:56 | 05:02 | 05:50 | 06:47 (7) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 4 06:40 (7) | 22:09 | 22:14 | 21:28 3 | 06:50 (7) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 06:35 (7) | 04:56 | 05:03 | 05:52 | 06:48 (7) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 4 06:39 (7) | 22:10 | 22:14 | 21:25 3 | 06:51 (7) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 06:35 (7) | 04:55 | 05:04 | 05:54 | 06:48 (7) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 3 06:38 (7) | 22:11 | 22:13 | 21:23 2 | 06:50 (7) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 06:34 (7) | 04:54 | 05:05 | 05:56 | 06:49 (7) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 3 06:37 (7) | 22:12 | 22:12 | 21:21 2 | 06:51 (7) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 06:33 (7) | 04:54 | 05:07 | 05:58 | 06:50 (7) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 3 06:36 (7) | 22:13 | 22:11 | 21:19 1 | 06:51 (7) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 06:34 (7) | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 2 06:36 (7) | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 06:33 (7) | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 2 06:35 (7) | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 06:32 (7) | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 2 06:34 (7) | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 06:33 (7) | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 1 06:34 (7) | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 06:32 (7) | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 2 06:34 (7) | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 06:32 (7) | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 1 06:33 (7) | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 06:32 (7) | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 1 06:33 (7) | 22:18 | 22:03 | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 04:52 | 05:19 | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 22:18 | 22:00 | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 04:52 | 05:21 | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 22:19 | 21:58 | 20:56 | | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 04:52 | 05:22 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 22:19 | 21:55 | 20:51 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 04:53 | 05:26 06:42 (7) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 22:19 | 21:54 1 06:43 (7) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 22:19 | 21:52 | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:56 (7) | 05:09 04:54 | 05:29 06:42 (7) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 12 07:08 (7) | 21:53 22:19 | 21:50 1 06:43 (7) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:51 (7) | 05:08 04:54 | 05:31 06:43 (7) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 21 07:12 (7) | 21:55 22:19 | 21:49 1 06:44 (7) | 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:49 (7) | 05:06 04:55 | 05:32 06:43 (7) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 10 07:15 (7) | 21:56 22:19 | 21:47 1 06:44 (7) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:46 (7) | 05:05 04:55 | 05:34 06:43 (7) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 8 06:54 (7) | 21:58 22:18 | 21:45 2 06:45 (7) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:44 (7) | 05:04 04:56 | 05:36 06:43 (7) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 7 06:51 (7) | 21:59 22:18 | 21:43 2 06:45 (7) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 05:38 06:43 (7) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | 21:41 3 06:46 (7) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 58 | 42 | | 11 | 29 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | | 0,46 | 0,49 | | | | |
| Total, real | | | | 22 | 21 | | 5 | 14 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:43 (7) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 4 | 06:47 (7) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:43 (7) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 3 | 06:46 (7) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:44 (7) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 3 | 06:47 (7) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 06:39 (7) | 04:59 | 04:59 | 05:45 | 06:45 (7) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 2 06:41 (7) | 22:06 | 22:16 | 21:34 3 | 06:48 (7) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 06:38 (7) | 04:58 | 05:00 | 05:47 | 06:45 (7) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 2 06:40 (7) | 22:07 | 22:16 | 21:32 3 | 06:48 (7) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 06:38 (7) | 04:57 | 05:01 | 05:49 | 06:46 (7) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 3 06:41 (7) | 22:08 | 22:15 | 21:30 4 | 06:50 (7) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 06:37 (7) | 04:56 | 05:02 | 05:50 | 06:47 (7) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 3 06:40 (7) | 22:09 | 22:14 | 21:28 3 | 06:50 (7) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 06:36 (7) | 04:56 | 05:03 | 05:52 | 06:49 (7) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 3 06:39 (7) | 22:10 | 22:14 | 21:25 2 | 06:51 (7) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 06:35 (7) | 04:55 | 05:04 | 05:54 | 06:49 (7) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 3 06:38 (7) | 22:11 | 22:13 | 21:23 1 | 06:50 (7) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 06:34 (7) | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 3 06:37 (7) | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 06:33 (7) | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 3 06:36 (7) | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 06:33 (7) | 04:53 | 05:08 06:39 (7) | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 3 06:36 (7) | 22:14 | 22:10 1 06:40 (7) | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 06:32 (7) | 04:53 | 05:09 06:39 (7) | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 3 06:35 (7) | 22:15 | 22:09 1 06:40 (7) | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 06:31 (7) | 04:53 | 05:11 06:39 (7) | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 3 06:34 (7) | 22:15 | 22:08 1 06:40 (7) | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 06:32 (7) | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 2 06:34 (7) | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 06:31 (7) | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 3 06:34 (7) | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 06:30 (7) | 04:52 | 05:15 06:39 (7) | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 3 06:33 (7) | 22:17 | 22:04 1 06:40 (7) | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 06:30 (7) | 04:52 | 05:16 06:39 (7) | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 3 06:33 (7) | 22:18 | 22:03 1 06:40 (7) | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 06:30 (7) | 04:52 | 05:18 06:40 (7) | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 2 06:32 (7) | 22:18 | 22:01 1 06:41 (7) | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 06:30 (7) | 04:52 | 05:19 06:40 (7) | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 2 06:32 (7) | 22:18 | 22:00 1 06:41 (7) | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 06:30 (7) | 04:52 | 05:21 06:39 (7) | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 2 06:32 (7) | 22:19 | 21:58 2 06:41 (7) | 20:56 | | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 06:30 (7) | 04:52 | 05:22 06:40 (7) | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 1 06:31 (7) | 22:19 | 21:57 2 06:42 (7) | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 06:30 (7) | 04:53 | 05:24 06:40 (7) | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 1 06:31 (7) | 22:19 | 21:55 2 06:42 (7) | 20:51 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 06:30 (7) | 04:53 | 05:26 06:40 (7) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 2 06:32 (7) | 22:19 | 21:54 3 06:43 (7) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 06:29 (7) | 04:53 | 05:27 06:40 (7) | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 2 06:31 (7) | 22:19 | 21:52 2 06:42 (7) | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 06:30 (7) | 04:54 | 05:29 06:41 (7) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 1 06:31 (7) | 22:19 | 21:50 2 06:43 (7) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 06:30 (7) | 04:54 | 05:31 06:42 (7) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 1 06:31 (7) | 22:19 | 21:49 2 06:44 (7) | 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:56 (7) | 05:06 06:30 (7) | 04:55 | 05:32 06:41 (7) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 2 06:58 (7) | 21:56 1 06:31 (7) | 22:19 | 21:47 3 06:44 (7) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:51 (7) | 05:05 06:30 (7) | 04:55 | 05:34 06:42 (7) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 3 06:54 (7) | 21:58 1 06:31 (7) | 22:18 | 21:45 3 06:45 (7) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:48 (7) | 05:04 | 04:56 | 05:36 06:42 (7) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 3 06:51 (7) | 21:59 | 22:18 | 21:43 3 06:45 (7) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 06:43 (7) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 3 06:46 (7) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Total, worst case | | | | 8 | 58 | | 34 | 26 | | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | 0,95 | 0,95 | | | | | |
| Total reduction | | | | 0,37 | 0,49 | | 0,46 | 0,49 | | | | | |
| Total, real | | | | 3 | 28 | | 16 | 13 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 10:11 (7) | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 2 10:13 (7) | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 10:01 (7) | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 23 10:24 (7) | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 09:57 (7) | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 32 10:29 (7) | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 09:53 (7) | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 39 10:32 (7) | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 09:50 (7) | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 45 10:35 (7) | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 09:36 (7) | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 80 10:56 (7) | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 09:35 (7) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 81 10:56 (7) | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 09:33 (7) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 82 10:55 (7) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 09:32 (7) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 82 10:54 (7) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 09:30 (7) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 10:08 (7) | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 83 10:53 (7) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 3 10:11 (7) | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 09:28 (7) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 10:06 (7) | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 84 10:52 (7) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 6 10:12 (7) | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 09:26 (7) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 10:05 (7) | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 85 10:51 (7) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 8 10:13 (7) | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 09:23 (7) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 10:06 (7) | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 86 10:49 (7) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 9 10:15 (7) | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 09:29 (7) | 06:28 09:21 (7) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 10:08 (7) | 08:23 | 09:00 |
| | 16:51 | 17:57 1 09:30 (7) | 18:54 88 10:49 (7) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 10 10:18 (7) | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 09:29 (7) | 06:26 09:19 (7) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 09:09 (7) | 08:24 | 09:00 |
| | 16:53 | 17:59 1 09:30 (7) | 18:55 88 10:47 (7) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 13 10:17 (7) | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 09:27 (7) | 06:23 09:18 (7) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 09:10 (7) | 08:26 | 09:00 |
| | 16:55 | 18:01 3 09:30 (7) | 18:57 87 10:45 (7) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 15 10:15 (7) | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 09:27 (7) | 06:21 09:19 (7) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 09:12 (7) | 08:28 | 09:00 |
| | 16:58 | 18:03 3 09:30 (7) | 18:59 85 10:44 (7) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 17 10:13 (7) | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 09:25 (7) | 06:18 09:20 (7) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 09:13 (7) | 08:30 | 09:01 |
| | 17:00 | 18:05 5 09:30 (7) | 19:01 82 10:42 (7) | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 21 10:11 (7) | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 10:21 (7) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 09:16 (7) | 08:31 | 09:01 |
| | 17:02 | | 20:03 79 11:40 (7) | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 25 10:09 (7) | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 10:21 (7) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 09:18 (7) | 08:33 | 09:01 |
| | 17:04 | | 20:05 77 11:38 (7) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 33 10:07 (7) | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 10:22 (7) | | 05:03 | | 05:38 | 06:36 | | 07:34 09:20 (7) | | 09:01 |
| | 17:06 | | 20:07 74 11:36 (7) | | 22:01 | | 21:41 | 20:32 | | 17:00 44 10:04 (7) | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 154 | 1323 | | | | | | | 204 | 90 | |
| Sun reduction | | 0,25 | 0,34 | | | | | | | 0,31 | 0,16 | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | | 1,00 | 1,00 | |
| Wind dir. red. | | 0,69 | 0,69 | | | | | | | 0,69 | 0,69 | |
| Total reduction | | 0,17 | 0,23 | | | | | | | 0,21 | 0,11 | |
| Total, real | | 26 | 310 | | | | | | | 43 | 10 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June | July | August | September | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | 08:39 (7) | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | | 07:36 | 08:35 |
| | 16:14 | 17:08 | | 18:07 | 1 08:40 (7) | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | | 07:24 | 08:38 (7) | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | | 07:38 | 08:36 |
| | 16:15 | 17:10 | | 18:09 | 1 08:39 (7) | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | | 07:22 | 08:38 (7) | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:41 | 08:38 |
| | 16:16 | 17:12 | | 18:11 | 1 08:39 (7) | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | | 07:19 | 08:37 (7) | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:43 | 08:40 |
| | 16:17 | 17:14 | | 18:13 | 1 08:38 (7) | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | 08:41 |
| | 16:19 | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | | 07:49 | 08:44 |
| | 16:21 | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | 08:45 |
| | 16:23 | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | 08:47 |
| | 16:24 | 17:25 | | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 09:12 (7) | 07:55 | 08:48 |
| | 16:26 | 17:27 | | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 1 09:13 (7) | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 09:12 (7) | 07:57 | 08:49 |
| | 16:28 | 17:29 | | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 1 09:13 (7) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 09:03 (7) | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 09:12 (7) | 07:59 | 08:50 |
| | 16:29 | 17:31 | 12 09:15 (7) | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 1 09:13 (7) | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 08:59 (7) | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 09:12 (7) | 08:01 | 08:51 |
| | 16:31 | 17:33 | 21 09:20 (7) | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 1 09:13 (7) | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 08:55 (7) | 06:54 | | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 09:12 (7) | 08:03 | 08:52 |
| | 16:33 | 17:36 | 27 09:22 (7) | 18:34 | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 1 09:13 (7) | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 08:53 (7) | 06:51 | | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 09:12 (7) | 08:05 | 08:53 |
| | 16:34 | 17:38 | 32 09:25 (7) | 18:36 | | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 2 09:14 (7) | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 08:51 (7) | 06:49 | | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 09:12 (7) | 08:07 | 08:54 |
| | 16:36 | 17:40 | 36 09:27 (7) | 18:38 | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 2 09:14 (7) | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 08:49 (7) | 06:46 | | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 09:12 (7) | 08:09 | 08:55 |
| | 16:38 | 17:42 | 39 09:28 (7) | 18:40 | | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 3 09:15 (7) | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 08:48 (7) | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 09:13 (7) | 08:11 | 08:56 |
| | 16:40 | 17:44 | 42 09:30 (7) | 18:42 | | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 3 09:16 (7) | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 08:47 (7) | 06:41 | | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 09:14 (7) | 08:13 | 08:57 |
| | 16:42 | 17:46 | 43 09:30 (7) | 18:44 | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 3 09:17 (7) | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 08:45 (7) | 06:39 | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 09:14 (7) | 08:15 | 08:57 |
| | 16:44 | 17:48 | 45 09:30 (7) | 18:46 | | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 4 09:18 (7) | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 08:44 (7) | 06:36 | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 09:15 (7) | 08:17 | 08:58 |
| | 16:46 | 17:50 | 46 09:30 (7) | 18:48 | | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 4 09:19 (7) | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 08:43 (7) | 06:33 | | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 09:15 (7) | 08:19 | 08:59 |
| | 16:48 | 17:53 | 47 09:30 (7) | 18:50 | | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 5 09:20 (7) | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 08:42 (7) | 06:31 | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 09:16 (7) | 08:21 | 08:59 |
| | 16:49 | 17:55 | 48 09:30 (7) | 18:52 | | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 5 09:21 (7) | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 08:41 (7) | 06:28 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 09:18 (7) | 08:23 | 09:00 |
| | 16:51 | 17:57 | 49 09:30 (7) | 18:54 | | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 6 09:24 (7) | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 08:41 (7) | 06:26 | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:20 (7) | 08:24 | 09:00 |
| | 16:53 | 17:59 | 49 09:30 (7) | 18:56 | | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 6 08:26 (7) | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:39 (7) | 06:23 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:21 (7) | 08:26 | 09:00 |
| | 16:55 | 18:01 | 51 09:30 (7) | 18:57 | | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 7 08:28 (7) | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 08:39 (7) | 06:21 | | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:23 (7) | 08:28 | 09:00 |
| | 16:58 | 18:03 | 51 09:30 (7) | 18:59 | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 11 08:54 (7) | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 08:38 (7) | 06:18 | | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:25 (7) | 08:30 | 09:01 |
| | 17:00 | 18:05 | 52 09:30 (7) | 19:01 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 19 08:51 (7) | 16:13 | 16:09 |
| 29 | 08:33 | | | 07:15 | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:29 (7) | 08:31 | 09:01 |
| | 17:02 | | | 20:03 | | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 19 08:48 (7) | 16:12 | 16:10 |
| 30 | 08:31 | | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:34 (7) | 08:33 | 09:01 |
| | 17:04 | | | 20:05 | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 9 08:43 (7) | 16:11 | 16:11 |
| 31 | 08:29 | | | 07:10 | | | 05:03 | | 05:38 | 06:36 | | 07:34 | | | 09:01 |
| | 17:06 | | | 20:07 | | | 22:01 | | 21:41 | 20:32 | | 17:00 | | | 16:12 |
| Potential sun hours | 242 | 269 | | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | | 690 | | 4 | | | | | | | | 113 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | | | | | | 0,31 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | | | | | 1,00 | | |
| Wind dir. red. | | | 0,84 | | 0,84 | | | | | | | | 0,84 | | |
| Total reduction | | | 0,21 | | 0,29 | | | | | | | | 0,26 | | |
| Total, real | | | 142 | | 1 | | | | | | | | 29 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 shut downShadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | April | May | June | July | August | September | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49 (8) | 07:26 | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | | 07:36 | | 08:35 |
| | 16:13 | | 17:08 | 32 16:21 (8) | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | | 16:57 | | 16:10 |
| 2 | 09:00 | | 08:25 | 15:48 (8) | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | | 07:38 | | 08:36 |
| | 16:15 | | 17:10 | 33 16:21 (8) | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | | 16:55 | | 16:09 |
| 3 | 09:00 | | 08:23 | 15:48 (8) | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:40 | | 08:38 |
| | 16:16 | | 17:12 | 34 16:22 (8) | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | | 16:53 | | 16:08 |
| 4 | 08:59 | | 08:22 | 15:48 (8) | 07:19 | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:42 | | 08:39 |
| | 16:17 | | 17:14 | 34 16:22 (8) | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | | 16:51 | | 16:07 |
| 5 | 08:59 | | 08:20 | 15:49 (8) | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 | | 07:44 | | 08:41 |
| | 16:18 | | 17:16 | 33 16:22 (8) | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | | 16:49 | | 16:06 |
| 6 | 08:59 | | 08:18 | 15:49 (8) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | | 07:46 | | 08:42 |
| | 16:20 | | 17:18 | 34 16:23 (8) | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | | 16:47 | | 16:06 |
| 7 | 08:58 | | 08:16 | 15:49 (8) | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | | 07:48 | 15:52 (8) | 08:44 |
| | 16:21 | | 17:20 | 34 16:23 (8) | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | | 16:45 | 1 15:53 (8) | 16:05 |
| 8 | 08:57 | | 08:14 | 15:50 (8) | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | | 08:45 |
| | 16:23 | | 17:23 | 33 16:23 (8) | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | | 16:43 | | 16:05 |
| 9 | 08:57 | | 08:12 | 15:49 (8) | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | | 07:53 | 15:51 (8) | 08:46 |
| | 16:24 | | 17:25 | 33 16:22 (8) | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | | 16:41 | 1 15:52 (8) | 16:04 |
| 10 | 08:56 | | 08:10 | 15:50 (8) | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | | 07:55 | 15:50 (8) | 08:48 |
| | 16:26 | | 17:27 | 31 16:21 (8) | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | | 16:39 | 1 15:51 (8) | 16:04 |
| 11 | 08:55 | | 08:07 | 15:51 (8) | 07:01 | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | | 07:57 | 15:50 (8) | 08:49 |
| | 16:27 | | 17:29 | 30 16:21 (8) | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | | 16:38 | 2 15:52 (8) | 16:04 |
| 12 | 08:55 | | 08:05 | 15:52 (8) | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 | | 07:59 | 15:49 (8) | 08:50 |
| | 16:29 | | 17:31 | 29 16:21 (8) | 18:29 | 20:31 | 21:29 | 22:14 | 22:09 | 21:17 | 20:01 | 18:44 | | 16:36 | 2 15:51 (8) | 16:04 |
| 13 | 08:54 | | 08:03 | 15:53 (8) | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | | 08:01 | 15:48 (8) | 08:51 |
| | 16:31 | | 17:33 | 26 16:19 (8) | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | | 16:34 | 2 15:50 (8) | 16:03 |
| 14 | 08:53 | | 08:01 | 15:54 (8) | 06:54 | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | | 08:03 | 15:47 (8) | 08:52 |
| | 16:32 | | 17:35 | 24 16:18 (8) | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | | 16:32 | 3 15:50 (8) | 16:03 |
| 15 | 08:52 | | 07:59 | 15:56 (8) | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | | 08:05 | 15:47 (8) | 08:53 |
| | 16:34 | | 17:38 | 21 16:17 (8) | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | | 16:30 | 3 15:50 (8) | 16:03 |
| 16 | 08:51 | | 07:57 | 15:58 (8) | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | 08:07 | 15:45 (8) | 08:54 |
| | 16:36 | | 17:40 | 16 16:14 (8) | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | | 16:29 | 4 15:49 (8) | 16:03 |
| 17 | 08:49 | | 07:54 | 16:01 (8) | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 08:09 | 15:43 (8) | 08:55 |
| | 16:38 | | 17:42 | 10 16:11 (8) | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | | 16:27 | 5 15:48 (8) | 16:03 |
| 18 | 08:48 | | 07:52 | | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | | 08:11 | 15:28 (8) | 08:56 |
| | 16:40 | | 17:44 | | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | | 16:26 | 6 15:46 (8) | 16:04 |
| 19 | 08:47 | | 07:50 | | 06:41 | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:10 | | 08:13 | 15:29 (8) | 08:56 |
| | 16:42 | | 17:46 | | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 13 15:44 (8) | 16:04 |
| 20 | 08:46 | | 07:48 | | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | | 08:15 | 15:33 (8) | 08:57 |
| | 16:43 | | 17:48 | | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | | 16:23 | 10 15:43 (8) | 16:04 |
| 21 | 08:45 | | 07:45 | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:14 | | 08:17 | | 08:58 |
| | 16:45 | | 17:50 | | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | | 16:21 | | 16:05 |
| 22 | 08:43 | 15:58 (8) | 07:43 | | 06:33 | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | | 08:18 | | 08:58 |
| | 16:47 | 10 16:08 (8) | 17:52 | | 18:49 | 20:50 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | | 16:20 | | 16:05 |
| 23 | 08:42 | 15:55 (8) | 07:41 | | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | | 08:20 | | 08:59 |
| | 16:49 | 15 16:10 (8) | 17:54 | | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | | 16:18 | | 16:06 |
| 24 | 08:40 | 15:54 (8) | 07:38 | | 06:28 | 06:11 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | | 08:22 | | 08:59 |
| | 16:51 | 18 16:12 (8) | 17:57 | | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | | 16:17 | | 16:06 |
| 25 | 08:39 | 15:53 (8) | 07:36 | | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 15:30 (8) | 08:24 | | 09:00 |
| | 16:53 | 22 16:15 (8) | 17:59 | | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 12 15:42 (8) | 16:16 | | 16:07 |
| 26 | 08:37 | 15:52 (8) | 07:33 | | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | 15:28 (8) | 08:26 | | 09:00 |
| | 16:55 | 24 16:16 (8) | 18:01 | | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 17 15:45 (8) | 16:15 | | 16:07 |
| 27 | 08:36 | 15:51 (8) | 07:31 | | 06:20 | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 07:26 | 15:25 (8) | 08:28 | | 09:00 |
| | 16:57 | 26 16:17 (8) | 18:03 | | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 22 15:47 (8) | 16:14 | | 16:08 |
| 28 | 08:34 | 15:50 (8) | 07:29 | | 06:18 | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 07:28 | 15:23 (8) | 08:29 | | 09:00 |
| | 16:59 | 28 16:18 (8) | 18:05 | | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 25 15:48 (8) | 16:12 | | 16:09 |
| 29 | 08:32 | 15:50 (8) | | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 15:22 (8) | 08:31 | | 09:00 |
| | 17:01 | 29 16:19 (8) | | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 27 15:49 (8) | 16:11 | | 16:10 |
| 30 | 08:31 | 15:49 (8) | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 15:22 (8) | 08:33 | | 09:00 |
| | 17:04 | 30 16:19 (8) | | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 28 15:50 (8) | 16:10 | | 16:11 |
| 31 | 08:29 | 15:49 (8) | | | 07:10 | | 05:02 | | 05:37 | 06:35 | | 07:34 | | | | 09:00 |
| | 17:06 | 31 16:20 (8) | | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 16:59 | | | | 16:12 |
| Potential sun hours | 242 | | 269 | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | | 224 |
| Total, worst case | | 233 | | 487 | | | | | | | | | 131 | | 53 | |
| Sun reduction | | 0,18 | | 0,25 | | | | | | | | | 0,31 | | 0,16 | |
| Oper. time red. | | 1,00 | | 1,00 | | | | | | | | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,73 | | 0,73 | | | | | | | | | 0,73 | | 0,73 | |
| Total reduction | | 0,13 | | 0,18 | | | | | | | | | 0,23 | | 0,12 | |
| Total, real | | 31 | | 88 | | | | | | | | | 30 | | 6 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | | 17:32 (8) | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | | 07:34 | | 18:01 (8) | 07:36 | 08:34 |
| | 16:13 | 17:08 | 18:07 | 7 | 17:39 (8) | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | | 19:12 | 24 | 18:25 (8) | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | | 17:28 (8) | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | | 07:36 | | 18:00 (8) | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 13 | 17:41 (8) | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | | 19:09 | 26 | 18:26 (8) | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | | 17:27 (8) | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | | 07:38 | | 17:59 (8) | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 16 | 17:43 (8) | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | | 19:06 | 27 | 18:26 (8) | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | | 17:25 (8) | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | | 07:40 | | 17:59 (8) | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20 | 17:45 (8) | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | | 19:04 | 26 | 18:25 (8) | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | | 17:23 (8) | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | | 07:42 | | 17:57 (8) | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 23 | 17:46 (8) | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | | 19:01 | 27 | 18:24 (8) | 16:49 | 16:06 |
| 6 | 08:59 | 08:18 | 07:14 | | 17:23 (8) | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | | 07:44 | | 17:57 (8) | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 24 | 17:47 (8) | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | | 18:59 | 26 | 18:23 (8) | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | | 17:21 (8) | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 07:46 | | 17:57 (8) | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 26 | 17:47 (8) | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | | 18:56 | 26 | 18:23 (8) | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | | 17:21 (8) | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 07:48 | | 17:59 (8) | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 27 | 17:48 (8) | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | | 18:54 | 24 | 18:23 (8) | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | | 17:21 (8) | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | | 07:50 | | 17:59 (8) | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 26 | 17:47 (8) | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:08 | | 18:51 | 23 | 18:22 (8) | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | | 17:21 (8) | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | | 07:52 | | 18:00 (8) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 27 | 17:48 (8) | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | | 18:49 | 19 | 18:19 (8) | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | | 17:21 (8) | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | | 07:54 | | 18:01 (8) | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 26 | 17:47 (8) | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | | 18:46 | 15 | 18:16 (8) | 16:37 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | | 17:20 (8) | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | | 07:56 | | 18:03 (8) | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 26 | 17:46 (8) | 20:31 | 21:29 | 22:14 | 22:09 | 21:16 | 20:01 | | 18:44 | 11 | 18:14 (8) | 16:36 | 16:03 |
| 13 | 08:54 | 08:03 | 06:56 | | 17:21 (8) | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | | 07:58 | | | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 24 | 17:45 (8) | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | | 18:41 | | | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | | 17:22 (8) | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | | 07:59 | | | 08:03 | 08:52 |
| | 16:32 | 17:35 | 18:33 | 22 | 17:44 (8) | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | | 18:39 | | | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 17:23 (8) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:01 | | | 08:05 | 08:53 |
| | 16:34 | 17:37 | 18:35 | 20 | 17:43 (8) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | | 18:36 | | | 16:30 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 17:25 (8) | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | | 08:03 | | | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 15 | 17:40 (8) | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | | 18:34 | | | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | | 17:27 (8) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:07 | | 08:05 | | | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 10 | 17:37 (8) | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | | 18:32 | | | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | | 08:07 | | | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | | | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | | 18:29 | | | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | | 08:09 | | | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | | 18:27 | | | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:12 | | | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | | | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | | 18:24 | | | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | | | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | | 08:14 | | | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | | | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | | 18:22 | | | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | | 08:16 | | | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | | | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | | 18:20 | | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | | 08:18 | | | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | | | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | | 18:17 | | | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | | | 06:10 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | | 08:20 | | | 08:22 | 08:59 |
| | 16:51 | 17:56 | 18:53 | | | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | | 18:15 | | | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 07:22 | | | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | | | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | 17:13 | | | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | | | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 18:11 (8) | 07:24 | | | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | | | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:24 | 7 18:18 (8) | 17:10 | | | 16:15 | 16:07 |
| 27 | 08:36 | 07:31 | 06:20 | | | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 18:07 (8) | 07:26 | | | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | | | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 14 18:21 (8) | 17:08 | | | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 18:05 (8) | 07:28 | | | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | | | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 18 18:23 (8) | 17:06 | | | 16:12 | 16:09 |
| 29 | 08:32 | | 07:15 | | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 18:03 (8) | 07:30 | | | 08:31 | 09:00 |
| | 17:01 | | 20:03 | | | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 21 18:24 (8) | 17:04 | | | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 18:02 (8) | 07:32 | | | 08:33 | 09:00 |
| | 17:04 | | 20:05 | | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 23 18:25 (8) | 17:02 | | | 16:10 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:02 | | 05:37 | 06:35 | | | 07:34 | | | | 09:00 |
| | 17:06 | | 20:07 | | | | 22:00 | | 21:41 | 20:31 | | | 16:59 | | | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 352 | | | | | | | 83 | | 274 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,95 | | | | | | | 0,95 | | 0,95 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,29 | | |
| Total, real | | | | 115 | | | | | | | 31 | | 80 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 shut downShadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | | April | | | May | | June | | July | | August | | September | | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | | 07:08 | | 07:41 (6) | 05:55 | | 05:02 | | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | 07:37 | | 08:35 | |
| | 16:14 | | 17:08 | | 18:07 | | | 20:10 | 20 | 08:01 (6) | 21:09 | | 22:02 | | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | | 16:10 | |
| 2 | 09:01 | | 08:26 | | 07:24 | | | 07:05 | | 07:41 (6) | 05:53 | | 05:01 | | 04:58 | | 05:42 | | 06:40 | | | 07:37 | | 07:39 | | 08:37 | |
| | 16:15 | | 17:10 | | 18:10 | | | 20:12 | 20 | 08:01 (6) | 21:11 | | 22:04 | | 22:18 | | 21:38 | | 20:27 | | | 19:10 | | 16:56 | | 16:09 | |
| 3 | 09:00 | | 08:24 | | 07:22 | | | 07:03 | | 07:42 (6) | 05:51 | | 05:00 | | 04:59 | | 05:43 | | 06:42 | | | 07:39 | | 07:41 | | 08:38 | |
| | 16:16 | | 17:13 | | 18:12 | | | 20:14 | 17 | 07:59 (6) | 21:13 | | 22:05 | | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | 16:54 | | 16:08 | |
| 4 | 09:00 | | 08:22 | | 07:19 | | | 07:00 | | 07:43 (6) | 05:49 | | 04:59 | | 04:59 | | 05:45 | | 06:44 | | | 07:40 | | 07:43 | | 08:40 | |
| | 16:18 | | 17:15 | | 18:14 | | | 20:16 | 15 | 07:58 (6) | 21:14 | | 22:06 | | 22:16 | | 21:34 | | 20:22 | | | 19:04 | | 16:52 | | 16:08 | |
| 5 | 09:00 | | 08:20 | | 07:17 | | | 06:58 | | 07:44 (6) | 05:46 | | 04:58 | | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 07:45 | | 08:41 | |
| | 16:19 | | 17:17 | | 18:16 | | | 20:17 | 11 | 07:55 (6) | 21:16 | | 22:07 | | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | 16:50 | | 16:07 | |
| 6 | 08:59 | | 08:18 | | 07:14 | | | 06:55 | | | 05:44 | | 04:57 | | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 07:47 | | 08:43 | |
| | 16:20 | | 17:19 | | 18:18 | | | 20:19 | | | 21:18 | | 22:08 | | 22:15 | | 21:30 | | 20:17 | | | 18:59 | | 16:48 | | 16:06 | |
| 7 | 08:59 | | 08:16 | | 07:12 | | | 06:53 | | | 05:42 | | 04:57 | | 05:02 | | 05:51 | | 06:49 | | 07:40 (6) | 07:46 | | 07:49 | | 08:44 | |
| | 16:22 | | 17:21 | | 18:20 | | | 20:21 | | | 21:20 | | 22:09 | | 22:14 | | 21:28 | | 20:14 | 10 | 07:50 (6) | 18:57 | | 16:46 | | 16:06 | |
| 8 | 08:58 | | 08:14 | | 07:09 | | | 06:50 | | | 05:40 | | 04:56 | | 05:04 | | 05:53 | | 06:51 | | 07:37 (6) | 07:48 | | 07:51 | | 08:46 | |
| | 16:23 | | 17:23 | | 18:22 | | | 20:23 | | | 21:22 | | 22:10 | | 22:14 | | 21:26 | | 20:12 | 15 | 07:52 (6) | 18:54 | | 16:44 | | 16:05 | |
| 9 | 08:57 | | 08:12 | | 07:07 | | | 06:48 | | | 05:38 | | 04:55 | | 05:05 | | 05:54 | | 06:53 | | 07:36 (6) | 07:50 | | 07:53 | | 08:47 | |
| | 16:25 | | 17:25 | | 18:24 | | | 20:25 | | | 21:24 | | 22:11 | | 22:13 | | 21:24 | | 20:09 | 17 | 07:53 (6) | 18:52 | | 16:42 | | 16:05 | |
| 10 | 08:57 | | 08:10 | | 07:04 | | | 06:45 | | | 05:36 | | 04:55 | | 05:06 | | 05:56 | | 06:55 | | 07:35 (6) | 07:52 | | 07:55 | | 08:48 | |
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| 11 | 08:56 | | 08:08 | | 07:02 | | | 06:43 | | | 05:34 | | 04:54 | | 05:07 | | 05:58 | | 06:57 | | 07:34 (6) | 07:54 | | 07:57 | | 08:49 | |
| | 16:28 | | 17:30 | | 18:28 | | | 20:29 | | | 21:28 | | 22:13 | | 22:11 | | 21:19 | | 20:04 | 21 | 07:55 (6) | 18:47 | | 16:38 | | 16:04 | |
| 12 | 08:55 | | 08:06 | | 06:59 | | | 06:40 | | | 05:32 | | 04:54 | | 05:08 | | 06:00 | | 06:59 | | 07:32 (6) | 07:56 | | 07:59 | | 08:50 | |
| | 16:30 | | 17:32 | | 18:30 | | | 20:31 | | | 21:30 | | 22:14 | | 22:10 | | 21:17 | | 20:01 | 22 | 07:54 (6) | 18:44 | | 16:36 | | 16:04 | |
| 13 | 08:54 | | 08:04 | | 06:57 | | | 06:38 | | | 05:30 | | 04:53 | | 05:10 | | 06:02 | | 07:01 | | 07:32 (6) | 07:58 | | 08:01 | | 08:52 | |
| | 16:31 | | 17:34 | | 18:32 | | | 20:33 | | | 21:31 | | 22:15 | | 22:09 | | 21:15 | | 19:59 | 22 | 07:54 (6) | 18:42 | | 16:34 | | 16:04 | |
| 14 | 08:53 | | 08:02 | | 06:54 | | | 06:35 | | | 05:29 | | 04:53 | | 05:11 | | 06:04 | | 07:02 | | 07:32 (6) | 08:00 | | 08:03 | | 08:53 | |
| | 16:33 | | 17:36 | | 18:34 | | | 20:35 | | | 21:33 | | 22:16 | | 22:08 | | 21:13 | | 19:56 | 21 | 07:53 (6) | 18:39 | | 16:33 | | 16:04 | |
| 15 | 08:52 | | 07:59 | | 06:52 | | | 06:33 | | | 05:27 | | 04:53 | | 05:12 | | 06:06 | | 07:04 | | 07:32 (6) | 08:02 | | 08:05 | | 08:54 | |
| | 16:35 | | 17:38 | | 18:36 | | | 20:37 | | | 21:35 | | 22:16 | | 22:07 | | 21:10 | | 19:54 | 21 | 07:53 (6) | 18:37 | | 16:31 | | 16:04 | |
| 16 | 08:51 | | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 04:53 | | 05:14 | | 06:08 | | 07:06 | | 07:34 (6) | 08:04 | | 08:07 | | 08:55 | |
| | 16:37 | | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | | 22:17 | | 22:05 | | 21:08 | | 19:51 | 18 | 07:52 (6) | 18:35 | | 16:29 | | 16:04 | |
| 17 | 08:50 | | 07:55 | | 06:47 | | | 06:28 | | | 05:23 | | 04:52 | | 05:15 | | 06:09 | | 07:08 | | 07:36 (6) | 08:06 | | 08:09 | | 08:55 | |
| | 16:38 | | 17:42 | | 18:40 | | | 20:41 | | | 21:39 | | 22:17 | | 22:04 | | 21:06 | | 19:48 | 15 | 07:51 (6) | 18:32 | | 16:28 | | 16:04 | |
| 18 | 08:49 | | 07:53 | | 06:44 | | | 06:25 | | | 05:22 | | 04:52 | | 05:17 | | 06:11 | | 07:10 | | 07:37 (6) | 08:08 | | 08:11 | | 08:56 | |
| | 16:40 | | 17:44 | | 18:42 | | | 20:43 | | | 21:40 | | 22:18 | | 22:03 | | 21:03 | | 19:46 | 12 | 07:49 (6) | 18:30 | | 16:26 | | 16:04 | |
| 19 | 08:48 | | 07:50 | | 06:41 | | | 06:23 | | | 05:20 | | 04:52 | | 05:18 | | 06:13 | | 07:12 | | 07:39 (6) | 08:10 | | 08:13 | | 08:57 | |
| | 16:42 | | 17:47 | | 18:44 | | | 20:45 | | | 21:42 | | 22:18 | | 22:01 | | 21:01 | | 19:43 | 8 | 07:47 (6) | 18:27 | | 16:25 | | 16:04 | |
| 20 | 08:46 | | 07:48 | | 06:39 | | | 06:21 | | | 05:18 | | 04:52 | | 05:20 | | 06:15 | | 07:14 | | 07:41 (6) | 08:12 | | 08:15 | | 08:58 | |
| | 16:44 | | 17:49 | | 18:46 | | | 20:47 | | | 21:44 | | 22:18 | | 22:00 | | 20:59 | | 19:41 | 3 | 07:44 (6) | 18:25 | | 16:23 | | 16:05 | |
| 21 | 08:45 | | 07:46 | | 06:36 | | | 06:18 | | | 05:17 | | 04:52 | | 05:21 | | 06:17 | | 07:16 | | | 08:14 | | 08:17 | | 08:58 | |
| | 16:46 | | 17:51 | | 18:48 | | | 20:49 | | | 21:46 | | 22:19 | | 21:59 | | 20:56 | | 19:38 | | | 18:23 | | 16:22 | | 16:05 | |
| 22 | 08:44 | | 07:43 | | 06:34 | | | 06:16 | | | 05:15 | | 04:53 | | 05:23 | | 06:19 | | 07:17 | | | 08:16 | | 08:19 | | 08:59 | |
| | 16:48 | | 17:53 | | 18:50 | | | 20:51 | | | 21:47 | | 22:19 | | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | 16:20 | | 16:06 | |
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| | 16:50 | | 17:55 | | 18:52 | | | 20:53 | | | 21:49 | | 22:19 | | 21:55 | | 20:52 | | 19:33 | | | 18:18 | | 16:19 | | 16:06 | |
| 24 | 08:41 | | 07:39 | | 06:29 | | 06:53 (6) | 06:11 | | | 05:12 | | 04:53 | | 05:26 | | 06:23 | | 07:21 | | | 08:20 | | 08:23 | | 09:00 | |
| | 16:52 | | 17:57 | | 18:54 | 7 | 07:00 (6) | 20:55 | | | 21:51 | | 22:19 | | 21:54 | | 20:49 | | 19:30 | | | 18:16 | | 16:18 | | 16:07 | |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:50 (6) | 06:09 | | | 05:11 | | 04:54 | | 05:28 | | 06:25 | | 07:23 | | | 07:22 | | 08:25 | | 09:00 | |
| | 16:54 | | 17:59 | | 18:56 | 11 | 07:01 (6) | 20:57 | | | 21:52 | | 22:19 | | 21:52 | | 20:47 | | 19:28 | | | 17:13 | | 16:16 | | 16:07 | |
| 26 | 08:38 | | 07:34 | | 06:23 | | 06:48 (6) | 06:06 | | | 05:09 | | 04:54 | | 05:29 | | 06:27 | | 07:25 | | | 07:24 | | 08:26 | | 09:00 | |
| | 16:56 | | 18:01 | | 18:58 | 15 | 07:03 (6) | 20:59 | | | 21:54 | | 22:19 | | 21:51 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | | 16:08 | |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:45 (6) | 06:04 | | | 05:08 | | 04:54 | | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | 09:01 | |
| | 16:58 | | 18:03 | | 19:00 | 18 | 07:03 (6) | 21:01 | | | 21:55 | | 22:19 | | 21:49 | | 20:42 | | 19:22 | | | 17:09 | | 16:14 | | 16:09 | |
| 28 | 08:34 | | 07:29 | | 06:18 | | 06:43 (6) | 06:02 | | | 05:07 | | 04:55 | | 05:33 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | 09:01 | |
| | 17:00 | | 18:05 | | 19:02 | 20 | 07:03 (6) | 21:03 | | | 21:57 | | 22:19 | | 21:47 | | 20:39 | | 19:20 | | | 17:07 | | 16:13 | | 16:10 | |
| 29 | 08:33 | | | | 07:16 | | 07:41 (6) | 06:00 | | | 05:05 | | 04:56 | | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:32 | | 09:01 | |
| | 17:02 | | | | 20:04 | 22 | 08:03 (6) | 21:05 | | | 21:58 | | 22:19 | | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | | 16:11 | |
| 30 | 08:31 | | | | 07:13 | | 07:41 (6) | 05:57 | | | 05:04 | | 04:56 | | 05:36 | | 06:34 | | 07:33 | | | 07:32 | | 08:33 | | 09:01 | |
| | 17:04 | | | | 20:06 | 21 | 08:02 (6) | 21:07 | | | 22:00 | | 22:18 | | 21:43 | | 20:34 | | 19:15 | | | 17:02 | | 16:11 | | 16:12 | |
| 31 | 08:29 | | | | 07:11 | | 07:41 (6) | | | | 05:03 | | | | 05:38 | | 06:36 | | | | | 07:35 | | | | 09:01 | |
| | 17:06 | | | | 20:08 | 21 | 08:02 (6) | | | | 22:01 | | | | 21:42 | | 20:32 | | | | | 17:00 | | | | 16:13 | |
| Potential sun hours | 242 | | 269 | | 366 | | | 423 | | | 501 | | 520 | | 521 | | 465 | | 383 | | | 326 | | 253 | | 224 | |
| Total, worst case | | | | | | 135 | | | 83 | | | | | | | | | | | 224 | | | | | | | |
| Sun reduction | | | | | | 0,34 | | | 0,39 | | | | | | | | | | | 0,40 | | | | | | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | | | | | | | | | 1,00 | | | | | | | |
| Wind dir. red. | | | | | | 1,00 | | | 1,00 | | | | | | | | | | | 1,00 | | | | | | | |
| Total reduction | | | | | | 0,34 | | | 0,39 | | | | | | | | | | | 0,40 | | | | | | | |
| Total, real | | | | | | 46 | | | 33 | | | | | | | | | | | 89 | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 shut downShadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 06:23 (6) | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 23 | 06:46 (6) | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:22 (6) | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 25 | 06:47 (6) | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 06:21 (6) | 05:00 | 04:59 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:12 27 | 06:48 (6) | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 06:21 (6) | 04:59 | 04:59 | 05:45 06:29 (6) | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 27 | 06:48 (6) | 22:06 | 22:16 | 21:34 1 06:30 (6) | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 06:20 (6) | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 28 | 06:48 (6) | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:20 (6) | 04:57 | 05:01 | 05:49 06:29 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 28 | 06:48 (6) | 22:08 | 22:15 | 21:30 1 06:30 (6) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 06:19 (6) | 04:57 | 05:02 | 05:51 06:29 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 29 | 06:48 (6) | 22:09 | 22:14 | 21:28 1 06:30 (6) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:19 (6) | 04:56 | 05:04 | 05:53 06:30 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 29 | 06:48 (6) | 22:10 | 22:14 | 21:26 1 06:31 (6) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 06:19 (6) | 04:55 | 05:05 | 05:54 06:30 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 29 | 06:48 (6) | 22:11 | 22:13 | 21:23 2 06:32 (6) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 06:19 (6) | 04:55 | 05:06 | 05:56 06:30 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 29 | 06:48 (6) | 22:12 | 22:12 | 21:21 2 06:32 (6) | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 06:20 (6) | 04:54 | 05:07 | 05:58 06:31 (6) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 28 | 06:48 (6) | 22:13 | 22:11 | 21:19 2 06:33 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:20 (6) | 04:54 | 05:08 | 06:00 06:32 (6) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 28 | 06:48 (6) | 22:14 | 22:10 | 21:17 2 06:34 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 06:20 (6) | 04:53 | 05:10 | 06:02 06:33 (6) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 27 | 06:47 (6) | 22:15 | 22:09 | 21:15 3 06:36 (6) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 06:21 (6) | 04:53 | 05:11 | 06:04 06:34 (6) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 26 | 06:47 (6) | 22:15 | 22:08 | 21:13 3 06:37 (6) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:21 (6) | 04:53 | 05:12 | 06:06 06:36 (6) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 25 | 06:46 (6) | 22:16 | 22:07 | 21:10 6 06:49 (6) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:21 (6) | 04:53 | 05:14 | 06:08 06:40 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 24 | 06:45 (6) | 22:17 | 22:05 | 21:08 5 06:45 (6) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 06:22 (6) | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 23 | 06:45 (6) | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 06:23 (6) | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 21 | 06:44 (6) | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 06:24 (6) | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 19 | 06:43 (6) | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 06:25 (6) | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 17 | 06:42 (6) | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 06:27 (6) | 04:52 | 05:21 06:40 (6) | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 14 | 06:41 (6) | 22:19 | 21:58 8 06:48 (6) | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 06:28 (6) | 04:53 | 05:23 06:37 (6) | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 10 | 06:38 (6) | 22:19 | 21:57 13 06:50 (6) | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 06:31 (6) | 04:53 | 05:24 06:36 (6) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 4 | 06:35 (6) | 22:19 | 21:55 16 06:52 (6) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | | 04:53 | 05:26 06:35 (6) | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | | 22:19 | 21:54 17 06:52 (6) | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | | 04:54 | 05:28 06:34 (6) | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | | 22:19 | 21:52 20 06:54 (6) | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | | 04:54 | 05:29 06:33 (6) | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | | 22:19 | 21:51 21 06:54 (6) | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 06:31 (6) | 05:08 | | 04:54 | 05:31 06:32 (6) | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 8 06:39 (6) | 21:55 | | 22:19 | 21:49 24 06:56 (6) | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:28 (6) | 05:07 | | 04:55 | 05:33 06:31 (6) | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 14 06:42 (6) | 21:57 | | 22:19 | 21:47 25 06:56 (6) | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 06:26 (6) | 05:05 | | 04:56 | 05:34 06:31 (6) | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 18 06:44 (6) | 21:58 | | 22:19 | 21:45 26 06:57 (6) | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 06:24 (6) | 05:04 | | 04:56 | 05:36 06:31 (6) | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 21 06:45 (6) | 22:00 | | 22:18 | 21:43 27 06:58 (6) | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | | 05:38 06:30 (6) | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 27 06:57 (6) | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 61 | 540 | | 224 | 29 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,93 | 0,93 | | 0,93 | 0,93 | | | | |
| Total reduction | | | | 0,37 | 0,48 | | 0,45 | 0,48 | | | | |
| Total, real | | | | 22 | 260 | | 101 | 14 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 shut downShadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | | June | | July | | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | | 05:02 | | 04:57 | | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | | 22:02 | 24 | 06:01 (6) | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | | 05:01 | | 05:38 (6) | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | | 22:04 | 24 | 06:02 (6) | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | | 05:00 | | 05:37 (6) | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | | 22:05 | 25 | 06:02 (6) | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | | 04:59 | | 05:37 (6) | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | | 22:06 | 25 | 06:02 (6) | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | | 04:58 | | 05:37 (6) | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | | 22:07 | 25 | 06:02 (6) | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | | 04:57 | | 05:38 (6) | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | | 22:08 | 25 | 06:03 (6) | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | | 04:57 | | 05:38 (6) | 05:02 | 05:43 (6) | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | | 22:09 | 25 | 06:03 (6) | 22:14 | 1 05:44 (6) | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | | 04:56 | | 05:38 (6) | 05:04 | | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | | 22:10 | 26 | 06:04 (6) | 22:14 | | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | | 04:55 | | 05:38 (6) | 05:05 | | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | | 22:11 | 25 | 06:03 (6) | 22:13 | | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | | 04:55 | | 05:39 (6) | 05:06 | 05:45 (6) | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | | 22:12 | 25 | 06:04 (6) | 22:12 | 1 05:46 (6) | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | | 04:54 | | 05:38 (6) | 05:07 | 05:45 (6) | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | | 22:13 | 25 | 06:03 (6) | 22:11 | 1 05:46 (6) | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | | 04:54 | | 05:39 (6) | 05:08 | 05:45 (6) | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | | 22:14 | 25 | 06:04 (6) | 22:10 | 1 05:46 (6) | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | | 04:53 | | 05:39 (6) | 05:10 | 05:45 (6) | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | | 22:15 | 25 | 06:04 (6) | 22:09 | 2 05:47 (6) | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | | 04:53 | | 05:40 (6) | 05:11 | 05:46 (6) | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | | 22:15 | 25 | 06:05 (6) | 22:08 | 1 05:47 (6) | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | | 04:53 | | 05:39 (6) | 05:12 | 05:47 (6) | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | | 22:16 | 25 | 06:04 (6) | 22:07 | 1 05:48 (6) | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | | 04:53 | | 05:39 (6) | 05:14 | | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | | 22:17 | 25 | 06:04 (6) | 22:05 | | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | | 04:52 | | 05:40 (6) | 05:15 | | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | | 22:17 | 25 | 06:05 (6) | 22:04 | | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | | 04:52 | | 05:40 (6) | 05:17 | | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | | 22:18 | 25 | 06:05 (6) | 22:03 | | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | | 04:52 | | 05:40 (6) | 05:18 | | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | | 22:18 | 25 | 06:05 (6) | 22:01 | | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 05:48 (6) | 04:52 | | 05:40 (6) | 05:20 | | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 3 05:51 (6) | 22:18 | 25 | 06:05 (6) | 22:00 | | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 05:47 (6) | 04:53 | | 05:41 (6) | 05:21 | | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 7 05:54 (6) | 22:19 | 25 | 06:06 (6) | 21:58 | | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 05:46 (6) | 04:53 | | 05:41 (6) | 05:23 | | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 10 05:56 (6) | 22:19 | 25 | 06:06 (6) | 21:57 | | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 05:44 (6) | 04:53 | | 05:41 (6) | 05:24 | 05:58 (6) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 12 05:56 (6) | 22:19 | 25 | 06:06 (6) | 21:55 | 5 06:03 (6) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 05:43 (6) | 04:53 | | 05:41 (6) | 05:26 | | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 14 05:57 (6) | 22:19 | 25 | 06:06 (6) | 21:54 | | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 05:42 (6) | 04:54 | | 05:42 (6) | 05:28 | | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 17 05:59 (6) | 22:19 | 25 | 06:07 (6) | 21:52 | | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 05:41 (6) | 04:54 | | 05:41 (6) | 05:29 | | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 18 05:59 (6) | 22:19 | 25 | 06:06 (6) | 21:50 | | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 05:39 (6) | 04:55 | | 05:42 (6) | 05:31 | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 20 05:59 (6) | 22:19 | 25 | 06:07 (6) | 21:49 | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 05:38 (6) | 04:55 | | 05:42 (6) | 05:33 | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22 06:00 (6) | 22:19 | 25 | 06:07 (6) | 21:47 | | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 05:37 (6) | 04:56 | | 05:42 (6) | 05:34 | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 23 06:00 (6) | 22:19 | 26 | 06:08 (6) | 21:45 | | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 05:37 (6) | 04:56 | | 05:43 (6) | 05:36 | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 24 06:01 (6) | 22:18 | 25 | 06:08 (6) | 21:43 | | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | 05:37 (6) | | | | 05:38 | | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | 24 06:01 (6) | | | | 21:42 | | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | | 520 | | | 521 | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | 194 | | 750 | | 13 | | | | | | |
| Sun reduction | | | | | | 0,52 | | 0,48 | | 0,49 | | | | | | |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | 1,00 | | | | | | |
| Wind dir. red. | | | | | | 0,83 | | 0,83 | | 0,83 | | | | | | |
| Total reduction | | | | | | 0,43 | | 0,40 | | 0,40 | | | | | | |
| Total, real | | | | | | 83 | | 301 | | 5 | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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+8 621 66746
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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 shut downShadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June | July | August | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 15:16 (6) | 07:27 | | 15:28 (6) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | | 07:37 | | 14:42 (6) | 08:35 |
| | 16:14 | | | 17:08 | 46 | 16:02 (6) | 18:07 | 23 | 15:51 (6) | 20:09 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | | | 16:58 | 54 | 15:36 (6) | 16:10 |
| 2 | 09:00 | | | 08:26 | | 15:15 (6) | 07:24 | | 15:33 (6) | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:36 | | | 07:39 | | 14:42 (6) | 08:37 |
| | 16:15 | | | 17:10 | 48 | 16:03 (6) | 18:09 | 14 | 15:47 (6) | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | | | 16:56 | 54 | 15:36 (6) | 16:09 |
| 3 | 09:00 | | | 08:24 | | 15:15 (6) | 07:22 | | | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | | | 07:41 | | 14:43 (6) | 08:38 |
| | 16:16 | | | 17:12 | 48 | 16:03 (6) | 18:11 | | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | | 16:54 | 53 | 15:36 (6) | 16:08 |
| 4 | 09:00 | | | 08:22 | | 15:15 (6) | 07:19 | | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | | | 07:43 | | 14:43 (6) | 08:40 |
| | 16:18 | | | 17:14 | 49 | 16:04 (6) | 18:14 | | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | | | 16:52 | 52 | 15:35 (6) | 16:08 |
| 5 | 08:59 | | | 08:20 | | 15:13 (6) | 07:17 | | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | | 07:45 | | 14:44 (6) | 08:41 |
| | 16:19 | | | 17:17 | 51 | 16:04 (6) | 18:16 | | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | | | 16:49 | 51 | 15:35 (6) | 16:07 |
| 6 | 08:59 | | | 08:18 | | 15:13 (6) | 07:14 | | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | | 07:47 | | 14:44 (6) | 08:43 |
| | 16:20 | | | 17:19 | 52 | 16:05 (6) | 18:18 | | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | | | 16:47 | 51 | 15:35 (6) | 16:06 |
| 7 | 08:58 | | | 08:16 | | 15:13 (6) | 07:12 | | | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | | 07:49 | | 14:44 (6) | 08:44 |
| | 16:22 | | | 17:21 | 52 | 16:05 (6) | 18:20 | | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | | | 16:46 | 50 | 15:34 (6) | 16:06 |
| 8 | 08:58 | | | 08:14 | | 15:13 (6) | 07:09 | | | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | 14:45 (6) | 08:45 |
| | 16:23 | | | 17:23 | 53 | 16:06 (6) | 18:22 | | | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:11 | 18:54 | | | 16:44 | 48 | 15:33 (6) | 16:05 |
| 9 | 08:57 | | | 08:12 | | 15:13 (6) | 07:07 | | | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | | 07:53 | | 14:46 (6) | 08:47 |
| | 16:25 | | | 17:25 | 54 | 16:07 (6) | 18:24 | | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | | | 16:42 | 47 | 15:33 (6) | 16:05 |
| 10 | 08:57 | | | 08:10 | | 15:13 (6) | 07:04 | | | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | | 14:47 (6) | 08:48 |
| | 16:26 | | | 17:27 | 54 | 16:07 (6) | 18:26 | | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | | | 16:40 | 45 | 15:32 (6) | 16:04 |
| 11 | 08:56 | | | 08:08 | | 15:12 (6) | 07:02 | | | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | 16:11 (6) | 07:57 | | 14:48 (6) | 08:49 |
| | 16:28 | | | 17:29 | 55 | 16:07 (6) | 18:28 | | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 5 | 16:16 (6) | 16:38 | 43 | 15:31 (6) | 16:04 |
| 12 | 08:55 | | | 08:06 | | 15:12 (6) | 06:59 | | | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | 16:04 (6) | 07:59 | | 14:48 (6) | 08:50 |
| | 16:30 | | | 17:32 | 55 | 16:07 (6) | 18:30 | | | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 18 | 16:22 (6) | 16:36 | 42 | 15:30 (6) | 16:04 |
| 13 | 08:54 | | | 08:04 | | 15:13 (6) | 06:57 | | | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | | 16:00 (6) | 08:01 | | 14:50 (6) | 08:51 |
| | 16:31 | | | 17:34 | 54 | 16:07 (6) | 18:32 | | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 25 | 16:25 (6) | 16:34 | 40 | 15:30 (6) | 16:04 |
| 14 | 08:53 | | | 08:01 | | 15:12 (6) | 06:54 | | | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | 15:57 (6) | 08:03 | | 14:51 (6) | 08:53 |
| | 16:33 | | | 17:36 | 55 | 16:07 (6) | 18:34 | | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 31 | 16:28 (6) | 16:33 | 38 | 15:29 (6) | 16:04 |
| 15 | 08:52 | | | 07:59 | | 15:13 (6) | 06:52 | | | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | 15:54 (6) | 08:05 | | 14:52 (6) | 08:54 |
| | 16:35 | | | 17:38 | 54 | 16:07 (6) | 18:36 | | | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 35 | 16:29 (6) | 16:31 | 36 | 15:28 (6) | 16:04 |
| 16 | 08:51 | | | 07:57 | | 15:13 (6) | 06:49 | | | 06:30 | 05:25 | 04:52 | 05:14 | 06:07 | 07:06 | 08:04 | | 15:52 (6) | 08:07 | | 14:54 (6) | 08:54 |
| | 16:36 | | | 17:40 | 54 | 16:07 (6) | 18:38 | | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 38 | 16:30 (6) | 16:29 | 32 | 15:26 (6) | 16:04 |
| 17 | 08:50 | | | 07:55 | | 15:13 (6) | 06:46 | | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 15:51 (6) | 08:09 | | 14:56 (6) | 08:55 |
| | 16:38 | | | 17:42 | 53 | 16:06 (6) | 18:40 | | | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 41 | 16:32 (6) | 16:28 | 30 | 15:26 (6) | 16:04 |
| 18 | 08:49 | | | 07:53 | | 15:14 (6) | 06:44 | | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | 15:49 (6) | 08:11 | | 14:58 (6) | 08:56 |
| | 16:40 | | | 17:44 | 52 | 16:06 (6) | 18:42 | | | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 44 | 16:33 (6) | 16:26 | 26 | 15:24 (6) | 16:04 |
| 19 | 08:48 | | | 07:50 | | 15:14 (6) | 06:41 | | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | 15:48 (6) | 08:13 | | 15:00 (6) | 08:57 |
| | 16:42 | | | 17:46 | 52 | 16:06 (6) | 18:44 | | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 46 | 16:34 (6) | 16:25 | 22 | 15:22 (6) | 16:04 |
| 20 | 08:46 | | | 07:48 | | 15:14 (6) | 06:39 | | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | | 08:15 | | 15:03 (6) | 08:58 |
| | 16:44 | | | 17:49 | 51 | 16:05 (6) | 18:46 | | | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | | | 16:23 | 17 | 15:20 (6) | 16:05 |
| 21 | 08:45 | | 15:31 (6) | 07:46 | | 15:16 (6) | 06:36 | | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | | | 08:17 | | 15:06 (6) | 08:58 |
| | 16:46 | 10 | 15:41 (6) | 17:51 | 48 | 16:04 (6) | 18:48 | | | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | | | 16:22 | 10 | 15:16 (6) | 16:05 |
| 22 | 08:44 | | 15:28 (6) | 07:43 | | 15:16 (6) | 06:34 | | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | | | 08:19 | | | 08:59 |
| | 16:48 | 17 | 15:45 (6) | 17:53 | 47 | 16:03 (6) | 18:50 | | | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | | | 16:20 | | | 16:05 |
| 23 | 08:42 | | 15:25 (6) | 07:41 | | 15:17 (6) | 06:31 | | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | | 08:21 | | | 08:59 |
| | 16:50 | 22 | 15:47 (6) | 17:55 | 45 | 16:02 (6) | 18:52 | | | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | | | 16:19 | | | 16:06 |
| 24 | 08:41 | | 15:24 (6) | 07:39 | | 15:18 (6) | 06:28 | | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | | 08:23 | | | 09:00 |
| | 16:52 | 26 | 15:50 (6) | 17:57 | 43 | 16:01 (6) | 18:54 | | | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | | | 16:18 | | | 16:07 |
| 25 | 08:39 | | 15:22 (6) | 07:36 | | 15:20 (6) | 06:26 | | | 06:09 | 05:10 | 04:53 | 05:28 | 06:24 | 07:23 | 07:22 | | | 08:24 | | | 09:00 |
| | 16:54 | 30 | 15:52 (6) | 17:59 | 40 | 16:00 (6) | 18:56 | | | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | | | 16:16 | | | 16:07 |
| 26 | 08:38 | | 15:21 (6) | 07:34 | | 15:22 (6) | 06:23 | | | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | | 08:26 | | | 09:00 |
| | 16:56 | 33 | 15:54 (6) | 18:01 | 37 | 15:59 (6) | 18:58 | | | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | | | 16:15 | | | 16:08 |
| 27 | 08:36 | | 15:19 (6) | 07:31 | | 15:23 (6) | 06:21 | | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | | 08:28 | | | 09:01 |
| | 16:58 | 36 | 15:55 (6) | 18:03 | 33 | 15:56 (6) | 19:00 | | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | | | 16:14 | | | 16:09 |
| 28 | 08:34 | | 15:19 (6) | 07:29 | | 15:26 (6) | 06:18 | | | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | | | 08:30 | | | 09:01 |
| | 17:00 | 38 | 15:57 (6) | 18:05 | 29 | 15:55 (6) | 19:02 | | | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | | | 16:13 | | | 16:10 |
| 29 | 08:33 | | 15:18 (6) | | | | 07:16 | | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | | | 08:32 | | | 09:01 |
| | 17:02 | 40 | 15:58 (6) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | | | 16:12 | | | 16:10 |
| 30 | 08:31 | | 15:17 (6) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | | 15:36 (6) | 08:33 | | | 09:01 |
| | 17:04 | 43 | 16:00 (6) | | | | 20:06 | | | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 1 | 15:37 (6) | 16:11 | | | 16:11 |
| 31 | 08:29 | | 15:17 (6) | | | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 15:35 (6) | | | | 09:01 |
| | 17:06 | 44 | 16:01 (6) | | | | 20:08 | | | | 22:01 | | 21:42 | 20:32 | | 17:00 | 1 | 15:36 (6) | | | | 16:12 |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 339 | | | 1364 | | | 37 | | | | | | | | | 285 | | | 841 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,67 | | | 0,67 | | | 0,67 | | | | | | | | | 0,67 | | | 0,67 | | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,23 | | | | | | | | | 0,21 | | | 0,11 | | |
| Total, real | | 41 | | | 226 | | | 9 | | | | | | | | | 59 | | | 89 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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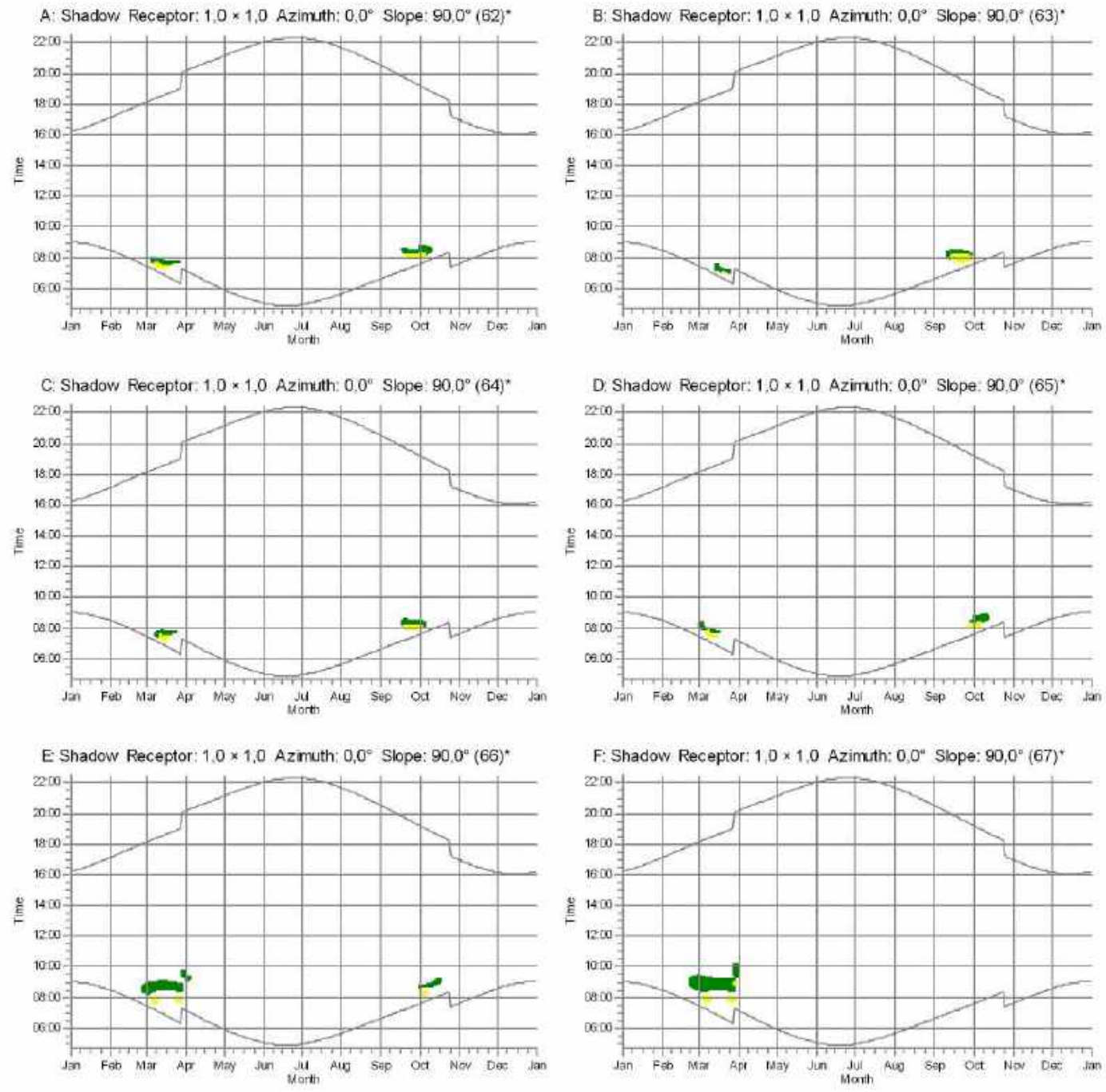
## SHADOW - Calendar, graphical

Calculation: Enercon E138 shut down




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

* Results reduced by flicker curtailment

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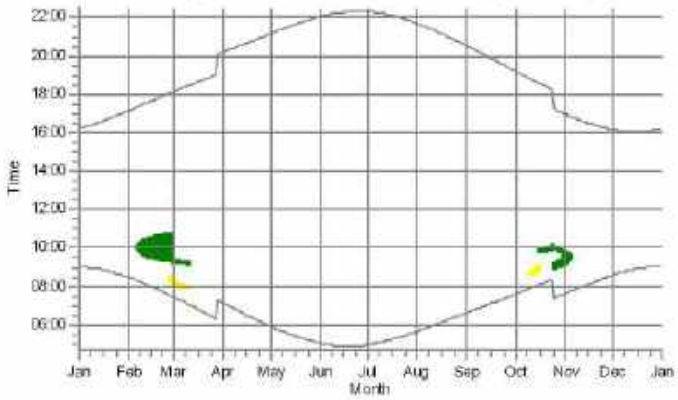
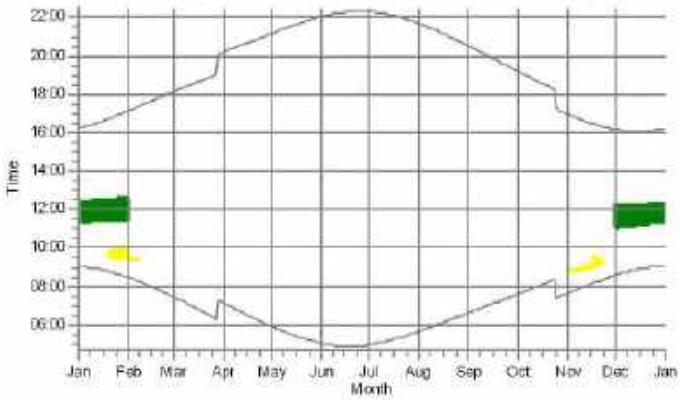
## SHADOW - Calendar, graphical

Calculation: Enercon E138 shut down

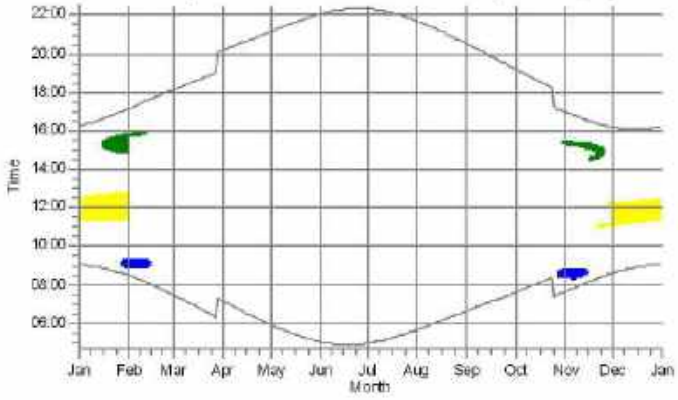
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*



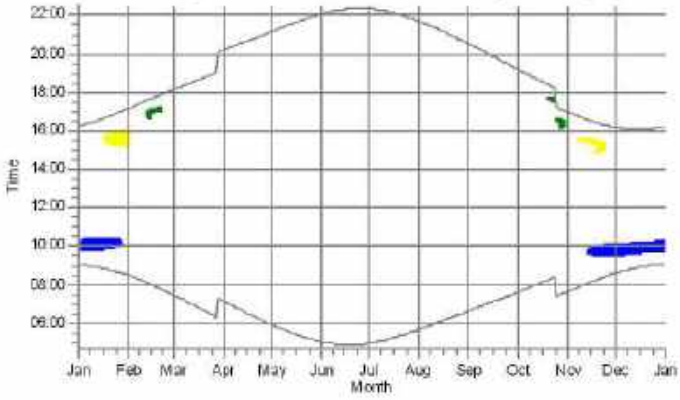

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*



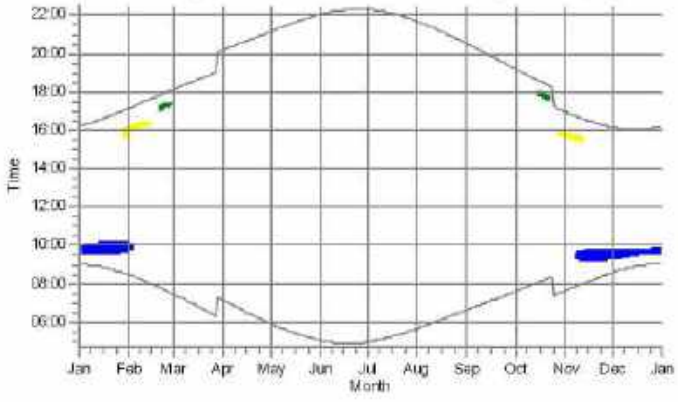

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*



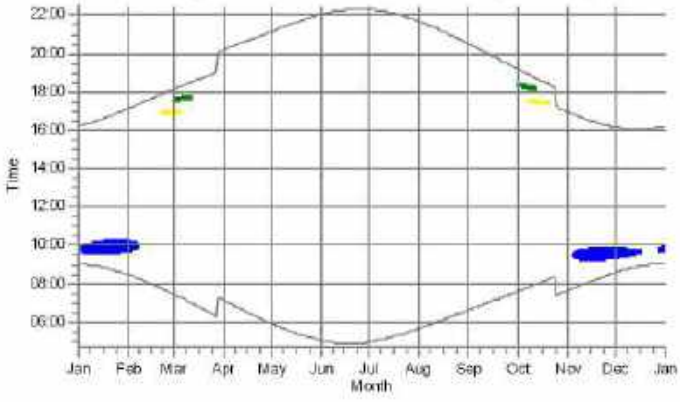

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

* Results reduced by flicker curtailment

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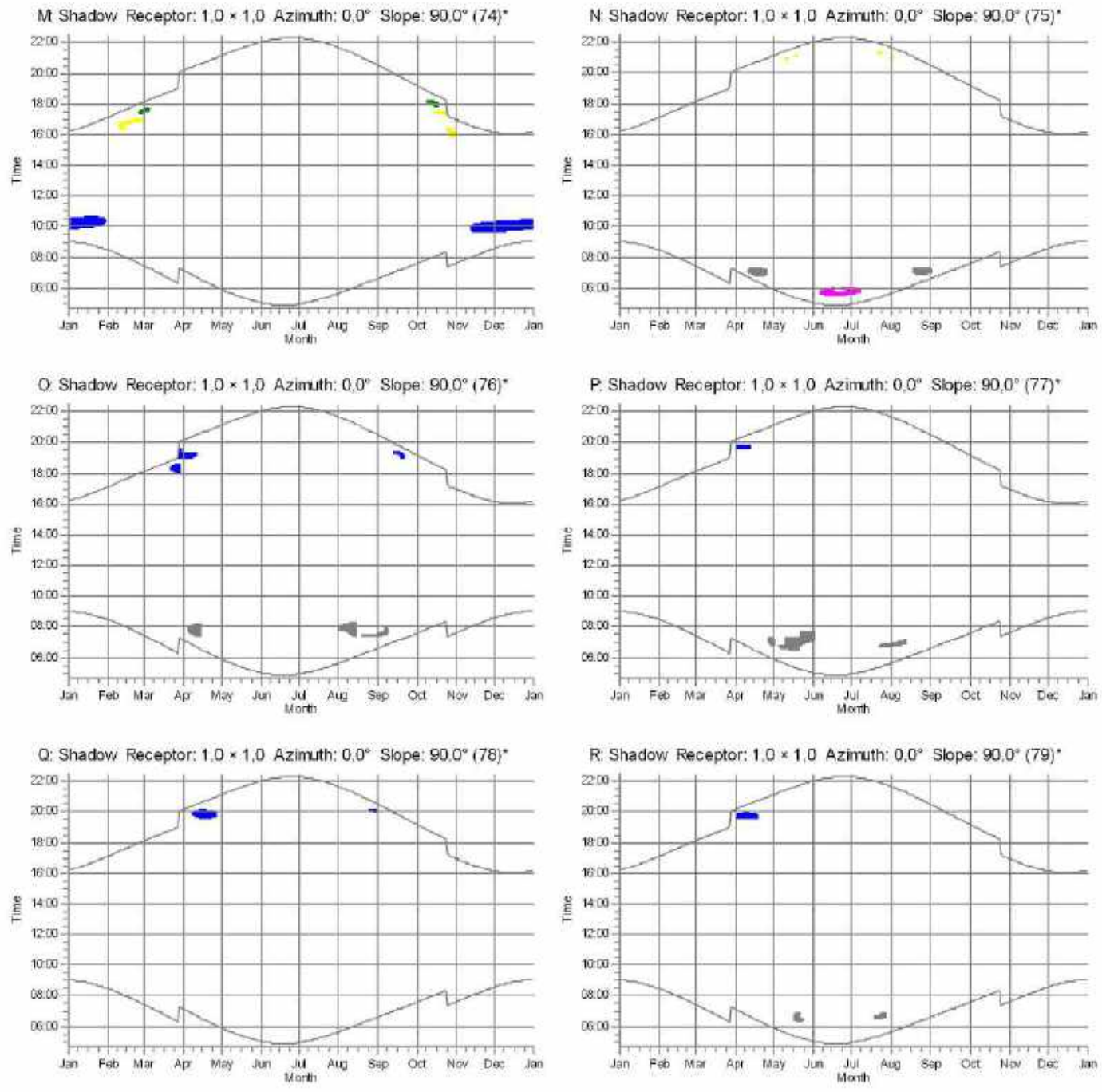
Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar, graphical

## Calculation: Enercon E138 shut down




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

* Results reduced by flicker curtailment

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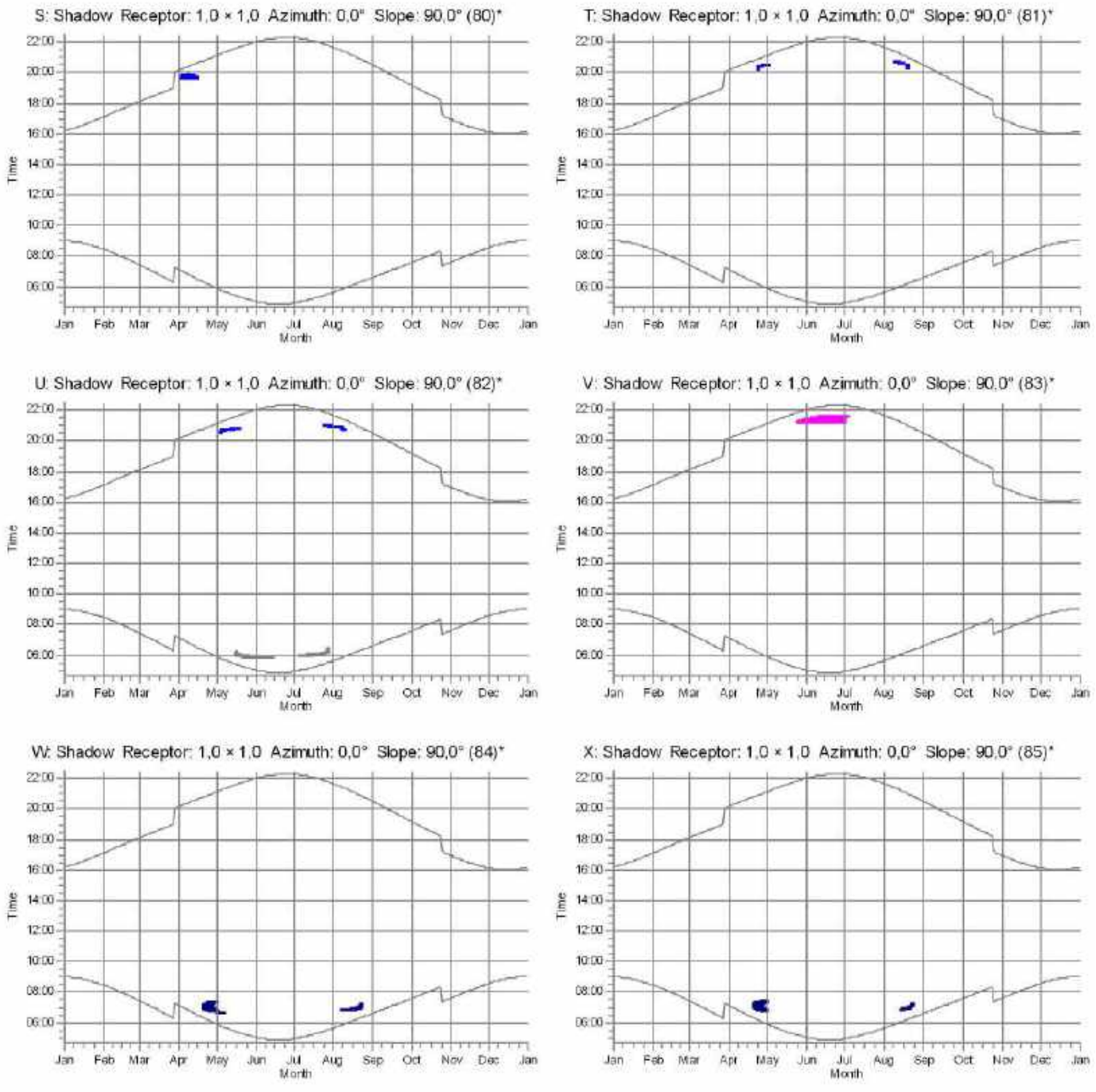
## SHADOW - Calendar, graphical

Calculation: Enercon E138 shut down




WTGs

- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
- 7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

* Results reduced by flicker curtailment

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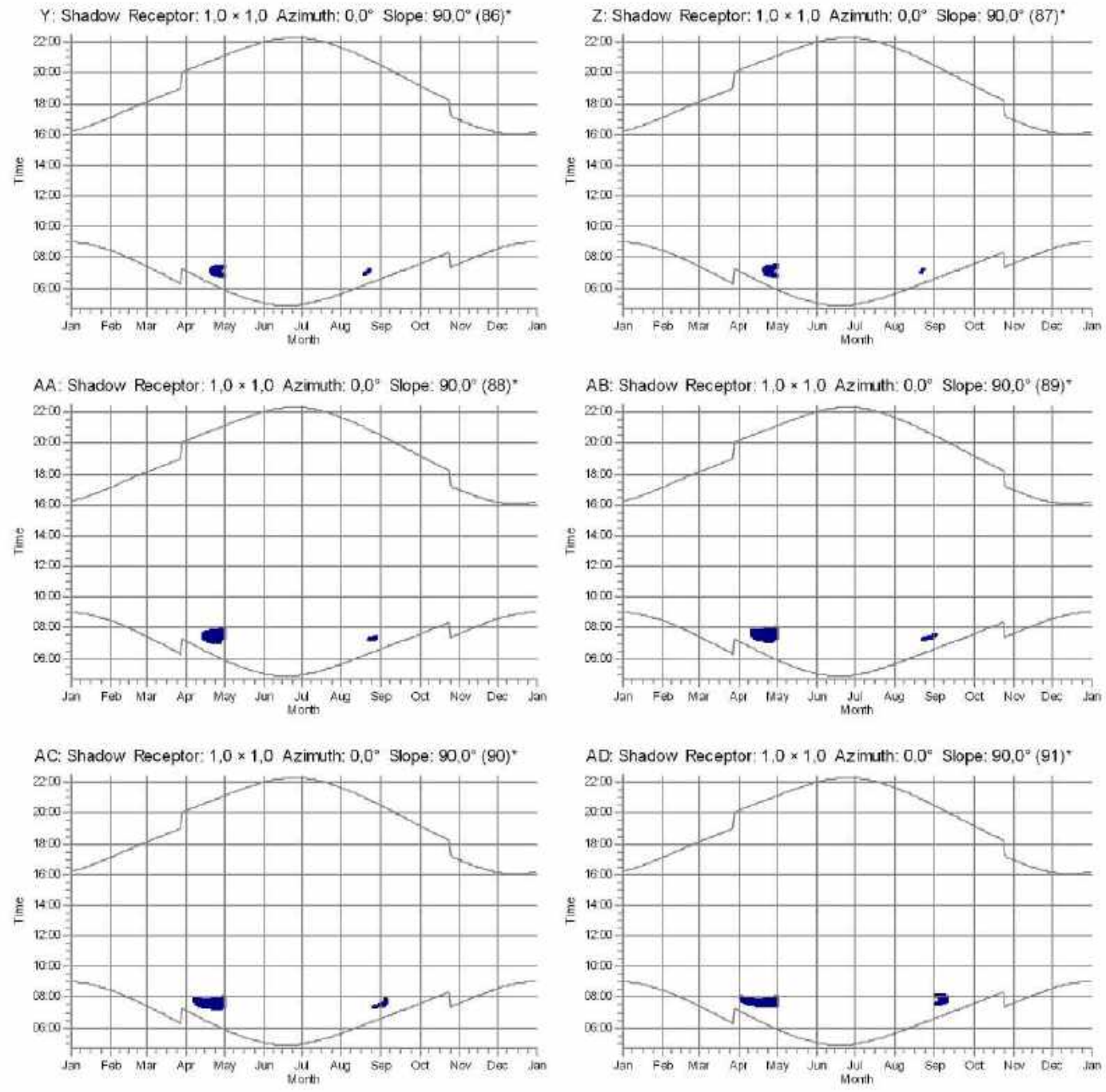
## SHADOW - Calendar, graphical

Calculation: Enercon E138 shut down




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

* Results reduced by flicker curtailment

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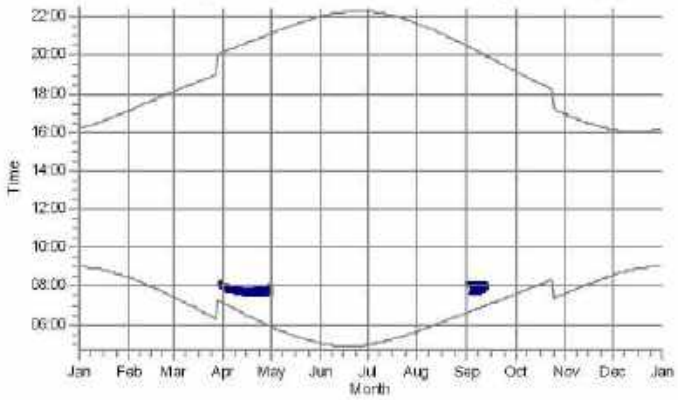
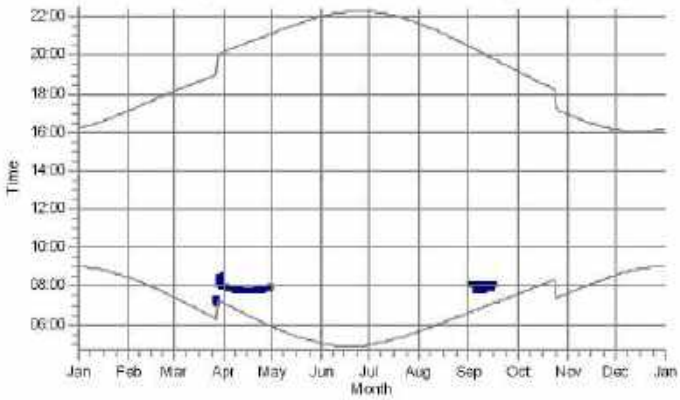
## SHADOW - Calendar, graphical

Calculation: Enercon E138 shut down

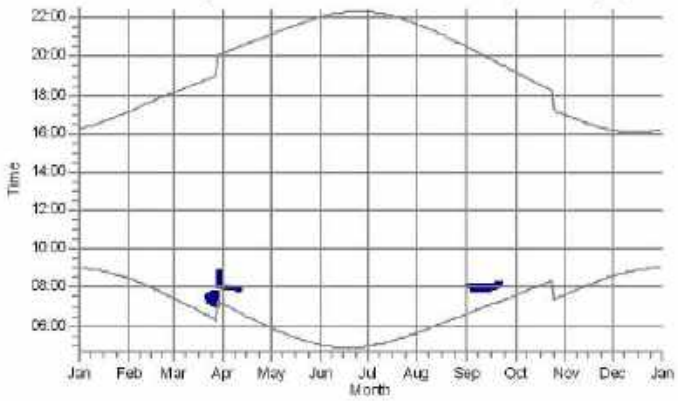
AE: Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (92)*



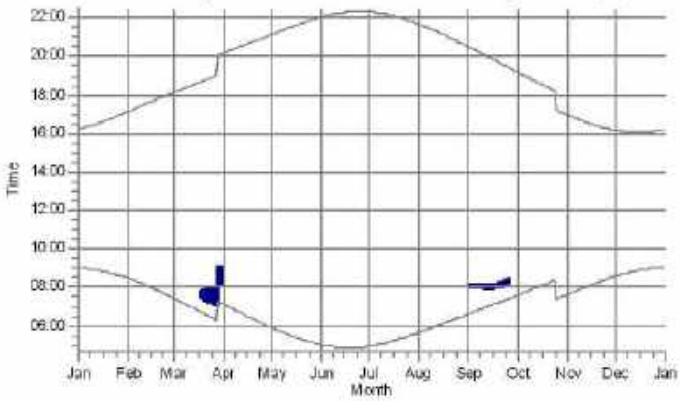

AF: Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (93)*



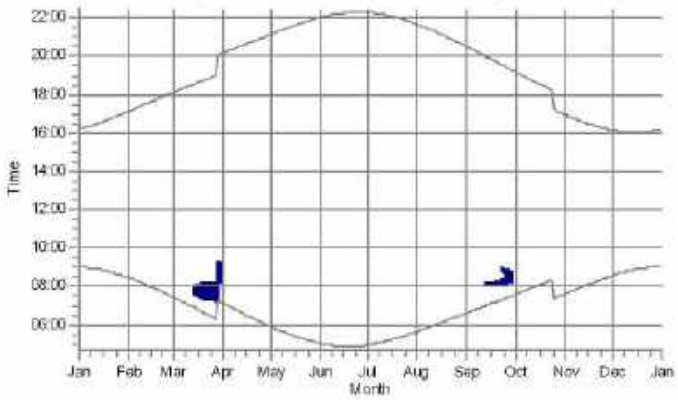

AG: Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (94)*



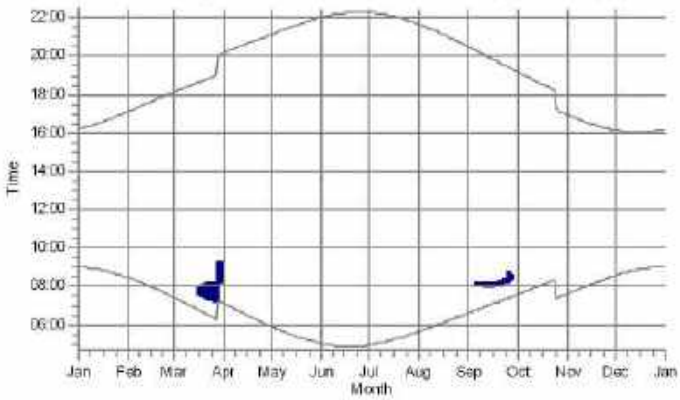

AH: Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (95)*




AI: Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (96)*




AJ: Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (97)*




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

* Results reduced by flicker curtailment

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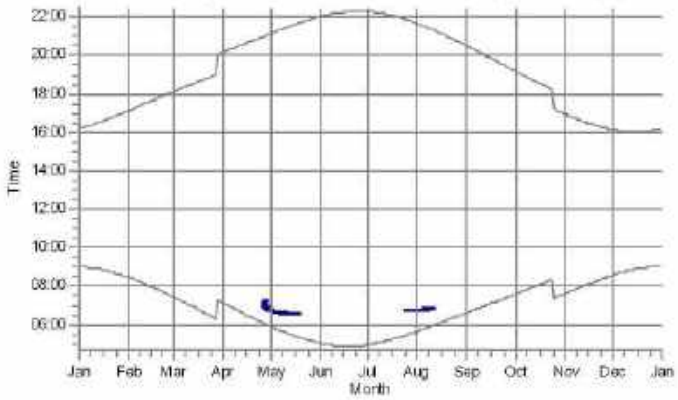
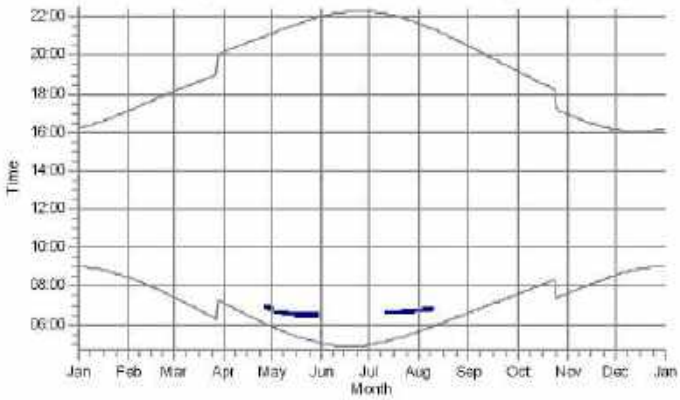
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 shut down

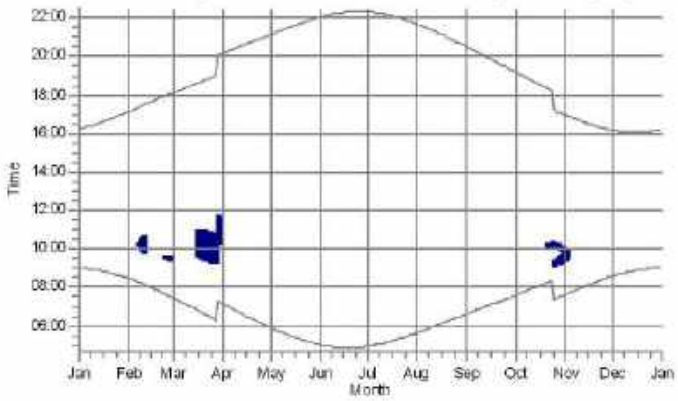
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*



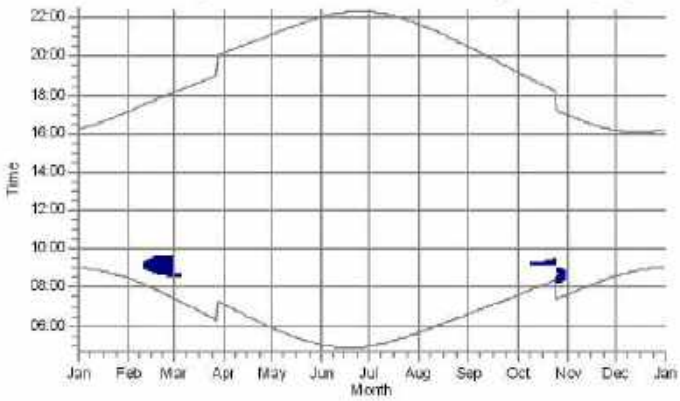

AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*



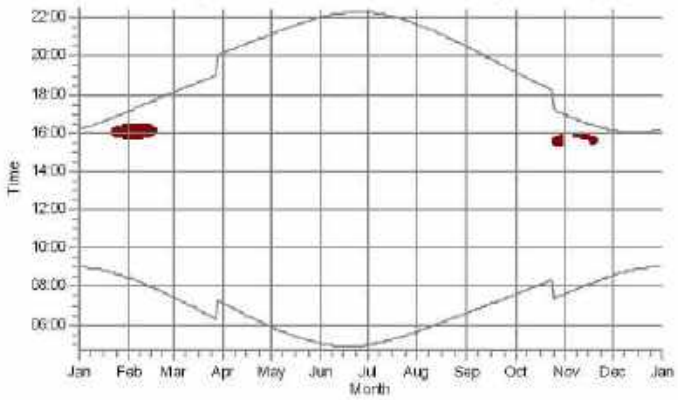

AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*



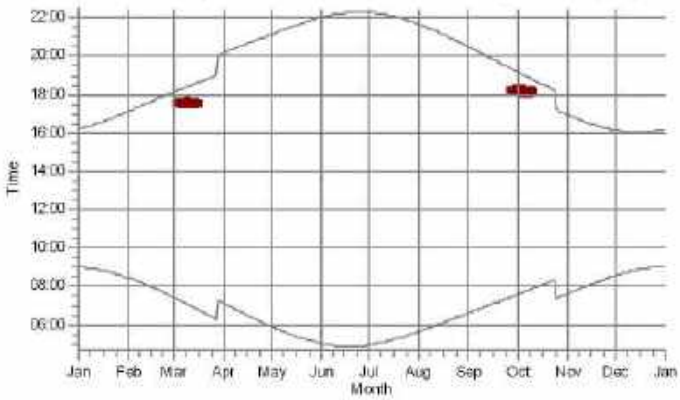

AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*




AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*




AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)
8: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

* Results reduced by flicker curtailment

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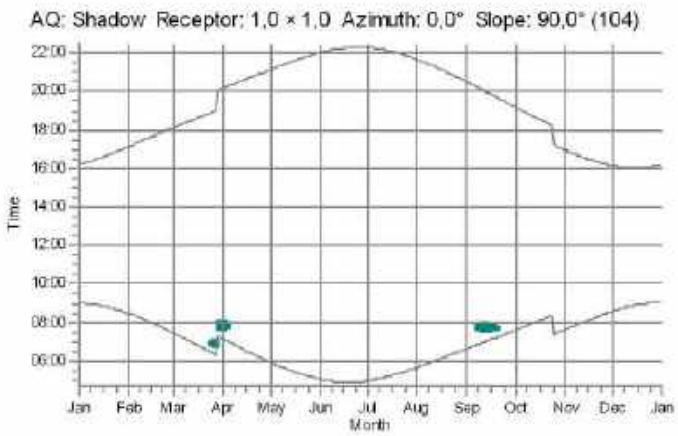
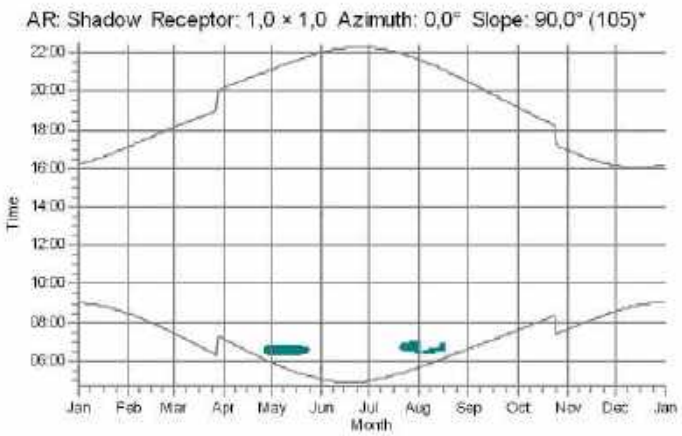
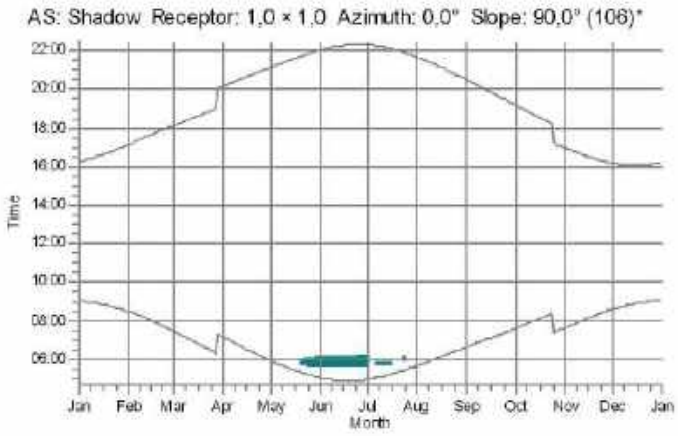
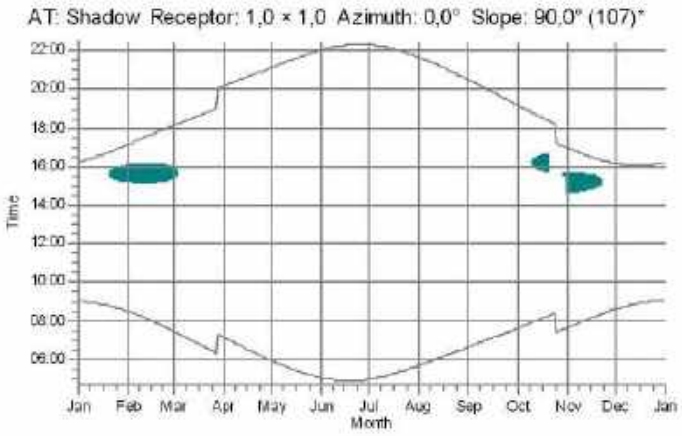
## SHADOW - Calendar, graphical

Calculation: Enercon E138 shut down




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

* Results reduced by flicker curtailment

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62<br>16:14 | 08:28 15:43-15:47/4<br>17:08 | 07:27 17:33-17:35/2<br>18:07 08:17-09:19/62 | 07:08 09:08-09:17/9<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:20-12:22/62<br>16:15 | 08:26 15:44-15:47/3<br>17:10 | 07:24 17:35-17:37/2<br>18:10 08:05-09:18/73 | 07:05 09:11-09:18/7<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:20-12:23/63<br>16:16 | 08:24 15:45-15:48/3<br>17:12 | 07:22 17:35-17:38/3 08:00-08:08/8<br>18:12 08:18-09:17/59 | 07:03 09:15-09:18/3<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:20-12:23/63<br>16:18 | 08:22 15:46-15:49/3<br>17:15 | 07:19 17:37-17:40/3 07:58-08:04/6<br>18:14 08:23-09:17/54 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:21-12:24/63<br>16:19 | 08:20 15:47-15:50/3<br>17:17 | 07:17 17:38-17:41/3 07:48-08:00/12<br>18:16 08:26-09:15/49 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:08 |
| 6 | 08:59 11:21-12:25/64<br>16:20 | 08:18 15:48-15:50/2<br>17:19 | 07:15 17:40-17:42/2 07:45-07:58/13<br>18:18 08:28-09:15/47 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57<br>22:09 |
| 7 | 08:59 11:21-12:25/64<br>16:22 | 08:16 15:49-15:51/2<br>17:21 09:54-10:08/14 | 07:12 17:40-17:43/3 07:42-07:55/13<br>18:20 08:29-09:14/45 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:21-12:25/64<br>16:23 | 08:14 15:49-15:51/2<br>17:23 09:47-10:13/26 | 07:10 17:41-17:43/2 07:39-07:53/14<br>18:22 08:30-09:13/43 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:22-12:27/65<br>16:25 | 08:12 15:50-15:51/1<br>17:25 09:44-10:17/33 | 07:07 17:42-17:43/1 07:33-07:52/19<br>18:24 08:32-09:13/41 | 06:48<br>20:26 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:22-12:28/66<br>16:26 | 08:10 15:51-15:52/1<br>17:27 09:41-10:20/39 | 07:04 17:42-17:43/1 07:29-07:50/21<br>18:26 08:32-09:12/40 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:22-12:28/66<br>16:28 | 08:08 15:51-15:52/1<br>17:30 09:39-10:23/44 | 07:02 17:43-17:44/1 07:27-07:50/23<br>18:28 08:34-09:12/38 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:22-12:28/66<br>16:30 | 08:06 09:36-10:25/49<br>17:32 | 06:59 17:42-17:43/1 07:25-07:48/23<br>18:30 08:34-09:11/37 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:22-12:29/67<br>16:31 | 08:04 16:46-16:58/12<br>17:34 09:34-10:27/53 | 06:57 08:35-09:11/36<br>18:32 07:24-07:48/24 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:22-12:29/67<br>16:33 | 08:02 16:55-17:01/6 09:32-10:29/57<br>17:36 16:43-16:44/1 | 06:54 08:35-09:10/35<br>18:34 07:22-07:47/25 | 06:35<br>20:35 | 05:29<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:23-12:30/67<br>16:35 | 08:00 16:58-17:02/4<br>17:38 09:30-10:30/60 | 06:52 08:34-09:09/35 07:18-07:24/6<br>18:36 07:30-07:46/16 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:22-12:30/68<br>16:36 | 07:57 17:01-17:04/3<br>17:40 09:29-10:32/63 | 06:49 08:35-09:09/34 07:16-07:20/4<br>18:38 07:35-07:46/11 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 15:09-15:21/12<br>16:38 11:23-12:31/68 | 07:55 17:03-17:06/3<br>17:42 09:28-10:34/66 | 06:47 08:34-09:09/35 07:13-07:16/3<br>18:40 07:37-07:45/8 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:07-15:25/18<br>16:40 11:24-12:32/68 | 07:53 17:04-17:06/2<br>17:44 09:26-10:35/69 | 06:44 08:35-09:09/34 07:12-07:15/3<br>18:42 07:39-07:45/6 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:04-15:28/24<br>16:42 11:23-12:32/69 | 07:51 17:05-17:07/2<br>17:47 09:25-10:36/71 | 06:42 08:34-09:08/34 07:11-07:13/2<br>18:44 07:40-07:44/4 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:03-15:30/27<br>16:44 11:24-12:32/68 | 07:48 17:07-17:08/1<br>17:49 09:24-10:38/74 | 06:39 08:33-09:08/35 07:09-07:11/2<br>18:46 07:41-07:44/3 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:01-15:32/31<br>16:46 11:24-12:32/68 | 07:46 17:07-17:14/7<br>17:51 09:22-10:38/76 | 06:36 08:33-09:08/35 07:09-07:10/1<br>18:48 07:42-07:44/2 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 14:59-15:34/35<br>16:48 11:24-12:32/68 | 07:44 17:12-17:17/5 08:50-09:09/19<br>17:53 09:22-10:39/77 | 06:34 08:32-09:08/36 07:08-07:09/1<br>18:50 07:42-07:44/2 | 06:16<br>20:51 | 05:15<br>21:48 | 04:53<br>22:19 |
| 23 | 08:42 14:59-15:36/37<br>16:50 11:25-12:33/68 | 07:41 17:15-17:19/4 08:45-09:13/28<br>17:55 09:20-10:40/80 | 06:31 08:32-09:08/36 07:08-07:09/1<br>18:52 07:43-07:44/1 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 14:57-15:37/40<br>16:52 11:25-12:33/68 | 07:39 17:17-17:21/4 08:42-09:16/34<br>17:57 09:20-10:41/81 | 06:29 08:31-09:08/37<br>18:54 07:42-07:44/2 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 14:56-15:39/43<br>16:54 11:25-12:33/68 | 07:36 17:18-17:21/3<br>17:59 08:39-10:41/122 | 06:26 08:29-09:08/39 07:42-07:44/2<br>18:56 07:06-07:07/1 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 14:56-15:41/45<br>16:56 11:26-12:34/68 | 07:34 17:20-17:30/10<br>18:01 08:29-10:42/133 | 06:23 08:28-09:08/40<br>18:58 07:42-07:45/3 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 14:55-15:42/47<br>16:58 11:26-12:34/68 | 07:32 17:28-17:32/4<br>18:03 08:23-10:42/139 | 06:21 08:27-09:08/41<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 14:54-15:43/49<br>17:00 11:27-12:34/67 | 07:29 17:31-17:34/3<br>18:05 08:20-10:43/143 | 06:18 08:26-09:09/43<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 14:54-15:44/50<br>17:02 11:27-12:34/67 | | 07:16 09:24-10:09/45<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 14:53-15:45/52<br>17:04 11:27-12:34/67 | | 07:13 09:22-10:10/48<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 14:52-15:46/54<br>17:06 11:28-12:33/65 | | 07:11 09:19-10:09/50<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 1749 | 1625 | 19 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 08:03-08:44/41 | 07:37 15:20-15:21/1 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 09:11-09:49/38 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 18:21-18:22/1 | 07:39 15:19-15:21/2 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-08:44/40 | 16:56 09:14-09:46/32 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 18:20-18:21/1 | 07:41 15:19-15:20/1 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-08:45/39 | 16:54 09:17-09:42/25 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 18:19-18:21/2 | 07:43 15:19-15:21/2 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-08:45/37 | 16:52 09:25-09:36/11 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 18:18-18:20/2 | 07:45 15:18-15:20/2 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-08:46/30 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 18:17-18:19/2 | 07:47 15:17-15:19/2 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-08:47/30 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 18:16-18:18/2 | 07:49 15:16-15:19/3 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:19-08:48/29 | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 18:14-18:17/3 | 07:51 15:16-15:19/3 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:21-08:49/28 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 18:12-18:15/3 08:26-08:30/4 | 07:53 15:15-15:18/3 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:31-08:50/19 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 08:07-08:18/11 | 07:52 18:10-18:13/3 | 07:55 15:14-15:17/3 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 | 18:49 08:33-08:52/19 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 08:04-08:21/17 | 07:54 18:09-18:11/2 | 07:57 15:12-15:16/4 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:35-08:54/19 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 08:02-08:23/21 | 07:56 18:07-18:09/2 08:41-08:46/5 | 07:59 15:12-15:17/5 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:49-08:56/7 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 07:59-08:23/24 | 07:58 18:05-18:08/3 | 08:01 15:11-15:16/5 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:51-09:00/9 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 07:58-08:24/26 | 08:00 18:02-18:06/4 | 08:03 15:09-15:15/6 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 | 18:39 08:54-09:07/13 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 07:57-08:25/28 | 08:02 17:59-18:04/5 | 08:06 15:08-15:14/6 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:58-09:08/10 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 07:56-08:25/29 | 08:04 17:52-18:01/9 09:05-09:08/3 | 08:08 15:07-15:14/7 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 | 18:35 09:52-09:55/3 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 07:55-08:26/31 | 08:06 17:50-17:53/3 | 08:10 15:06-15:12/6 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 08:31-08:34/3 | 18:32 09:51-09:56/5 | 16:28 14:30-14:31/1 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-08:33/38 | 08:08 17:48-17:51/3 | 08:11 15:04-15:11/7 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-09:57/6 | 16:26 14:31-14:33/2 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-08:31/37 | 08:10 17:45-17:49/4 | 08:13 15:01-15:10/9 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:52-09:57/5 | 16:25 14:33-14:36/3 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-08:30/37 | 08:12 17:41-17:47/6 | 08:15 14:59-15:09/10 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:52-09:59/7 | 16:23 14:34-14:38/4 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 07:53-08:29/36 | 08:14 17:37-17:43/6 | 08:17 14:56-15:08/12 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 | 18:23 09:53-10:00/7 | 16:22 14:37-14:44/7 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 07:53-08:29/36 | 08:16 17:37-17:38/1 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 | 18:20 09:55-10:02/7 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 07:54-08:28/34 | 08:18 17:35-17:37/2 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 | 18:18 09:56-10:03/7 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 07:54-08:28/34 | 08:20 17:34-17:36/2 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 | 18:16 09:56-10:05/9 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 07:55-08:28/33 | 07:22 16:32-16:35/3 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 | 17:13 08:57-09:06/9 | 16:16 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 07:56-08:27/31 | 07:24 16:30-16:33/3 | 08:27 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 | 17:11 08:59-09:08/9 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 07:57-08:27/30 | 07:26 16:28-16:32/4 09:01-09:12/11 | 08:28 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:59-10:00/1 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 07:59-08:27/28 | 07:29 16:24-16:30/6 09:56-09:58/2 | 08:30 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 | 17:07 16:13-16:15/2 09:02-09:14/12 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 08:01-08:26/25 | 07:31 16:16-16:26/10 09:04-09:17/13 | 08:32 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 | 17:04 09:52-09:56/4 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 08:03-08:27/24 | 07:33 09:47-09:54/7 | 08:34 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 | 17:02 09:06-09:21/15 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 15:21-15:22/1 09:09-09:29/20 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 09:41-09:52/11 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 613 | 652 | 304 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:57-16:06/9<br>17:08 09:23-09:25/2 | 07:27 16:56-16:57/1<br>18:07 08:07-08:13/6 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:59-16:08/9<br>17:10 09:22-09:24/2 | 07:24 16:57-16:58/1<br>18:10 08:05-08:10/5 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 16:02-16:10/8<br>17:12 09:22-09:24/2 | 07:22 16:57-16:58/1<br>18:12 08:03-08:07/4 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 16:05-16:12/7<br>17:15 09:22-09:23/1 | 07:19 16:57-16:58/1<br>18:14 08:02-08:06/4 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 16:07-16:13/6<br>17:17 09:22-09:23/1 | 07:17 07:51-08:04/13<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 16:10-16:15/5<br>17:19 09:21-09:23/2 | 07:14 07:47-08:03/16<br>18:18 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 16:10-16:15/5<br>17:21 | 07:12 07:41-08:01/20<br>18:20 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 16:12-16:17/5<br>17:23 | 07:09 07:47-07:59/12<br>18:22 07:35-07:40/5 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 16:14-16:18/4<br>17:25 | 07:07 07:52-07:59/7<br>18:24 07:32-07:36/4 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 16:15-16:19/4<br>17:27 | 07:04 07:54-07:57/3<br>18:26 07:29-07:33/4 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14<br>17:29 16:17-16:20/3 | 07:02 07:56-07:57/1<br>18:28 07:27-07:32/5 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:32-16:43/11 16:17-16:20/3<br>17:32 16:22-16:28/6 | 06:59 07:24-07:30/6<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 16:39-16:46/7<br>17:34 16:18-16:21/3 | 06:57 07:22-07:29/7<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 16:42-16:48/6<br>17:36 | 06:54 07:19-07:27/8<br>18:34 | 06:35<br>20:35 | 05:29<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 16:44-16:49/5<br>17:38 | 06:52 07:16-07:26/10<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 16:47-16:51/4<br>17:40 | 06:49 07:21-07:26/5<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 16:49-16:53/4<br>17:42 | 06:47 07:24-07:25/1<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 16:49-16:53/4<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 16:51-16:54/3<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 21:08-21:09/1<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 16:53-16:55/2<br>17:49 | 06:39 07:03-07:04/1<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 16:53-16:55/2<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 16:54-16:56/2<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 16:54-16:56/2<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 16:55-16:57/2<br>17:57 | 06:29 07:53-07:54/1<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 16:55-16:56/1<br>17:59 | 06:26 07:51-07:54/3<br>18:56 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 16:56-16:57/1<br>18:01 | 06:23 07:50-07:55/5<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 16:56-16:57/1<br>18:03 08:13-08:28/15 | 06:21 07:47-07:56/9<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 16:56-16:58/2<br>18:05 08:10-08:32/22 | 06:18 07:44-07:57/13<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 197 | 189 | 0 | 3 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:03/1<br>21:40 | 06:38<br>20:30 | 07:35 08:02-08:14/12<br>19:12 | 07:37 15:45-15:48/3<br>16:58 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 08:04-08:15/11<br>19:10 | 07:39 15:43-15:47/4<br>16:56 08:50-08:51/1 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 08:06-08:16/10<br>19:07 | 07:41 15:42-15:46/4<br>16:54 08:50-08:51/1 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 08:08-08:17/9<br>19:05 | 07:43 15:41-15:46/5<br>16:52 08:51-08:52/1 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 08:10-08:19/9<br>19:02 | 07:45 15:39-15:44/5<br>16:50 08:51-08:52/1 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 08:14-08:21/7<br>18:59 | 07:47 15:37-15:43/6<br>16:48 08:51-08:53/2 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:23/3<br>18:57 | 07:49 15:34-15:41/7<br>16:46 08:51-08:53/2 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 17:32-17:33/1<br>18:54 | 07:51 15:33-15:41/8<br>16:44 08:53-08:55/2 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 15:29-15:39/10<br>16:42 08:53-08:55/2 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 17:31-17:32/1<br>18:49 08:36-08:41/5 | 07:55 15:28-15:36/8<br>16:40 08:53-08:56/3 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:30-17:31/1<br>18:47 08:38-08:42/4 | 07:57 15:27-15:34/7<br>16:38 08:54-08:57/3 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:29-17:31/2<br>18:44 08:39-08:45/6 | 07:59 15:27-15:31/4<br>16:36 08:56-08:59/3 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:29-17:30/1<br>18:42 08:41-08:48/7 | 08:01 15:26-15:29/3<br>16:34 08:56-09:00/4 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02 07:59-08:04/5<br>19:56 | 08:00 17:28-17:30/2 08:44-08:55/11<br>18:39 09:00-09:04/4 | 08:03 15:25-15:28/3<br>16:33 08:57-09:01/4 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04 07:55-08:07/12<br>19:54 | 08:02 17:29-17:30/1<br>18:37 08:48-09:00/12 | 08:05 15:23-15:27/4<br>16:31 08:58-09:03/5 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06 07:53-08:09/16<br>19:51 | 08:04 17:28-17:29/1<br>18:35 | 08:07 15:23-15:27/4<br>16:29 09:00-09:05/5 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 07:51-08:10/19<br>19:48 | 08:06 17:27-17:28/1<br>18:32 | 08:09 15:21-15:26/5 09:01-09:07/6<br>16:28 09:30-09:31/1 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 07:50-08:11/21<br>19:46 | 08:08 17:26-17:28/2<br>18:30 | 08:11 15:19-15:25/6 09:03-09:10/7<br>16:26 09:27-09:29/2 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 07:48-08:10/22<br>19:43 | 08:10 17:25-17:27/2<br>18:27 | 08:13 15:17-15:24/7 09:24-09:28/4<br>16:25 14:53-14:54/1 09:04-09:13/9 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 07:48-08:11/23<br>19:41 | 08:12 17:24-17:26/2<br>18:25 | 08:15 15:15-15:23/8 09:06-09:26/20<br>16:23 14:54-14:57/3 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 07:47-08:10/23<br>19:38 | 08:14 17:23-17:25/2<br>18:23 | 08:17 15:12-15:22/10 11:02-11:03/1<br>16:22 14:57-15:02/5 09:10-09:25/15 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 21:18-21:19/1<br>21:57 | 06:19<br>20:54 | 07:18 07:47-08:10/23<br>19:35 | 08:16 17:23-17:25/2<br>18:20 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-11:03/1 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 07:47-08:09/22<br>19:33 | 08:18 17:21-17:24/3<br>18:18 | 08:21 15:01-15:19/18<br>16:19 11:03-11:04/1 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 21:18-21:19/1<br>21:54 | 06:23<br>20:49 | 07:21 07:49-08:08/19<br>19:30 | 08:20 17:19-17:23/4<br>18:16 | 08:23 15:05-15:16/11<br>16:18 11:03-11:05/2 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23 07:51-08:08/17<br>19:28 | 07:22 16:18-16:22/4<br>17:13 | 08:25 11:04-11:06/2<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 07:53-08:08/15<br>19:25 | 07:24 16:16-16:20/4<br>17:11 | 08:27 11:05-11:06/1<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 07:55-08:08/13<br>19:23 | 07:26 16:14-16:19/5<br>17:09 | 08:28 11:05-11:07/2<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 07:57-08:08/11<br>19:20 | 07:29 16:11-16:17/6<br>17:07 | 08:30 11:06-11:08/2<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34<br>21:46 | 06:32<br>20:37 | 07:31 07:58-08:07/9<br>19:17 | 07:31 16:07-16:15/8<br>17:04 15:48-15:52/4 | 08:32 12:14-12:15/1<br>16:12 11:07-11:09/2 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:35 | 07:33 08:00-08:08/8<br>19:15 | 07:33 15:52-16:12/20<br>17:02 15:46-15:49/3 | 08:34 12:14-12:15/1<br>16:11 11:08-11:10/2 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | <br><br> | 07:35 15:56-16:08/12<br>17:00 15:45-15:48/3 | <br><br> | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2 | 1 | 278 | 207 | 309 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:10/25<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:15/12<br>20:10 | 05:55 20:33-20:34/1<br>21:09 | 05:02<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:40-19:44/4<br>20:12 19:03-19:15/12 | 05:53 20:33-20:34/1<br>21:11 | 05:01<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:40-19:46/6<br>20:14 19:03-19:15/12 | 05:51 20:34-20:38/4<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:40-19:48/8<br>20:16 19:04-19:15/11 | 05:48 20:35-20:41/6<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:40-19:49/9<br>20:18 19:03-19:15/12 | 05:46 20:38-20:42/4<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:40-19:52/12<br>20:19 19:05-19:15/10 | 05:44 20:40-20:44/4<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:40-19:53/13<br>20:21 19:05-19:15/10 | 05:42 20:42-20:45/3<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:40-19:54/14<br>20:23 19:07-19:15/8 | 05:40 20:43-20:46/3<br>21:22 | 04:56<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:40-19:57/17<br>20:25 19:08-19:15/7 | 05:38 20:44-20:46/2<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:40-19:59/19<br>20:27 19:13-19:15/2 | 05:36 20:44-20:47/3<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:40-20:01/21<br>20:29 | 05:34 20:45-20:47/2<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:40-20:03/23<br>20:31 | 05:32 20:46-20:48/2<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:40-20:04/24<br>20:33 | 05:30 20:47-20:48/1<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:40-20:06/26<br>20:35 | 05:28 20:47-20:48/1<br>21:33 | 04:53<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:40-20:06/26<br>20:37 | 05:27 20:48-20:49/1<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:40-20:06/26<br>20:39 | 05:25 20:48-20:49/1<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:40-20:06/26<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:48-20:49/1<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:25-20:26/1<br>20:57 19:44-19:58/14 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 19:46-19:55/9<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:29-20:30/1<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:31-20:32/1<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:32-20:33/1<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:15/11<br>20:06 | 05:57 20:32-20:34/2<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:15/11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 352 | 159 | 568 | 40 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:56-20:58/2<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41 20:55-20:57/2<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 20:54-20:57/3<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45 20:54-20:56/2<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47 20:53-20:56/3<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 20:51-20:54/3<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51 20:49-20:53/4<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 20:47-20:51/4<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 20:42-20:48/6<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 20:42-20:45/3<br>21:21 | 06:55<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 20:42-20:43/1<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 20:41-20:43/2<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 20:40-20:41/1<br>21:15 | 07:00<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 20:39-20:41/2<br>21:13 | 07:02 19:21-19:22/1<br>19:56 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06 20:38-20:39/1<br>21:10 | 07:04 19:20-19:22/2<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 19:19-19:21/2<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 19:17-19:19/2<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 20:31-20:32/1<br>21:03 | 07:10 19:14-19:16/2<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13 20:23-20:30/7<br>21:01 | 07:12 19:10-19:14/4<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:59-21:00/1<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26 20:08-20:09/1<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:59-21:00/1<br>21:49 | 06:28 20:07-20:08/1<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:58-20:59/1<br>21:47 | 06:30 20:06-20:07/1<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:58-20:59/1<br>21:45 | 06:32 20:05-20:07/2<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:58-20:59/1<br>21:44 | 06:34 20:04-20:05/1<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:57-20:58/1<br>21:42 | 06:36<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 6 | 53 | 22 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | 05:51-05:52/1 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | | 05:01 | 05:51-05:52/1 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | | 05:00 | 05:52-05:53/1 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | | 04:59 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | | 04:58 | 05:51-05:52/1 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-06:45/2 | 04:57 | 05:51-05:52/1 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-06:45/3 | 04:56 | |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-06:45/4 | 04:56 | |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-06:45/5 | 04:55 | 05:52-05:53/1 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-06:45/6 | 04:54 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:15/37 | 04:54 | 05:52-05:53/1 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:15/37 | 04:53 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:15/38 | 04:53 | 05:52-05:53/1 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:15/39 | 04:53 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 06:58-07:14/16 | 05:27 | 06:04-06:11/7 | 04:52 | |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | 06:37-07:15/38 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 06:55-07:14/19 | 05:25 | 06:00-06:14/14 | 04:52 | |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 06:36-07:15/39 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 06:54-07:14/20 | 05:23 | 05:59-06:05/6 | 04:52 | |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 06:36-07:15/39 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 06:53-07:14/21 | 05:21 | 05:57-06:02/5 | 04:52 | |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 06:29-07:15/46 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 06:53-07:14/21 | 05:20 | 05:56-06:00/4 | 04:52 | |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 06:26-07:15/49 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 06:54-07:13/19 | 05:18 | 05:55-05:58/3 | 04:52 | |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 06:23-07:15/52 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 06:54-07:13/19 | 05:16 | 05:54-05:58/4 06:23-06:34/11 | 04:52 | |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 06:51-07:15/24 | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:54-07:11/17 | 05:15 | 05:53-05:56/3 06:54-07:39/45 | 04:52 | |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 06:23-06:30/7 | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:55-07:10/15 | 05:13 | 05:53-05:56/3 06:57-07:39/42 | 04:53 | |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 06:25-06:28/3 | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 06:57-07:09/12 | 05:12 | 05:53-05:55/2 | 04:53 | |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 06:59-07:40/41 | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:59-07:06/7 | 05:10 | 05:53-05:55/2 | 04:53 | |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 07:00-07:39/39 | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 05:52-05:54/2 | 04:54 | |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 07:02-07:39/37 | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 05:51-05:53/2 | 04:54 | |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 07:03-07:40/37 | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-05:53/2 | 04:55 | |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 07:05-07:40/35 | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:15/17 | 05:05 | 05:51-05:53/2 | 04:55 | |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 07:06-07:40/34 | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-07:07/13 | 05:04 | 05:51-05:53/2 | 04:56 | |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 07:07-07:40/33 | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-05:52/1 | | |
| | 17:06 | | 20:08 | | | 22:01 | 07:08-07:40/32 | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 577 | | 918 | | 8 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 06:49-06:53/4 | 06:38 07:27-07:31/4 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 07:52-07:58/6 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 06:49-06:53/4 | 06:40 07:28-07:33/5 | 07:36 | 07:39 | 08:37 |
| | 22:18 | 21:38 07:50-08:00/10 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 06:50-06:55/5 | 06:41 07:29-07:35/6 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 07:50-08:03/13 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 06:51-06:56/5 | 06:43 07:31-07:37/6 | 07:40 | 07:43 | 08:40 |
| | 22:17 | 21:34 07:49-08:05/16 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 05:57-05:58/1 | 05:47 06:52-06:57/5 | 06:45 07:33-07:41/8 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 07:48-08:07/19 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 06:52-06:58/6 | 06:47 07:49-07:54/5 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 07:46-08:08/22 | 20:17 07:35-07:48/13 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 06:53-07:00/7 | 06:49 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | 21:28 07:44-08:09/25 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 05:58-05:59/1 | 05:52 06:55-07:01/6 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 22:14 | 21:26 07:43-08:11/28 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 05:58-05:59/1 | 05:54 06:55-07:02/7 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:24 07:40-08:11/31 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 05:58-05:59/1 | 05:56 06:57-07:05/8 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 07:38-08:12/34 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 05:59-06:01/2 | 05:58 06:59-07:08/9 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 07:35-08:13/38 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 06:00-06:01/1 | 06:00 07:32-08:14/42 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 06:00-06:01/1 | 06:02 07:29-08:13/44 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 06:00-06:01/1 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 06:00-06:01/1 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 06:01-06:03/2 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 06:01-06:03/2 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 06:01-06:03/2 | 06:11 07:04-07:12/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 06:02-06:04/2 | 06:13 07:02-07:15/13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 06:02-06:05/3 | 06:15 07:25-07:26/1 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 06:35-06:37/2 | 20:59 07:01-07:16/15 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 06:04-06:06/2 | 06:17 07:25-07:26/1 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:59 06:35-06:40/5 | 20:56 07:00-07:17/17 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 06:04-06:07/3 | 06:19 07:24-07:25/1 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 06:33-06:42/9 | 20:54 06:58-07:17/19 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 06:05-06:08/3 | 06:21 07:24-07:26/2 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 06:33-06:47/14 | 20:52 06:57-07:17/20 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:06-06:09/3 | 06:23 07:24-07:26/2 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 06:34-06:48/14 | 20:49 06:57-07:17/20 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 06:07-06:11/4 | 06:24 07:24-07:26/2 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 06:37-06:49/12 | 20:47 06:57-07:17/20 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:08-06:13/5 | 06:26 07:25-07:27/2 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 06:41-06:49/8 | 20:44 06:57-07:17/20 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:25-06:26/1 06:47-06:50/3 | 06:28 07:24-07:27/3 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 06:10-06:17/7 | 20:42 06:57-07:16/19 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 06:12-06:23/11 | 06:30 07:25-07:27/2 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 06:46-06:50/4 | 20:39 06:59-07:15/16 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 06:47-06:51/4 | 06:32 07:25-07:28/3 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 07:01-07:14/13 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 06:48-06:52/4 | 06:34 07:26-07:29/3 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 07:03-07:13/10 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 06:48-06:52/4 | 06:36 07:27-07:31/4 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 07:05-07:11/6 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 143 | 636 | 56 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 21:11-21:26/15 | 04:57 05:52-05:56/4 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 05:39-05:48/9 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 21:11-21:27/16 | 04:57 05:40-05:56/16 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 21:11-21:28/17 | 04:58 21:39-21:40/1 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 21:12-21:29/17 | 04:59 05:43-05:54/11 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 21:11-21:30/19 | 05:00 05:44-05:52/8 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 21:11-21:31/20 | 05:01 05:48-05:49/1 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 21:12-21:32/20 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 21:11-21:33/22 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 21:12-21:34/22 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 21:12-21:34/22 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 05:35-05:43/8 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:50-05:52/2 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 05:35-05:42/7 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:52-05:53/1 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 05:34-05:41/7 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:52-05:53/1 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 05:34-05:40/6 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:53-05:54/1 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 05:34-05:40/6 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:54-05:55/1 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:40/6 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:40/6 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:40/6 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:40/6 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:40/6 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:41/6 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:41/6 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 05:35-05:41/6 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:56-05:57/1 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:42/6 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 05:36-05:42/6 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:56-05:57/1 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:43/6 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 05:37-05:43/6 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:56-05:57/1 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 05:38-05:45/7 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:55-05:57/2 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 05:38-05:46/8 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:54-05:56/2 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 54 | 829 | 63 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 15:16-16:02/46 | 07:27 | 15:28-15:51/23 | 07:08 | 07:41-08:01/20 | 05:55 | 06:23-06:46/23 | 05:02 | 05:37-06:01/24 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | 21:09 | | 22:02 | |
| 2 | 09:00 | | 08:26 | 15:15-16:03/48 | 07:24 | 15:33-15:47/14 | 07:05 | 07:41-08:01/20 | 05:53 | 06:22-06:47/25 | 05:01 | 05:38-06:02/24 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | | 21:10 | | 22:04 | |
| 3 | 09:00 | | 08:24 | 15:15-16:03/48 | 07:22 | | 07:03 | 07:42-07:59/17 | 05:51 | 06:21-06:48/27 | 05:00 | 05:37-06:02/25 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | | 22:05 | |
| 4 | 09:00 | | 08:22 | 15:15-16:04/49 | 07:19 | | 07:00 | 07:43-07:58/15 | 05:49 | 06:21-06:48/27 | 04:59 | 05:37-06:02/25 |
| | 16:18 | | 17:15 | | 18:14 | | 20:15 | | 21:14 | | 22:06 | |
| 5 | 08:59 | | 08:20 | 15:13-16:04/51 | 07:17 | | 06:58 | 07:44-07:55/11 | 05:46 | 06:20-06:48/28 | 04:58 | 05:37-06:02/25 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | | 08:18 | 15:13-16:05/52 | 07:14 | | 06:55 | | 05:44 | 06:20-06:48/28 | 04:57 | 05:38-06:03/25 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:58 | | 08:16 | 15:13-16:05/52 | 07:12 | | 06:53 | | 05:42 | 06:19-06:48/29 | 04:56 | 05:38-06:03/25 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | | 21:20 | | 22:09 | |
| 8 | 08:58 | | 08:14 | 15:13-16:06/53 | 07:09 | | 06:50 | | 05:40 | 06:19-06:48/29 | 04:56 | 05:38-06:04/26 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | | 21:22 | | 22:10 | |
| 9 | 08:57 | | 08:12 | 15:13-16:07/54 | 07:07 | | 06:48 | | 05:38 | 06:19-06:48/29 | 04:55 | 05:38-06:03/25 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | | 21:24 | | 22:11 | |
| 10 | 08:57 | | 08:10 | 15:13-16:07/54 | 07:04 | | 06:45 | | 05:36 | 06:19-06:48/29 | 04:55 | 05:39-06:04/25 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | | 08:08 | 15:12-16:07/55 | 07:02 | | 06:43 | | 05:34 | 06:20-06:48/28 | 04:54 | 05:38-06:03/25 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | | 08:06 | 15:12-16:07/55 | 06:59 | | 06:40 | | 05:32 | 06:20-06:48/28 | 04:54 | 05:39-06:04/25 |
| | 16:30 | | 17:32 | | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | | 08:04 | 15:13-16:07/54 | 06:57 | | 06:38 | | 05:30 | 06:20-06:47/27 | 04:53 | 05:39-06:04/25 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | | 21:31 | | 22:15 | |
| 14 | 08:53 | | 08:01 | 15:12-16:07/55 | 06:54 | | 06:35 | | 05:29 | 06:21-06:47/26 | 04:53 | 05:40-06:05/25 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | | 22:15 | |
| 15 | 08:52 | | 07:59 | 15:13-16:07/54 | 06:52 | | 06:33 | | 05:27 | 06:21-06:46/25 | 04:53 | 05:39-06:04/25 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | | 22:16 | |
| 16 | 08:51 | | 07:57 | 15:13-16:07/54 | 06:49 | | 06:30 | | 05:25 | 06:21-06:45/24 | 04:52 | 05:39-06:04/25 |
| | 16:37 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | | 22:17 | |
| 17 | 08:50 | | 07:55 | 15:13-16:06/53 | 06:46 | | 06:28 | | 05:23 | 06:22-06:45/23 | 04:52 | 05:40-06:05/25 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | | 22:17 | |
| 18 | 08:49 | | 07:53 | 15:14-16:06/52 | 06:44 | | 06:25 | | 05:21 | 06:23-06:44/21 | 04:52 | 05:40-06:05/25 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | | 22:18 | |
| 19 | 08:48 | | 07:50 | 15:14-16:06/52 | 06:41 | | 06:23 | | 05:20 | 06:24-06:43/19 | 04:52 | 05:40-06:05/25 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 | | 22:18 | |
| 20 | 08:46 | | 07:48 | 15:14-16:05/51 | 06:39 | | 06:20 | | 05:18 | 05:48-05:51/3 | 04:52 | 05:40-06:05/25 |
| | 16:44 | | 17:49 | | 18:46 | | 20:47 | | 21:44 | 06:25-06:42/17 | 22:18 | |
| 21 | 08:45 | 15:31-15:41/10 | 07:46 | 15:16-16:04/48 | 06:36 | | 06:18 | | 05:17 | 05:47-05:54/7 | 04:52 | 05:41-06:06/25 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | 21:46 | 06:27-06:41/14 | 22:19 | |
| 22 | 08:44 | 15:28-15:45/17 | 07:43 | 15:16-16:03/47 | 06:34 | | 06:16 | | 05:15 | 05:46-05:56/10 | 04:53 | 05:41-06:06/25 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | 21:47 | 06:28-06:38/10 | 22:19 | |
| 23 | 08:42 | 15:25-15:47/22 | 07:41 | 15:17-16:02/45 | 06:31 | | 06:13 | | 05:13 | 05:44-05:56/12 | 04:53 | 05:41-06:06/25 |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | 21:49 | 06:31-06:35/4 | 22:19 | |
| 24 | 08:41 | 15:24-15:50/26 | 07:39 | 15:18-16:01/43 | 06:28 | 06:53-07:00/7 | 06:11 | | 05:12 | 05:43-05:57/14 | 04:53 | 05:41-06:06/25 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | 21:50 | | 22:19 | |
| 25 | 08:39 | 15:22-15:52/30 | 07:36 | 15:20-16:00/40 | 06:26 | 06:50-07:01/11 | 06:09 | | 05:11 | 05:42-05:59/17 | 04:53 | 05:42-06:07/25 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | 21:52 | | 22:19 | |
| 26 | 08:38 | 15:21-15:54/33 | 07:34 | 15:22-15:59/37 | 06:23 | 06:48-07:03/15 | 06:06 | | 05:09 | 05:41-05:59/18 | 04:54 | 05:41-06:06/25 |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 15:19-15:55/36 | 07:31 | 15:23-15:56/33 | 06:21 | 06:45-07:03/18 | 06:04 | 06:31-06:39/8 | 05:08 | 05:39-05:59/20 | 04:54 | 05:42-06:07/25 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 15:19-15:57/38 | 07:29 | 15:26-15:55/29 | 06:18 | 06:43-07:03/20 | 06:02 | 06:28-06:42/14 | 05:07 | 05:38-06:00/22 | 04:55 | 05:42-06:07/25 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | 15:18-15:58/40 | | | 07:16 | 07:41-08:03/22 | 05:59 | 06:26-06:44/18 | 05:05 | 05:37-06:00/23 | 04:56 | 05:42-06:08/26 |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | 15:17-16:00/43 | | | 07:13 | 07:41-08:02/21 | 05:57 | 06:24-06:45/21 | 05:04 | 05:37-06:01/24 | 04:56 | 05:43-06:08/25 |
| | 17:04 | | | | 20:06 | | 21:07 | | 21:59 | | 22:18 | |
| 31 | 08:29 | 15:17-16:01/44 | | | 07:10 | 07:41-08:02/21 | | | 05:03 | 05:37-06:01/24 | | |
| | 17:06 | | | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | | 339 | | 1364 | | 172 | | 144 | | 734 | | 750 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | 14:42-15:36/54 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | 16:58 | | 16:10 |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 07:39 | 14:42-15:36/54 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:10 | | 16:56 | | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:38 | | 07:41 | 14:43-15:36/53 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | 16:54 | | 16:08 |
| 4 | 04:59 | | 05:45 | 06:29-06:30/1 | 06:43 | | 07:40 | | 07:43 | 14:43-15:35/52 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | | 16:52 | | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 07:45 | 14:44-15:35/51 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | 16:50 | | 16:07 |
| 6 | 05:01 | | 05:49 | 06:29-06:30/1 | 06:47 | | 07:44 | | 07:47 | 14:44-15:35/51 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | | 16:48 | | 16:06 |
| 7 | 05:02 | 05:43-05:44/1 | 05:51 | 06:29-06:30/1 | 06:49 | 07:40-07:50/10 | 07:46 | | 07:49 | 14:44-15:34/50 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:52 | 06:30-06:31/1 | 06:51 | 07:37-07:52/15 | 07:48 | | 07:51 | 14:45-15:33/48 | 08:45 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | 06:30-06:32/2 | 06:53 | 07:36-07:53/17 | 07:50 | | 07:53 | 14:46-15:33/47 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | | 16:42 | | 16:05 |
| 10 | 05:06 | 05:45-05:46/1 | 05:56 | 06:30-06:32/2 | 06:55 | 07:35-07:54/19 | 07:52 | | 07:55 | 14:47-15:32/45 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | | 16:40 | | 16:05 |
| 11 | 05:07 | 05:45-05:46/1 | 05:58 | 06:31-06:33/2 | 06:57 | 07:34-07:55/21 | 07:54 | 16:11-16:16/5 | 07:57 | 14:48-15:31/43 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | 16:38 | | 16:04 |
| 12 | 05:08 | 05:45-05:46/1 | 06:00 | 06:32-06:34/2 | 06:59 | 07:32-07:54/22 | 07:56 | 16:04-16:22/18 | 07:59 | 14:48-15:30/42 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | 16:36 | | 16:04 |
| 13 | 05:09 | 05:45-05:47/2 | 06:02 | 06:33-06:36/3 | 07:00 | 07:32-07:54/22 | 07:58 | 16:00-16:25/25 | 08:01 | 14:50-15:30/40 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | | 16:34 | | 16:04 |
| 14 | 05:11 | 05:46-05:47/1 | 06:04 | 06:34-06:37/3 | 07:02 | 07:32-07:53/21 | 08:00 | 15:57-16:28/31 | 08:03 | 14:51-15:29/38 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | | 16:33 | | 16:04 |
| 15 | 05:12 | 05:47-05:48/1 | 06:06 | 06:48-06:49/1 | 07:04 | 07:32-07:53/21 | 08:02 | 15:54-16:29/35 | 08:05 | 14:52-15:28/36 | 08:54 |
| | 22:07 | | 21:10 | 06:36-06:41/5 | 19:53 | | 18:37 | | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:07 | 06:40-06:45/5 | 07:06 | 07:34-07:52/18 | 08:04 | 15:52-16:30/38 | 08:07 | 14:54-15:26/32 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | 07:36-07:51/15 | 08:06 | 15:51-16:32/41 | 08:09 | 14:56-15:26/30 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 07:37-07:49/12 | 08:08 | 15:49-16:33/44 | 08:11 | 14:58-15:24/26 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 07:39-07:47/8 | 08:10 | 15:48-16:34/46 | 08:13 | 15:00-15:22/22 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | | 16:25 | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:14 | 07:41-07:44/3 | 08:12 | | 08:15 | 15:03-15:20/17 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | | 16:23 | | 16:05 |
| 21 | 05:21 | 06:40-06:48/8 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 15:06-15:16/10 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:23 | | 16:22 | | 16:05 |
| 22 | 05:23 | 06:37-06:50/13 | 06:19 | | 07:17 | | 08:16 | | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | | 16:20 | | 16:05 |
| 23 | 05:24 | 05:58-06:03/5 | 06:21 | | 07:19 | | 08:18 | | 08:21 | | 08:59 |
| | 21:55 | 06:36-06:52/16 | 20:51 | | 19:33 | | 18:18 | | 16:19 | | 16:06 |
| 24 | 05:26 | 06:35-06:52/17 | 06:23 | | 07:21 | | 08:20 | | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | | 16:18 | | 16:07 |
| 25 | 05:28 | 06:34-06:54/20 | 06:25 | | 07:23 | | 07:22 | | 08:24 | | 09:00 |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | | 16:16 | | 16:07 |
| 26 | 05:29 | 06:33-06:54/21 | 06:26 | | 07:25 | | 07:24 | | 08:26 | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | | 16:15 | | 16:08 |
| 27 | 05:31 | 06:32-06:56/24 | 06:28 | | 07:27 | | 07:26 | | 08:28 | | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | | 16:14 | | 16:09 |
| 28 | 05:33 | 06:31-06:56/25 | 06:30 | | 07:29 | | 07:28 | | 08:30 | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | | 16:13 | | 16:10 |
| 29 | 05:34 | 06:31-06:57/26 | 06:32 | | 07:31 | | 07:30 | | 08:32 | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | | 16:12 | | 16:11 |
| 30 | 05:36 | 06:31-06:58/27 | 06:34 | | 07:33 | | 07:32 | 15:36-15:37/1 | 08:33 | | 09:01 |
| | 21:43 | | 20:34 | | 19:15 | | 17:02 | | 16:11 | | 16:12 |
| 31 | 05:38 | 06:30-06:57/27 | 06:36 | | | | 07:34 | 15:35-15:36/1 | | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 |
| Sum of minutes with flicker | 237 | | 29 | | 224 | | 285 | | 841 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | 08:39-08:40/1 | 07:08 | 07:54-08:02/8 | 05:55 | 06:41-06:43/2 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | | 20:09 | | 21:08 | | 22:02 |
| 2 | 09:00 | 08:25 | | 07:24 | 08:38-08:39/1 | 07:05 | 07:51-08:02/11 | 05:53 | 06:40-06:42/2 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | | 20:11 | | 21:10 | | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | 08:38-08:39/1 | 07:03 | 07:48-08:00/12 | 05:50 | 06:39-06:41/2 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | 08:37-08:38/1 | 07:00 | 07:46-07:58/12 | 05:48 | 06:38-06:41/3 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | | 06:57 | 07:43-07:58/15 | 05:46 | 06:37-06:40/3 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 06:55 | 07:40-07:57/17 | 05:44 | 06:37-06:41/4 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:58 | 08:16 | 10:11-10:13/2 | 07:12 | | 06:52 | 07:39-07:56/17 | 05:42 | 06:36-06:40/4 | 04:56 |
| | 16:21 | 17:21 | | 18:19 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 10:01-10:24/23 | 07:09 | | 06:50 | 07:36-07:55/19 | 05:40 | 06:35-06:39/4 | 04:55 |
| | 16:23 | 17:23 | | 18:21 | | 20:23 | | 21:22 | | 22:10 |
| 9 | 08:57 | 08:12 | 09:57-10:29/32 | 07:07 | | 06:47 | 07:33-07:55/22 | 05:38 | 06:35-06:38/3 | 04:55 |
| | 16:24 | 17:25 | | 18:24 | | 20:25 | | 21:24 | | 22:11 |
| 10 | 08:56 | 08:10 | 09:53-10:32/39 | 07:04 | | 06:45 | 07:30-07:54/24 | 05:36 | 06:34-06:37/3 | 04:54 |
| | 16:26 | 17:27 | | 18:26 | | 20:27 | | 21:26 | | 22:12 |
| 11 | 08:56 | 08:08 | 09:50-10:35/45 | 07:02 | | 06:42 | 07:29-07:54/25 | 05:34 | 06:33-06:36/3 | 04:54 |
| | 16:28 | 17:29 | | 18:28 | | 20:29 | | 21:28 | | 22:13 |
| 12 | 08:55 | 08:06 | 09:03-09:15/12 | 06:59 | | 06:40 | 07:27-07:54/27 | 05:32 | 06:33-06:36/3 | 04:53 |
| | 16:29 | 17:31 | | 18:30 | | 20:31 | | 21:29 | | 22:14 |
| 13 | 08:54 | 08:03 | 08:59-09:20/21 | 06:56 | | 06:37 | 07:23-07:53/30 | 05:30 | 06:32-06:35/3 | 04:53 |
| | 16:31 | 17:33 | | 18:32 | | 20:33 | | 21:31 | | 22:15 |
| 14 | 08:53 | 08:01 | 08:55-09:22/27 | 06:54 | 07:42-07:55/13 | 06:35 | 07:21-07:53/32 | 05:28 | 06:31-06:34/3 | 04:53 |
| | 16:33 | 17:36 | | 18:34 | | 20:35 | | 21:33 | | 22:15 |
| 15 | 08:52 | 07:59 | 08:53-09:25/32 | 06:51 | 07:37-07:59/22 | 06:32 | 07:19-07:52/33 | 05:26 | 06:32-06:34/2 | 04:52 |
| | 16:34 | 17:38 | | 18:36 | | 20:37 | | 21:35 | | 22:16 |
| 16 | 08:51 | 07:57 | 08:51-09:27/36 | 06:49 | 09:36-10:56/80 | 06:30 | 07:17-07:53/36 | 05:25 | 06:31-06:34/3 | 04:52 |
| | 16:36 | 17:40 | | 18:38 | 07:33-08:01/28 | 20:39 | | 21:37 | | 22:17 |
| 17 | 08:50 | 07:55 | 08:49-09:28/39 | 06:46 | 09:35-10:56/81 | 06:27 | 07:14-07:53/39 | 05:23 | 06:30-06:33/3 | 04:52 |
| | 16:38 | 17:42 | | 18:40 | 07:31-08:04/33 | 20:41 | | 21:38 | | 22:17 |
| 18 | 08:49 | 07:52 | 08:48-09:30/42 | 06:44 | 09:33-10:55/82 | 06:25 | 07:11-07:52/41 | 05:21 | 06:30-06:33/3 | 04:52 |
| | 16:40 | 17:44 | | 18:42 | 07:29-08:05/36 | 20:43 | | 21:40 | | 22:18 |
| 19 | 08:47 | 07:50 | 08:47-09:30/43 | 06:41 | 09:32-10:54/82 | 06:23 | 07:10-07:53/43 | 05:19 | 06:30-06:32/2 | 04:52 |
| | 16:42 | 17:46 | | 18:44 | 07:27-08:07/40 | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | 07:48 | 08:45-09:30/45 | 06:39 | 09:30-10:53/83 | 06:20 | 06:59-07:53/54 | 05:18 | 06:30-06:32/2 | 04:52 |
| | 16:44 | 17:48 | | 18:46 | 07:24-08:08/44 | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | 07:45 | 08:44-09:30/46 | 06:36 | 09:28-10:52/84 | 06:18 | 06:54-07:53/59 | 05:16 | 06:30-06:32/2 | 04:52 |
| | 16:46 | 17:50 | | 18:48 | 07:21-08:08/47 | 20:49 | | 21:45 | | 22:19 |
| 22 | 08:43 | 07:43 | 08:43-09:30/47 | 06:33 | 09:26-10:51/85 | 06:15 | 06:52-07:54/62 | 05:15 | 06:30-06:31/1 | 04:52 |
| | 16:47 | 17:53 | | 18:50 | 07:19-08:10/51 | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | 07:41 | 08:42-09:30/48 | 06:31 | 09:23-10:49/86 | 06:13 | 06:50-07:54/64 | 05:13 | 06:30-06:31/1 | 04:52 |
| | 16:49 | 17:55 | | 18:52 | 07:17-08:10/53 | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | 07:38 | 08:41-09:30/49 | 06:28 | 09:21-10:49/88 | 06:11 | 06:48-07:55/67 | 05:12 | 06:30-06:32/2 | 04:53 |
| | 16:51 | 17:57 | | 18:54 | 07:14-08:11/57 | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | 07:36 | 08:41-09:30/49 | 06:26 | 09:19-10:47/88 | 06:08 | 06:46-07:55/69 | 05:10 | 06:29-06:31/2 | 04:53 |
| | 16:53 | 17:59 | | 18:55 | 07:11-08:11/60 | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:37 | 07:34 | 08:39-09:30/51 | 06:23 | 09:18-10:45/87 | 06:06 | 06:45-07:56/71 | 05:09 | 06:30-06:31/1 | 04:54 |
| | 16:55 | 18:01 | | 18:57 | 07:08-08:10/62 | 20:59 | | 21:53 | | 22:19 |
| 27 | 08:36 | 07:31 | 08:39-09:30/51 | 06:21 | 09:19-10:44/85 | 06:04 | 06:44-07:57/73 | 05:07 | 06:30-06:31/1 | 04:54 |
| | 16:58 | 18:03 | | 18:59 | 07:07-08:11/64 | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 08:38-09:30/52 | 06:18 | 09:20-10:42/82 | 06:01 | 06:43-06:58/15 | 05:06 | 06:30-06:31/1 | 04:55 |
| | 17:00 | 18:05 | | 19:01 | 07:04-08:11/67 | 21:03 | 07:14-07:58/44 | 21:56 | | 22:19 |
| 29 | 08:33 | | | 07:15 | 10:21-11:40/79 | 05:59 | 06:43-06:54/11 | 05:05 | 06:30-06:31/1 | 04:55 |
| | 17:02 | | | 20:03 | 08:01-09:12/71 | 21:04 | 07:18-07:59/41 | 21:58 | | 22:18 |
| 30 | 08:31 | | | 07:13 | 10:21-11:38/77 | 05:57 | 06:42-06:51/9 | 05:04 | | 04:56 |
| | 17:04 | | | 20:05 | 07:58-09:12/74 | 21:06 | 07:21-08:00/39 | 21:59 | | 22:18 |
| 31 | 08:29 | | | 07:10 | 10:22-11:36/74 | | | 05:03 | | |
| | 17:06 | | | 20:07 | 07:57-09:12/75 | | | 22:01 | | |
| Potential sun hours | 242 | 269 | | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 831 | | 2224 | | 1141 | | 69 | | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:05/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:39 06:43-06:47/4<br>21:39 | 06:38 08:07-08:08/1<br>20:29 07:28-07:34/6 | 07:34<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57<br>22:17 | 05:41 06:43-06:46/3<br>21:38 | 06:39 08:04-08:08/4<br>20:27 07:29-07:36/7 | 07:36<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 06:44-06:47/3<br>21:36 | 06:41 08:00-08:08/8<br>20:24 07:31-07:40/9 | 07:38<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45 06:45-06:48/3<br>21:34 | 06:43 07:51-08:08/17<br>20:22 07:34-07:49/15 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00<br>22:16 | 05:47 06:45-06:48/3<br>21:32 | 06:45 07:35-08:07/32<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01<br>22:15 | 05:48 06:46-06:50/4<br>21:30 | 06:47 07:36-08:07/31<br>20:16 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02<br>22:14 | 05:50 06:47-06:50/3<br>21:27 | 06:49 07:38-08:07/29<br>20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03<br>22:13 | 05:52 06:48-06:51/3<br>21:25 | 06:51 07:41-08:07/26<br>20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 06:48-06:50/2<br>21:23 | 06:53 07:42-08:07/25<br>20:09 | 07:50<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05<br>22:12 | 05:56 06:49-06:51/2<br>21:21 | 06:55 07:43-08:06/23<br>20:06 | 07:52 09:12-09:13/1<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:50-06:51/1<br>21:19 | 06:56 07:46-08:07/21<br>20:04 | 07:54 09:12-09:13/1<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-06:40/1<br>22:10 | 06:00 06:49-06:51/2<br>21:17 | 06:58 07:48-08:07/19<br>20:01 | 07:56 09:12-09:13/1<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-06:40/1<br>22:09 | 06:02 06:50-06:52/2<br>21:15 | 07:00 07:49-08:08/19<br>19:58 | 07:58 09:12-09:13/1<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-06:40/1<br>22:08 | 06:03 06:50-06:53/3<br>21:12 | 07:02 07:51-08:08/17<br>19:56 | 08:00 09:12-09:13/1<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12<br>22:06 | 06:05 06:51-06:54/3<br>21:10 | 07:04 07:53-08:09/16<br>19:53 | 08:02 09:12-09:14/2<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13<br>22:05 | 06:07 06:52-06:55/3<br>21:08 | 07:06 07:55-08:09/14<br>19:51 | 08:04 09:12-09:14/2<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-06:40/1<br>22:04 | 06:09 06:52-06:55/3<br>21:05 | 07:08 07:56-08:10/14<br>19:48 | 08:06 09:12-09:15/3<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-06:40/1<br>22:03 | 06:11 06:53-06:57/4<br>21:03 | 07:10 07:58-08:11/13<br>19:45 | 08:08 09:13-09:16/3<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-06:41/1<br>22:01 | 06:13 06:54-06:59/5<br>21:01 | 07:11 08:00-08:12/12<br>19:43 | 08:10 09:14-09:17/3<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-06:41/1<br>22:00 | 06:15 06:56-07:01/5<br>20:58 | 07:13 08:03-08:14/11<br>19:40 | 08:12 09:14-09:18/4<br>18:25 10:08-10:11/3 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-06:41/2<br>21:58 | 06:17 06:57-07:03/6<br>20:56 | 07:15 08:04-08:15/11<br>19:38 | 08:14 09:15-09:19/4<br>18:22 10:06-10:12/6 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-06:42/2<br>21:57 | 06:19 07:13-07:16/3<br>20:54 06:59-07:10/11 | 07:17 08:06-08:17/11<br>19:35 | 08:16 09:15-09:20/5<br>18:20 10:05-10:13/8 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-06:42/2<br>21:55 | 06:20 07:04-07:18/14<br>20:51 | 07:19 08:08-08:20/12<br>19:32 08:51-08:53/2 | 08:18 09:16-09:21/5<br>18:18 10:06-10:15/9 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-06:43/3<br>21:54 | 06:22 07:14-07:20/6<br>20:49 | 07:21 08:10-08:22/12<br>19:30 08:46-08:50/4 | 08:20 09:18-09:24/6<br>18:15 10:08-10:18/10 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-06:42/2<br>21:52 | 06:24 07:15-07:23/8<br>20:46 | 07:23 08:41-08:49/8<br>19:27 08:11-08:27/16 | 07:22 08:20-08:26/6 09:09-09:20/11<br>17:13 10:15-10:17/2 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-06:43/2<br>21:50 | 06:26 07:17-07:23/6<br>20:44 | 07:25 08:12-08:47/35<br>19:25 | 07:24 08:21-08:28/7 09:10-09:22/12<br>17:11 10:12-10:15/3 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-06:44/2<br>21:49 | 06:28 07:19-07:25/6<br>20:42 | 07:27 08:14-08:44/30<br>19:22 | 07:26 08:52-08:54/2 10:09-10:13/4<br>17:08 08:23-08:32/9 09:12-09:25/13 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-06:44/3<br>21:47 | 06:30 07:21-07:27/6<br>20:39 | 07:29 08:17-08:41/24<br>19:20 | 07:28 08:45-08:51/6 10:05-10:11/6<br>17:06 08:25-08:38/13 09:13-09:28/15 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-06:45/3<br>21:45 | 06:32 07:22-07:29/7<br>20:37 | 07:31 08:20-08:37/17<br>19:17 | 07:30 08:29-08:48/19 09:16-09:33/17<br>17:04 10:01-10:09/8 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-06:45/3<br>21:43 | 06:34 07:24-07:31/7<br>20:34 | 07:32<br>19:14 | 07:32 08:34-08:43/9 09:18-09:39/21<br>17:02 09:55-10:07/12 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-06:46/3<br>21:41 | 06:36 07:26-07:32/6<br>20:32 | <br> | 07:34 09:20-10:04/44<br>17:00 | <br> | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 34 | 147 | 571 | 317 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 shut downWTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:52-15:53/1 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:51-15:52/1 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:50-15:51/1 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:50-15:52/2 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:49-15:51/2 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:48-15:50/2 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:47-15:50/3 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:47-15:50/3 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:45-15:49/4 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:43-15:48/5 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:41-15:46/5 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 15:28-15:29/1 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:36-15:44/8 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 15:29-15:34/5 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 405 | 53 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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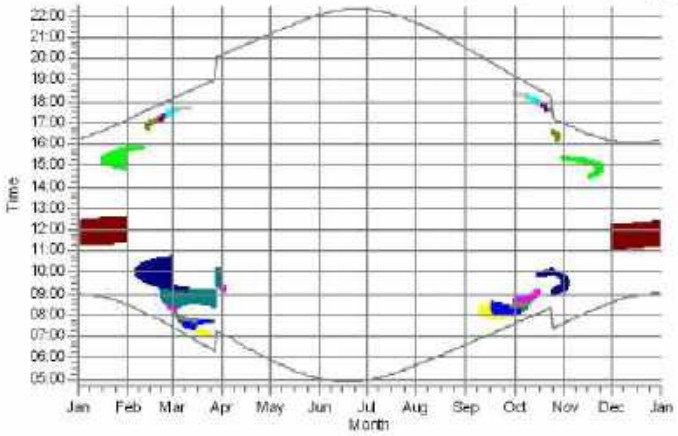
Calculated:
2021.12.03 09:05/3.5.552

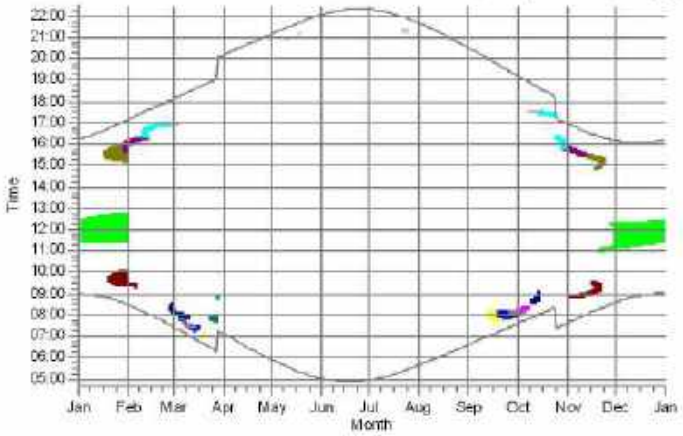
# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138 shut down

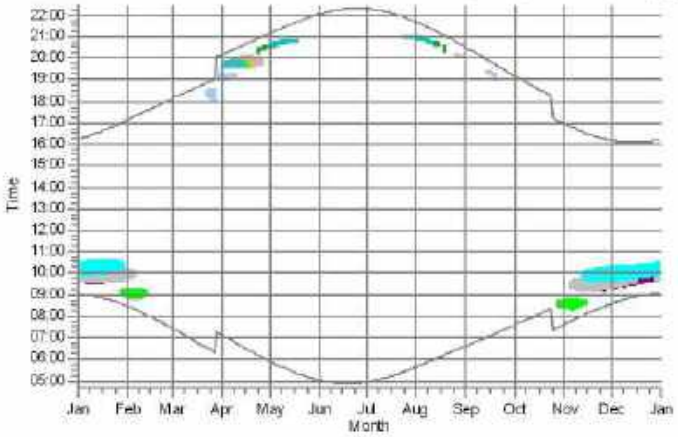
1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1



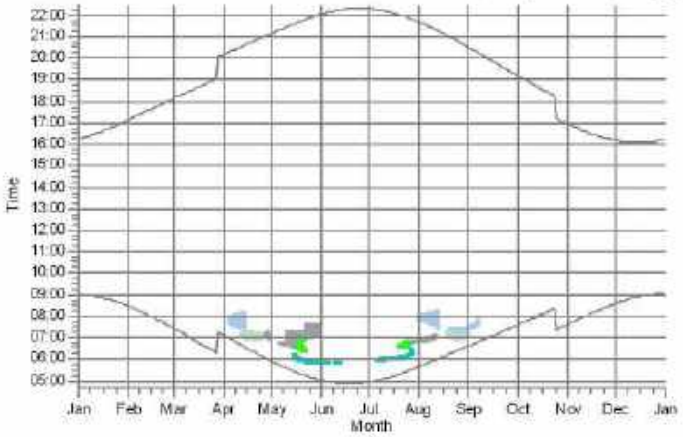

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2



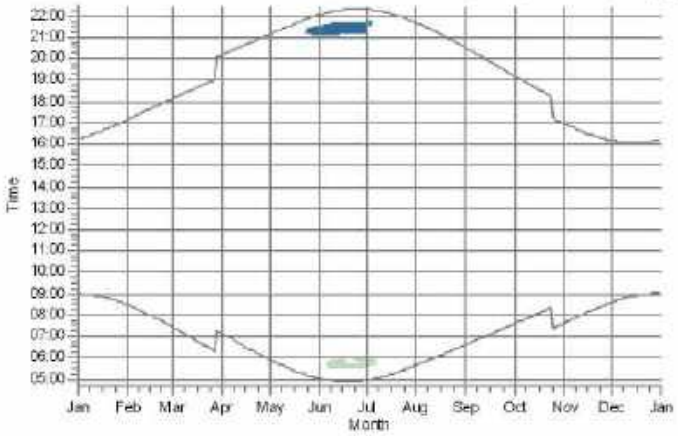

3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3



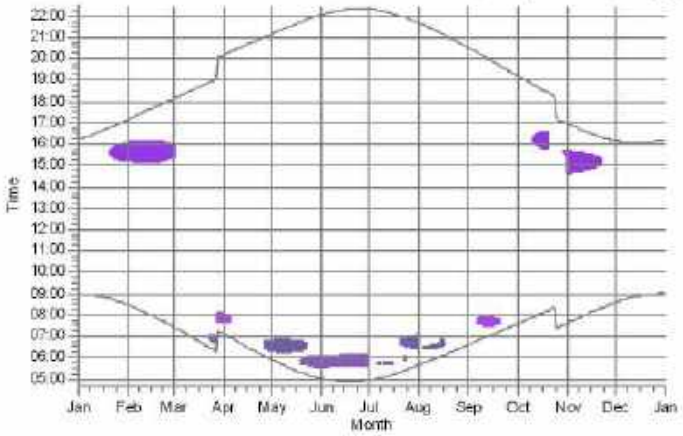

4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4




5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5




6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6




Shadow receptors

- A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)*
- B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)*
- C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)*
- D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)*
- E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)*
- F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)*
- G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
- H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
- I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
- J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
- O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
- T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
- U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
- V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
- AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
- AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)*
- AS: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)*
- AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)*

* Results reduced by flicker curtailment

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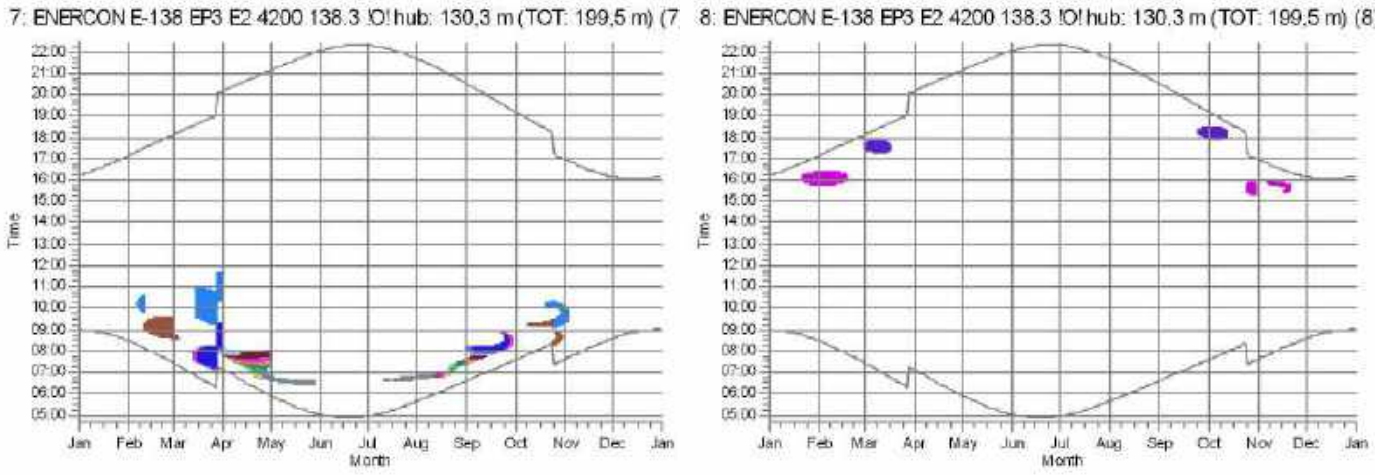
# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138 shut down




Shadow receptors

- W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
- X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
- Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
- Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
- AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
- AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
- AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
- AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
- AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
- AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
- AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
- AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
- AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
- AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
- AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
- AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
- AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*
- AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*
- AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*
- AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

* Results reduced by flicker curtailment

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 14:52-15:43 11:28-12:33 | 16:35-17:33 15:00-15:40 09:19-10:43 | 10:21-11:08 09:17-10:11 08:11-08:28 | | |
| 2 | | 14:51-15:44 11:29-12:33 | 16:36-17:35 15:03-15:38 09:18-10:43 | 10:24-11:05 09:18-10:09 08:14-08:25 | | |
| 3 | | 14:51-15:45 11:30-12:32 | 16:36-17:35 15:06-15:35 09:17-10:43 08:08-08:18 | 10:26-11:00 09:18-10:06 | | |
| 4 | | 14:51-15:46 11:30-12:32 | 16:38-17:37 15:10-15:32 09:17-10:44 08:04-08:23 | 10:30-10:56 09:28-10:03 | | |
| 5 | | 14:50-15:47 11:31-12:32 | 16:39-17:38 15:16-15:25 09:15-10:43 08:00-08:26 | 10:37-10:46 09:30-09:59 | | |
| 6 | | 14:50-15:48 11:32-12:31 | 16:42-17:40 09:15-10:44 07:58-08:28 | 09:34-09:55 | | |
| 7 | | 14:50-15:49 11:33-12:30 | 16:45-17:40 09:14-10:43 07:55-08:29 | 09:42-09:46 | | |
| 8 | | 14:49-15:49 11:33-12:29 | 16:47-17:41 09:13-10:43 07:53-08:30 | | | |
| 9 | | 14:49-15:50 11:35-12:28 | 16:48-17:42 09:13-10:43 07:52-08:32 | | | |
| 10 | | 14:49-15:51 11:36-12:27 | 16:48-17:42 09:12-10:42 07:50-08:32 | | | |
| 11 | | 14:49-15:51 11:38-12:26 | 16:50-17:43 09:12-10:42 07:50-08:34 | | | |
| 12 | | 14:49-15:51 11:39-12:23 | 16:50-17:42 09:11-10:41 07:48-08:34 | | | |
| 13 | | 14:49-15:52 11:41-12:21 | 16:51-17:42 09:11-10:41 07:48-08:35 | | | |
| 14 | | 16:44-16:55 14:49-15:52 11:44-12:19 | 16:54-17:42 09:10-10:40 07:47-08:35 | | | |
| 15 | | 16:40-16:58 14:49-15:51 11:46-12:16 | 16:56-17:41 09:09-10:39 07:46-08:34 07:24-07:30 | | | |
| 16 | | 16:39-17:01 14:49-15:51 11:50-12:12 | 17:08-17:41 09:09-10:39 07:46-08:35 07:20-07:35 | | | |
| 17 | | 16:38-17:03 14:50-15:52 11:58-12:05 | 17:08-17:40 09:09-10:38 07:45-08:34 07:16-07:37 | | | |
| 18 | | 16:37-17:04 14:50-15:51 | 17:09-17:38 09:09-10:37 07:45-08:35 07:15-07:39 | | | |
| 19 | | 16:36-17:05 14:50-15:51 | 17:10-17:37 09:08-10:36 07:44-08:34 07:13-07:40 | | | |
| 20 | | 16:36-17:07 14:51-15:51 | 17:11-17:35 09:08-10:34 07:44-08:33 07:11-07:41 | | | |
| 21 | | 16:35-17:07 14:51-15:49 | 17:14-17:33 09:08-10:33 07:44-08:33 07:10-07:42 | | | |
| 22 | | 16:35-17:12 14:52-15:49 | 17:16-17:30 09:08-10:31 07:44-08:32 07:09-07:42 | | | |
| 23 | | 16:34-17:15 14:53-15:48 | 09:08-10:30 07:44-08:32 07:09-07:43 | | | |
| 24 | | 16:34-17:17 14:54-15:47 | 09:08-10:28 07:44-08:31 07:07-07:42 | | | |
| 25 | | 16:34-17:18 14:54-15:46 | 09:08-10:26 07:44-08:29 07:07-07:42 | | | |
| 26 | | 16:34-17:20 14:56-15:45 | 09:08-10:25 07:45-08:28 07:07-07:38 | | | |
| 27 | | 16:34-17:28 14:57-15:43 | 09:08-10:22 07:51-08:27 07:07-07:36 | | | |
| 28 | | 16:35-17:31 14:59-15:42 | 09:09-10:20 07:54-08:26 07:07-07:36 | | | |
| 29 | | | 10:09-11:18 08:58-09:24 08:08-08:34 | | | |
| 30 | | | 10:19-11:15 10:10-10:16 09:06-09:22 08:09-08:33 | | | |
| 31 | | | 10:20-11:12 10:09-10:13 09:07-09:19 08:09-08:31 | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | | | 17:30-18:22 08:44-11:20 | 14:19-15:20 11:06-11:57 | |
| 2 | | | | 17:28-18:21 08:44-11:20 | 14:19-15:19 11:04-11:58 | |
| 3 | | | | 17:27-18:20 08:45-11:20 | 14:19-15:19 11:03-11:58 | |
| 4 | | | | 17:26-18:19 08:45-11:20 | 14:20-15:19 11:03-12:00 | |
| 5 | | | 09:40-09:41 | 17:25-18:18 08:46-11:20 | 14:20-15:18 11:02-12:01 | |
| 6 | | | 09:31-09:51 | 17:24-18:17 08:47-11:19 | 14:20-15:17 11:01-12:01 | |
| 7 | | | 10:34-10:40 09:26-09:54 | 17:19-18:16 08:48-11:19 | 14:20-15:16 11:00-12:02 | |
| 8 | | | 10:25-10:49 09:23-09:57 | 17:15-18:14 08:49-11:19 | 14:22-15:16 11:00-12:03 | |
| 9 | | | 10:21-10:54 09:09-10:00 | 17:13-18:12 15:47-16:03 08:50-11:18 | 14:22-15:15 11:00-12:04 | |
| 10 | | | 10:17-10:58 09:05-10:02 | 17:11-18:10 15:42-16:07 08:52-11:18 | 14:23-15:14 10:59-12:04 | |
| 11 | | | 10:15-11:01 09:02-10:04 | 17:10-18:09 15:38-16:10 08:54-11:17 | 14:23-15:12 10:59-12:04 | |
| 12 | | | 10:11-11:03 08:59-10:05 | 17:08-18:07 15:35-16:12 08:56-11:16 | 14:25-15:12 10:59-12:05 | |
| 13 | | | 10:09-11:05 08:56-10:06 | 17:07-18:05 15:33-16:13 09:00-11:15 | 14:25-15:11 10:59-12:06 | |
| 14 | | | 10:08-11:08 08:49-10:07 | 17:06-18:02 15:31-16:16 09:07-11:16 | 14:26-15:09 10:58-12:06 | |
| 15 | | | 08:44-11:10 | 17:07-17:59 15:29-16:17 09:08-11:15 | 14:27-15:08 10:58-12:06 | |
| 16 | | | 08:41-11:11 | 17:06-17:52 15:28-16:17 09:55-11:14 09:10-09:52 | 14:29-15:07 10:59-12:07 | |
| 17 | | | 08:34-11:13 | 17:06-17:50 15:26-16:18 09:56-11:13 09:12-09:49 | 14:31-15:06 10:59-12:07 | |
| 18 | | | 08:33-11:14 | 17:05-17:48 15:25-16:19 09:57-11:12 09:14-09:46 | 14:33-15:04 10:59-12:07 | |
| 19 | | | 08:31-11:15 | 17:05-17:45 15:24-16:19 09:57-11:11 09:17-09:43 | 14:36-15:01 10:59-12:07 | |
| 20 | | | 08:30-11:16 | 17:05-17:41 15:22-16:20 09:59-11:09 09:22-09:38 | 14:38-14:59 10:59-12:07 | |
| 21 | | | 18:02-18:14 08:29-11:17 | 17:05-17:37 15:21-16:20 10:00-11:08 | 14:44-14:56 11:00-12:08 | |
| 22 | | | 17:59-18:17 08:29-11:18 | 17:06-17:37 15:21-16:21 10:02-11:08 | 11:00-12:08 | |
| 23 | | | 17:56-18:19 08:28-11:18 | 17:07-17:35 15:21-16:21 10:03-11:06 | 11:00-12:09 | |
| 24 | | | 17:54-18:20 08:28-11:19 | 17:07-17:34 15:20-16:21 10:05-11:05 | 11:01-12:09 | |
| 25 | | | 17:53-18:21 08:28-11:20 | 16:08-16:32 14:19-15:21 11:24-11:37 09:06-10:03 | 11:01-12:09 | |
| 26 | | | 17:52-18:22 08:27-11:20 | 16:09-16:30 14:19-15:21 11:18-11:43 09:08-10:01 | 11:02-12:09 | |
| 27 | | | 17:49-18:22 08:27-11:21 | 16:11-16:28 14:19-15:22 11:15-11:47 09:12-09:59 | 11:02-12:09 | |
| 28 | | | 17:39-18:22 08:27-11:20 | 16:15-16:24 14:19-15:22 11:13-11:49 09:14-09:56 | 11:03-12:09 | |
| 29 | | | 17:35-18:22 08:26-11:20 | 14:18-15:21 11:10-11:51 09:17-09:52 | 11:03-12:10 | |
| 30 | | | 17:32-18:22 08:27-11:20 | 14:18-15:21 11:08-11:53 09:21-09:47 | 11:04-12:10 | |
| 31 | | | | 14:19-15:21 11:07-11:55 09:29-09:41 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 15:13-15:57 11:27-12:44 09:25-10:05 | 15:27-16:56 08:13-08:34 | | | 20:50-21:07 |
| 2 | | 15:12-15:59 11:27-12:44 09:24-10:06 | 15:28-16:57 08:10-08:36 | | | 20:51-21:06 |
| 3 | | 15:12-16:02 11:27-12:44 09:24-10:06 | 15:28-16:57 08:07-08:37 | | | 20:52-21:07 |
| 4 | | 15:12-16:05 11:28-12:44 09:23-10:07 | 15:30-16:57 08:06-08:39 | | | 20:53-21:06 |
| 5 | | 15:12-16:07 11:28-12:44 09:23-10:08 | 15:31-16:57 08:04-08:39 | | | 20:53-21:05 |
| 6 | | 15:12-16:10 11:28-12:44 09:23-10:08 | 15:33-16:58 08:03-08:41 | | | 20:55-21:05 |
| 7 | | 15:11-16:10 11:29-12:44 09:22-10:09 | 15:35-16:57 08:01-08:41 | | | 20:56-21:04 |
| 8 | | 15:11-16:12 11:28-12:43 09:21-10:08 | 15:36-16:56 07:59-08:41 07:40-07:47 | | | 20:57-21:02 |
| 9 | | 15:11-16:14 11:29-12:43 09:21-10:08 | 15:40-16:56 07:59-08:42 07:36-07:52 | | | |
| 10 | | 15:12-16:15 11:30-12:43 09:21-10:09 | 16:01-16:55 15:44-16:00 07:57-08:41 07:33-07:54 | | | |
| 11 | | 15:12-16:17 11:31-12:43 09:21-10:09 | 16:02-16:55 07:57-08:42 07:32-07:56 | | | |
| 12 | | 16:28-16:32 15:12-16:17 11:30-12:41 09:21-10:08 | 16:02-16:53 07:30-08:41 | | 20:51-20:57 | |
| 13 | | 16:21-16:39 15:12-16:18 11:31-12:41 09:21-10:08 | 16:02-16:52 07:29-08:42 | | 20:50-20:58 | |
| 14 | | 15:13-16:42 11:32-12:40 09:22-10:08 | 16:04-16:51 07:27-08:41 | | 20:48-21:00 | |
| 15 | | 15:13-16:44 11:32-12:39 09:22-10:07 | 16:04-16:50 07:26-08:40 | | 20:48-21:02 | |
| 16 | | 15:14-16:47 11:34-12:38 09:23-10:06 | 16:06-16:49 07:26-08:40 07:14-07:21 | | 20:47-21:03 | |
| 17 | | 15:15-16:49 11:35-12:37 09:24-10:06 | 16:07-16:47 07:25-08:39 07:11-07:24 | | 20:47-21:05 | |
| 18 | | 15:15-16:49 11:36-12:35 09:24-10:05 | 16:08-16:44 07:09-08:39 | | 20:47-21:07 | |
| 19 | | 15:16-16:51 11:37-12:34 09:25-10:04 | 16:11-16:43 07:06-08:37 | | 20:47-21:08 | |
| 20 | | 15:17-16:53 11:39-12:33 09:26-10:03 | 16:13-16:39 07:04-08:36 | | 20:46-21:08 | |
| 21 | | 15:18-16:53 11:40-12:30 09:27-10:01 | 16:17-16:36 07:03-08:35 | | 20:47-21:09 | |
| 22 | | 15:20-16:54 11:43-12:28 09:29-10:00 | 16:25-16:27 07:02-08:33 | | 20:46-21:08 | |
| 23 | | 15:21-16:54 11:44-12:25 09:30-09:57 | 07:02-08:32 | | 20:46-21:09 | |
| 24 | | 15:24-16:55 11:48-12:22 09:33-09:55 | 07:54-08:30 07:30-07:53 07:02-07:25 | | 20:47-21:09 | |
| 25 | | 15:24-16:55 11:51-12:17 09:36-09:50 | 07:54-08:27 07:33-07:51 07:02-07:22 | | 20:47-21:09 | |
| 26 | | 15:25-16:56 12:00-12:09 | 07:55-08:25 07:35-07:50 07:03-07:22 | | 20:47-21:08 | |
| 27 | | 15:25-16:56 | 08:04-08:21 07:56-08:03 07:37-07:47 07:03-07:20 | | 20:47-21:08 | |
| 28 | | 15:26-16:56 | 07:57-08:01 07:05-07:18 | | 20:48-21:08 | |
| 29 | | | 08:08-08:14 | | 20:48-21:08 | |
| 30 | | | | | 20:49-21:08 | |
| 31 | | | | | 20:49-21:07 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | 21:03-21:07 | | 16:42-17:32 08:14-09:20 | 14:41-15:45 10:59-12:12 08:51-09:38 | |
| 2 | | | | 16:40-17:32 08:15-09:20 | 14:41-15:43 10:59-12:13 08:51-09:38 | |
| 3 | | | | 16:39-17:33 16:25-16:35 08:16-09:20 | 14:41-15:42 10:58-12:13 08:51-09:38 | |
| 4 | 21:04-21:08 | | | 16:19-17:33 08:17-09:19 | 14:42-15:41 10:58-12:14 08:52-09:38 | |
| 5 | 21:02-21:09 | | | 16:15-17:33 08:19-09:18 | 14:42-15:39 10:58-12:14 08:52-09:38 | |
| 6 | 21:01-21:10 | | | 16:12-17:33 08:21-09:17 | 14:42-15:37 10:58-12:14 08:53-09:37 | |
| 7 | 21:00-21:11 | | | 16:09-17:33 08:23-09:16 | 14:42-15:34 10:57-12:14 08:53-09:37 | |
| 8 | 20:59-21:12 | | | 16:07-17:32 08:25-09:15 | 14:43-15:33 10:58-12:15 08:55-09:37 | |
| 9 | 20:59-21:13 | | | 16:05-17:32 08:29-09:14 | 14:43-15:29 10:58-12:15 08:55-09:36 | |
| 10 | 20:58-21:13 | | | 16:03-17:31 08:41-09:12 | 14:44-15:28 10:58-12:14 08:56-09:36 | |
| 11 | 20:59-21:15 | | | 16:02-17:30 08:42-09:11 | 14:44-15:27 10:57-12:14 08:57-09:35 | |
| 12 | 20:58-21:16 | | | 16:00-17:29 08:45-09:09 | 14:46-15:27 10:58-12:15 08:59-09:35 | |
| 13 | 20:58-21:16 | | | 15:59-17:29 08:48-09:06 | 14:46-15:26 10:58-12:15 09:00-09:34 | |
| 14 | 20:57-21:16 | | 08:41-08:43 | 15:58-17:28 08:55-09:00 | 14:47-15:25 10:58-12:15 09:01-09:33 | |
| 15 | 20:57-21:16 | | 08:34-08:49 | 15:58-17:29 | 14:48-15:23 10:58-12:15 09:03-09:32 | |
| 16 | 20:57-21:18 | | 08:55-09:09 08:27-08:52 | 15:57-17:28 12:28-12:45 10:13-10:18 | 14:50-15:23 11:00-12:15 09:05-09:32 | |
| 17 | 20:57-21:18 | | 08:24-09:13 | 15:56-17:27 12:22-12:51 10:06-10:24 | 14:51-15:21 11:00-12:15 09:07-09:30 | |
| 18 | 20:56-21:18 | | 08:22-09:15 | 15:54-17:26 12:18-12:54 10:03-10:27 | 14:52-15:19 11:00-12:15 09:10-09:27 | |
| 19 | 20:57-21:19 | | 08:17-09:16 | 15:52-17:25 12:15-12:57 10:01-10:29 | 14:54-15:17 11:00-12:15 09:13-09:24 | |
| 20 | 20:56-21:18 | | 08:11-09:17 | 15:50-17:24 12:12-12:59 09:59-10:30 | 14:57-15:15 11:01-12:15 | |
| 21 | 20:57-21:19 | | 08:10-09:19 | 15:48-17:23 12:10-13:01 09:57-10:32 | 15:02-15:12 11:03-12:15 | |
| 22 | 20:56-21:18 | | 17:03-17:19 08:10-09:20 | 15:47-17:23 12:09-13:04 09:56-10:34 | 11:03-12:15 | |
| 23 | 20:57-21:19 | | 16:59-17:23 08:09-09:20 | 15:46-17:21 12:07-13:05 09:55-10:35 | 11:04-12:15 | |
| 24 | 20:57-21:18 | | 16:56-17:26 08:08-09:21 | 15:45-17:19 12:06-13:06 09:54-10:35 | 11:05-12:15 | |
| 25 | 20:57-21:18 | | 16:53-17:27 08:08-09:21 | 14:44-16:18 11:04-12:07 08:53-09:36 | 11:06-12:15 | |
| 26 | 20:57-21:16 | | 16:51-17:29 08:08-09:22 | 14:43-16:16 11:03-12:08 08:52-09:36 | 11:06-12:15 | |
| 27 | 20:58-21:15 | | 16:48-17:29 08:08-09:22 | 14:43-16:14 11:03-12:09 08:52-09:37 | 11:07-12:15 | |
| 28 | 20:58-21:13 | | 16:46-17:30 08:08-09:21 | 14:42-16:11 11:02-12:10 08:52-09:37 | 11:08-12:15 | |
| 29 | 20:59-21:12 | | 16:44-17:31 08:07-09:21 | 15:52-16:07 14:42-15:48 11:01-12:10 08:51-09:38 | 11:09-12:14 | |
| 30 | 21:00-21:10 | | 16:43-17:31 08:08-09:21 | 14:41-15:46 11:00-12:11 08:50-09:38 | 11:10-12:14 | |
| 31 | 21:00-21:08 | | | 14:41-15:45 11:00-12:12 08:51-09:38 | | |

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# SHADOW - Flicker curtailment calendar

## Calculation: Enercon E138 shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 10:10-10:11 | | 19:15-19:42 | 20:08-20:33 | 20:20-20:46 | 20:32-20:46 | 20:20-20:56 | 19:20-20:00 | | | |
| 2 | | | | 19:15-19:40 | 20:07-20:33 | 20:21-20:46 | 20:32-20:47 | 20:18-20:55 | 19:19-19:57 19:10-19:16 | | | |
| 3 | | | | 19:15-19:40 | 20:07-20:34 | 20:22-20:46 | 20:32-20:48 | 20:18-20:54 | 19:06-19:55 | | | |
| 4 | | | | 19:15-19:40 | 20:07-20:35 | 20:23-20:46 | 20:31-20:48 | 20:18-20:54 | 19:04-19:51 | | | |
| 5 | | | | 19:15-19:40 | 20:07-20:38 | 20:23-20:45 | 20:30-20:49 | 20:17-20:53 | 19:02-19:50 | | | |
| 6 | | | | 19:15-19:40 | 20:07-20:40 | 20:23-20:44 | 20:30-20:50 | 20:16-20:51 | 19:00-19:47 | | | |
| 7 | | | | 19:15-19:40 | 20:07-20:42 | 20:25-20:44 | 20:30-20:51 | 20:16-20:49 | 18:59-19:45 | | | |
| 8 | | | | 19:15-19:40 | 20:07-20:43 | 20:25-20:43 | 20:29-20:52 | 20:16-20:47 | 18:58-19:42 | | | |
| 9 | | | | 19:15-19:40 | 20:07-20:44 | 20:26-20:43 | 20:29-20:52 | 20:15-20:42 | 18:57-19:40 | | | |
| 10 | | | | 19:21-19:40 19:15-19:18 | 20:08-20:44 | 20:27-20:42 | 20:28-20:53 | 20:15-20:42 | 18:57-19:38 | | | |
| 11 | | | | 19:21-19:40 | 20:08-20:45 | 20:28-20:42 | 20:29-20:54 | 20:16-20:42 | 18:55-19:34 | | | |
| 12 | | | | 19:23-19:40 | 20:10-20:46 | 20:29-20:42 | 20:28-20:55 | 20:16-20:41 | 18:55-19:32 | | | |
| 13 | | | | 19:24-19:40 | 20:11-20:47 | 20:29-20:41 | 20:28-20:55 | 20:16-20:40 | 18:55-19:29 | | | |
| 14 | | | | 19:26-19:40 | 20:12-20:47 | 20:30-20:41 | 20:27-20:56 | 20:16-20:39 | 19:24-19:27 18:55-19:21 | | | |
| 15 | | | | 19:31-19:40 | 20:14-20:48 | 20:31-20:41 | 20:27-20:56 | 20:17-20:38 | 18:56-19:20 | | | |
| 16 | | | | 19:32-19:40 | 20:15-20:48 | 20:32-20:40 | 20:27-20:57 | 20:18-20:37 | 18:56-19:19 | | | |
| 17 | | | | 19:34-19:40 | 20:15-20:49 | 20:33-20:40 | 20:26-20:57 | 20:18-20:34 19:52-20:03 | 18:57-19:17 | | | |
| 18 | | | | | 20:15-20:48 | 20:34-20:40 | 20:26-20:57 | 20:20-20:31 19:50-20:05 | 18:57-19:14 | | | |
| 19 | | | | | 20:15-20:49 | 20:34-20:39 | 20:26-20:58 | 19:48-20:06 | 18:59-19:10 | | | |
| 20 | | | | | 20:15-20:49 | 20:35-20:39 | 20:26-20:58 | 19:47-20:08 | | | | |
| 21 | | | | | 20:16-20:49 | 20:35-20:39 | 20:26-20:59 | 19:46-20:08 | | | | |
| 22 | | | | | 20:15-20:48 | 20:36-20:40 | 20:25-20:59 | 19:44-20:08 | | | | |
| 23 | | | | | 20:16-20:49 | 20:36-20:40 | 20:26-20:59 | 19:44-20:09 | | | | |
| 24 | | | | | 20:16-20:49 | 20:35-20:40 | 20:25-20:59 | 19:43-20:09 | | | | |
| 25 | | | | 20:13-20:25 | 20:17-20:49 | 20:35-20:42 | 20:26-20:59 | 19:40-20:09 | | | | |
| 26 | | | | 20:12-20:28 | 20:17-20:48 | 20:35-20:42 | 20:25-20:59 | 19:37-20:08 | | | | |
| 27 | | | | 20:10-20:29 | 20:17-20:48 | 20:35-20:44 | 20:26-20:59 | 19:34-20:07 | | | | |
| 28 | | | | 20:09-20:31 | 20:18-20:47 | 20:34-20:44 | 20:25-20:58 | 19:32-20:06 | | | | |
| 29 | | | | 20:09-20:32 | 20:18-20:47 | 20:34-20:45 | 20:24-20:58 | 19:27-20:05 | | | | |
| 30 | | | 19:15-19:38 | 20:08-20:32 | 20:19-20:47 | 20:33-20:45 | 20:22-20:58 | 19:24-20:04 | | | | |
| 31 | | | 19:15-19:40 | | 20:20-20:47 | | 20:21-20:57 | 19:23-20:03 | | | | |

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## SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 06:52-08:05 | 05:52-07:40 | 05:57-07:46 | 06:53-07:52 | 07:31-08:06 | | | |
| 2 | | | | | 06:50-08:04 | 05:52-07:40 | 05:57-07:46 | 06:53-07:50 | 07:33-08:05 | | | |
| 3 | | | | | 06:48-08:03 | 05:53-07:41 | 05:58-07:47 | 06:55-07:50 | 07:35-08:03 | | | |
| 4 | | | | | 06:46-08:02 | 05:52-07:41 | 05:57-07:46 | 06:56-07:49 | 07:37-08:01 | | | |
| 5 | | | | | 06:45-08:01 | 05:52-07:41 | 05:58-07:46 | 06:57-07:48 | 07:41-07:59 | | | |
| 6 | | | | | 06:45-07:59 | 05:52-07:40 | 05:58-07:47 | 06:58-07:46 | 07:48-07:49 | | | |
| 7 | | | | | 06:45-07:58 | 05:52-07:41 | 05:58-07:47 | 07:00-07:44 | | | | |
| 8 | | | | | 06:45-07:56 | 05:52-07:41 | 05:59-07:47 | 07:01-07:43 | | | | |
| 9 | | | | | 06:45-07:54 | 05:53-07:41 | 05:59-07:47 | 07:02-07:40 | | | | |
| 10 | | | | | 06:45-07:52 | 05:52-07:41 | 05:59-07:48 | 07:05-07:38 | | | | |
| 11 | | | | | 07:15-07:49 | 05:53-07:41 | 06:01-07:49 | 07:08-07:35 | | | | |
| 12 | | | | | 07:37-07:45 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:01-07:32 | | | | |
| 13 | | | | | 07:15-07:36 | 05:53-07:41 | 06:01-07:49 | 07:03-07:29 | | | | |
| 14 | | | | | 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:27-08:14 07:06-07:25 | | | | |
| 15 | | | | 07:24-08:10 | 07:15-07:37 | 05:53-07:42 | 06:01-07:49 | 07:27-08:15 07:13-07:18 | | | | |
| 16 | | | | 07:22-08:10 | 07:15-07:37 | 05:54-07:42 | 06:03-07:49 | 07:27-08:15 | | | | |
| 17 | | | | 07:22-08:10 | 07:15-07:38 06:05-06:16 | 05:54-07:42 | 06:03-07:49 | 07:25-08:15 | | | | |
| 18 | | | | 07:21-08:10 | 07:15-07:38 06:02-06:17 | 05:54-07:43 | 06:03-07:49 | 07:25-08:15 | | | | |
| 19 | | | | 07:20-08:10 | 07:15-07:39 06:00-06:19 | 05:54-07:43 | 06:04-07:49 | 07:25-08:15 | | | | |
| 20 | | | | 07:20-08:11 | 07:15-07:39 05:58-06:20 | 05:54-07:43 | 06:37-07:49 06:05-06:35 | 07:26-08:15 | | | | |
| 21 | | | | 07:19-08:10 | 07:15-07:39 06:34-06:51 05:58-06:23 | 05:54-07:43 | 06:40-07:50 06:06-06:35 | 07:26-08:15 | | | | |
| 22 | | | | 07:19-08:10 | 06:30-06:54 05:56-06:23 | 05:55-07:44 | 06:42-07:49 06:07-06:33 | 07:25-08:14 | | | | |
| 23 | | | | 07:19-08:10 | 06:28-06:57 05:56-06:25 | 05:55-07:44 | 06:47-07:49 06:08-06:31 | 07:26-08:14 | | | | |
| 24 | | | | 07:19-08:10 | 05:55-06:59 | 05:55-07:44 | 06:48-07:49 06:09-06:30 | 07:26-08:14 | | | | |
| 25 | | | | 07:19-08:08 | 05:55-07:00 | 05:56-07:44 | 06:49-07:49 06:11-06:29 | 07:26-08:14 | | | | |
| 26 | | | | 07:19-08:08 | 05:54-07:02 | 05:56-07:44 | 06:49-07:48 06:13-06:27 | 07:27-08:13 | | | | |
| 27 | | | | 07:19-08:08 | 05:53-07:03 | 05:56-07:45 | 06:50-07:48 06:17-06:25 | 07:27-08:12 | | | | |
| 28 | | | | 07:20-08:07 | 05:53-07:05 | 05:56-07:45 | 06:50-07:48 | 07:27-08:11 | | | | |
| 29 | | | | 07:20-08:07 07:15-07:19 | 05:53-07:06 | 05:57-07:45 | 06:51-07:48 | 07:28-08:10 | | | | |
| 30 | | | | 07:07-08:06 | 05:53-07:07 | 05:56-07:45 | 06:52-07:47 | 07:29-08:09 | | | | |
| 31 | | | | | 05:52-07:08 | | 06:52-07:46 | 07:31-08:08 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 07:52-08:15 | | | | 21:16-21:39 05:48-05:52 | | | | | |
| 2 | | | 07:50-08:15 | | | | 21:17-21:39 | | | | | |
| 3 | | | 07:47-08:14 | | | | 21:17-21:39 | | | 08:26-08:34 | | |
| 4 | | | 07:45-08:14 | | | | 21:17-21:38 | | | 08:24-08:36 | | |
| 5 | | | 07:44-08:12 | | | | 21:17-21:38 | | | 08:22-08:37 | | |
| 6 | | | 07:44-08:11 | | | | 21:17-21:38 | | | 08:21-08:38 | | |
| 7 | | | 07:44-08:06 | | | | 21:18-21:37 | | | 08:20-08:44 | | |
| 8 | | | 07:44-08:01 | | | | 21:18-21:36 | | | 08:19-08:46 | | |
| 9 | | | 07:46-08:00 | | | | 21:18-21:35 | | | 08:19-08:48 | | |
| 10 | | | 07:47-07:57 | | | | 21:19-21:35 | | | 08:20-08:48 | | |
| 11 | | | | | | | 21:19-21:34 | | | 08:22-08:49 | | |
| 12 | | | | | | 05:43-05:50 | 21:20-21:34 | | | 08:24-08:49 | | |
| 13 | | | | | | 05:42-05:52 | 21:20-21:33 | | | 08:26-08:48 | | |
| 14 | | | | | | 05:41-05:52 | 21:21-21:31 | | | 08:28-08:48 | | |
| 15 | | | | | | 05:40-05:53 | 21:21-21:30 | | | 08:31-08:48 | | |
| 16 | | | | | | 05:40-05:54 | 21:22-21:30 | | | 08:33-08:47 | | |
| 17 | | | | | | 05:40-05:55 | 21:23-21:28 | | | 08:35-08:46 | | |
| 18 | | | | | | 05:40-05:55 | 21:24-21:27 | | | 08:37-08:45 | | |
| 19 | | | | | | 05:40-05:56 | | | | 08:39-08:42 | | |
| 20 | | | | | | 05:40-05:56 | | | | | | |
| 21 | | | | | | 05:40-05:56 | | | | | | |
| 22 | | | | | | 05:41-05:57 | | | | | | |
| 23 | | 08:07-08:12 | | | | 05:41-05:57 | | | | | | |
| 24 | | 08:05-08:14 | | | | 05:41-05:56 | | | | | | |
| 25 | | 08:02-08:14 | | | | 05:42-05:57 | | | | | | |
| 26 | | 08:00-08:16 | | | | 05:42-05:56 | | | | | | |
| 27 | | 07:57-08:15 | | | | 05:43-05:57 | | | | | | |
| 28 | | 07:55-08:16 | | | | 05:43-05:56 | | | | | | |
| 29 | | | | | | 05:45-05:55 | | | | | | |
| 30 | | | | | | 05:46-05:54 | | | | | | |
| 31 | | | | | | | | | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 05:42-06:08 | 06:30-06:58 | | | | |
| 2 | | | | | | | 05:43-06:08 | 06:30-06:59 | | | | |
| 3 | | | | | | | 05:43-06:09 | 06:29-06:58 | | | | |
| 4 | | | | | | | 05:44-06:09 | 06:30-06:58 | | | | |
| 5 | | | | | | | 05:44-06:09 | 06:30-06:59 | | | | |
| 6 | | | | | | | 05:44-06:10 | 06:30-06:58 | | | | |
| 7 | | | | | | | 05:44-06:09 | 06:30-06:58 | | | | |
| 8 | | | | | | | 05:44-06:09 | 06:31-06:58 | | | | |
| 9 | | | | | | | 05:45-06:10 | 06:32-06:57 | | | | |
| 10 | | | | | | | 05:46-06:10 | 06:32-06:56 | | | | |
| 11 | | | | | | | 05:46-06:10 | 06:33-06:55 | | | | |
| 12 | | | | | | | 05:46-06:10 | 06:34-06:54 | | | | |
| 13 | | | | | | | 05:47-06:09 | 06:36-06:53 | | | | |
| 14 | | | | | | | 05:47-06:09 | 06:37-06:51 | | | | |
| 15 | | | | | | | 05:48-06:09 | 06:41-06:48 | | | | |
| 16 | | | | | | | 05:48-06:09 | | | | | |
| 17 | | | | | | | 05:49-06:08 | | | | | |
| 18 | | | | | | | 05:51-06:08 | | | | | |
| 19 | | | | | | | 05:52-06:08 | | | | | |
| 20 | | | | | | | 05:53-06:06 | | | 15:47-16:34 | | |
| 21 | | | | | | | 05:55-06:06 | | | 15:46-16:35 | | |
| 22 | | | | | | | 05:56-06:04 | | | 15:45-16:35 | | |
| 23 | | | | | | | | | | 15:44-16:35 | | |
| 24 | | | | | | | | | | 15:44-16:36 | | |
| 25 | | | | | | | | | | 14:43-15:36 | | |
| 26 | | | | | | | | | | 14:42-15:36 | | |
| 27 | | | | | | | | | | 14:42-15:36 | | |
| 28 | | | | | | | | | | 14:41-15:36 | | |
| 29 | | | | | | | | | | 14:42-15:37 | | |
| 30 | | | | | | | | | | 14:42-15:36 | | |
| 31 | | | | | | | | | | 14:42-15:35 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | | 08:40-10:58 | 10:23-11:33 08:02-09:12 | 06:43-08:20 | 06:31-07:40 |
| 2 | | | 08:39-10:58 | 10:23-11:30 08:02-09:12 | 06:42-08:18 | 06:31-07:39 |
| 3 | | | 08:39-10:59 | 10:25-11:28 08:00-09:12 | 06:41-08:16 | 06:31-07:38 |
| 4 | | | 08:38-10:59 | 10:26-11:24 07:58-09:11 | 06:41-08:14 | 06:32-07:38 |
| 5 | | | 08:38-10:59 | 10:28-11:22 07:58-09:11 | 06:40-08:13 | 06:32-07:36 |
| 6 | | | 08:37-10:59 | 10:29-11:18 07:57-09:10 | 06:41-08:11 | 06:32-07:35 |
| 7 | | | 08:38-11:00 | 10:32-11:14 07:56-09:10 | 06:40-08:10 | 06:33-07:34 |
| 8 | | | 08:38-10:59 | 10:34-11:09 07:55-09:09 | 06:39-08:08 | 06:32-07:33 |
| 9 | | | 08:37-10:59 | 10:39-11:04 07:55-09:09 | 06:38-08:07 | 06:33-07:32 |
| 10 | | | 08:38-10:59 | 10:47-10:52 07:54-09:07 | 06:37-08:05 | 06:33-07:31 |
| 11 | | | 08:38-10:58 | 07:54-09:07 | 06:36-08:03 | 06:33-07:31 |
| 12 | | 09:48-10:38 | 08:39-10:59 | 07:54-09:06 | 06:36-08:02 | 06:34-07:32 |
| 13 | | 09:46-10:40 | 08:40-10:58 | 07:53-09:05 | 06:35-08:00 | 06:34-07:31 |
| 14 | | 09:43-10:42 | 08:41-10:58 | 07:53-09:04 | 06:34-07:59 | 06:34-07:31 |
| 15 | | 09:42-10:44 | 08:41-10:57 | 07:52-09:02 | 06:34-07:58 | 06:34-07:32 |
| 16 | | 09:40-10:46 | 08:42-09:36 | 07:53-09:01 | 06:34-07:56 | 06:35-07:32 |
| 17 | | 09:38-10:47 | 08:44-09:35 | 07:53-09:00 | 06:33-07:54 | 06:35-07:32 |
| 18 | | 09:37-10:49 | 08:45-09:33 | 07:52-08:58 | 06:33-07:53 | 06:35-07:32 |
| 19 | | 09:36-10:50 09:30-09:31 | 09:18-09:32 08:48-09:15 | 07:53-08:56 | 06:32-07:52 | 06:36-07:32 |
| 20 | | 09:34-10:51 09:30-09:32 | 09:18-09:30 08:51-09:11 | 07:53-08:55 | 06:32-07:51 | 06:36-07:32 |
| 21 | | 09:30-10:52 | 09:17-09:28 08:56-09:04 | 07:53-08:52 | 06:32-07:51 | 06:36-07:33 |
| 22 | | 09:30-10:53 | 09:18-09:26 | 07:54-08:50 | 06:31-07:49 | 06:36-07:32 |
| 23 | | 09:30-10:54 | 09:18-09:23 | 07:54-08:47 | 06:31-07:48 | 06:37-07:33 |
| 24 | | 09:30-10:55 | 09:19-09:21 | 07:55-08:43 | 06:32-07:47 | 06:36-07:33 |
| 25 | | 09:30-10:56 | | 08:31-08:35 07:55-08:30 | 06:31-07:45 | 06:37-07:34 |
| 26 | | 09:30-10:56 | | 07:56-08:29 | 06:31-07:44 | 06:37-07:34 |
| 27 | | 09:30-10:57 | | 07:57-08:27 | 06:31-07:44 | 06:37-07:34 |
| 28 | | 09:30-10:57 | | 07:58-08:26 06:58-07:14 | 06:31-07:43 | 06:37-07:35 |
| 29 | | | | 07:59-08:24 06:54-07:18 | 06:31-07:42 | 06:38-07:35 |
| 30 | | | | 08:00-08:22 06:51-07:21 | 06:31-07:42 | 06:37-07:35 |
| 31 | | | | | 06:31-07:41 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 06:38-07:35 | 06:47-08:13 | 08:08-09:06 07:34-08:07 | 09:19-11:38 | | |
| 2 | 06:38-07:36 | 06:46-08:14 | 10:46-10:51 08:08-09:06 07:36-08:04 | 09:17-11:37 | | |
| 3 | 06:37-07:36 | 06:47-08:16 | 10:37-11:02 08:08-09:07 07:40-08:00 | 09:17-11:37 | | |
| 4 | 06:38-07:37 | 06:48-08:18 | 10:32-11:07 08:08-09:07 07:49-07:51 | 09:16-11:37 | | |
| 5 | 06:38-07:39 | 06:48-08:18 | 10:28-11:10 08:07-09:06 | 09:15-11:36 | | |
| 6 | 06:38-07:41 | 06:50-08:20 | 10:25-11:14 08:07-09:06 | 09:14-11:36 | | |
| 7 | 06:38-07:42 | 06:50-08:22 | 10:23-11:17 08:07-09:06 | 09:14-11:35 | | |
| 8 | 06:38-07:43 | 06:51-08:24 | 10:21-11:19 08:07-09:06 | 09:13-11:35 | | |
| 9 | 06:38-07:45 | 06:50-08:24 | 10:19-11:22 08:07-09:06 | 09:13-11:34 | | |
| 10 | 06:38-07:46 | 06:51-08:26 | 10:17-11:23 08:06-09:05 | 09:13-11:33 | | |
| 11 | 06:38-07:47 | 06:51-08:27 | 10:15-11:25 08:07-09:04 | 09:13-11:33 | | |
| 12 | 06:40-07:49 | 06:51-08:28 | 10:14-11:27 08:07-09:04 | 09:13-11:32 | | |
| 13 | 06:40-07:50 | 06:52-08:30 | 10:12-11:29 08:08-09:03 | 09:13-11:31 | | |
| 14 | 06:40-07:50 | 06:53-08:32 | 10:11-11:30 08:08-09:03 | 09:13-11:30 | | |
| 15 | 06:39-07:51 | 06:54-08:34 | 10:10-11:32 08:09-09:02 | 09:14-11:29 | | |
| 16 | 06:40-07:53 | 06:55-08:35 | 10:08-11:32 08:09-09:00 | 09:14-11:28 | | |
| 17 | 06:40-07:53 | 06:55-08:35 | 10:07-11:33 08:10-08:59 | 09:15-11:27 | | |
| 18 | 06:40-07:54 | 06:57-08:44 | 10:06-11:34 08:11-08:58 | 09:16-11:26 | | |
| 19 | 06:41-07:56 | 06:59-08:50 | 10:05-11:35 08:12-08:57 | 09:17-11:25 | | |
| 20 | 06:41-07:57 | 07:01-08:53 | 10:05-11:36 08:14-08:56 | 10:11-11:24 09:18-10:08 | | |
| 21 | 06:41-07:58 | 07:03-08:55 | 10:04-11:36 08:15-08:55 | 10:12-11:22 10:04-10:06 09:19-10:03 | | |
| 22 | 06:42-08:00 | 07:16-08:57 07:10-07:13 | 10:03-11:37 08:17-08:54 | 10:13-11:21 09:20-10:02 | | |
| 23 | 06:42-08:00 | 07:18-08:59 | 10:02-11:38 09:37-09:54 08:20-08:51 | 10:15-11:19 09:21-10:00 | | |
| 24 | 06:43-08:02 | 07:20-09:00 | 10:01-11:37 09:32-09:57 08:22-08:46 | 10:18-11:18 09:24-10:00 | | |
| 25 | 06:42-08:03 | 07:23-09:02 | 09:29-11:37 08:27-08:41 | 09:20-10:15 08:26-08:58 | | |
| 26 | 06:43-08:04 | 07:23-09:02 | 09:26-11:38 | 09:22-10:12 08:28-08:56 | | |
| 27 | 06:44-08:06 | 07:25-09:03 | 09:24-11:38 | 09:25-10:09 08:32-08:52 | | |
| 28 | 06:44-08:07 | 07:27-09:04 | 09:23-11:38 | 09:28-10:05 08:38-08:45 | | |
| 29 | 06:45-08:09 | 07:29-09:05 | 09:21-11:38 | 09:33-10:01 | | |
| 30 | 06:45-08:09 | 07:31-09:06 | 09:20-11:38 | 09:39-09:55 | | |
| 31 | 06:46-08:11 | 07:32-09:05 | | | | |

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## SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 shut downWTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | 15:20-15:51 | |
| 2 | | | | | | | | | | | 15:19-15:51 | |
| 3 | | | | | | | | | | | 15:19-15:52 | |
| 4 | | | | | | | | | | | 15:19-15:52 | |
| 5 | | | | | | | | | | | 15:19-15:52 | |
| 6 | | | | | | | | | | | 15:18-15:52 | |
| 7 | | | | | | | | | | | 15:19-15:52 | |
| 8 | | | | | | | | | | | 15:19-15:52 | |
| 9 | | | | | | | | | | | 15:19-15:51 | |
| 10 | | | | | | | | | | | 15:19-15:50 | |
| 11 | | | | | | | | | | | 15:21-15:50 | |
| 12 | | | | | | | | | | | 15:21-15:49 | |
| 13 | | | | | | | | | | | 15:22-15:48 | |
| 14 | | | | | | | | | | | 15:22-15:47 | |
| 15 | | | | | | | | | | | 15:24-15:47 | |
| 16 | | | | | | | | | | | 15:25-15:45 | |
| 17 | | | | | | | | | | | 15:26-15:43 | |
| 18 | | | | | | | | | | | 15:29-15:41 | |
| 19 | | | | | | | | | | | 15:34-15:36 | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | | | | | | | | | | 15:21-15:51 | | |

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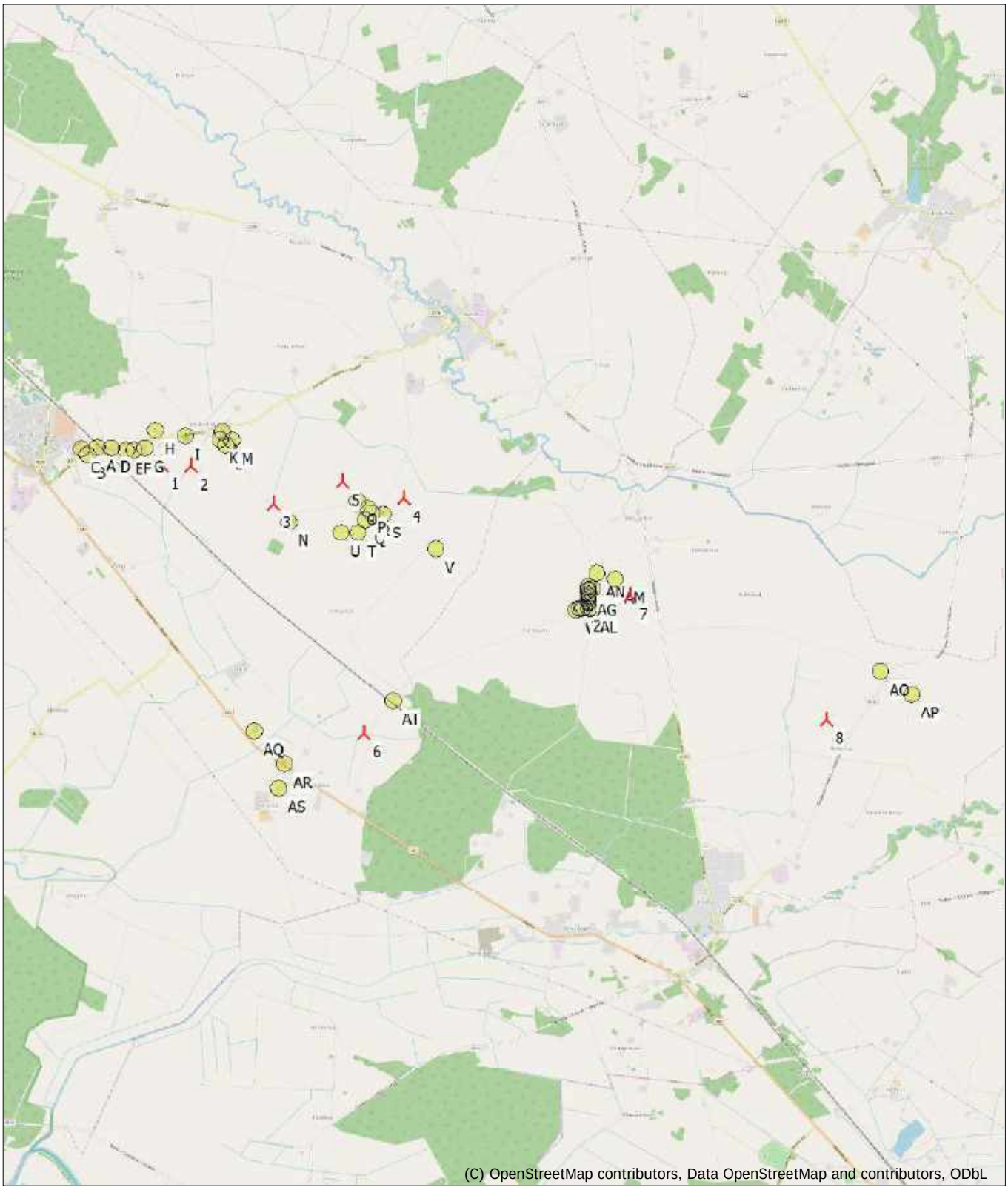
## SHADOW - Map

Calculation: Enercon E138 shut down




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.410 North: 6.128.477

New WTG  Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138 (be 6 VE)

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

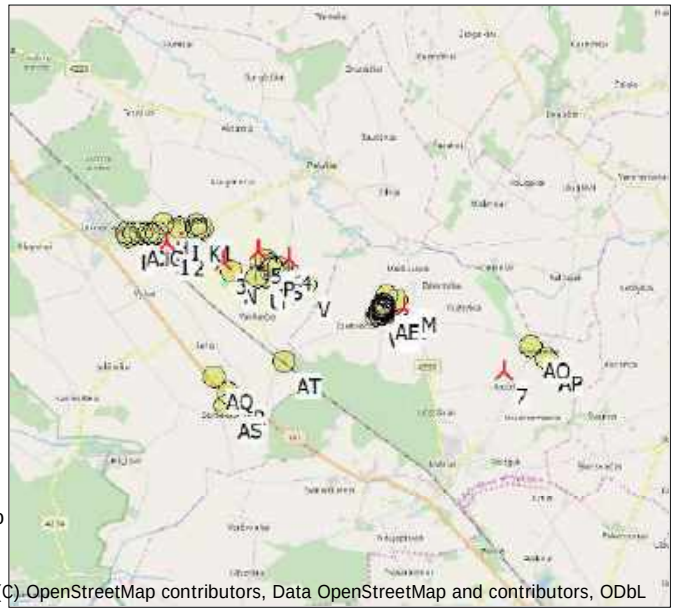
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200.000
New WTG
Shadow receptor

### WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |

### Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

To be continued on next page...

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138 (be 6 VE)

...continued from previous page

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

## Calculation Results

Shadow receptor

Shadow, expected values

| No. | Shadow hours per year [h/year] |
|---|---|
| A | 9:03 |
| B | 6:38 |
| C | 5:52 |
| D | 14:30 |
| E | 25:00 |
| F | 34:27 |
| G | 43:30 |
| H | 10:28 |
| I | 16:55 |
| J | 15:40 |
| K | 21:21 |
| L | 25:36 |
| M | 19:05 |
| N | 13:16 |
| O | 28:01 |
| P | 54:19 |
| Q | 21:57 |
| R | 29:57 |
| S | 2:58 |
| T | 7:42 |
| U | 34:22 |
| V | 6:25 |
| W | 21:11 |
| X | 26:17 |
| Y | 29:08 |
| Z | 33:21 |
| AA | 38:57 |
| AB | 34:08 |
| AC | 31:10 |
| AD | 28:37 |
| AE | 26:23 |
| AF | 24:09 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Enercon E138 (be 6 VE)

...continued from previous page

Shadow, expected values

| No. | Shadow hours per year [h/year] |
|---|---|
| AG | 22:12 |
| AH | 20:29 |
| AI | 18:45 |
| AJ | 24:56 |
| AK | 43:35 |
| AL | 45:58 |
| AM | 36:28 |
| AN | 14:52 |
| AO | 3:39 |
| AP | 3:46 |
| AQ | 0:00 |
| AR | 0:00 |
| AS | 0:00 |
| AT | 0:00 |

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 511:50 | 96:45 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 408:04 | 71:03 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 168:45 | 45:56 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 211:27 | 93:12 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 34:51 | 12:40 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 470:37 | 168:42 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 35:50 | 7:25 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 08:02 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 45 08:47 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 08:04 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 42 08:46 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | 08:06 (2) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 39 08:45 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:08 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 36 08:44 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:48 (1) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | 08:10 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 11 07:59 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 31 08:43 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:45 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | 08:17 (1) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 17 08:02 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 24 08:41 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:42 (1) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | | 07:46 | 08:19 (1) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 22 08:04 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 20 08:39 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:39 (1) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | 08:21 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 26 08:05 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 15 08:36 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:32 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | 08:26 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 35 08:07 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 4 08:30 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:29 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 38 08:07 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:27 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 41 08:08 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 44 08:08 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 47 08:09 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:21 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | | 08:00 | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 47 08:08 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:20 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 48 08:08 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:20 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 48 08:08 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:19 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:31 (1) | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 48 08:07 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 9 | 08:40 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:20 (2) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:27 (1) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 47 08:07 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 17 | 08:44 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:20 (2) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:24 (1) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 46 08:06 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 21 | 08:45 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:20 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 08:11 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 45 08:05 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 35 | 08:47 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:21 (2) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 08:08 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 43 08:04 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 40 | 08:48 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:22 (2) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 08:06 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 40 08:02 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 43 | 08:49 (1) | 18:20 | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | 07:24 (2) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 08:05 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 37 08:01 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 44 | 08:49 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:37 (1) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 08:04 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 22 07:59 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 46 | 08:50 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:38 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 08:03 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 18 07:56 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 47 | 08:50 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:42 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 08:02 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 11 07:53 (1) | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 48 | 08:50 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:02 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 48 | 08:50 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 08:02 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 48 | 08:50 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:01 (2) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 47 | 08:48 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 08:01 (2) | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 47 | 08:48 (1) | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 781 | | | | | | | 540 | | 256 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,97 | | | | | | | 0,97 | | 0,97 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,39 | | 0,30 | | |
| Total, real | | | | 259 | | | | | | | 208 | | 76 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 08:11 (1) | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 17 08:28 (1) | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 08:14 (1) | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 11 08:25 (1) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | | 07:39 | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 06:50 | | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | | 20:24 | | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | | 20:26 | | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | | 06:45 | | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 08:07 (1) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:28 | | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 11 08:18 (1) | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 08:04 (1) | 07:54 | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | | 20:30 | | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 17 08:21 (1) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 08:02 (1) | 07:56 | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | | 20:31 | | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 21 08:23 (1) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:59 (1) | 07:58 | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 24 08:23 (1) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 07:58 (1) | 08:00 | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 26 08:24 (1) | 18:40 | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:18 (1) | 06:33 | | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 07:55 (2) | 08:02 | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 14 07:32 (1) | 20:37 | | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 30 08:25 (1) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:14 (2) | 06:30 | | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 07:53 (2) | 08:04 | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 21 07:35 (1) | 20:39 | | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 32 08:25 (1) | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:11 (2) | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 07:51 (2) | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 25 07:36 (1) | 20:41 | | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 35 08:26 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:09 (2) | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 07:50 (2) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 28 07:37 (1) | 20:43 | | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 36 08:26 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:06 (2) | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 07:48 (2) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 32 07:38 (1) | 20:45 | | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 37 08:25 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:03 (2) | 06:21 | | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 07:48 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 35 07:38 (1) | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 36 08:24 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:03 (2) | 06:18 | | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 07:47 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 36 07:39 (1) | 20:49 | | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 37 08:24 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:02 (2) | 06:16 | | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 07:47 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 36 07:38 (1) | 20:51 | | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 36 08:23 (1) | 18:20 | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:02 (2) | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 07:47 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 37 07:39 (1) | 20:53 | | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 36 08:23 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:02 (2) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 07:49 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 36 07:38 (1) | 20:55 | | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 33 08:22 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:02 (2) | 06:09 | | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:51 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 35 07:37 (1) | 20:57 | | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 29 08:20 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:03 (2) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:53 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 34 07:37 (1) | 20:59 | | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 26 08:19 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 07:03 (2) | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 33 07:36 (1) | 21:01 | | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 22 08:17 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 07:05 (2) | 06:02 | | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 31 07:36 (1) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 18 08:15 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 08:08 (1) | 06:00 | | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 08:01 (1) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 26 08:34 (1) | 21:05 | | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 9 08:10 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 08:09 (1) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | 24 08:33 (1) | 21:07 | | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | 08:09 (1) | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | 22 08:31 (1) | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 505 | | 28 | | | | | | 551 | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | | 0,99 | | | | | | 0,99 | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | | 0,39 | | | |
| Total, real | | | | 171 | | 11 | | | | | | 216 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 08:02 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 24 08:26 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 08:04 (1) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 21 08:25 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | | 07:39 | 08:06 (1) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 17 08:23 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:08 (1) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 12 08:20 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | | 07:46 | | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:33 (1) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 7 07:40 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:29 (1) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 15 07:44 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:27 (1) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 19 07:46 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 23 07:47 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:02 | | 18:44 | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 26 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 08:54 | 08:02 | 06:54 | 07:19 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | | 08:00 | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 30 07:49 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:16 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 33 07:49 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:14 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 35 07:49 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:12 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:15 (1) | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 37 07:49 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 11 08:26 (1) | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:12 (2) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:12 (1) | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 37 07:49 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 17 08:29 (1) | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:12 (2) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:04 (2) | 08:10 | | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 36 07:48 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 25 08:29 (1) | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:11 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:01 (2) | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 36 07:47 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 29 08:30 (1) | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:12 (2) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 07:59 (2) | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 35 07:47 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 32 08:31 (1) | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:13 (2) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 07:57 (2) | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 33 07:46 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 35 08:32 (1) | 18:20 | | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:14 (2) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 07:56 (2) | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 31 07:45 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 36 08:32 (1) | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:16 (2) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 07:55 (2) | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 27 07:43 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 37 08:32 (1) | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:23 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:55 (2) | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 17 07:40 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 37 08:32 (1) | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:25 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:55 (2) | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 13 07:38 (1) | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 37 08:32 (1) | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | | 08:29 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 36 08:31 (1) | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 34 08:31 (1) | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:58 (2) | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:59 | 22:19 | 21:46 | 20:37 | 19:17 | 31 08:29 (1) | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:00 (2) | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 28 08:28 (1) | 17:02 | | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 490 | | | | | | | 425 | | 74 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,98 | | | | | | | 0,98 | | 0,98 | | |
| Total reduction | | | | 0,34 | | | | | | | 0,39 | | 0,30 | | |
| Total, real | | | | 165 | | | | | | | 166 | | 22 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 08:07 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 61 09:08 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:05 (1) | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 08:07 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 12 08:17 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 61 09:08 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:00 (1) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | 08:08 (2) | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 | 20 08:20 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 59 09:07 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 07:58 (1) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:09 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 25 08:23 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 57 09:06 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:55 (1) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | 08:11 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 29 08:24 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 54 09:05 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:54 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:44 | 08:14 (2) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 32 08:26 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 45 09:03 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:41 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | | 07:46 | 08:28 (1) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 38 08:27 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 34 09:02 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:35 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | 08:29 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 50 08:27 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 31 09:00 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:33 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | 08:31 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 55 08:28 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 27 08:58 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:30 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | 08:33 (1) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 58 08:28 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | 23 08:56 (1) | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:29 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | 08:35 (1) | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 60 08:29 (1) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | 17 08:52 (1) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:28 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | 08:41 (1) | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 61 08:29 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | 5 08:46 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:27 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 63 08:30 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:26 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:49 (1) | 08:00 | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 63 08:29 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 6 08:55 (1) | 18:40 | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:25 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:44 (1) | 08:02 | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 64 08:29 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 17 09:01 (1) | 18:37 | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:26 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:41 (1) | 08:04 | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 63 08:29 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 22 09:03 (1) | 18:35 | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:25 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:38 (1) | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 63 08:28 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 27 09:05 (1) | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:25 (2) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:23 (2) | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 63 08:28 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 35 09:07 (1) | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:25 (2) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:17 (2) | 08:10 | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 62 08:27 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 47 09:07 (1) | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:25 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:14 (2) | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 61 08:26 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 54 09:08 (1) | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:26 (2) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:13 (2) | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 59 08:25 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 56 09:09 (1) | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:27 (2) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:11 (2) | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 57 08:24 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 59 09:10 (1) | 18:20 | | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | 07:28 (2) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 08:10 (2) | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 55 08:23 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 60 09:10 (1) | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:30 (2) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:09 (2) | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 49 08:21 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 62 09:11 (1) | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:33 (2) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 08:08 (2) | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 39 08:19 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 63 09:11 (1) | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | 07:49 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 08:08 (2) | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 28 08:17 (1) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 63 09:11 (1) | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 07:51 (1) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 08:07 (2) | 07:27 | | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 23 08:14 (1) | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 64 09:11 (1) | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 07:54 (1) | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 08:07 (2) | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 18 08:12 (1) | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 64 09:11 (1) | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 08:58 (1) | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 08:06 (2) | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 8 09:06 (1) | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 63 09:09 (1) | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:06 (2) | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 63 09:09 (1) | 17:02 | | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 1278 | | | | | | | 825 | | 474 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,96 | | | | | | | 0,96 | | 0,96 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,29 | | |
| Total, real | | | | 418 | | | | | | | 313 | | 139 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:17 (1) | 07:08 | 09:08 (1) | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:12 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 33 | 08:50 (1) | 20:10 30 | 09:38 (1) | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 87 | 09:39 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:15 (1) | 07:06 | 09:11 (1) | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:12 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 38 | 08:53 (1) | 20:12 24 | 09:35 (1) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 86 | 09:38 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:13 (1) | 07:03 | 09:15 (1) | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:13 (2) | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 41 | 08:54 (1) | 20:14 15 | 09:30 (1) | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 85 | 09:38 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:12 (1) | 07:00 | | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:14 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 44 | 08:56 (1) | 20:16 | | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 81 | 09:37 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 08:10 (1) | 06:58 | | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 08:15 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 46 | 08:56 (1) | 20:18 | | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 77 | 09:36 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:47 (2) | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 08:17 (2) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 57 | 08:58 (1) | 20:20 | | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 71 | 09:35 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:42 (2) | 06:53 | | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 08:20 (2) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 68 | 08:58 (1) | 20:22 | | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 62 | 09:33 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:39 (2) | 06:50 | | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 08:44 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 73 | 08:58 (1) | 20:24 | | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 48 | 09:32 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:38 (2) | 06:48 | | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 09:09 (1) | 07:50 | 08:45 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 79 | 08:59 (1) | 20:26 | | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 15 09:24 (1) | 18:52 46 | 09:31 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:36 (2) | 06:45 | | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 09:05 (1) | 07:52 | 08:46 (1) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 82 | 08:59 (1) | 20:28 | | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 23 09:28 (1) | 18:49 43 | 09:29 (1) | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 07:35 (2) | 06:43 | | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 09:02 (1) | 07:54 | 08:48 (1) | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 85 | 09:00 (1) | 20:29 | | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 29 09:31 (1) | 18:47 39 | 09:27 (1) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:33 (2) | 06:40 | | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 08:59 (1) | 07:56 | 08:49 (1) | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 87 | 09:00 (1) | 20:31 | | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 34 09:33 (1) | 18:44 36 | 09:25 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:33 (2) | 06:38 | | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 08:56 (1) | 07:58 | 08:51 (1) | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 87 | 09:00 (1) | 20:33 | | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 38 09:34 (1) | 18:42 31 | 09:22 (1) | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:32 (2) | 06:35 | | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 08:55 (1) | 08:00 | 08:54 (1) | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 88 | 09:00 (1) | 20:35 | | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 41 09:36 (1) | 18:39 26 | 09:20 (1) | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:31 (2) | 06:33 | | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 08:53 (1) | 08:02 | 08:58 (1) | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 88 | 08:59 (1) | 20:37 | | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 44 09:37 (1) | 18:37 18 | 09:16 (1) | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:31 (2) | 06:30 | | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 08:27 (2) | 08:04 | 09:05 (1) | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 89 | 09:00 (1) | 20:39 | | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 59 09:38 (1) | 18:35 3 | 09:08 (1) | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:30 (2) | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 08:24 (2) | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 89 | 08:59 (1) | 20:41 | | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 67 09:39 (1) | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:30 (2) | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 08:22 (2) | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 89 | 08:59 (1) | 20:43 | | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 74 09:40 (1) | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:30 (2) | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:19 (2) | 08:10 | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 88 | 08:58 (1) | 20:45 | | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 79 09:40 (1) | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:30 (2) | 06:21 | | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:18 (2) | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 87 | 08:57 (1) | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 82 09:41 (1) | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:31 (2) | 06:18 | | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 08:16 (2) | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 86 | 08:57 (1) | 20:49 | | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 85 09:41 (1) | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:31 (2) | 06:16 | | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 08:15 (2) | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 85 | 08:56 (1) | 20:51 | | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 86 09:41 (1) | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:32 (2) | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:15 (2) | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 83 | 08:55 (1) | 20:53 | | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 87 09:42 (1) | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:32 (2) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:14 (2) | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 80 | 08:54 (1) | 20:55 | | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 88 09:42 (1) | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:33 (2) | 06:09 | | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 08:13 (2) | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 74 | 08:52 (1) | 20:57 | | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 89 09:42 (1) | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 08:29 (1) | 06:24 | 07:35 (2) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 08:13 (2) | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 12 08:41 (1) | 18:58 69 | 08:51 (1) | 20:59 | | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 89 09:42 (1) | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 08:23 (1) | 06:21 | 07:37 (2) | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:13 (2) | 07:27 | | 08:28 | 09:01 |
| | 16:58 | 18:03 22 08:45 (1) | 19:00 61 | 08:49 (1) | 21:01 | | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 89 09:42 (1) | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 08:20 (1) | 06:18 | 08:04 (1) | 06:02 | | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:11 (2) | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 28 08:48 (1) | 19:02 44 | 08:48 (1) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 89 09:40 (1) | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 09:04 (1) | 06:00 | | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:12 (2) | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 42 | 09:46 (1) | 21:05 | | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 88 09:40 (1) | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 09:06 (1) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:12 (2) | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 38 | 09:44 (1) | 21:07 | | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 87 09:39 (1) | 17:02 | | 16:11 | 16:11 |
| 31 | 08:30 | | 07:11 | 09:07 (1) | | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 34 | 09:41 (1) | | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | 62 | 2134 | 69 | | | | | 1462 | 839 | | | |
| Sun reduction | | 0,25 | 0,34 | 0,39 | | | | | 0,40 | 0,31 | | | |
| Oper. time red. | | 1,00 | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | 0,92 | 0,93 | 0,92 | | | | | 0,94 | 0,93 | | | |
| Total reduction | | 0,23 | 0,32 | 0,36 | | | | | 0,37 | 0,29 | | | |
| Total, real | | 14 | 680 | 25 | | | | | 541 | 240 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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+8 621 66746
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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:31 (1) 07:08 | 09:23 (1) 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:17 (2) 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 54 | 09:25 (1) 20:10 48 | 10:11 (1) 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 109 | 10:10 (1) 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:30 (1) 07:05 | 09:25 (1) 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:18 (2) 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 56 | 09:26 (1) 20:12 44 | 10:09 (1) 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 106 | 10:09 (1) 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:28 (1) 07:03 | 09:26 (1) 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:18 (2) 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 59 | 09:27 (1) 20:14 40 | 10:06 (1) 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 105 | 10:09 (1) 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:28 (1) 07:00 | 09:28 (1) 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:19 (2) 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 60 | 09:28 (1) 20:16 35 | 10:03 (1) 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 101 | 10:08 (1) 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:51 (2) 06:58 | 09:30 (1) 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 09:40 (1) 07:43 | 08:20 (2) 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 77 | 09:28 (1) 20:18 29 | 09:59 (1) 21:17 | 22:08 | 22:16 | 21:32 | 20:19 1 | 09:41 (1) 19:02 97 | 10:07 (1) 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:49 (2) 06:55 | 09:34 (1) 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 09:31 (1) 07:44 | 08:21 (2) 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 85 | 09:30 (1) 20:20 21 | 09:55 (1) 21:19 | 22:09 | 22:16 | 21:30 | 20:17 20 | 09:51 (1) 18:59 93 | 10:06 (1) 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:46 (2) 06:53 | 09:42 (1) 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 09:26 (1) 07:46 | 08:23 (2) 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 91 | 09:30 (1) 20:22 4 | 09:46 (1) 21:20 | 22:10 | 22:15 | 21:28 | 20:14 28 | 09:54 (1) 18:57 88 | 10:05 (1) 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:44 (2) 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 09:23 (1) 07:48 | 08:25 (2) 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 95 | 09:30 (1) 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 34 | 09:57 (1) 18:54 81 | 10:04 (1) 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:43 (2) 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 09:20 (1) 07:50 | 08:29 (2) 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 99 | 09:31 (1) 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 40 | 10:00 (1) 18:52 72 | 10:03 (1) 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 07:41 (2) 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 09:18 (1) 07:52 | 09:02 (1) 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 101 | 09:30 (1) 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 44 | 10:02 (1) 18:49 60 | 10:02 (1) 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 07:40 (2) 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 09:17 (1) 07:54 | 09:03 (1) 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 106 | 09:31 (1) 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 47 | 10:04 (1) 18:47 57 | 10:00 (1) 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:39 (2) 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 09:15 (1) 07:56 | 09:04 (1) 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 108 | 09:31 (1) 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 50 | 10:05 (1) 18:44 55 | 09:59 (1) 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:39 (2) 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 09:12 (1) 07:58 | 09:05 (1) 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 109 | 09:31 (1) 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 54 | 10:06 (1) 18:42 52 | 09:57 (1) 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:37 (2) 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:41 (2) 08:00 | 09:07 (1) 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 110 | 09:31 (1) 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 58 | 10:07 (1) 18:39 49 | 09:56 (1) 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:36 (2) 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:34 (2) 08:02 | 09:08 (1) 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 111 | 09:30 (1) 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 73 | 10:08 (1) 18:37 46 | 09:54 (1) 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:37 (2) 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:31 (2) 08:04 | 09:10 (1) 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 110 | 09:30 (1) 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 81 | 10:09 (1) 18:35 42 | 09:52 (1) 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:36 (2) 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:29 (2) 08:06 | 09:12 (1) 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 111 | 09:29 (1) 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 87 | 10:10 (1) 18:32 37 | 09:49 (1) 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:36 (2) 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:27 (2) 08:08 | 09:14 (1) 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 111 | 09:30 (1) 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 93 | 10:11 (1) 18:30 32 | 09:46 (1) 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:36 (2) 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:24 (2) 08:10 | 09:17 (1) 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 110 | 09:29 (1) 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 98 | 10:11 (1) 18:27 26 | 09:43 (1) 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:35 (2) 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:23 (2) 08:12 | 09:22 (1) 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 108 | 09:27 (1) 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 101 | 10:11 (1) 18:25 16 | 09:38 (1) 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:36 (2) 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:22 (2) 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 106 | 09:27 (1) 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 102 | 10:11 (1) 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 08:50 (1) | 06:34 | 07:36 (2) 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:21 (2) 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 19 09:09 (1) | 18:50 104 | 09:26 (1) 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 106 | 10:12 (1) 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 08:45 (1) | 06:31 | 07:37 (2) 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:20 (2) 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 28 09:13 (1) | 18:52 101 | 09:26 (1) 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 108 | 10:12 (1) 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 08:42 (1) | 06:29 | 07:38 (2) 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 (2) 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 34 09:16 (1) | 18:54 97 | 09:24 (1) 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 108 | 10:12 (1) 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 08:39 (1) | 06:26 | 07:38 (2) 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 08:19 (2) 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 39 09:18 (1) | 18:56 94 | 09:23 (1) 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 110 | 10:12 (1) 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 08:37 (1) | 06:23 | 07:40 (2) 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 08:19 (2) 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 44 09:21 (1) | 18:58 89 | 09:22 (1) 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 110 | 10:12 (1) 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 08:35 (1) | 06:21 | 07:41 (2) 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 08:18 (2) 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 47 09:22 (1) | 19:00 83 | 09:20 (1) 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 111 | 10:12 (1) 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 08:33 (1) | 06:18 | 07:44 (2) 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 08:17 (2) 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 51 09:24 (1) | 19:02 76 | 09:19 (1) 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 111 | 10:11 (1) 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 08:48 (2) 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 08:17 (2) 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 63 | 10:17 (1) 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 111 | 10:11 (1) 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 09:22 (1) 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:17 (2) 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 54 | 10:16 (1) 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 110 | 10:10 (1) 17:02 | 16:11 | 16:11 |
| 31 | 08:30 | | 07:11 | 09:22 (1) | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 51 | 10:13 (1) | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 262 | 2789 | 221 | | | | | 1996 | 1324 | | |
| Sun reduction | | 0,25 | 0,34 | 0,39 | | | | | 0,40 | 0,31 | | |
| Oper. time red. | | 1,00 | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | |
| Wind dir. red. | | 0,88 | 0,90 | 0,88 | | | | | 0,90 | 0,89 | | |
| Total reduction | | 0,22 | 0,31 | 0,35 | | | | | 0,36 | 0,27 | | |
| Total, real | | 56 | 858 | 76 | | | | | 712 | 364 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 08:07 (2) | 07:08 | 10:21 (1) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | 115 | 10:43 (1) | 20:10 | 47 11:08 (1) | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | 07:24 | | 08:05 (2) | 07:05 | 10:24 (1) | 05:53 | 05:01 |
| | 16:15 | 17:10 | | 18:10 | 119 | 10:43 (1) | 20:12 | 41 11:05 (1) | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | 07:22 | | 08:03 (2) | 07:03 | 10:26 (1) | 05:51 | 05:00 |
| | 16:16 | 17:12 | | 18:12 | 123 | 10:43 (1) | 20:14 | 34 11:00 (1) | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 08:02 (2) | 07:00 | 10:30 (1) | 05:49 | 04:59 |
| | 16:18 | 17:15 | | 18:14 | 127 | 10:44 (1) | 20:16 | 26 10:56 (1) | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | 07:17 | | 08:00 (2) | 06:58 | 10:37 (1) | 05:46 | 04:58 |
| | 16:19 | 17:17 | | 18:16 | 129 | 10:43 (1) | 20:18 | 9 10:46 (1) | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | 07:15 | | 07:59 (2) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:18 | 133 | 10:44 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | 09:54 (1) | 07:12 | | 07:58 (2) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 17:21 | 14 10:08 (1) | 18:20 | 134 | 10:43 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | 08:14 | 09:47 (1) | 07:10 | | 07:57 (2) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 17:23 | 26 10:13 (1) | 18:22 | 135 | 10:43 (1) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | 09:44 (1) | 07:07 | | 07:57 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 17:25 | 33 10:17 (1) | 18:24 | 136 | 10:43 (1) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | 09:41 (1) | 07:04 | | 07:55 (2) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | 17:27 | 39 10:20 (1) | 18:26 | 137 | 10:42 (1) | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | 09:39 (1) | 07:02 | | 07:55 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 17:30 | 44 10:23 (1) | 18:28 | 137 | 10:42 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | 09:36 (1) | 06:59 | | 07:55 (2) | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 17:32 | 49 10:25 (1) | 18:30 | 136 | 10:41 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 09:34 (1) | 06:57 | | 07:55 (2) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 17:34 | 53 10:27 (1) | 18:32 | 137 | 10:41 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 09:32 (1) | 06:54 | | 07:54 (2) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 17:36 | 57 10:29 (1) | 18:34 | 136 | 10:40 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | 09:30 (1) | 06:52 | | 07:54 (2) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 17:38 | 60 10:30 (1) | 18:36 | 135 | 10:39 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 09:29 (1) | 06:49 | | 07:54 (2) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 17:40 | 63 10:32 (1) | 18:38 | 134 | 10:39 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 09:28 (1) | 06:47 | | 07:54 (2) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 66 10:34 (1) | 18:40 | 132 | 10:38 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | 09:26 (1) | 06:44 | | 07:55 (2) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 69 10:35 (1) | 18:42 | 130 | 10:37 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | 09:25 (1) | 06:42 | | 07:54 (2) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 17:47 | 71 10:36 (1) | 18:44 | 128 | 10:36 (1) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | 07:48 | 09:24 (1) | 06:39 | | 07:54 (2) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 17:49 | 74 10:38 (1) | 18:46 | 125 | 10:34 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 09:22 (1) | 06:36 | | 07:56 (2) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 17:51 | 76 10:38 (1) | 18:48 | 120 | 10:33 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | 09:22 (1) | 06:34 | | 07:56 (2) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 17:53 | 77 10:39 (1) | 18:50 | 116 | 10:31 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | 07:41 | 09:20 (1) | 06:31 | | 07:57 (2) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 17:55 | 80 10:40 (1) | 18:52 | 112 | 10:30 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 09:20 (1) | 06:29 | | 07:58 (2) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 17:57 | 81 10:41 (1) | 18:54 | 107 | 10:28 (1) | 20:55 | | 21:51 | 22:19 |
| 25 | 08:40 | 07:37 | 09:18 (1) | 06:26 | | 07:59 (2) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 17:59 | 83 10:41 (1) | 18:56 | 101 | 10:26 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | 09:18 (1) | 06:23 | | 08:02 (2) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 18:01 | 84 10:42 (1) | 18:58 | 94 | 10:25 (1) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 08:13 (2) | 06:21 | | 08:04 (2) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 18:03 | 100 10:42 (1) | 19:00 | 84 | 10:22 (1) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | 07:29 | 08:10 (2) | 06:18 | | 09:16 (1) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 18:05 | 109 10:43 (1) | 19:02 | 64 | 10:20 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:16 | | 10:17 (1) | 06:00 | | 05:05 | 04:55 |
| | 17:02 | | | 20:04 | 61 | 11:18 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | | 07:13 | | 10:19 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:06 | 56 | 11:15 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | | 07:11 | | 10:20 (1) | | | 05:03 | |
| | 17:06 | | | 20:08 | 52 | 11:12 (1) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 1408 | | 3585 | | | 157 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,72 | | 0,78 | | | 0,72 | | |
| Total reduction | | | 0,18 | | 0,27 | | | 0,28 | | |
| Total, real | | | 250 | | 954 | | | 44 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:33 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 137 | 11:20 (1) | | 16:58 | 38 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:33 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 137 | 11:20 (1) | | 16:56 | 32 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:33 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 138 | 11:20 (1) | | 16:54 | 25 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:33 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 137 | 11:20 (1) | | 16:52 | 11 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | 08:34 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 135 | 11:20 (1) | | 16:50 | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:34 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | 134 | 11:19 (1) | | 16:48 | |
| 7 | 05:02 | | 05:51 | | 06:49 | 10:34 (1) | 07:46 | | 08:34 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | 6 10:40 (1) | 18:57 | 133 | 11:19 (1) | | 16:46 | |
| 8 | 05:03 | | 05:53 | | 06:51 | 10:25 (1) | 07:48 | | 08:35 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | 24 10:49 (1) | 18:54 | 131 | 11:19 (1) | | 16:44 | |
| 9 | 05:04 | | 05:54 | | 06:53 | 10:21 (1) | 07:50 | | 08:36 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | 33 10:54 (1) | 18:52 | 128 | 11:18 (1) | | 16:42 | |
| 10 | 05:06 | | 05:56 | | 06:55 | 10:17 (1) | 07:52 | | 08:36 (2) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | 41 10:58 (1) | 18:49 | 126 | 11:18 (1) | | 16:40 | |
| 11 | 05:07 | | 05:58 | | 06:57 | 10:15 (1) | 07:54 | | 08:38 (2) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | 46 11:01 (1) | 18:47 | 122 | 11:17 (1) | | 16:38 | |
| 12 | 05:08 | | 06:00 | | 06:59 | 10:11 (1) | 07:56 | | 08:39 (2) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | 52 11:03 (1) | 18:44 | 118 | 11:16 (1) | | 16:36 | |
| 13 | 05:09 | | 06:02 | | 07:01 | 10:09 (1) | 07:58 | | 08:41 (2) | | 08:01 | |
| | 22:09 | | 21:15 | | 19:59 | 56 11:05 (1) | 18:42 | 111 | 11:15 (1) | | 16:34 | |
| 14 | 05:11 | | 06:04 | | 07:02 | 10:08 (1) | 08:00 | | 08:44 (2) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 60 11:08 (1) | 18:39 | 106 | 11:16 (1) | | 16:33 | |
| 15 | 05:12 | | 06:06 | | 07:04 | 10:06 (1) | 08:02 | | 08:48 (2) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 64 11:10 (1) | 18:37 | 97 | 11:15 (1) | | 16:31 | |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:55 (2) | 08:04 | | 09:50 (1) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 81 11:11 (1) | 18:35 | 84 | 11:14 (1) | | 16:29 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:51 (2) | 08:06 | | 09:51 (1) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:48 | 92 11:13 (1) | 18:32 | 82 | 11:13 (1) | | 16:28 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:48 (2) | 08:08 | | 09:51 (1) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 99 11:14 (1) | 18:30 | 81 | 11:12 (1) | | 16:26 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:45 (2) | 08:10 | | 09:52 (1) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 106 11:15 (1) | 18:27 | 79 | 11:11 (1) | | 16:25 | |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:43 (2) | 08:12 | | 09:52 (1) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 111 11:16 (1) | 18:25 | 77 | 11:09 (1) | | 16:23 | |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:42 (2) | 08:14 | | 09:53 (1) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 116 11:17 (1) | 18:23 | 75 | 11:08 (1) | | 16:22 | |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:41 (2) | 08:16 | | 09:55 (1) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 120 11:18 (1) | 18:20 | 73 | 11:08 (1) | | 16:20 | |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:39 (2) | 08:18 | | 09:56 (1) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 123 11:18 (1) | 18:18 | 70 | 11:06 (1) | | 16:19 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 08:38 (2) | 08:20 | | 09:56 (1) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 127 11:19 (1) | 18:16 | 69 | 11:05 (1) | | 16:18 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 08:37 (2) | 07:22 | | 08:57 (1) | | 08:25 | |
| | 21:52 | | 20:47 | | 19:28 | 130 11:20 (1) | 17:13 | 66 | 10:03 (1) | | 16:16 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:37 (2) | 07:24 | | 08:59 (1) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 131 11:20 (1) | 17:11 | 62 | 10:01 (1) | | 16:15 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:36 (2) | 07:26 | | 09:01 (1) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 134 11:21 (1) | 17:09 | 59 | 10:00 (1) | | 16:14 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:34 (2) | 07:29 | | 09:02 (1) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 136 11:20 (1) | 17:07 | 56 | 09:58 (1) | | 16:13 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:34 (2) | 07:31 | | 09:04 (1) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 136 11:20 (1) | 17:04 | 52 | 09:56 (1) | | 16:12 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:34 (2) | 07:33 | | 09:06 (1) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 137 11:20 (1) | 17:02 | 48 | 09:54 (1) | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 09:09 (1) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 43 | 09:52 (1) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 2161 | | 2966 | | | 106 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,78 | | 0,76 | | | 0,72 | | |
| Total reduction | | | | | 0,31 | | 0,23 | | | 0,11 | | |
| Total, real | | | | | 661 | | 690 | | | 12 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:20 (1) | 08:28 | | 09:23 (2) | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 | 62 | 12:22 (1) | 17:08 | 107 | 12:33 (1) | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 11:20 (1) | 08:26 | | 09:22 (2) | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 | 62 | 12:22 (1) | 17:10 | 108 | 12:33 (1) | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 11:20 (1) | 08:24 | | 09:22 (2) | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 | 63 | 12:23 (1) | 17:12 | 106 | 12:32 (1) | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 11:20 (1) | 08:22 | | 09:22 (2) | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 | 63 | 12:23 (1) | 17:15 | 107 | 12:32 (1) | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 11:21 (1) | 08:20 | | 09:22 (2) | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 | 63 | 12:24 (1) | 17:17 | 107 | 12:32 (1) | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 11:21 (1) | 08:18 | | 09:21 (2) | 07:15 | 06:55 | 05:44 | 04:57 |
| | 16:20 | 64 | 12:25 (1) | 17:19 | 106 | 12:31 (1) | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 11:21 (1) | 08:16 | | 09:22 (2) | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 | 64 | 12:25 (1) | 17:21 | 104 | 12:30 (1) | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 11:21 (1) | 08:14 | | 09:21 (2) | 07:10 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 64 | 12:25 (1) | 17:23 | 103 | 12:29 (1) | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 11:22 (1) | 08:12 | | 09:21 (2) | 07:07 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 65 | 12:27 (1) | 17:25 | 100 | 12:28 (1) | 18:24 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 11:22 (1) | 08:10 | | 09:21 (2) | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 66 | 12:28 (1) | 17:27 | 99 | 12:27 (1) | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 11:22 (1) | 08:08 | | 09:21 (2) | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 66 | 12:28 (1) | 17:30 | 96 | 12:26 (1) | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 11:22 (1) | 08:06 | | 09:21 (2) | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 66 | 12:28 (1) | 17:32 | 91 | 12:23 (1) | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 11:22 (1) | 08:04 | | 09:21 (2) | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 67 | 12:29 (1) | 17:34 | 87 | 12:21 (1) | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 11:22 (1) | 08:02 | | 09:22 (2) | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 67 | 12:29 (1) | 17:36 | 81 | 12:19 (1) | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 11:23 (1) | 08:00 | | 09:22 (2) | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 67 | 12:30 (1) | 17:38 | 75 | 12:16 (1) | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 11:22 (1) | 07:57 | | 09:23 (2) | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 68 | 12:30 (1) | 17:40 | 65 | 12:12 (1) | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 11:23 (1) | 07:55 | | 09:24 (2) | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 68 | 12:31 (1) | 17:42 | 49 | 12:05 (1) | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 11:24 (1) | 07:53 | | 09:24 (2) | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 68 | 12:32 (1) | 17:44 | 41 | 10:05 (2) | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 11:23 (1) | 07:51 | | 09:25 (2) | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 69 | 12:32 (1) | 17:47 | 39 | 10:04 (2) | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:38 (2) | 07:48 | | 09:26 (2) | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 74 | 12:32 (1) | 17:49 | 37 | 10:03 (2) | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:34 (2) | 07:46 | | 09:27 (2) | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 82 | 12:32 (1) | 17:51 | 34 | 10:01 (2) | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:31 (2) | 07:44 | | 09:29 (2) | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 88 | 12:32 (1) | 17:53 | 31 | 10:00 (2) | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:30 (2) | 07:41 | | 09:30 (2) | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 92 | 12:33 (1) | 17:55 | 27 | 09:57 (2) | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:29 (2) | 07:39 | | 09:33 (2) | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 94 | 12:33 (1) | 17:57 | 22 | 09:55 (2) | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | 09:36 (2) | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 98 | 12:33 (1) | 17:59 | 14 | 09:50 (2) | 18:56 | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 100 | 12:34 (1) | 18:01 | | | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 102 | 12:34 (1) | 18:03 | | | 19:00 | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 103 | 12:34 (1) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 | 105 | 12:34 (1) | | | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | 106 | 12:34 (1) | | | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 05:03 | |
| | 17:06 | 106 | 12:33 (1) | | | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 |
| Total, worst case | | 2392 | | | 1836 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,27 | | | 0,48 | | | | | |
| Total reduction | | 0,05 | | | 0,11 | | | | | |
| Total, real | | 109 | | | 201 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | 08:51 (2) | 08:35 | | 11:05 (1) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | | 16:58 | 98 | 11:57 (1) | 16:10 | 65 | 12:10 (1) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | 08:50 (2) | 08:37 | | 11:04 (1) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | 102 | 11:58 (1) | 16:09 | 66 | 12:10 (1) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | 08:50 (2) | 08:39 | | 11:05 (1) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | 103 | 11:58 (1) | 16:08 | 65 | 12:10 (1) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | 08:51 (2) | 08:40 | | 11:06 (1) |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | 16:52 | 104 | 12:00 (1) | 16:08 | 65 | 12:11 (1) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | | 07:45 | | 08:51 (2) | 08:42 | | 11:06 (1) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | 106 | 12:01 (1) | 16:07 | 64 | 12:10 (1) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | 08:51 (2) | 08:43 | | 11:07 (1) |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | 106 | 12:01 (1) | 16:06 | 64 | 12:11 (1) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:51 (2) | 08:44 | | 11:07 (1) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | 108 | 12:02 (1) | 16:06 | 63 | 12:10 (1) |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | 07:51 | | 08:53 (2) | 08:46 | | 11:08 (1) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | 107 | 12:03 (1) | 16:05 | 63 | 12:11 (1) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | 08:53 (2) | 08:47 | | 11:08 (1) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | 107 | 12:04 (1) | 16:05 | 63 | 12:11 (1) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | | 07:55 | | 08:53 (2) | 08:48 | | 11:10 (1) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | | | 16:40 | 108 | 12:04 (1) | 16:04 | 62 | 12:12 (1) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | | 07:57 | | 08:54 (2) | 08:50 | | 11:10 (1) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | 16:38 | 106 | 12:04 (1) | 16:04 | 62 | 12:12 (1) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | | 07:59 | | 08:56 (2) | 08:51 | | 11:10 (1) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | | 16:36 | 105 | 12:05 (1) | 16:04 | 62 | 12:12 (1) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | | 08:01 | | 08:56 (2) | 08:52 | | 11:11 (1) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | | | 16:34 | 105 | 12:06 (1) | 16:04 | 61 | 12:12 (1) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | | 08:04 | | 08:57 (2) | 08:53 | | 11:11 (1) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | | | 16:33 | 104 | 12:06 (1) | 16:04 | 61 | 12:12 (1) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | | 08:06 | | 08:58 (2) | 08:54 | | 11:13 (1) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | | | 16:31 | 102 | 12:06 (1) | 16:04 | 61 | 12:14 (1) |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 10:13 (2) | 08:08 | | 09:00 (2) | 08:55 | | 11:12 (1) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 5 | 10:18 (2) | 16:29 | 100 | 12:07 (1) | 16:04 | 61 | 12:13 (1) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 10:06 (2) | 08:10 | | 09:01 (2) | 08:56 | | 11:13 (1) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 18 | 10:24 (2) | 16:28 | 98 | 12:07 (1) | 16:04 | 60 | 12:13 (1) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 10:03 (2) | 08:12 | | 09:03 (2) | 08:57 | | 11:14 (1) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 24 | 10:27 (2) | 16:26 | 94 | 12:07 (1) | 16:04 | 60 | 12:14 (1) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 10:01 (2) | 08:13 | | 09:04 (2) | 08:57 | | 11:15 (1) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 28 | 10:29 (2) | 16:25 | 92 | 12:07 (1) | 16:04 | 60 | 12:15 (1) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 09:59 (2) | 08:15 | | 09:06 (2) | 08:58 | | 11:14 (1) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 31 | 10:30 (2) | 16:23 | 88 | 12:07 (1) | 16:05 | 60 | 12:14 (1) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 09:57 (2) | 08:17 | | 09:10 (2) | 08:59 | | 11:15 (1) |
| | 21:59 | | 20:57 | | 19:38 | | 18:23 | 35 | 10:32 (2) | 16:22 | 83 | 12:08 (1) | 16:05 | 60 | 12:15 (1) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 09:56 (2) | 08:19 | | 09:14 (2) | 08:59 | | 11:16 (1) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 38 | 10:34 (2) | 16:20 | 75 | 12:08 (1) | 16:05 | 60 | 12:16 (1) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 09:55 (2) | 08:21 | | 11:00 (1) | 09:00 | | 11:16 (1) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 40 | 10:35 (2) | 16:19 | 69 | 12:09 (1) | 16:06 | 60 | 12:16 (1) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 09:54 (2) | 08:23 | | 11:01 (1) | 09:00 | | 11:17 (1) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 41 | 10:35 (2) | 16:18 | 68 | 12:09 (1) | 16:07 | 60 | 12:17 (1) |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:22 | | 08:53 (2) | 08:25 | | 11:01 (1) | 09:00 | | 11:17 (1) |
| | 21:53 | | 20:47 | | 19:28 | | 17:13 | 56 | 11:37 (1) | 16:16 | 68 | 12:09 (1) | 16:07 | 60 | 12:17 (1) |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:24 | | 08:52 (2) | 08:27 | | 11:02 (1) | 09:01 | | 11:18 (1) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 69 | 11:43 (1) | 16:15 | 67 | 12:09 (1) | 16:08 | 60 | 12:18 (1) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 08:52 (2) | 08:28 | | 11:02 (1) | 09:01 | | 11:18 (1) |
| | 21:49 | | 20:42 | | 19:23 | | 17:09 | 77 | 11:47 (1) | 16:14 | 67 | 12:09 (1) | 16:09 | 61 | 12:19 (1) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:29 | | 08:52 (2) | 08:30 | | 11:03 (1) | 09:01 | | 11:19 (1) |
| | 21:47 | | 20:40 | | 19:20 | | 17:07 | 81 | 11:49 (1) | 16:13 | 66 | 12:09 (1) | 16:10 | 60 | 12:19 (1) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 08:51 (2) | 08:32 | | 11:03 (1) | 09:01 | | 11:19 (1) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 88 | 11:51 (1) | 16:12 | 67 | 12:10 (1) | 16:10 | 61 | 12:20 (1) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 08:50 (2) | 08:34 | | 11:04 (1) | 09:01 | | 11:19 (1) |
| | 21:44 | | 20:35 | | 19:15 | | 17:02 | 93 | 11:53 (1) | 16:11 | 66 | 12:10 (1) | 16:11 | 61 | 12:20 (1) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:51 (2) | | | | 09:01 | | 11:19 (1) |
| | 21:42 | | 20:32 | | | | 17:00 | 95 | 11:55 (1) | | | | 16:12 | 62 | 12:21 (1) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 819 | | | 2739 | | | 1913 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,56 | | | 0,35 | | | 0,20 | |
| Total reduction | | | | | | | | 0,16 | | | 0,05 | | | 0,03 | |
| Total, real | | | | | | | | 130 | | | 140 | | | 48 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:26 (2) | 08:28 | | 08:57 (3) | 07:27 | | 15:00 (1) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 59 | 12:25 (2) | 17:08 | 149 | 15:47 (1) | 18:07 | 40 | 15:40 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 11:25 (2) | 08:26 | | 08:55 (3) | 07:24 | | 15:03 (1) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 60 | 12:25 (2) | 17:10 | 153 | 15:47 (1) | 18:10 | 35 | 15:38 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 11:26 (2) | 08:24 | | 08:54 (3) | 07:22 | | 15:06 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 60 | 12:26 (2) | 17:12 | 155 | 15:48 (1) | 18:12 | 29 | 15:35 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 11:26 (2) | 08:22 | | 08:54 (3) | 07:19 | | 15:10 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 60 | 12:26 (2) | 17:15 | 156 | 15:49 (1) | 18:14 | 22 | 15:32 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 11:26 (2) | 08:20 | | 08:54 (3) | 07:17 | | 15:16 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 62 | 12:28 (2) | 17:17 | 158 | 15:50 (1) | 18:16 | 9 | 15:25 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 11:26 (2) | 08:18 | | 08:54 (3) | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 62 | 12:28 (2) | 17:19 | 158 | 15:50 (1) | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 11:26 (2) | 08:16 | | 08:54 (3) | 07:12 | | | 06:53 | 05:42 | 04:56 |
| | 16:22 | 63 | 12:29 (2) | 17:21 | 158 | 15:51 (1) | 18:20 | | | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 11:26 (2) | 08:14 | | 08:54 (3) | 07:09 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 64 | 12:30 (2) | 17:23 | 158 | 15:51 (1) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 11:27 (2) | 08:12 | | 08:55 (3) | 07:07 | | | 06:48 | 05:38 | 04:55 |
| | 16:25 | 64 | 12:31 (2) | 17:25 | 156 | 15:51 (1) | 18:24 | | | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 11:27 (2) | 08:10 | | 08:56 (3) | 07:04 | | | 06:45 | 05:36 | 04:55 |
| | 16:26 | 65 | 12:32 (2) | 17:27 | 154 | 15:52 (1) | 18:26 | | | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 11:27 (2) | 08:08 | | 08:57 (3) | 07:02 | | | 06:43 | 05:34 | 04:54 |
| | 16:28 | 66 | 12:33 (2) | 17:29 | 152 | 15:52 (1) | 18:28 | | | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 11:26 (2) | 08:06 | | 08:58 (3) | 06:59 | | | 06:40 | 05:32 | 04:54 |
| | 16:30 | 67 | 12:33 (2) | 17:32 | 146 | 15:51 (1) | 18:30 | | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 11:26 (2) | 08:04 | | 09:01 (3) | 06:57 | | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 68 | 12:34 (2) | 17:34 | 141 | 15:52 (1) | 18:32 | | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 11:26 (2) | 08:02 | | 11:32 (2) | 06:54 | | | 06:35 | 05:29 | 04:53 |
| | 16:33 | 69 | 12:35 (2) | 17:36 | 131 | 15:52 (1) | 18:34 | | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 11:26 (2) | 07:59 | | 11:32 (2) | 06:52 | | | 06:33 | 05:27 | 04:53 |
| | 16:35 | 70 | 12:36 (2) | 17:38 | 129 | 15:51 (1) | 18:36 | | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 11:26 (2) | 07:57 | | 11:34 (2) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 70 | 12:36 (2) | 17:40 | 126 | 15:51 (1) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 11:26 (2) | 07:55 | | 11:35 (2) | 06:47 | | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 83 | 15:21 (1) | 17:42 | 124 | 15:52 (1) | 18:40 | | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 11:26 (2) | 07:53 | | 11:36 (2) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 90 | 15:25 (1) | 17:44 | 120 | 15:51 (1) | 18:42 | | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 11:26 (2) | 07:51 | | 11:37 (2) | 06:41 | | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 96 | 15:28 (1) | 17:47 | 118 | 15:51 (1) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 11:26 (2) | 07:48 | | 11:39 (2) | 06:39 | | | 06:21 | 05:18 | 04:52 |
| | 16:44 | 100 | 15:30 (1) | 17:49 | 114 | 15:51 (1) | 18:46 | | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 11:26 (2) | 07:46 | | 11:40 (2) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 104 | 15:32 (1) | 17:51 | 108 | 15:49 (1) | 18:48 | | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 11:26 (2) | 07:44 | | 11:43 (2) | 06:34 | | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 109 | 15:34 (1) | 17:53 | 102 | 15:49 (1) | 18:50 | | | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 11:26 (2) | 07:41 | | 11:44 (2) | 06:31 | | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 112 | 15:36 (1) | 17:55 | 96 | 15:48 (1) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 11:26 (2) | 07:39 | | 11:48 (2) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 115 | 15:37 (1) | 17:57 | 87 | 15:47 (1) | 18:54 | | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 11:26 (2) | 07:36 | | 11:51 (2) | 06:26 | | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 118 | 15:39 (1) | 17:59 | 78 | 15:46 (1) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 11:27 (2) | 07:34 | | 12:00 (2) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 120 | 15:41 (1) | 18:01 | 58 | 15:45 (1) | 18:58 | | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 11:26 (2) | 07:32 | | 14:57 (1) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 124 | 15:42 (1) | 18:03 | 46 | 15:43 (1) | 19:00 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 14:59 (1) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 129 | 15:43 (1) | 18:05 | 43 | 15:42 (1) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (3) | | | | 07:16 | | | 06:00 | 05:05 | 04:55 |
| | 17:02 | 134 | 15:44 (1) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (3) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 140 | 15:45 (1) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (3) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 144 | 15:46 (1) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 2747 | | | 3474 | | | 135 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,28 | | | 0,43 | | | 0,62 | | | | |
| Total reduction | | 0,05 | | | 0,10 | | | 0,20 | | | | |
| Total, real | | 132 | | | 347 | | | 27 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | 08:25 (3) | 08:35 | | 11:08 (2) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | | 16:58 | 154 | 15:21 (1) | 16:10 | 66 | 12:14 (2) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | 08:24 (3) | 08:37 | | 11:09 (2) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | 157 | 15:21 (1) | 16:09 | 65 | 12:14 (2) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | 08:24 (3) | 08:38 | | 11:10 (2) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | 157 | 15:20 (1) | 16:08 | 64 | 12:14 (2) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | 08:24 (3) | 08:40 | | 11:11 (2) |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | 16:52 | 159 | 15:21 (1) | 16:08 | 64 | 12:15 (2) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | | 07:45 | | 08:24 (3) | 08:42 | | 11:11 (2) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | 158 | 15:20 (1) | 16:07 | 63 | 12:14 (2) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | 08:23 (3) | 08:43 | | 11:12 (2) |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | 158 | 15:19 (1) | 16:06 | 62 | 12:14 (2) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:23 (3) | 08:44 | | 11:12 (2) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | 158 | 15:19 (1) | 16:06 | 62 | 12:14 (2) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | | 07:51 | | 08:24 (3) | 08:46 | | 11:14 (2) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | 156 | 15:19 (1) | 16:05 | 61 | 12:15 (2) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 15:47 (1) | 07:53 | | 08:26 (3) | 08:47 | | 11:14 (2) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16 | 16:03 (1) | 16:42 | 152 | 15:18 (1) | 16:05 | 60 | 12:14 (2) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 15:42 (1) | 07:55 | | 08:28 (3) | 08:48 | | 11:15 (2) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 25 | 16:07 (1) | 16:40 | 147 | 15:17 (1) | 16:04 | 60 | 12:15 (2) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 15:38 (1) | 07:57 | | 08:30 (3) | 08:50 | | 11:16 (2) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 32 | 16:10 (1) | 16:38 | 144 | 15:16 (1) | 16:04 | 59 | 12:15 (2) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 15:35 (1) | 07:59 | | 08:33 (3) | 08:51 | | 11:16 (2) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 37 | 16:12 (1) | 16:36 | 140 | 15:17 (1) | 16:04 | 59 | 12:15 (2) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 15:33 (1) | 08:01 | | 08:35 (3) | 08:52 | | 11:17 (2) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 40 | 16:13 (1) | 16:34 | 135 | 15:16 (1) | 16:04 | 58 | 12:15 (2) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 15:31 (1) | 08:03 | | 08:37 (3) | 08:53 | | 11:18 (2) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 45 | 16:16 (1) | 16:33 | 129 | 15:15 (1) | 16:04 | 57 | 12:15 (2) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 15:29 (1) | 08:06 | | 10:58 (2) | 08:54 | | 11:18 (2) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 48 | 16:17 (1) | 16:31 | 124 | 15:14 (1) | 16:04 | 57 | 12:15 (2) |
| 16 | 05:13 | | 06:08 | | 07:06 | | 08:04 | | 12:28 (2) | 08:08 | | 11:00 (2) | 08:55 | | 11:19 (2) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 66 | 16:17 (1) | 16:29 | 120 | 15:14 (1) | 16:04 | 56 | 12:15 (2) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 12:22 (2) | 08:09 | | 11:00 (2) | 08:56 | | 11:20 (2) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 81 | 16:18 (1) | 16:28 | 117 | 15:12 (1) | 16:04 | 56 | 12:16 (2) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 12:18 (2) | 08:11 | | 11:00 (2) | 08:57 | | 11:21 (2) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 90 | 16:19 (1) | 16:26 | 115 | 15:11 (1) | 16:04 | 55 | 12:16 (2) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 12:15 (2) | 08:13 | | 11:00 (2) | 08:57 | | 11:21 (2) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 97 | 16:19 (1) | 16:25 | 112 | 15:10 (1) | 16:04 | 56 | 12:17 (2) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 12:12 (2) | 08:15 | | 11:01 (2) | 08:58 | | 11:21 (2) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 105 | 16:20 (1) | 16:23 | 109 | 15:09 (1) | 16:05 | 56 | 12:17 (2) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 12:10 (2) | 08:17 | | 11:02 (2) | 08:59 | | 11:22 (2) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 110 | 16:20 (1) | 16:22 | 104 | 15:08 (1) | 16:05 | 56 | 12:18 (2) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 12:09 (2) | 08:19 | | 11:02 (2) | 08:59 | | 11:22 (2) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 115 | 16:21 (1) | 16:20 | 101 | 15:07 (1) | 16:05 | 55 | 12:17 (2) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 12:07 (2) | 08:21 | | 11:03 (2) | 09:00 | | 11:23 (2) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 118 | 16:21 (1) | 16:19 | 96 | 15:05 (1) | 16:06 | 56 | 12:19 (2) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 12:06 (2) | 08:23 | | 11:03 (2) | 09:00 | | 11:23 (2) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 121 | 16:21 (1) | 16:18 | 90 | 15:02 (1) | 16:07 | 56 | 12:19 (2) |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:22 | | 11:04 (2) | 08:25 | | 11:04 (2) | 09:00 | | 11:23 (2) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 125 | 15:21 (1) | 16:16 | 83 | 14:59 (1) | 16:07 | 56 | 12:19 (2) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 11:03 (2) | 08:27 | | 11:05 (2) | 09:01 | | 11:25 (2) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 127 | 15:21 (1) | 16:15 | 70 | 12:15 (2) | 16:08 | 56 | 12:21 (2) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 11:03 (2) | 08:28 | | 11:05 (2) | 09:01 | | 11:25 (2) |
| | 21:49 | | 20:42 | | 19:23 | | 17:09 | 129 | 15:22 (1) | 16:14 | 70 | 12:15 (2) | 16:09 | 56 | 12:21 (2) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:29 | | 11:02 (2) | 08:30 | | 11:06 (2) | 09:01 | | 11:25 (2) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | 131 | 15:22 (1) | 16:13 | 69 | 12:15 (2) | 16:10 | 57 | 12:22 (2) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 08:29 (3) | 08:32 | | 11:07 (2) | 09:01 | | 11:25 (2) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 143 | 15:21 (1) | 16:12 | 68 | 12:15 (2) | 16:10 | 57 | 12:22 (2) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 08:27 (3) | 08:34 | | 11:08 (2) | 09:01 | | 11:25 (2) |
| | 21:44 | | 20:35 | | 19:15 | | 17:02 | 148 | 15:21 (1) | 16:11 | 67 | 12:15 (2) | 16:11 | 57 | 12:22 (2) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:27 (3) | | | | 09:01 | | 11:25 (2) |
| | 21:42 | | 20:32 | | | | 17:00 | 151 | 15:22 (1) | | | | 16:12 | 58 | 12:23 (2) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 2100 | | | 3619 | | | 1816 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,44 | | | 0,36 | | | 0,19 | |
| Total reduction | | | | | | | | 0,13 | | | 0,05 | | | 0,02 | |
| Total, real | | | | | | | | 269 | | | 197 | | | 43 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 15:13 (2) | 07:27 | | 16:35 (1) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 26 | 10:14 (3) | 17:08 | 47 | 16:00 (2) | 18:07 | 31 | 17:06 (1) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 15:12 (2) | 07:24 | | 16:36 (1) | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 27 | 10:14 (3) | 17:10 | 48 | 16:00 (2) | 18:09 | 29 | 17:05 (1) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | 15:12 (2) | 07:22 | | 16:36 (1) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 27 | 10:15 (3) | 17:12 | 49 | 16:01 (2) | 18:12 | 28 | 17:04 (1) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | 15:12 (2) | 07:19 | | 16:38 (1) | 07:00 | | 05:48 | 04:59 |
| | 16:18 | 28 | 10:16 (3) | 17:15 | 50 | 16:02 (2) | 18:14 | 25 | 17:03 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | 15:12 (2) | 07:17 | | 16:39 (1) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 28 | 10:17 (3) | 17:17 | 50 | 16:02 (2) | 18:16 | 22 | 17:01 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | 15:12 (2) | 07:14 | | 16:42 (1) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 28 | 10:17 (3) | 17:19 | 51 | 16:03 (2) | 18:18 | 17 | 16:59 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | 15:11 (2) | 07:12 | | 16:45 (1) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 28 | 10:17 (3) | 17:21 | 51 | 16:02 (2) | 18:20 | 9 | 16:54 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | 15:11 (2) | 07:09 | | | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 29 | 10:18 (3) | 17:23 | 52 | 16:03 (2) | 18:22 | | | 20:23 | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | 15:11 (2) | 07:07 | | | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 29 | 10:18 (3) | 17:25 | 52 | 16:03 (2) | 18:24 | | | 20:25 | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | 15:12 (2) | 07:04 | | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | 28 | 10:19 (3) | 17:27 | 51 | 16:03 (2) | 18:26 | | | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | 15:12 (2) | 07:02 | | | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 29 | 10:19 (3) | 17:29 | 52 | 16:04 (2) | 18:28 | | | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | 15:12 (2) | 06:59 | | | 06:40 | | 05:32 | 04:54 |
| | 16:29 | 29 | 10:19 (3) | 17:32 | 51 | 16:03 (2) | 18:30 | | | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 15:12 (2) | 06:57 | | | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 29 | 10:20 (3) | 17:34 | 63 | 16:58 (1) | 18:32 | | | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 15:13 (2) | 06:54 | | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 28 | 10:20 (3) | 17:36 | 68 | 17:01 (1) | 18:34 | | | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 15:13 (2) | 06:52 | | | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 29 | 10:21 (3) | 17:38 | 71 | 17:02 (1) | 18:36 | | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 15:14 (2) | 06:49 | | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 28 | 10:20 (3) | 17:40 | 73 | 17:04 (1) | 18:38 | | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 15:15 (2) | 06:47 | | | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 28 | 10:21 (3) | 17:42 | 74 | 17:06 (1) | 18:40 | | | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 15:15 (2) | 06:44 | | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 37 | 15:38 (2) | 17:44 | 74 | 17:06 (1) | 18:42 | | | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 15:16 (2) | 06:41 | | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 44 | 15:41 (2) | 17:46 | 74 | 17:07 (1) | 18:44 | | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 15:17 (2) | 06:39 | | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 46 | 15:44 (2) | 17:49 | 74 | 17:08 (1) | 18:46 | | | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 15:18 (2) | 06:36 | | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 49 | 15:46 (2) | 17:51 | 72 | 17:08 (1) | 18:48 | | | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | 15:20 (2) | 06:34 | | | 06:16 | | 05:15 | 04:52 |
| | 16:48 | 52 | 15:48 (2) | 17:53 | 70 | 17:09 (1) | 18:50 | | | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | 15:21 (2) | 06:31 | | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 52 | 15:50 (2) | 17:55 | 67 | 17:08 (1) | 18:52 | | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | 15:24 (2) | 06:29 | | | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 52 | 15:51 (2) | 17:57 | 63 | 17:09 (1) | 18:54 | | | 20:55 | | 21:51 | 22:19 |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | 15:26 (2) | 06:26 | | | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 51 | 15:52 (2) | 17:59 | 57 | 17:08 (1) | 18:56 | | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | 15:30 (2) | 06:23 | | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 50 | 15:55 (2) | 18:01 | 50 | 17:08 (1) | 18:58 | | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | 16:34 (1) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 46 | 15:56 (2) | 18:03 | 33 | 17:07 (1) | 19:00 | | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 15:15 (2) | 07:29 | | 16:35 (1) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 41 | 15:56 (2) | 18:05 | 32 | 17:07 (1) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 15:14 (2) | | | | 07:16 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 43 | 15:57 (2) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 15:14 (2) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 44 | 15:58 (2) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 15:13 (2) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 46 | 15:59 (2) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 1131 | | | 1619 | | | 161 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,62 | | | 0,72 | | | 0,87 | | | | | |
| Total reduction | | 0,11 | | | 0,17 | | | 0,29 | | | | | |
| Total, real | | 123 | | | 279 | | | 46 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | 14:41 (2) | 08:35 | | 09:32 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | 52 | 15:33 (2) | 16:10 | 29 | 10:01 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | 14:41 (2) | 08:37 | | 09:33 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | 52 | 15:33 (2) | 16:09 | 29 | 10:02 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | 14:41 (2) | 08:38 | | 09:33 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | 51 | 15:32 (2) | 16:08 | 29 | 10:02 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | 14:42 (2) | 08:40 | | 09:34 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | | | 16:52 | 51 | 15:33 (2) | 16:08 | 29 | 10:03 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | | 07:45 | | 14:42 (2) | 08:42 | | 09:34 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | 50 | 15:32 (2) | 16:07 | 28 | 10:02 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | 14:42 (2) | 08:43 | | 09:35 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | 50 | 15:32 (2) | 16:06 | 28 | 10:03 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 17:19 (1) | 07:49 | | 14:42 (2) | 08:44 | | 09:35 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 13 | 17:32 (1) | 16:46 | 49 | 15:31 (2) | 16:06 | 28 | 10:03 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:15 (1) | 07:51 | | 14:43 (2) | 08:46 | | 09:36 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 20 | 17:35 (1) | 16:44 | 49 | 15:32 (2) | 16:05 | 28 | 10:04 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 17:13 (1) | 07:53 | | 14:43 (2) | 08:47 | | 09:36 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 23 | 17:36 (1) | 16:42 | 48 | 15:31 (2) | 16:05 | 28 | 10:04 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 17:11 (1) | 07:55 | | 14:44 (2) | 08:48 | | 09:37 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 26 | 17:37 (1) | 16:40 | 47 | 15:31 (2) | 16:04 | 27 | 10:04 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 17:10 (1) | 07:57 | | 14:44 (2) | 08:50 | | 09:38 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 28 | 17:38 (1) | 16:38 | 46 | 15:30 (2) | 16:04 | 26 | 10:04 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 17:08 (1) | 07:59 | | 14:46 (2) | 08:51 | | 09:38 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 31 | 17:39 (1) | 16:36 | 44 | 15:30 (2) | 16:04 | 27 | 10:05 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 17:07 (1) | 08:01 | | 14:46 (2) | 08:52 | | 09:38 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 32 | 17:39 (1) | 16:34 | 43 | 15:29 (2) | 16:04 | 27 | 10:05 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 17:06 (1) | 08:03 | | 14:47 (2) | 08:53 | | 09:39 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 33 | 17:39 (1) | 16:33 | 41 | 15:28 (2) | 16:04 | 26 | 10:05 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 16:06 (2) | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 43 | 17:41 (1) | 16:31 | 47 | 15:27 (2) | 16:04 | 26 | 10:05 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 16:00 (2) | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 54 | 17:40 (1) | 16:29 | 49 | 15:27 (2) | 16:04 | 26 | 10:06 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 15:57 (2) | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 59 | 17:40 (1) | 16:28 | 51 | 15:26 (2) | 16:04 | 25 | 10:06 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 15:54 (2) | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 65 | 17:40 (1) | 16:26 | 52 | 15:25 (2) | 16:04 | 26 | 10:07 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 15:52 (2) | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 68 | 17:39 (1) | 16:25 | 52 | 15:24 (2) | 16:04 | 25 | 10:07 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 15:50 (2) | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 71 | 17:39 (1) | 16:23 | 52 | 15:23 (2) | 16:05 | 25 | 10:07 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 15:48 (2) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 73 | 17:38 (1) | 16:22 | 49 | 15:22 (2) | 16:05 | 25 | 10:08 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 15:47 (2) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 74 | 17:38 (1) | 16:20 | 47 | 15:21 (2) | 16:05 | 25 | 10:08 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 15:46 (2) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 74 | 17:37 (1) | 16:19 | 44 | 15:19 (2) | 16:06 | 25 | 10:09 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 15:45 (2) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 75 | 17:36 (1) | 16:18 | 38 | 15:16 (2) | 16:06 | 25 | 10:09 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 14:44 (2) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 74 | 16:35 (1) | 16:16 | 28 | 09:59 (3) | 16:07 | 26 | 10:10 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 14:43 (2) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 72 | 16:33 (1) | 16:15 | 28 | 09:59 (3) | 16:08 | 25 | 10:11 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 14:43 (2) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 70 | 16:32 (1) | 16:14 | 28 | 10:00 (3) | 16:09 | 25 | 10:11 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:28 | | 14:42 (2) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | 67 | 16:30 (1) | 16:13 | 29 | 10:01 (3) | 16:10 | 26 | 10:12 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 14:42 (2) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 60 | 16:26 (1) | 16:12 | 29 | 10:01 (3) | 16:10 | 26 | 10:13 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 14:41 (2) | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 51 | 15:32 (2) | 16:11 | 29 | 10:02 (3) | 16:11 | 26 | 10:12 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 14:41 (2) | | | | 09:01 | | 09:47 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | 51 | 15:32 (2) | | | | 16:12 | 26 | 10:13 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 1307 | | | 1325 | | | 822 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,76 | | | 0,64 | | | 0,59 | |
| Total reduction | | | | | | | | 0,23 | | | 0,10 | | | 0,08 | |
| Total, real | | | | | | | | 298 | | | 131 | | | 64 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | 15:27 (2) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 15 | 09:54 (3) | 17:08 | 45 | 16:06 (2) | 18:07 | 87 | 17:24 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | 15:28 (2) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 16 | 09:54 (3) | 17:10 | 45 | 16:08 (2) | 18:09 | 87 | 17:25 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | 15:28 (2) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 18 | 09:56 (3) | 17:12 | 43 | 16:10 (2) | 18:12 | 85 | 17:24 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 15:34 (2) | 07:19 | 15:30 (2) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 18 | 09:56 (3) | 17:15 | 38 | 16:12 (2) | 18:14 | 82 | 17:25 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 15:33 (2) | 07:17 | 15:31 (2) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 20 | 09:58 (3) | 17:17 | 40 | 16:13 (2) | 18:16 | 79 | 17:24 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 15:32 (2) | 07:14 | 15:33 (2) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 21 | 09:59 (3) | 17:19 | 43 | 16:15 (2) | 18:18 | 75 | 17:24 (1) | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 15:30 (2) | 07:12 | 15:35 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 22 | 09:59 (3) | 17:21 | 45 | 16:15 (2) | 18:20 | 71 | 17:23 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 15:29 (2) | 07:09 | 15:36 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 23 | 10:00 (3) | 17:23 | 48 | 16:17 (2) | 18:22 | 66 | 17:22 (1) | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 15:29 (2) | 07:07 | 15:40 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 24 | 10:01 (3) | 17:25 | 49 | 16:18 (2) | 18:24 | 59 | 17:22 (1) | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 15:28 (2) | 07:04 | 15:44 (2) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 25 | 10:03 (3) | 17:27 | 51 | 16:19 (2) | 18:26 | 48 | 17:20 (1) | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 15:28 (2) | 07:02 | 16:50 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 25 | 10:02 (3) | 17:29 | 52 | 16:20 (2) | 18:28 | 30 | 17:20 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 15:26 (2) | 06:59 | 16:50 (1) | 06:40 | 05:32 | 04:54 |
| | 16:29 | 26 | 10:03 (3) | 17:32 | 54 | 16:20 (2) | 18:30 | 28 | 17:18 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 15:26 (2) | 06:57 | 16:51 (1) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 27 | 10:04 (3) | 17:34 | 55 | 16:21 (2) | 18:32 | 25 | 17:16 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | 15:26 (2) | 06:54 | 16:54 (1) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 28 | 10:05 (3) | 17:36 | 56 | 16:22 (2) | 18:34 | 20 | 17:14 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | 15:25 (2) | 06:52 | 16:56 (1) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 28 | 10:06 (3) | 17:38 | 56 | 16:21 (2) | 18:36 | 14 | 17:10 (1) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | 15:25 (2) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 29 | 10:06 (3) | 17:40 | 57 | 16:22 (2) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | 15:25 (2) | 06:47 | | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 30 | 10:07 (3) | 17:42 | 58 | 16:23 (2) | 18:40 | | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | 15:24 (2) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 30 | 10:08 (3) | 17:44 | 58 | 16:22 (2) | 18:42 | | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | 15:24 (2) | 06:41 | | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 30 | 10:08 (3) | 17:46 | 59 | 16:23 (2) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 15:25 (2) | 06:39 | | | 06:20 | 05:18 | 04:52 |
| | 16:44 | 30 | 10:09 (3) | 17:49 | 58 | 16:23 (2) | 18:46 | | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 15:24 (2) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 31 | 10:09 (3) | 17:51 | 72 | 17:14 (1) | 18:48 | | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 15:24 (2) | 06:34 | | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 30 | 10:08 (3) | 17:53 | 78 | 17:17 (1) | 18:50 | | | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 15:24 (2) | 06:31 | | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 30 | 10:09 (3) | 17:55 | 82 | 17:19 (1) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 15:25 (2) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 29 | 10:09 (3) | 17:57 | 84 | 17:21 (1) | 18:54 | | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 15:24 (2) | 06:26 | | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 29 | 10:09 (3) | 17:59 | 86 | 17:21 (1) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 15:25 (2) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 29 | 10:10 (3) | 18:01 | 88 | 17:23 (1) | 18:58 | | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 15:25 (2) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 27 | 10:09 (3) | 18:03 | 88 | 17:23 (1) | 19:00 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 15:26 (2) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 27 | 10:09 (3) | 18:05 | 88 | 17:24 (1) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | 25 | 10:08 (3) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 38 | 15:59 (2) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 43 | 16:03 (2) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 823 | | | 1676 | | | 856 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,65 | | | 0,75 | | | 0,83 | | | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,28 | | | | |
| Total, real | | 95 | | | 301 | | | 236 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 17:30 (1) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 26 | 17:56 (1) | | 16:58 | 50 |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 17:28 (1) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 29 | 17:57 (1) | | 16:56 | 49 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 16:25 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 41 | 17:58 (1) | | 16:54 | 47 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 16:19 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 54 | 17:59 (1) | | 16:52 | 45 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 16:15 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 62 | 17:59 (1) | | 16:50 | 42 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 16:12 (2) | | 07:47 | |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 68 | 17:59 (1) | | 16:48 | 40 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 16:09 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 74 | 17:59 (1) | | 16:46 | 37 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 16:07 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 78 | 17:59 (1) | | 16:44 | 43 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 16:05 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 81 | 17:59 (1) | | 16:42 | 45 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 16:03 (2) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 84 | 17:59 (1) | | 16:40 | 44 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 16:02 (2) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 85 | 17:58 (1) | | 16:38 | 43 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 16:00 (2) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 87 | 17:57 (1) | | 16:36 | 37 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 15:59 (2) | | 08:01 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 88 | 17:57 (1) | | 16:34 | 25 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 15:58 (2) | | 08:03 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 88 | 17:56 (1) | | 16:33 | 27 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 15:58 (2) | | 08:05 | |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 88 | 17:56 (1) | | 16:31 | 27 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 15:57 (2) | | 08:07 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 87 | 17:55 (1) | | 16:29 | 28 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 15:56 (2) | | 08:09 | |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 85 | 17:53 (1) | | 16:28 | 29 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 15:56 (2) | | 08:11 | |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 82 | 17:51 (1) | | 16:26 | 29 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 15:55 (2) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 80 | 17:49 (1) | | 16:25 | 30 |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 15:55 (2) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 76 | 17:47 (1) | | 16:23 | 31 |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 15:54 (2) | | 08:17 | |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 70 | 17:43 (1) | | 16:22 | 31 |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 15:55 (2) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 58 | 16:53 (2) | | 16:20 | 30 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 15:55 (2) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 58 | 16:53 (2) | | 16:19 | 30 |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 15:54 (2) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 58 | 16:52 (2) | | 16:18 | 30 |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 14:54 (2) | | 08:25 | |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 58 | 15:52 (2) | | 16:16 | 29 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 14:54 (2) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 57 | 15:51 (2) | | 16:15 | 29 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 14:55 (2) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 57 | 15:52 (2) | | 16:14 | 28 |
| 28 | 05:33 | | 06:30 | | 07:29 | 17:39 (1) | 07:28 | | 14:55 (2) | | 08:30 | |
| | 21:47 | | 20:39 | | 19:20 | 11 17:50 (1) | 17:07 | 56 | 15:51 (2) | | 16:13 | 28 |
| 29 | 05:34 | | 06:32 | | 07:31 | 17:35 (1) | 07:31 | | 14:56 (2) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 18 17:53 (1) | 17:04 | 54 | 15:50 (2) | | 16:12 | 27 |
| 30 | 05:36 | | 06:34 | | 07:33 | 17:32 (1) | 07:33 | | 14:56 (2) | | 08:34 | |
| | 21:44 | | 20:34 | | 19:15 | 23 17:55 (1) | 17:02 | 53 | 15:49 (2) | | 16:11 | 26 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 14:56 (2) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 52 | 15:48 (2) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | |
| Total, worst case | | | | | 52 | | 2074 | | | 1036 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,91 | | 0,78 | | | 0,68 | | |
| Total reduction | | | | | 0,35 | | 0,24 | | | 0,11 | | |
| Total, real | | | | | 18 | | 488 | | | 109 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 17:30 (1) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 26 | 17:56 (1) | | 16:58 | 50 |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 17:28 (1) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 29 | 17:57 (1) | | 16:56 | 49 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 16:25 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 41 | 17:58 (1) | | 16:54 | 47 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 16:19 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 54 | 17:59 (1) | | 16:52 | 45 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 16:15 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 62 | 17:59 (1) | | 16:50 | 42 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 16:12 (2) | | 07:47 | |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 68 | 17:59 (1) | | 16:48 | 40 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 16:09 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 74 | 17:59 (1) | | 16:46 | 37 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 16:07 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 78 | 17:59 (1) | | 16:44 | 43 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 16:05 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 81 | 17:59 (1) | | 16:42 | 45 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 16:03 (2) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 84 | 17:59 (1) | | 16:40 | 44 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 16:02 (2) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 85 | 17:58 (1) | | 16:38 | 43 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 16:00 (2) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 87 | 17:57 (1) | | 16:36 | 37 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 15:59 (2) | | 08:01 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 88 | 17:57 (1) | | 16:34 | 25 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 15:58 (2) | | 08:03 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 88 | 17:56 (1) | | 16:33 | 27 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 15:58 (2) | | 08:05 | |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 88 | 17:56 (1) | | 16:31 | 27 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 15:57 (2) | | 08:07 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 87 | 17:55 (1) | | 16:29 | 28 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 15:56 (2) | | 08:09 | |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 85 | 17:53 (1) | | 16:28 | 29 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 15:56 (2) | | 08:11 | |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 82 | 17:51 (1) | | 16:26 | 29 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 15:55 (2) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 80 | 17:49 (1) | | 16:25 | 30 |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 15:55 (2) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 76 | 17:47 (1) | | 16:23 | 31 |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 15:54 (2) | | 08:17 | |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 70 | 17:43 (1) | | 16:22 | 31 |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 15:55 (2) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 58 | 16:53 (2) | | 16:20 | 30 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 15:55 (2) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 58 | 16:53 (2) | | 16:19 | 30 |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 15:54 (2) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 58 | 16:52 (2) | | 16:18 | 30 |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 14:54 (2) | | 08:25 | |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 58 | 15:52 (2) | | 16:16 | 29 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 14:54 (2) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 57 | 15:51 (2) | | 16:15 | 29 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 14:55 (2) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 57 | 15:52 (2) | | 16:14 | 28 |
| 28 | 05:33 | | 06:30 | | 07:29 | 17:39 (1) | 07:28 | | 14:55 (2) | | 08:30 | |
| | 21:47 | | 20:39 | | 19:20 | 11 17:50 (1) | 17:07 | 56 | 15:51 (2) | | 16:13 | 28 |
| 29 | 05:34 | | 06:32 | | 07:31 | 17:35 (1) | 07:31 | | 14:56 (2) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 18 17:53 (1) | 17:04 | 54 | 15:50 (2) | | 16:12 | 27 |
| 30 | 05:36 | | 06:34 | | 07:33 | 17:32 (1) | 07:33 | | 14:56 (2) | | 08:34 | |
| | 21:44 | | 20:34 | | 19:15 | 23 17:55 (1) | 17:02 | 53 | 15:49 (2) | | 16:11 | 26 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 14:56 (2) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 52 | 15:48 (2) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | |
| Total, worst case | | | | | 52 | | 2074 | | | 1036 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,91 | | 0,78 | | | 0,68 | | |
| Total reduction | | | | | 0,35 | | 0,24 | | | 0,11 | | |
| Total, real | | | | | 18 | | 488 | | | 109 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 17:30 (1) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 26 | 17:56 (1) | | 16:58 | 50 |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 17:28 (1) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 29 | 17:57 (1) | | 16:56 | 49 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 16:25 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 41 | 17:58 (1) | | 16:54 | 47 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 16:19 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 54 | 17:59 (1) | | 16:52 | 45 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 16:15 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 62 | 17:59 (1) | | 16:50 | 42 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 16:12 (2) | | 07:47 | |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 68 | 17:59 (1) | | 16:48 | 40 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 16:09 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 74 | 17:59 (1) | | 16:46 | 37 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 16:07 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 78 | 17:59 (1) | | 16:44 | 43 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 16:05 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 81 | 17:59 (1) | | 16:42 | 45 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 16:03 (2) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 84 | 17:59 (1) | | 16:40 | 44 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 16:02 (2) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 85 | 17:58 (1) | | 16:38 | 43 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 16:00 (2) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 87 | 17:57 (1) | | 16:36 | 37 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 15:59 (2) | | 08:01 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 88 | 17:57 (1) | | 16:34 | 25 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 15:58 (2) | | 08:03 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 88 | 17:56 (1) | | 16:33 | 27 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 15:58 (2) | | 08:05 | |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 88 | 17:56 (1) | | 16:31 | 27 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 15:57 (2) | | 08:07 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 87 | 17:55 (1) | | 16:29 | 28 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 15:56 (2) | | 08:09 | |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 85 | 17:53 (1) | | 16:28 | 29 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 15:56 (2) | | 08:11 | |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 82 | 17:51 (1) | | 16:26 | 29 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 15:55 (2) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 80 | 17:49 (1) | | 16:25 | 30 |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 15:55 (2) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 76 | 17:47 (1) | | 16:23 | 31 |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 15:54 (2) | | 08:17 | |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 70 | 17:43 (1) | | 16:22 | 31 |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 15:55 (2) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 58 | 16:53 (2) | | 16:20 | 30 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 15:55 (2) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 58 | 16:53 (2) | | 16:19 | 30 |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 15:54 (2) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 58 | 16:52 (2) | | 16:18 | 30 |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 14:54 (2) | | 08:25 | |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 58 | 15:52 (2) | | 16:16 | 29 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 14:54 (2) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 57 | 15:51 (2) | | 16:15 | 29 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 14:55 (2) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 57 | 15:52 (2) | | 16:14 | 28 |
| 28 | 05:33 | | 06:30 | | 07:29 | 17:39 (1) | 07:28 | | 14:55 (2) | | 08:30 | |
| | 21:47 | | 20:39 | | 19:20 | 11 17:50 (1) | 17:07 | 56 | 15:51 (2) | | 16:13 | 28 |
| 29 | 05:34 | | 06:32 | | 07:31 | 17:35 (1) | 07:31 | | 14:56 (2) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 18 17:53 (1) | 17:04 | 54 | 15:50 (2) | | 16:12 | 27 |
| 30 | 05:36 | | 06:34 | | 07:33 | 17:32 (1) | 07:33 | | 14:56 (2) | | 08:34 | |
| | 21:44 | | 20:34 | | 19:15 | 23 17:55 (1) | 17:02 | 53 | 15:49 (2) | | 16:11 | 26 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 14:56 (2) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 52 | 15:48 (2) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | |
| Total, worst case | | | | | 52 | | 2074 | | | 1036 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,91 | | 0,78 | | | 0,68 | | |
| Total reduction | | | | | 0,35 | | 0,24 | | | 0,11 | | |
| Total, real | | | | | 18 | | 488 | | | 109 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | | 07:52 (5) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 13 | 09:55 (3) | 17:08 | 26 | 10:11 (3) | 18:07 | 74 | 17:32 (1) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | | 07:50 (5) | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 15 | 09:56 (3) | 17:10 | 24 | 10:10 (3) | 18:09 | 86 | 17:36 (1) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | | 07:47 (5) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 16 | 09:57 (3) | 17:12 | 21 | 10:09 (3) | 18:12 | 95 | 17:38 (1) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | | 07:45 (5) | 07:00 | | 05:48 | 04:59 |
| | 16:18 | 18 | 09:58 (3) | 17:15 | 19 | 10:08 (3) | 18:14 | 101 | 17:40 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | | 07:44 (5) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (3) | 17:17 | 14 | 10:06 (3) | 18:16 | 103 | 17:41 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | | 07:44 (5) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 21 | 10:01 (3) | 17:19 | 6 | 10:02 (3) | 18:18 | 106 | 17:42 (1) | 20:20 | | 21:18 | 22:09 |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | | 07:12 | | 07:44 (5) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 22 | 10:01 (3) | 17:21 | | | 18:20 | 106 | 17:43 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | | 07:09 | | 07:44 (5) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 23 | 10:02 (3) | 17:23 | | | 18:22 | 107 | 17:43 (1) | 20:23 | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | | 07:07 | | 07:46 (5) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 24 | 10:03 (3) | 17:25 | | | 18:24 | 103 | 17:43 (1) | 20:25 | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | | 07:04 | | 07:47 (5) | 06:45 | | 05:36 | 04:54 |
| | 16:26 | 25 | 10:05 (3) | 17:27 | | | 18:26 | 99 | 17:43 (1) | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | | 07:02 | | 16:02 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 26 | 10:05 (3) | 17:29 | | | 18:28 | 89 | 17:44 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | | 06:59 | | 16:02 (2) | 06:40 | | 05:32 | 04:54 |
| | 16:29 | 27 | 10:06 (3) | 17:32 | | | 18:30 | 86 | 17:43 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | | 06:57 | | 16:02 (2) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 28 | 10:07 (3) | 17:34 | | | 18:32 | 85 | 17:42 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | 16:24 (2) | 06:54 | | 16:04 (2) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 29 | 10:08 (3) | 17:36 | 15 | 16:39 (2) | 18:34 | 81 | 17:42 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | 16:19 (2) | 06:52 | | 16:04 (2) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 30 | 10:09 (3) | 17:38 | 23 | 16:42 (2) | 18:36 | 80 | 17:41 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | 16:17 (2) | 06:49 | | 16:06 (2) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 31 | 10:09 (3) | 17:40 | 28 | 16:45 (2) | 18:38 | 76 | 17:41 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | 16:15 (2) | 06:47 | | 16:07 (2) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 31 | 10:10 (3) | 17:42 | 33 | 16:48 (2) | 18:40 | 72 | 17:40 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | 16:12 (2) | 06:44 | | 16:08 (2) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 32 | 10:11 (3) | 17:44 | 37 | 16:49 (2) | 18:42 | 65 | 17:38 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | 16:11 (2) | 06:41 | | 16:11 (2) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 32 | 10:11 (3) | 17:46 | 40 | 16:51 (2) | 18:44 | 59 | 17:37 (1) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 16:10 (2) | 06:39 | | 16:13 (2) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 33 | 10:12 (3) | 17:49 | 43 | 16:53 (2) | 18:46 | 50 | 17:35 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | 16:08 (2) | 06:36 | | 16:17 (2) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 33 | 10:12 (3) | 17:51 | 45 | 16:53 (2) | 18:48 | 38 | 17:33 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 16:07 (2) | 06:34 | | 16:25 (2) | 06:16 | | 05:15 | 04:52 |
| | 16:48 | 33 | 10:12 (3) | 17:53 | 48 | 16:55 (2) | 18:50 | 16 | 17:30 (1) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 16:06 (2) | 06:31 | | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 33 | 10:13 (3) | 17:55 | 49 | 16:55 (2) | 18:52 | | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 16:05 (2) | 06:29 | | | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 33 | 10:13 (3) | 17:57 | 51 | 16:56 (2) | 18:54 | | | 20:55 | | 21:51 | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 16:04 (2) | 06:26 | | | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 33 | 10:13 (3) | 17:59 | 52 | 16:56 (2) | 18:56 | | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 16:04 (2) | 06:23 | | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 33 | 10:14 (3) | 18:01 | 53 | 16:57 (2) | 18:58 | | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 32 | 10:14 (3) | 18:03 | 56 | 16:57 (2) | 19:00 | | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 07:55 (5) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 31 | 10:13 (3) | 18:05 | 61 | 16:58 (2) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 30 | 10:13 (3) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 29 | 10:12 (3) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 28 | 10:12 (3) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 844 | | | 744 | | | 1777 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,64 | | | 0,81 | | | 0,89 | | | | | |
| Total reduction | | 0,11 | | | 0,19 | | | 0,29 | | | | | |
| Total, real | | 95 | | | 143 | | | 520 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | 16:42 (2) | 07:37 | | | 08:35 | | 09:21 (3) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 85 | 18:22 (1) | 16:58 | | | 16:10 | 26 | 09:47 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | | 07:37 | | 16:40 (2) | 07:39 | | | 08:37 | | 09:22 (3) |
| | 22:18 | | 21:38 | | 20:27 | | | 19:10 | 88 | 18:22 (1) | 16:56 | | | 16:09 | 25 | 09:47 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | | 07:39 | | 08:26 (5) | 07:41 | | | 08:38 | | 09:23 (3) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 97 | 18:21 (1) | 16:54 | | | 16:08 | 24 | 09:47 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | | 07:41 | | 08:24 (5) | 07:43 | | | 08:40 | | 09:24 (3) |
| | 22:17 | | 21:34 | | 20:22 | | | 19:04 | 102 | 18:21 (1) | 16:52 | | | 16:08 | 23 | 09:47 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 08:22 (5) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 104 | 18:20 (1) | 16:50 | 7 | 09:32 (3) | 16:07 | 22 | 09:47 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 08:21 (5) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | | 21:30 | | 20:17 | | | 18:59 | 105 | 18:19 (1) | 16:48 | 15 | 09:36 (3) | 16:06 | 21 | 09:47 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | | 07:46 | | 08:20 (5) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | | 21:28 | | 20:14 | | | 18:57 | 106 | 18:18 (1) | 16:46 | 19 | 09:38 (3) | 16:06 | 20 | 09:46 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 08:19 (5) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | | 21:26 | | 20:12 | | | 18:54 | 105 | 18:17 (1) | 16:44 | 22 | 09:40 (3) | 16:05 | 18 | 09:46 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 08:19 (5) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | | 21:24 | | 20:09 | | | 18:52 | 103 | 18:15 (1) | 16:42 | 24 | 09:41 (3) | 16:05 | 16 | 09:45 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | | 07:52 | | 08:20 (5) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | | 21:22 | | 20:07 | | | 18:49 | 98 | 18:13 (1) | 16:40 | 26 | 09:42 (3) | 16:04 | 15 | 09:46 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | | 07:54 | | 08:22 (5) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | 91 | 18:11 (1) | 16:38 | 28 | 09:43 (3) | 16:04 | 13 | 09:45 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | | 07:56 | | 08:24 (5) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | 82 | 18:08 (1) | 16:36 | 29 | 09:44 (3) | 16:04 | 12 | 09:45 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | | 07:58 | | 08:26 (5) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | | 21:15 | | 19:59 | | | 18:42 | 65 | 18:01 (1) | 16:34 | 31 | 09:45 (3) | 16:04 | 10 | 09:44 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | | 08:00 | | 08:28 (5) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | | 21:13 | | 19:56 | | | 18:39 | 60 | 17:30 (2) | 16:33 | 31 | 09:45 (3) | 16:04 | 8 | 09:43 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | | 08:02 | | 16:36 (2) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | | 21:10 | | 19:54 | | | 18:37 | 54 | 17:30 (2) | 16:31 | 31 | 09:45 (3) | 16:04 | 6 | 09:43 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | 16:36 (2) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | | 21:08 | | 19:51 | | | 18:35 | 53 | 17:29 (2) | 16:29 | 33 | 09:47 (3) | 16:04 | 3 | 09:42 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | 16:36 (2) | 08:09 | | 09:14 (3) | 08:56 | | |
| | 22:04 | | 21:06 | | 19:48 | | | 18:32 | 52 | 17:28 (2) | 16:28 | 33 | 09:47 (3) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | 16:37 (2) | 08:11 | | 09:14 (3) | 08:56 | | |
| | 22:03 | | 21:04 | | 19:46 | | | 18:30 | 50 | 17:27 (2) | 16:26 | 33 | 09:47 (3) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 16:37 (2) | 08:13 | | 09:14 (3) | 08:57 | | |
| | 22:02 | | 21:01 | | 19:43 | | | 18:27 | 49 | 17:26 (2) | 16:25 | 33 | 09:47 (3) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:14 | | | 08:12 | | 16:38 (2) | 08:15 | | 09:14 (3) | 08:58 | | |
| | 22:00 | | 20:59 | | 19:41 | | | 18:25 | 47 | 17:25 (2) | 16:23 | 33 | 09:47 (3) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 18:02 (1) | 08:14 | | 16:39 (2) | 08:17 | | 09:15 (3) | 08:59 | | |
| | 21:59 | | 20:56 | | 19:38 | 12 | 18:14 (1) | 18:23 | 44 | 17:23 (2) | 16:22 | 33 | 09:48 (3) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 17:03 (2) | 08:16 | | 16:41 (2) | 08:19 | | 09:15 (3) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | 34 | 18:17 (1) | 18:20 | 42 | 17:23 (2) | 16:20 | 33 | 09:48 (3) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 16:59 (2) | 08:18 | | 16:42 (2) | 08:21 | | 09:16 (3) | 09:00 | | |
| | 21:56 | | 20:52 | | 19:33 | 47 | 18:19 (1) | 18:18 | 39 | 17:21 (2) | 16:19 | 32 | 09:48 (3) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 16:56 (2) | 08:20 | | 16:43 (2) | 08:23 | | 09:16 (3) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 56 | 18:20 (1) | 18:16 | 36 | 17:19 (2) | 16:18 | 32 | 09:48 (3) | 16:06 | | |
| 25 | 05:27 | | 06:25 | | 07:23 | | 16:53 (2) | 07:22 | | 15:45 (2) | 08:25 | | 09:17 (3) | 09:00 | | |
| | 21:52 | | 20:47 | | 19:28 | 62 | 18:21 (1) | 17:13 | 31 | 16:16 (2) | 16:16 | 31 | 09:48 (3) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 16:51 (2) | 07:24 | | 15:47 (2) | 08:27 | | 09:17 (3) | 09:01 | | |
| | 21:51 | | 20:44 | | 19:25 | 68 | 18:22 (1) | 17:11 | 27 | 16:14 (2) | 16:15 | 31 | 09:48 (3) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 16:48 (2) | 07:26 | | 15:51 (2) | 08:28 | | 09:18 (3) | 09:01 | | |
| | 21:49 | | 20:42 | | 19:22 | 74 | 18:22 (1) | 17:09 | 21 | 16:12 (2) | 16:14 | 30 | 09:48 (3) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 16:46 (2) | 07:28 | | 15:55 (2) | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | | 20:39 | | 19:20 | 78 | 18:22 (1) | 17:07 | 12 | 16:07 (2) | 16:13 | 29 | 09:48 (3) | 16:10 | 5 | 09:49 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 16:44 (2) | 07:31 | | | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | | 20:37 | | 19:17 | 81 | 18:22 (1) | 17:04 | | | 16:12 | 28 | 09:48 (3) | 16:10 | 8 | 09:51 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 16:43 (2) | 07:33 | | | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | | 20:34 | | 19:15 | 83 | 18:22 (1) | 17:02 | | | 16:11 | 27 | 09:48 (3) | 16:11 | 9 | 09:51 (3) |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | | | | | 09:01 | | 09:42 (3) |
| | 21:42 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 11 | 09:53 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 595 | | | 1848 | | | 734 | | | 295 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,89 | | | 0,87 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | 0,34 | | | 0,26 | | | 0,10 | | | 0,08 | |
| Total, real | | | | | | 203 | | | 479 | | | 72 | | | 25 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | | 07:27 | | 07:55 (5) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 32 | 10:29 (3) | 17:08 | | | 18:07 | 92 | 17:35 (1) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | | 07:24 | | 07:56 (5) | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 31 | 10:28 (3) | 17:10 | | | 18:09 | 93 | 17:37 (1) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | | 07:22 | | 07:55 (5) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 33 | 10:30 (3) | 17:12 | | | 18:12 | 95 | 17:37 (1) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | | 07:19 | | 07:57 (5) | 07:00 | | 05:48 | 04:59 |
| | 16:18 | 33 | 10:30 (3) | 17:15 | | | 18:14 | 92 | 17:38 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | | 07:17 | | 07:57 (5) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 33 | 10:31 (3) | 17:17 | | | 18:16 | 90 | 17:38 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | | 07:14 | | 07:59 (5) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 33 | 10:31 (3) | 17:19 | | | 18:18 | 85 | 17:38 (1) | 20:20 | | 21:18 | 22:09 |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | | 07:12 | | 08:02 (5) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 33 | 10:31 (3) | 17:21 | | | 18:20 | 76 | 17:38 (1) | 20:21 | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | | 07:09 | | 16:11 (2) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 34 | 10:32 (3) | 17:23 | | | 18:22 | 70 | 17:37 (1) | 20:23 | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | | 07:07 | | 16:13 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 33 | 10:32 (3) | 17:25 | | | 18:24 | 67 | 17:37 (1) | 20:25 | | 21:24 | 22:12 |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | | 07:04 | | 16:14 (2) | 06:45 | | 05:36 | 04:54 |
| | 16:26 | 34 | 10:34 (3) | 17:27 | | | 18:26 | 63 | 17:36 (1) | 20:27 | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 16:26 (2) | 07:02 | | 16:17 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 34 | 10:33 (3) | 17:29 | 14 | 16:40 (2) | 18:28 | 57 | 17:36 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 16:22 (2) | 06:59 | | 16:18 (2) | 06:40 | | 05:32 | 04:54 |
| | 16:29 | 34 | 10:34 (3) | 17:32 | 21 | 16:43 (2) | 18:30 | 52 | 17:35 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 16:20 (2) | 06:57 | | 16:21 (2) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 34 | 10:34 (3) | 17:34 | 26 | 16:46 (2) | 18:32 | 43 | 17:33 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 16:19 (2) | 06:54 | | 17:09 (1) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 34 | 10:35 (3) | 17:36 | 29 | 16:48 (2) | 18:34 | 24 | 17:33 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 16:16 (2) | 06:52 | | 17:10 (1) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 33 | 10:35 (3) | 17:38 | 33 | 16:49 (2) | 18:36 | 20 | 17:30 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 16:15 (2) | 06:49 | | 17:12 (1) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 33 | 10:35 (3) | 17:40 | 36 | 16:51 (2) | 18:38 | 17 | 17:29 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 16:14 (2) | 06:47 | | 17:15 (1) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 32 | 10:35 (3) | 17:42 | 39 | 16:53 (2) | 18:40 | 9 | 17:24 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 16:13 (2) | 06:44 | | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 32 | 10:36 (3) | 17:44 | 40 | 16:53 (2) | 18:42 | | | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 16:12 (2) | 06:41 | | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 31 | 10:35 (3) | 17:46 | 42 | 16:54 (2) | 18:44 | | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 16:12 (2) | 06:39 | | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 31 | 10:36 (3) | 17:49 | 43 | 16:55 (2) | 18:46 | | | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 16:10 (2) | 06:36 | | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 30 | 10:35 (3) | 17:51 | 45 | 16:55 (2) | 18:48 | | | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 16:10 (2) | 06:34 | | | 06:16 | | 05:15 | 04:52 |
| | 16:48 | 28 | 10:34 (3) | 17:53 | 46 | 16:56 (2) | 18:50 | | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 08:07 (5) | 06:31 | | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 28 | 10:35 (3) | 17:55 | 52 | 16:56 (2) | 18:52 | | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 08:05 (5) | 06:29 | | | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 26 | 10:34 (3) | 17:57 | 57 | 16:57 (2) | 18:54 | | | 20:55 | | 21:51 | 22:19 |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 08:02 (5) | 06:26 | | | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 24 | 10:33 (3) | 17:59 | 60 | 16:56 (2) | 18:56 | | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 08:00 (5) | 06:23 | | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 22 | 10:33 (3) | 18:01 | 76 | 17:30 (1) | 18:58 | | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 19 | 10:31 (3) | 18:03 | 84 | 17:32 (1) | 19:00 | | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 07:56 (5) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 15 | 10:29 (3) | 18:05 | 89 | 17:34 (1) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 10 | 10:27 (3) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | | | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 859 | | | 832 | | | 1045 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,56 | | | 0,85 | | | 0,89 | | | | | |
| Total reduction | | 0,09 | | | 0,20 | | | 0,29 | | | | | |
| Total, real | | 81 | | | 164 | | | 299 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 16:59 (2) | 07:37 | | | 08:35 | | 09:41 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 49 | 18:14 (1) | 16:58 | | | 16:10 | 34 | 10:15 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 16:56 (2) | 07:39 | | | 08:37 | | 09:42 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 55 | 18:14 (1) | 16:56 | | | 16:09 | 34 | 10:16 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 16:53 (2) | 07:41 | | | 08:38 | | 09:43 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 61 | 18:14 (1) | 16:54 | | | 16:08 | 33 | 10:16 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 16:51 (2) | 07:43 | | | 08:40 | | 09:44 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 65 | 18:14 (1) | 16:52 | | | 16:08 | 33 | 10:17 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 16:49 (2) | 07:45 | | | 08:41 | | 09:43 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 68 | 18:14 (1) | 16:50 | | | 16:07 | 34 | 10:17 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 16:48 (2) | 07:47 | | | 08:43 | | 09:44 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 71 | 18:14 (1) | 16:48 | | | 16:06 | 33 | 10:17 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:36 (5) | 07:49 | | | 08:44 | | 09:44 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 82 | 18:14 (1) | 16:46 | | | 16:06 | 33 | 10:17 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 08:33 (5) | 07:51 | | | 08:46 | | 09:45 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 87 | 18:13 (1) | 16:44 | | | 16:05 | 33 | 10:18 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 08:31 (5) | 07:53 | | | 08:47 | | 09:45 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 91 | 18:12 (1) | 16:42 | | | 16:05 | 33 | 10:18 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:30 (5) | 07:55 | | | 08:48 | | 09:47 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 94 | 18:12 (1) | 16:40 | | | 16:04 | 32 | 10:19 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:29 (5) | 07:57 | | | 08:50 | | 09:47 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 95 | 18:11 (1) | 16:38 | | | 16:04 | 32 | 10:19 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:29 (5) | 07:59 | | | 08:51 | | 09:47 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 94 | 18:09 (1) | 16:36 | | | 16:04 | 32 | 10:19 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:28 (5) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 92 | 18:08 (1) | 16:34 | 10 | 09:59 (3) | 16:04 | 31 | 10:19 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:28 (5) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 88 | 18:06 (1) | 16:33 | 15 | 10:01 (3) | 16:04 | 31 | 10:19 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:31 (5) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 81 | 18:04 (1) | 16:31 | 19 | 10:03 (3) | 16:04 | 30 | 10:19 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 08:33 (5) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 72 | 18:01 (1) | 16:29 | 22 | 10:06 (3) | 16:04 | 31 | 10:20 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 08:35 (5) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 58 | 17:28 (2) | 16:28 | 24 | 10:07 (3) | 16:04 | 30 | 10:20 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 08:37 (5) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 55 | 17:28 (2) | 16:26 | 26 | 10:08 (3) | 16:04 | 30 | 10:21 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 08:39 (5) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 49 | 17:27 (2) | 16:25 | 28 | 10:09 (3) | 16:04 | 30 | 10:22 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 16:41 (2) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 45 | 17:26 (2) | 16:23 | 28 | 10:09 (3) | 16:05 | 30 | 10:21 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 16:41 (2) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 44 | 17:25 (2) | 16:22 | 30 | 10:11 (3) | 16:05 | 30 | 10:22 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 16:42 (2) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 43 | 17:25 (2) | 16:20 | 31 | 10:12 (3) | 16:05 | 30 | 10:22 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 16:43 (2) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 41 | 17:24 (2) | 16:19 | 31 | 10:12 (3) | 16:06 | 30 | 10:23 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 16:43 (2) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 40 | 17:23 (2) | 16:18 | 32 | 10:13 (3) | 16:06 | 31 | 10:24 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 15:44 (2) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 38 | 16:22 (2) | 16:16 | 32 | 10:13 (3) | 16:07 | 30 | 10:24 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | 18:00 (1) | 07:24 | | 15:45 (2) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | | 20:44 | | 19:25 | 5 18:05 (1) | 17:11 | 35 | 16:20 (2) | 16:15 | 33 | 10:14 (3) | 16:08 | 30 | 10:25 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | 17:54 (1) | 07:26 | | 15:47 (2) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | | 20:42 | | 19:22 | 14 18:08 (1) | 17:09 | 32 | 16:19 (2) | 16:14 | 33 | 10:14 (3) | 16:09 | 31 | 10:26 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | 17:51 (1) | 07:28 | | 15:48 (2) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | | 20:39 | | 19:20 | 20 18:11 (1) | 17:07 | 29 | 16:17 (2) | 16:13 | 34 | 10:15 (3) | 16:10 | 30 | 10:26 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | 17:49 (1) | 07:31 | | 15:50 (2) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | | 20:37 | | 19:17 | 23 18:12 (1) | 17:04 | 25 | 16:15 (2) | 16:12 | 33 | 10:15 (3) | 16:10 | 31 | 10:27 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | 17:03 (2) | 07:33 | | 15:52 (2) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | | 20:34 | | 19:15 | 39 18:13 (1) | 17:02 | 20 | 16:12 (2) | 16:11 | 34 | 10:16 (3) | 16:11 | 32 | 10:27 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 15:56 (2) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | 12 | 16:08 (2) | | | | 16:12 | 31 | 10:27 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 101 | | 1811 | | | 495 | | | 975 | |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,92 | | 0,87 | | | 0,56 | | | 0,56 | |
| Total reduction | | | | | | 0,34 | | 0,25 | | | 0,08 | | | 0,07 | |
| Total, real | | | | | | 35 | | 456 | | | 41 | | | 69 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27<br>18:07 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:02 | 20:50 (2)<br>21:07 (2) 17 | 04:57<br>22:18 | 05:39 (5)<br>05:56 (5) | 05:40<br>21:40 | 21:02 (2)<br>21:07 (2) 5 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37<br>16:58 | 08:35<br>16:10 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 | 20:51 (2)<br>21:06 (2) 15 | 04:58<br>22:18 | 05:40 (5)<br>05:56 (5) | 05:41<br>21:38 | | 06:40<br>20:27 | 07:37<br>19:10 | 07:39<br>16:56 | 08:37<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:12 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 | 20:52 (2)<br>21:07 (2) 15 | 04:58<br>22:17 | 05:42 (5)<br>05:55 (5) | 05:43<br>21:36 | | 06:42<br>20:24 | 07:39<br>19:07 | 07:41<br>16:54 | 08:38<br>16:08 |
| 4 | 09:00<br>16:18 | 08:22<br>17:15 | 07:19<br>18:14 | 07:00<br>20:16 | 05:48<br>21:15 | 04:59<br>22:06 | 20:53 (2)<br>21:06 (2) 13 | 04:59<br>22:17 | 05:43 (5)<br>05:55 (5) | 05:45<br>21:34 | | 06:43<br>20:22 | 07:40<br>19:04 | 07:43<br>16:52 | 08:40<br>16:08 |
| 5 | 09:00<br>16:19 | 08:20<br>17:17 | 07:17<br>18:16 | 06:58<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 | 20:53 (2)<br>21:05 (2) 12 | 05:00<br>22:16 | 05:44 (5)<br>05:55 (5) | 05:47<br>21:32 | | 06:45<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:18 | 06:55<br>20:19 | 05:44<br>21:18 | 04:57<br>22:09 | 20:55 (2)<br>21:05 (2) 10 | 05:01<br>22:15 | 05:48 (5)<br>05:55 (5) | 05:49<br>21:30 | | 06:47<br>20:17 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 08:59<br>16:22 | 08:16<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 | 05:40 (5)<br>21:04 (2) 14 | 05:02<br>22:15 | 21:00 (2)<br>21:11 (2) 11 | 05:51<br>21:28 | | 06:49<br>20:14 | 07:46<br>18:57 | 07:49<br>16:46 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 | 05:37 (5)<br>21:02 (2) 15 | 05:03<br>22:14 | 20:59 (2)<br>21:12 (2) 13 | 05:52<br>21:26 | | 06:51<br>20:12 | 07:48<br>18:54 | 07:51<br>16:44 | 08:46<br>16:05 |
| 9 | 08:57<br>16:25 | 08:12<br>17:25 | 07:07<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 | 05:37 (5)<br>05:49 (5) 12 | 05:04<br>22:13 | 20:59 (2)<br>21:13 (2) 14 | 05:54<br>21:24 | | 06:53<br>20:09 | 07:50<br>18:52 | 07:53<br>16:42 | 08:47<br>16:05 |
| 10 | 08:57<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 | 05:35 (5)<br>05:50 (5) 15 | 05:06<br>22:12 | 20:58 (2)<br>21:13 (2) 15 | 05:56<br>21:21 | | 06:55<br>20:06 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 2 | 20:54 (2)<br>20:56 (2) 16 | 04:54<br>05:51 (5) | 05:35 (5)<br>22:11 | 05:07<br>20:59 (2)<br>21:15 (2) 16 | 05:58<br>21:19 | | 06:57<br>20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:29 | 08:06<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 6 | 07:05 (4)<br>07:11 (4) 21:30 6 | 20:51 (2)<br>20:57 (2) 17 | 04:54<br>05:52 (5) | 05:35 (5)<br>22:10 | 05:08<br>20:58 (2)<br>21:16 (2) 18 | 06:00<br>21:17 | | 06:59<br>20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:51<br>16:04 |
| 13 | 08:54<br>16:31 | 08:04<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 10 | 07:02 (4)<br>07:12 (4) 21:32 8 | 20:50 (2)<br>20:58 (2) 18 | 04:53<br>05:53 (5) | 05:35 (5)<br>22:09 | 05:09<br>20:58 (2)<br>21:16 (2) 18 | 06:02<br>21:15 | | 07:00<br>19:59 | 07:58<br>18:42 | 08:01<br>16:34 | 08:52<br>16:04 |
| 14 | 08:53<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 13 | 07:00 (4)<br>07:13 (4) 21:33 12 | 20:48 (2)<br>21:00 (2) 19 | 04:53<br>05:53 (5) | 05:34 (5)<br>22:08 | 05:11<br>20:57 (2)<br>21:16 (2) 19 | 06:04<br>21:13 | | 07:02<br>19:56 | 08:00<br>18:39 | 08:03<br>16:33 | 08:53<br>16:04 |
| 15 | 08:52<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 16 | 06:58 (4)<br>07:14 (4) 21:35 14 | 20:48 (2)<br>21:02 (2) 20 | 04:53<br>05:54 (5) | 05:34 (5)<br>22:07 | 05:12<br>20:57 (2)<br>21:16 (2) 19 | 06:06<br>21:10 | | 07:04<br>19:54 | 08:02<br>18:37 | 08:05<br>16:31 | 08:54<br>16:04 |
| 16 | 08:51<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 19 | 06:55 (4)<br>07:14 (4) 21:37 16 | 20:47 (2)<br>21:03 (2) 21 | 04:52<br>05:55 (5) | 05:34 (5)<br>22:05 | 05:13<br>20:57 (2)<br>21:18 (2) 21 | 06:07<br>21:08 | | 07:06<br>19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:55<br>16:04 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 20 | 06:54 (4)<br>07:14 (4) 21:39 18 | 20:47 (2)<br>21:05 (2) 22 | 04:52<br>05:55 (5) | 05:34 (5)<br>22:04 | 05:15<br>20:57 (2)<br>21:18 (2) 21 | 06:09<br>21:06 | | 07:08<br>19:48 | 08:06<br>18:32 | 08:09<br>16:28 | 08:56<br>16:04 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 21 | 06:53 (4)<br>07:14 (4) 21:41 20 | 20:47 (2)<br>21:07 (2) 22 | 04:52<br>05:55 (5) | 05:34 (5)<br>22:03 | 05:16<br>20:56 (2)<br>21:18 (2) 22 | 06:11<br>21:03 | 07:04 (4)<br>07:12 (4) 8 | 07:10<br>19:46 | 08:08<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:48<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 21 | 06:53 (4)<br>07:14 (4) 21:42 22 | 20:47 (2)<br>21:09 (2) 22 | 04:52<br>05:56 (5) | 05:34 (5)<br>22:02 | 05:18<br>20:57 (2)<br>21:19 (2) 22 | 06:13<br>21:01 | 07:02 (4)<br>07:15 (4) 13 | 07:12<br>19:43 | 08:10<br>18:27 | 08:13<br>16:25 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 19 | 06:54 (4)<br>07:13 (4) 21:44 22 | 20:46 (2)<br>21:08 (2) 22 | 04:52<br>05:56 (5) | 05:34 (5)<br>22:00 | 05:19<br>20:56 (2)<br>21:18 (2) 22 | 06:15<br>20:59 | 07:01 (4)<br>07:16 (4) 15 | 07:14<br>19:41 | 08:12<br>18:25 | 08:15<br>16:23 | 08:58<br>16:05 |
| 21 | 08:45<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 19 | 06:54 (4)<br>07:13 (4) 21:46 22 | 20:47 (2)<br>21:09 (2) 22 | 04:52<br>05:56 (5) | 05:34 (5)<br>21:59 | 05:21<br>20:57 (2)<br>21:19 (2) 22 | 06:17<br>20:56 | 07:00 (4)<br>07:17 (4) 17 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17<br>16:22 | 08:58<br>16:05 |
| 22 | 08:44<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 17 | 06:54 (4)<br>07:11 (4) 21:47 22 | 20:46 (2)<br>21:08 (2) 22 | 04:52<br>05:57 (5) | 05:35 (5)<br>21:57 | 05:23<br>20:56 (2)<br>21:19 (2) 23 | 06:19<br>20:54 | 06:58 (4)<br>07:17 (4) 19 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 15 | 06:55 (4)<br>07:10 (4) 21:49 23 | 20:46 (2)<br>21:09 (2) 22 | 04:53<br>05:57 (5) | 05:35 (5)<br>21:56 | 05:24<br>20:57 (2)<br>21:19 (2) 22 | 06:21<br>20:52 | 06:57 (4)<br>07:17 (4) 20 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:52 | 07:39<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 12 | 06:57 (4)<br>07:09 (4) 21:51 22 | 20:47 (2)<br>21:09 (2) 22 | 04:53<br>05:57 (5) | 05:35 (5)<br>21:54 | 05:26<br>20:57 (2)<br>21:19 (2) 22 | 06:23<br>20:49 | 06:57 (4)<br>07:17 (4) 20 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23<br>16:18 | 09:00<br>16:06 |
| 25 | 08:39<br>16:54 | 07:36<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 7 | 06:59 (4)<br>07:06 (4) 21:52 22 | 20:47 (2)<br>21:09 (2) 21 | 04:53<br>05:57 (5) | 05:36 (5)<br>21:52 | 05:27<br>20:57 (2)<br>21:18 (2) 21 | 06:25<br>20:47 | 06:57 (4)<br>07:17 (4) 20 | 07:23<br>19:28 | 08:22<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 08:38<br>16:56 | 07:34<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 21 | 20:47 (2)<br>21:08 (2) 21 | 04:54<br>05:57 (5) | 05:36 (5)<br>21:51 | 05:29<br>20:57 (2)<br>21:16 (2) 19 | 06:26<br>20:44 | 06:57 (4)<br>07:17 (4) 20 | 07:25<br>19:25 | 08:24<br>17:11 | 08:26<br>16:15 | 09:01<br>16:08 |
| 27 | 08:36<br>16:58 | 07:32<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 21 | 20:47 (2)<br>21:08 (2) 20 | 04:54<br>05:57 (5) | 05:37 (5)<br>21:49 | 05:31<br>20:58 (2)<br>21:15 (2) 17 | 06:28<br>20:42 | 06:57 (4)<br>07:16 (4) 19 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 08:35<br>17:00 | 07:29<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 20 | 20:48 (2)<br>21:08 (2) 20 | 04:55<br>05:57 (5) | 05:37 (5)<br>21:47 | 05:33<br>20:58 (2)<br>21:13 (2) 15 | 06:30<br>20:39 | 06:59 (4)<br>07:15 (4) 16 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:10 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 20 | 20:48 (2)<br>21:08 (2) 19 | 04:55<br>05:57 (5) | 05:38 (5)<br>21:45 | 05:34<br>20:59 (2)<br>21:12 (2) 13 | 06:32<br>20:37 | 07:01 (4)<br>07:14 (4) 13 | 07:31<br>19:17 | 07:30<br>17:04 | 08:32<br>16:12 | 09:01<br>16:10 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 19 | 20:49 (2)<br>21:08 (2) 18 | 04:56<br>05:56 (5) | 05:38 (5)<br>21:44 | 05:36<br>21:00 (2)<br>21:10 (2) 10 | 06:34<br>20:34 | 07:03 (4)<br>07:13 (4) 10 | 07:33<br>19:15 | 07:33<br>17:02 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 18 | 20:49 (2)<br>21:07 (2) | | 05:38<br>21:42 8 | 21:00 (2)<br>21:08 (2) | 06:36<br>20:32 | 07:05 (4)<br>07:11 (4) 6 | | 07:35<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | | 521 | 465 | | 383 | 326 | 253 | 224 | |
| Total, worst case | | | | 215 | 370 | | 542 | 529 | | 221 | | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,48 | 0,49 | | 0,51 | | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | 1,00 | | | | | |
| Wind dir. red. | | | | 0,98 | 0,88 | | 0,81 | 0,87 | | 0,97 | | | | | |
| Total reduction | | | | 0,38 | 0,45 | | 0,39 | 0,42 | | 0,50 | | | | | |
| Total, real | | | | 83 | 168 | | 212 | 223 | | 111 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 19:03 (3) | 05:55 | 07:21 (4) | 05:02 | 04:57 | 05:40 | 07:46 (4) | 06:38 | 07:27 (4) | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 28 | 19:31 (3) | 21:09 44 | 08:05 (4) | 22:02 | 22:18 | 21:40 12 | 07:58 (4) | 20:29 39 | 08:06 (4) | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:03 (3) | 05:53 | 07:22 (4) | 05:01 | 04:57 | 05:41 | 07:42 (4) | 06:40 | 07:28 (4) | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 29 | 19:32 (3) | 21:11 42 | 08:04 (4) | 22:04 | 22:18 | 21:38 18 | 08:00 (4) | 20:27 43 | 19:16 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:03 (3) | 05:51 | 07:22 (4) | 05:00 | 04:58 | 05:43 | 07:40 (4) | 06:42 | 07:29 (4) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 28 | 19:31 (3) | 21:13 41 | 08:03 (4) | 22:05 | 22:17 | 21:36 23 | 08:03 (4) | 20:24 48 | 19:20 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:04 (3) | 05:48 | 07:23 (4) | 04:59 | 04:59 | 05:45 | 07:38 (4) | 06:43 | 07:31 (4) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 26 | 19:30 (3) | 21:14 39 | 08:02 (4) | 22:06 | 22:17 | 21:34 27 | 08:05 (4) | 20:22 48 | 19:22 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45 (4) | 05:46 | 07:24 (4) | 04:58 | 05:00 | 05:47 | 07:37 (4) | 06:45 | 07:33 (4) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 35 | 19:29 (3) | 21:16 37 | 08:01 (4) | 22:07 | 22:16 | 21:32 30 | 08:07 (4) | 20:19 47 | 19:23 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40 (4) | 05:44 | 07:25 (4) | 04:57 | 05:01 | 05:49 | 07:35 (4) | 06:47 | 07:35 (4) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 42 | 19:28 (3) | 21:18 34 | 07:59 (4) | 22:08 | 22:15 | 21:30 33 | 08:08 (4) | 20:17 42 | 19:23 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36 (4) | 05:42 | 07:26 (4) | 04:56 | 05:02 | 05:51 | 07:34 (4) | 06:49 | 07:40 (4) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 46 | 19:26 (3) | 21:20 32 | 07:58 (4) | 22:10 | 22:15 | 21:28 35 | 08:09 (4) | 20:14 34 | 19:24 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34 (4) | 05:40 | 07:27 (4) | 04:56 | 05:03 | 05:52 | 07:33 (4) | 06:51 | 18:58 (3) | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 48 | 19:25 (3) | 21:22 29 | 07:56 (4) | 22:11 | 22:14 | 21:26 38 | 08:11 (4) | 20:12 26 | 19:24 (3) | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 07:31 (4) | 05:38 | 07:28 (4) | 04:55 | 05:04 | 05:54 | 07:31 (4) | 06:53 | 18:57 (3) | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 48 | 19:22 (3) | 21:24 26 | 07:54 (4) | 22:12 | 22:13 | 21:24 40 | 08:11 (4) | 20:09 28 | 19:25 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30 (4) | 05:36 | 07:30 (4) | 04:54 | 05:06 | 05:56 | 07:30 (4) | 06:55 | 18:57 (3) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 42 | 19:18 (3) | 21:26 22 | 07:52 (4) | 22:12 | 22:12 | 21:21 42 | 08:12 (4) | 20:06 28 | 19:25 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 07:28 (4) | 05:34 | 07:32 (4) | 04:54 | 05:07 | 05:58 | 07:30 (4) | 06:57 | 18:55 (3) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 39 | 08:07 (4) | 21:28 17 | 07:49 (4) | 22:13 | 22:11 | 21:19 43 | 08:13 (4) | 20:04 29 | 19:24 (3) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (4) | 05:32 | 07:37 (4) | 04:53 | 05:08 | 06:00 | 07:29 (4) | 06:59 | 18:55 (3) | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 41 | 08:08 (4) | 21:30 8 | 07:45 (4) | 22:14 | 22:10 | 21:17 45 | 08:14 (4) | 20:01 28 | 19:23 (3) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 07:25 (4) | 05:30 | | 04:53 | 05:09 | 06:02 | 07:28 (4) | 07:00 | 18:55 (3) | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 43 | 08:08 (4) | 21:32 | | 22:15 | 22:09 | 21:15 45 | 08:13 (4) | 19:59 28 | 19:23 (3) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 07:24 (4) | 05:28 | | 04:53 | 05:11 | 06:04 | 07:27 (4) | 07:02 | 18:55 (3) | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 45 | 08:09 (4) | 21:33 | | 22:16 | 22:08 | 21:13 47 | 08:14 (4) | 19:56 27 | 19:22 (3) | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 07:24 (4) | 05:27 | | 04:52 | 05:12 | 06:06 | 07:27 (4) | 07:04 | 18:56 (3) | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 46 | 08:10 (4) | 21:35 | | 22:16 | 22:07 | 21:10 48 | 08:15 (4) | 19:53 26 | 19:22 (3) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:22 (4) | 05:25 | | 04:52 | 05:13 | 06:07 | 07:27 (4) | 07:06 | 18:56 (3) | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 48 | 08:10 (4) | 21:37 | | 22:17 | 22:05 | 21:08 48 | 08:15 (4) | 19:51 25 | 19:21 (3) | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 07:22 (4) | 05:23 | | 04:52 | 05:15 | 06:09 | 07:25 (4) | 07:08 | 18:57 (3) | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 48 | 08:10 (4) | 21:39 | | 22:17 | 22:04 | 21:06 50 | 08:15 (4) | 19:48 22 | 19:19 (3) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 07:21 (4) | 05:21 | | 04:52 | 05:16 | 06:11 | 07:25 (4) | 07:10 | 18:57 (3) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 49 | 08:10 (4) | 21:41 | | 22:18 | 22:03 | 21:03 50 | 08:15 (4) | 19:46 19 | 19:16 (3) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 07:20 (4) | 05:20 | | 04:52 | 05:18 | 06:13 | 07:25 (4) | 07:12 | 18:59 (3) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 50 | 08:10 (4) | 21:42 | | 22:18 | 22:01 | 21:01 50 | 08:15 (4) | 19:43 15 | 19:14 (3) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:20 (4) | 05:18 | | 04:52 | 05:19 | 06:15 | 07:25 (4) | 07:14 | 19:02 (3) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 51 | 08:11 (4) | 21:44 | | 22:19 | 22:00 | 20:59 50 | 08:15 (4) | 19:41 9 | 19:11 (3) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:19 (4) | 05:16 | | 04:52 | 05:21 | 06:17 | 07:25 (4) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 51 | 08:10 (4) | 21:46 | | 22:19 | 21:59 | 20:56 50 | 08:15 (4) | 19:38 | | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 07:19 (4) | 05:15 | | 04:52 | 05:22 | 06:19 | 07:24 (4) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 51 | 08:10 (4) | 21:47 | | 22:19 | 21:57 | 20:54 50 | 08:14 (4) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:17 (3) | 06:13 | 07:19 (4) | 05:13 | | 04:53 | 05:24 | 06:21 | 07:24 (4) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 6 18:23 (3) | 20:53 51 | 08:10 (4) | 21:49 | | 22:19 | 21:56 | 20:52 50 | 08:14 (4) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 18:13 (3) | 06:11 | 07:19 (4) | 05:12 | | 04:53 | 05:26 | 06:23 | 07:24 (4) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 14 18:27 (3) | 20:55 51 | 08:10 (4) | 21:51 | | 22:19 | 21:54 | 20:49 50 | 08:14 (4) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:10 (3) | 06:09 | 07:19 (4) | 05:10 | | 04:53 | 05:27 | 06:24 | 07:24 (4) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 18 18:28 (3) | 20:57 49 | 08:08 (4) | 21:52 | | 22:19 | 21:52 | 20:47 50 | 08:14 (4) | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 18:09 (3) | 06:06 | 07:19 (4) | 05:09 | | 04:54 | 05:29 | 06:26 | 07:25 (4) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 22 18:31 (3) | 20:59 49 | 08:08 (4) | 21:54 | | 22:19 | 21:51 | 20:44 48 | 08:13 (4) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 18:07 (3) | 06:04 | 07:19 (4) | 05:08 | | 04:54 | 05:31 | 06:28 | 07:24 (4) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 24 18:31 (3) | 21:01 49 | 08:08 (4) | 21:55 | | 22:19 | 21:49 | 20:42 48 | 08:12 (4) | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 18:05 (3) | 06:02 | 07:20 (4) | 05:06 | | 04:55 | 05:33 | 06:30 | 07:25 (4) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 26 18:31 (3) | 21:03 47 | 08:07 (4) | 21:57 | | 22:19 | 21:47 | 20:39 46 | 08:11 (4) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 19:05 (3) | 05:59 | 07:20 (4) | 05:05 | | 04:55 | 05:34 | 06:32 | 07:25 (4) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 27 19:32 (3) | 21:05 47 | 08:07 (4) | 21:58 | | 22:19 | 21:45 | 20:37 45 | 08:10 (4) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 19:04 (3) | 05:57 | 07:20 (4) | 05:04 | | 04:56 | 05:36 | 06:34 | 07:26 (4) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 28 19:32 (3) | 21:07 46 | 08:06 (4) | 22:00 | | 22:18 | 21:44 | 20:34 43 | 08:09 (4) | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 19:04 (3) | | | 05:03 | | | 05:38 | 06:36 | 07:27 (4) | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 28 19:32 (3) | | | 22:01 | | | 21:42 | 20:32 41 | 08:08 (4) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 193 | 1323 | 371 | | | 1295 | 611 | | | |
| Sun reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | |
| Total reduction | | | 0,34 | 0,39 | 0,51 | | | 0,51 | 0,40 | | | |
| Total, real | | | 66 | 519 | 191 | | | 664 | 242 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 19:25 (3) | 05:55 06:52 (4) | 05:02 06:35 (4) |
| | 16:14 | 17:08 | 18:07 | 20:10 17 | 19:42 (3) | 21:09 32 07:24 (4) | 22:02 65 07:40 (4) |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:24 (3) | 05:53 06:50 (4) | 05:01 06:35 (4) |
| | 16:15 | 17:10 | 18:09 | 20:12 20 | 19:44 (3) | 21:11 36 07:26 (4) | 22:04 65 07:40 (4) |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:22 (3) | 05:51 06:48 (4) | 05:00 06:36 (4) |
| | 16:16 | 17:12 | 18:11 | 20:13 24 | 19:46 (3) | 21:13 40 07:28 (4) | 22:05 65 07:41 (4) |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:22 (3) | 05:48 06:46 (4) | 04:59 06:36 (4) |
| | 16:17 | 17:14 | 18:14 | 20:15 24 | 19:46 (3) | 21:14 43 07:29 (4) | 22:06 65 07:41 (4) |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 19:21 (3) | 05:46 06:45 (4) | 04:58 06:36 (4) |
| | 16:19 | 17:17 | 18:16 | 20:17 25 | 19:46 (3) | 21:16 45 07:30 (4) | 22:07 65 07:41 (4) |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 19:21 (3) | 05:44 06:43 (4) | 04:57 06:35 (4) |
| | 16:20 | 17:19 | 18:18 | 20:19 25 | 19:46 (3) | 21:18 48 07:31 (4) | 22:08 65 07:40 (4) |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 19:20 (3) | 05:42 06:42 (4) | 04:56 06:36 (4) |
| | 16:22 | 17:21 | 18:20 | 20:21 25 | 19:45 (3) | 21:20 50 07:32 (4) | 22:10 65 07:41 (4) |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 19:21 (3) | 05:40 06:41 (4) | 04:56 06:36 (4) |
| | 16:23 | 17:23 | 18:22 | 20:23 24 | 19:45 (3) | 21:22 52 07:33 (4) | 22:11 65 07:41 (4) |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 19:20 (3) | 05:38 06:40 (4) | 04:55 06:37 (4) |
| | 16:25 | 17:25 | 18:24 | 20:25 24 | 19:44 (3) | 21:24 54 07:34 (4) | 22:12 64 07:41 (4) |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 19:21 (3) | 05:36 06:39 (4) | 04:54 06:36 (4) |
| | 16:26 | 17:27 | 18:26 | 20:27 23 | 19:44 (3) | 21:26 55 07:34 (4) | 22:12 65 07:41 (4) |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 19:21 (3) | 05:34 06:38 (4) | 04:54 06:37 (4) |
| | 16:28 | 17:29 | 18:28 | 20:29 21 | 19:42 (3) | 21:28 57 07:35 (4) | 22:13 64 07:41 (4) |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 19:23 (3) | 05:32 06:38 (4) | 04:53 06:38 (4) |
| | 16:29 | 17:31 | 18:30 | 20:31 18 | 19:41 (3) | 21:30 58 07:36 (4) | 22:14 64 07:42 (4) |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 19:24 (3) | 05:30 06:37 (4) | 04:53 06:37 (4) |
| | 16:31 | 17:34 | 18:32 | 20:33 14 | 19:38 (3) | 21:32 59 07:36 (4) | 22:15 64 07:41 (4) |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 19:26 (3) | 05:28 06:36 (4) | 04:53 06:38 (4) |
| | 16:33 | 17:36 | 18:34 | 20:35 10 | 19:36 (3) | 21:33 60 07:36 (4) | 22:16 64 07:42 (4) |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 05:27 06:37 (4) | 04:52 06:38 (4) |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 60 07:37 (4) | 22:16 64 07:42 (4) |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 06:36 (4) | 04:52 06:38 (4) |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 61 07:37 (4) | 22:17 64 07:42 (4) |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 05:23 06:36 (4) | 04:52 06:39 (4) |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 62 07:38 (4) | 22:17 63 07:42 (4) |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:21 06:35 (4) | 04:52 06:39 (4) |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:41 63 07:38 (4) | 22:18 64 07:43 (4) |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 06:35 (4) | 04:52 06:39 (4) |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 64 07:39 (4) | 22:18 64 07:43 (4) |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 05:18 06:35 (4) | 04:52 06:39 (4) |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 64 07:39 (4) | 22:19 64 07:43 (4) |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:16 06:35 (4) | 04:52 06:39 (4) |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 64 07:39 (4) | 22:19 64 07:43 (4) |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 05:15 06:34 (4) | 04:52 06:40 (4) |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 65 07:39 (4) | 22:19 64 07:44 (4) |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 05:13 06:34 (4) | 04:53 06:40 (4) |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 65 07:39 (4) | 22:19 64 07:44 (4) |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | 05:12 06:35 (4) | 04:53 06:40 (4) |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 65 07:40 (4) | 22:19 64 07:44 (4) |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | 05:10 06:34 (4) | 04:53 06:41 (4) |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 65 07:39 (4) | 22:19 63 07:44 (4) |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 06:34 (4) | 04:54 06:40 (4) |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 65 07:39 (4) | 22:19 64 07:44 (4) |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | 05:08 06:34 (4) | 04:54 06:41 (4) |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 66 07:40 (4) | 22:19 64 07:45 (4) |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 07:03 (4) | 05:06 06:34 (4) | 04:55 06:41 (4) |
| | 17:00 | 18:05 | 19:02 | 21:03 10 | 07:13 (4) | 21:57 66 07:40 (4) | 22:19 64 07:45 (4) |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58 (4) | 05:05 06:35 (4) | 04:55 06:41 (4) |
| | 17:02 | | 20:04 | 21:05 21 | 07:19 (4) | 21:58 65 07:40 (4) | 22:19 64 07:45 (4) |
| 30 | 08:31 | | 07:13 19:29 (3) | 05:57 | 06:54 (4) | 05:04 06:35 (4) | 04:56 06:41 (4) |
| | 17:04 | | 20:06 9 19:38 (3) | 21:07 28 | 07:22 (4) | 22:00 65 07:40 (4) | 22:18 64 07:45 (4) |
| 31 | 08:29 | | 07:10 19:27 (3) | | | 05:03 06:35 (4) | |
| | 17:06 | | 20:08 13 19:40 (3) | | | 22:01 65 07:40 (4) | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 |
| Total, worst case | | | 22 | 353 | | 1779 | 1927 |
| Sun reduction | | | 0,34 | 0,39 | | 0,52 | 0,48 |
| Oper. time red. | | | 1,00 | 1,00 | | 1,00 | 1,00 |
| Wind dir. red. | | | 1,00 | 0,99 | | 0,95 | 0,95 |
| Total reduction | | | 0,34 | 0,39 | | 0,49 | 0,46 |
| Total, real | | | 8 | 138 | | 876 | 887 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:41 (4) | 05:40 | | 06:49 (4) | 06:38 | | 19:20 (3) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 65 | 07:46 (4) | 21:40 | 57 | 07:46 (4) | 20:29 | 21 | 19:41 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 06:42 (4) | 05:41 | | 06:49 (4) | 06:40 | | 19:19 (3) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 64 | 07:46 (4) | 21:38 | 56 | 07:45 (4) | 20:27 | 23 | 19:42 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 06:42 (4) | 05:43 | | 06:50 (4) | 06:42 | | 19:18 (3) | 07:38 | 07:41 | 08:38 |
| | 22:17 | 65 | 07:47 (4) | 21:36 | 54 | 07:44 (4) | 20:24 | 24 | 19:42 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 06:41 (4) | 05:45 | | 06:51 (4) | 06:43 | | 19:18 (3) | 07:40 | 07:43 | 08:40 |
| | 22:17 | 65 | 07:46 (4) | 21:34 | 53 | 07:44 (4) | 20:22 | 24 | 19:42 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 06:42 (4) | 05:47 | | 06:52 (4) | 06:45 | | 19:17 (3) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 64 | 07:46 (4) | 21:32 | 51 | 07:43 (4) | 20:19 | 25 | 19:42 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 06:42 (4) | 05:49 | | 06:52 (4) | 06:47 | | 19:16 (3) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 65 | 07:47 (4) | 21:30 | 49 | 07:41 (4) | 20:17 | 25 | 19:41 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 06:42 (4) | 05:51 | | 06:53 (4) | 06:49 | | 19:16 (3) | 07:46 | 07:49 | 08:44 |
| | 22:15 | 65 | 07:47 (4) | 21:28 | 47 | 07:40 (4) | 20:14 | 25 | 19:41 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 06:42 (4) | 05:52 | | 06:55 (4) | 06:51 | | 19:16 (3) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 65 | 07:47 (4) | 21:26 | 44 | 07:39 (4) | 20:12 | 25 | 19:41 (3) | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 06:42 (4) | 05:54 | | 06:55 (4) | 06:53 | | 19:17 (3) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 65 | 07:47 (4) | 21:24 | 42 | 07:37 (4) | 20:09 | 23 | 19:40 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 06:42 (4) | 05:56 | | 06:57 (4) | 06:55 | | 19:17 (3) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 66 | 07:48 (4) | 21:21 | 39 | 07:36 (4) | 20:06 | 21 | 19:38 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 06:43 (4) | 05:58 | | 06:59 (4) | 06:57 | | 19:17 (3) | 07:54 | 07:57 | 08:49 |
| | 22:11 | 66 | 07:49 (4) | 21:19 | 35 | 07:34 (4) | 20:04 | 17 | 19:34 (3) | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:43 (4) | 06:00 | | 07:01 (4) | 06:59 | | 19:18 (3) | 07:56 | 07:59 | 08:51 |
| | 22:10 | 66 | 07:49 (4) | 21:17 | 31 | 07:32 (4) | 20:01 | 14 | 19:32 (3) | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:43 (4) | 06:02 | | 07:03 (4) | 07:00 | | 19:20 (3) | 07:58 | 08:01 | 08:52 |
| | 22:09 | 66 | 07:49 (4) | 21:15 | 26 | 07:29 (4) | 19:59 | 9 | 19:29 (3) | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:43 (4) | 06:04 | | 07:06 (4) | 07:02 | | 19:24 (3) | 08:00 | 08:03 | 08:53 |
| | 22:08 | 66 | 07:49 (4) | 21:13 | 19 | 07:25 (4) | 19:56 | 3 | 19:27 (3) | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 06:43 (4) | 06:06 | | 07:13 (4) | 07:04 | | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 66 | 07:49 (4) | 21:10 | 5 | 07:18 (4) | 19:53 | | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | | 06:44 (4) | 06:07 | | | 07:06 | | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 65 | 07:49 (4) | 21:08 | | | 19:51 | | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:44 (4) | 06:09 | | | 07:08 | | | 08:06 | 08:09 | 08:55 |
| | 22:04 | 65 | 07:49 (4) | 21:06 | | | 19:48 | | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | | 06:43 (4) | 06:11 | | | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 22:03 | 66 | 07:49 (4) | 21:03 | | | 19:46 | | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:44 (4) | 06:13 | | | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 22:01 | 65 | 07:49 (4) | 21:01 | | | 19:43 | | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:44 (4) | 06:15 | | | 07:14 | | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 65 | 07:49 (4) | 20:59 | | | 19:41 | | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:45 (4) | 06:17 | | | 07:15 | | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 65 | 07:50 (4) | 20:56 | | | 19:38 | | | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | | 06:45 (4) | 06:19 | | | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 64 | 07:49 (4) | 20:54 | | | 19:35 | | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:45 (4) | 06:21 | | | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 21:56 | 64 | 07:49 (4) | 20:52 | | | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:45 (4) | 06:23 | | | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 64 | 07:49 (4) | 20:49 | | | 19:30 | | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:46 (4) | 06:24 | | | 07:23 | | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 63 | 07:49 (4) | 20:47 | | | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:46 (4) | 06:26 | | | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 62 | 07:48 (4) | 20:44 | | | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | 06:47 (4) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 61 | 07:48 (4) | 20:42 | | | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | 06:46 (4) | 06:30 | | | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 62 | 07:48 (4) | 20:39 | | | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | | 06:47 (4) | 06:32 | | 19:27 (3) | 07:31 | | | 07:30 | 08:32 | 09:01 |
| | 21:45 | 61 | 07:48 (4) | 20:37 | 10 | 19:37 (3) | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | | 06:48 (4) | 06:34 | | 19:24 (3) | 07:33 | | | 07:32 | 08:33 | 09:01 |
| | 21:44 | 59 | 07:47 (4) | 20:34 | 15 | 19:39 (3) | 19:15 | | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | | 06:48 (4) | 06:36 | | 19:23 (3) | | | | 07:35 | | 09:01 |
| | 21:42 | 58 | 07:46 (4) | 20:32 | 18 | 19:41 (3) | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | 1988 | | | 651 | | | 279 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,95 | | | 0,96 | | | 1,00 | | | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,40 | | | | |
| Total, real | | 920 | | | 321 | | | 110 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | | 05:59 (4) |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | | 22:02 | 38 | 06:37 (4) |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | | 05:01 | | 05:58 (4) |
| | 16:15 | 17:10 | 18:09 | 20:12 | | 21:11 | | 22:04 | 39 | 06:37 (4) |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | | 05:00 | | 05:58 (4) |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | 41 | 06:39 (4) |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | | 04:59 | | 05:58 (4) |
| | 16:17 | 17:14 | 18:14 | 20:15 | | 21:14 | | 22:06 | 41 | 06:39 (4) |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 05:46 | | 04:58 | | 05:57 (4) |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | 43 | 06:40 (4) |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | | 04:57 | | 05:57 (4) |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | 43 | 06:40 (4) |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 05:42 | | 04:56 | | 05:57 (4) |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | 44 | 06:41 (4) |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | | 04:56 | | 05:56 (4) |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | 45 | 06:41 (4) |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 19:50 (3) | 05:38 | | 04:55 | | 05:57 (4) |
| | 16:25 | 17:25 | 18:24 | 20:25 | 7 19:57 (3) | 21:24 | | 22:12 | 45 | 06:42 (4) |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 19:48 (3) | 05:36 | | 04:54 | | 05:56 (4) |
| | 16:26 | 17:27 | 18:26 | 20:27 | 11 19:59 (3) | 21:26 | | 22:12 | 46 | 06:42 (4) |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 19:45 (3) | 05:34 | | 04:54 | | 05:56 (4) |
| | 16:28 | 17:29 | 18:28 | 20:29 | 16 20:01 (3) | 21:28 | | 22:13 | 47 | 06:43 (4) |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 19:44 (3) | 05:32 | | 04:53 | | 05:57 (4) |
| | 16:29 | 17:32 | 18:30 | 20:31 | 19 20:03 (3) | 21:30 | | 22:14 | 47 | 06:44 (4) |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 19:42 (3) | 05:30 | | 04:53 | | 05:56 (4) |
| | 16:31 | 17:34 | 18:32 | 20:33 | 22 20:04 (3) | 21:32 | | 22:15 | 47 | 06:43 (4) |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 19:42 (3) | 05:28 | | 04:53 | | 05:56 (4) |
| | 16:33 | 17:36 | 18:34 | 20:35 | 24 20:06 (3) | 21:33 | | 22:16 | 48 | 06:44 (4) |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 19:41 (3) | 05:27 | | 04:52 | | 05:56 (4) |
| | 16:35 | 17:38 | 18:36 | 20:37 | 25 20:06 (3) | 21:35 | | 22:16 | 48 | 06:44 (4) |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 19:40 (3) | 05:25 | | 04:52 | | 05:57 (4) |
| | 16:36 | 17:40 | 18:38 | 20:39 | 26 20:06 (3) | 21:37 | | 22:17 | 48 | 06:45 (4) |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 19:40 (3) | 05:23 | | 04:52 | | 05:57 (4) |
| | 16:38 | 17:42 | 18:40 | 20:41 | 26 20:06 (3) | 21:39 | | 22:17 | 48 | 06:45 (4) |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 19:39 (3) | 05:21 | | 04:52 | | 05:57 (4) |
| | 16:40 | 17:44 | 18:42 | 20:43 | 26 20:05 (3) | 21:41 | | 22:18 | 48 | 06:45 (4) |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 19:40 (3) | 05:20 | | 04:52 | | 05:57 (4) |
| | 16:42 | 17:46 | 18:44 | 20:45 | 25 20:05 (3) | 21:42 | | 22:18 | 49 | 06:46 (4) |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 19:40 (3) | 05:18 | | 04:52 | | 05:57 (4) |
| | 16:44 | 17:49 | 18:46 | 20:47 | 25 20:05 (3) | 21:44 | | 22:19 | 49 | 06:46 (4) |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 19:40 (3) | 05:16 | | 04:52 | | 05:57 (4) |
| | 16:46 | 17:51 | 18:48 | 20:49 | 23 20:03 (3) | 21:46 | | 22:19 | 49 | 06:46 (4) |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 19:41 (3) | 05:15 | | 04:52 | | 05:58 (4) |
| | 16:48 | 17:53 | 18:50 | 20:51 | 22 20:03 (3) | 21:47 | | 22:19 | 49 | 06:47 (4) |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 19:42 (3) | 05:13 | 06:11 (4) | 04:53 | | 05:58 (4) |
| | 16:50 | 17:55 | 18:52 | 20:53 | 20 20:02 (3) | 21:49 | 12 06:23 (4) | 22:19 | 49 | 06:47 (4) |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 19:43 (3) | 05:12 | 06:08 (4) | 04:53 | | 05:58 (4) |
| | 16:52 | 17:57 | 18:54 | 20:55 | 18 20:01 (3) | 21:51 | 18 06:26 (4) | 22:19 | 48 | 06:46 (4) |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 19:44 (3) | 05:10 | 06:05 (4) | 04:53 | | 05:59 (4) |
| | 16:54 | 17:59 | 18:56 | 20:57 | 14 19:58 (3) | 21:52 | 23 06:28 (4) | 22:19 | 48 | 06:47 (4) |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 19:46 (3) | 05:09 | 06:04 (4) | 04:54 | | 05:59 (4) |
| | 16:56 | 18:01 | 18:58 | 20:59 | 9 19:55 (3) | 21:54 | 26 06:30 (4) | 22:19 | 48 | 06:47 (4) |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | 05:08 | 06:03 (4) | 04:54 | | 05:59 (4) |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 28 06:31 (4) | 22:19 | 49 | 06:48 (4) |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 05:06 | 06:02 (4) | 04:55 | | 05:59 (4) |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 31 06:33 (4) | 22:19 | 48 | 06:47 (4) |
| 29 | 08:33 | | 07:16 | 05:59 | | 05:05 | 06:01 (4) | 04:55 | | 06:00 (4) |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 33 06:34 (4) | 22:19 | 48 | 06:48 (4) |
| 30 | 08:31 | | 07:13 | 05:57 | | 05:04 | 06:00 (4) | 04:56 | | 06:00 (4) |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 35 06:35 (4) | 22:18 | 47 | 06:47 (4) |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:59 (4) | | | |
| | 17:06 | | 20:08 | | | 22:01 | 37 06:36 (4) | | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | | |
| Total, worst case | | | | | 358 | | 243 | | 1387 | |
| Sun reduction | | | | | 0,39 | | 0,52 | | 0,48 | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | | 0,99 | | 0,86 | | 0,86 | |
| Total reduction | | | | | 0,39 | | 0,45 | | 0,42 | |
| Total, real | | | | | 139 | | 109 | | 579 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:01 (4) | 05:40 | | 06:38 | | 19:44 (3) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 46 | 06:47 (4) | 21:40 | | 20:29 | 16 | 20:00 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | | 06:01 (4) | 05:41 | | 06:40 | | 19:46 (3) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 46 | 06:47 (4) | 21:38 | | 20:27 | 11 | 19:57 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 06:02 (4) | 05:43 | | 06:42 | | 19:48 (3) | 07:38 | 07:41 | 08:38 |
| | 22:17 | 46 | 06:48 (4) | 21:36 | | 20:24 | 7 | 19:55 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 06:02 (4) | 05:45 | | 06:43 | | | 07:40 | 07:43 | 08:40 |
| | 22:17 | 45 | 06:47 (4) | 21:34 | | 20:22 | | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 06:02 (4) | 05:47 | | 06:45 | | | 07:42 | 07:45 | 08:41 |
| | 22:16 | 45 | 06:47 (4) | 21:32 | | 20:19 | | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 06:03 (4) | 05:49 | | 06:47 | | | 07:44 | 07:47 | 08:43 |
| | 22:15 | 43 | 06:46 (4) | 21:30 | | 20:17 | | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 06:03 (4) | 05:51 | | 06:49 | | | 07:46 | 07:49 | 08:44 |
| | 22:15 | 43 | 06:46 (4) | 21:28 | | 20:14 | | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 06:04 (4) | 05:52 | | 06:51 | | | 07:48 | 07:51 | 08:46 |
| | 22:14 | 42 | 06:46 (4) | 21:26 | | 20:12 | | | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | | 06:05 (4) | 05:54 | | 06:53 | | | 07:50 | 07:53 | 08:47 |
| | 22:13 | 41 | 06:46 (4) | 21:24 | | 20:09 | | | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 06:05 (4) | 05:56 | | 06:55 | | | 07:52 | 07:55 | 08:48 |
| | 22:12 | 40 | 06:45 (4) | 21:21 | | 20:06 | | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 06:07 (4) | 05:58 | | 06:57 | | | 07:54 | 07:57 | 08:49 |
| | 22:11 | 39 | 06:46 (4) | 21:19 | | 20:04 | | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:08 (4) | 06:00 | | 06:59 | | | 07:56 | 07:59 | 08:51 |
| | 22:10 | 37 | 06:45 (4) | 21:17 | | 20:01 | | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:08 (4) | 06:02 | | 07:00 | | | 07:58 | 08:01 | 08:52 |
| | 22:09 | 36 | 06:44 (4) | 21:15 | | 19:59 | | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:09 (4) | 06:04 | | 07:02 | | | 08:00 | 08:03 | 08:53 |
| | 22:08 | 34 | 06:43 (4) | 21:13 | | 19:56 | | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 06:10 (4) | 06:06 | | 07:04 | | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 32 | 06:42 (4) | 21:10 | | 19:53 | | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | | 06:12 (4) | 06:07 | | 07:06 | | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 30 | 06:42 (4) | 21:08 | | 19:51 | | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:13 (4) | 06:09 | 19:52 (3) | 07:08 | | | 08:06 | 08:09 | 08:55 |
| | 22:04 | 27 | 06:40 (4) | 21:06 | 11 20:03 (3) | 19:48 | | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | | 06:14 (4) | 06:11 | 19:50 (3) | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 22:03 | 24 | 06:38 (4) | 21:03 | 15 20:05 (3) | 19:46 | | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:17 (4) | 06:13 | 19:48 (3) | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 22:01 | 20 | 06:37 (4) | 21:01 | 18 20:06 (3) | 19:43 | | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:19 (4) | 06:15 | 19:47 (3) | 07:14 | | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 16 | 06:35 (4) | 20:59 | 21 20:08 (3) | 19:41 | | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:23 (4) | 06:17 | 19:46 (3) | 07:16 | | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 8 | 06:31 (4) | 20:56 | 22 20:08 (3) | 19:38 | | | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | | | 06:19 | 19:44 (3) | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | | 20:54 | 24 20:08 (3) | 19:35 | | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | | 06:21 | 19:44 (3) | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | | 20:52 | 25 20:09 (3) | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | | 06:23 | 19:43 (3) | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | | 20:49 | 26 20:09 (3) | 19:30 | | | 18:15 | 16:18 | 16:06 |
| 25 | 05:27 | | | 06:24 | 19:43 (3) | 07:23 | | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | | 20:47 | 26 20:09 (3) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | | 06:26 | 19:43 (3) | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | | 20:44 | 26 20:09 (3) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | 19:42 (3) | 07:27 | | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 26 20:08 (3) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | 19:42 (3) | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 25 20:07 (3) | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | | | 06:32 | 19:43 (3) | 07:31 | | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 24 20:07 (3) | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | | | 06:34 | 19:43 (3) | 07:33 | | | 07:32 | 08:33 | 09:01 |
| | 21:44 | | | 20:34 | 22 20:05 (3) | 19:15 | | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | | | 06:36 | 19:44 (3) | | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 19 20:03 (3) | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | | 465 | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | 740 | | | 330 | | 34 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | 0,40 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | 0,86 | | | 0,99 | | 0,99 | | | | |
| Total reduction | | 0,42 | | | 0,51 | | 0,39 | | | | |
| Total, real | | 311 | | | 168 | | 13 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | | 05:55 | | | 05:02 | | 06:11 (4) |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | | 21:09 | | | 22:02 | 53 | 07:04 (4) |
| 2 | 09:01 | | 08:26 | | 07:24 | | 07:05 | | 19:42 (3) | 05:53 | | | 05:01 | | 06:11 (4) |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 2 | 19:44 (3) | 21:11 | | | 22:04 | 54 | 07:05 (4) |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 19:37 (3) | 05:51 | | | 05:00 | | 06:11 (4) |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 9 | 19:46 (3) | 21:13 | | | 22:05 | 55 | 07:06 (4) |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 19:35 (3) | 05:48 | | | 04:59 | | 06:11 (4) |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 13 | 19:48 (3) | 21:14 | | | 22:06 | 56 | 07:07 (4) |
| 5 | 09:00 | | 08:20 | | 07:17 | | 06:58 | | 19:33 (3) | 05:46 | | | 04:58 | | 06:10 (4) |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | 16 | 19:49 (3) | 21:16 | | | 22:07 | 57 | 07:07 (4) |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 19:32 (3) | 05:44 | | | 04:57 | | 06:10 (4) |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | 20 | 19:52 (3) | 21:18 | | | 22:08 | 57 | 07:07 (4) |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | 19:31 (3) | 05:42 | | | 04:56 | | 06:10 (4) |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | 22 | 19:53 (3) | 21:20 | | | 22:10 | 58 | 07:08 (4) |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | 19:31 (3) | 05:40 | | | 04:56 | | 06:09 (4) |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | 23 | 19:54 (3) | 21:22 | | | 22:11 | 59 | 07:08 (4) |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:48 | | 19:30 (3) | 05:38 | | | 04:55 | | 06:10 (4) |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | 24 | 19:54 (3) | 21:24 | | | 22:12 | 59 | 07:09 (4) |
| 10 | 08:57 | | 08:10 | | 07:04 | | 06:45 | | 19:30 (3) | 05:36 | | | 04:54 | | 06:09 (4) |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | 24 | 19:54 (3) | 21:26 | | | 22:12 | 60 | 07:09 (4) |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 19:29 (3) | 05:34 | | | 04:54 | | 06:10 (4) |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | 24 | 19:53 (3) | 21:28 | | | 22:13 | 60 | 07:10 (4) |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 19:30 (3) | 05:32 | | | 04:53 | | 06:10 (4) |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | 23 | 19:53 (3) | 21:30 | | | 22:14 | 60 | 07:10 (4) |
| 13 | 08:54 | | 08:04 | | 06:57 | | 06:38 | | 19:29 (3) | 05:30 | | | 04:53 | | 06:09 (4) |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | 23 | 19:52 (3) | 21:32 | | | 22:15 | 61 | 07:10 (4) |
| 14 | 08:53 | | 08:02 | | 06:54 | | 06:35 | | 19:30 (3) | 05:28 | | | 04:53 | | 06:09 (4) |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | 21 | 19:51 (3) | 21:33 | | | 22:16 | 62 | 07:11 (4) |
| 15 | 08:52 | | 07:59 | | 06:52 | | 06:33 | | 19:31 (3) | 05:27 | | | 04:52 | | 06:10 (4) |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | 19 | 19:50 (3) | 21:35 | | | 22:16 | 61 | 07:11 (4) |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 19:32 (3) | 05:25 | | | 04:52 | | 06:10 (4) |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | 16 | 19:48 (3) | 21:37 | | | 22:17 | 61 | 07:11 (4) |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:28 | | 19:34 (3) | 05:23 | | | 04:52 | | 06:10 (4) |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | 12 | 19:46 (3) | 21:39 | | | 22:17 | 62 | 07:12 (4) |
| 18 | 08:49 | | 07:53 | | 06:44 | | 06:25 | | 19:37 (3) | 05:21 | | 06:29 (4) | 04:52 | | 06:10 (4) |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | 4 | 19:41 (3) | 21:41 | 16 | 06:45 (4) | 22:18 | 62 | 07:12 (4) |
| 19 | 08:48 | | 07:50 | | 06:41 | | 06:23 | | | 05:20 | | 06:26 (4) | 04:52 | | 06:10 (4) |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | | 21:42 | 23 | 06:49 (4) | 22:18 | 62 | 07:12 (4) |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:20 | | | 05:18 | | 06:23 (4) | 04:52 | | 06:10 (4) |
| | 16:44 | | 17:48 | | 18:46 | | 20:47 | | | 21:44 | 27 | 06:50 (4) | 22:19 | 62 | 07:12 (4) |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | | | 05:16 | | 06:21 (4) | 04:52 | | 06:10 (4) |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | | 21:46 | 32 | 06:53 (4) | 22:19 | 62 | 07:12 (4) |
| 22 | 08:44 | | 07:43 | | 06:34 | | 06:16 | | | 05:15 | | 06:19 (4) | 04:52 | | 06:11 (4) |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | | 21:47 | 35 | 06:54 (4) | 22:19 | 62 | 07:13 (4) |
| 23 | 08:42 | | 07:41 | | 06:31 | | 06:13 | | | 05:13 | | 06:18 (4) | 04:53 | | 06:11 (4) |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | | 21:49 | 38 | 06:56 (4) | 22:19 | 62 | 07:13 (4) |
| 24 | 08:41 | | 07:39 | | 06:28 | | 06:11 | | | 05:12 | | 06:17 (4) | 04:53 | | 06:11 (4) |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | | 21:51 | 40 | 06:57 (4) | 22:19 | 62 | 07:13 (4) |
| 25 | 08:39 | | 07:36 | | 06:26 | | 06:09 | | | 05:10 | | 06:15 (4) | 04:53 | | 06:12 (4) |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | | 21:52 | 43 | 06:58 (4) | 22:19 | 62 | 07:14 (4) |
| 26 | 08:38 | | 07:34 | | 06:23 | | 06:06 | | | 05:09 | | 06:15 (4) | 04:54 | | 06:12 (4) |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | | 21:54 | 44 | 06:59 (4) | 22:19 | 62 | 07:14 (4) |
| 27 | 08:36 | | 07:32 | | 06:21 | | 06:04 | | | 05:08 | | 06:14 (4) | 04:54 | | 06:13 (4) |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | | 21:55 | 46 | 07:00 (4) | 22:19 | 61 | 07:14 (4) |
| 28 | 08:34 | | 07:29 | | 06:18 | | 06:02 | | | 05:06 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | | 21:57 | 48 | 07:01 (4) | 22:19 | 61 | 07:14 (4) |
| 29 | 08:33 | | | | 07:16 | | 05:59 | | | 05:05 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:02 | | | | 20:04 | | 21:05 | | | 21:58 | 49 | 07:02 (4) | 22:19 | 61 | 07:14 (4) |
| 30 | 08:31 | | | | 07:13 | | 05:57 | | | 05:04 | | 06:12 (4) | 04:56 | | 06:13 (4) |
| | 17:04 | | | | 20:06 | | 21:07 | | | 22:00 | 51 | 07:03 (4) | 22:18 | 61 | 07:14 (4) |
| 31 | 08:29 | | | | 07:10 | | | | | 05:03 | | 06:12 (4) | | | |
| | 17:06 | | | | 20:08 | | | | | 22:01 | 52 | 07:04 (4) | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | | | | 295 | | | 544 | | | 1797 | | |
| Sun reduction | | | | | | | 0,39 | | | 0,52 | | | 0,48 | | |
| Oper. time red. | | | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | | | 1,00 | | | 0,89 | | | 0,89 | | |
| Total reduction | | | | | | | 0,39 | | | 0,46 | | | 0,43 | | |
| Total, real | | | | | | | 116 | | | 251 | | | 775 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:14 (4) | 05:40 | | | 06:38 | | 19:28 (3) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 60 | 07:14 (4) | 21:40 | | | 20:29 | 24 | 19:52 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 06:14 (4) | 05:41 | | | 06:40 | | 19:28 (3) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 60 | 07:14 (4) | 21:38 | | | 20:27 | 24 | 19:52 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 06:15 (4) | 05:43 | | | 06:42 | | 19:28 (3) | 07:38 | 07:41 | 08:38 |
| | 22:17 | 59 | 07:14 (4) | 21:36 | | | 20:24 | 24 | 19:52 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 06:15 (4) | 05:45 | | | 06:43 | | 19:28 (3) | 07:40 | 07:43 | 08:40 |
| | 22:17 | 58 | 07:13 (4) | 21:34 | | | 20:22 | 23 | 19:51 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 06:15 (4) | 05:47 | | | 06:45 | | 19:28 (3) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 58 | 07:13 (4) | 21:32 | | | 20:19 | 22 | 19:50 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 06:16 (4) | 05:49 | | | 06:47 | | 19:28 (3) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 57 | 07:13 (4) | 21:30 | | | 20:17 | 19 | 19:47 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 06:16 (4) | 05:51 | | | 06:49 | | 19:28 (3) | 07:46 | 07:49 | 08:44 |
| | 22:15 | 57 | 07:13 (4) | 21:28 | | | 20:14 | 17 | 19:45 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 06:17 (4) | 05:52 | | | 06:51 | | 19:29 (3) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 56 | 07:13 (4) | 21:26 | | | 20:12 | 13 | 19:42 (3) | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 06:17 (4) | 05:54 | | | 06:53 | | 19:31 (3) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 56 | 07:13 (4) | 21:24 | | | 20:09 | 9 | 19:40 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 06:18 (4) | 05:56 | | | 06:55 | | 19:34 (3) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 54 | 07:12 (4) | 21:21 | | | 20:06 | 4 | 19:38 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 06:19 (4) | 05:58 | | | 06:57 | | | 07:54 | 07:57 | 08:49 |
| | 22:11 | 54 | 07:13 (4) | 21:19 | | | 20:04 | | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:20 (4) | 06:00 | | | 06:59 | | | 07:56 | 07:59 | 08:51 |
| | 22:10 | 52 | 07:12 (4) | 21:17 | | | 20:01 | | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:21 (4) | 06:02 | | | 07:00 | | | 07:58 | 08:01 | 08:52 |
| | 22:09 | 51 | 07:12 (4) | 21:15 | | | 19:59 | | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:21 (4) | 06:04 | | | 07:02 | | | 08:00 | 08:03 | 08:53 |
| | 22:08 | 50 | 07:11 (4) | 21:13 | | | 19:56 | | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 06:22 (4) | 06:05 | | | 07:04 | | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 48 | 07:10 (4) | 21:10 | | | 19:53 | | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | | 06:23 (4) | 06:07 | | | 07:06 | | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 47 | 07:10 (4) | 21:08 | | | 19:51 | | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:24 (4) | 06:09 | | | 07:08 | | | 08:06 | 08:09 | 08:55 |
| | 22:04 | 45 | 07:09 (4) | 21:06 | | | 19:48 | | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | | 06:25 (4) | 06:11 | | | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 22:03 | 43 | 07:08 (4) | 21:03 | | | 19:46 | | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:26 (4) | 06:13 | | | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 22:01 | 42 | 07:08 (4) | 21:01 | | | 19:43 | | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:27 (4) | 06:15 | | | 07:14 | | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 39 | 07:06 (4) | 20:59 | | | 19:41 | | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:29 (4) | 06:17 | | | 07:15 | | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 36 | 07:05 (4) | 20:56 | | | 19:38 | | | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | | 06:30 (4) | 06:19 | | | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 34 | 07:04 (4) | 20:54 | | | 19:35 | | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:33 (4) | 06:21 | | | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 29 | 07:02 (4) | 20:52 | | | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:34 (4) | 06:23 | | | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 26 | 07:00 (4) | 20:49 | | | 19:30 | | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:37 (4) | 06:24 | | 19:40 (3) | 07:23 | | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 21 | 06:58 (4) | 20:47 | 5 | 19:45 (3) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:41 (4) | 06:26 | | 19:37 (3) | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 12 | 06:53 (4) | 20:44 | 12 | 19:49 (3) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | | 19:34 (3) | 07:27 | | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 16 | 19:50 (3) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | | 19:32 (3) | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 19 | 19:51 (3) | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | | | 06:32 | | 19:31 (3) | 07:31 | | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 21 | 19:52 (3) | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | | | 06:34 | | 19:30 (3) | 07:33 | | | 07:32 | 08:33 | 09:01 |
| | 21:44 | | | 20:34 | 22 | 19:52 (3) | 19:15 | | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | | | 06:36 | | 19:29 (3) | | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 24 | 19:53 (3) | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | 1204 | | | 119 | | | 179 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,89 | | | 1,00 | | | 1,00 | | | | |
| Total reduction | | 0,43 | | | 0,51 | | | 0,39 | | | | |
| Total, real | | 523 | | | 61 | | | 71 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 19:41 (3) | 05:55 | 05:02 | 04:57 | 05:40 | | 06:38 | 19:30 (3) | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 1 19:42 (3) | 21:09 | 22:02 | 22:18 | 21:40 | | 20:29 | 20 19:50 (3) | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:38 (3) | 05:53 | 05:01 | 04:57 | 05:41 | | 06:40 | 19:30 (3) | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 6 19:44 (3) | 21:11 | 22:04 | 22:18 | 21:38 | | 20:27 | 20 19:50 (3) | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:36 (3) | 05:51 | 05:00 | 04:58 | 05:43 | | 06:42 | 19:29 (3) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 10 19:46 (3) | 21:13 | 22:05 | 22:17 | 21:36 | | 20:24 | 22 19:51 (3) | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:35 (3) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 19:29 (3) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 13 19:48 (3) | 21:14 | 22:06 | 22:17 | 21:34 | | 20:22 | 22 19:51 (3) | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 19:33 (3) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 19:29 (3) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 16 19:49 (3) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 21 19:50 (3) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 19:33 (3) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 19:28 (3) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 19 19:52 (3) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:17 | 19 19:47 (3) | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 19:32 (3) | 05:42 | 04:56 | 05:02 | 05:51 | | 06:49 | 19:28 (3) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21 19:53 (3) | 21:20 | 22:10 | 22:15 | 21:28 | | 20:14 | 17 19:45 (3) | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 19:32 (3) | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 19:29 (3) | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 22 19:54 (3) | 21:22 | 22:11 | 22:14 | 21:26 | | 20:12 | 13 19:42 (3) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 19:31 (3) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 19:30 (3) | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 22 19:53 (3) | 21:24 | 22:12 | 22:13 | 21:24 | | 20:09 | 10 19:40 (3) | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 19:32 (3) | 05:36 | 04:54 | 05:06 | 05:56 | | 06:55 | 19:31 (3) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 20 19:52 (3) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 7 19:38 (3) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 19:31 (3) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:57 | 19:33 (3) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 20 19:51 (3) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 1 19:34 (3) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 19:33 (3) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:59 | | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 17 19:50 (3) | 21:30 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 19:33 (3) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 15 19:48 (3) | 21:32 | 22:15 | 22:09 | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 19:35 (3) | 05:28 | 04:53 | 05:11 | 06:04 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 12 19:47 (3) | 21:33 | 22:16 | 22:08 | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 19:39 (3) | 05:27 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 4 19:43 (3) | 21:35 | 22:16 | 22:07 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 05:18 | 04:52 | 05:19 | 06:15 | | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 22:19 | 21:59 | 20:56 | | 19:38 | | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 22:19 | 21:55 | 20:52 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 22:19 | 21:54 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 22:19 | 21:52 | 20:47 | | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 22:19 | 21:51 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 05:06 | 04:55 | 05:32 | 06:30 | 19:39 (3) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 | 5 19:44 (3) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 | 19:36 (3) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 22:19 | 21:45 | 20:37 | 12 19:48 (3) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 19:34 (3) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 22:18 | 21:43 | 20:34 | 15 19:49 (3) | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 19:32 (3) | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | 18 19:50 (3) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 218 | | | | | 50 | | 172 | | | | |
| Sun reduction | | | | 0,39 | | | | | 0,51 | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | | 1,00 | | | | | 1,00 | | 1,00 | | | | |
| Total reduction | | | | 0,39 | | | | | 0,51 | | 0,39 | | | | |
| Total, real | | | | 85 | | | | | 26 | | 68 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 20:08 (3) | 05:02 | 04:57 | 05:40 | 20:20 (3) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 26 | 20:34 (3) | 22:02 | 22:18 | 21:40 21 | 20:41 (3) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 20:07 (3) | 05:01 | 04:58 | 05:41 | 20:18 (3) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 27 | 20:34 (3) | 22:04 | 22:18 | 21:38 23 | 20:41 (3) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 20:07 (3) | 05:00 | 04:58 | 05:43 | 20:18 (3) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 27 | 20:34 (3) | 22:05 | 22:17 | 21:36 24 | 20:42 (3) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 20:07 (3) | 04:59 | 04:59 | 05:45 | 20:18 (3) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:14 27 | 20:34 (3) | 22:06 | 22:17 | 21:34 25 | 20:43 (3) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 20:07 (3) | 04:58 | 05:00 | 05:47 | 20:17 (3) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 27 | 20:34 (3) | 22:07 | 22:16 | 21:32 26 | 20:43 (3) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 20:07 (3) | 04:57 | 05:01 | 05:49 | 20:16 (3) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 27 | 20:34 (3) | 22:08 | 22:15 | 21:30 27 | 20:43 (3) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 20:07 (3) | 04:56 | 05:02 | 05:51 | 20:16 (3) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 26 | 20:33 (3) | 22:10 | 22:15 | 21:28 27 | 20:43 (3) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 20:07 (3) | 04:56 | 05:03 | 05:52 | 20:16 (3) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 26 | 20:33 (3) | 22:11 | 22:14 | 21:26 28 | 20:44 (3) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 20:07 (3) | 04:55 | 05:04 | 05:54 | 20:15 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 25 | 20:32 (3) | 22:12 | 22:13 | 21:24 28 | 20:43 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 20:08 (3) | 04:54 | 05:06 | 05:56 | 20:15 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 23 | 20:31 (3) | 22:12 | 22:12 | 21:21 28 | 20:43 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 20:08 (3) | 04:54 | 05:07 | 05:58 | 20:16 (3) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 22 | 20:30 (3) | 22:13 | 22:11 | 21:19 27 | 20:43 (3) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 20:10 (3) | 04:53 | 05:08 | 06:00 | 20:16 (3) | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 20 | 20:30 (3) | 22:14 | 22:10 | 21:17 27 | 20:43 (3) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 20:11 (3) | 04:53 | 05:09 | 06:02 | 20:16 (3) | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 18 | 20:29 (3) | 22:15 | 22:09 | 21:15 25 | 20:41 (3) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 20:12 (3) | 04:53 | 05:11 | 06:04 | 20:16 (3) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 15 | 20:27 (3) | 22:16 | 22:08 | 21:13 25 | 20:41 (3) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 20:14 (3) | 04:52 | 05:12 | 06:06 | 20:17 (3) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 12 | 20:26 (3) | 22:16 | 22:07 | 21:10 22 | 20:39 (3) | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 20:16 (3) | 04:52 | 05:13 | 06:07 | 20:18 (3) | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 7 | 20:23 (3) | 22:17 | 22:05 | 21:08 19 | 20:37 (3) | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 20:18 (3) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 16 | 20:34 (3) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 20:20 (3) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 12 | 20:32 (3) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 20:23 (3) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 7 | 20:30 (3) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 20:17 (3) | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 8 20:25 (3) | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 20:13 (3) | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 13 20:26 (3) | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 20:12 (3) | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 16 20:28 (3) | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 20:10 (3) | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 20 20:30 (3) | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 20:09 (3) | 05:06 | 04:55 | 05:33 20:25 (3) | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 23 20:32 (3) | 21:57 | 22:19 | 21:47 10 20:35 (3) | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 20:09 (3) | 05:05 | 04:55 | 05:34 20:24 (3) | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 24 20:33 (3) | 21:58 | 22:19 | 21:45 13 20:37 (3) | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:08 (3) | 05:04 | 04:56 | 05:36 20:22 (3) | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 26 20:34 (3) | 22:00 | 22:18 | 21:44 17 20:39 (3) | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 20:21 (3) | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 19 20:40 (3) | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 130 | 355 | | 59 | 437 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | | 0,46 | 0,49 | | | | |
| Total, real | | | | 48 | 174 | | 27 | 213 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 61 | 05:51 (4) 20:46 (3) 49 | 05:57 (4) 21:40 31 | 20:27 (3) 20:58 (3) | 20:29 | 19:12 | 16:58 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:57 (4) | 06:38 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 60 | 05:51 (4) 20:46 (3) 51 | 05:41 20:47 (3) 31 | 20:26 (3) 20:57 (3) | 20:27 | 19:10 | 16:56 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:58 (4) | 06:40 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 10 | 20:38 (3) 22:05 59 | 05:52 (4) 20:46 (3) 51 | 05:43 20:48 (3) 30 | 20:27 (3) 20:57 (3) | 20:24 | 19:07 | 16:54 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 20:25 (3) 04:59 | 05:52 (4) 04:59 | 05:57 (4) 05:45 | 20:28 (3) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:14 | 18:14 | 20:15 | 21:14 16 | 20:41 (3) 22:06 58 | 20:46 (3) 22:17 52 | 20:48 (3) 21:34 28 | 20:56 (3) 20:22 | 19:04 | 16:51 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 20:23 (3) 04:58 | 05:51 (4) 05:00 | 05:57 (4) 05:47 | 20:29 (3) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 19 | 20:42 (3) 22:07 58 | 20:45 (3) 22:16 55 | 20:49 (3) 21:32 27 | 20:56 (3) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 20:21 (3) 04:57 | 05:51 (4) 05:01 | 05:58 (4) 05:49 | 20:29 (3) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 23 | 20:44 (3) 22:08 57 | 20:44 (3) 22:15 55 | 20:50 (3) 21:30 25 | 20:54 (3) 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 20:20 (3) 04:56 | 05:52 (4) 05:02 | 05:58 (4) 05:51 | 20:31 (3) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 25 | 20:45 (3) 22:10 54 | 20:44 (3) 22:15 56 | 20:51 (3) 21:28 22 | 20:53 (3) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 20:19 (3) 04:56 | 05:52 (4) 05:03 | 05:58 (4) 05:52 | 20:33 (3) 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 27 | 20:46 (3) 22:11 53 | 20:43 (3) 22:14 58 | 20:52 (3) 21:26 18 | 20:51 (3) 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 20:18 (3) 04:55 | 05:52 (4) 05:04 | 05:58 (4) 05:54 | 20:34 (3) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 28 | 20:46 (3) 22:12 53 | 20:43 (3) 22:13 58 | 20:52 (3) 21:24 14 | 20:48 (3) 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 20:17 (3) 04:54 | 05:52 (4) 05:06 | 05:58 (4) 05:56 | 20:38 (3) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 30 | 20:47 (3) 22:12 50 | 20:42 (3) 22:12 60 | 20:53 (3) 21:21 7 | 20:45 (3) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 20:16 (3) 04:54 | 05:52 (4) 05:07 | 05:59 (4) 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 31 | 20:47 (3) 22:13 50 | 20:42 (3) 22:11 60 | 20:54 (3) 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 20:16 (3) 04:53 | 05:53 (4) 05:08 | 06:00 (4) 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 32 | 20:48 (3) 22:14 48 | 20:42 (3) 22:10 61 | 20:55 (3) 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 20:15 (3) 04:53 | 05:52 (4) 05:09 | 06:00 (4) 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 33 | 20:48 (3) 22:15 48 | 20:41 (3) 22:09 61 | 20:55 (3) 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 20:15 (3) 04:53 | 05:53 (4) 05:11 | 06:00 (4) 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 33 | 20:48 (3) 22:16 46 | 20:41 (3) 22:08 63 | 20:56 (3) 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:04 (4) 04:53 | 05:53 (4) 05:12 | 06:00 (4) 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 41 | 20:49 (3) 22:16 46 | 20:41 (3) 22:07 62 | 20:56 (3) 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:00 (4) 04:52 | 05:54 (4) 05:13 | 06:01 (4) 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 48 | 20:49 (3) 22:17 43 | 20:40 (3) 22:05 63 | 20:57 (3) 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 05:59 (4) 04:52 | 05:54 (4) 05:15 | 06:01 (4) 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 51 | 20:49 (3) 22:17 42 | 20:40 (3) 22:04 63 | 20:57 (3) 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 05:57 (4) 04:52 | 05:54 (4) 05:16 | 06:01 (4) 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 54 | 20:49 (3) 22:18 41 | 20:40 (3) 22:03 63 | 20:57 (3) 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 05:56 (4) 04:52 | 05:54 (4) 05:18 | 06:02 (4) 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 57 | 20:49 (3) 22:18 40 | 20:39 (3) 22:01 63 | 20:58 (3) 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 05:55 (4) 04:52 | 05:54 (4) 05:19 | 06:02 (4) 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 59 | 20:49 (3) 22:19 39 | 20:39 (3) 22:00 62 | 20:58 (3) 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 05:54 (4) 04:52 | 05:54 (4) 05:21 | 06:04 (4) 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 60 | 20:49 (3) 22:19 40 | 20:39 (3) 21:59 61 | 20:59 (3) 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 05:53 (4) 04:52 | 05:55 (4) 05:23 | 06:04 (4) 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 61 | 20:48 (3) 22:19 39 | 20:40 (3) 21:57 61 | 20:59 (3) 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 05:53 (4) 04:53 | 05:55 (4) 05:24 | 06:05 (4) 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 62 | 20:49 (3) 22:19 39 | 20:40 (3) 21:56 59 | 20:59 (3) 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 05:53 (4) 04:53 | 05:55 (4) 05:26 | 06:06 (4) 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 63 | 20:49 (3) 22:19 40 | 20:40 (3) 21:54 58 | 20:59 (3) 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 05:53 (4) 04:53 | 05:56 (4) 05:27 | 06:07 (4) 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 63 | 20:49 (3) 22:19 42 | 20:42 (3) 21:52 56 | 21:00 (3) 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 05:52 (4) 04:54 | 05:56 (4) 05:29 | 06:08 (4) 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 62 | 20:48 (3) 22:19 42 | 20:42 (3) 21:51 53 | 20:59 (3) 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 05:51 (4) 04:54 | 05:56 (4) 05:31 | 06:10 (4) 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 64 | 20:48 (3) 22:19 45 | 20:44 (3) 21:49 50 | 21:00 (3) 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 05:51 (4) 04:55 | 05:56 (4) 05:33 | 06:12 (4) 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 62 | 20:47 (3) 22:19 45 | 20:44 (3) 21:47 45 | 20:59 (3) 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 05:51 (4) 04:55 | 05:57 (4) 05:34 | 20:26 (3) 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 63 | 20:47 (3) 22:19 46 | 20:45 (3) 21:45 33 | 20:59 (3) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 05:51 (4) 04:56 | 05:56 (4) 05:36 | 20:26 (3) 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 62 | 20:47 (3) 22:18 48 | 20:45 (3) 21:44 33 | 20:59 (3) 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 05:51 (4) | 05:38 | 20:26 (3) 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 61 | 20:47 (3) | 21:42 32 | 20:58 (3) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 1300 | 1432 | 1707 | 233 | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | | 0,90 | 0,88 | 0,89 | 0,92 | | | | |
| Total reduction | | | | | 0,47 | 0,42 | 0,43 | 0,47 | | | | |
| Total, real | | | | | 605 | 608 | 740 | 110 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 21:11 (5) 04:57 | 21:16 (5) 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 15 | 21:26 (5) 22:18 23 | 21:39 (5) 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 21:11 (5) 04:57 | 21:17 (5) 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 16 | 21:27 (5) 22:18 22 | 21:39 (5) 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 21:11 (5) 04:58 | 21:17 (5) 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 17 | 21:28 (5) 22:17 23 | 21:40 (5) 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 21:12 (5) 04:59 | 21:17 (5) 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 17 | 21:29 (5) 22:16 21 | 21:38 (5) 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 21:11 (5) 05:00 | 21:17 (5) 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 19 | 21:30 (5) 22:16 21 | 21:38 (5) 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 21:11 (5) 05:01 | 21:17 (5) 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 20 | 21:31 (5) 22:15 21 | 21:38 (5) 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | 21:12 (5) 05:02 | 21:18 (5) 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 20 | 21:32 (5) 22:14 19 | 21:37 (5) 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 21:11 (5) 05:03 | 21:18 (5) 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 22 | 21:33 (5) 22:14 18 | 21:36 (5) 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 21:12 (5) 05:04 | 21:18 (5) 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 22 | 21:34 (5) 22:13 17 | 21:35 (5) 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 21:12 (5) 05:05 | 21:19 (5) 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 22 | 21:34 (5) 22:12 16 | 21:35 (5) 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 21:12 (5) 05:07 | 21:19 (5) 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 23 | 21:35 (5) 22:11 15 | 21:34 (5) 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 21:13 (5) 05:08 | 21:20 (5) 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 22 | 21:35 (5) 22:10 14 | 21:34 (5) 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 21:12 (5) 05:09 | 21:20 (5) 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 23 | 21:35 (5) 22:09 13 | 21:33 (5) 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 21:13 (5) 05:11 | 21:21 (5) 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 22 | 21:35 (5) 22:08 10 | 21:31 (5) 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 21:13 (5) 05:12 | 21:21 (5) 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 22 | 21:35 (5) 22:07 9 | 21:30 (5) 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 21:13 (5) 05:13 | 21:22 (5) 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 23 | 21:36 (5) 22:05 8 | 21:30 (5) 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 21:14 (5) 05:15 | 21:23 (5) 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 22 | 21:36 (5) 22:04 5 | 21:28 (5) 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 21:14 (5) 05:16 | 21:24 (5) 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 22 | 21:36 (5) 22:03 3 | 21:27 (5) 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 21:14 (5) 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 22 | 21:36 (5) 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 21:14 (5) 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 22 | 21:36 (5) 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 21:14 (5) 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 22 | 21:36 (5) 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 21:15 (5) 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 22 | 21:37 (5) 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 21:15 (5) 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 22 | 21:37 (5) 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 21:15 (5) 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 22 | 21:37 (5) 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 21:15 (5) | 04:53 | 21:16 (5) 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 1 21:16 (5) | 22:19 22 | 21:38 (5) 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 21:14 (5) | 04:54 | 21:15 (5) 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 4 21:18 (5) | 22:19 23 | 21:38 (5) 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 21:13 (5) | 04:54 | 21:16 (5) 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 6 21:19 (5) | 22:19 23 | 21:39 (5) 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 21:13 (5) | 04:55 | 21:16 (5) 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 8 21:21 (5) | 22:19 22 | 21:38 (5) 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12 (5) | 04:55 | 21:16 (5) 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 10 21:22 (5) | 22:19 23 | 21:39 (5) 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12 (5) | 04:56 | 21:16 (5) 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 12 21:24 (5) | 22:18 22 | 21:38 (5) 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12 (5) | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 13 21:25 (5) | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 54 | 636 | 278 | | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,82 | 0,82 | 0,82 | | | | | |
| Total reduction | | | | | 0,42 | 0,40 | 0,40 | | | | | |
| Total, real | | | | | 23 | 252 | 111 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:41 (6) | 05:02 | 04:57 | 05:39 | 06:51 (6) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 42 | 07:23 (6) | 22:02 | 22:18 | 21:40 41 | 07:32 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:40 (6) | 05:01 | 04:57 | 05:41 | 06:50 (6) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 42 | 07:22 (6) | 22:03 | 22:17 | 21:38 42 | 07:32 (6) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:40 (6) | 05:00 | 04:58 | 05:43 | 06:50 (6) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 42 | 07:22 (6) | 22:05 | 22:17 | 21:36 42 | 07:32 (6) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:39 (6) | 04:59 | 04:59 | 05:45 | 06:50 (6) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 43 | 07:22 (6) | 22:06 | 22:16 | 21:34 43 | 07:33 (6) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:39 (6) | 04:58 | 05:00 | 05:47 | 06:49 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 43 | 07:22 (6) | 22:07 | 22:16 | 21:32 43 | 07:32 (6) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:40 (6) | 04:57 | 05:01 | 05:49 | 06:49 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 43 | 07:23 (6) | 22:08 | 22:15 | 21:30 43 | 07:32 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:40 (6) | 04:56 | 05:02 | 05:50 | 06:49 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 43 | 07:23 (6) | 22:09 | 22:14 | 21:28 44 | 07:33 (6) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:40 (6) | 04:56 | 05:03 | 05:52 | 06:50 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 43 | 07:23 (6) | 22:10 | 22:14 | 21:25 43 | 07:33 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:39 (6) | 04:55 | 05:04 | 05:54 | 06:49 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 43 | 07:22 (6) | 22:11 | 22:13 | 21:23 43 | 07:32 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:39 (6) | 04:54 | 05:05 | 05:56 | 06:49 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 43 | 07:22 (6) | 22:12 | 22:12 | 21:21 43 | 07:32 (6) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:39 (6) | 04:54 | 05:07 | 05:58 | 06:50 (6) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 42 | 07:21 (6) | 22:13 | 22:11 | 21:19 42 | 07:32 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:40 (6) | 04:53 | 05:08 | 06:00 | 06:49 (6) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 42 | 07:22 (6) | 22:14 | 22:10 | 21:17 41 | 07:30 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | 05:30 | 06:40 (6) | 04:53 | 05:09 | 06:02 | 06:50 (6) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 41 | 07:21 (6) | 22:15 | 22:09 | 21:15 40 | 07:30 (6) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:40 (6) | 04:53 | 05:11 07:08 (6) | 06:03 | 06:50 (6) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 40 | 07:20 (6) | 22:15 | 22:08 3 07:11 (6) | 21:12 39 | 07:29 (6) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (6) | 04:52 | 05:12 07:04 (6) | 06:05 | 06:51 (6) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 38 | 07:20 (6) | 22:16 | 22:06 11 07:15 (6) | 21:10 38 | 07:29 (6) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (6) | 04:52 | 05:13 07:03 (6) | 06:07 | 06:52 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 37 | 07:19 (6) | 22:17 | 22:05 15 07:18 (6) | 21:08 36 | 07:28 (6) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (6) | 04:52 | 05:15 07:01 (6) | 06:09 | 06:52 (6) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 36 | 07:18 (6) | 22:17 | 22:04 18 07:19 (6) | 21:05 34 | 07:26 (6) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (6) | 04:52 | 05:16 06:59 (6) | 06:11 | 06:53 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 35 | 07:18 (6) | 22:18 | 22:03 22 07:21 (6) | 21:03 32 | 07:25 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (6) | 04:52 | 05:18 06:59 (6) | 06:13 | 06:54 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 34 | 07:17 (6) | 22:18 | 22:01 24 07:23 (6) | 21:01 30 | 07:24 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 06:59 (6) | 05:18 | 06:44 (6) | 04:52 | 05:19 06:57 (6) | 06:15 | 06:56 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 10 07:09 (6) | 21:44 33 | 07:17 (6) | 22:18 | 22:00 26 07:23 (6) | 20:58 26 | 07:22 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:54 (6) | 05:16 | 06:46 (6) | 04:52 | 05:21 06:56 (6) | 06:17 | 06:57 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 18 07:12 (6) | 21:45 30 | 07:16 (6) | 22:19 | 21:58 28 07:24 (6) | 20:56 22 | 07:19 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 06:52 (6) | 05:15 | 06:46 (6) | 04:52 | 05:22 06:56 (6) | 06:19 | 06:59 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 23 07:15 (6) | 21:47 29 | 07:15 (6) | 22:19 | 21:57 30 07:26 (6) | 20:54 18 | 07:17 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:50 (6) | 05:13 | 06:47 (6) | 04:53 | 05:24 06:55 (6) | 06:21 | 07:04 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 27 07:17 (6) | 21:49 27 | 07:14 (6) | 22:19 | 21:55 31 07:26 (6) | 20:51 8 | 07:12 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 06:48 (6) | 05:12 | 06:49 (6) | 04:53 | 05:26 06:54 (6) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 30 07:18 (6) | 21:50 25 | 07:14 (6) | 22:19 | 21:54 33 07:27 (6) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:46 (6) | 05:10 | 06:49 (6) | 04:53 | 05:27 06:53 (6) | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 33 07:19 (6) | 21:52 23 | 07:12 (6) | 22:19 | 21:52 35 07:28 (6) | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:45 (6) | 05:09 | 06:51 (6) | 04:54 | 05:29 06:53 (6) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 35 07:20 (6) | 21:53 20 | 07:11 (6) | 22:19 | 21:50 36 07:29 (6) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:44 (6) | 05:08 | 06:52 (6) | 04:54 | 05:31 06:53 (6) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 37 07:21 (6) | 21:55 17 | 07:09 (6) | 22:19 | 21:49 37 07:30 (6) | 20:42 | | 19:22 | 17:09 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:43 (6) | 05:06 | 06:54 (6) | 04:55 | 05:32 06:52 (6) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 38 07:21 (6) | 21:57 14 | 07:08 (6) | 22:19 | 21:47 38 07:30 (6) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:43 (6) | 05:05 | 06:57 (6) | 04:55 | 05:34 06:52 (6) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 39 07:22 (6) | 21:58 8 | 07:05 (6) | 22:18 | 21:45 39 07:31 (6) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:42 (6) | 05:04 | | 04:56 | 05:36 06:51 (6) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 41 07:23 (6) | 21:59 | | 22:18 | 21:43 40 07:31 (6) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 06:51 (6) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | | 21:41 41 07:32 (6) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 331 | 998 | | 507 | 833 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,96 | 0,96 | | 0,96 | 0,96 | | | | |
| Total reduction | | | | 0,38 | 0,50 | | 0,47 | 0,50 | | | | |
| Total, real | | | | 125 | 496 | | 237 | 413 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:43 (6) | 05:02 | 06:55 (6) | 04:57 | 05:39 | 06:52 (6) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 44 | 07:27 (6) | 22:02 19 | 07:14 (6) | 22:18 | 21:40 46 | 07:38 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:42 (6) | 05:01 | 06:56 (6) | 04:57 | 05:41 | 06:51 (6) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 45 | 07:27 (6) | 22:03 17 | 07:13 (6) | 22:17 | 21:38 46 | 07:37 (6) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:41 (6) | 05:00 | 06:58 (6) | 04:58 | 05:43 | 06:51 (6) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 46 | 07:27 (6) | 22:05 13 | 07:11 (6) | 22:17 | 21:36 47 | 07:38 (6) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:41 (6) | 04:59 | 07:01 (6) | 04:59 | 05:45 | 06:51 (6) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 46 | 07:27 (6) | 22:06 9 | 07:10 (6) | 22:16 | 21:34 47 | 07:38 (6) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:41 (6) | 04:58 | | 05:00 | 05:47 | 06:50 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 46 | 07:27 (6) | 22:07 | | 22:16 | 21:32 47 | 07:37 (6) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:41 (6) | 04:57 | | 05:01 | 05:49 | 06:51 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 47 | 07:28 (6) | 22:08 | | 22:15 | 21:30 46 | 07:37 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:41 (6) | 04:56 | | 05:02 | 05:50 | 06:51 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 47 | 07:28 (6) | 22:09 | | 22:14 | 21:28 47 | 07:38 (6) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:41 (6) | 04:56 | | 05:03 | 07:08 (6) | 05:52 | 06:51 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 47 | 07:28 (6) | 22:10 | | 22:14 7 | 07:15 (6) | 21:25 47 | 07:38 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:41 (6) | 04:55 | | 05:04 | 07:06 (6) | 05:54 | 06:51 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 47 | 07:28 (6) | 22:11 | | 22:13 12 | 07:18 (6) | 21:23 46 | 07:37 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:41 (6) | 04:54 | | 05:05 | 07:04 (6) | 05:56 | 06:51 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 46 | 07:27 (6) | 22:12 | | 22:12 15 | 07:19 (6) | 21:21 45 | 07:36 (6) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:40 (6) | 04:54 | | 05:07 | 07:03 (6) | 05:58 | 06:51 (6) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 47 | 07:27 (6) | 22:13 | | 22:11 18 | 07:21 (6) | 21:19 45 | 07:36 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:41 (6) | 04:53 | | 05:08 | 07:03 (6) | 06:00 | 06:51 (6) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 46 | 07:27 (6) | 22:14 | | 22:10 20 | 07:23 (6) | 21:17 44 | 07:35 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | 05:30 | 06:41 (6) | 04:53 | | 05:09 | 07:01 (6) | 06:02 | 06:52 (6) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 46 | 07:27 (6) | 22:15 | | 22:09 23 | 07:24 (6) | 21:15 42 | 07:34 (6) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:41 (6) | 04:53 | | 05:11 | 07:00 (6) | 06:03 | 06:52 (6) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 45 | 07:26 (6) | 22:15 | | 22:08 25 | 07:25 (6) | 21:12 42 | 07:34 (6) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (6) | 04:52 | | 05:12 | 06:59 (6) | 06:05 | 06:53 (6) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 44 | 07:26 (6) | 22:16 | | 22:06 27 | 07:26 (6) | 21:10 40 | 07:33 (6) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (6) | 04:52 | | 05:13 | 06:59 (6) | 06:07 | 06:54 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 44 | 07:26 (6) | 22:17 | | 22:05 29 | 07:28 (6) | 21:08 38 | 07:32 (6) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (6) | 04:52 | | 05:15 | 06:58 (6) | 06:09 | 06:54 (6) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 43 | 07:25 (6) | 22:17 | | 22:04 31 | 07:29 (6) | 21:05 36 | 07:30 (6) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (6) | 04:52 | | 05:16 | 06:57 (6) | 06:11 | 06:55 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 42 | 07:25 (6) | 22:18 | | 22:03 32 | 07:29 (6) | 21:03 34 | 07:29 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (6) | 04:52 | | 05:18 | 06:57 (6) | 06:13 | 06:57 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 41 | 07:24 (6) | 22:18 | | 22:01 34 | 07:31 (6) | 21:01 31 | 07:28 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:02 (6) | 05:18 | 06:44 (6) | 04:52 | | 05:19 | 06:56 (6) | 06:15 | 06:59 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 10 07:12 (6) | 21:44 40 | 07:24 (6) | 22:18 | | 22:00 35 | 07:31 (6) | 20:58 27 | 07:26 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:57 (6) | 05:16 | 06:45 (6) | 04:52 | | 05:21 | 06:55 (6) | 06:17 | 07:00 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 19 07:16 (6) | 21:45 38 | 07:23 (6) | 22:19 | | 21:58 37 | 07:32 (6) | 20:56 23 | 07:23 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 06:55 (6) | 05:15 | 06:45 (6) | 04:52 | | 05:22 | 06:55 (6) | 06:19 | 07:02 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 24 07:19 (6) | 21:47 37 | 07:22 (6) | 22:19 | | 21:57 38 | 07:33 (6) | 20:54 18 | 07:20 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:53 (6) | 05:13 | 06:46 (6) | 04:53 | | 05:24 | 06:54 (6) | 06:21 | 07:07 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 28 07:21 (6) | 21:49 36 | 07:22 (6) | 22:19 | | 21:55 39 | 07:33 (6) | 20:51 8 | 07:15 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 06:51 (6) | 05:12 | 06:47 (6) | 04:53 | | 05:26 | 06:54 (6) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 31 07:22 (6) | 21:50 34 | 07:21 (6) | 22:19 | | 21:54 40 | 07:34 (6) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:49 (6) | 05:10 | 06:47 (6) | 04:53 | | 05:27 | 06:53 (6) | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 34 07:23 (6) | 21:52 33 | 07:20 (6) | 22:19 | | 21:52 41 | 07:34 (6) | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:47 (6) | 05:09 | 06:48 (6) | 04:54 | | 05:29 | 06:53 (6) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 37 07:24 (6) | 21:53 31 | 07:19 (6) | 22:19 | | 21:50 42 | 07:35 (6) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:46 (6) | 05:08 | 06:49 (6) | 04:54 | | 05:31 | 06:53 (6) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 39 07:25 (6) | 21:55 30 | 07:19 (6) | 22:19 | | 21:49 43 | 07:36 (6) | 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:45 (6) | 05:06 | 06:50 (6) | 04:55 | | 05:32 | 06:52 (6) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 41 07:26 (6) | 21:57 28 | 07:18 (6) | 22:19 | | 21:47 44 | 07:36 (6) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:45 (6) | 05:05 | 06:51 (6) | 04:55 | | 05:34 | 06:52 (6) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 41 07:26 (6) | 21:58 26 | 07:17 (6) | 22:18 | | 21:45 45 | 07:37 (6) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:44 (6) | 05:04 | 06:52 (6) | 04:56 | | 05:36 | 06:51 (6) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 43 07:27 (6) | 21:59 24 | 07:16 (6) | 22:18 | | 21:43 46 | 07:37 (6) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:54 (6) | | | 05:38 | 06:51 (6) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 21 | 07:15 (6) | | | 21:41 46 | 07:37 (6) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | | 520 | | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 347 | 1237 | | 58 | | 769 | 892 | | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,48 | | 0,49 | 0,51 | | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | 0,96 | 0,96 | | 0,96 | | 0,96 | 0,96 | | | | | |
| Total reduction | | | | 0,38 | 0,50 | | 0,47 | | 0,47 | 0,50 | | | | | |
| Total, real | | | | 132 | 616 | | 27 | | 360 | 443 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:44 (6) | 05:02 | 06:53 (6) | 04:57 | 05:39 | 06:52 (6) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 45 | 07:29 (6) | 22:02 26 | 07:19 (6) | 22:18 | 21:40 48 | 07:40 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:43 (6) | 05:01 | 06:54 (6) | 04:57 | 05:41 | 06:51 (6) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 46 | 07:29 (6) | 22:03 24 | 07:18 (6) | 22:17 | 21:38 49 | 07:40 (6) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:42 (6) | 05:00 | 06:55 (6) | 04:58 | 05:43 | 06:51 (6) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 47 | 07:29 (6) | 22:05 22 | 07:17 (6) | 22:17 | 21:36 49 | 07:40 (6) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:42 (6) | 04:59 | 06:57 (6) | 04:59 | 07:09 (6) 05:45 | 06:52 (6) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 47 | 07:29 (6) | 22:06 20 | 07:17 (6) | 22:16 6 | 07:15 (6) 21:34 | 48 07:40 (6) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:41 (6) | 04:58 | 06:58 (6) | 05:00 | 07:07 (6) 05:47 | 06:51 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 48 | 07:29 (6) | 22:07 17 | 07:15 (6) | 22:16 11 | 07:18 (6) 21:32 | 48 07:39 (6) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:42 (6) | 04:57 | 06:59 (6) | 05:01 | 07:05 (6) 05:49 | 06:51 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 48 | 07:30 (6) | 22:08 15 | 07:14 (6) | 22:15 14 | 07:19 (6) 21:30 | 49 07:40 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:42 (6) | 04:56 | 07:01 (6) | 05:02 | 07:04 (6) 05:50 | 06:51 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 48 | 07:30 (6) | 22:09 12 | 07:13 (6) | 22:14 17 | 07:21 (6) 21:28 | 49 07:40 (6) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:41 (6) | 04:56 | 07:02 (6) | 05:03 | 07:03 (6) 05:52 | 06:52 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 49 | 07:30 (6) | 22:10 9 | 07:11 (6) | 22:14 19 | 07:22 (6) 21:25 | 48 07:40 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:41 (6) | 04:55 | 07:06 (6) | 05:04 | 07:02 (6) 05:54 | 06:51 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 49 | 07:30 (6) | 22:11 2 | 07:08 (6) | 22:13 22 | 07:24 (6) 21:23 | 48 07:39 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:41 (6) | 04:54 | | 05:05 | 07:02 (6) 05:56 | 06:52 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 49 | 07:30 (6) | 22:12 | | 22:12 23 | 07:25 (6) 21:21 | 46 07:38 (6) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:41 (6) | 04:54 | | 05:07 | 07:01 (6) 05:58 | 06:52 (6) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 48 | 07:29 (6) | 22:13 | | 22:11 25 | 07:26 (6) 21:19 | 46 07:38 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:42 (6) | 04:53 | | 05:08 | 07:01 (6) 06:00 | 06:52 (6) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 48 | 07:30 (6) | 22:14 | | 22:10 27 | 07:28 (6) 21:17 | 45 07:37 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | 05:30 | 06:41 (6) | 04:53 | | 05:09 | 07:00 (6) 06:02 | 06:53 (6) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 48 | 07:29 (6) | 22:15 | | 22:09 29 | 07:29 (6) 21:15 | 43 07:36 (6) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:41 (6) | 04:53 | | 05:11 | 06:59 (6) 06:03 | 06:53 (6) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 48 | 07:29 (6) | 22:15 | | 22:08 30 | 07:29 (6) 21:12 | 43 07:36 (6) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (6) | 04:52 | | 05:12 | 06:58 (6) 06:05 | 06:54 (6) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 47 | 07:29 (6) | 22:16 | | 22:06 32 | 07:30 (6) 21:10 | 41 07:35 (6) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (6) | 04:52 | | 05:13 | 06:58 (6) 06:07 | 06:55 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 46 | 07:28 (6) | 22:17 | | 22:05 34 | 07:32 (6) 21:08 | 39 07:34 (6) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (6) | 04:52 | | 05:15 | 06:57 (6) 06:09 | 06:55 (6) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 45 | 07:27 (6) | 22:17 | | 22:04 35 | 07:32 (6) 21:05 | 37 07:32 (6) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (6) | 04:52 | | 05:16 | 06:56 (6) 06:11 | 06:56 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 44 | 07:27 (6) | 22:18 | | 22:03 37 | 07:33 (6) 21:03 | 35 07:31 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (6) | 04:52 | | 05:18 | 06:57 (6) 06:13 | 06:58 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 43 | 07:26 (6) | 22:18 | | 22:01 37 | 07:34 (6) 21:01 | 31 07:29 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:04 (6) | 05:18 | 06:44 (6) | 04:52 | | 05:19 | 06:56 (6) 06:15 | 07:00 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 9 07:13 (6) | 21:44 42 | 07:26 (6) | 22:18 | | 22:00 38 | 07:34 (6) 20:58 | 27 07:27 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:59 (6) | 05:16 | 06:45 (6) | 04:52 | | 05:21 | 06:55 (6) 06:17 | 07:01 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 18 07:17 (6) | 21:45 41 | 07:26 (6) | 22:19 | | 21:58 40 | 07:35 (6) 20:56 | 23 07:24 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 06:56 (6) | 05:15 | 06:45 (6) | 04:52 | | 05:22 | 06:55 (6) 06:19 | 07:04 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 24 07:20 (6) | 21:47 40 | 07:25 (6) | 22:19 | | 21:57 41 | 07:36 (6) 20:54 | 17 07:21 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:54 (6) | 05:13 | 06:46 (6) | 04:53 | | 05:24 | 06:54 (6) 06:21 | 07:09 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 28 07:22 (6) | 21:49 39 | 07:25 (6) | 22:19 | | 21:55 42 | 07:36 (6) 20:51 | 7 07:16 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 06:52 (6) | 05:12 | 06:47 (6) | 04:53 | | 05:26 | 06:54 (6) 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 32 07:24 (6) | 21:50 38 | 07:25 (6) | 22:19 | | 21:54 43 | 07:37 (6) 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:50 (6) | 05:10 | 06:46 (6) | 04:53 | | 05:27 | 06:53 (6) 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 34 07:24 (6) | 21:52 37 | 07:23 (6) | 22:19 | | 21:52 44 | 07:37 (6) 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:48 (6) | 05:09 | 06:47 (6) | 04:54 | | 05:29 | 06:53 (6) 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 38 07:26 (6) | 21:53 36 | 07:23 (6) | 22:19 | | 21:50 45 | 07:38 (6) 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:47 (6) | 05:08 | 06:48 (6) | 04:54 | | 05:31 | 06:53 (6) 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 40 07:27 (6) | 21:55 34 | 07:22 (6) | 22:19 | | 21:49 46 | 07:39 (6) 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:46 (6) | 05:06 | 06:49 (6) | 04:55 | | 05:32 | 06:52 (6) 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 41 07:27 (6) | 21:57 33 | 07:22 (6) | 22:19 | | 21:47 47 | 07:39 (6) 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:46 (6) | 05:05 | 06:50 (6) | 04:55 | | 05:34 | 06:52 (6) 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 42 07:28 (6) | 21:58 31 | 07:21 (6) | 22:18 | | 21:45 47 | 07:39 (6) 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:45 (6) | 05:04 | 06:51 (6) | 04:56 | | 05:36 | 06:52 (6) 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 44 07:29 (6) | 21:59 29 | 07:20 (6) | 22:18 | | 21:43 47 | 07:39 (6) 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:52 (6) | | | 05:38 | 06:52 (6) 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 28 | 07:20 (6) | | | 21:41 48 | 07:40 (6) 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | | 520 | | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 350 | 1321 | | 147 | | 926 | 916 | | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,48 | | 0,49 | 0,51 | | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | 0,96 | 0,96 | | 0,96 | | 0,96 | 0,96 | | | | | |
| Total reduction | | | | 0,38 | 0,50 | | 0,47 | | 0,47 | 0,50 | | | | | |
| Total, real | | | | 133 | 658 | | 68 | | 434 | 455 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 46 | 07:31 (6) 22:02 32 | 06:51 (6) 22:18 16 | 07:05 (6) 21:40 51 | 06:52 (6) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:44 (6) 05:01 | 06:52 (6) 04:57 | 07:05 (6) 05:41 | 06:52 (6) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 47 | 07:31 (6) 22:03 30 | 07:22 (6) 22:17 17 | 07:22 (6) 21:38 50 | 07:42 (6) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:43 (6) 05:00 | 06:53 (6) 04:58 | 07:04 (6) 05:43 | 06:52 (6) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 48 | 07:31 (6) 22:05 29 | 07:22 (6) 22:17 18 | 07:22 (6) 21:36 50 | 07:42 (6) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:42 (6) 04:59 | 06:54 (6) 04:59 | 07:03 (6) 05:45 | 06:52 (6) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 49 | 07:31 (6) 22:06 28 | 07:22 (6) 22:16 21 | 07:24 (6) 21:34 51 | 07:43 (6) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:42 (6) 04:58 | 06:55 (6) 05:00 | 07:03 (6) 05:47 | 06:51 (6) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 49 | 07:31 (6) 22:07 26 | 07:21 (6) 22:16 22 | 07:25 (6) 21:32 51 | 07:42 (6) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:43 (6) 04:57 | 06:55 (6) 05:01 | 07:02 (6) 05:49 | 06:52 (6) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 50 | 07:33 (6) 22:08 25 | 07:20 (6) 22:15 24 | 07:26 (6) 21:30 50 | 07:42 (6) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:42 (6) 04:56 | 06:57 (6) 05:02 | 07:02 (6) 05:50 | 06:52 (6) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 50 | 07:32 (6) 22:09 23 | 07:20 (6) 22:14 25 | 07:27 (6) 21:28 50 | 07:42 (6) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:42 (6) 04:56 | 06:57 (6) 05:03 | 07:01 (6) 05:52 | 06:53 (6) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 50 | 07:32 (6) 22:10 22 | 07:19 (6) 22:14 27 | 07:28 (6) 21:25 49 | 07:42 (6) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:42 (6) 04:55 | 06:59 (6) 05:04 | 07:00 (6) 05:54 | 06:52 (6) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 50 | 07:32 (6) 22:11 19 | 07:18 (6) 22:13 29 | 07:29 (6) 21:23 49 | 07:41 (6) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:41 (6) 04:54 | 06:59 (6) 05:05 | 07:00 (6) 05:56 | 06:53 (6) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 51 | 07:32 (6) 22:12 18 | 07:17 (6) 22:12 30 | 07:30 (6) 21:21 47 | 07:40 (6) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:41 (6) 04:54 | 07:01 (6) 05:07 | 06:59 (6) 05:58 | 06:53 (6) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 51 | 07:32 (6) 22:13 16 | 07:17 (6) 22:11 31 | 07:30 (6) 21:19 47 | 07:40 (6) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:42 (6) 04:53 | 07:02 (6) 05:08 | 06:59 (6) 06:00 | 06:53 (6) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 50 | 07:32 (6) 22:14 14 | 07:16 (6) 22:10 33 | 07:32 (6) 21:17 46 | 07:39 (6) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 06:42 (6) 04:53 | 07:03 (6) 05:09 | 06:59 (6) 06:02 | 06:53 (6) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 50 | 07:32 (6) 22:15 12 | 07:15 (6) 22:09 34 | 07:33 (6) 21:15 45 | 07:38 (6) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:42 (6) 04:53 | 07:04 (6) 05:11 | 06:58 (6) 06:03 | 06:54 (6) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 49 | 07:31 (6) 22:15 10 | 07:14 (6) 22:08 35 | 07:33 (6) 21:12 43 | 07:37 (6) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:42 (6) 04:52 | 07:05 (6) 05:12 | 06:57 (6) 06:05 | 06:55 (6) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 50 | 07:32 (6) 22:16 9 | 07:14 (6) 22:06 37 | 07:34 (6) 21:10 42 | 07:37 (6) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:42 (6) 04:52 | 07:07 (6) 05:13 | 06:57 (6) 06:07 | 06:56 (6) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 49 | 07:31 (6) 22:17 6 | 07:13 (6) 22:05 38 | 07:35 (6) 21:08 40 | 07:36 (6) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:42 (6) 04:52 | 07:08 (6) 05:15 | 06:57 (6) 06:09 | 06:56 (6) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 48 | 07:30 (6) 22:17 4 | 07:12 (6) 22:04 39 | 07:36 (6) 21:05 38 | 07:34 (6) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:43 (6) 04:52 | 05:16 | 06:56 (6) 06:11 | 06:58 (6) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 47 | 07:30 (6) 22:18 | 22:03 40 | 07:36 (6) 21:03 34 | 07:32 (6) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:43 (6) 04:52 | 05:18 | 06:56 (6) 06:13 | 06:59 (6) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 46 | 07:29 (6) 22:18 | 22:01 41 | 07:37 (6) 21:01 32 | 07:31 (6) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:07 (6) 05:18 | 06:44 (6) 04:52 | 05:19 | 06:55 (6) 06:15 | 07:01 (6) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 7 | 07:14 (6) 21:44 45 | 07:29 (6) 22:18 | 22:00 43 | 07:38 (6) 20:58 28 | 07:29 (6) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:00 (6) 05:16 | 06:45 (6) 04:52 | 05:21 | 06:54 (6) 06:17 | 07:02 (6) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 18 | 07:18 (6) 21:45 44 | 07:29 (6) 22:19 | 21:58 44 | 07:38 (6) 20:56 24 | 07:26 (6) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 06:57 (6) 05:15 | 06:44 (6) 04:52 | 05:22 | 06:55 (6) 06:19 | 07:06 (6) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 24 | 07:21 (6) 21:47 44 | 07:28 (6) 22:19 | 21:57 44 | 07:39 (6) 20:54 16 | 07:22 (6) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:55 (6) 05:13 | 06:45 (6) 04:53 | 05:24 | 06:54 (6) 06:21 | 07:12 (6) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 29 | 07:24 (6) 21:49 43 | 07:28 (6) 22:19 | 21:55 45 | 07:39 (6) 20:51 4 | 07:16 (6) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 06:53 (6) 05:12 | 06:46 (6) 04:53 | 05:26 | 06:54 (6) 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 33 | 07:26 (6) 21:50 42 | 07:28 (6) 22:19 | 21:54 46 | 07:40 (6) 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 06:51 (6) 05:10 | 06:46 (6) 04:53 | 05:27 | 06:53 (6) 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 35 | 07:26 (6) 21:52 41 | 07:27 (6) 22:19 2 | 07:11 (6) 21:52 47 | 07:40 (6) 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 06:50 (6) 05:09 | 06:47 (6) 04:54 | 07:09 (6) 05:29 | 06:53 (6) 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 37 | 07:27 (6) 21:53 39 | 07:26 (6) 22:19 6 | 07:15 (6) 21:50 48 | 07:41 (6) 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 06:48 (6) 05:08 | 06:48 (6) 04:54 | 07:08 (6) 05:31 | 06:53 (6) 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 40 | 07:28 (6) 21:55 38 | 07:26 (6) 22:19 7 | 07:15 (6) 21:49 49 | 07:42 (6) 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:47 (6) 05:06 | 06:48 (6) 04:55 | 07:07 (6) 05:32 | 06:52 (6) 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 42 | 07:29 (6) 21:57 38 | 07:26 (6) 22:19 10 | 07:17 (6) 21:47 49 | 07:41 (6) 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 06:47 (6) 05:05 | 06:49 (6) 04:55 | 07:07 (6) 05:34 | 06:53 (6) 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 43 | 07:30 (6) 21:58 36 | 07:25 (6) 22:18 12 | 07:19 (6) 21:45 49 | 07:42 (6) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:46 (6) 05:04 | 06:50 (6) 04:56 | 07:06 (6) 05:36 | 06:52 (6) 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 45 | 07:31 (6) 21:59 35 | 07:25 (6) 22:18 13 | 07:19 (6) 21:43 50 | 07:42 (6) 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:51 (6) | 05:38 | 06:52 (6) 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 33 | 07:24 (6) | 21:41 50 | 07:42 (6) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 353 | 1408 | 373 | 1121 | 937 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,97 | 0,97 | 0,97 | 0,97 | 0,97 | | | | |
| Total reduction | | | | 0,38 | 0,50 | 0,47 | 0,47 | 0,50 | | | | |
| Total, real | | | | 134 | 702 | 174 | 525 | 466 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26<br>18:07 | 07:08<br>20:09 | 05:55<br>21:08 57 | 05:02<br>07:55 (6) \| 22:02 | 30 07:10 (6) \| 04:57<br>07:40 (6) \| 22:18 | 05:39<br>21:40 55 | 07:08 (6) \| 06:38<br>08:03 (6) \| 20:29 | 07:34<br>19:12 | 07:36<br>16:58 | 08:35<br>16:10 |
| 2 | 09:00<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05<br>20:11 | 05:53<br>21:10 57 | 06:57 (6) \| 05:01<br>07:54 (6) \| 22:03 | 07:11 (6) \| 04:57<br>28 07:39 (6) \| 22:17 | 07:29 (6) \| 05:41<br>4 07:33 (6) \| 21:38 | 07:07 (6) \| 06:39<br>56 08:03 (6) \| 20:27 | 07:36<br>19:09 | 07:38<br>16:55 | 08:36<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:11 | 07:03<br>20:13 | 05:50<br>21:12 57 | 06:57 (6) \| 05:00<br>07:54 (6) \| 22:05 | 07:12 (6) \| 04:58<br>26 07:38 (6) \| 22:17 | 07:26 (6) \| 05:43<br>9 07:35 (6) \| 21:36 | 07:07 (6) \| 06:41<br>56 08:03 (6) \| 20:24 | 07:38<br>19:07 | 07:41<br>16:53 | 08:38<br>16:08 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19<br>18:13 | 07:00<br>20:15 | 05:48<br>21:14 58 | 06:56 (6) \| 04:59<br>07:54 (6) \| 22:06 | 07:14 (6) \| 04:59<br>24 07:38 (6) \| 22:16 | 07:24 (6) \| 05:45<br>13 07:37 (6) \| 21:34 | 07:07 (6) \| 06:43<br>57 08:04 (6) \| 20:22 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17<br>18:15 | 06:57<br>20:17 | 05:46<br>21:16 57 | 06:56 (6) \| 04:58<br>07:53 (6) \| 22:07 | 07:15 (6) \| 05:00<br>21 07:36 (6) \| 22:16 | 07:23 (6) \| 05:47<br>16 07:39 (6) \| 21:32 | 07:06 (6) \| 06:45<br>57 08:03 (6) \| 20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:17 | 06:55<br>20:19 | 05:44<br>21:18 57 | 06:57 (6) \| 04:57<br>07:54 (6) \| 22:08 | 07:15 (6) \| 05:01<br>20 07:35 (6) \| 22:15 | 07:22 (6) \| 05:49<br>19 07:41 (6) \| 21:30 | 07:06 (6) \| 06:47<br>57 08:03 (6) \| 20:16 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 08:58<br>16:21 | 08:16<br>17:21 | 07:12<br>18:19 | 06:52<br>20:21 | 05:42<br>21:20 57 | 06:57 (6) \| 04:56<br>07:54 (6) \| 22:09 | 07:17 (6) \| 05:02<br>17 07:34 (6) \| 22:14 | 07:21 (6) \| 05:50<br>21 07:42 (6) \| 21:28 | 07:06 (6) \| 06:49<br>58 08:04 (6) \| 20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 57 | 06:57 (6) \| 04:56<br>07:54 (6) \| 22:10 | 07:19 (6) \| 05:03<br>14 07:33 (6) \| 22:14 | 07:20 (6) \| 05:52<br>23 07:43 (6) \| 21:25 | 07:07 (6) \| 06:51<br>57 08:04 (6) \| 20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:24 | 08:12<br>17:25 | 07:07<br>18:24 | 06:47<br>20:25 | 05:38<br>21:24 56 | 06:57 (6) \| 04:55<br>07:53 (6) \| 22:11 | 07:21 (6) \| 05:04<br>11 07:32 (6) \| 22:13 | 07:20 (6) \| 05:54<br>25 07:45 (6) \| 21:23 | 07:06 (6) \| 06:53<br>57 08:03 (6) \| 20:09 | 07:50<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 08:56<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 56 | 06:57 (6) \| 04:54<br>07:53 (6) \| 22:12 | 07:22 (6) \| 05:05<br>7 07:29 (6) \| 22:12 | 07:19 (6) \| 05:56<br>27 07:46 (6) \| 21:21 | 07:06 (6) \| 06:55<br>57 08:03 (6) \| 20:06 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:42<br>20:29 | 05:34<br>21:28 55 | 06:57 (6) \| 04:54<br>07:52 (6) \| 22:13 | 05:07<br>22:11 29 | 07:18 (6) \| 05:58<br>07:47 (6) \| 21:19 | 07:06 (6) \| 06:56<br>57 08:03 (6) \| 20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:29 | 08:06<br>17:31 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:29 55 | 06:58 (6) \| 04:53<br>07:53 (6) \| 22:14 | 05:08<br>22:10 31 | 07:18 (6) \| 06:00<br>07:49 (6) \| 21:17 | 07:06 (6) \| 06:58<br>56 08:02 (6) \| 20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 08:54<br>16:31 | 08:03<br>17:33 | 06:56<br>18:32 | 06:37<br>20:33 | 05:30<br>21:31 55 | 06:57 (6) \| 04:53<br>07:52 (6) \| 22:15 | 05:09<br>22:09 33 | 07:17 (6) \| 06:02<br>07:50 (6) \| 21:15 | 07:06 (6) \| 07:00<br>56 08:02 (6) \| 19:58 | 07:58<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 08:53<br>16:33 | 08:01<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 54 | 06:57 (6) \| 04:53<br>07:51 (6) \| 22:15 | 05:11<br>22:08 34 | 07:16 (6) \| 06:03<br>07:50 (6) \| 21:12 | 07:07 (6) \| 07:02<br>54 08:01 (6) \| 19:56 | 08:00<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 08:52<br>16:34 | 07:59<br>17:38 | 06:51<br>18:36 | 06:32<br>20:37 16 | 07:21 (6) \| 05:26<br>07:37 (6) \| 21:35 53 | 06:58 (6) \| 04:52<br>07:51 (6) \| 22:16 | 05:12<br>22:06 36 | 07:15 (6) \| 06:05<br>07:51 (6) \| 21:10 | 07:07 (6) \| 07:04<br>54 08:01 (6) \| 19:53 | 08:02<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 08:51<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 24 | 07:17 (6) \| 05:25<br>07:41 (6) \| 21:37 52 | 06:58 (6) \| 04:52<br>07:50 (6) \| 22:17 | 05:13<br>22:05 38 | 07:15 (6) \| 06:07<br>07:53 (6) \| 21:08 | 07:08 (6) \| 07:06<br>53 08:01 (6) \| 19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:46<br>18:40 | 06:27<br>20:41 30 | 07:14 (6) \| 05:23<br>07:44 (6) \| 21:39 52 | 06:58 (6) \| 04:52<br>07:50 (6) \| 22:17 | 05:15<br>22:04 39 | 07:14 (6) \| 06:09<br>07:53 (6) \| 21:05 | 07:07 (6) \| 07:08<br>52 07:59 (6) \| 19:48 | 08:06<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 08:49<br>16:40 | 07:52<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 34 | 07:11 (6) \| 05:21<br>07:45 (6) \| 21:40 51 | 06:59 (6) \| 04:52<br>07:50 (6) \| 22:18 | 05:16<br>22:03 41 | 07:13 (6) \| 06:11<br>07:54 (6) \| 21:03 | 07:08 (6) \| 07:10<br>50 07:58 (6) \| 19:46 | 08:08<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:47<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 37 | 07:10 (6) \| 05:19<br>07:47 (6) \| 21:42 49 | 06:59 (6) \| 04:52<br>07:48 (6) \| 22:18 | 05:18<br>22:01 43 | 07:13 (6) \| 06:13<br>07:56 (6) \| 21:01 | 07:09 (6) \| 07:12<br>49 07:58 (6) \| 19:43 | 08:10<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:48 | 06:39<br>18:46 | 06:20<br>20:47 41 | 07:08 (6) \| 05:18<br>07:49 (6) \| 21:44 48 | 07:00 (6) \| 04:52<br>07:48 (6) \| 22:18 | 05:19<br>22:00 44 | 07:12 (6) \| 06:15<br>07:56 (6) \| 20:58 | 07:10 (6) \| 07:13<br>47 07:57 (6) \| 19:40 | 08:12<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 08:45<br>16:46 | 07:46<br>17:50 | 06:36<br>18:48 | 06:18<br>20:49 43 | 07:06 (6) \| 05:16<br>07:49 (6) \| 21:45 47 | 07:01 (6) \| 04:52<br>07:48 (6) \| 22:19 | 05:21<br>21:58 44 | 07:12 (6) \| 06:17<br>07:56 (6) \| 20:56 | 07:10 (6) \| 07:15<br>45 07:55 (6) \| 19:38 | 08:14<br>18:22 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 08:43<br>16:48 | 07:43<br>17:53 | 06:33<br>18:50 | 06:15<br>20:51 45 | 07:05 (6) \| 05:15<br>07:50 (6) \| 21:47 46 | 07:01 (6) \| 04:52<br>07:47 (6) \| 22:19 | 05:22<br>21:57 46 | 07:12 (6) \| 06:19<br>07:58 (6) \| 20:54 | 07:11 (6) \| 07:17<br>43 07:54 (6) \| 19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 47 | 07:04 (6) \| 05:13<br>07:51 (6) \| 21:49 45 | 07:02 (6) \| 04:53<br>07:47 (6) \| 22:19 | 05:24<br>21:55 47 | 07:11 (6) \| 06:21<br>07:58 (6) \| 20:51 | 07:12 (6) \| 07:19<br>40 07:52 (6) \| 19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:51 | 07:38<br>17:57 | 06:28<br>18:54 | 06:11<br>20:55 49 | 07:03 (6) \| 05:12<br>07:52 (6) \| 21:50 43 | 07:03 (6) \| 04:53<br>07:46 (6) \| 22:19 | 05:26<br>21:54 48 | 07:11 (6) \| 06:22<br>07:59 (6) \| 20:49 | 07:14 (6) \| 07:21<br>37 07:51 (6) \| 19:30 | 08:20<br>18:15 | 08:23<br>16:17 | 09:00<br>16:06 |
| 25 | 08:39<br>16:53 | 07:36<br>17:59 | 06:26<br>18:56 | 06:08<br>20:57 51 | 07:01 (6) \| 05:10<br>07:52 (6) \| 21:52 42 | 07:03 (6) \| 04:53<br>07:45 (6) \| 22:19 | 05:27<br>21:52 49 | 07:10 (6) \| 06:24<br>07:59 (6) \| 20:46 | 07:15 (6) \| 07:23<br>34 07:49 (6) \| 19:27 | 08:22<br>17:13 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 08:37<br>16:56 | 07:34<br>18:01 | 06:23<br>18:57 | 06:06<br>20:59 52 | 07:01 (6) \| 05:09<br>07:53 (6) \| 21:53 40 | 07:04 (6) \| 04:54<br>07:44 (6) \| 22:19 | 05:29<br>21:50 50 | 07:10 (6) \| 06:26<br>08:00 (6) \| 20:44 | 07:17 (6) \| 07:25<br>28 07:45 (6) \| 19:25 | 08:24<br>17:11 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 08:36<br>16:58 | 07:31<br>18:03 | 06:21<br>18:59 | 06:04<br>21:01 53 | 07:00 (6) \| 05:08<br>07:53 (6) \| 21:55 39 | 07:05 (6) \| 04:54<br>07:44 (6) \| 22:19 | 05:31<br>21:49 51 | 07:10 (6) \| 06:28<br>08:01 (6) \| 20:42 | 07:19 (6) \| 07:27<br>24 07:43 (6) \| 19:22 | 08:26<br>17:08 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:01 | 06:01<br>21:03 54 | 07:00 (6) \| 05:06<br>07:54 (6) \| 21:57 37 | 07:06 (6) \| 04:55<br>07:43 (6) \| 22:19 | 05:32<br>21:47 52 | 07:09 (6) \| 06:30<br>08:01 (6) \| 20:39 | 07:23 (6) \| 07:29<br>16 07:39 (6) \| 19:20 | 08:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 08:33<br>17:02 | | 07:15<br>20:03 | 05:59<br>21:05 55 | 06:59 (6) \| 05:05<br>07:54 (6) \| 21:58 35 | 07:07 (6) \| 04:55<br>07:42 (6) \| 22:18 | 05:34<br>21:45 53 | 07:09 (6) \| 06:32<br>08:02 (6) \| 20:37 | 07:31<br>19:17 | 07:30<br>17:04 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:05 | 05:57<br>21:06 55 | 06:59 (6) \| 05:04<br>07:54 (6) \| 21:59 34 | 07:08 (6) \| 04:56<br>07:42 (6) \| 22:18 | 05:36<br>21:43 54 | 07:08 (6) \| 06:34<br>08:02 (6) \| 20:34 | 07:32<br>19:14 | 07:32<br>17:02 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 08:29<br>17:06 | | 07:10<br>20:07 | | 05:03<br>22:01 32 | 07:09 (6) \|<br>07:41 (6) \| | 05:38<br>21:41 54 | 07:08 (6) \| 06:36<br>08:02 (6) \| 20:32 | | 07:34<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 686 | 1533 | 198 | 1073 | 1362 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 | | | | |
| Total reduction | | | | 0,39 | 0,51 | 0,47 | 0,48 | 0,51 | | | | |
| Total, real | | | | 265 | 778 | 94 | 512 | 689 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 07:07 (6) 05:02 | 04:57 | 05:39 | 07:19 (6) 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 57 | 08:04 (6) 22:02 | 22:18 | 21:40 50 | 08:09 (6) 20:29 17 | 07:30 (6) 07:47 (6) 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 07:06 (6) 05:01 | 04:57 | 05:41 | 07:18 (6) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 56 | 08:02 (6) 22:03 | 22:17 | 21:38 51 | 08:09 (6) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 07:05 (6) 05:00 | 04:58 | 05:43 | 07:17 (6) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 57 | 08:02 (6) 22:05 | 22:17 | 21:36 53 | 08:10 (6) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 07:06 (6) 04:59 | 04:59 | 05:45 | 07:17 (6) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 56 | 08:02 (6) 22:06 | 22:16 | 21:34 53 | 08:10 (6) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 07:06 (6) 04:58 | 05:00 | 05:47 | 07:16 (6) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 55 | 08:01 (6) 22:07 | 22:16 | 21:32 54 | 08:10 (6) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 07:07 (6) 04:57 | 05:01 | 05:49 | 07:16 (6) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 55 | 08:02 (6) 22:08 | 22:15 | 21:30 55 | 08:11 (6) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 07:07 (6) 04:56 | 05:02 | 05:50 | 07:16 (6) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 54 | 08:01 (6) 22:09 | 22:14 | 21:28 55 | 08:11 (6) 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 07:07 (6) 04:56 | 05:03 | 05:52 | 07:16 (6) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 54 | 08:01 (6) 22:10 | 22:14 | 21:25 56 | 08:12 (6) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 07:07 (6) 04:55 | 05:04 | 05:54 | 07:15 (6) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 53 | 08:00 (6) 22:11 | 22:13 | 21:23 56 | 08:11 (6) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 07:07 (6) 04:54 | 05:05 | 05:56 | 07:15 (6) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 52 | 07:59 (6) 22:12 | 22:12 | 21:21 57 | 08:12 (6) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:31 (6) | 05:34 | 07:07 (6) 04:54 | 05:07 | 05:58 | 07:15 (6) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 17 07:48 (6) | 21:28 51 | 07:58 (6) 22:13 | 22:11 | 21:19 57 | 08:12 (6) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:27 (6) | 05:32 | 07:09 (6) 04:53 | 05:08 | 06:00 | 07:14 (6) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 25 07:52 (6) | 21:29 49 | 07:58 (6) 22:14 | 22:10 | 21:17 57 | 08:11 (6) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 07:23 (6) | 05:30 | 07:09 (6) 04:53 | 05:09 | 06:02 | 07:14 (6) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 31 07:54 (6) | 21:31 48 | 07:57 (6) 22:15 | 22:09 | 21:15 57 | 08:11 (6) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:21 (6) | 05:28 | 07:09 (6) 04:53 | 05:10 | 06:03 | 07:14 (6) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 35 07:56 (6) | 21:33 47 | 07:56 (6) 22:15 | 22:08 | 21:12 57 | 08:11 (6) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 07:19 (6) | 05:26 | 07:10 (6) 04:52 | 05:12 07:37 (6) | 06:05 | 07:15 (6) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 38 07:57 (6) | 21:35 46 | 07:56 (6) 22:16 | 22:06 9 07:46 (6) | 21:10 56 | 08:11 (6) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:17 (6) | 05:25 | 07:11 (6) 04:52 | 05:13 07:35 (6) | 06:07 | 07:15 (6) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 41 07:58 (6) | 21:37 44 | 07:55 (6) 22:17 | 22:05 15 07:50 (6) | 21:08 56 | 08:11 (6) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 07:16 (6) | 05:23 | 07:11 (6) 04:52 | 05:15 07:32 (6) | 06:09 | 07:14 (6) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 44 08:00 (6) | 21:39 43 | 07:54 (6) 22:17 | 22:04 20 07:52 (6) | 21:05 56 | 08:10 (6) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 07:14 (6) | 05:21 | 07:12 (6) 04:52 | 05:16 07:30 (6) | 06:11 | 07:14 (6) 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 46 08:00 (6) | 21:40 41 | 07:53 (6) 22:18 | 22:03 23 07:53 (6) | 21:03 56 | 08:10 (6) 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 07:13 (6) | 05:19 | 07:13 (6) 04:52 | 05:18 07:30 (6) | 06:13 | 07:15 (6) 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 48 08:01 (6) | 21:42 39 | 07:52 (6) 22:18 | 22:01 26 07:56 (6) | 21:01 54 | 08:09 (6) 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 07:12 (6) | 05:18 | 07:14 (6) 04:52 | 05:19 07:28 (6) | 06:15 | 07:15 (6) 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 50 08:02 (6) | 21:44 37 | 07:51 (6) 22:18 | 22:00 29 07:57 (6) | 20:58 54 | 08:09 (6) 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 07:11 (6) | 05:16 | 07:16 (6) 04:52 | 05:21 07:26 (6) | 06:17 | 07:15 (6) 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 51 08:02 (6) | 21:45 35 | 07:51 (6) 22:19 | 21:58 32 07:58 (6) | 20:56 52 | 08:07 (6) 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 07:10 (6) | 05:15 | 07:16 (6) 04:52 | 05:22 07:26 (6) | 06:19 | 07:15 (6) 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 53 08:03 (6) | 21:47 33 | 07:49 (6) 22:19 | 21:57 34 08:00 (6) | 20:54 51 | 08:06 (6) 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 07:10 (6) | 05:13 | 07:18 (6) 04:53 | 05:24 07:25 (6) | 06:21 | 07:16 (6) 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 53 08:03 (6) | 21:49 30 | 07:48 (6) 22:19 | 21:55 35 08:00 (6) | 20:51 50 | 08:06 (6) 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 07:09 (6) | 05:12 | 07:19 (6) 04:53 | 05:26 07:24 (6) | 06:22 | 07:17 (6) 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 55 08:04 (6) | 21:50 28 | 07:47 (6) 22:19 | 21:54 38 08:02 (6) | 20:49 48 | 08:05 (6) 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 07:08 (6) | 05:10 | 07:20 (6) 04:53 | 05:27 07:23 (6) | 06:24 | 07:18 (6) 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 55 08:03 (6) | 21:52 25 | 07:45 (6) 22:19 | 21:52 40 08:03 (6) | 20:46 46 | 08:04 (6) 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 07:07 (6) | 05:09 | 07:22 (6) 04:54 | 05:29 07:22 (6) | 06:26 | 07:18 (6) 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 56 08:03 (6) | 21:53 21 | 07:43 (6) 22:19 | 21:50 42 08:04 (6) | 20:44 43 | 08:01 (6) 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 07:07 (6) | 05:08 | 07:24 (6) 04:54 | 05:31 07:22 (6) | 06:28 | 07:19 (6) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 56 08:03 (6) | 21:55 17 | 07:41 (6) 22:19 | 21:49 43 08:05 (6) | 20:42 41 | 08:00 (6) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 07:07 (6) | 05:06 | 07:27 (6) 04:55 | 05:32 07:21 (6) | 06:30 | 07:21 (6) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 57 08:04 (6) | 21:57 12 | 07:39 (6) 22:19 | 21:47 45 08:06 (6) | 20:39 37 | 07:58 (6) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 07:07 (6) | 05:05 | 07:32 (6) 04:55 | 05:34 07:21 (6) | 06:32 | 07:22 (6) 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 57 08:04 (6) | 21:58 2 | 07:34 (6) 22:18 | 21:45 46 08:07 (6) | 20:37 35 | 07:57 (6) 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 07:07 (6) | 05:04 | 04:56 | 05:36 07:19 (6) | 06:34 | 07:24 (6) 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 57 08:04 (6) | 21:59 | 22:18 | 21:43 48 08:07 (6) | 20:34 30 | 07:54 (6) 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 07:19 (6) | 06:36 | 07:26 (6) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 49 08:08 (6) | 20:32 25 | 07:51 (6) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 925 | 1197 | | 574 | 1558 | 17 | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | 0,99 | | 0,99 | 0,99 | 0,99 | | | |
| Total reduction | | | | 0,39 | 0,51 | | 0,48 | 0,51 | 0,39 | | | |
| Total, real | | | | 360 | 612 | | 276 | 794 | 7 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 07:30 (6) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 55 08:10 (6) | 22:02 | 22:18 | 21:40 | 42 08:12 (6) | 20:29 | 36 08:04 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 07:14 (6) | 05:01 | 04:57 | 05:41 | 07:29 (6) | 06:39 | 07:29 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 55 08:09 (6) | 22:03 | 22:17 | 21:38 | 44 08:13 (6) | 20:27 | 33 08:02 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 07:14 (6) | 05:00 | 04:58 | 05:43 | 07:28 (6) | 06:41 | 07:31 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 54 08:08 (6) | 22:05 | 22:17 | 21:36 | 46 08:14 (6) | 20:24 | 29 08:00 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 07:15 (6) | 04:59 | 04:59 | 05:45 | 07:28 (6) | 06:43 | 07:34 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 53 08:08 (6) | 22:06 | 22:16 | 21:34 | 47 08:15 (6) | 20:22 | 22 07:56 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 07:15 (6) | 04:58 | 05:00 | 05:47 | 07:26 (6) | 06:45 | 07:38 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 52 08:07 (6) | 22:07 | 22:16 | 21:32 | 49 08:15 (6) | 20:19 | 13 07:51 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 07:16 (6) | 04:57 | 05:01 | 05:49 | 07:26 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 51 08:07 (6) | 22:08 | 22:15 | 21:30 | 50 08:16 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:42 (6) | 05:42 | 07:17 (6) | 04:56 | 05:02 | 05:50 | 07:26 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 12 07:54 (6) | 21:20 | 49 08:06 (6) | 22:09 | 22:14 | 21:28 | 51 08:17 (6) | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:36 (6) | 05:40 | 07:17 (6) | 04:56 | 05:03 | 05:52 | 07:25 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 22 07:58 (6) | 21:22 | 48 08:05 (6) | 22:10 | 22:14 | 21:25 | 52 08:17 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:33 (6) | 05:38 | 07:18 (6) | 04:55 | 05:04 | 05:54 | 07:24 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 29 08:02 (6) | 21:24 | 46 08:04 (6) | 22:11 | 22:13 | 21:23 | 53 08:17 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:30 (6) | 05:36 | 07:18 (6) | 04:54 | 05:05 | 05:56 | 07:24 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 33 08:03 (6) | 21:26 | 45 08:03 (6) | 22:12 | 22:12 | 21:21 | 54 08:18 (6) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:29 (6) | 05:34 | 07:19 (6) | 04:54 | 05:07 | 05:58 | 07:24 (6) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 36 08:05 (6) | 21:28 | 43 08:02 (6) | 22:13 | 22:11 | 21:19 | 54 08:18 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (6) | 05:32 | 07:20 (6) | 04:53 | 05:08 | 06:00 | 07:22 (6) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 40 08:07 (6) | 21:29 | 42 08:02 (6) | 22:14 | 22:10 | 21:17 | 56 08:18 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:25 (6) | 05:30 | 07:21 (6) | 04:53 | 05:09 | 06:02 | 07:22 (6) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 43 08:08 (6) | 21:31 | 39 08:00 (6) | 22:15 | 22:09 | 21:15 | 56 08:18 (6) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24 (6) | 05:28 | 07:21 (6) | 04:53 | 05:10 | 06:03 | 07:22 (6) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 45 08:09 (6) | 21:33 | 38 07:59 (6) | 22:15 | 22:08 | 21:12 | 56 08:18 (6) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:22 (6) | 05:26 | 07:23 (6) | 04:52 | 05:12 | 06:05 | 07:22 (6) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 47 08:09 (6) | 21:35 | 35 07:58 (6) | 22:16 | 22:06 | 21:10 | 57 08:19 (6) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:21 (6) | 05:25 | 07:24 (6) | 04:52 | 05:13 | 06:07 | 07:22 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 49 08:10 (6) | 21:37 | 32 07:56 (6) | 22:17 | 22:05 | 21:08 | 57 08:19 (6) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:20 (6) | 05:23 | 07:25 (6) | 04:52 | 05:15 | 06:09 | 07:21 (6) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 51 08:11 (6) | 21:39 | 29 07:54 (6) | 22:17 | 22:04 | 21:05 | 57 08:18 (6) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:19 (6) | 05:21 | 07:27 (6) | 04:52 | 05:16 | 06:11 | 07:21 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 52 08:11 (6) | 21:40 | 26 07:53 (6) | 22:18 | 22:03 | 21:03 | 57 08:18 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:18 (6) | 05:19 | 07:29 (6) | 04:52 | 05:18 | 06:13 | 07:21 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 53 08:11 (6) | 21:42 | 22 07:51 (6) | 22:18 | 22:01 | 21:01 | 57 08:18 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:18 (6) | 05:18 | 07:31 (6) | 04:52 | 05:19 | 06:15 | 07:22 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 54 08:12 (6) | 21:44 | 18 07:49 (6) | 22:18 | 22:00 | 20:58 | 56 08:18 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:16 (6) | 05:16 | 07:35 (6) | 04:52 | 05:21 | 06:17 | 07:21 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 55 08:11 (6) | 21:45 | 11 07:46 (6) | 22:19 | 21:58 | 20:56 | 55 08:16 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:16 (6) | 05:15 | 04:52 | 05:22 | 07:48 (6) | 06:19 | 07:21 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 56 08:12 (6) | 21:47 | 22:19 | 21:57 | 4 07:52 (6) | 20:54 | 55 08:16 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:16 (6) | 05:13 | 04:53 | 05:24 | 07:43 (6) | 06:21 | 07:22 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 56 08:12 (6) | 21:49 | 22:19 | 21:55 | 14 07:57 (6) | 20:51 | 54 08:16 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:16 (6) | 05:12 | 04:53 | 05:26 | 07:40 (6) | 06:22 | 07:22 (6) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 56 08:12 (6) | 21:50 | 22:19 | 21:54 | 20 08:00 (6) | 20:49 | 53 08:15 (6) | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:15 (6) | 05:10 | 04:53 | 05:27 | 07:38 (6) | 06:24 | 07:23 (6) | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 56 08:11 (6) | 21:52 | 22:19 | 21:52 | 24 08:02 (6) | 20:46 | 51 08:14 (6) | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:15 (6) | 05:09 | 04:54 | 05:29 | 07:37 (6) | 06:26 | 07:22 (6) | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 56 08:11 (6) | 21:53 | 22:19 | 21:50 | 27 08:04 (6) | 20:44 | 51 08:13 (6) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:15 (6) | 05:08 | 04:54 | 05:31 | 07:36 (6) | 06:28 | 07:23 (6) | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 56 08:11 (6) | 21:55 | 22:19 | 21:49 | 30 08:06 (6) | 20:42 | 49 08:12 (6) | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:15 (6) | 05:06 | 04:55 | 05:32 | 07:34 (6) | 06:30 | 07:24 (6) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 56 08:11 (6) | 21:57 | 22:19 | 21:47 | 33 08:07 (6) | 20:39 | 47 08:11 (6) | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:15 (6) | 05:05 | 04:55 | 05:34 | 07:33 (6) | 06:32 | 07:25 (6) | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 56 08:11 (6) | 21:58 | 22:18 | 21:45 | 36 08:09 (6) | 20:37 | 45 08:10 (6) | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:15 (6) | 05:04 | 04:56 | 05:36 | 07:31 (6) | 06:34 | 07:26 (6) | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 56 08:11 (6) | 21:59 | 22:18 | 21:43 | 38 08:09 (6) | 20:34 | 42 08:08 (6) | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 07:31 (6) | 06:36 | 07:26 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 40 08:11 (6) | 20:32 | 40 08:06 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 1125 | 843 | | 266 | 1593 | 133 | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | 0,99 | | 0,99 | 0,99 | 0,99 | | | |
| Total reduction | | | | 0,39 | 0,51 | | 0,48 | 0,51 | 0,39 | | | |
| Total, real | | | | 440 | 433 | | 128 | 816 | 52 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 07:26 (6) 05:02 | 04:57 | 05:39 | 07:47 (6) 06:38 | 07:31 (6) 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 50 | 08:16 (6) 22:02 | 22:18 | 21:40 26 | 08:13 (6) 20:29 48 | 08:19 (6) 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 07:26 (6) 05:01 | 04:57 | 05:41 | 07:44 (6) 06:39 | 07:32 (6) 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 49 | 08:15 (6) 22:03 | 22:17 | 21:38 30 | 08:14 (6) 20:27 45 | 08:17 (6) 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:52 (6) 05:50 | 07:26 (6) 05:00 | 04:58 | 05:43 | 07:43 (6) 06:41 | 07:33 (6) 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 13 | 08:05 (6) 21:12 48 | 08:14 (6) 22:05 | 22:17 | 21:36 33 | 08:16 (6) 20:24 43 | 08:16 (6) 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:46 (6) 05:48 | 07:27 (6) 04:59 | 04:59 | 05:45 | 07:42 (6) 06:43 | 07:34 (6) 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 23 | 08:09 (6) 21:14 46 | 08:13 (6) 22:06 | 22:16 | 21:34 36 | 08:18 (6) 20:22 41 | 08:15 (6) 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:43 (6) 05:46 | 07:28 (6) 04:58 | 05:00 | 05:47 | 07:40 (6) 06:45 | 07:35 (6) 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 29 | 08:12 (6) 21:16 44 | 08:12 (6) 22:07 | 22:16 | 21:32 38 | 08:18 (6) 20:19 37 | 08:12 (6) 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40 (6) 05:44 | 07:29 (6) 04:57 | 05:01 | 05:49 | 07:39 (6) 06:47 | 07:36 (6) 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 34 | 08:14 (6) 21:18 42 | 08:11 (6) 22:08 | 22:15 | 21:30 41 | 08:20 (6) 20:16 34 | 08:10 (6) 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:39 (6) 05:42 | 07:30 (6) 04:56 | 05:02 | 05:50 | 07:38 (6) 06:49 | 07:38 (6) 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 37 | 08:16 (6) 21:20 40 | 08:10 (6) 22:09 | 22:14 | 21:28 43 | 08:21 (6) 20:14 29 | 08:07 (6) 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:36 (6) 05:40 | 07:31 (6) 04:56 | 05:03 | 05:52 | 07:38 (6) 06:51 | 07:41 (6) 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 41 | 08:17 (6) 21:22 37 | 08:08 (6) 22:10 | 22:14 | 21:25 44 | 08:22 (6) 20:11 23 | 08:04 (6) 18:54 | 16:43 | 16:05 |
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| | 16:24 | 17:25 | 18:24 | 20:25 43 | 08:18 (6) 21:24 35 | 08:07 (6) 22:11 | 22:13 | 21:23 46 | 08:22 (6) 20:09 15 | 08:00 (6) 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:33 (6) 05:36 | 07:33 (6) 04:54 | 05:05 | 05:56 | 07:35 (6) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 45 | 08:18 (6) 21:26 32 | 08:05 (6) 22:12 | 22:12 | 21:21 48 | 08:23 (6) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:32 (6) 05:34 | 07:35 (6) 04:54 | 05:07 | 05:58 | 07:35 (6) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 48 | 08:20 (6) 21:28 28 | 08:03 (6) 22:13 | 22:11 | 21:19 49 | 08:24 (6) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:31 (6) 05:32 | 07:37 (6) 04:53 | 05:08 | 06:00 | 07:33 (6) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 50 | 08:21 (6) 21:29 25 | 08:02 (6) 22:14 | 22:10 | 21:17 51 | 08:24 (6) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:30 (6) 05:30 | 07:39 (6) 04:53 | 05:09 | 06:02 | 07:33 (6) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 51 | 08:21 (6) 21:31 20 | 07:59 (6) 22:15 | 22:09 | 21:15 52 | 08:25 (6) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:29 (6) 05:28 | 07:42 (6) 04:53 | 05:10 | 06:03 | 07:33 (6) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 52 | 08:21 (6) 21:33 13 | 07:55 (6) 22:15 | 22:08 | 21:12 53 | 08:26 (6) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:28 (6) 05:26 | 04:52 | 05:12 | 06:05 | 07:32 (6) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 53 | 08:21 (6) 21:35 | 22:16 | 22:06 | 21:10 54 | 08:26 (6) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:27 (6) 05:25 | 04:52 | 05:13 | 06:07 | 07:32 (6) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 55 | 08:22 (6) 21:37 | 22:17 | 22:05 | 21:08 55 | 08:27 (6) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:27 (6) 05:23 | 04:52 | 05:15 | 06:09 | 07:31 (6) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 55 | 08:22 (6) 21:39 | 22:17 | 22:04 | 21:05 55 | 08:26 (6) 19:48 | 18:32 | 16:27 | 16:04 |
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| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:24 (6) 05:08 | 04:54 | 05:31 | 06:28 | 07:29 (6) 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 55 | 08:19 (6) 21:55 | 22:19 | 21:49 | 20:42 54 | 08:23 (6) 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:25 (6) 05:06 | 04:55 | 05:32 | 06:30 | 07:30 (6) 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 53 | 08:18 (6) 21:57 | 22:19 | 21:47 | 20:39 53 | 08:23 (6) 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:25 (6) 05:05 | 04:55 | 05:34 07:56 (6) | 06:32 | 07:30 (6) 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 53 | 08:18 (6) 21:58 | 22:18 | 21:45 6 08:02 (6) | 20:37 52 | 08:22 (6) 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:26 (6) 05:04 | 04:56 | 05:36 07:51 (6) | 06:34 | 07:31 (6) 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 51 | 08:17 (6) 21:59 | 22:18 | 21:43 16 08:07 (6) | 20:34 51 | 08:22 (6) 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 07:49 (6) | 06:36 | 07:30 (6) | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 21 08:10 (6) | 20:32 50 | 08:20 (6) | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 1344 | 509 | | 43 | 1521 | 315 | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | 0,40 | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Wind dir. red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | 1,00 | | | |
| Total reduction | | | | 0,39 | 0,52 | | 0,48 | 0,51 | 0,40 | | | |
| Total, real | | | | 528 | 263 | | 21 | 782 | 125 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26<br>18:07 | 07:08<br>20:09 26<br>08:20 (6) | 07:54 (6)<br>21:08 42<br>05:55 | 07:38 (6)<br>08:20 (6) | 05:02<br>22:02 | 04:57<br>22:18 | 05:39<br>21:40 | 06:38<br>20:29 53<br>07:36 (6) | 07:34<br>08:29 (6)<br>19:12 | 07:36<br>16:58 | 08:35<br>16:10 |
| 2 | 09:00<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05<br>20:11 32<br>08:23 (6) | 07:51 (6)<br>21:10 40<br>05:53 | 07:38 (6)<br>08:18 (6) | 05:01<br>22:03 | 04:57<br>22:17 | 05:41<br>21:38 | 06:39<br>20:27 52<br>07:37 (6) | 07:36<br>08:29 (6)<br>19:09 | 07:38<br>16:55 | 08:36<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:11 | 07:03<br>20:13 36<br>08:24 (6) | 07:48 (6)<br>21:12 37<br>05:50 | 07:39 (6)<br>08:16 (6) | 05:00<br>22:05 | 04:58<br>22:17 | 05:43<br>21:36 | 06:41<br>20:24 51<br>07:37 (6) | 07:38<br>08:28 (6)<br>19:07 | 07:41<br>16:53 | 08:38<br>16:08 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19<br>18:13 | 07:00<br>20:15 39<br>08:25 (6) | 07:46 (6)<br>21:14 34<br>05:48 | 07:40 (6)<br>08:14 (6) | 04:59<br>22:06 | 04:59<br>22:16 | 05:45<br>21:34 11<br>08:02 (6) | 06:43<br>08:13 (6)<br>20:22 49<br>07:38 (6) | 07:40<br>08:27 (6)<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17<br>18:15 | 06:57<br>20:17 42<br>08:27 (6) | 07:45 (6)<br>21:16 31<br>05:46 | 07:42 (6)<br>08:13 (6) | 04:58<br>22:07 | 05:00<br>22:16 | 05:47<br>21:32 19<br>07:57 (6) | 06:45<br>08:16 (6)<br>20:19 47<br>07:38 (6) | 07:42<br>08:25 (6)<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:17 | 06:55<br>20:19 44<br>08:27 (6) | 07:43 (6)<br>21:18 27<br>05:44 | 07:44 (6)<br>08:11 (6) | 04:57<br>22:08 | 05:01<br>22:15 | 05:49<br>21:30 24<br>08:19 (6) | 07:55 (6)<br>06:47<br>20:16 44<br>07:39 (6) | 07:44<br>08:23 (6)<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 08:58<br>16:21 | 08:16<br>17:21 | 07:12<br>18:19 | 06:52<br>20:21 47<br>08:29 (6) | 07:42 (6)<br>21:20 23<br>05:42 | 07:46 (6)<br>08:09 (6) | 04:56<br>22:09 | 05:02<br>22:14 | 05:50<br>21:28 29<br>08:22 (6) | 07:53 (6)<br>06:49<br>20:14 42<br>07:40 (6) | 07:46<br>08:22 (6)<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 49<br>08:29 (6) | 07:40 (6)<br>21:22 17<br>05:40 | 07:49 (6)<br>08:06 (6) | 04:56<br>22:10 | 05:03<br>22:14 | 05:52<br>21:25 33<br>07:51 (6) | 06:51<br>08:24 (6)<br>20:11 39<br>07:41 (6) | 07:48<br>08:20 (6)<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:24 | 08:12<br>17:25 | 07:07<br>18:24 | 06:47<br>20:25 51<br>08:30 (6) | 07:39 (6)<br>21:24 7<br>05:38 | 07:53 (6)<br>08:00 (6) | 04:55<br>22:11 | 05:04<br>22:13 | 05:54<br>21:23 35<br>07:49 (6) | 06:53<br>08:24 (6)<br>20:09 37<br>07:42 (6) | 07:50<br>08:19 (6)<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 08:56<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 52<br>08:30 (6) | 07:38 (6)<br>21:26 | | 04:54<br>22:12 | 05:05<br>22:12 | 05:56<br>21:21 38<br>07:48 (6) | 06:55<br>08:26 (6)<br>20:06 32<br>07:43 (6) | 07:52<br>08:15 (6)<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:42<br>20:29 53<br>08:30 (6) | 07:37 (6)<br>21:28 | | 04:54<br>22:13 | 05:07<br>22:11 | 05:58<br>21:19 40<br>07:47 (6) | 06:56<br>08:27 (6)<br>20:04 27<br>07:46 (6) | 07:54<br>08:13 (6)<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:29 | 08:06<br>17:31 | 06:59<br>18:30 | 06:40<br>20:31 54<br>08:31 (6) | 07:37 (6)<br>21:29 | | 04:53<br>22:14 | 05:08<br>22:10 | 06:00<br>21:17 43<br>07:45 (6) | 06:58<br>08:28 (6)<br>20:01 20<br>07:49 (6) | 07:49<br>08:09 (6)<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 08:54<br>16:31 | 08:03<br>17:33 | 06:56<br>18:32 | 06:37<br>20:33 54<br>08:30 (6) | 07:36 (6)<br>21:31 | | 04:53<br>22:15 | 05:09<br>22:09 | 06:02<br>21:15 45<br>07:44 (6) | 07:00<br>08:29 (6)<br>19:58 10<br>07:54 (6) | 07:56<br>08:04 (6)<br>18:42 | 07:58<br>16:34 | 08:51<br>16:04 |
| 14 | 08:53<br>16:33 | 08:01<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 56<br>08:31 (6) | 07:35 (6)<br>21:33 | | 04:53<br>22:15 | 05:10<br>22:08 | 06:03<br>21:12 47<br>07:43 (6) | 07:02<br>08:30 (6)<br>19:56 | 08:00<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 08:52<br>16:34 | 07:59<br>17:38 | 06:51<br>18:36 | 06:32<br>20:37 56<br>08:30 (6) | 07:34 (6)<br>21:35 | | 04:52<br>22:16 | 05:12<br>22:06 | 06:05<br>21:10 48<br>07:43 (6) | 07:04<br>08:31 (6)<br>19:53 | 08:02<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 08:51<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 56<br>08:30 (6) | 07:34 (6)<br>21:37 | | 04:52<br>22:17 | 05:13<br>22:05 | 06:07<br>21:08 50<br>07:42 (6) | 07:06<br>08:32 (6)<br>19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:46<br>18:40 | 06:27<br>20:41 57<br>08:31 (6) | 07:34 (6)<br>21:39 | | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:05 51<br>07:41 (6) | 07:08<br>08:32 (6)<br>19:48 | 08:06<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 08:49<br>16:40 | 07:52<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 57<br>08:30 (6) | 07:33 (6)<br>21:40 | | 04:52<br>22:18 | 05:16<br>22:03 | 06:11<br>21:03 52<br>07:40 (6) | 07:10<br>08:32 (6)<br>19:46 | 08:08<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:47<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 57<br>08:30 (6) | 07:33 (6)<br>21:42 | | 04:52<br>22:18 | 05:18<br>22:01 | 06:13<br>21:01 53<br>07:40 (6) | 07:12<br>08:33 (6)<br>19:43 | 08:10<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:48 | 06:39<br>18:46 | 06:20<br>20:47 55<br>08:29 (6) | 07:34 (6)<br>21:44 | | 04:52<br>22:18 | 05:19<br>22:00 | 06:15<br>20:58 54<br>07:39 (6) | 07:13<br>08:33 (6)<br>19:40 | 08:12<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 08:45<br>16:46 | 07:46<br>17:50 | 06:36<br>18:48 | 06:18<br>20:49 55<br>08:28 (6) | 07:33 (6)<br>21:45 | | 04:52<br>22:19 | 05:21<br>21:58 | 06:17<br>20:56 55<br>07:38 (6) | 07:15<br>08:33 (6)<br>19:38 | 08:14<br>18:22 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 08:43<br>16:48 | 07:43<br>17:53 | 06:33<br>18:50 | 06:15<br>20:51 55<br>08:28 (6) | 07:33 (6)<br>21:47 | | 04:52<br>22:19 | 05:22<br>21:57 | 06:19<br>20:54 55<br>07:38 (6) | 07:17<br>08:33 (6)<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:49 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 54<br>08:28 (6) | 07:34 (6)<br>21:49 | | 04:53<br>22:19 | 05:24<br>21:55 | 06:21<br>20:51 56<br>07:37 (6) | 07:19<br>08:33 (6)<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:51 | 07:38<br>17:57 | 06:28<br>18:54 | 06:11<br>20:55 53<br>08:27 (6) | 07:34 (6)<br>21:50 | | 04:53<br>22:19 | 05:26<br>21:54 | 06:22<br>20:49 56<br>07:37 (6) | 07:21<br>08:33 (6)<br>19:30 | 08:20<br>18:15 | 08:23<br>16:17 | 09:00<br>16:06 |
| 25 | 08:39<br>16:53 | 07:36<br>17:59 | 06:26<br>18:56 | 06:08<br>20:57 51<br>08:25 (6) | 07:34 (6)<br>21:52 | | 04:53<br>22:19 | 05:27<br>21:52 | 06:24<br>20:46 56<br>07:37 (6) | 07:23<br>08:33 (6)<br>19:27 | 08:22<br>17:13 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 08:37<br>16:56 | 07:34<br>18:01 | 06:23<br>18:57 | 06:06<br>20:59 51<br>08:25 (6) | 07:34 (6)<br>21:53 | | 04:54<br>22:19 | 05:29<br>21:50 | 06:26<br>20:44 56<br>07:36 (6) | 07:25<br>08:32 (6)<br>19:25 | 08:24<br>17:11 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 08:36<br>16:58 | 07:31<br>18:03 | 06:21<br>18:59 | 06:04<br>21:01 49<br>08:24 (6) | 07:35 (6)<br>21:55 | | 04:54<br>22:19 | 05:31<br>21:49 | 06:28<br>20:42 56<br>07:36 (6) | 07:27<br>08:32 (6)<br>19:22 | 07:26<br>17:08 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:01 | 06:01<br>21:03 48<br>08:23 (6) | 07:35 (6)<br>21:57 | | 04:55<br>22:19 | 05:32<br>21:47 | 06:30<br>20:39 56<br>07:36 (6) | 07:29<br>08:32 (6)<br>19:20 | 07:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 08:33<br>17:02 | | 07:15<br>20:03 | 05:59<br>21:05 46<br>08:22 (6) | 07:36 (6)<br>21:58 | | 04:55<br>22:18 | 05:34<br>21:45 | 06:32<br>20:37 56<br>07:36 (6) | 07:31<br>08:32 (6)<br>19:17 | 07:30<br>17:04 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:05 7<br>08:04 (6)<br>08:11 (6) | 05:57<br>21:06 44<br>07:37 (6)<br>08:21 (6) | 05:04<br>21:59 | | 04:56<br>22:18 | 05:36<br>21:43 | 06:34<br>20:34 54<br>07:37 (6)<br>08:31 (6) | 07:32<br>19:14 | 07:32<br>17:02 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 08:29<br>17:06 | | 07:10<br>20:07 19<br>07:58 (6)<br>08:17 (6) | | 05:03<br>22:01 | | | 05:38<br>21:41 | 06:36<br>20:32 54<br>07:36 (6)<br>08:30 (6) | | 07:34<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | | 224 |
| Total, worst case | | | 26 | 1479 | 258 | | | 1282 | 503 | | | | |
| Sun reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | 1,00 | 1,00 | | | 1,00 | 1,00 | | | | |
| Total reduction | | | 0,34 | 0,39 | 0,52 | | | 0,51 | 0,40 | | | | |
| Total, real | | | 9 | 582 | 133 | | | 660 | 199 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 07:54 (6) | 05:55 | 07:54 (6) | 05:02 | 04:57 | 05:39 | 06:38 | 07:43 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 42 | 08:36 (6) | 21:08 26 | 08:20 (6) | 22:02 | 22:18 | 21:40 | 20:29 56 | 08:39 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 07:53 (6) | 05:53 | 07:55 (6) | 05:01 | 04:57 | 05:41 | 06:39 | 07:43 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 45 | 08:38 (6) | 21:10 21 | 08:16 (6) | 22:03 | 22:17 | 21:38 | 20:27 56 | 08:39 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:51 (6) | 05:50 | 07:59 (6) | 05:00 | 04:58 | 05:43 | 06:41 | 07:44 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 47 | 08:38 (6) | 21:12 13 | 08:12 (6) | 22:05 | 22:17 | 21:36 | 20:24 54 | 08:38 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:50 (6) | 05:48 | | 04:59 | 04:59 | 05:45 | 06:43 | 07:44 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 48 | 08:38 (6) | 21:14 | | 22:06 | 22:16 | 21:34 | 20:22 54 | 08:38 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:49 (6) | 05:46 | | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 50 | 08:39 (6) | 21:16 | | 22:07 | 22:16 | 21:32 | 20:19 53 | 08:36 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:48 (6) | 05:44 | | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 51 | 08:39 (6) | 21:18 | | 22:08 | 22:15 | 21:30 | 20:16 51 | 08:35 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:47 (6) | 05:42 | | 04:56 | 05:02 | 05:50 | 06:49 | 07:44 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 53 | 08:40 (6) | 21:20 | | 22:09 | 22:14 | 21:28 | 20:14 50 | 08:34 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:46 (6) | 05:40 | | 04:55 | 05:03 | 05:52 | 06:51 | 07:45 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 54 | 08:40 (6) | 21:22 | | 22:10 | 22:14 | 21:25 | 20:11 48 | 08:33 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:46 (6) | 05:38 | | 04:55 | 05:04 | 05:54 | 06:53 | 07:46 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 54 | 08:40 (6) | 21:24 | | 22:11 | 22:13 | 21:23 | 20:09 46 | 08:32 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:44 (6) | 05:36 | | 04:54 | 05:05 | 05:56 | 08:07 (6) | 06:55 | 07:45 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 56 | 08:40 (6) | 21:26 | | 22:12 | 22:12 | 21:21 16 | 08:23 (6) | 20:06 45 | 08:30 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:44 (6) | 05:34 | | 04:54 | 05:07 | 05:58 | 08:04 (6) | 06:56 | 07:47 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 56 | 08:40 (6) | 21:28 | | 22:13 | 22:11 | 21:19 22 | 08:26 (6) | 20:04 42 | 08:29 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:44 (6) | 05:32 | | 04:53 | 05:08 | 06:00 | 08:01 (6) | 06:58 | 07:48 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 56 | 08:40 (6) | 21:29 | | 22:14 | 22:10 | 21:17 27 | 08:28 (6) | 20:01 39 | 08:27 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:43 (6) | 05:30 | | 04:53 | 05:09 | 06:02 | 07:59 (6) | 07:00 | 07:49 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 56 | 08:39 (6) | 21:31 | | 22:15 | 22:09 | 21:15 31 | 08:30 (6) | 19:58 36 | 08:25 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:44 (6) | 05:28 | | 04:53 | 05:10 | 06:03 | 07:57 (6) | 07:02 | 07:51 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 55 | 08:39 (6) | 21:33 | | 22:15 | 22:08 | 21:12 35 | 08:32 (6) | 19:56 32 | 08:23 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:43 (6) | 05:26 | | 04:52 | 05:12 | 06:05 | 07:56 (6) | 07:04 | 07:53 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 55 | 08:38 (6) | 21:35 | | 22:16 | 22:06 | 21:10 38 | 08:34 (6) | 19:53 27 | 08:20 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:43 (6) | 05:25 | | 04:52 | 05:13 | 06:07 | 07:55 (6) | 07:06 | 07:56 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 55 | 08:38 (6) | 21:37 | | 22:17 | 22:05 | 21:08 40 | 08:35 (6) | 19:51 20 | 08:16 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:43 (6) | 05:23 | | 04:52 | 05:15 | 06:09 | 07:53 (6) | 07:08 | 08:01 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 55 | 08:38 (6) | 21:39 | | 22:17 | 22:04 | 21:05 42 | 08:35 (6) | 19:48 8 | 08:09 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:43 (6) | 05:21 | | 04:52 | 05:16 | 06:11 | 07:52 (6) | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 54 | 08:37 (6) | 21:40 | | 22:18 | 22:03 | 21:03 45 | 08:37 (6) | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:43 (6) | 05:19 | | 04:52 | 05:18 | 06:13 | 07:51 (6) | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 53 | 08:36 (6) | 21:42 | | 22:18 | 22:01 | 21:01 47 | 08:38 (6) | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:44 (6) | 05:18 | | 04:52 | 05:19 | 06:15 | 07:50 (6) | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 52 | 08:36 (6) | 21:44 | | 22:18 | 22:00 | 20:58 49 | 08:39 (6) | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:43 (6) | 05:16 | | 04:52 | 05:21 | 06:17 | 07:49 (6) | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 51 | 08:34 (6) | 21:45 | | 22:19 | 21:58 | 20:56 49 | 08:38 (6) | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:44 (6) | 05:15 | | 04:52 | 05:22 | 06:19 | 07:48 (6) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 50 | 08:34 (6) | 21:47 | | 22:19 | 21:57 | 20:54 51 | 08:39 (6) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:45 (6) | 05:13 | | 04:53 | 05:24 | 06:21 | 07:47 (6) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 48 | 08:33 (6) | 21:49 | | 22:19 | 21:55 | 20:51 53 | 08:40 (6) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:46 (6) | 05:12 | | 04:53 | 05:26 | 06:22 | 07:47 (6) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 46 | 08:32 (6) | 21:50 | | 22:19 | 21:54 | 20:49 53 | 08:40 (6) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:46 (6) | 05:10 | | 04:53 | 05:27 | 06:24 | 07:46 (6) | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 44 | 08:30 (6) | 21:52 | | 22:19 | 21:52 | 20:46 55 | 08:41 (6) | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:47 (6) | 05:09 | | 04:54 | 05:29 | 06:26 | 07:45 (6) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 42 | 08:29 (6) | 21:53 | | 22:19 | 21:50 | 20:44 55 | 08:40 (6) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 07:08 (6) | 06:04 | 07:48 (6) | 05:07 | | 04:54 | 05:31 | 06:28 | 07:45 (6) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 18 | 07:26 (6) 21:01 39 | 08:27 (6) | 21:55 | | 22:19 | 21:49 | 20:42 55 | 08:40 (6) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (6) 06:01 | 07:49 (6) | 05:06 | | 04:55 | 05:32 | 06:30 | 07:45 (6) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 25 | 07:29 (6) 21:03 37 | 08:26 (6) | 21:57 | | 22:19 | 21:47 | 20:39 55 | 08:40 (6) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:01 (6) 05:59 | 07:50 (6) | 05:05 | | 04:55 | 05:34 | 06:32 | 07:44 (6) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 31 | 08:32 (6) 21:05 34 | 08:24 (6) | 21:58 | | 22:18 | 21:45 | 20:37 56 | 08:40 (6) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 07:58 (6) 05:57 | 07:52 (6) | 05:04 | | 04:56 | 05:36 | 06:34 | 07:44 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 35 | 08:33 (6) 21:06 30 | 08:22 (6) | 21:59 | | 22:18 | 21:43 | 20:34 56 | 08:40 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 07:57 (6) | | 05:03 | | | 05:38 | 06:36 | 07:43 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 39 | 08:36 (6) | | 22:01 | | | 21:41 | 20:32 56 | 08:39 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 148 | 1468 | | 60 | | | | 986 | | 717 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | 0,52 | | | | 0,51 | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | 1,00 | | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | 1,00 | | 1,00 | | | | 1,00 | | 1,00 | | | | |
| Total reduction | | | 0,34 | 0,39 | | 0,52 | | | | 0,51 | | 0,40 | | | | |
| Total, real | | | 50 | 577 | | 31 | | | | 507 | | 284 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | | 07:59 (6) | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:52 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 50 | 08:49 (6) | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 55 08:47 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | | 07:59 (6) | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:52 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 51 | 08:50 (6) | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 55 08:47 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 07:57 (6) | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:52 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 53 | 08:50 (6) | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 55 08:47 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 07:56 (6) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:52 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 54 | 08:50 (6) | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 55 08:47 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | | 07:56 (6) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:51 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 54 | 08:50 (6) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 55 08:46 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 07:55 (6) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:51 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 55 | 08:50 (6) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 55 08:46 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | | 07:55 (6) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:51 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 55 | 08:50 (6) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 54 08:45 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 07:54 (6) | 05:40 | 04:55 | 05:03 | 05:52 | | 06:51 | 07:51 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 55 | 08:49 (6) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 54 08:45 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 07:54 (6) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:51 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 55 | 08:49 (6) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 53 08:44 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | | 07:53 (6) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:51 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 55 | 08:48 (6) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 51 08:42 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 07:53 (6) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:51 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 55 | 08:48 (6) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 51 08:42 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 07:54 (6) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:52 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 54 | 08:48 (6) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 49 08:41 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | | 07:53 (6) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:53 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 54 | 08:47 (6) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 47 08:40 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 07:54 (6) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | 07:53 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 53 | 08:47 (6) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 45 08:38 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 07:53 (6) | 05:26 | 04:52 | 05:12 | 06:05 | 08:18 (6) | 07:04 | | 07:54 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 52 | 08:45 (6) | 21:35 | 22:16 | 22:06 | 21:10 | 10 08:28 (6) | 19:53 | 43 08:37 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 07:54 (6) | 05:25 | 04:52 | 05:13 | 06:07 | 08:14 (6) | 07:06 | | 07:55 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 51 | 08:45 (6) | 21:37 | 22:17 | 22:05 | 21:08 | 19 08:33 (6) | 19:51 | 39 08:34 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 07:55 (6) | 05:23 | 04:52 | 05:15 | 06:09 | 08:10 (6) | 07:08 | | 07:56 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 49 | 08:44 (6) | 21:39 | 22:17 | 22:04 | 21:05 | 25 08:35 (6) | 19:48 | 36 08:32 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 07:55 (6) | 05:21 | 04:52 | 05:16 | 06:11 | 08:08 (6) | 07:10 | | 07:58 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 47 | 08:42 (6) | 21:40 | 22:18 | 22:03 | 21:03 | 29 08:37 (6) | 19:46 | 32 08:30 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 07:55 (6) | 05:19 | 04:52 | 05:18 | 06:13 | 08:06 (6) | 07:12 | | 08:00 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | 46 | 08:41 (6) | 21:42 | 22:18 | 22:01 | 21:01 | 33 08:39 (6) | 19:43 | 27 08:27 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 07:56 (6) | 05:18 | 04:52 | 05:19 | 06:15 | 08:05 (6) | 07:13 | | 08:03 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | 44 | 08:40 (6) | 21:44 | 22:18 | 22:00 | 20:58 | 36 08:41 (6) | 19:40 | 21 08:24 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 07:57 (6) | 05:16 | 04:52 | 05:21 | 06:17 | 08:02 (6) | 07:15 | | 08:08 (6) | 08:14 | 08:17 | 08:58 |
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| 22 | 08:43 | 07:43 | 06:33 | 07:25 (6) | 06:15 | | 07:58 (6) | 05:15 | 04:52 | 05:22 | 06:19 | 08:01 (6) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 5 07:30 (6) | 20:51 | 39 | 08:37 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 42 08:43 (6) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:17 (6) | 06:13 | | 07:59 (6) | 05:13 | 04:53 | 05:24 | 06:21 | 08:00 (6) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 19 07:36 (6) | 20:53 | 36 | 08:35 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 44 08:44 (6) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:14 (6) | 06:11 | | 08:01 (6) | 05:12 | 04:53 | 05:26 | 06:22 | 07:59 (6) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 26 07:40 (6) | 20:55 | 32 | 08:33 (6) | 21:50 | 22:19 | 21:54 | 20:49 | 46 08:45 (6) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:11 (6) | 06:08 | | 08:02 (6) | 05:10 | 04:53 | 05:27 | 06:24 | 07:58 (6) | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 31 07:42 (6) | 20:57 | 28 | 08:30 (6) | 21:52 | 22:19 | 21:52 | 20:46 | 48 08:46 (6) | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 07:08 (6) | 06:06 | | 08:04 (6) | 05:09 | 04:54 | 05:29 | 06:26 | 07:56 (6) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 35 07:43 (6) | 20:59 | 24 | 08:28 (6) | 21:53 | 22:19 | 21:50 | 20:44 | 50 08:46 (6) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:07 (6) | 06:04 | | 08:07 (6) | 05:07 | 04:54 | 05:31 | 06:28 | 07:56 (6) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 38 07:45 (6) | 21:01 | 17 | 08:24 (6) | 21:55 | 22:19 | 21:49 | 20:42 | 50 08:46 (6) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (6) | 06:01 | | 08:13 (6) | 05:06 | 04:55 | 05:32 | 06:30 | 07:55 (6) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 42 07:46 (6) | 21:03 | 5 | 08:18 (6) | 21:57 | 22:19 | 21:47 | 20:39 | 52 08:47 (6) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:03 (6) | 05:59 | | | 05:05 | 04:55 | 05:34 | 06:32 | 07:55 (6) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 45 08:48 (6) | 21:05 | | | 21:58 | 22:18 | 21:45 | 20:37 | 52 08:47 (6) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:01 (6) | 05:57 | | | 05:04 | 04:56 | 05:36 | 06:34 | 07:54 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 47 08:48 (6) | 21:06 | | | 21:59 | 22:18 | 21:43 | 20:34 | 54 08:48 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:01 (6) | | | | 05:03 | | 05:38 | 06:36 | 07:53 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 48 08:49 (6) | | | | 22:01 | | 21:41 | 20:32 | 54 08:47 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 336 | | 1264 | | | | | 684 | | 943 | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | 1,00 | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | 114 | | 496 | | | | | 351 | | 372 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 08:06 (6) | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 08:04 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 54 09:00 (6) | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 50 08:54 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 08:06 (6) | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 08:03 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 55 09:01 (6) | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 52 08:55 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 08:05 (6) | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 08:02 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 55 09:00 (6) | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 53 08:55 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 08:04 (6) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 08:02 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 55 08:59 (6) | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 53 08:55 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 08:05 (6) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 08:00 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 54 08:59 (6) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 54 08:54 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 08:04 (6) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 08:00 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 54 08:58 (6) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 55 08:55 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 08:04 (6) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 08:00 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 54 08:58 (6) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 55 08:55 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 08:04 (6) | 05:40 | 04:55 | 05:03 | 05:52 | | 06:51 | 08:00 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 53 08:57 (6) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 54 08:54 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 08:04 (6) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 08:00 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 53 08:57 (6) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 54 08:54 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 08:04 (6) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:59 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 52 08:56 (6) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 54 08:53 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 08:05 (6) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:59 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 50 08:55 (6) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 54 08:53 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 08:05 (6) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:59 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 49 08:54 (6) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 53 08:52 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 08:05 (6) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:59 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 48 08:53 (6) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 53 08:52 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 08:06 (6) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | 07:59 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 46 08:52 (6) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 52 08:51 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | 08:06 (6) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:00 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 44 08:50 (6) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 50 08:50 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 08:07 (6) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 07:59 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 42 08:49 (6) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 49 08:48 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | 08:09 (6) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:00 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 38 08:47 (6) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 47 08:47 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 07:34 (6) | 06:25 | 08:09 (6) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:01 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 8 07:42 (6) | 20:43 | 36 08:45 (6) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 45 08:46 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 07:28 (6) | 06:23 | 08:11 (6) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:02 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20 07:48 (6) | 20:45 | 32 08:43 (6) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 42 08:44 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 07:24 (6) | 06:20 | 08:13 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | 08:03 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 27 07:51 (6) | 20:47 | 28 08:41 (6) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 40 08:43 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 07:21 (6) | 06:18 | 08:15 (6) | 05:16 | 04:52 | 05:21 | 06:17 | 08:22 (6) | 07:15 | 08:04 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 32 07:53 (6) | 20:49 | 22 08:37 (6) | 21:45 | 22:19 | 21:58 | 20:56 | 17 08:39 (6) | 19:38 | 37 08:41 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 07:19 (6) | 06:15 | 08:18 (6) | 05:15 | 04:52 | 05:22 | 06:19 | 08:19 (6) | 07:17 | 08:06 (6) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 36 07:55 (6) | 20:51 | 15 08:33 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 23 08:42 (6) | 19:35 | 33 08:39 (6) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:17 (6) | 06:13 | | 05:13 | 04:52 | 05:24 | 06:21 | 08:17 (6) | 07:19 | 08:08 (6) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 39 07:56 (6) | 20:53 | | 21:49 | 22:19 | 21:55 | 20:51 | 28 08:45 (6) | 19:33 | 28 08:36 (6) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:15 (6) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:22 | 08:15 (6) | 07:21 | 08:10 (6) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 42 07:57 (6) | 20:55 | | 21:50 | 22:19 | 21:54 | 20:49 | 32 08:47 (6) | 19:30 | 22 08:32 (6) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:13 (6) | 06:08 | | 05:10 | 04:53 | 05:27 | 06:24 | 08:13 (6) | 07:23 | 08:14 (6) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 45 07:58 (6) | 20:57 | | 21:52 | 22:19 | 21:52 | 20:46 | 36 08:49 (6) | 19:27 | 13 08:27 (6) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 07:12 (6) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 | 08:10 (6) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 46 07:58 (6) | 20:59 | | 21:53 | 22:19 | 21:50 | 20:44 | 39 08:49 (6) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:11 (6) | 06:04 | | 05:07 | 04:54 | 05:31 | 06:28 | 08:09 (6) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 48 07:59 (6) | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 | 42 08:51 (6) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:09 (6) | 06:01 | | 05:06 | 04:55 | 05:32 | 06:30 | 08:08 (6) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 50 07:59 (6) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 | 44 08:52 (6) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:09 (6) | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 | 08:07 (6) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 51 09:00 (6) | 21:05 | | 21:58 | 22:18 | 21:45 | 20:37 | 46 08:53 (6) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:08 (6) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 08:06 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 52 09:00 (6) | 21:06 | | 21:59 | 22:18 | 21:43 | 20:34 | 48 08:54 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:07 (6) | | | 05:03 | | 05:38 | 06:36 | 08:04 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 54 09:01 (6) | | | 22:01 | | 21:41 | 20:32 | 49 08:53 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 550 | | 989 | | | | | 404 | | 1152 | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | | 0,99 | | | | | 0,99 | | 0,99 | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | 186 | | 386 | | | | | 206 | | 452 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 08:16 (6) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 08:18 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 53 09:09 (6) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 40 08:58 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 08:16 (6) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 08:16 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 53 09:09 (6) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 43 08:59 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 08:15 (6) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 08:15 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 53 09:08 (6) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 45 09:00 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 08:15 (6) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 08:14 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 52 09:07 (6) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 47 09:01 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 08:16 (6) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 08:12 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 51 09:07 (6) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 49 09:01 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 08:15 (6) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 08:11 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 50 09:05 (6) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 50 09:01 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 08:16 (6) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 08:11 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 49 09:05 (6) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 51 09:02 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 08:16 (6) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 08:10 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 47 09:03 (6) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 52 09:02 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 08:17 (6) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 08:10 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 45 09:02 (6) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 52 09:02 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 08:17 (6) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 08:08 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 43 09:00 (6) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 54 09:02 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 08:19 (6) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 08:08 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 40 08:59 (6) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 54 09:02 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 08:20 (6) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 08:08 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 38 08:58 (6) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 54 09:02 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 08:21 (6) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 08:07 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 34 08:55 (6) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 54 09:01 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 07:42 (6) | 06:35 08:23 (6) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 08:07 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 13 07:55 (6) | 20:35 30 08:53 (6) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 54 09:01 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 07:37 (6) | 06:32 08:24 (6) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 08:07 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 22 07:59 (6) | 20:37 26 08:50 (6) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 54 09:01 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 07:33 (6) | 06:30 08:27 (6) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 08:06 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 28 08:01 (6) | 20:39 20 08:47 (6) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 53 08:59 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 07:31 (6) | 06:27 08:32 (6) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 08:06 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 33 08:04 (6) | 20:41 10 08:42 (6) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 53 08:59 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:29 (6) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 08:07 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 36 08:05 (6) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 51 08:58 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:27 (6) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 08:07 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 40 08:07 (6) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 50 08:57 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:25 (6) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 08:08 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 43 08:08 (6) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 48 08:56 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:23 (6) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 08:08 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 45 08:08 (6) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 47 08:55 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 07:23 (6) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 08:09 (6) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 47 08:10 (6) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 45 08:54 (6) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:21 (6) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 08:10 (6) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 49 08:10 (6) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 43 08:53 (6) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 07:21 (6) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 08:10 (6) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 50 08:11 (6) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 40 08:50 (6) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 07:19 (6) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 08:11 (6) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 52 08:11 (6) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 38 08:49 (6) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 07:18 (6) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 08:33 (6) | 07:25 | 08:12 (6) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 52 08:10 (6) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 11 08:44 (6) | 19:25 35 | 08:47 (6) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 07:18 (6) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 08:29 (6) | 07:27 | 08:14 (6) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 53 08:11 (6) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 20 08:49 (6) | 19:22 30 | 08:44 (6) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 07:17 (6) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 08:26 (6) | 07:29 | 08:17 (6) | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 53 08:10 (6) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 26 08:52 (6) | 19:20 24 | 08:41 (6) | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 08:17 (6) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 08:23 (6) | 07:31 | 08:20 (6) | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 54 09:11 (6) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 31 08:54 (6) | 19:17 17 | 08:37 (6) | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 08:16 (6) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 08:22 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 54 09:10 (6) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 34 08:56 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 08:16 (6) | | 05:03 | | 05:38 | 06:36 08:19 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 54 09:10 (6) | | 22:01 | | 21:41 | 20:32 37 08:56 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 778 | 694 | | | | 159 | 1327 | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 0,98 | 0,98 | | | | 0,98 | 0,98 | | | |
| Total reduction | | | 0,34 | 0,39 | | | | 0,51 | 0,39 | | | |
| Total, real | | | 261 | 268 | | | | 80 | 516 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 08:12 (6) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:09 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 60 | 09:12 (6) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 57 | 09:06 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 08:12 (6) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:09 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 60 | 09:12 (6) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 57 | 09:06 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 08:11 (6) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 08:08 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 61 | 09:12 (6) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 59 | 09:07 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 08:11 (6) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 08:08 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 60 | 09:11 (6) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 59 | 09:07 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 08:11 (6) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 08:06 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 60 | 09:11 (6) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 60 | 09:06 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 08:10 (6) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 08:06 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 60 | 09:10 (6) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 60 | 09:06 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 08:10 (6) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 08:06 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 60 | 09:10 (6) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 60 | 09:06 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 08:10 (6) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 08:06 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 59 | 09:09 (6) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 60 | 09:06 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 08:10 (6) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 08:06 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 59 | 09:09 (6) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 60 | 09:06 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 08:10 (6) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 08:05 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 57 | 09:07 (6) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 60 | 09:05 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 08:10 (6) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 08:05 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 57 | 09:07 (6) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 59 | 09:04 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 08:11 (6) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 08:05 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 55 | 09:06 (6) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 59 | 09:04 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 08:11 (6) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 08:05 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 54 | 09:05 (6) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 58 | 09:03 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 08:12 (6) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:05 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 52 | 09:04 (6) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 58 | 09:03 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 08:11 (6) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:06 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 51 | 09:02 (6) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 56 | 09:02 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 08:12 (6) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:05 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 49 | 09:01 (6) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 55 | 09:00 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 07:39 (6) | 06:27 | 08:14 (6) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 16 07:55 (6) | 20:41 46 | 09:00 (6) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 53 | 08:59 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:34 (6) | 06:25 | 08:14 (6) | 05:21 | 04:52 | 05:16 | 06:11 08:35 (6) | 07:10 | 08:06 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 25 07:59 (6) | 20:43 44 | 08:58 (6) | 21:40 | 22:18 | 22:03 | 21:03 9 08:44 (6) | 19:46 52 | 08:58 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:31 (6) | 06:23 | 08:15 (6) | 05:19 | 04:52 | 05:18 | 06:13 08:30 (6) | 07:12 | 08:07 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 31 08:02 (6) | 20:45 41 | 08:56 (6) | 21:42 | 22:18 | 22:01 | 21:01 20 08:50 (6) | 19:43 49 | 08:56 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:28 (6) | 06:20 | 08:17 (6) | 05:18 | 04:52 | 05:19 | 06:15 08:27 (6) | 07:13 | 08:08 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 36 08:04 (6) | 20:47 38 | 08:55 (6) | 21:44 | 22:18 | 22:00 | 20:58 26 08:53 (6) | 19:40 47 | 08:55 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:26 (6) | 06:18 | 08:17 (6) | 05:16 | 04:52 | 05:21 | 06:17 08:24 (6) | 07:15 | 08:09 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 39 08:05 (6) | 20:49 35 | 08:52 (6) | 21:45 | 22:19 | 21:58 | 20:56 31 08:55 (6) | 19:38 44 | 08:53 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 07:24 (6) | 06:15 | 08:20 (6) | 05:15 | 04:52 | 05:22 | 06:19 08:22 (6) | 07:17 | 08:11 (6) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 43 08:07 (6) | 20:51 30 | 08:50 (6) | 21:47 | 22:19 | 21:57 | 20:54 35 08:57 (6) | 19:35 41 | 08:52 (6) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:22 (6) | 06:13 | 08:22 (6) | 05:13 | 04:52 | 05:24 | 06:20 08:20 (6) | 07:19 | 08:12 (6) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 46 08:08 (6) | 20:53 25 | 08:47 (6) | 21:49 | 22:19 | 21:55 | 20:51 39 08:59 (6) | 19:33 37 | 08:49 (6) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 07:21 (6) | 06:11 | 08:25 (6) | 05:12 | 04:53 | 05:26 | 06:22 08:19 (6) | 07:21 | 08:13 (6) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 49 08:10 (6) | 20:55 18 | 08:43 (6) | 21:50 | 22:19 | 21:54 | 20:49 41 09:00 (6) | 19:30 33 | 08:46 (6) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 07:19 (6) | 06:08 | 08:31 (6) | 05:10 | 04:53 | 05:27 | 06:24 08:17 (6) | 07:23 | 08:16 (6) | 08:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 51 08:10 (6) | 20:57 4 | 08:35 (6) | 21:52 | 22:19 | 21:52 | 20:46 45 09:02 (6) | 19:27 27 | 08:43 (6) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 07:17 (6) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 08:15 (6) | 07:25 | 08:19 (6) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 53 08:10 (6) | 20:59 | | 21:53 | 22:19 | 21:50 | 20:44 47 09:02 (6) | 19:25 20 | 08:39 (6) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 07:17 (6) | 06:04 | | 05:07 | 04:54 | 05:31 | 06:28 08:14 (6) | 07:27 | 08:27 (6) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 54 08:11 (6) | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 49 09:03 (6) | 19:22 4 | 08:31 (6) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 07:15 (6) | 06:01 | | 05:06 | 04:55 | 05:32 | 06:30 08:13 (6) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 56 08:11 (6) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 51 09:04 (6) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 08:15 (6) | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 08:12 (6) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 57 09:12 (6) | 21:05 | | 21:58 | 22:18 | 21:45 | 20:37 53 09:05 (6) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 08:14 (6) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 08:12 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 58 09:12 (6) | 21:06 | | 21:59 | 22:18 | 21:43 | 20:34 54 09:06 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 08:14 (6) | | | 05:03 | | 05:38 | 06:36 08:10 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 58 09:12 (6) | | | 22:01 | | 21:41 | 20:32 55 09:05 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 672 | 1195 | | | | | 555 | 1344 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | 0,51 | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | 0,99 | 0,99 | | | | | 0,99 | 0,99 | | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | 0,51 | 0,39 | | | | |
| Total, real | | | 226 | 464 | | | | | 282 | 525 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:43 (6) 05:02 | 06:34 (6) 04:57 | 06:42 (6) 05:39 | 06:44 (6) 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 37 | 07:20 (6) 22:02 53 | 07:27 (6) 22:18 49 | 07:31 (6) 21:40 54 | 07:38 (6) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:40 (6) 05:01 | 06:35 (6) 04:57 | 06:43 (6) 05:41 | 06:44 (6) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 40 | 07:20 (6) 22:03 52 | 07:27 (6) 22:17 49 | 07:32 (6) 21:38 53 | 07:37 (6) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:39 (6) 05:00 | 06:35 (6) 04:58 | 06:42 (6) 05:43 | 06:44 (6) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 42 | 07:21 (6) 22:05 52 | 07:27 (6) 22:17 50 | 07:32 (6) 21:36 52 | 07:36 (6) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:38 (6) 04:59 | 06:36 (6) 04:59 | 06:42 (6) 05:45 | 06:45 (6) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 44 | 07:22 (6) 22:06 52 | 07:28 (6) 22:16 50 | 07:32 (6) 21:34 51 | 07:36 (6) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:37 (6) 04:58 | 06:36 (6) 05:00 | 06:42 (6) 05:47 | 06:45 (6) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 46 | 07:23 (6) 22:07 51 | 07:27 (6) 22:16 51 | 07:33 (6) 21:32 50 | 07:35 (6) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:37 (6) 04:57 | 06:36 (6) 05:01 | 06:42 (6) 05:49 | 06:46 (6) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 48 | 07:25 (6) 22:08 51 | 07:27 (6) 22:15 51 | 07:33 (6) 21:30 48 | 07:34 (6) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:36 (6) 04:56 | 06:37 (6) 05:02 | 06:42 (6) 05:50 | 06:47 (6) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 49 | 07:25 (6) 22:09 50 | 07:27 (6) 22:14 51 | 07:33 (6) 21:28 47 | 07:34 (6) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:35 (6) 04:56 | 06:37 (6) 05:03 | 06:42 (6) 05:52 | 06:48 (6) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 51 | 07:26 (6) 22:10 50 | 07:27 (6) 22:14 52 | 07:34 (6) 21:25 45 | 07:33 (6) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:35 (6) 04:55 | 06:37 (6) 05:04 | 06:42 (6) 05:54 | 06:48 (6) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 51 | 07:26 (6) 22:11 50 | 07:27 (6) 22:13 52 | 07:34 (6) 21:23 43 | 07:31 (6) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:34 (6) 04:54 | 06:37 (6) 05:05 | 06:42 (6) 05:56 | 06:49 (6) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 52 | 07:26 (6) 22:12 50 | 07:27 (6) 22:12 53 | 07:35 (6) 21:21 42 | 07:31 (6) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:33 (6) 04:54 | 06:38 (6) 05:07 | 06:42 (6) 05:58 | 06:50 (6) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 53 | 07:26 (6) 22:13 49 | 07:27 (6) 22:11 53 | 07:35 (6) 21:19 40 | 07:30 (6) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:34 (6) 04:53 | 06:39 (6) 05:08 | 06:43 (6) 06:00 | 06:51 (6) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 53 | 07:27 (6) 22:14 48 | 07:27 (6) 22:10 53 | 07:36 (6) 21:17 36 | 07:27 (6) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 06:33 (6) 04:53 | 06:38 (6) 05:09 | 06:42 (6) 06:02 | 06:52 (6) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 54 | 07:27 (6) 22:15 49 | 07:27 (6) 22:09 54 | 07:36 (6) 21:15 34 | 07:26 (6) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:32 (6) 04:53 | 06:39 (6) 05:11 | 06:42 (6) 06:03 | 06:54 (6) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 55 | 07:27 (6) 22:15 48 | 07:27 (6) 22:08 54 | 07:36 (6) 21:12 30 | 07:24 (6) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:33 (6) 04:52 | 06:39 (6) 05:12 | 06:42 (6) 06:05 | 06:57 (6) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 55 | 07:28 (6) 22:16 48 | 07:27 (6) 22:06 54 | 07:36 (6) 21:10 25 | 07:22 (6) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:32 (6) 04:52 | 06:40 (6) 05:13 | 06:43 (6) 06:07 | 07:00 (6) 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 56 | 07:28 (6) 22:17 47 | 07:27 (6) 22:05 54 | 07:37 (6) 21:08 19 | 07:19 (6) 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:32 (6) 04:52 | 06:40 (6) 05:15 | 06:42 (6) 06:09 | 07:04 (6) 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 55 | 07:27 (6) 22:17 48 | 07:28 (6) 22:04 55 | 07:37 (6) 21:05 9 | 07:13 (6) 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:32 (6) 04:52 | 06:40 (6) 05:16 | 06:42 (6) 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 56 | 07:28 (6) 22:18 48 | 07:28 (6) 22:03 55 | 07:37 (6) 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:32 (6) 04:52 | 06:40 (6) 05:18 | 06:42 (6) 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 56 | 07:28 (6) 22:18 48 | 07:28 (6) 22:01 56 | 07:38 (6) 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 06:32 (6) 04:52 | 06:41 (6) 05:19 | 06:42 (6) 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 56 | 07:28 (6) 22:18 47 | 07:28 (6) 22:00 56 | 07:38 (6) 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 06:32 (6) 04:52 | 06:41 (6) 05:21 | 06:42 (6) 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 57 | 07:29 (6) 22:19 47 | 07:28 (6) 21:58 56 | 07:38 (6) 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 06:32 (6) 04:52 | 06:41 (6) 05:22 | 06:42 (6) 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 56 | 07:28 (6) 22:19 47 | 07:28 (6) 21:57 56 | 07:38 (6) 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 06:32 (6) 04:53 | 06:42 (6) 05:24 | 06:42 (6) 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 56 | 07:28 (6) 22:19 47 | 07:29 (6) 21:55 56 | 07:38 (6) 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 06:33 (6) 04:53 | 06:41 (6) 05:26 | 06:42 (6) 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 55 | 07:28 (6) 22:19 48 | 07:29 (6) 21:54 56 | 07:38 (6) 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 06:32 (6) 04:53 | 06:42 (6) 05:27 | 06:42 (6) 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 56 | 07:28 (6) 22:19 48 | 07:30 (6) 21:52 56 | 07:38 (6) 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:56 (6) | 05:09 | 06:33 (6) 04:54 | 06:42 (6) 05:29 | 06:42 (6) 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 12 07:08 (6) | 21:53 55 | 07:28 (6) 22:19 48 | 07:30 (6) 21:50 56 | 07:38 (6) 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:51 (6) | 05:08 | 06:33 (6) 04:54 | 06:41 (6) 05:31 | 06:43 (6) 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 21 07:12 (6) | 21:55 55 | 07:28 (6) 22:19 48 | 07:29 (6) 21:49 56 | 07:39 (6) 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:49 (6) | 05:06 | 06:33 (6) 04:55 | 06:42 (6) 05:32 | 06:43 (6) 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 26 07:15 (6) | 21:56 55 | 07:28 (6) 22:19 48 | 07:30 (6) 21:47 55 | 07:38 (6) 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:46 (6) | 05:05 | 06:34 (6) 04:55 | 06:43 (6) 05:34 | 06:43 (6) 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 31 07:17 (6) | 21:58 54 | 07:28 (6) 22:18 48 | 07:31 (6) 21:45 55 | 07:38 (6) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:44 (6) | 05:04 | 06:34 (6) 04:56 | 06:42 (6) 05:36 | 06:43 (6) 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 35 07:19 (6) | 21:59 54 | 07:28 (6) 22:18 49 | 07:31 (6) 21:43 54 | 07:37 (6) 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:34 (6) | 05:38 | 06:43 (6) 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 54 | 07:28 (6) | 21:41 55 | 07:38 (6) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 125 | 1616 | 1469 | 1663 | 678 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | 0,95 | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | 0,46 | 0,46 | 0,49 | | | | |
| Total, real | | | | 47 | 794 | 674 | 768 | 332 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 06:46 (6) 05:02 | 06:31 (6) 04:57 | 06:38 (6) 05:39 | 06:43 (6) 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 31 | 07:17 (6) 22:02 60 | 07:31 (6) 22:18 57 | 07:35 (6) 21:40 55 | 07:38 (6) 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:43 (6) 05:01 | 06:31 (6) 04:57 | 06:38 (6) 05:41 | 06:43 (6) 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 35 | 07:18 (6) 22:03 60 | 07:31 (6) 22:17 58 | 07:36 (6) 21:38 53 | 07:36 (6) 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 06:41 (6) 05:00 | 06:31 (6) 04:58 | 06:37 (6) 05:43 | 06:44 (6) 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 38 | 07:19 (6) 22:05 59 | 07:30 (6) 22:17 59 | 07:36 (6) 21:36 52 | 07:36 (6) 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 06:39 (6) 04:59 | 06:32 (6) 04:59 | 06:38 (6) 05:45 | 06:45 (6) 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 41 | 07:20 (6) 22:06 59 | 07:31 (6) 22:16 58 | 07:36 (6) 21:34 51 | 07:36 (6) 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 06:38 (6) 04:58 | 06:32 (6) 05:00 | 06:38 (6) 05:47 | 06:45 (6) 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 44 | 07:22 (6) 22:07 59 | 07:31 (6) 22:16 58 | 07:36 (6) 21:32 49 | 07:34 (6) 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:38 (6) 04:57 | 06:32 (6) 05:01 | 06:38 (6) 05:49 | 06:46 (6) 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 45 | 07:23 (6) 22:08 59 | 07:31 (6) 22:15 59 | 07:37 (6) 21:30 47 | 07:33 (6) 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 06:37 (6) 04:56 | 06:33 (6) 05:02 | 06:38 (6) 05:50 | 06:47 (6) 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 47 | 07:24 (6) 22:09 58 | 07:31 (6) 22:14 59 | 07:37 (6) 21:28 46 | 07:33 (6) 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:36 (6) 04:56 | 06:32 (6) 05:03 | 06:38 (6) 05:52 | 06:49 (6) 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 49 | 07:25 (6) 22:10 59 | 07:31 (6) 22:14 59 | 07:37 (6) 21:25 43 | 07:32 (6) 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 06:35 (6) 04:55 | 06:33 (6) 05:04 | 06:38 (6) 05:54 | 06:49 (6) 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 50 | 07:25 (6) 22:11 58 | 07:31 (6) 22:13 60 | 07:38 (6) 21:23 40 | 07:29 (6) 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 06:34 (6) 04:54 | 06:33 (6) 05:05 | 06:38 (6) 05:56 | 06:51 (6) 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 52 | 07:26 (6) 22:12 58 | 07:31 (6) 22:12 60 | 07:38 (6) 21:21 37 | 07:28 (6) 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 06:33 (6) 04:54 | 06:33 (6) 05:07 | 06:38 (6) 05:58 | 06:53 (6) 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 53 | 07:26 (6) 22:13 58 | 07:31 (6) 22:11 60 | 07:38 (6) 21:19 34 | 07:27 (6) 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:33 (6) 04:53 | 06:34 (6) 05:08 | 06:39 (6) 06:00 | 06:54 (6) 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 55 | 07:28 (6) 22:14 58 | 07:32 (6) 22:10 60 | 07:39 (6) 21:17 30 | 07:24 (6) 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 06:32 (6) 04:53 | 06:34 (6) 05:09 | 06:39 (6) 06:02 | 06:56 (6) 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 56 | 07:28 (6) 22:15 57 | 07:31 (6) 22:09 60 | 07:39 (6) 21:15 25 | 07:21 (6) 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 06:31 (6) 04:53 | 06:34 (6) 05:11 | 06:39 (6) 06:03 | 07:00 (6) 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 57 | 07:28 (6) 22:15 57 | 07:31 (6) 22:08 60 | 07:39 (6) 21:12 18 | 07:18 (6) 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 06:32 (6) 04:52 | 06:34 (6) 05:12 | 06:39 (6) 06:05 | 07:06 (6) 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 57 | 07:29 (6) 22:16 58 | 07:32 (6) 22:06 60 | 07:39 (6) 21:10 6 | 07:12 (6) 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:31 (6) 04:52 | 06:35 (6) 05:13 | 06:40 (6) 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 58 | 07:29 (6) 22:17 57 | 07:32 (6) 22:05 60 | 07:40 (6) 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 06:30 (6) 04:52 | 06:35 (6) 05:15 | 06:39 (6) 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 59 | 07:29 (6) 22:17 57 | 07:32 (6) 22:04 61 | 07:40 (6) 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 06:30 (6) 04:52 | 06:35 (6) 05:16 | 06:39 (6) 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 59 | 07:29 (6) 22:18 57 | 07:32 (6) 22:03 61 | 07:40 (6) 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 06:30 (6) 04:52 | 06:36 (6) 05:18 | 06:40 (6) 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 59 | 07:29 (6) 22:18 56 | 07:32 (6) 22:01 60 | 07:40 (6) 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 06:30 (6) 04:52 | 06:36 (6) 05:19 | 06:40 (6) 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 60 | 07:30 (6) 22:18 56 | 07:32 (6) 22:00 60 | 07:40 (6) 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 06:30 (6) 04:52 | 06:36 (6) 05:21 | 06:39 (6) 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 60 | 07:30 (6) 22:19 57 | 07:33 (6) 21:58 61 | 07:40 (6) 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 06:30 (6) 04:52 | 06:36 (6) 05:22 | 06:40 (6) 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 60 | 07:30 (6) 22:19 56 | 07:32 (6) 21:57 60 | 07:40 (6) 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 06:30 (6) 04:53 | 06:37 (6) 05:24 | 06:40 (6) 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 60 | 07:30 (6) 22:19 56 | 07:33 (6) 21:55 60 | 07:40 (6) 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 06:30 (6) 04:53 | 06:36 (6) 05:26 | 06:40 (6) 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 61 | 07:31 (6) 22:19 57 | 07:33 (6) 21:54 60 | 07:40 (6) 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 06:29 (6) 04:53 | 06:37 (6) 05:27 | 06:40 (6) 06:24 | 07:23 | 08:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 61 | 07:30 (6) 22:19 57 | 07:34 (6) 21:52 59 | 07:39 (6) 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 06:30 (6) 04:54 | 06:37 (6) 05:29 | 06:41 (6) 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 60 | 07:30 (6) 22:19 57 | 07:34 (6) 21:50 59 | 07:40 (6) 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 06:30 (6) 04:54 | 06:37 (6) 05:31 | 06:42 (6) 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 60 | 07:30 (6) 22:19 57 | 07:34 (6) 21:49 58 | 07:40 (6) 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:56 (6) | 05:06 | 06:30 (6) 04:55 | 06:37 (6) 05:32 | 06:41 (6) 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 11 07:07 (6) | 21:56 61 | 07:31 (6) 22:19 58 | 07:35 (6) 21:47 58 | 07:39 (6) 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:51 (6) | 05:05 | 06:30 (6) 04:55 | 06:38 (6) 05:34 | 06:42 (6) 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 21 07:12 (6) | 21:58 61 | 07:31 (6) 22:18 57 | 07:35 (6) 21:45 57 | 07:39 (6) 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:48 (6) | 05:04 | 06:31 (6) 04:56 | 06:37 (6) 05:36 | 06:42 (6) 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 27 07:15 (6) | 21:59 60 | 07:31 (6) 22:18 58 | 07:35 (6) 21:43 56 | 07:38 (6) 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 06:31 (6) | 05:38 | 06:43 (6) 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 60 | 07:31 (6) | 21:41 55 | 07:38 (6) 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 59 | 1669 | 1730 | 1832 | 586 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | 0,95 | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | 0,46 | 0,46 | 0,49 | | | | |
| Total, real | | | | 22 | 817 | 791 | 843 | 286 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE)Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | | 09:25 (6) | 07:08 | 10:23 (6) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | 93 | 10:58 (6) | 20:09 | 70 11:33 (6) | 21:08 | 22:02 |
| 2 | 09:00 | 08:26 | | 07:24 | | 09:24 (6) | 07:05 | 10:23 (6) | 05:53 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | 94 | 10:58 (6) | 20:11 | 67 11:30 (6) | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | | 09:24 (6) | 07:03 | 10:25 (6) | 05:50 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | 95 | 10:59 (6) | 20:13 | 63 11:28 (6) | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 09:23 (6) | 07:00 | 10:26 (6) | 05:48 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | 96 | 10:59 (6) | 20:15 | 58 11:24 (6) | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | | 09:23 (6) | 06:57 | 10:28 (6) | 05:46 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | 96 | 10:59 (6) | 20:17 | 54 11:22 (6) | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 09:22 (6) | 06:55 | 10:29 (6) | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | 97 | 10:59 (6) | 20:19 | 49 11:18 (6) | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 10:11 (6) | 07:12 | | 09:22 (6) | 06:52 | 10:32 (6) | 05:42 | 04:56 |
| | 16:21 | 17:21 | 2 10:13 (6) | 18:19 | 98 | 11:00 (6) | 20:21 | 42 11:14 (6) | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 10:01 (6) | 07:09 | | 09:21 (6) | 06:50 | 10:34 (6) | 05:40 | 04:55 |
| | 16:23 | 17:23 | 23 10:24 (6) | 18:21 | 98 | 10:59 (6) | 20:23 | 35 11:09 (6) | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 09:57 (6) | 07:07 | | 09:20 (6) | 06:47 | 10:39 (6) | 05:38 | 04:55 |
| | 16:24 | 17:25 | 32 10:29 (6) | 18:24 | 99 | 10:59 (6) | 20:25 | 25 11:04 (6) | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 | 09:53 (6) | 07:04 | | 09:20 (6) | 06:45 | 10:47 (6) | 05:36 | 04:54 |
| | 16:26 | 17:27 | 39 10:32 (6) | 18:26 | 99 | 10:59 (6) | 20:27 | 5 10:52 (6) | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 09:50 (6) | 07:02 | | 09:19 (6) | 06:42 | | 05:34 | 04:54 |
| | 16:28 | 17:29 | 45 10:35 (6) | 18:28 | 99 | 10:58 (6) | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 09:48 (6) | 06:59 | | 09:19 (6) | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 17:31 | 50 10:38 (6) | 18:30 | 100 | 10:59 (6) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 | 09:46 (6) | 06:56 | | 09:19 (6) | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 17:33 | 54 10:40 (6) | 18:32 | 99 | 10:58 (6) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 09:43 (6) | 06:54 | | 09:19 (6) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 17:36 | 59 10:42 (6) | 18:34 | 99 | 10:58 (6) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 09:42 (6) | 06:51 | | 09:18 (6) | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 17:38 | 62 10:44 (6) | 18:36 | 99 | 10:57 (6) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 09:40 (6) | 06:49 | | 09:18 (6) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 17:40 | 66 10:46 (6) | 18:38 | 98 | 10:56 (6) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 09:38 (6) | 06:46 | | 09:18 (6) | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 69 10:47 (6) | 18:40 | 98 | 10:56 (6) | 20:41 | | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 | 09:37 (6) | 06:44 | | 09:18 (6) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 72 10:49 (6) | 18:42 | 97 | 10:55 (6) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | 09:36 (6) | 06:41 | | 09:18 (6) | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 17:46 | 74 10:50 (6) | 18:44 | 96 | 10:54 (6) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 09:34 (6) | 06:39 | | 09:18 (6) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 17:48 | 77 10:51 (6) | 18:46 | 95 | 10:53 (6) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 09:33 (6) | 06:36 | | 09:17 (6) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 17:50 | 79 10:52 (6) | 18:48 | 95 | 10:52 (6) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 | 09:32 (6) | 06:33 | | 09:18 (6) | 06:15 | | 05:15 | 04:52 |
| | 16:47 | 17:53 | 81 10:53 (6) | 18:50 | 93 | 10:51 (6) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 09:31 (6) | 06:31 | | 09:18 (6) | 06:13 | | 05:13 | 04:52 |
| | 16:49 | 17:55 | 83 10:54 (6) | 18:52 | 91 | 10:49 (6) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 | 09:29 (6) | 06:28 | | 09:19 (6) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 17:57 | 86 10:55 (6) | 18:54 | 90 | 10:49 (6) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 09:29 (6) | 06:26 | | 09:19 (6) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 17:59 | 87 10:56 (6) | 18:55 | 88 | 10:47 (6) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 | 09:27 (6) | 06:23 | | 09:18 (6) | 06:06 | | 05:09 | 04:54 |
| | 16:55 | 18:01 | 89 10:56 (6) | 18:57 | 87 | 10:45 (6) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 | 09:27 (6) | 06:21 | | 09:19 (6) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | 18:03 | 90 10:57 (6) | 18:59 | 85 | 10:44 (6) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 09:25 (6) | 06:18 | | 09:20 (6) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | 18:05 | 92 10:57 (6) | 19:01 | 82 | 10:42 (6) | 21:03 | | 21:56 | 22:19 |
| 29 | 08:33 | | | 07:15 | | 10:21 (6) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 79 | 11:40 (6) | 21:04 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | | 10:21 (6) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 77 | 11:38 (6) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | | 10:22 (6) | | | 05:03 | |
| | 17:06 | | | 20:07 | 74 | 11:36 (6) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 1411 | | 2886 | | | 468 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,69 | | 0,69 | | | 0,69 | | |
| Total reduction | | | 0,17 | | 0,23 | | | 0,27 | | |
| Total, real | | | 238 | | 677 | | | 127 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE)Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 09:58 (6) | 07:36 | | 09:23 (6) | 08:35 | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 100 | 11:38 (6) | 16:58 | 38 | 10:01 (6) | 16:10 | |
| 2 | 04:57 | | 05:41 | | 06:39 | | 10:46 (6) | 07:36 | | 09:58 (6) | 07:38 | | 09:27 (6) | 08:36 | |
| | 22:17 | | 21:38 | | 20:27 | 5 | 10:51 (6) | 19:09 | 99 | 11:37 (6) | 16:55 | 31 | 09:58 (6) | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 10:37 (6) | 07:38 | | 09:58 (6) | 07:40 | | 09:32 (6) | 08:38 | |
| | 22:17 | | 21:36 | | 20:24 | 25 | 11:02 (6) | 19:07 | 99 | 11:37 (6) | 16:53 | 21 | 09:53 (6) | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 10:32 (6) | 07:40 | | 09:58 (6) | 07:43 | | | 08:40 | |
| | 22:16 | | 21:34 | | 20:22 | 35 | 11:07 (6) | 19:04 | 99 | 11:37 (6) | 16:51 | | | 16:07 | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 10:28 (6) | 07:42 | | 09:58 (6) | 07:45 | | | 08:41 | |
| | 22:16 | | 21:32 | | 20:19 | 42 | 11:10 (6) | 19:02 | 98 | 11:36 (6) | 16:49 | | | 16:07 | |
| 6 | 05:01 | | 05:48 | | 06:47 | | 10:25 (6) | 07:44 | | 09:57 (6) | 07:47 | | | 08:43 | |
| | 22:15 | | 21:30 | | 20:16 | 49 | 11:14 (6) | 18:59 | 99 | 11:36 (6) | 16:47 | | | 16:06 | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 10:23 (6) | 07:46 | | 09:57 (6) | 07:49 | | | 08:44 | |
| | 22:14 | | 21:28 | | 20:14 | 54 | 11:17 (6) | 18:57 | 98 | 11:35 (6) | 16:45 | | | 16:05 | |
| 8 | 05:03 | | 05:52 | | 06:51 | | 10:21 (6) | 07:48 | | 09:58 (6) | 07:51 | | | 08:45 | |
| | 22:14 | | 21:25 | | 20:11 | 58 | 11:19 (6) | 18:54 | 97 | 11:35 (6) | 16:43 | | | 16:05 | |
| 9 | 05:04 | | 05:54 | | 06:53 | | 10:19 (6) | 07:50 | | 09:58 (6) | 07:53 | | | 08:47 | |
| | 22:13 | | 21:23 | | 20:09 | 63 | 11:22 (6) | 18:52 | 96 | 11:34 (6) | 16:41 | | | 16:05 | |
| 10 | 05:05 | | 05:56 | | 06:55 | | 10:17 (6) | 07:52 | | 09:58 (6) | 07:55 | | | 08:48 | |
| | 22:12 | | 21:21 | | 20:06 | 66 | 11:23 (6) | 18:49 | 95 | 11:33 (6) | 16:40 | | | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:56 | | 10:15 (6) | 07:54 | | 09:58 (6) | 07:57 | | | 08:49 | |
| | 22:11 | | 21:19 | | 20:04 | 70 | 11:25 (6) | 18:47 | 95 | 11:33 (6) | 16:38 | | | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 10:14 (6) | 07:56 | | 09:58 (6) | 07:59 | | | 08:50 | |
| | 22:10 | | 21:17 | | 20:01 | 73 | 11:27 (6) | 18:44 | 94 | 11:32 (6) | 16:36 | | | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 10:12 (6) | 07:58 | | 09:58 (6) | 08:01 | | | 08:51 | |
| | 22:09 | | 21:15 | | 19:58 | 77 | 11:29 (6) | 18:42 | 93 | 11:31 (6) | 16:34 | | | 16:04 | |
| 14 | 05:10 | | 06:03 | | 07:02 | | 10:11 (6) | 08:00 | | 09:59 (6) | 08:03 | | | 08:52 | |
| | 22:08 | | 21:12 | | 19:56 | 79 | 11:30 (6) | 18:39 | 91 | 11:30 (6) | 16:32 | | | 16:03 | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 10:10 (6) | 08:02 | | 09:59 (6) | 08:05 | | | 08:53 | |
| | 22:06 | | 21:10 | | 19:53 | 82 | 11:32 (6) | 18:37 | 90 | 11:29 (6) | 16:31 | | | 16:03 | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 10:08 (6) | 08:04 | | 10:00 (6) | 08:07 | | | 08:54 | |
| | 22:05 | | 21:08 | | 19:51 | 84 | 11:32 (6) | 18:34 | 88 | 11:28 (6) | 16:29 | | | 16:03 | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 10:07 (6) | 08:06 | | 10:00 (6) | 08:09 | | | 08:55 | |
| | 22:04 | | 21:05 | | 19:48 | 86 | 11:33 (6) | 18:32 | 87 | 11:27 (6) | 16:27 | | | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 10:06 (6) | 08:08 | | 10:02 (6) | 08:11 | | | 08:56 | |
| | 22:03 | | 21:03 | | 19:45 | 88 | 11:34 (6) | 18:29 | 84 | 11:26 (6) | 16:26 | | | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 10:05 (6) | 08:10 | | 10:02 (6) | 08:13 | | | 08:57 | |
| | 22:01 | | 21:01 | | 19:43 | 90 | 11:35 (6) | 18:27 | 83 | 11:25 (6) | 16:24 | | | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 10:05 (6) | 08:12 | | 10:03 (6) | 08:15 | | | 08:57 | |
| | 22:00 | | 20:58 | | 19:40 | 91 | 11:36 (6) | 18:25 | 81 | 11:24 (6) | 16:23 | | | 16:04 | |
| 21 | 05:21 | | 06:17 | | 07:15 | | 10:04 (6) | 08:14 | | 10:04 (6) | 08:17 | | | 08:58 | |
| | 21:58 | | 20:56 | | 19:38 | 92 | 11:36 (6) | 18:22 | 78 | 11:22 (6) | 16:21 | | | 16:05 | |
| 22 | 05:22 | | 06:19 | | 07:17 | | 10:03 (6) | 08:16 | | 10:05 (6) | 08:19 | | | 08:59 | |
| | 21:57 | | 20:54 | | 19:35 | 94 | 11:37 (6) | 18:20 | 76 | 11:21 (6) | 16:20 | | | 16:05 | |
| 23 | 05:24 | | 06:20 | | 07:19 | | 10:02 (6) | 08:18 | | 10:06 (6) | 08:21 | | | 08:59 | |
| | 21:55 | | 20:51 | | 19:33 | 96 | 11:38 (6) | 18:18 | 73 | 11:19 (6) | 16:19 | | | 16:06 | |
| 24 | 05:26 | | 06:22 | | 07:21 | | 10:01 (6) | 08:20 | | 10:08 (6) | 08:23 | | | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | 96 | 11:37 (6) | 18:15 | 70 | 11:18 (6) | 16:17 | | | 16:06 | |
| 25 | 05:27 | | 06:24 | | 07:23 | | 10:00 (6) | 07:22 | | 09:09 (6) | 08:24 | | | 09:00 | |
| | 21:52 | | 20:46 | | 19:27 | 97 | 11:37 (6) | 17:13 | 68 | 10:17 (6) | 16:16 | | | 16:07 | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 10:00 (6) | 07:24 | | 09:10 (6) | 08:26 | | | 09:00 | |
| | 21:50 | | 20:44 | | 19:25 | 98 | 11:38 (6) | 17:11 | 65 | 10:15 (6) | 16:15 | | | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 09:59 (6) | 07:26 | | 09:12 (6) | 08:28 | | | 09:00 | |
| | 21:49 | | 20:42 | | 19:22 | 99 | 11:38 (6) | 17:08 | 61 | 10:13 (6) | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 06:30 | | 07:29 | | 09:59 (6) | 07:28 | | 09:13 (6) | 08:30 | | | 09:01 | |
| | 21:47 | | 20:39 | | 19:20 | 99 | 11:38 (6) | 17:06 | 58 | 10:11 (6) | 16:13 | | | 16:09 | |
| 29 | 05:34 | | 06:32 | | 07:31 | | 09:59 (6) | 07:30 | | 09:16 (6) | 08:31 | | | 09:01 | |
| | 21:45 | | 20:37 | | 19:17 | 99 | 11:38 (6) | 17:04 | 53 | 10:09 (6) | 16:12 | | | 16:10 | |
| 30 | 05:36 | | 06:34 | | 07:32 | | 09:58 (6) | 07:32 | | 09:18 (6) | 08:33 | | | 09:01 | |
| | 21:43 | | 20:34 | | 19:14 | 100 | 11:38 (6) | 17:02 | 49 | 10:07 (6) | 16:11 | | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | 09:20 (6) | | | | 09:01 | |
| | 21:41 | | 20:32 | | | | | 17:00 | 44 | 10:04 (6) | | | | 16:12 | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | |
| Total, worst case | | | | | | 2187 | | | 2561 | | | 90 | | | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | | | | | 0,69 | | | 0,69 | | | 0,69 | | | |
| Total reduction | | | | | | 0,27 | | | 0,21 | | | 0,11 | | | |
| Total, real | | | | | | 596 | | | 541 | | | 10 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 - 16:14 | 08:27 - 17:08 | 07:26 - 18:07 (57) 08:39 (6) - 09:36 (6) | 07:08 - 20:09 | 05:55 - 21:08 | 05:02 - 22:02 | 04:57 - 22:18 | 05:39 - 21:40 | 06:38 - 20:29 | 07:34 - 19:12 (49) 09:19 (6) - 10:08 (6) | 07:36 - 16:58 | 08:35 - 16:10 |
| 2 | 09:00 - 16:15 | 08:26 - 17:10 | 07:24 - 18:09 (58) 08:38 (6) - 09:36 (6) | 07:05 - 20:11 | 05:53 - 21:10 | 05:00 - 22:03 | 04:57 - 22:17 | 05:41 - 21:38 | 06:39 - 20:27 | 07:36 - 19:09 (52) 09:17 (6) - 10:09 (6) | 07:38 - 16:55 | 08:36 - 16:09 |
| 3 | 09:00 - 16:16 | 08:24 - 17:12 | 07:22 - 18:11 (58) 08:38 (6) - 09:36 (6) | 07:03 - 20:13 | 05:50 - 21:12 | 05:00 - 22:05 | 04:58 - 22:17 | 05:43 - 21:36 | 06:41 - 20:24 | 07:38 - 19:07 (52) 09:17 (6) - 10:09 (6) | 07:41 - 16:53 | 08:38 - 16:08 |
| 4 | 09:00 - 16:17 | 08:22 - 17:14 | 07:19 - 18:13 (58) 08:37 (6) - 09:35 (6) | 07:00 - 20:15 | 05:48 - 21:14 | 04:59 - 22:06 | 04:59 - 22:16 | 05:45 - 21:34 | 06:43 - 20:22 | 07:40 - 19:04 (54) 09:16 (6) - 10:10 (6) | 07:43 - 16:51 | 08:40 - 16:07 |
| 5 | 08:59 - 16:19 | 08:20 - 17:16 | 07:17 - 18:15 (57) 08:38 (6) - 09:35 (6) | 06:57 - 20:17 | 05:46 - 21:16 | 04:58 - 22:07 | 05:00 - 22:16 | 05:47 - 21:32 | 06:45 - 20:19 | 07:42 - 19:02 (55) 09:15 (6) - 10:10 (6) | 07:45 - 16:49 | 08:41 - 16:07 |
| 6 | 08:59 - 16:20 | 08:18 - 17:19 | 07:14 - 18:17 (58) 08:37 (6) - 09:35 (6) | 06:55 - 20:19 | 05:44 - 21:18 | 04:57 - 22:08 | 05:01 - 22:15 | 05:49 - 21:30 | 06:47 - 20:16 | 07:44 - 18:59 (56) 09:14 (6) - 10:10 (6) | 07:47 - 16:47 | 08:43 - 16:06 |
| 7 | 08:58 - 16:21 | 08:16 - 17:21 | 07:12 - 18:19 (57) 08:38 (6) - 09:35 (6) | 06:52 - 20:21 | 05:42 - 21:20 | 04:56 - 22:09 | 05:02 - 22:14 | 05:50 - 21:28 | 06:49 - 20:14 | 07:46 - 18:57 (57) 09:14 (6) - 10:11 (6) | 07:49 - 16:45 | 08:44 - 16:05 |
| 8 | 08:58 - 16:23 | 08:14 - 17:23 | 07:09 - 18:21 (55) 08:38 (6) - 09:33 (6) | 06:50 - 20:23 | 05:40 - 21:22 | 04:55 - 22:10 | 05:03 - 22:14 | 05:52 - 21:25 | 06:51 - 20:11 | 07:48 - 18:54 (58) 09:13 (6) - 10:11 (6) | 07:51 - 16:43 | 08:45 - 16:05 |
| 9 | 08:57 - 16:24 | 08:12 - 17:25 | 07:07 - 18:24 (55) 08:37 (6) - 09:32 (6) | 06:47 - 20:25 | 05:38 - 21:24 | 04:55 - 22:11 | 05:04 - 22:13 | 05:54 - 21:23 | 06:53 - 20:09 | 07:50 - 18:52 (57) 09:13 (6) - 10:10 (6) | 07:53 - 16:41 | 08:47 - 16:05 |
| 10 | 08:56 - 16:26 | 08:10 - 17:27 | 07:04 - 18:26 (54) 08:38 (6) - 09:32 (6) | 06:45 - 20:27 | 05:36 - 21:26 | 04:54 - 22:12 | 05:05 - 22:12 | 05:56 - 21:21 | 06:55 - 20:06 | 07:52 - 18:49 (58) 09:12 (6) - 10:10 (6) | 07:55 - 16:40 | 08:48 - 16:04 |
| 11 | 08:56 - 16:28 | 08:08 - 17:29 | 07:02 - 18:28 (52) 08:38 (6) - 09:30 (6) | 06:42 - 20:29 | 05:34 - 21:28 | 04:54 - 22:13 | 05:07 - 22:11 | 05:58 - 21:19 | 06:56 - 20:04 | 07:54 - 18:47 (58) 09:12 (6) - 10:10 (6) | 07:57 - 16:38 | 08:49 - 16:04 |
| 12 | 08:55 - 16:29 | 08:06 - 17:31 (12) 09:03 (6) - 09:15 (6) | 06:59 - 18:30 (51) 08:39 (6) - 09:30 (6) | 06:40 - 20:31 | 05:32 - 21:29 | 04:53 - 22:14 | 05:08 - 22:10 | 06:00 - 21:17 | 06:58 - 20:01 | 07:56 - 18:44 (58) 09:12 (6) - 10:10 (6) | 07:59 - 16:36 | 08:50 - 16:04 |
| 13 | 08:54 - 16:31 | 08:03 - 17:33 (21) 08:59 (6) - 09:20 (6) | 06:56 - 18:32 (48) 08:40 (6) - 09:28 (6) | 06:37 - 20:33 | 05:30 - 21:31 | 04:53 - 22:15 | 05:09 - 22:09 | 06:02 - 21:15 | 07:00 - 19:58 | 07:58 - 18:42 (57) 09:12 (6) - 10:09 (6) | 08:01 - 16:34 | 08:51 - 16:04 |
| 14 | 08:53 - 16:33 | 08:01 - 17:36 (27) 08:55 (6) - 09:22 (6) | 06:54 - 18:34 (46) 08:41 (6) - 09:27 (6) | 06:35 - 20:35 | 05:28 - 21:33 | 04:53 - 22:15 | 05:10 - 22:08 | 06:03 - 21:12 | 07:02 - 19:56 | 08:00 - 18:39 (57) 09:12 (6) - 10:09 (6) | 08:02 - 16:32 | 08:52 - 16:03 |
| 15 | 08:52 - 16:34 | 07:59 - 17:38 (32) 08:53 (6) - 09:25 (6) | 06:51 - 18:36 (44) 08:41 (6) - 09:25 (6) | 06:32 - 20:37 | 05:26 - 21:35 | 04:52 - 22:16 | 05:12 - 22:06 | 06:05 - 21:10 | 07:04 - 19:53 | 08:02 - 18:37 (56) 09:12 (6) - 10:08 (6) | 08:05 - 16:31 | 08:53 - 16:03 |
| 16 | 08:51 - 16:36 | 07:57 - 17:40 (36) 08:51 (6) - 09:27 (6) | 06:49 - 18:38 (41) 08:42 (6) - 09:23 (6) | 06:30 - 20:39 | 05:25 - 21:37 | 04:52 - 22:17 | 05:13 - 22:05 | 06:07 - 21:08 | 07:06 - 19:51 | 08:04 - 18:34 (55) 09:12 (6) - 10:07 (6) | 08:07 - 16:29 | 08:54 - 16:03 |
| 17 | 08:50 - 16:38 | 07:55 - 17:42 (39) 08:49 (6) - 09:28 (6) | 06:46 - 18:40 (37) 08:44 (6) - 09:21 (6) | 06:27 - 20:41 | 05:23 - 21:39 | 04:52 - 22:17 | 05:15 - 22:04 | 06:09 - 21:05 | 07:08 - 19:48 | 08:06 - 18:32 (54) 09:12 (6) - 10:06 (6) | 08:09 - 16:27 | 08:55 - 16:04 |
| 18 | 08:49 - 16:40 | 07:52 - 17:44 (42) 08:48 (6) - 09:30 (6) | 06:44 - 18:42 (33) 08:45 (6) - 09:18 (6) | 06:25 - 20:43 | 05:21 - 21:40 | 04:52 - 22:18 | 05:16 - 22:03 | 06:11 - 21:03 | 07:10 - 19:46 | 08:08 - 18:29 (54) 09:13 (6) - 10:07 (6) | 08:11 - 16:26 | 08:56 - 16:04 |
| 19 | 08:47 - 16:42 | 07:50 - 17:46 (44) 08:47 (6) - 09:31 (6) | 06:41 - 18:44 (27) 08:48 (6) - 09:15 (6) | 06:23 - 20:45 | 05:19 - 21:42 | 04:52 - 22:18 | 05:18 - 22:01 | 06:13 - 21:01 | 07:12 - 19:43 | 08:10 - 18:27 (51) 09:14 (6) - 10:05 (6) | 08:13 - 16:24 | 08:57 - 16:04 |
| 20 | 08:46 - 16:44 | 07:48 - 17:48 (47) 08:45 (6) - 09:32 (6) | 06:39 - 18:46 (20) 08:51 (6) - 09:11 (6) | 06:20 - 20:47 | 05:18 - 21:44 | 04:52 - 22:18 | 05:19 - 22:00 | 06:15 - 20:58 | 07:13 - 19:40 | 08:12 - 18:25 (50) 09:14 (6) - 10:04 (6) | 08:15 - 16:23 | 08:57 - 16:04 |
| 21 | 08:45 - 16:46 | 07:46 - 17:50 (49) 08:44 (6) - 09:33 (6) | 06:36 - 18:48 (8) 08:56 (6) - 09:04 (6) | 06:18 - 20:49 | 05:16 - 21:45 | 04:52 - 22:19 | 05:21 - 21:58 | 06:17 - 20:56 | 07:15 - 19:38 | 08:14 - 18:22 (48) 09:15 (6) - 10:03 (6) | 08:17 - 16:21 | 08:58 - 16:05 |
| 22 | 08:43 - 16:48 | 07:43 - 17:53 (50) 08:43 (6) - 09:33 (6) | 06:33 - 18:50 | 06:15 - 20:51 | 05:15 - 21:47 | 04:52 - 22:19 | 05:22 - 21:57 | 06:19 - 20:54 | 07:17 - 19:35 | 08:16 - 18:20 (47) 09:15 (6) - 10:02 (6) | 08:19 - 16:20 | 08:59 - 16:05 |
| 23 | 08:42 - 16:49 | 07:41 - 17:55 (53) 08:42 (6) - 09:35 (6) | 06:31 - 18:52 | 06:13 - 20:53 | 05:13 - 21:49 | 04:52 - 22:19 | 05:24 - 21:55 | 06:20 - 20:51 | 07:19 - 19:33 (17) 09:37 (6) - 09:54 (6) | 08:18 - 18:18 (44) 09:16 (6) - 10:00 (6) | 08:21 - 16:19 | 08:59 - 16:06 |
| 24 | 08:41 - 16:51 | 07:38 - 17:57 (54) 08:41 (6) - 09:35 (6) | 06:28 - 18:54 | 06:11 - 20:55 | 05:12 - 21:50 | 04:53 - 22:19 | 05:26 - 21:54 | 06:22 - 20:49 | 07:21 - 19:30 (25) 09:32 (6) - 09:57 (6) | 08:20 - 18:15 (42) 09:18 (6) - 10:00 (6) | 08:23 - 16:17 | 09:00 - 16:06 |
| 25 | 08:39 - 16:53 | 07:36 - 17:59 (54) 08:41 (6) - 09:35 (6) | 06:26 - 18:56 | 06:08 - 20:57 | 05:10 - 21:52 | 04:53 - 22:19 | 05:27 - 21:52 | 06:24 - 20:46 | 07:23 - 19:27 (31) 09:29 (6) - 10:00 (6) | 07:22 - 17:13 (38) 08:20 (6) - 08:58 (6) | 08:24 - 16:16 | 09:00 - 16:07 |
| 26 | 08:38 - 16:55 | 07:34 - 18:01 (56) 08:39 (6) - 09:35 (6) | 06:23 - 18:57 | 06:06 - 20:59 | 05:09 - 21:53 | 04:54 - 22:19 | 05:29 - 21:50 | 06:26 - 20:44 | 07:25 - 19:25 (36) 09:26 (6) - 10:02 (6) | 07:24 - 17:11 (35) 08:21 (6) - 08:56 (6) | 08:26 - 16:15 | 09:00 - 16:08 |
| 27 | 08:36 - 16:58 | 07:31 - 18:03 (57) 08:39 (6) - 09:36 (6) | 06:21 - 18:59 | 06:04 - 21:01 | 05:07 - 21:55 | 04:54 - 22:19 | 05:31 - 21:49 | 06:28 - 20:42 | 07:27 - 19:22 (40) 09:24 (6) - 10:04 (6) | 07:26 - 17:08 (31) 08:23 (6) - 08:54 (6) | 08:28 - 16:14 | 09:00 - 16:08 |
| 28 | 08:34 - 17:00 | 07:29 - 18:05 (58) 08:38 (6) - 09:36 (6) | 06:18 - 19:01 | 06:01 - 21:03 | 05:06 - 21:57 | 04:55 - 22:19 | 05:32 - 21:47 | 06:30 - 20:39 | 07:29 - 19:20 (42) 09:23 (6) - 10:05 (6) | 07:28 - 17:06 (26) 08:25 (6) - 08:51 (6) | 08:30 - 16:13 | 09:01 - 16:09 |
| 29 | 08:33 - 17:02 | | 07:15 - 20:03 | 05:59 - 21:05 | 05:05 - 21:58 | 04:55 - 22:18 | 05:34 - 21:45 | 06:32 - 20:37 | 07:31 - 19:17 (45) 09:21 (6) - 10:06 (6) | 07:30 - 17:04 (19) 08:29 (6) - 08:48 (6) | 08:31 - 16:12 | 09:01 - 16:10 |
| 30 | 08:31 - 17:04 | | 07:13 - 20:05 | 05:57 - 21:06 | 05:04 - 21:59 | 04:56 - 22:18 | 05:36 - 21:43 | 06:34 - 20:34 | 07:32 - 19:14 (47) 09:20 (6) - 10:07 (6) | 07:32 - 17:02 (9) 08:34 (6) - 08:43 (6) | 08:33 - 16:11 | 09:01 - 16:11 |
| 31 | 08:29 - 17:06 | | 07:10 - 20:07 | | 05:03 - 22:01 | | 05:38 - 21:41 | 06:36 - 20:32 | | 07:34 - 17:00 | | 09:01 - 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 731 | 974 | | | | | | 283 | 1437 | | |
| Sun reduction | | 0,25 | 0,34 | | | | | | 0,40 | 0,31 | | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | 1,00 | 1,00 | | |
| Wind dir. red. | | 0,84 | 0,84 | | | | | | 0,84 | 0,84 | | |
| Total reduction | | 0,21 | 0,29 | | | | | | 0,33 | 0,26 | | |
| Total, real | | 150 | 278 | | | | | | 94 | 370 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 15:49 (7) | 07:26 | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | | | 07:36 | | 15:20 (7) | 08:35 |
| | 16:13 | | | 17:08 | 32 | 16:21 (7) | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | | | 16:57 | 31 | 15:51 (7) | 16:10 |
| 2 | 09:00 | | | 08:25 | | 15:48 (7) | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | | | 07:38 | | 15:19 (7) | 08:36 |
| | 16:15 | | | 17:10 | 33 | 16:21 (7) | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | | | 16:55 | 32 | 15:51 (7) | 16:09 |
| 3 | 09:00 | | | 08:23 | | 15:48 (7) | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | | | 07:40 | | 15:19 (7) | 08:38 |
| | 16:16 | | | 17:12 | 34 | 16:22 (7) | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | | | 16:53 | 33 | 15:52 (7) | 16:08 |
| 4 | 08:59 | | | 08:22 | | 15:48 (7) | 07:19 | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | | | 07:42 | | 15:19 (7) | 08:39 |
| | 16:17 | | | 17:14 | 34 | 16:22 (7) | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | | | 16:51 | 33 | 15:52 (7) | 16:07 |
| 5 | 08:59 | | | 08:20 | | 15:49 (7) | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 | | | 07:44 | | 15:19 (7) | 08:41 |
| | 16:18 | | | 17:16 | 33 | 16:22 (7) | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | | | 16:49 | 33 | 15:52 (7) | 16:06 |
| 6 | 08:59 | | | 08:18 | | 15:49 (7) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | | | 07:46 | | 15:18 (7) | 08:42 |
| | 16:20 | | | 17:18 | 34 | 16:23 (7) | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | | | 16:47 | 34 | 15:52 (7) | 16:06 |
| 7 | 08:58 | | | 08:16 | | 15:49 (7) | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | | | 07:48 | | 15:19 (7) | 08:44 |
| | 16:21 | | | 17:20 | 34 | 16:23 (7) | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | | | 16:45 | 34 | 15:53 (7) | 16:05 |
| 8 | 08:57 | | | 08:14 | | 15:50 (7) | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | 15:19 (7) | 08:45 |
| | 16:23 | | | 17:23 | 33 | 16:23 (7) | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | | | 16:43 | 33 | 15:52 (7) | 16:05 |
| 9 | 08:57 | | | 08:12 | | 15:49 (7) | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | | | 07:53 | | 15:19 (7) | 08:46 |
| | 16:24 | | | 17:25 | 33 | 16:22 (7) | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | | | 16:41 | 33 | 15:52 (7) | 16:04 |
| 10 | 08:56 | | | 08:10 | | 15:50 (7) | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | | | 07:55 | | 15:19 (7) | 08:48 |
| | 16:26 | | | 17:27 | 31 | 16:21 (7) | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | | | 16:39 | 32 | 15:51 (7) | 16:04 |
| 11 | 08:55 | | | 08:07 | | 15:51 (7) | 07:01 | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | | | 07:57 | | 15:21 (7) | 08:49 |
| | 16:27 | | | 17:29 | 30 | 16:21 (7) | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | | | 16:38 | 31 | 15:52 (7) | 16:04 |
| 12 | 08:55 | | | 08:05 | | 15:52 (7) | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 | | | 07:59 | | 15:21 (7) | 08:50 |
| | 16:29 | | | 17:31 | 29 | 16:21 (7) | 18:29 | 20:31 | 21:29 | 22:14 | 22:09 | 21:17 | 20:01 | 18:44 | | | 16:36 | 30 | 15:51 (7) | 16:04 |
| 13 | 08:54 | | | 08:03 | | 15:53 (7) | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | | | 08:01 | | 15:22 (7) | 08:51 |
| | 16:31 | | | 17:33 | 26 | 16:19 (7) | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | | | 16:34 | 28 | 15:50 (7) | 16:03 |
| 14 | 08:53 | | | 08:01 | | 15:54 (7) | 06:54 | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | | | 08:03 | | 15:22 (7) | 08:52 |
| | 16:32 | | | 17:35 | 24 | 16:18 (7) | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | | | 16:32 | 28 | 15:50 (7) | 16:03 |
| 15 | 08:52 | | | 07:59 | | 15:56 (7) | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | | | 08:05 | | 15:24 (7) | 08:53 |
| | 16:34 | | | 17:38 | 21 | 16:17 (7) | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | | | 16:30 | 26 | 15:50 (7) | 16:03 |
| 16 | 08:51 | | | 07:57 | | 15:58 (7) | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | | 08:07 | | 15:25 (7) | 08:54 |
| | 16:36 | | | 17:40 | 16 | 16:14 (7) | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | | | 16:29 | 24 | 15:49 (7) | 16:03 |
| 17 | 08:49 | | | 07:54 | | 16:01 (7) | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | | 08:09 | | 15:26 (7) | 08:55 |
| | 16:38 | | | 17:42 | 10 | 16:11 (7) | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | | | 16:27 | 22 | 15:48 (7) | 16:03 |
| 18 | 08:48 | | | 07:52 | | | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | | | 08:11 | | 15:28 (7) | 08:56 |
| | 16:40 | | | 17:44 | | | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | | | 16:26 | 18 | 15:46 (7) | 16:04 |
| 19 | 08:47 | | | 07:50 | | | 06:41 | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:10 | | | 08:13 | | 15:29 (7) | 08:56 |
| | 16:42 | | | 17:46 | | | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | | | 16:24 | 15 | 15:44 (7) | 16:04 |
| 20 | 08:46 | | | 07:48 | | | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | | | 08:15 | | 15:33 (7) | 08:57 |
| | 16:43 | | | 17:48 | | | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | | | 16:23 | 10 | 15:43 (7) | 16:04 |
| 21 | 08:45 | | | 07:45 | | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:14 | | | 08:17 | | | 08:58 |
| | 16:45 | | | 17:50 | | | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | | | 16:21 | | | 16:05 |
| 22 | 08:43 | | 15:58 (7) | 07:43 | | | 06:33 | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | | | 08:18 | | | 08:58 |
| | 16:47 | 10 | 16:08 (7) | 17:52 | | | 18:49 | 20:50 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | | | 16:20 | | | 16:05 |
| 23 | 08:42 | | 15:55 (7) | 07:41 | | | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | | | 08:20 | | | 08:59 |
| | 16:49 | 15 | 16:10 (7) | 17:54 | | | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | | | 16:18 | | | 16:06 |
| 24 | 08:40 | | 15:54 (7) | 07:38 | | | 06:28 | 06:11 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | | | 08:22 | | | 08:59 |
| | 16:51 | 18 | 16:12 (7) | 17:57 | | | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | | | 16:17 | | | 16:06 |
| 25 | 08:39 | | 15:53 (7) | 07:36 | | | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | | 15:30 (7) | 08:24 | | | 09:00 |
| | 16:53 | 22 | 16:15 (7) | 17:59 | | | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 12 | 15:42 (7) | 16:16 | | | 16:07 |
| 26 | 08:37 | | 15:52 (7) | 07:33 | | | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | | 15:28 (7) | 08:26 | | | 09:00 |
| | 16:55 | 24 | 16:16 (7) | 18:01 | | | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 17 | 15:45 (7) | 16:15 | | | 16:07 |
| 27 | 08:36 | | 15:51 (7) | 07:31 | | | 06:20 | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 07:26 | | 15:25 (7) | 08:28 | | | 09:00 |
| | 16:57 | 26 | 16:17 (7) | 18:03 | | | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 22 | 15:47 (7) | 16:14 | | | 16:08 |
| 28 | 08:34 | | 15:50 (7) | 07:29 | | | 06:18 | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 07:28 | | 15:23 (7) | 08:29 | | | 09:00 |
| | 16:59 | 28 | 16:18 (7) | 18:05 | | | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 25 | 15:48 (7) | 16:12 | | | 16:09 |
| 29 | 08:32 | | 15:50 (7) | | | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | | 15:22 (7) | 08:31 | | | 09:00 |
| | 17:01 | 29 | 16:19 (7) | | | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 27 | 15:49 (7) | 16:11 | | | 16:10 |
| 30 | 08:31 | | 15:49 (7) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | | 15:22 (7) | 08:33 | | | 09:00 |
| | 17:04 | 30 | 16:19 (7) | | | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 28 | 15:50 (7) | 16:10 | | | 16:11 |
| 31 | 08:29 | | 15:49 (7) | | | | 07:10 | | 05:02 | | 05:37 | 06:35 | | 07:34 | | 15:21 (7) | | | | 09:00 |
| | 17:06 | 31 | 16:20 (7) | | | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 16:59 | 30 | 15:51 (7) | | | | 16:12 |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 233 | | | 487 | | | | | | | | | | 161 | | | 560 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,73 | | | 0,73 | | | | | | | | | | 0,73 | | | 0,73 | | |
| Total reduction | | 0,13 | | | 0,18 | | | | | | | | | | 0,23 | | | 0,12 | | |
| Total, real | | 31 | | | 88 | | | | | | | | | | 36 | | | 65 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar

## Calculation: Enercon E138 (be 6 VE)Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 17:32 (7) | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | 18:01 (7) | 07:36 | 08:34 |
| | 16:13 | 17:08 | 18:07 7 | 17:39 (7) | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 24 | 18:25 (7) | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 17:28 (7) | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 18:00 (7) | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 13 | 17:41 (7) | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 26 | 18:26 (7) | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 17:27 (7) | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 17:59 (7) | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 16 | 17:43 (7) | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:06 27 | 18:26 (7) | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 17:25 (7) | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | 17:59 (7) | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 20 | 17:45 (7) | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 26 | 18:25 (7) | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 17:23 (7) | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 | 17:57 (7) | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 23 | 17:46 (7) | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 27 | 18:24 (7) | 16:49 | 16:06 |
| 6 | 08:59 | 08:18 | 07:14 | 17:23 (7) | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 17:57 (7) | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 24 | 17:47 (7) | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 26 | 18:23 (7) | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 17:21 (7) | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 17:57 (7) | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 26 | 17:47 (7) | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 26 | 18:23 (7) | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 17:21 (7) | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 17:59 (7) | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 27 | 17:48 (7) | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 24 | 18:23 (7) | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 17:21 (7) | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 17:59 (7) | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 26 | 17:47 (7) | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:08 | 18:51 23 | 18:22 (7) | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 17:21 (7) | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 18:00 (7) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 27 | 17:48 (7) | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 19 | 18:19 (7) | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 17:21 (7) | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 18:01 (7) | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 26 | 17:47 (7) | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 15 | 18:16 (7) | 16:37 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 17:20 (7) | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 | 18:03 (7) | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 26 | 17:46 (7) | 20:31 | 21:29 | 22:14 | 22:09 | 21:16 | 20:01 | 18:44 11 | 18:14 (7) | 16:36 | 16:03 |
| 13 | 08:54 | 08:03 | 06:56 | 17:21 (7) | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 24 | 17:45 (7) | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 17:22 (7) | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 07:59 | | 08:03 | 08:52 |
| | 16:32 | 17:35 | 18:33 22 | 17:44 (7) | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 17:23 (7) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | | 08:05 | 08:53 |
| | 16:34 | 17:37 | 18:35 20 | 17:43 (7) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | | 16:30 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 17:25 (7) | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 15 | 17:40 (7) | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 17:27 (7) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:07 | 08:05 | | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 10 | 17:37 (7) | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:09 | | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:14 | | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | | 06:10 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | | 08:22 | 08:59 |
| | 16:51 | 17:56 | 18:53 | | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 18:11 (7) 07:24 | | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:24 7 | 18:18 (7) 17:10 | | 16:15 | 16:07 |
| 27 | 08:36 | 07:31 | 06:20 | | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 18:07 (7) 07:26 | | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 14 | 18:21 (7) 17:08 | | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 18:05 (7) 07:28 | | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 18 | 18:23 (7) 17:06 | | 16:12 | 16:09 |
| 29 | 08:32 | | 07:15 | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 18:03 (7) 07:30 | | 08:31 | 09:00 |
| | 17:01 | | 20:03 | | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 21 | 18:24 (7) 17:04 | | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 18:02 (7) 07:32 | | 08:33 | 09:00 |
| | 17:04 | | 20:05 | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 23 | 18:25 (7) 17:02 | | 16:10 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:02 | | 05:37 | 06:35 | | 07:34 | | | 09:00 |
| | 17:06 | | 20:07 | | | 22:00 | | 21:41 | 20:31 | | 16:59 | | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | 352 | | | | | | 83 | | 274 | | | |
| Sun reduction | | | 0,34 | | | | | | 0,40 | | 0,31 | | | |
| Oper. time red. | | | 1,00 | | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | 0,95 | | | | | | 0,95 | | 0,95 | | | |
| Total reduction | | | 0,33 | | | | | | 0,38 | | 0,29 | | | |
| Total, real | | | 115 | | | | | | 31 | | 80 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE)Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE)Shadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE)Shadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:53 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:55 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE)Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:14 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:11 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:28 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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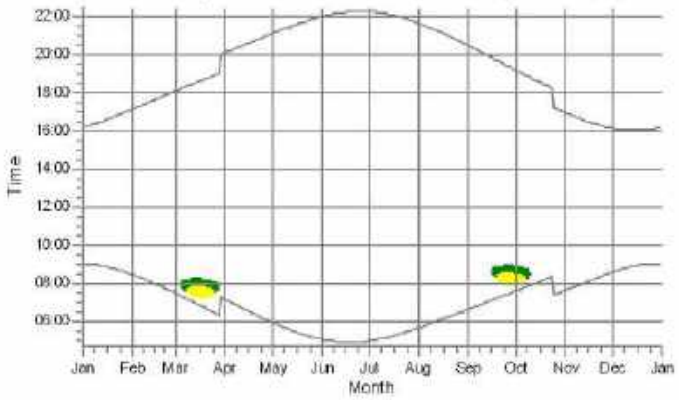
Calculated:
2021.12.03 11:15/3.5.552

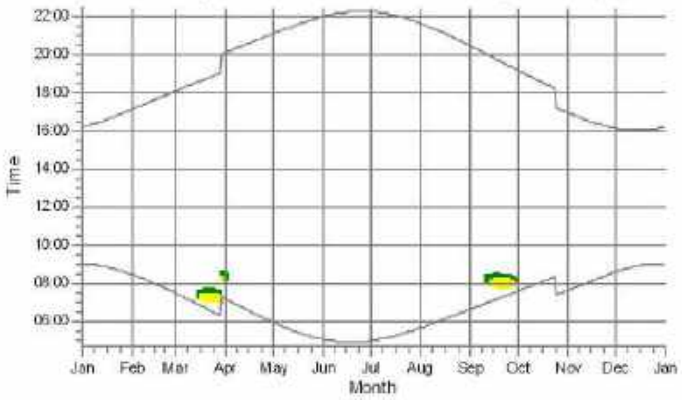
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE)

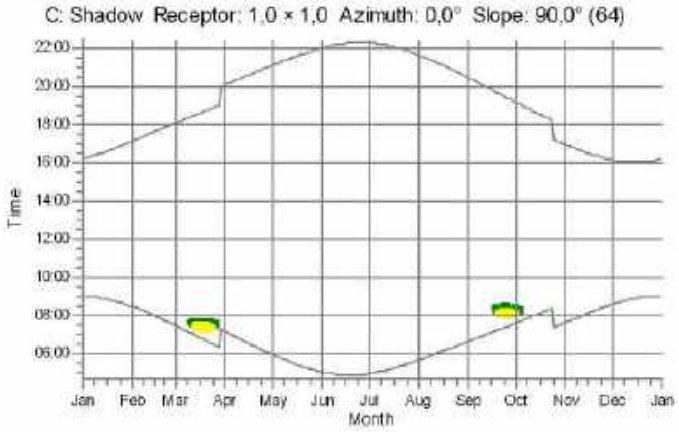
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)



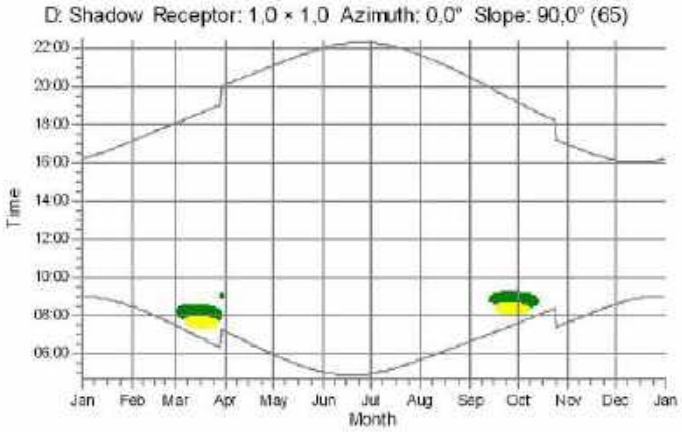

B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)



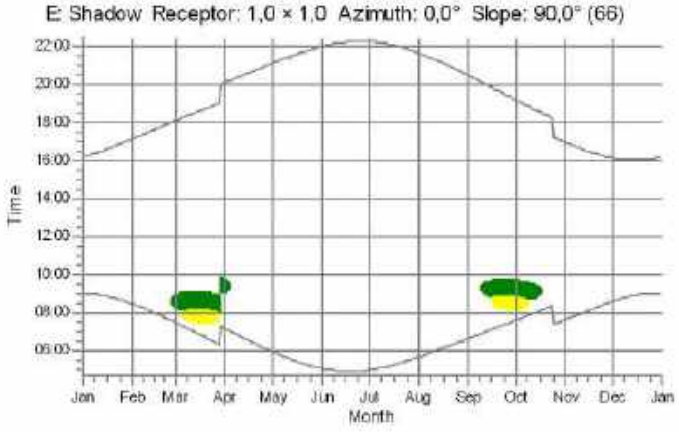

C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)



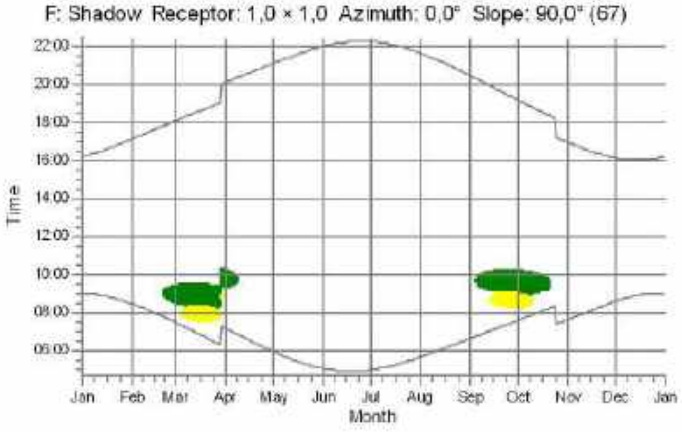

D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)




E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)




F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

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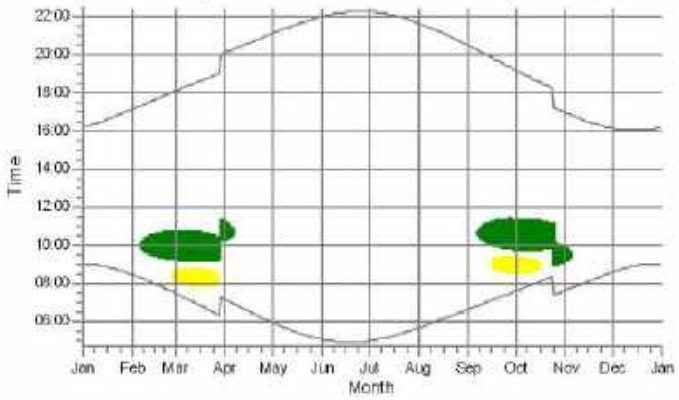
Calculated:
2021.12.03 11:15/3.5.552

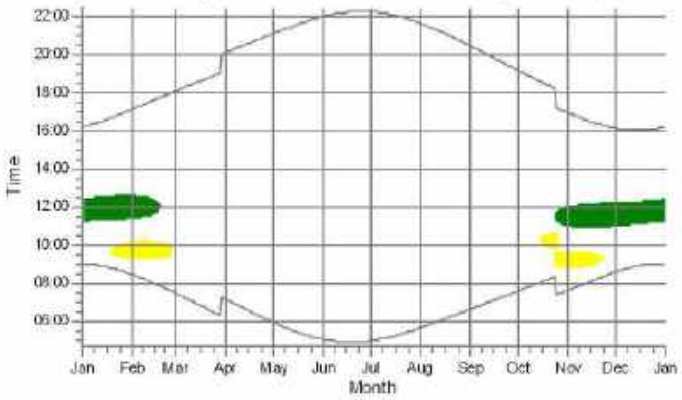
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE)

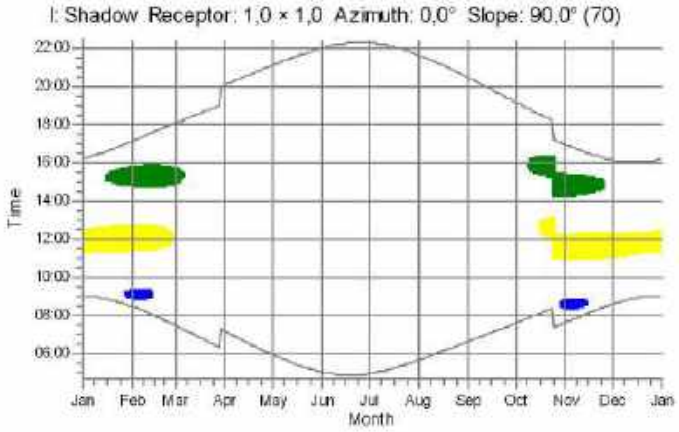
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)



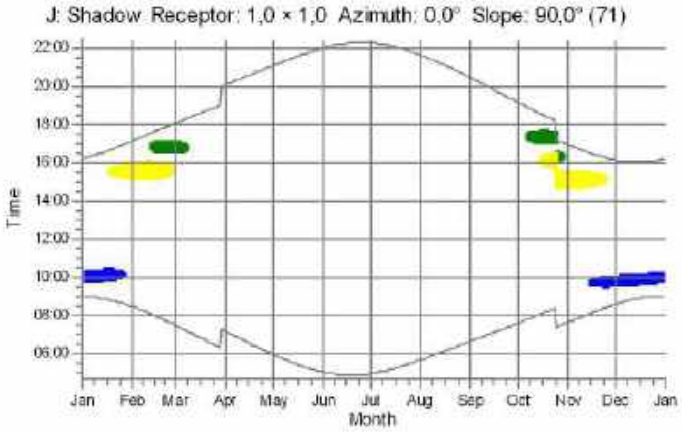

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)



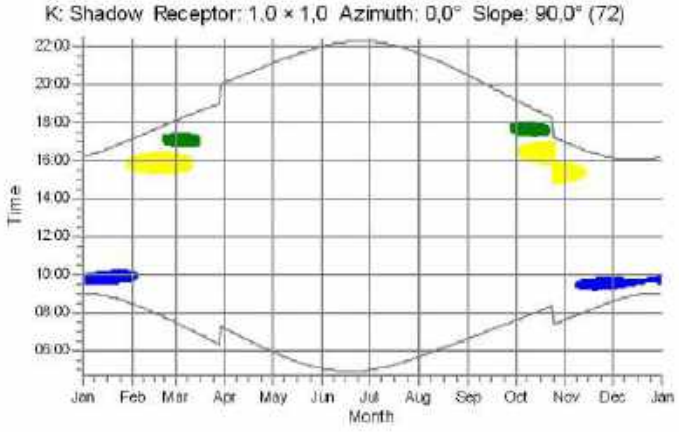

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)



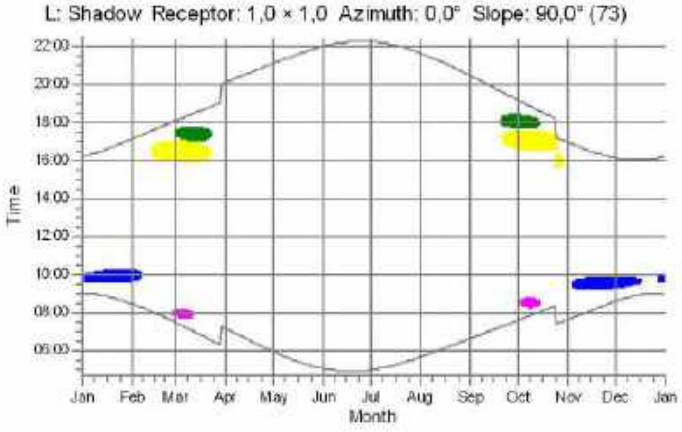

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)




WTGs

- 1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
- 2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

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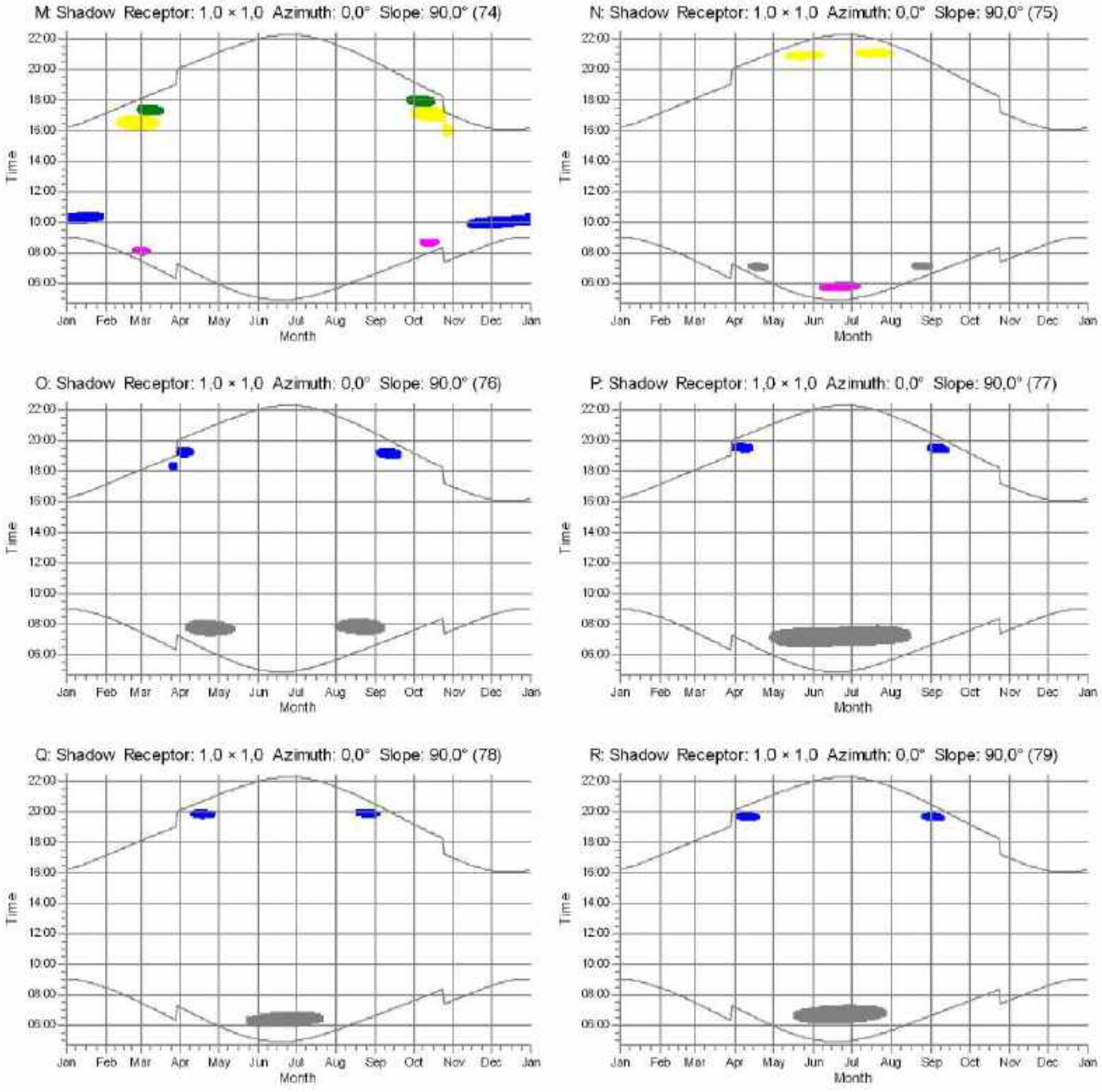
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

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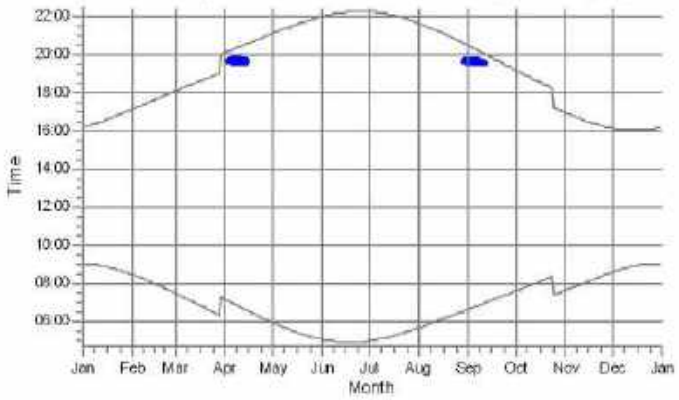
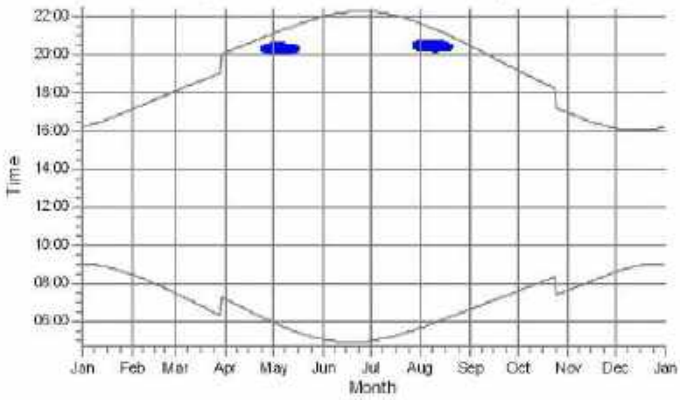
## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE)

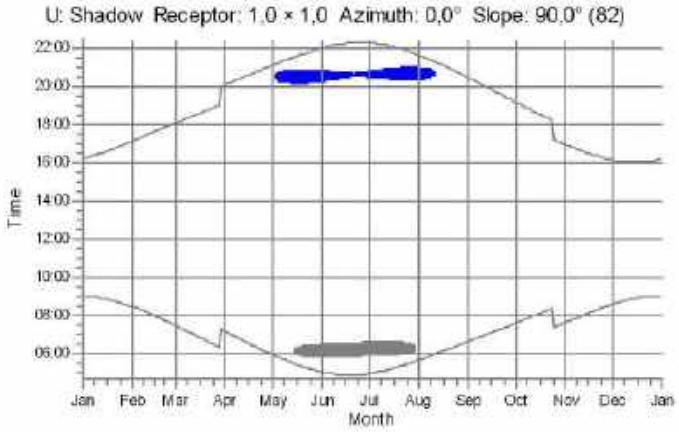
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)



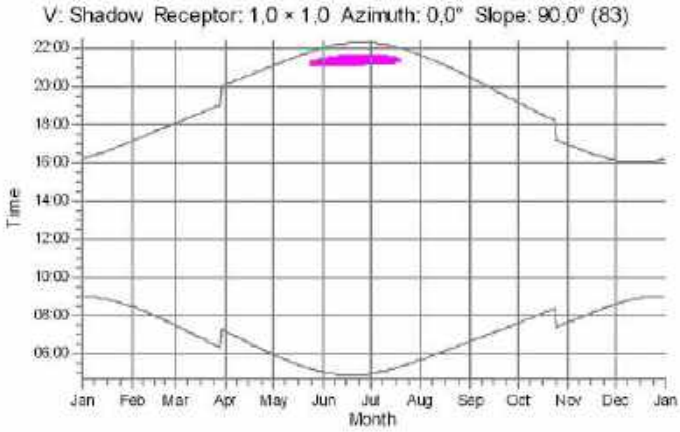

T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)



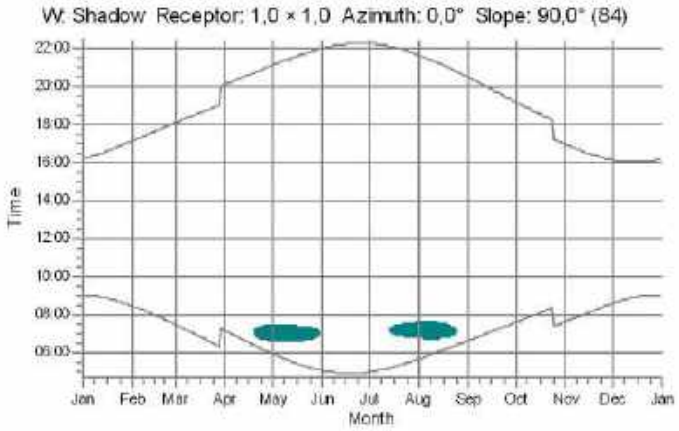

U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)



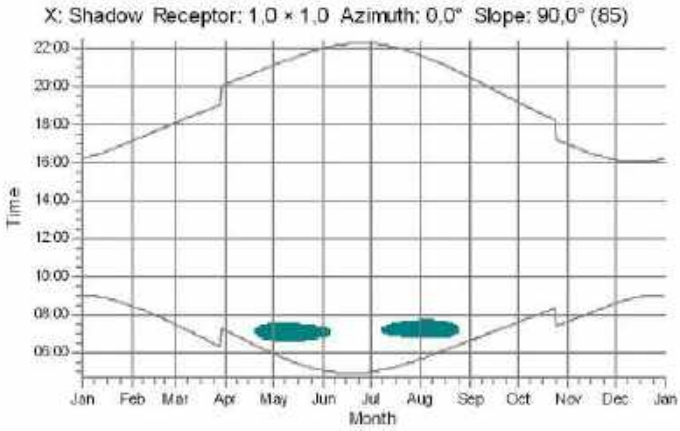

V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)




W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)




X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)




WTGs

- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
- 6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

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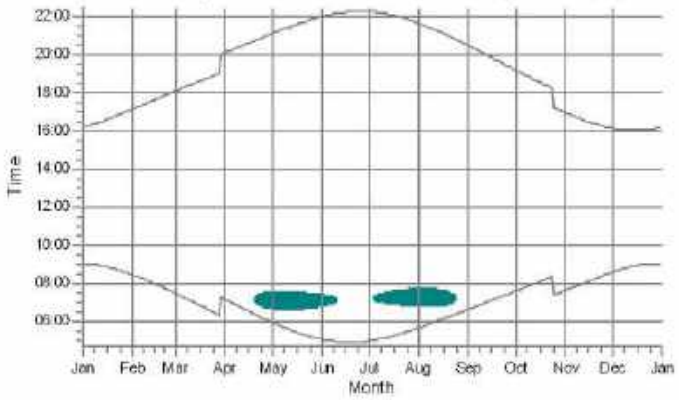
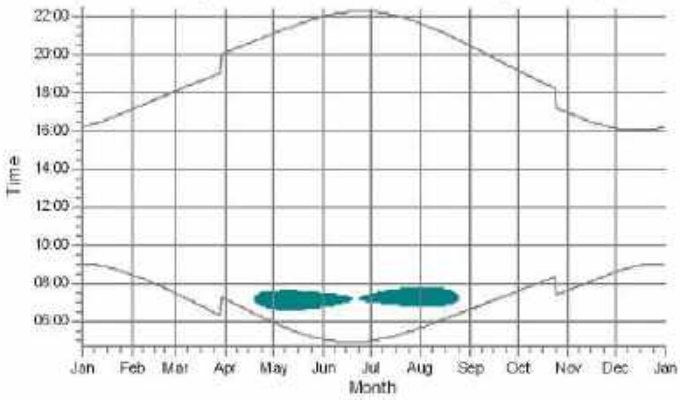
## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE)

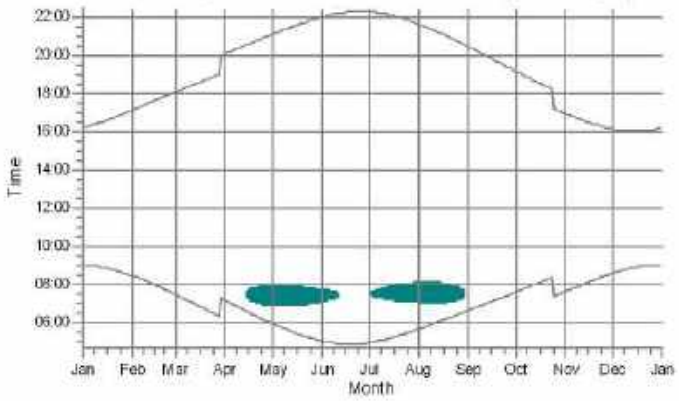
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)



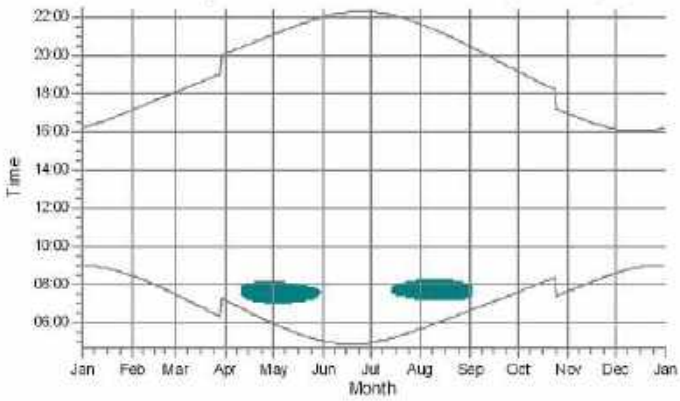

Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)



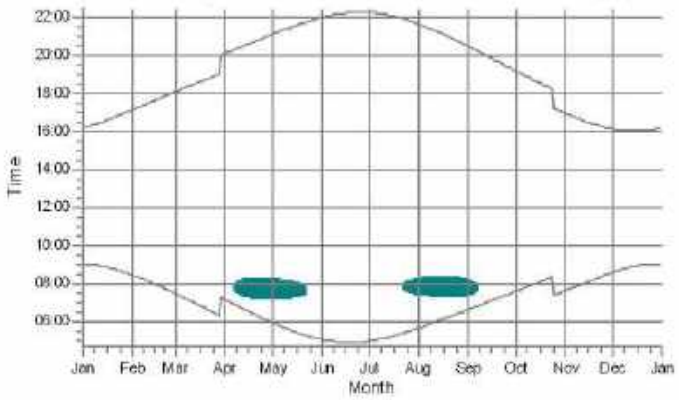

AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)



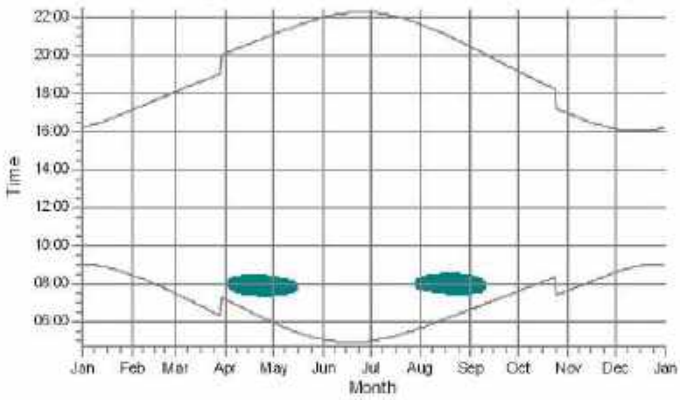

AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)




AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)




AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

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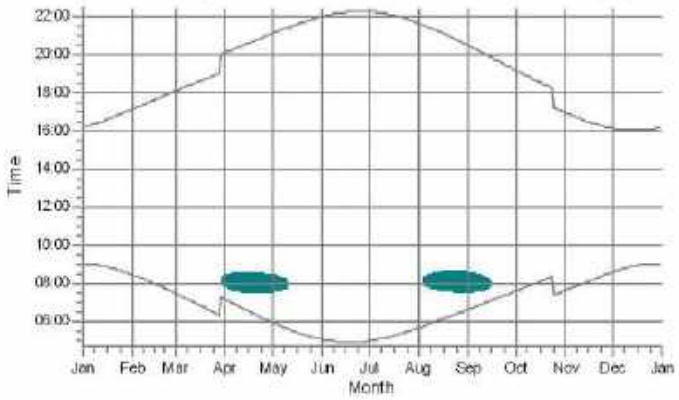
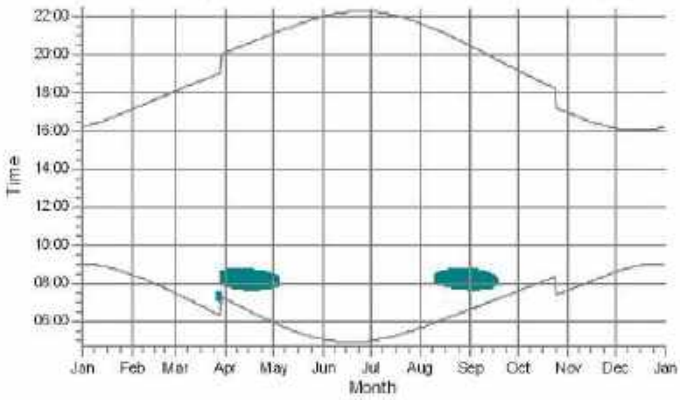
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE)

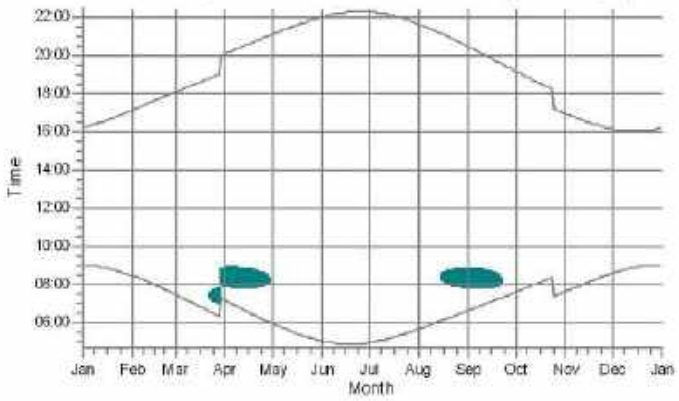
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)



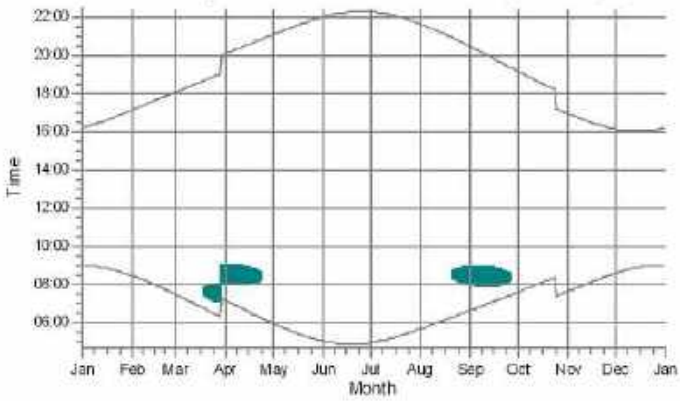

AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)



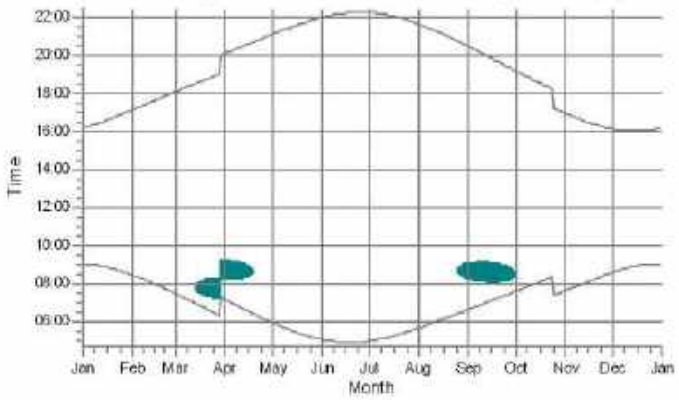

AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)



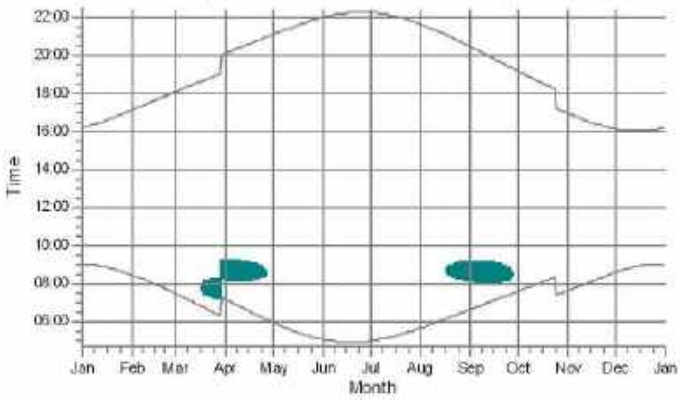

AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)




AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)




AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

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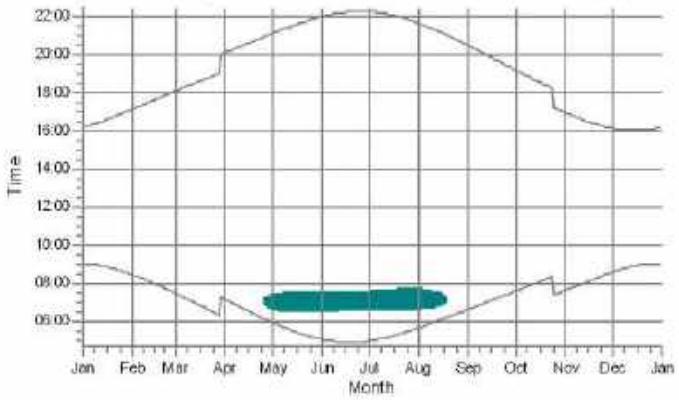
Calculated:
2021.12.03 11:15/3.5.552

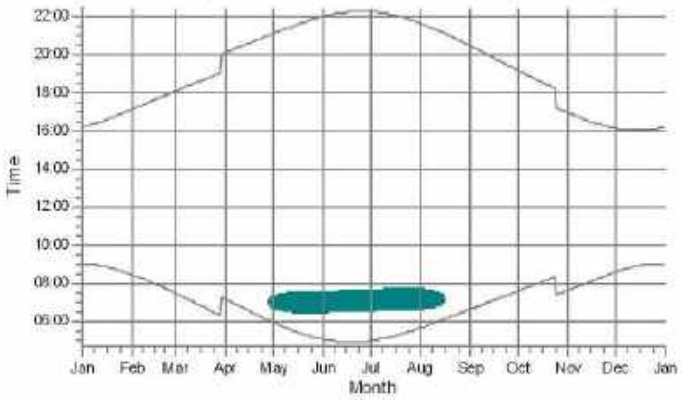
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE)

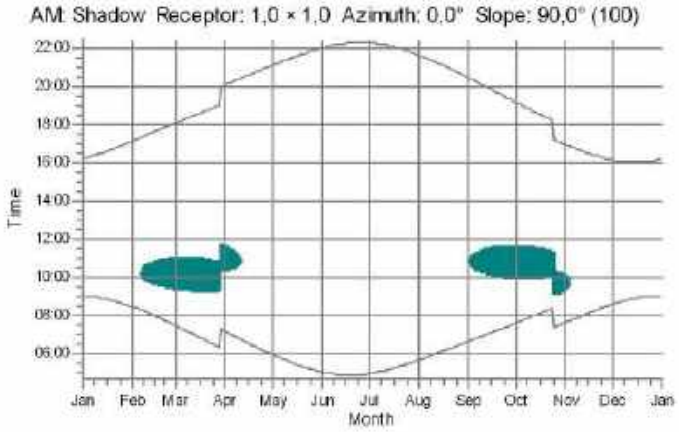
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)



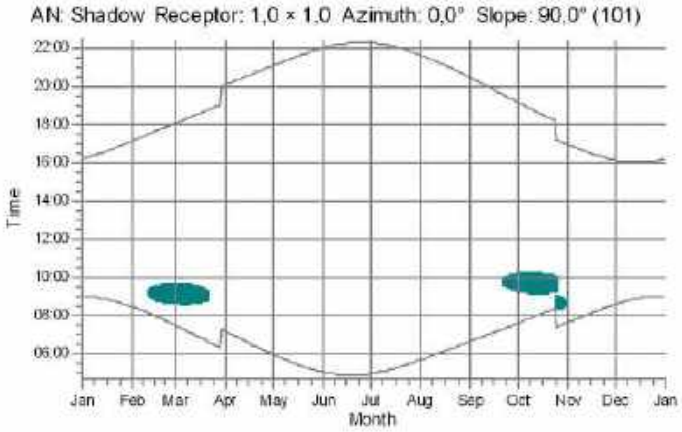

AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)



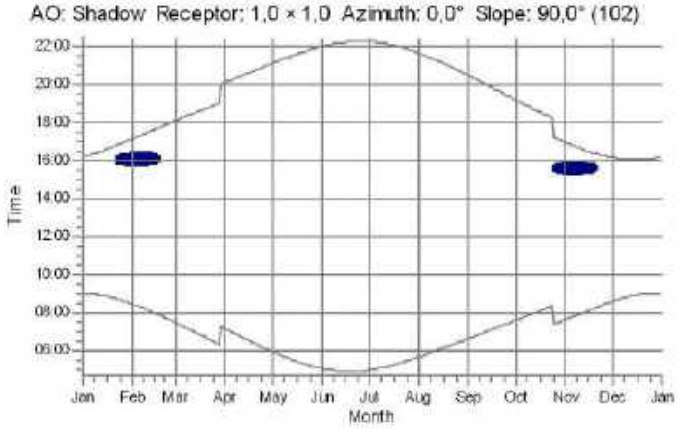

AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)



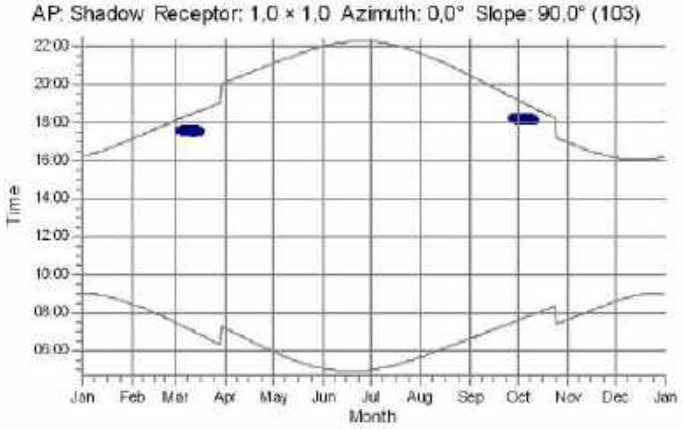

AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)




AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)




AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

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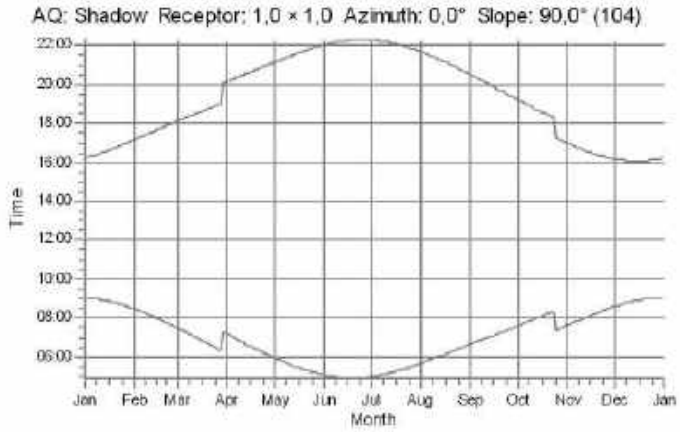
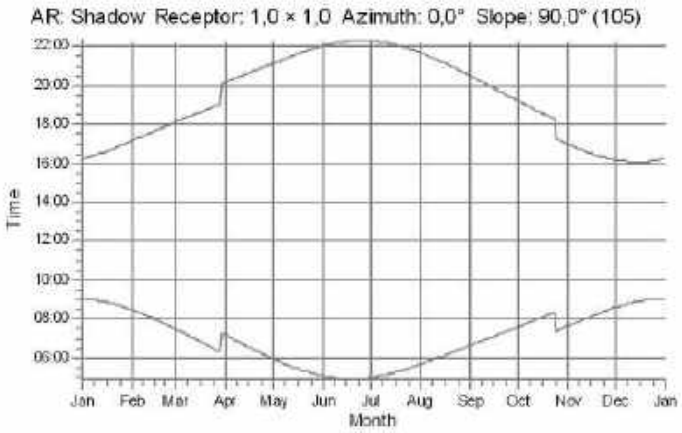
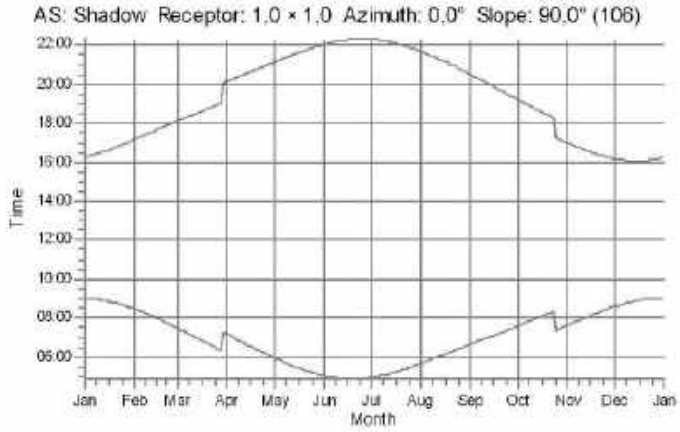
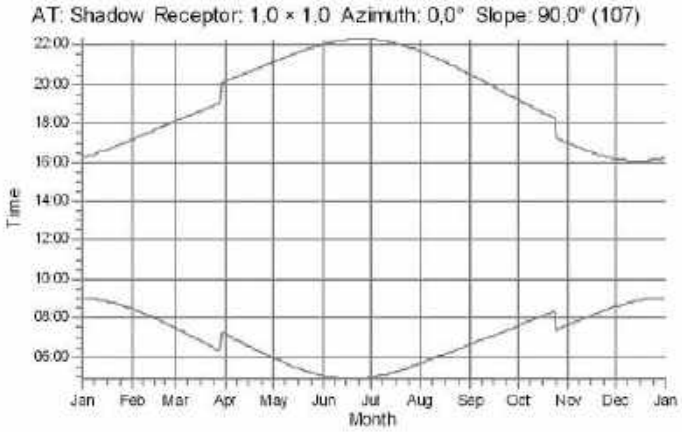
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE)




WTGs

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62 | 08:28 14:52-15:47/55 | 07:27 16:35-17:35/60 08:17-10:43/146 | 07:08 10:21-11:08/47 08:11-08:28/17 | 05:55 | 05:02 |
| | 16:14 | 17:08 11:28-12:33/65 | 18:07 15:00-15:40/40 | 20:10 09:08-10:11/63 | 21:09 | 22:03 |
| 2 | 09:01 11:20-12:22/62 | 08:26 14:51-15:47/56 | 07:24 16:36-17:37/61 08:05-10:43/158 | 07:05 10:24-11:05/41 08:14-08:25/11 | 05:53 | 05:01 |
| | 16:15 | 17:10 11:29-12:33/64 | 18:10 15:03-15:38/35 | 20:12 09:11-10:09/58 | 21:11 | 22:04 |
| 3 | 09:01 11:20-12:23/63 | 08:24 14:51-15:48/57 | 07:22 16:36-17:38/62 08:00-10:43/163 | 07:03 10:26-11:00/34 | 05:51 | 05:00 |
| | 16:16 | 17:12 11:30-12:32/62 | 18:12 15:06-15:35/29 | 20:14 09:15-10:06/51 | 21:13 | 22:05 |
| 4 | 09:00 11:20-12:23/63 | 08:22 14:51-15:49/58 | 07:19 16:38-17:40/62 07:58-10:44/166 | 07:00 10:30-10:56/26 | 05:49 | 04:59 |
| | 16:18 | 17:15 11:30-12:32/62 | 18:14 15:10-15:32/22 | 20:16 09:28-10:03/35 | 21:15 | 22:06 |
| 5 | 09:00 11:21-12:24/63 | 08:20 14:50-15:50/60 | 07:17 16:39-17:41/62 07:48-10:43/175 | 06:58 10:37-10:46/9 | 05:46 | 04:58 |
| | 16:19 | 17:17 11:31-12:32/61 | 18:16 15:16-15:25/9 | 20:18 09:30-09:59/29 | 21:17 | 22:08 |
| 6 | 08:59 11:21-12:25/64 | 08:18 14:50-15:50/60 | 07:15 16:42-17:42/60 | 06:55 09:34-09:55/21 | 05:44 | 04:57 |
| | 16:20 | 17:19 11:32-12:31/59 | 18:18 07:45-10:44/179 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 11:21-12:25/64 | 08:16 14:50-15:51/61 09:54-10:08/14 | 07:12 16:45-17:43/58 | 06:53 09:42-09:46/4 | 05:42 | 04:56 |
| | 16:22 | 17:21 11:33-12:30/57 | 18:20 07:42-10:43/181 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 11:21-12:25/64 | 08:14 14:49-15:51/62 09:47-10:13/26 | 07:10 16:47-17:43/56 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 11:33-12:29/56 | 18:22 07:39-10:43/184 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 11:22-12:27/65 | 08:12 14:49-15:51/62 09:44-10:17/33 | 07:07 16:48-17:43/55 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 11:35-12:28/53 | 18:24 07:33-10:43/190 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 11:22-12:28/66 | 08:10 14:49-15:52/63 09:41-10:20/39 | 07:04 16:48-17:43/55 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 11:36-12:27/51 | 18:26 07:29-10:42/193 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 11:22-12:28/66 | 08:08 14:49-15:52/63 09:39-10:23/44 | 07:02 16:50-17:44/54 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 11:38-12:26/48 | 18:28 07:27-10:42/195 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 11:22-12:28/66 | 08:06 14:49-15:51/62 09:36-10:25/49 | 06:59 16:50-17:43/53 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 11:39-12:23/44 | 18:30 07:25-10:41/196 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 11:22-12:29/67 | 08:04 16:46-16:58/12 11:41-12:21/40 | 06:57 16:51-17:42/51 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 14:49-15:52/63 09:34-10:27/53 | 18:32 07:24-10:41/197 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 11:22-12:29/67 | 08:02 16:43-17:01/18 11:44-12:19/35 | 06:54 16:54-17:42/48 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 14:49-15:52/63 09:32-10:29/57 | 18:34 07:22-10:40/198 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 11:23-12:30/67 | 08:00 16:40-17:02/22 11:46-12:16/30 | 06:52 16:56-17:41/45 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 14:49-15:51/62 09:30-10:30/60 | 18:36 07:18-10:39/201 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 11:22-12:30/68 | 07:57 16:39-17:04/25 11:50-12:12/22 | 06:49 17:08-17:41/33 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 14:49-15:51/62 09:29-10:32/63 | 18:38 07:16-10:39/203 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 15:09-15:21/12 | 07:55 16:38-17:06/28 11:58-12:05/7 | 06:47 17:08-17:40/32 | 06:28 | 05:23 | 04:52 |
| | 16:38 11:23-12:31/68 | 17:42 14:50-15:52/62 09:28-10:34/66 | 18:40 07:13-10:38/205 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 15:07-15:25/18 | 07:53 16:37-17:06/29 09:26-10:35/69 | 06:44 17:09-17:38/29 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:24-12:32/68 | 17:44 14:50-15:51/61 | 18:42 07:12-10:37/205 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 15:04-15:28/24 | 07:51 16:36-17:07/31 09:25-10:36/71 | 06:42 17:10-17:37/27 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:23-12:32/69 | 17:47 14:50-15:51/61 | 18:44 07:11-10:36/205 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 15:03-15:30/27 | 07:48 16:36-17:08/32 09:24-10:38/74 | 06:39 17:11-17:35/24 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:24-12:32/68 | 17:49 14:51-15:51/60 | 18:46 07:09-10:34/205 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 15:01-15:32/31 | 07:46 16:35-17:14/39 09:22-10:38/76 | 06:36 17:14-17:33/19 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:24-12:32/68 | 17:51 14:51-15:49/58 | 18:48 07:09-10:33/204 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:59-15:34/35 | 07:44 16:35-17:17/42 09:22-10:39/77 | 06:34 17:16-17:30/14 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:24-12:32/68 | 17:53 14:52-15:49/57 08:50-09:09/19 | 18:50 07:08-10:31/203 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:59-15:36/37 | 07:41 16:34-17:19/45 09:20-10:40/80 | 06:31 07:08-10:30/202 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:25-12:33/68 | 17:55 14:53-15:48/55 08:45-09:13/28 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:57-15:37/40 | 07:39 16:34-17:21/47 09:20-10:41/81 | 06:29 07:07-10:28/201 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:25-12:33/68 | 17:57 14:54-15:47/53 08:42-09:16/34 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:56-15:39/43 | 07:36 16:34-17:21/47 08:39-10:41/122 | 06:26 07:06-10:26/200 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:25-12:33/68 | 17:59 14:54-15:46/52 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 14:56-15:41/45 | 07:34 16:34-17:30/56 08:29-10:42/133 | 06:23 07:42-10:25/163 | 06:06 | 05:09 | 04:54 |
| | 16:56 11:26-12:34/68 | 18:01 14:56-15:45/49 | 18:58 07:07-07:38/31 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 14:55-15:42/47 | 07:32 16:34-17:32/58 08:23-10:42/139 | 06:21 07:51-10:22/151 | 06:04 | 05:08 | 04:54 |
| | 16:58 11:26-12:34/68 | 18:03 14:57-15:43/46 | 19:00 07:07-07:36/29 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:54-15:43/49 | 07:29 16:35-17:34/59 08:20-10:43/143 | 06:18 07:54-10:20/146 | 06:02 | 05:06 | 04:55 |
| | 17:00 11:27-12:34/67 | 18:05 14:59-15:42/43 | 19:02 07:07-07:36/29 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:54-15:44/50 | | 07:16 08:58-11:18/140 | 06:00 | 05:05 | 04:55 |
| | 17:02 11:27-12:34/67 | | 20:04 08:08-08:34/26 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:53-15:45/52 | | 07:13 10:19-11:15/56 08:09-08:33/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 11:27-12:34/67 | | 20:06 09:06-10:16/70 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:52-15:46/54 | | 07:11 10:20-11:12/52 08:09-08:31/22 | | 05:03 | |
| | 17:06 11:28-12:33/65 | | 20:08 09:07-10:13/66 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 4682 | 6915 | 446 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 17:30-18:22/52 | 07:37 14:19-15:21/62 09:11-09:49/38 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 08:03-11:20/197 | 16:58 11:06-11:57/51 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 17:28-18:22/54 | 07:39 14:19-15:21/62 09:14-09:46/32 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-11:20/196 | 16:56 11:04-11:58/54 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 17:27-18:21/54 | 07:41 14:19-15:20/61 09:17-09:42/25 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-11:20/194 | 16:54 11:03-11:58/55 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 17:26-18:21/55 | 07:43 14:20-15:21/61 09:25-09:36/11 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-11:20/192 | 16:52 11:03-12:00/57 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 09:40-09:41/1 | 07:43 17:25-18:20/55 | 07:45 14:20-15:20/60 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-11:20/184 | 16:50 11:02-12:01/59 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 09:31-09:51/20 | 07:44 17:24-18:19/55 | 07:47 14:20-15:19/59 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-11:19/182 | 16:48 11:01-12:01/60 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 10:34-10:40/6 | 07:46 17:19-18:18/59 | 07:49 14:20-15:19/59 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 09:26-09:54/28 | 18:57 08:19-11:19/180 | 16:46 11:00-12:02/62 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 10:25-10:49/24 | 07:48 17:15-18:17/62 | 07:51 14:22-15:19/57 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 09:23-09:57/34 | 18:54 08:21-11:19/178 | 16:44 11:00-12:03/63 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 10:21-10:54/33 | 07:50 17:13-18:15/62 08:31-11:18/167 | 07:53 14:22-15:18/56 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 09:09-10:00/51 | 18:52 15:47-16:03/16 08:26-08:30/4 | 16:42 11:00-12:04/64 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 10:17-10:58/41 08:07-08:18/11 | 07:52 17:11-18:13/62 08:33-11:18/165 | 07:55 14:23-15:17/54 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 09:05-10:02/57 | 18:49 15:42-16:07/25 | 16:40 10:59-12:04/65 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 10:15-11:01/46 08:04-08:21/17 | 07:54 17:10-18:11/61 08:35-11:17/162 | 07:57 14:23-15:16/53 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 09:02-10:04/62 | 18:47 15:38-16:10/32 | 16:38 10:59-12:04/65 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 10:11-11:03/52 08:02-08:23/21 | 07:56 17:08-18:09/61 08:49-11:16/147 | 07:59 14:25-15:17/52 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 08:59-10:05/66 | 18:44 15:35-16:12/37 08:41-08:46/5 | 16:36 10:59-12:05/66 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 10:09-11:05/56 07:59-08:23/24 | 07:58 17:07-18:08/61 08:51-11:15/144 | 08:01 14:25-15:16/51 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 08:56-10:06/70 | 18:42 15:33-16:13/40 | 16:34 10:59-12:06/67 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 10:08-11:08/60 07:58-08:24/26 | 08:00 17:06-18:06/60 08:54-11:16/142 | 08:03 14:26-15:15/49 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 08:49-10:07/78 | 18:39 15:31-16:16/45 | 16:33 10:58-12:06/68 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 08:44-11:10/146 | 08:02 17:07-18:04/57 08:58-11:15/137 | 08:06 14:27-15:14/47 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 07:57-08:25/28 | 18:37 15:29-16:17/48 | 16:31 10:58-12:06/68 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 08:41-11:11/150 | 08:04 17:06-18:01/55 09:10-11:14/124 | 08:08 14:29-15:14/45 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 07:56-08:25/29 | 18:35 15:28-16:17/49 09:05-09:08/3 | 16:29 10:59-12:07/68 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 08:31-11:13/162 | 08:06 17:06-17:53/47 09:51-11:13/82 | 08:10 14:30-15:12/42 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 07:55-08:26/31 | 18:32 15:26-16:18/52 09:12-09:49/37 | 16:28 10:59-12:07/68 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-11:14/199 | 08:08 17:05-17:51/46 09:51-11:12/81 | 08:11 14:31-15:11/40 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 15:25-16:19/54 09:14-09:46/32 | 16:26 10:59-12:07/68 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-11:15/201 | 08:10 17:05-17:49/44 09:52-11:11/79 | 08:13 14:33-15:10/37 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 15:24-16:19/55 09:17-09:43/26 | 16:25 10:59-12:07/68 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-11:16/203 | 08:12 17:05-17:47/42 09:52-11:09/77 | 08:15 14:34-15:09/35 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 15:22-16:20/58 09:22-09:38/16 | 16:23 10:59-12:07/68 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:02-18:14/12 | 08:14 17:05-17:43/38 09:53-11:08/75 | 08:17 14:37-15:08/31 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 07:53-11:17/204 | 18:23 15:21-16:20/59 | 16:22 11:00-12:08/68 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 17:59-18:17/18 | 08:16 17:06-17:38/32 09:55-11:08/73 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 07:53-11:18/205 | 18:20 15:21-16:21/60 | 16:20 11:00-12:08/68 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 17:56-18:19/23 | 08:18 17:07-17:37/30 09:56-11:06/70 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 07:54-11:18/204 | 18:18 15:21-16:21/60 | 16:19 11:00-12:09/69 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 17:54-18:20/26 | 08:20 17:07-17:36/29 09:56-11:05/69 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 07:54-11:19/205 | 18:16 15:20-16:21/61 | 16:18 11:01-12:09/68 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 17:53-18:21/28 | 07:22 16:08-16:35/27 11:24-11:37/13 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 07:55-11:20/205 | 17:13 14:19-15:21/62 08:57-10:03/66 | 16:16 11:01-12:09/68 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 17:52-18:22/30 | 07:24 16:09-16:33/24 11:18-11:43/25 | 08:27 11:02-12:09/67 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 07:56-11:20/204 | 17:11 14:19-15:21/62 08:59-10:01/62 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 17:49-18:22/33 | 07:26 16:11-16:32/21 11:15-11:47/32 | 08:28 11:02-12:09/67 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 07:57-11:21/204 | 17:09 14:19-15:22/63 09:01-10:00/59 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 17:39-18:22/43 | 07:29 16:13-16:30/17 11:13-11:49/36 | 08:30 11:03-12:09/66 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 07:59-11:20/201 | 17:07 14:19-15:22/63 09:02-09:58/56 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 17:35-18:22/47 | 07:31 16:16-16:26/10 11:10-11:51/41 | 08:32 11:03-12:10/67 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 08:01-11:20/199 | 17:04 14:18-15:21/63 09:04-09:56/52 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 17:32-18:22/50 | 07:33 14:18-15:21/63 09:06-09:54/48 | 08:34 11:04-12:10/66 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 08:03-11:20/197 | 17:02 11:08-11:53/45 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 14:19-15:22/63 09:09-09:52/43 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 11:07-11:55/48 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 4371 | 6568 | 3199 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:13-16:06/53 09:23-10:05/42<br>17:08 11:27-12:44/77 | 07:27 15:27-16:57/90<br>18:07 08:07-08:34/27 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02 20:50-21:07/17<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:12-16:08/56 09:22-10:06/44<br>17:10 11:27-12:44/77 | 07:24 15:28-16:58/90<br>18:10 08:05-08:36/31 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01 20:51-21:06/15<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 15:12-16:10/58 09:22-10:06/44<br>17:12 11:27-12:44/77 | 07:22 15:28-16:58/90<br>18:12 08:03-08:37/34 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00 20:52-21:07/15<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 15:12-16:12/60 09:22-10:07/45<br>17:15 11:28-12:44/76 | 07:19 15:30-16:58/88<br>18:14 08:02-08:39/37 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59 20:53-21:06/13<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 15:12-16:13/61 09:22-10:08/46<br>17:17 11:28-12:44/76 | 07:17 15:31-16:57/86<br>18:16 07:51-08:39/48 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58 20:53-21:05/12<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 15:12-16:15/63 09:21-10:08/47<br>17:19 11:28-12:44/76 | 07:14 15:33-16:58/85<br>18:18 07:47-08:41/54 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57 20:55-21:05/10<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 15:11-16:15/64 09:22-10:09/47<br>17:21 11:29-12:44/75 | 07:12 15:35-16:57/82<br>18:20 07:41-08:41/60 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56 20:56-21:04/8<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 15:11-16:17/66 09:21-10:08/47<br>17:23 11:28-12:43/75 | 07:09 15:36-16:56/80<br>18:22 07:35-08:41/66 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56 20:57-21:02/5<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 15:11-16:18/67 09:21-10:08/47<br>17:25 11:29-12:43/74 | 07:07 15:40-16:56/76<br>18:24 07:32-08:42/70 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 15:12-16:19/67 09:21-10:09/48<br>17:27 11:30-12:43/73 | 07:04 16:01-16:55/54 07:29-08:41/72<br>18:26 15:44-16:00/16 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14 11:31-12:43/72<br>17:29 15:12-16:20/68 09:21-10:09/48 | 07:02 16:02-16:55/53<br>18:28 07:27-08:42/75 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:22-16:43/21 11:30-12:41/71<br>17:32 15:12-16:20/68 09:21-10:08/47 | 06:59 16:02-16:53/51<br>18:30 07:24-08:41/77 | 06:40<br>20:31 | 05:32 20:51-20:57/6<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 15:12-16:46/94 09:21-10:08/47<br>17:34 11:31-12:41/70 | 06:57 16:02-16:52/50<br>18:32 07:22-08:42/80 | 06:38<br>20:33 | 05:30 20:50-20:58/8<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 15:13-16:48/95 09:22-10:08/46<br>17:36 11:32-12:40/68 | 06:54 16:04-16:51/47<br>18:34 07:19-08:41/82 | 06:35<br>20:35 | 05:29 20:48-21:00/12<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 15:13-16:49/96 09:22-10:07/45<br>17:38 11:32-12:39/67 | 06:52 16:04-16:50/46<br>18:36 07:16-08:40/84 | 06:33<br>20:37 | 05:27 20:48-21:02/14<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 15:14-16:51/97 09:23-10:06/43<br>17:40 11:34-12:38/64 | 06:49 16:06-16:49/43<br>18:38 07:14-08:40/86 | 06:30<br>20:39 | 05:25 20:47-21:03/16<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 15:15-16:53/98 09:24-10:06/42<br>17:42 11:35-12:37/62 | 06:47 16:07-16:47/40<br>18:40 07:11-08:39/88 | 06:28<br>20:41 | 05:23 20:47-21:05/18<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 15:15-16:53/98 09:24-10:05/41<br>17:44 11:36-12:35/59 | 06:44 16:08-16:44/36<br>18:42 07:09-08:39/90 | 06:25<br>20:43 | 05:21 20:47-21:07/20<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 15:16-16:54/98 09:25-10:04/39<br>17:47 11:37-12:34/57 | 06:41 16:11-16:43/32<br>18:44 07:06-08:37/91 | 06:23<br>20:45 | 05:20 20:47-21:09/22<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 15:17-16:55/98 09:26-10:03/37<br>17:49 11:39-12:33/54 | 06:39 16:13-16:39/26<br>18:46 07:03-08:36/93 | 06:21<br>20:47 | 05:18 20:46-21:08/22<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 15:18-16:55/97 09:27-10:01/34<br>17:51 11:40-12:30/50 | 06:36 16:17-16:36/19<br>18:48 07:03-08:35/92 | 06:18<br>20:49 | 05:16 20:47-21:09/22<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 15:20-16:56/96 09:29-10:00/31<br>17:53 11:43-12:28/45 | 06:34 16:25-16:27/2<br>18:50 07:02-08:33/91 | 06:16<br>20:51 | 05:15 20:46-21:08/22<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 15:21-16:56/95 09:30-09:57/27<br>17:55 11:44-12:25/41 | 06:31 07:02-08:32/90<br>18:52 | 06:13<br>20:53 | 05:13 20:46-21:09/23<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 15:24-16:57/93 09:33-09:55/22<br>17:57 11:48-12:22/34 | 06:29 07:30-08:30/60<br>18:54 07:02-07:25/23 | 06:11<br>20:55 | 05:12 20:47-21:09/22<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 15:24-16:56/92 09:36-09:50/14<br>17:59 11:51-12:17/26 | 06:26 07:33-08:27/54<br>18:56 07:02-07:22/20 | 06:09<br>20:57 | 05:10 20:47-21:09/22<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 15:25-16:57/92<br>18:01 12:00-12:09/9 | 06:23 07:35-08:25/50<br>18:58 07:03-07:22/19 | 06:06<br>20:59 | 05:09 20:47-21:08/21<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 15:25-16:57/92<br>18:03 08:13-08:28/15 | 06:21 08:04-08:21/17 07:03-07:20/17<br>19:00 07:37-08:03/26 | 06:04<br>21:01 | 05:08 20:47-21:08/21<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 15:26-16:58/92<br>18:05 08:10-08:32/22 | 06:18 07:44-08:01/17<br>19:02 07:05-07:18/13 | 06:02<br>21:03 | 05:06 20:48-21:08/20<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 08:08-08:14/6 | 06:00<br>21:05 | 05:05 20:48-21:08/20<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04 20:49-21:08/19<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03 20:49-21:07/18<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 4971 | 3229 | 0 | 370 | 95 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 11:15/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:07/5<br>21:40 | 06:38<br>20:30 | 07:35 16:42-17:32/50<br>19:12 08:02-09:20/78 | 07:37 14:41-15:48/67 08:51-09:38/47<br>16:58 10:59-12:12/73 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 16:40-17:32/52<br>19:10 08:04-09:20/76 | 07:39 14:41-15:47/66 08:50-09:38/48<br>16:56 10:59-12:13/74 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 16:39-17:33/54 08:06-09:20/74<br>19:07 16:25-16:35/10 | 07:41 14:41-15:46/65 08:50-09:38/48<br>16:54 10:58-12:13/75 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59 21:04-21:08/4<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 16:19-17:33/74<br>19:05 08:08-09:19/71 | 07:43 14:42-15:46/64 08:51-09:38/47<br>16:52 10:58-12:14/76 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00 21:02-21:09/7<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 16:15-17:33/78<br>19:02 08:10-09:18/68 | 07:45 14:42-15:44/62 08:51-09:38/47<br>16:50 10:58-12:14/76 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01 21:01-21:10/9<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 16:12-17:33/81<br>18:59 08:14-09:17/63 | 07:47 14:42-15:43/61 08:51-09:37/46<br>16:48 10:58-12:14/76 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02 21:00-21:11/11<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 16:09-17:33/84<br>18:57 08:20-09:16/56 | 07:49 14:42-15:41/59 08:51-09:37/46<br>16:46 10:57-12:14/77 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03 20:59-21:12/13<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 16:07-17:33/86<br>18:54 08:25-09:15/50 | 07:51 14:43-15:41/58 08:53-09:37/44<br>16:44 10:58-12:15/77 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04 20:59-21:13/14<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 16:05-17:32/87<br>18:52 08:29-09:14/45 | 07:53 14:43-15:39/56 08:53-09:36/43<br>16:42 10:58-12:15/77 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06 20:58-21:13/15<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 16:03-17:32/89<br>18:49 08:36-09:12/36 | 07:55 14:44-15:36/52 08:53-09:36/43<br>16:40 10:58-12:14/76 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07 20:59-21:15/16<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 16:02-17:31/89<br>18:47 08:38-09:11/33 | 07:57 14:44-15:34/50 08:54-09:35/41<br>16:38 10:57-12:14/77 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08 20:58-21:16/18<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 16:00-17:31/91<br>18:44 08:39-09:09/30 | 07:59 14:46-15:31/45 08:56-09:35/39<br>16:36 10:58-12:15/77 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09 20:58-21:16/18<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 15:59-17:30/91<br>18:42 08:41-09:06/25 | 08:01 14:46-15:29/43 08:56-09:34/38<br>16:34 10:58-12:15/77 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11 20:57-21:16/19<br>22:08 | 06:04<br>21:13 | 07:02 08:41-08:43/2<br>19:56 07:59-08:04/5 | 08:00 15:58-17:30/92<br>18:39 08:44-09:04/20 | 08:03 14:47-15:28/41 08:57-09:33/36<br>16:33 10:58-12:15/77 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12 20:57-21:16/19<br>22:07 | 06:06<br>21:10 | 07:04 08:34-08:49/15<br>19:54 07:55-08:07/12 | 08:02 15:58-17:30/92<br>18:37 08:48-09:00/12 | 08:05 14:48-15:27/39 08:58-09:32/34<br>16:31 10:58-12:15/77 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14 20:57-21:18/21<br>22:06 | 06:08<br>21:08 | 07:06 08:55-09:09/14 07:53-08:09/16<br>19:51 08:27-08:52/25 | 08:04 15:57-17:29/92 10:13-10:18/5<br>18:35 12:28-12:45/17 | 08:07 14:50-15:27/37 09:00-09:32/32<br>16:29 11:00-12:15/75 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15 20:57-21:18/21<br>22:04 | 06:09<br>21:06 | 07:08 08:24-09:13/49<br>19:48 07:51-08:10/19 | 08:06 15:56-17:28/92 10:06-10:24/18<br>18:32 12:22-12:51/29 | 08:09 14:51-15:26/35 09:01-09:31/30<br>16:28 11:00-12:15/75 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16 20:56-21:18/22<br>22:03 | 06:11<br>21:04 | 07:10 08:22-09:15/53<br>19:46 07:50-08:11/21 | 08:08 15:54-17:28/94 10:03-10:27/24<br>18:30 12:18-12:54/36 | 08:11 14:52-15:25/33 09:03-09:29/26<br>16:26 11:00-12:15/75 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18 20:57-21:19/22<br>22:02 | 06:13<br>21:01 | 07:12 08:17-09:16/59<br>19:43 07:48-08:10/22 | 08:10 15:52-17:27/95 10:01-10:29/28<br>18:27 12:15-12:57/42 | 08:13 14:53-15:24/31 09:04-09:28/24<br>16:25 11:00-12:15/75 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19 20:56-21:18/22<br>22:00 | 06:15<br>20:59 | 07:14 07:48-09:17/89<br>19:41 | 08:12 15:50-17:26/96 09:59-10:30/31<br>18:25 12:12-12:59/47 | 08:15 14:54-15:23/29 09:06-09:26/20<br>16:23 11:01-12:15/74 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21 20:57-21:19/22<br>21:59 | 06:17<br>20:56 | 07:16 07:47-09:19/92<br>19:38 | 08:14 15:48-17:25/97 09:57-10:32/35<br>18:23 12:10-13:01/51 | 08:17 14:57-15:22/25 09:10-09:25/15<br>16:22 11:02-12:15/73 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 20:56-21:19/23<br>21:57 | 06:19<br>20:54 | 07:18 17:03-17:19/16<br>19:35 07:47-09:20/93 | 08:16 15:47-17:25/98 09:56-10:34/38<br>18:20 12:09-13:04/55 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-12:15/73 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24 20:57-21:19/22<br>21:56 | 06:21<br>20:52 | 07:19 16:59-17:23/24<br>19:33 07:47-09:20/93 | 08:18 15:46-17:24/98 09:55-10:35/40<br>18:18 12:07-13:05/58 | 08:21 15:01-15:19/18<br>16:19 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 20:57-21:19/22<br>21:54 | 06:23<br>20:49 | 07:21 16:56-17:26/30<br>19:30 07:49-09:21/92 | 08:20 15:45-17:23/98 09:54-10:35/41<br>18:16 12:06-13:06/60 | 08:23 15:05-15:16/11<br>16:18 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28 20:57-21:18/21<br>21:52 | 06:25<br>20:47 | 07:23 16:53-17:27/34<br>19:28 07:51-09:21/90 | 08:22 14:44-16:22/98 08:53-09:36/43<br>17:13 11:04-12:07/63 | 08:25 11:04-12:15/71<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29 20:57-21:16/19<br>21:51 | 06:26<br>20:44 | 07:25 16:51-17:29/38<br>19:25 07:53-09:22/89 | 07:24 14:43-16:20/97 08:52-09:36/44<br>17:11 11:03-12:08/65 | 08:27 11:05-12:15/70<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31 20:58-21:15/17<br>21:49 | 06:28<br>20:42 | 07:27 16:48-17:29/41<br>19:23 07:55-09:22/87 | 07:26 14:43-16:19/96 08:52-09:37/45<br>17:09 11:03-12:09/66 | 08:28 11:05-12:15/70<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33 20:58-21:13/15<br>21:47 | 06:30<br>20:39 | 07:29 16:46-17:30/44<br>19:20 07:57-09:21/84 | 07:29 14:42-16:17/95 08:52-09:37/45<br>17:07 11:02-12:10/68 | 08:30 11:06-12:15/69<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34 20:59-21:12/13<br>21:46 | 06:32<br>20:37 | 07:31 16:44-17:31/47<br>19:17 07:58-09:21/83 | 07:31 14:42-16:15/93 08:51-09:38/47<br>17:04 11:01-12:10/69 | 08:32 11:07-12:15/68<br>16:12 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36 21:00-21:10/10<br>21:44 | 06:34<br>20:35 | 07:33 16:43-17:31/48<br>19:15 08:00-09:21/81 | 07:33 15:52-16:12/20 11:00-12:11/71<br>17:02 14:41-15:49/68 08:50-09:38/48 | 08:34 11:08-12:15/67<br>16:11 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38 21:00-21:08/8<br>21:42 | 06:36<br>20:32 | | 07:35 15:56-16:08/12 11:00-12:12/72<br>17:00 14:41-15:48/67 08:51-09:38/47 | | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 463 | 5 | 1607 | 4891 | 4091 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:11/26<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:42/39<br>20:10 | 05:55 20:08-20:34/26<br>21:09 | 05:02 20:20-20:46/26<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:03-19:44/41<br>20:12 | 05:53 20:07-20:34/27<br>21:11 | 05:01 20:21-20:46/25<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:03-19:46/43<br>20:14 | 05:51 20:07-20:38/31<br>21:13 | 05:00 20:22-20:46/24<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:04-19:48/44<br>20:16 | 05:48 20:07-20:41/34<br>21:15 | 04:59 20:23-20:46/23<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:03-19:49/46<br>20:18 | 05:46 20:07-20:42/35<br>21:16 | 04:58 20:23-20:45/22<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:05-19:52/47<br>20:19 | 05:44 20:07-20:44/37<br>21:18 | 04:57 20:23-20:44/21<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:05-19:53/48<br>20:21 | 05:42 20:07-20:45/38<br>21:20 | 04:56 20:25-20:44/19<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:07-19:54/47<br>20:23 | 05:40 20:07-20:46/39<br>21:22 | 04:56 20:25-20:43/18<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:08-19:57/49<br>20:25 | 05:38 20:07-20:46/39<br>21:24 | 04:55 20:26-20:43/17<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:21-19:59/38<br>20:27 19:13-19:18/5 | 05:36 20:08-20:47/39<br>21:26 | 04:54 20:27-20:42/15<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:21-20:01/40<br>20:29 | 05:34 20:08-20:47/39<br>21:28 | 04:54 20:28-20:42/14<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:23-20:03/40<br>20:31 | 05:32 20:10-20:48/38<br>21:30 | 04:54 20:29-20:42/13<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:24-20:04/40<br>20:33 | 05:30 20:11-20:48/37<br>21:32 | 04:53 20:29-20:41/12<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:26-20:06/40<br>20:35 | 05:28 20:12-20:48/36<br>21:33 | 04:53 20:30-20:41/11<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:31-20:06/35<br>20:37 | 05:27 20:14-20:49/35<br>21:35 | 04:53 20:31-20:41/10<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:32-20:06/34<br>20:39 | 05:25 20:15-20:49/34<br>21:37 | 04:52 20:32-20:40/8<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:34-20:06/32<br>20:41 | 05:23 20:15-20:49/34<br>21:39 | 04:52 20:33-20:40/7<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:15-20:49/34<br>21:41 | 04:52 20:34-20:40/6<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20 20:15-20:49/34<br>21:42 | 04:52 20:34-20:39/5<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18 20:15-20:49/34<br>21:44 | 04:52 20:35-20:39/4<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16 20:16-20:49/33<br>21:46 | 04:52 20:35-20:39/4<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15 20:15-20:48/33<br>21:47 | 04:52 20:36-20:40/4<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13 20:16-20:49/33<br>21:49 | 04:53 20:36-20:40/4<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12 20:16-20:49/33<br>21:51 | 04:53 20:35-20:40/5<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:13-20:26/13<br>20:57 19:44-19:58/14 | 05:10 20:17-20:49/32<br>21:52 | 04:53 20:35-20:42/7<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 20:12-20:28/16<br>20:59 19:46-19:55/9 | 05:09 20:17-20:48/31<br>21:54 | 04:54 20:35-20:42/7<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:10-20:30/20<br>21:01 | 05:08 20:17-20:48/31<br>21:55 | 04:54 20:35-20:44/9<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:09-20:32/23<br>21:03 | 05:06 20:18-20:47/29<br>21:57 | 04:55 20:34-20:44/10<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:09-20:33/24<br>21:05 | 05:05 20:18-20:47/29<br>21:58 | 04:55 20:34-20:45/11<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:38/34<br>20:06 | 05:57 20:08-20:34/26<br>21:07 | 05:04 20:19-20:47/28<br>22:00 | 04:56 20:33-20:45/12<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:40/36<br>20:08 | | 05:03 20:20-20:47/27<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 353 | 207 | 1022 | 1039 | 373 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 20:32-20:46/14<br>22:18 | 05:40 20:20-20:58/38<br>21:40 | 06:38 19:20-20:00/40<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58 20:32-20:47/15<br>22:18 | 05:41 20:18-20:57/39<br>21:38 | 06:40 19:19-19:57/38<br>20:27 19:10-19:16/6 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58 20:32-20:48/16<br>22:17 | 05:43 20:18-20:57/39<br>21:36 | 06:42 19:06-19:55/49<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59 20:31-20:48/17<br>22:17 | 05:45 20:18-20:56/38<br>21:34 | 06:43 19:04-19:51/47<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00 20:30-20:49/19<br>22:16 | 05:47 20:17-20:56/39<br>21:32 | 06:45 19:02-19:50/48<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01 20:30-20:50/20<br>22:15 | 05:49 20:16-20:54/38<br>21:30 | 06:47 19:00-19:47/47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02 20:30-20:51/21<br>22:15 | 05:51 20:16-20:53/37<br>21:28 | 06:49 18:59-19:45/46<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03 20:29-20:52/23<br>22:14 | 05:52 20:16-20:51/35<br>21:26 | 06:51 18:58-19:42/44<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04 20:29-20:52/23<br>22:13 | 05:54 20:15-20:48/33<br>21:24 | 06:53 18:57-19:40/43<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06 20:28-20:53/25<br>22:12 | 05:56 20:15-20:45/30<br>21:21 | 06:55 18:57-19:38/41<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07 20:29-20:54/25<br>22:11 | 05:58 20:16-20:43/27<br>21:19 | 06:57 18:55-19:34/39<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08 20:28-20:55/27<br>22:10 | 06:00 20:16-20:43/27<br>21:17 | 06:59 18:55-19:32/37<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09 20:28-20:55/27<br>22:09 | 06:02 20:16-20:41/25<br>21:15 | 07:00 18:55-19:29/34<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11 20:27-20:56/29<br>22:08 | 06:04 20:16-20:41/25<br>21:13 | 07:02 19:24-19:27/3<br>19:56 18:55-19:22/27 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12 20:27-20:56/29<br>22:07 | 06:06 20:17-20:39/22<br>21:10 | 07:04 18:56-19:22/26<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13 20:27-20:57/30<br>22:06 | 06:07 20:18-20:37/19<br>21:08 | 07:06 18:56-19:21/25<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15 20:26-20:57/31<br>22:04 | 06:09 20:18-20:34/16<br>21:06 19:52-20:03/11 | 07:08 18:57-19:19/22<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16 20:26-20:57/31<br>22:03 | 06:11 20:20-20:32/12<br>21:03 19:50-20:05/15 | 07:10 18:57-19:16/19<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18 20:26-20:58/32<br>22:02 | 06:13 20:23-20:30/7<br>21:01 19:48-20:06/18 | 07:12 18:59-19:14/15<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19 20:26-20:58/32<br>22:00 | 06:15 19:47-20:08/21<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21 20:26-20:59/33<br>21:59 | 06:17 19:46-20:08/22<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23 20:25-20:59/34<br>21:57 | 06:19 19:44-20:08/24<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24 20:26-20:59/33<br>21:56 | 06:21 19:44-20:09/25<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26 20:25-20:59/34<br>21:54 | 06:23 19:43-20:09/26<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:26-21:00/34<br>21:52 | 06:25 19:40-20:09/29<br>20:47 | 07:23<br>19:28 | 08:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29 20:25-20:59/34<br>21:51 | 06:26 19:37-20:09/32<br>20:44 | 07:25<br>19:25 | 08:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:26-21:00/34<br>21:49 | 06:28 19:34-20:08/34<br>20:42 | 07:27<br>19:22 | 08:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:25-20:59/34<br>21:47 | 06:30 19:32-20:07/35<br>20:39 | 07:29<br>19:20 | 08:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:24-20:59/35<br>21:45 | 06:32 19:27-20:07/40<br>20:37 | 07:31<br>19:17 | 08:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:22-20:59/37<br>21:44 | 06:34 19:24-20:05/41<br>20:34 | 07:33<br>19:15 | 08:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:21-20:58/37<br>21:42 | 06:36 19:23-20:03/40<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 865 | 959 | 705 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:52-08:05/73 | 05:02 | 05:51-07:40/109 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:50-08:04/74 | 05:01 | 05:51-07:40/109 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:48-08:03/75 | 05:00 | 05:52-07:41/109 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 06:46-08:02/76 | 04:59 | 05:52-07:41/109 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | 06:45-08:01/76 | 04:58 | 05:51-07:41/110 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-07:59/76 | 04:57 | 05:51-07:40/109 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-07:58/76 | 04:56 | 05:52-07:41/109 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-07:56/75 | 04:56 | 05:52-07:41/109 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-07:54/74 | 04:55 | 05:52-07:41/109 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-07:52/73 | 04:54 | 05:52-07:41/109 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:49/71 | 04:54 | 05:52-07:41/109 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:36/58 | 04:53 | 05:53-07:42/109 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | 07:37-07:45/8 | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:36/59 | 04:53 | 05:52-07:41/109 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:36/60 | 04:53 | 05:53-07:42/109 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 07:24-08:10/46 | 05:27 | 06:04-06:11/7 | 04:52 | 05:53-07:42/109 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 06:58-07:14/16 | 21:35 | 06:37-07:37/60 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:22-08:10/48 | 05:25 | 06:00-06:14/14 | 04:52 | 05:54-07:42/108 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 06:55-07:14/19 | 21:37 | 06:36-07:37/61 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 07:22-08:10/48 | 05:23 | 05:59-06:16/17 | 04:52 | 05:54-07:42/108 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 06:54-07:14/20 | 21:39 | 06:36-07:38/62 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 07:21-08:10/49 | 05:21 | 05:57-06:17/20 | 04:52 | 05:54-07:43/109 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 06:53-07:14/21 | 21:40 | 06:29-07:38/69 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 07:20-08:10/50 | 05:20 | 05:56-06:19/23 | 04:52 | 05:54-07:43/109 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 06:53-07:14/21 | 21:42 | 06:26-07:39/73 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:20-08:11/51 | 05:18 | 05:55-06:20/25 | 04:52 | 05:54-07:43/109 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 06:54-07:13/19 | 21:44 | 06:23-07:39/76 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:19-08:10/51 | 05:16 | 05:54-07:39/105 | 04:52 | 05:54-07:43/109 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 06:54-07:13/19 | 21:46 | | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 07:19-08:10/51 | 05:15 | 05:53-07:39/106 | 04:52 | 05:55-07:44/109 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 06:54-07:11/17 | 21:47 | | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:19-08:10/51 | 05:13 | 05:53-07:39/106 | 04:53 | 05:55-07:44/109 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 06:55-07:10/15 | 21:49 | | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 07:19-08:10/51 | 05:12 | 05:53-07:40/107 | 04:53 | 05:55-07:44/109 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 06:57-07:09/12 | 21:51 | | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 07:19-08:08/49 | 05:10 | 05:53-07:39/106 | 04:53 | 05:56-07:44/108 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 06:59-07:06/7 | 21:52 | | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 07:19-08:08/49 | 05:09 | 05:52-07:39/107 | 04:54 | 05:56-07:44/108 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:19-08:08/49 | 05:08 | 05:51-07:40/109 | 04:54 | 05:56-07:45/109 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-07:40/109 | 04:55 | 05:56-07:45/109 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 07:20-08:07/47 | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:19/21 | 05:05 | 05:51-07:40/109 | 04:55 | 05:57-07:45/108 |
| | 17:02 | | 20:04 | 21:05 | 07:20-08:07/47 | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-08:06/72 | 05:04 | 05:51-07:40/109 | 04:56 | 05:56-07:45/109 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-07:40/109 | | |
| | 17:06 | | 20:08 | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 1377 | | 2693 | | 3266 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:57-07:46/109 | 05:40 | 06:49-07:58/69 | 06:38 | 07:27-08:06/39 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:57-07:46/109 | 05:41 | 06:49-08:00/71 | 06:40 | 07:28-08:05/37 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:58-07:47/109 | 05:43 | 06:50-08:03/73 | 06:41 | 07:29-08:03/34 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:57-07:46/109 | 05:45 | 06:51-08:05/74 | 06:43 | 07:31-08:01/30 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:57-07:46/109 | 05:47 | 06:52-08:07/75 | 06:45 | 07:33-07:59/26 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:58-07:47/109 | 05:49 | 06:52-08:08/76 | 06:47 | 07:35-07:54/19 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:58-07:47/109 | 05:50 | 06:53-08:09/76 | 06:49 | 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:58-07:47/109 | 05:52 | 06:55-08:11/76 | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:58-07:47/109 | 05:54 | 06:55-08:11/76 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | 05:58-07:48/110 | 05:56 | 06:57-08:12/75 | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:59-07:49/110 | 05:58 | 06:59-08:13/74 | 06:57 | | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00-07:49/109 | 06:00 | 07:01-08:14/73 | 06:58 | | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:00-07:49/109 | 06:02 | 07:03-08:13/70 | 07:00 | | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:00-07:49/109 | 06:04 | 07:06-07:25/19 | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | 07:27-08:14/47 | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:00-07:49/109 | 06:05 | 07:13-07:18/5 | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | 07:27-08:15/48 | 19:53 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:01-07:49/108 | 06:07 | 07:27-08:15/48 | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:01-07:49/108 | 06:09 | 07:25-08:15/50 | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:01-07:49/108 | 06:11 | 07:25-08:15/50 | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | 07:04-07:12/8 | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:02-07:49/107 | 06:13 | 07:25-08:15/50 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | 07:02-07:15/13 | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:02-07:49/107 | 06:15 | 07:25-08:15/50 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | 07:01-07:16/15 | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:04-07:50/106 | 06:17 | 07:25-08:15/50 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | 07:00-07:17/17 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:04-07:49/105 | 06:19 | 07:24-08:14/50 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | 06:58-07:17/19 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:05-06:31/26 | 06:21 | 07:24-08:14/50 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 06:33-07:49/76 | 20:52 | 06:57-07:17/20 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:06-06:30/24 | 06:23 | 07:24-08:14/50 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 06:34-07:49/75 | 20:49 | 06:57-07:17/20 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:07-06:29/22 | 06:24 | 07:24-08:14/50 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 06:37-07:49/72 | 20:47 | 06:57-07:17/20 | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:08-06:27/19 | 06:26 | 07:25-08:13/48 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 06:41-07:48/67 | 20:44 | 06:57-07:17/20 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:10-06:26/16 | 06:28 | 07:24-08:12/48 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 06:47-07:48/61 | 20:42 | 06:57-07:16/19 | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:12-06:23/11 | 06:30 | 07:25-08:11/46 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 06:46-07:48/62 | 20:39 | 06:59-07:15/16 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:47-07:48/61 | 06:32 | 07:25-08:10/45 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | 07:01-07:14/13 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-07:47/59 | 06:34 | 07:26-08:09/43 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | 07:03-07:13/10 | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-07:46/58 | 06:36 | 07:27-08:08/41 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | 07:05-07:11/6 | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 3095 | | 2062 | | 194 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:52-08:15/23 | 07:08 | 05:55 | 05:02 21:11-21:26/15 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 07:50-08:15/25 | 07:05 | 05:53 | 05:01 21:11-21:27/16 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 07:47-08:14/27 | 07:03 | 05:51 | 05:00 21:11-21:28/17 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 07:45-08:14/29 | 07:00 | 05:48 | 04:59 21:12-21:29/17 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 07:44-08:12/28 | 06:58 | 05:46 | 04:58 21:11-21:30/19 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:11/27 | 06:55 | 05:44 | 04:57 21:11-21:31/20 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 |
| 7 | 08:59 | 08:16 | 07:12 07:44-08:06/22 | 06:53 | 05:42 | 04:56 21:12-21:32/20 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 |
| 8 | 08:58 | 08:14 | 07:09 07:44-08:01/17 | 06:50 | 05:40 | 04:56 21:11-21:33/22 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 |
| 9 | 08:57 | 08:12 | 07:07 07:46-08:00/14 | 06:48 | 05:38 | 04:55 21:12-21:34/22 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 |
| 10 | 08:57 | 08:10 | 07:04 07:47-07:57/10 | 06:45 | 05:36 | 04:54 21:12-21:34/22 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:35-05:52/17 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:35-05:53/18 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:34-05:53/19 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:34-05:54/20 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:34-05:55/21 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:55/21 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:55/21 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:56/22 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:56/22 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:56/22 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:57/22 |
| 23 | 08:42 | 07:41 08:07-08:12/5 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:57/22 |
| 24 | 08:41 | 07:39 08:05-08:14/9 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:35-05:57/22 |
| 25 | 08:39 | 07:36 08:02-08:14/12 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:57/21 |
| 26 | 08:38 | 07:34 08:00-08:16/16 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:36-05:57/21 |
| 27 | 08:36 | 07:32 07:57-08:15/18 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:57/20 |
| 28 | 08:35 | 07:29 07:55-08:16/21 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:37-05:57/20 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:38-05:57/19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:38-05:56/18 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 81 | 222 | 0 | 54 | 1083 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:16-21:39/23 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 22:18 05:39-05:56/17 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 21:17-21:39/22 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 22:18 05:40-05:56/16 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:17-21:40/23 | 05:43 | 06:42 | 07:38 08:26-08:34/8 | 07:41 | 08:38 |
| | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:17-21:38/21 | 05:45 | 06:43 | 07:40 08:24-08:36/12 | 07:43 | 08:40 |
| | 22:17 05:43-05:54/11 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 21:17-21:38/21 | 05:47 | 06:45 | 07:42 08:22-08:37/15 | 07:45 | 08:41 |
| | 22:16 05:44-05:52/8 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 21:17-21:38/21 | 05:49 | 06:47 | 07:44 08:21-08:38/17 | 07:47 | 08:43 |
| | 22:15 05:48-05:49/1 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 21:18-21:37/19 | 05:51 | 06:49 | 07:46 08:20-08:44/24 | 07:49 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 21:18-21:36/18 | 05:52 | 06:51 | 07:48 08:19-08:46/27 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 21:18-21:35/17 | 05:54 | 06:53 | 07:50 08:19-08:48/29 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 21:19-21:35/16 | 05:56 | 06:55 | 07:52 08:20-08:48/28 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 21:19-21:34/15 | 05:58 | 06:57 | 07:54 08:22-08:49/27 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 21:20-21:34/14 | 06:00 | 06:59 | 07:56 08:24-08:49/25 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 21:20-21:33/13 | 06:02 | 07:00 | 07:58 08:26-08:48/22 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 21:21-21:31/10 | 06:04 | 07:02 | 08:00 08:28-08:48/20 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 21:21-21:30/9 | 06:06 | 07:04 | 08:02 08:31-08:48/17 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 21:22-21:30/8 | 06:07 | 07:06 | 08:04 08:33-08:47/14 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 21:23-21:28/5 | 06:09 | 07:08 | 08:06 08:35-08:46/11 | 08:09 | 08:56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 21:24-21:27/3 | 06:11 | 07:10 | 08:08 08:37-08:45/8 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 08:39-08:42/3 | 08:13 | 08:57 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 344 | 0 | 0 | 307 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26 08:39-10:58/139<br>18:07 | 07:08 10:23-11:33/70<br>20:09 07:54-09:12/78 | 05:55 06:41-08:20/99<br>21:08 | 05:02 06:31-07:40/69<br>22:02 |
| 2 | 09:00<br>16:15 | 08:25<br>17:10 | 07:24 08:38-10:58/140<br>18:09 | 07:05 10:23-11:30/67<br>20:11 07:51-09:12/81 | 05:53 06:40-08:18/98<br>21:10 | 05:00 06:31-07:39/68<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:38-10:59/141<br>18:11 | 07:03 10:25-11:28/63<br>20:13 07:48-09:12/84 | 05:50 06:39-08:16/97<br>21:12 | 05:00 06:31-07:38/67<br>22:05 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19 08:37-10:59/142<br>18:13 | 07:00 10:26-11:24/58<br>20:15 07:46-09:11/85 | 05:48 06:38-08:14/96<br>21:14 | 04:59 06:32-07:38/66<br>22:06 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17 08:38-10:59/141<br>18:15 | 06:57 10:28-11:22/54<br>20:17 07:43-09:11/88 | 05:46 06:37-08:13/96<br>21:16 | 04:58 06:32-07:36/64<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14 08:37-10:59/142<br>18:17 | 06:55 10:29-11:18/49<br>20:19 07:40-09:10/90 | 05:44 06:37-08:11/94<br>21:18 | 04:57 06:32-07:35/63<br>22:08 |
| 7 | 08:58<br>16:21 | 08:16 10:11-10:13/2<br>17:21 | 07:12 08:38-11:00/142<br>18:19 | 06:52 10:32-11:14/42<br>20:21 07:39-09:10/91 | 05:42 06:36-08:10/94<br>21:20 | 04:56 06:33-07:34/61<br>22:09 |
| 8 | 08:58<br>16:23 | 08:14 10:01-10:24/23<br>17:23 | 07:09 08:38-10:59/141<br>18:21 | 06:50 10:34-11:09/35<br>20:23 07:36-09:09/93 | 05:40 06:35-08:08/93<br>21:22 | 04:55 06:32-07:33/61<br>22:10 |
| 9 | 08:57<br>16:24 | 08:12 09:57-10:29/32<br>17:25 | 07:07 08:37-10:59/142<br>18:24 | 06:47 10:39-11:04/25<br>20:25 07:33-09:09/96 | 05:38 06:35-08:07/92<br>21:24 | 04:55 06:33-07:32/59<br>22:11 |
| 10 | 08:56<br>16:26 | 08:10 09:53-10:32/39<br>17:27 | 07:04 08:38-10:59/141<br>18:26 | 06:45 10:47-10:52/5<br>20:27 07:30-09:07/97 | 05:36 06:34-08:05/91<br>21:26 | 04:54 06:33-07:31/58<br>22:12 |
| 11 | 08:56<br>16:28 | 08:08 09:50-10:35/45<br>17:29 | 07:02 08:38-10:58/140<br>18:28 | 06:42 07:29-09:07/98<br>20:29 | 05:34 06:33-08:03/90<br>21:28 | 04:54 06:33-07:31/58<br>22:13 |
| 12 | 08:55<br>16:29 | 08:06 09:03-09:15/12<br>17:31 09:48-10:38/50 | 06:59 08:39-10:59/140<br>18:30 | 06:40 07:27-09:06/99<br>20:31 | 05:32 06:33-08:02/89<br>21:29 | 04:53 06:34-07:32/58<br>22:14 |
| 13 | 08:54<br>16:31 | 08:03 08:59-09:20/21<br>17:33 09:46-10:40/54 | 06:56 08:40-10:58/138<br>18:32 | 06:37 07:23-09:05/102<br>20:33 | 05:30 06:32-08:00/88<br>21:31 | 04:53 06:34-07:31/57<br>22:15 |
| 14 | 08:53<br>16:33 | 08:01 08:55-09:22/27<br>17:36 09:43-10:42/59 | 06:54 08:41-10:58/137<br>18:34 07:42-07:55/13 | 06:35 07:21-09:04/103<br>20:35 | 05:28 06:31-07:59/88<br>21:33 | 04:53 06:34-07:31/57<br>22:15 |
| 15 | 08:52<br>16:34 | 07:59 08:53-09:25/32<br>17:38 09:42-10:44/62 | 06:51 08:41-10:57/136<br>18:36 07:37-07:59/22 | 06:32 07:19-09:02/103<br>20:37 | 05:26 06:32-07:58/86<br>21:35 | 04:52 06:34-07:32/58<br>22:16 |
| 16 | 08:51<br>16:36 | 07:57 08:51-09:27/36<br>17:40 09:40-10:46/66 | 06:49 08:42-10:56/134<br>18:38 07:33-08:01/28 | 06:30 07:17-09:01/104<br>20:39 | 05:25 06:31-07:56/85<br>21:37 | 04:52 06:35-07:32/57<br>22:17 |
| 17 | 08:50<br>16:38 | 07:55 08:49-09:28/39<br>17:42 09:38-10:47/69 | 06:46 08:44-10:56/132<br>18:40 07:31-08:04/33 | 06:27 07:14-09:00/106<br>20:41 | 05:23 06:30-07:54/84<br>21:38 | 04:52 06:35-07:32/57<br>22:17 |
| 18 | 08:49<br>16:40 | 07:52 08:48-09:30/42<br>17:44 09:37-10:49/72 | 06:44 08:45-10:55/130<br>18:42 07:29-08:05/36 | 06:25 07:11-08:58/107<br>20:43 | 05:21 06:30-07:53/83<br>21:40 | 04:52 06:35-07:32/57<br>22:18 |
| 19 | 08:47<br>16:42 | 07:50 08:47-09:31/44<br>17:46 09:36-10:50/74 | 06:41 08:48-09:15/27 07:27-08:07/40<br>18:44 09:18-10:54/96 | 06:23 07:10-08:56/106<br>20:45 | 05:19 06:30-07:52/82<br>21:42 | 04:52 06:36-07:32/56<br>22:18 |
| 20 | 08:46<br>16:44 | 07:48 08:45-09:32/47<br>17:48 09:34-10:51/77 | 06:39 08:51-09:11/20 07:24-08:08/44<br>18:46 09:18-10:53/95 | 06:20 06:59-08:55/116<br>20:47 | 05:18 06:30-07:51/81<br>21:44 | 04:52 06:36-07:32/56<br>22:18 |
| 21 | 08:45<br>16:46 | 07:45 08:44-10:52/128<br>17:50 | 06:36 08:56-09:04/8 07:21-08:08/47<br>18:48 09:17-10:52/95 | 06:18 06:54-08:52/118<br>20:49 | 05:16 06:30-07:51/81<br>21:45 | 04:52 06:36-07:33/57<br>22:19 |
| 22 | 08:43<br>16:47 | 07:43 08:43-10:53/130<br>17:53 | 06:33 09:18-10:51/93<br>18:50 07:19-08:10/51 | 06:15 06:52-08:50/118<br>20:51 | 05:15 06:30-07:49/79<br>21:47 | 04:52 06:36-07:32/56<br>22:19 |
| 23 | 08:42<br>16:49 | 07:41 08:42-10:54/132<br>17:55 | 06:31 09:18-10:49/91<br>18:52 07:17-08:10/53 | 06:13 06:50-08:47/117<br>20:53 | 05:13 06:30-07:48/78<br>21:49 | 04:52 06:37-07:33/56<br>22:19 |
| 24 | 08:41<br>16:51 | 07:38 08:41-10:55/134<br>17:57 | 06:28 09:19-10:49/90<br>18:54 07:14-08:11/57 | 06:11 06:48-08:43/115<br>20:55 | 05:12 06:30-07:47/77<br>21:50 | 04:53 06:36-07:33/57<br>22:19 |
| 25 | 08:39<br>16:53 | 07:36 08:41-10:56/135<br>17:59 | 06:26 09:19-10:47/88<br>18:55 07:11-08:11/60 | 06:08 08:31-08:35/4<br>20:57 06:46-08:30/104 | 05:10 06:29-07:45/76<br>21:52 | 04:53 06:37-07:34/57<br>22:19 |
| 26 | 08:37<br>16:55 | 07:34 08:39-10:56/137<br>18:01 | 06:23 09:18-10:45/87<br>18:57 07:08-08:10/62 | 06:06 06:45-08:29/104<br>20:59 | 05:09 06:30-07:44/74<br>21:53 | 04:54 06:37-07:34/57<br>22:19 |
| 27 | 08:36<br>16:58 | 07:31 08:39-10:57/138<br>18:03 | 06:21 09:19-10:44/85<br>18:59 07:07-08:11/64 | 06:04 06:44-08:27/103<br>21:01 | 05:07 06:30-07:44/74<br>21:55 | 04:54 06:37-07:34/57<br>22:19 |
| 28 | 08:34<br>17:00 | 07:29 08:38-10:57/139<br>18:05 | 06:18 09:20-10:42/82<br>19:01 07:04-08:11/67 | 06:01 06:43-08:26/103<br>21:03 | 05:06 06:30-07:43/73<br>21:56 | 04:55 06:37-07:35/58<br>22:19 |
| 29 | 08:33<br>17:02 | | 07:15 10:21-11:40/79<br>20:03 08:01-09:12/71 | 05:59 06:43-08:24/101<br>21:04 | 05:05 06:30-07:42/72<br>21:58 | 04:55 06:38-07:35/57<br>22:18 |
| 30 | 08:31<br>17:04 | | 07:13 10:21-11:38/77<br>20:05 07:58-09:12/74 | 05:57 06:42-08:22/100<br>21:06 | 05:04 06:31-07:42/71<br>21:59 | 04:56 06:37-07:35/58<br>22:18 |
| 31 | 08:29<br>17:06 | | 07:10 10:22-11:36/74<br>20:07 07:57-09:12/75 | | 05:03 06:31-07:41/70<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 2097 | 4582 | 3482 | 2631 | 1777 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 06:38-07:35/57<br>22:18 | 05:39 06:43-08:13/90<br>21:39 | 06:38 07:28-09:06/98<br>20:29 | 07:34 09:19-11:38/139<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57 06:38-07:36/58<br>22:17 | 05:41 06:43-08:14/91<br>21:38 | 06:39 10:46-10:51/5<br>20:27 07:29-09:06/97 | 07:36 09:17-11:37/140<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58 06:37-07:36/59<br>22:17 | 05:43 06:44-08:16/92<br>21:36 | 06:41 10:37-11:02/25<br>20:24 07:31-09:07/96 | 07:38 09:17-11:37/140<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59 06:38-07:37/59<br>22:16 | 05:45 06:45-08:18/93<br>21:34 | 06:43 10:32-11:07/35<br>20:22 07:34-09:07/93 | 07:40 09:16-11:37/141<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00 06:38-07:39/61<br>22:16 | 05:47 06:45-08:18/93<br>21:32 | 06:45 10:28-11:10/42<br>20:19 07:35-09:06/91 | 07:42 09:15-11:36/141<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01 06:38-07:41/63<br>22:15 | 05:48 06:46-08:20/94<br>21:30 | 06:47 10:25-11:14/49<br>20:16 07:36-09:06/90 | 07:44 09:14-11:36/142<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02 06:38-07:42/64<br>22:14 | 05:50 06:47-08:22/95<br>21:27 | 06:49 10:23-11:17/54<br>20:14 07:38-09:06/88 | 07:46 09:14-11:35/141<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03 06:38-07:43/65<br>22:13 | 05:52 06:48-08:24/96<br>21:25 | 06:51 10:21-11:19/58<br>20:11 07:41-09:06/85 | 07:48 09:13-11:35/142<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04 06:38-07:45/67<br>22:13 | 05:54 06:48-08:24/96<br>21:23 | 06:53 10:19-11:22/63<br>20:09 07:42-09:06/84 | 07:50 09:13-11:34/141<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05 06:38-07:46/68<br>22:12 | 05:56 06:49-08:26/97<br>21:21 | 06:55 10:17-11:23/66<br>20:06 07:43-09:05/82 | 07:52 09:12-11:33/141<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07 06:38-07:47/69<br>22:11 | 05:58 06:50-08:27/97<br>21:19 | 06:56 10:15-11:25/70<br>20:04 07:46-09:04/78 | 07:54 09:12-11:33/141<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-07:49/70<br>22:10 | 06:00 06:49-08:28/99<br>21:17 | 06:58 10:14-11:27/73<br>20:01 07:48-09:04/76 | 07:56 09:12-11:32/140<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-07:50/71<br>22:09 | 06:02 06:50-08:30/100<br>21:15 | 07:00 10:12-11:29/77<br>19:58 07:49-09:03/74 | 07:58 09:12-11:31/139<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-07:50/71<br>22:08 | 06:03 06:50-08:32/102<br>21:12 | 07:02 10:11-11:30/79<br>19:56 07:51-09:03/72 | 08:00 09:12-11:30/138<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12 06:39-07:51/72<br>22:06 | 06:05 06:51-08:34/103<br>21:10 | 07:04 10:10-11:32/82<br>19:53 07:53-09:02/69 | 08:02 09:12-11:29/137<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13 06:40-07:53/73<br>22:05 | 06:07 06:52-08:35/103<br>21:08 | 07:06 10:08-11:32/84<br>19:51 07:55-09:00/65 | 08:04 09:12-11:28/136<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-07:53/74<br>22:04 | 06:09 06:52-08:35/103<br>21:05 | 07:08 10:07-11:33/86<br>19:48 07:56-08:59/63 | 08:06 09:12-11:27/135<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-07:54/75<br>22:03 | 06:11 06:53-08:44/111<br>21:03 | 07:10 10:06-11:34/88<br>19:45 07:58-08:58/60 | 08:08 09:13-11:26/133<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-07:56/76<br>22:01 | 06:13 06:54-08:50/116<br>21:01 | 07:11 10:05-11:35/90<br>19:43 08:00-08:57/57 | 08:10 09:14-11:25/131<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-07:57/77<br>22:00 | 06:15 06:56-08:53/117<br>20:58 | 07:13 10:05-11:36/91<br>19:40 08:03-08:56/53 | 08:12 09:14-11:24/130<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-07:58/79<br>21:58 | 06:17 06:57-08:55/118<br>20:56 | 07:15 10:04-11:36/92<br>19:38 08:04-08:55/51 | 08:14 09:15-10:03/48<br>18:22 10:04-11:22/78 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-08:00/80<br>21:57 | 06:19 06:59-08:57/118<br>20:54 | 07:17 10:03-11:37/94<br>19:35 08:06-08:54/48 | 08:16 09:15-10:02/47<br>18:20 10:05-11:21/76 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-08:00/80<br>21:55 | 06:20 07:04-08:59/115<br>20:51 | 07:19 09:37-09:54/17 08:08-08:53/45<br>19:32 10:02-11:38/96 | 08:18 09:16-10:00/44<br>18:18 10:06-11:19/73 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-08:02/82<br>21:54 | 06:22 07:14-09:00/106<br>20:49 | 07:21 09:32-09:57/25 08:10-08:50/40<br>19:30 10:01-11:37/96 | 08:20 09:18-10:00/42<br>18:15 10:08-11:18/70 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-08:03/83<br>21:52 | 06:24 07:15-09:02/107<br>20:46 | 07:23 09:29-11:37/128<br>19:27 08:11-08:49/38 | 07:22 08:20-08:58/38<br>17:13 09:09-10:17/68 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-08:04/83<br>21:50 | 06:26 07:17-09:02/105<br>20:44 | 07:25 09:26-11:38/132<br>19:25 08:12-08:47/35 | 07:24 08:21-08:56/35<br>17:11 09:10-10:15/65 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-08:06/84<br>21:49 | 06:28 07:19-09:03/104<br>20:42 | 07:27 09:24-11:38/134<br>19:22 08:14-08:44/30 | 07:26 08:23-08:54/31<br>17:08 09:12-10:13/61 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-08:07/86<br>21:47 | 06:30 07:21-09:04/103<br>20:39 | 07:29 09:23-11:38/135<br>19:20 08:17-08:41/24 | 07:28 08:25-08:51/26<br>17:06 09:13-10:11/58 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-08:09/87<br>21:45 | 06:32 07:22-09:05/103<br>20:37 | 07:31 09:21-11:38/137<br>19:17 08:20-08:37/17 | 07:30 08:29-08:48/19<br>17:04 09:16-10:09/53 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-08:09/87<br>21:43 | 06:34 07:24-09:06/102<br>20:34 | 07:32 09:20-11:38/138<br>19:14 | 07:32 08:34-08:43/9<br>17:02 09:18-10:07/49 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-08:11/88<br>21:41 | 06:36 07:26-09:05/99<br>20:32 | | 07:34 09:20-10:04/44<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2268 | 3168 | 4340 | 3802 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Enercon E138 (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 15:20-15:51/31 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 15:19-15:51/32 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 15:19-15:52/33 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 15:19-15:52/33 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 15:19-15:52/33 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 15:18-15:52/34 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:19-15:53/34 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 15:19-15:52/33 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:19-15:52/33 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:19-15:51/32 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:21-15:52/31 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:21-15:51/30 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:22-15:50/28 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:22-15:50/28 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:24-15:50/26 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:25-15:49/24 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:26-15:48/22 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:28-15:46/18 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:29-15:44/15 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 15:21-15:51/30 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 435 | 560 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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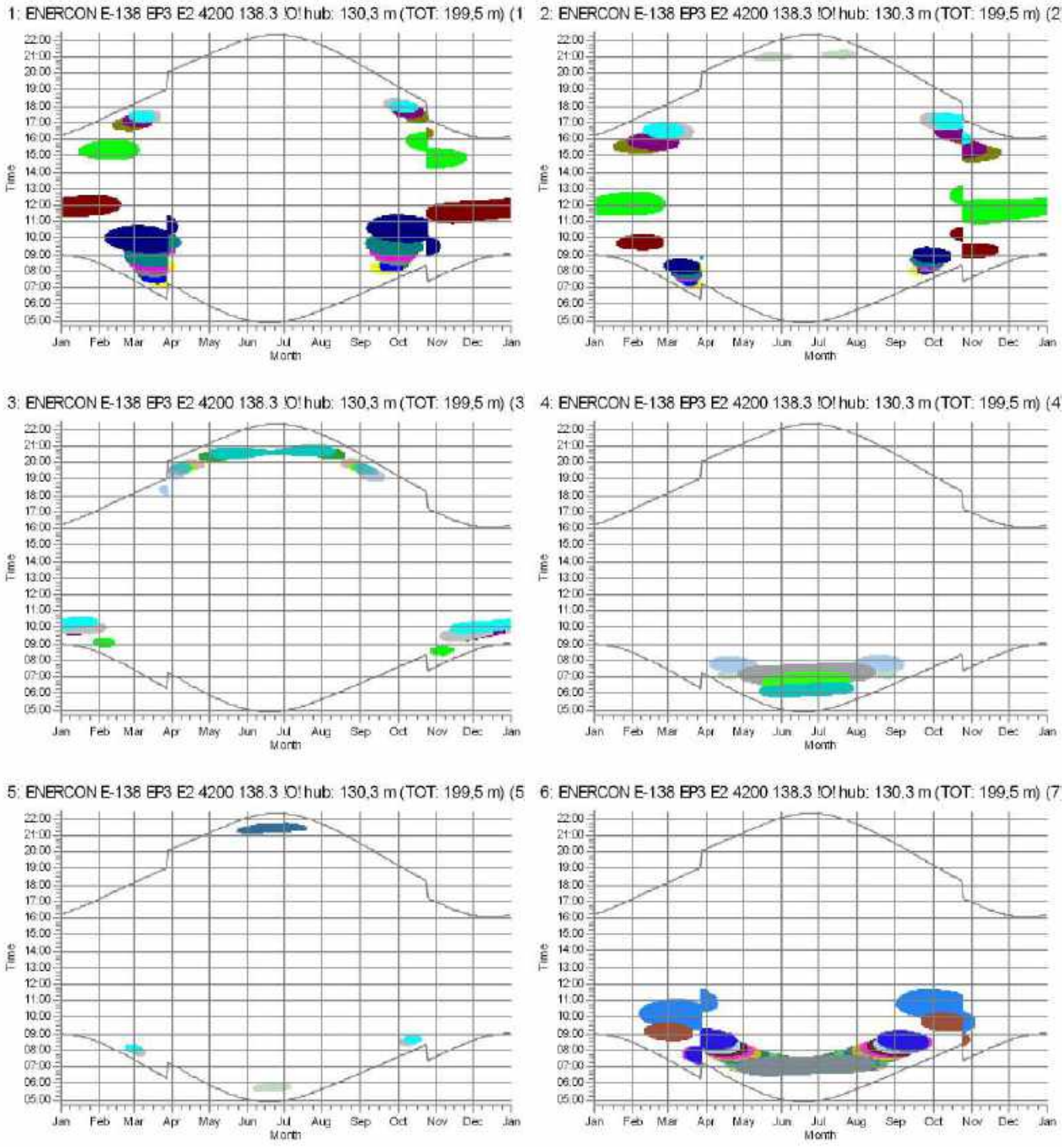
# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138 (be 6 VE)




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

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# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138 (be 6 VE)

Shadow receptors

AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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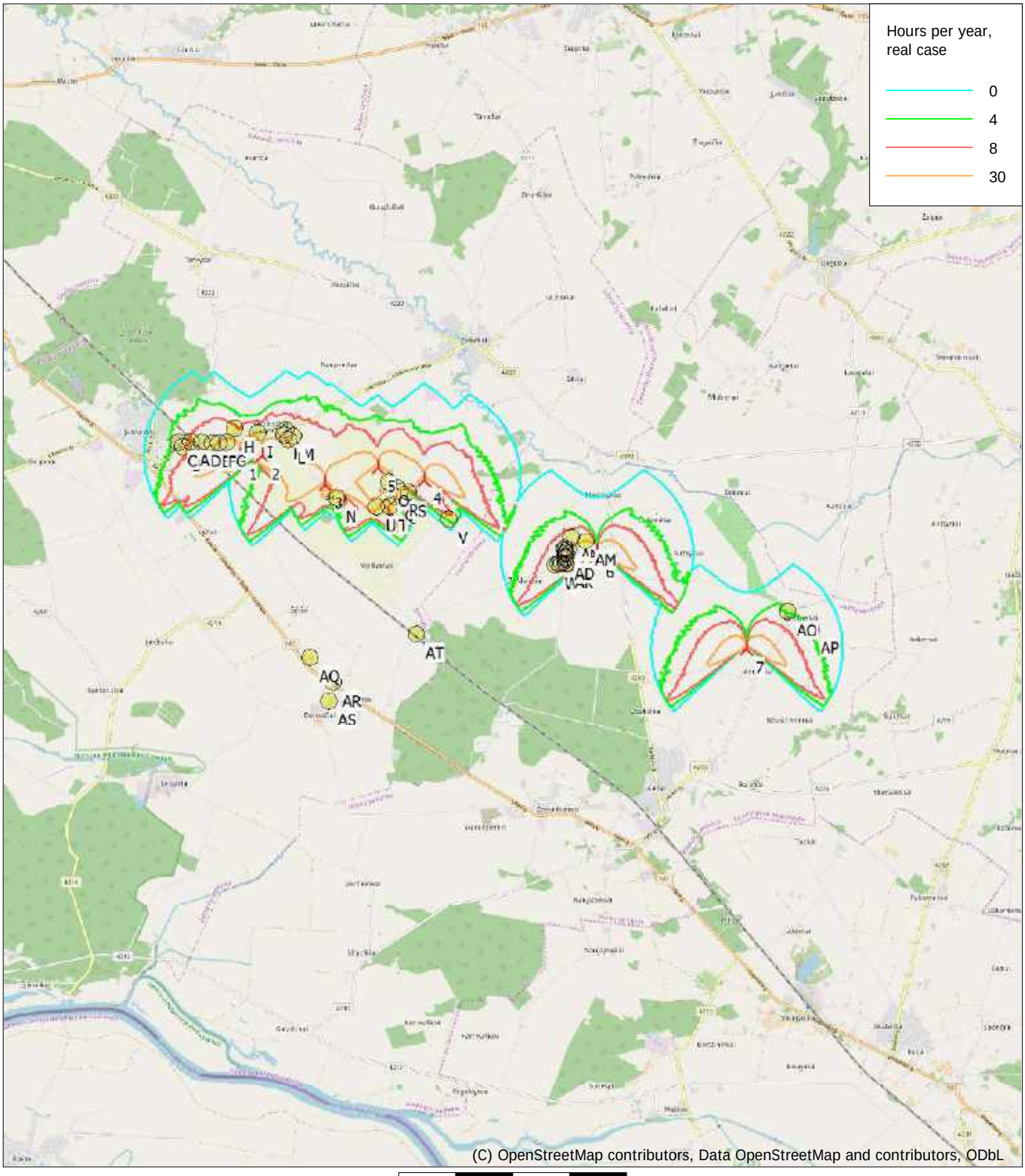
## SHADOW - Map

Calculation: Enercon E138 (be 6 VE)




0 1 2 3 4 km

Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.580 North: 6.127.900

New WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

Time step: 3 minutes, Day step: 7 days, Map resolution: 20 m, Visibility resolution: 10 m, Eye height: 1,5 m

Project:
8 VE Đilutės r.

Description:
Vėjo elektriniø (Đilutės raj. sav. Usėnø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138 (be 6 VE) Shut down

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

Flicker curtailment according to specified plan

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Đilutės r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)

(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200.000

New WTG  Shadow receptor

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 E2 4200 1... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |

## Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

To be continued on next page...

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Main Result

## Calculation: Enercon E138 (be 6 VE) Shut down

...continued from previous page

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

## Calculation Results

Shadow receptor

| No. | Shadow, expected values: Shadow hours per year [h/year] | Avoided hours per year [h/year] |
|---|---|---|
| A* | 3:43 | 5:20 |
| AA* | 4:23 | 34:33 |
| AB* | 5:27 | 28:40 |
| AC* | 5:38 | 25:31 |
| AD* | 5:46 | 22:51 |
| AE* | 5:16 | 21:06 |
| AF* | 4:30 | 19:39 |
| AG* | 3:48 | 18:23 |
| AH* | 4:29 | 16:00 |
| AI* | 5:38 | 13:07 |
| AJ* | 4:28 | 20:27 |
| AK* | 1:01 | 42:34 |
| AL* | 0:59 | 44:58 |
| AM* | 6:29 | 29:59 |
| AN* | 2:52 | 12:00 |
| AO* | 2:34 | 1:05 |
| AP | 3:46 | |
| AQ | 0:00 | |
| AR | 0:00 | |
| AS | 0:00 | |
| AT | 0:00 | |
| B* | 3:45 | 2:52 |
| C* | 3:57 | 1:54 |
| D* | 1:45 | 12:44 |
| E* | 5:26 | 19:33 |
| F* | 7:47 | 26:40 |
| G* | 5:29 | 38:06 |
| H* | 3:00 | 7:48 |
| I* | 4:41 | 12:28 |
| J* | 4:14 | 11:40 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Enercon E138 (be 6 VE) Shut down

...continued from previous page

Shadow, expected values

| No. | Shadow hours per year [h/year] | Avoided hours per year [h/year] |
|---|---|---|
| K* | 3:52 | 17:48 |
| L* | 3:52 | 22:32 |
| M* | 4:06 | 15:59 |
| N* | 4:52 | 8:22 |
| O* | 7:10 | 20:50 |
| P* | 7:57 | 46:21 |
| Q* | 2:21 | 19:32 |
| R* | 2:15 | 27:40 |
| S* | 0:50 | 2:07 |
| T* | 0:14 | 7:27 |
| U* | 1:33 | 32:49 |
| V* | 4:35 | 1:50 |
| W* | 2:15 | 18:55 |
| X* | 2:00 | 24:16 |
| Y* | 1:56 | 27:11 |
| Z* | 1:53 | 31:27 |

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Stopped due to flicker curtailment [h/year] | Expected [h/year] |
|---|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 158:11 | 353:39 | 23:40 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 99:08 | 308:56 | 8:39 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 96:42 | 72:03 | 13:45 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 38:58 | 172:29 | 17:56 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 15:46 | 19:05 | 6:13 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 90:24 | 380:13 | 27:31 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 26:53 | 8:57 | 6:20 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 42 | 08:44 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | | 08:04 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 40 | 08:44 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | | 08:06 (2) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 39 | 08:45 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | | 08:08 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 36 | 08:44 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 08:10 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 11 | 07:59 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 31 | 08:43 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 07:45 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:45 | | 08:17 (1) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 13 | 07:58 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 19:00 | 24 | 08:41 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 07:42 (1) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | 08:19 (1) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 13 | 07:55 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 20 | 08:39 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 07:39 (1) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | | 08:21 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 14 | 07:53 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 15 | 08:36 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | | 07:32 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | | 08:26 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 18 | 07:52 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 4 | 08:30 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | | 07:29 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 17 | 07:50 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | | 07:27 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 19 | 07:50 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 19 | 07:48 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20 | 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | | 07:21 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 08:00 | | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 19 | 07:47 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:40 | | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | | 07:20 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 19 | 07:46 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 18:37 | | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | | 07:21 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 16 | 07:46 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | | 07:24 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:31 (1) | | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 9 | 07:45 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 3 | 08:34 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | | 07:39 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:27 (1) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 6 | 07:45 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 6 | 08:33 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | | 07:40 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:24 (1) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 4 | 07:44 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 7 | 08:31 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | | 07:41 (1) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 08:22 (1) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 3 | 07:44 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 8 | 08:30 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:42 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 08:08 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 2 | 07:44 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 11 | 08:29 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | | 07:42 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 08:06 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 2 | 07:44 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 14 | 08:29 (1) | 18:20 | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | | 07:43 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 08:05 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 1 | 07:44 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 14 | 08:28 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | | 07:42 (1) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 08:04 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 2 | 07:44 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 15 | 08:28 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | | 07:42 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 08:03 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 2 | 07:44 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17 | 08:28 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | | 07:42 (1) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 08:02 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 3 | 07:45 (1) | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 17 | 08:27 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:02 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 18 | 08:27 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 08:02 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 18 | 08:27 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:01 (2) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 18 | 08:26 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 08:01 (2) | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 20 | 08:27 (1) | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | | 05:03 | | 05:38 | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | | 21:42 | 20:32 | | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 | |
| Total, worst case | | | | 232 | | | | | | | 186 | | 251 | | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | 0,97 | | | | | | | 0,97 | | 0,97 | | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,30 | | | |
| Total, real | | | | 77 | | | | | | | 72 | | 75 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | | 07:39 | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 08:07 (1) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 11 | 08:18 (1) | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 08:04 (1) | 07:54 | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 17 | 08:21 (1) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 08:02 (1) | 07:56 | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 21 | 08:23 (1) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:59 (1) | 07:58 | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 24 | 08:23 (1) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | | 07:58 (1) | 08:00 | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 26 | 08:24 (1) | 18:40 | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:18 (1) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 07:55 (2) | 08:02 | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 8 07:32 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 30 | 08:25 (1) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:16 (1) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 07:53 (2) | 08:04 | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 4 07:20 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 32 | 08:25 (1) | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:13 (1) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 07:51 (2) | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 3 07:16 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 35 | 08:26 (1) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:12 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 07:50 (2) | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 3 07:15 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 36 | 08:26 (1) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:11 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 07:48 (2) | 08:10 | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 2 07:13 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 37 | 08:25 (1) | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:03 (2) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 07:48 (2) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 3 07:11 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 36 | 08:24 (1) | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:09 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 07:47 (2) | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 1 07:10 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 37 | 08:24 (1) | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:08 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 07:47 (2) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 1 07:09 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 36 | 08:23 (1) | 18:20 | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:08 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 07:47 (2) | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 1 07:09 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 36 | 08:23 (1) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 07:49 (2) | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 33 | 08:22 (1) | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:06 (1) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 07:51 (2) | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 1 07:07 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 29 | 08:20 (1) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 07:53 (2) | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 26 | 08:19 (1) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 07:55 (2) | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 22 | 08:17 (1) | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 07:57 (2) | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 18 | 08:15 (1) | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:01 (1) | 07:31 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 9 | 08:10 (1) | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | | 07:33 | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | | | 17:02 | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 27 | | | | | | | 551 | | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | | |
| Wind dir. red. | | | | 0,99 | | | | | | | 0,99 | | | |
| Total reduction | | | | 0,34 | | | | | | | 0,39 | | | |
| Total, real | | | | 9 | | | | | | | 216 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | 08:02 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 24 08:26 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | 08:04 (1) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 21 08:25 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | | 07:39 | 08:06 (1) | 07:41 | 08:39 |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 17 08:23 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:08 (1) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 12 08:20 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:45 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | | 07:46 | | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:33 (1) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 7 07:40 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:29 (1) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 15 07:44 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:27 (1) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 19 07:46 (1) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | 08:00 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 23 07:47 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:02 | | 18:44 | | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 26 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 08:54 | 08:02 | 06:54 | 07:19 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | | 08:00 | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 28 07:47 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:16 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 26 07:46 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:21 (2) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 16 07:46 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 07:24 (2) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:15 (1) | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 9 07:45 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 11 08:26 (1) | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 07:39 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:12 (1) | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | 6 07:45 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 17 08:29 (1) | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 07:40 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:04 (2) | 08:10 | | 08:14 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 4 07:44 (1) | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 25 08:29 (1) | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 07:41 (1) | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:01 (2) | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 3 07:44 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 29 08:30 (1) | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 07:42 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 07:59 (2) | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | 2 07:44 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 30 08:29 (1) | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 07:42 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 07:57 (2) | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 2 07:44 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 32 08:29 (1) | 18:20 | | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 | 06:31 | 07:43 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 07:56 (2) | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | 1 07:44 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 32 08:28 (1) | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:42 (1) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 07:55 (2) | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 1 07:43 (1) | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 33 08:28 (1) | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:55 (2) | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 33 08:28 (1) | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:55 (2) | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 32 08:27 (1) | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | | 08:29 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 32 08:27 (1) | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 30 08:27 (1) | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:58 (2) | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:59 | 22:19 | 21:46 | 20:37 | 19:17 | 28 08:26 (1) | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 08:00 (2) | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 27 08:27 (1) | 17:02 | | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 188 | | | | | | | 391 | | 74 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,98 | | | | | | | 0,98 | | 0,98 | | |
| Total reduction | | | | 0,34 | | | | | | | 0,39 | | 0,30 | | |
| Total, real | | | | 63 | | | | | | | 152 | | 22 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 | | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | | 19:12 | 26 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:05 (1) | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | | 07:37 | | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 12 08:17 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | | 19:10 | 27 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:00 (1) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | | 07:39 | | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 | 10 08:20 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | | 19:07 | 27 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 07:58 (1) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | | 07:41 | | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 6 08:04 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | | 19:05 | 27 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 07:55 (1) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | | 07:43 | | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 | 5 08:00 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | | 19:02 | 27 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:54 (1) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:44 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 4 07:58 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | | 19:00 | 27 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:41 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | | 07:46 | | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 6 07:55 (1) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | | 18:57 | 20 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:35 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | | 07:48 | | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 9 07:53 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | | 18:54 | 20 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:33 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | | 07:50 | | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 6 07:52 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | | 18:52 | 19 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:30 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 5 07:50 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | | 18:49 | 19 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 07:29 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | | 07:54 | | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 | 5 07:50 (1) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | | 18:47 | 17 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 07:28 (2) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | | 07:56 | | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 3 07:48 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | 5 | 08:46 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 07:27 (2) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | | 07:58 | | | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 3 07:48 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | | 18:42 | | | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 07:26 (2) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | | 08:00 | | | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 2 07:47 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | | 18:40 | | | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 07:25 (2) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | | 08:02 | | | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 2 07:46 (1) | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | | 18:37 | | | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 07:45 (1) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | | 08:04 | | | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 1 07:46 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | | 18:35 | | | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:06 | | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | | 18:32 | | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:08 | | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | | 18:30 | | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:10 | | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | | 18:27 | | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | | 08:12 | | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | | 18:25 | | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | | 08:14 | | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | | 18:23 | | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | | 08:16 | | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | | 18:20 | | | 16:20 | 16:05 |
| 23 | 08:43 | 07:41 | 06:31 | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | | 08:18 | | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | | 18:18 | | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | | 08:20 | | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | | 18:16 | | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | | 07:22 | | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | | 17:13 | | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:24 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | | 07:24 | | | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | | 17:11 | | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 08:07 (2) | 07:27 | | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 1 | 08:08 (2) | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | | 08:07 (2) | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 1 | 08:08 (2) | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | | 08:06 (2) | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 2 | 08:26 (1) | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | | 08:06 (2) | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 4 | 08:27 (1) | 17:02 | | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | | 326 | | 253 | 224 |
| Total, worst case | | | | 79 | | | | | | | 8 | | | 261 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | 0,96 | | | | | | | 0,97 | | | 0,95 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | | 0,29 | | |
| Total, real | | | | 26 | | | | | | | 3 | | | 77 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:17 (1) | 07:08 | 09:08 (1) | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 08:12 (2) | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:08 33 | 08:50 (1) | 20:10 9 | 09:17 (1) | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 5 | 08:44 (1) | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:15 (1) | 07:06 | 09:11 (1) | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 08:12 (2) | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 38 | 08:53 (1) | 20:12 7 | 09:18 (1) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 5 | 08:44 (1) | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:18 (1) | 07:03 | 09:15 (1) | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 08:13 (2) | 07:41 | 08:39 |
| | 16:16 | 17:12 | 18:12 36 | 08:54 (1) | 20:14 3 | 09:18 (1) | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 6 | 08:45 (1) | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:23 (1) | 07:00 | | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 08:14 (2) | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 33 | 08:56 (1) | 20:16 | | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 6 | 08:45 (1) | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 08:26 (1) | 06:58 | | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 08:15 (2) | 07:45 | 08:42 |
| | 16:19 | 17:17 | 18:16 30 | 08:56 (1) | 20:18 | | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 8 | 08:46 (1) | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | 07:47 (2) | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 08:17 (2) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 38 | 08:58 (1) | 20:20 | | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 8 | 08:47 (1) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 07:42 (2) | 06:53 | | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 08:20 (2) | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 46 | 08:58 (1) | 20:22 | | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 7 | 08:48 (1) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:10 | 07:39 (2) | 06:50 | | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 08:44 (1) | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 41 | 08:58 (1) | 20:24 | | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 5 | 08:49 (1) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | 07:07 | 07:52 (2) | 06:48 | | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 08:45 (1) | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 34 | 08:59 (1) | 20:26 | | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 5 | 08:50 (1) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:05 | 07:54 (2) | 06:45 | | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 08:46 (1) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 30 | 08:59 (1) | 20:28 | | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 6 | 08:52 (1) | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 07:56 (2) | 06:43 | | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 08:48 (1) | 07:57 | 08:50 |
| | 16:28 | 17:30 | 18:28 27 | 09:00 (1) | 20:29 | | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 6 | 08:54 (1) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 08:34 (1) | 06:40 | | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 08:49 (1) | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 26 | 09:00 (1) | 20:31 | | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 7 | 08:56 (1) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 08:35 (1) | 06:38 | | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:51 (1) | 08:02 | 08:52 |
| | 16:31 | 17:34 | 18:32 25 | 09:00 (1) | 20:33 | | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 9 | 09:00 (1) | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 08:35 (1) | 06:35 | | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:54 (1) | 08:04 | 08:53 |
| | 16:33 | 17:36 | 18:34 25 | 09:00 (1) | 20:35 | | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 13 | 09:07 (1) | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | 06:52 | 08:34 (1) | 06:33 | | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:58 (1) | 08:06 | 08:54 |
| | 16:35 | 17:38 | 18:36 25 | 08:59 (1) | 20:37 | | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 | 18:37 10 | 09:08 (1) | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 08:35 (1) | 06:30 | | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 09:05 (1) | 08:08 | 08:55 |
| | 16:37 | 17:40 | 18:38 25 | 09:00 (1) | 20:39 | | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 3 | 09:08 (1) | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 08:34 (1) | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 08:10 | 08:56 |
| | 16:38 | 17:42 | 18:40 25 | 08:59 (1) | 20:41 | | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 18:32 | | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 08:35 (1) | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | 08:12 | 08:57 |
| | 16:40 | 17:44 | 18:42 24 | 08:59 (1) | 20:43 | | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | 06:42 | 08:34 (1) | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 24 | 08:58 (1) | 20:45 | | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | 06:39 | 08:33 (1) | 06:21 | | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 24 | 08:57 (1) | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 08:33 (1) | 06:18 | | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | | 08:17 | 08:59 |
| | 16:46 | 17:51 | 18:48 24 | 08:57 (1) | 20:49 | | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 06:34 | 08:32 (1) | 06:16 | | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 24 | 08:56 (1) | 20:51 | | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 08:32 (1) | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 08:21 | 09:00 |
| | 16:50 | 17:55 | 18:52 23 | 08:55 (1) | 20:53 | | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 07:53 (2) | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 24 | 08:54 (1) | 20:55 | | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 18:16 | | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 06:26 | 07:51 (2) | 06:09 | | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 26 | 08:52 (1) | 20:57 | | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 | | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:29 (1) 06:24 | 07:50 (2) | 06:06 | | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | | 08:27 | 09:01 |
| | 16:56 | 18:01 12 | 08:41 (1) 18:58 28 | 08:51 (1) | 20:59 | | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 08:23 (1) 06:21 | 07:47 (2) | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:27 | | 08:28 | 09:01 |
| | 16:58 | 18:03 22 | 08:45 (1) 19:00 26 | 08:49 (1) | 21:01 | | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 08:20 (1) 06:18 | 08:26 (1) | 06:02 | | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | | 08:30 | 09:01 |
| | 17:00 | 18:05 28 | 08:48 (1) 19:02 22 | 08:48 (1) | 21:03 | | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 09:24 (1) | 06:00 | | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | | 08:32 | 09:01 |
| | 17:02 | | 20:04 22 | 09:46 (1) | 21:05 | | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 09:22 (1) | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | | 08:34 | 09:01 |
| | 17:04 | | 20:06 22 | 09:44 (1) | 21:07 | | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | | 16:11 | 16:11 |
| 31 | 08:30 | | 07:11 | 09:19 (1) | | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | 09:01 |
| | 17:06 | | 20:08 22 | 09:41 (1) | | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | 62 | 872 | 19 | | | | | | 109 | | | |
| Sun reduction | | 0,25 | 0,34 | 0,39 | | | | | | 0,31 | | | |
| Oper. time red. | | 1,00 | 1,00 | 1,00 | | | | | | 1,00 | | | |
| Wind dir. red. | | 0,92 | 0,92 | 0,92 | | | | | | 0,93 | | | |
| Total reduction | | 0,23 | 0,32 | 0,36 | | | | | | 0,29 | | | |
| Total, real | | 14 | 275 | 7 | | | | | | 31 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 08:31 (1) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | | 18:07 | 48 | 09:19 (1) | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | | 07:24 | | 08:30 (1) | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | | 18:10 | 48 | 09:18 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:01 | 08:24 | | 07:22 | | 08:28 (1) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 | 08:39 |
| | 16:16 | 17:12 | | 18:12 | 49 | 09:17 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | | 07:20 | | 08:28 (1) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | 08:40 |
| | 16:18 | 17:15 | | 18:14 | 49 | 09:17 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | | 07:17 | | 07:51 (2) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 | 07:45 | 08:42 |
| | 16:19 | 17:17 | | 18:16 | 62 | 09:15 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | | 07:15 | | 07:49 (2) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | | 18:18 | 61 | 09:15 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | | 07:12 | | 07:46 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | | 18:20 | 60 | 09:14 (1) | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | | 07:10 | | 07:47 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | | 18:22 | 55 | 09:13 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 | | 07:07 | | 07:52 (2) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | | 18:24 | 48 | 09:13 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | | 07:04 | | 07:54 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | | 18:26 | 43 | 09:12 (1) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | | 07:02 | | 07:56 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:50 |
| | 16:28 | 17:30 | | 18:28 | 39 | 09:12 (1) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | | 06:59 | | 08:34 (1) | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:30 | 17:32 | | 18:30 | 37 | 09:11 (1) | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | | 06:57 | | 08:35 (1) | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:02 | 08:52 |
| | 16:31 | 17:34 | | 18:32 | 36 | 09:11 (1) | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | | 06:54 | | 08:35 (1) | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:04 | 08:53 |
| | 16:33 | 17:36 | | 18:34 | 35 | 09:10 (1) | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 | | 06:52 | | 08:34 (1) | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:06 | 08:54 |
| | 16:35 | 17:38 | | 18:36 | 35 | 09:09 (1) | 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | | 06:49 | | 08:35 (1) | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:08 | 08:55 |
| | 16:37 | 17:40 | | 18:38 | 34 | 09:09 (1) | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | | 06:47 | | 08:34 (1) | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:10 | 08:56 |
| | 16:38 | 17:42 | | 18:40 | 35 | 09:09 (1) | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | | 06:44 | | 08:35 (1) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:12 | 08:57 |
| | 16:40 | 17:44 | | 18:42 | 34 | 09:09 (1) | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 | | 06:42 | | 08:34 (1) | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | | 18:44 | 34 | 09:08 (1) | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 | | 06:39 | | 08:33 (1) | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | | 18:46 | 35 | 09:08 (1) | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | | 06:36 | | 08:33 (1) | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:59 |
| | 16:46 | 17:51 | | 18:48 | 35 | 09:08 (1) | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 | 08:50 (1) | 06:34 | | 08:32 (1) | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 19 09:09 (1) | 18:50 | 36 | 09:08 (1) | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 08:45 (1) | 06:31 | | 08:32 (1) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 09:00 |
| | 16:50 | 17:55 | 28 09:13 (1) | 18:52 | 36 | 09:08 (1) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 08:42 (1) | 06:29 | | 07:53 (2) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 34 09:16 (1) | 18:54 | 38 | 09:08 (1) | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 | 08:39 (1) | 06:26 | | 07:51 (2) | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 39 09:18 (1) | 18:56 | 42 | 09:08 (1) | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:37 (1) | 06:23 | | 07:50 (2) | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 44 09:21 (1) | 18:58 | 45 | 09:08 (1) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 08:35 (1) | 06:21 | | 07:47 (2) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:27 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 47 09:22 (1) | 19:00 | 50 | 09:08 (1) | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 08:33 (1) | 06:18 | | 07:44 (2) | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 51 09:24 (1) | 19:02 | 56 | 09:09 (1) | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | | 07:16 | | 08:48 (2) | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 08:32 | 09:01 |
| | 17:02 | | | 20:04 | 52 | 10:09 (1) | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | | 07:13 | | 09:22 (1) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 08:34 | 09:01 |
| | 17:04 | | | 20:06 | 48 | 10:10 (1) | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:30 | | | 07:11 | | 09:22 (1) | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | | 20:08 | 47 | 10:09 (1) | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 262 | | 1362 | | | | | | | | | | |
| Sun reduction | | | 0,25 | | 0,34 | | | | | | | | | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | | | | | | | |
| Wind dir. red. | | | 0,88 | | 0,89 | | | | | | | | | | |
| Total reduction | | | 0,22 | | 0,30 | | | | | | | | | | |
| Total, real | | | 56 | | 411 | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June | July | August | September | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 08:07 (2) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | 09:11 (1) | 08:35 |
| | 16:14 | 17:08 | | 18:07 | 10 | 09:19 (1) | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | | 16:58 | 38 09:49 (1) | 16:10 |
| 2 | 09:01 | 08:26 | | 07:24 | | 08:05 (2) | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | | 07:39 | 09:14 (1) | 08:37 |
| | 16:15 | 17:10 | | 18:10 | 8 | 09:18 (1) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | | 16:56 | 32 09:46 (1) | 16:09 |
| 3 | 09:01 | 08:24 | | 07:22 | | 08:03 (2) | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | | 07:41 | 09:17 (1) | 08:39 |
| | 16:16 | 17:12 | | 18:12 | 7 | 09:17 (1) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 | | 16:54 | 25 09:42 (1) | 16:08 |
| 4 | 09:00 | 08:22 | | 07:19 | | 08:02 (2) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | | 07:43 | 09:25 (1) | 08:40 |
| | 16:18 | 17:15 | | 18:14 | 7 | 09:17 (1) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | | 16:52 | 11 09:36 (1) | 16:08 |
| 5 | 09:00 | 08:20 | | 07:17 | | 08:00 (2) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 | | 07:45 | | 08:42 |
| | 16:19 | 17:17 | | 18:16 | 6 | 09:15 (1) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | | 16:50 | | 16:07 |
| 6 | 08:59 | 08:18 | | 07:15 | | 07:59 (2) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | | 08:43 |
| | 16:20 | 17:19 | | 18:18 | 6 | 09:15 (1) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | | 16:48 | | 16:06 |
| 7 | 08:59 | 08:16 | 09:54 (1) | 07:12 | | 07:58 (2) | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | | 08:44 |
| | 16:22 | 17:21 | 14 10:08 (1) | 18:20 | 5 | 09:14 (1) | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | | 16:46 | | 16:06 |
| 8 | 08:58 | 08:14 | 09:47 (1) | 07:10 | | 07:57 (2) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | | 07:51 | | 08:46 |
| | 16:23 | 17:23 | 26 10:13 (1) | 18:22 | 3 | 09:13 (1) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | | 16:44 | | 16:05 |
| 9 | 08:58 | 08:12 | 09:44 (1) | 07:07 | | 07:57 (2) | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | | 08:47 |
| | 16:25 | 17:25 | 33 10:17 (1) | 18:24 | 3 | 09:13 (1) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | | 16:42 | | 16:05 |
| 10 | 08:57 | 08:10 | 09:41 (1) | 07:04 | | 07:55 (2) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 08:36 (2) | 07:55 | | 08:48 |
| | 16:26 | 17:27 | 39 10:20 (1) | 18:26 | 3 | 09:12 (1) | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | 5 08:41 (2) | 16:40 | | 16:04 |
| 11 | 08:56 | 08:08 | 09:39 (1) | 07:02 | | 07:56 (2) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 08:38 (2) | 07:57 | | 08:50 |
| | 16:28 | 17:30 | 44 10:23 (1) | 18:28 | 1 | 07:57 (2) | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | 4 08:42 (2) | 16:38 | | 16:04 |
| 12 | 08:55 | 08:06 | 09:36 (1) | 06:59 | | | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 08:39 (2) | 07:59 | | 08:51 |
| | 16:30 | 17:32 | 49 10:25 (1) | 18:30 | | | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 6 08:45 (2) | 16:36 | | 16:04 |
| 13 | 08:54 | 08:04 | 09:34 (1) | 06:57 | | | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:41 (2) | 08:01 | | 08:52 |
| | 16:31 | 17:34 | 53 10:27 (1) | 18:32 | | | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 7 08:48 (2) | 16:34 | | 16:04 |
| 14 | 08:53 | 08:02 | 09:32 (1) | 06:54 | | | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:44 (2) | 08:04 | | 08:53 |
| | 16:33 | 17:36 | 57 10:29 (1) | 18:34 | | | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 15 09:04 (2) | 16:33 | | 16:04 |
| 15 | 08:52 | 08:00 | 09:30 (1) | 06:52 | | | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:48 (2) | 08:06 | | 08:54 |
| | 16:35 | 17:38 | 60 10:30 (1) | 18:36 | | | 20:37 | 21:35 | 22:16 | 22:07 | 21:11 | 19:54 | 18:37 | 12 09:00 (2) | 16:31 | | 16:04 |
| 16 | 08:51 | 07:57 | 09:29 (1) | 06:49 | | | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 09:52 (1) | 08:08 | | 08:55 |
| | 16:37 | 17:40 | 63 10:32 (1) | 18:38 | | | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 3 09:55 (1) | 16:29 | | 16:04 |
| 17 | 08:50 | 07:55 | 09:28 (1) | 06:47 | | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 09:51 (1) | 08:10 | | 08:56 |
| | 16:38 | 17:42 | 66 10:34 (1) | 18:40 | | | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 5 09:56 (1) | 16:28 | | 16:04 |
| 18 | 08:49 | 07:53 | 09:26 (1) | 06:44 | | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 09:51 (1) | 08:12 | | 08:57 |
| | 16:40 | 17:44 | 69 10:35 (1) | 18:42 | | | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 6 09:57 (1) | 16:26 | | 16:04 |
| 19 | 08:48 | 07:51 | 09:25 (1) | 06:42 | | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 09:52 (1) | 08:13 | | 08:57 |
| | 16:42 | 17:47 | 71 10:36 (1) | 18:44 | | | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 5 09:57 (1) | 16:25 | | 16:04 |
| 20 | 08:47 | 07:48 | 09:24 (1) | 06:39 | | | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 09:52 (1) | 08:15 | | 08:58 |
| | 16:44 | 17:49 | 74 10:38 (1) | 18:46 | | | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 7 09:59 (1) | 16:23 | | 16:05 |
| 21 | 08:45 | 07:46 | 09:22 (1) | 06:36 | | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 09:53 (1) | 08:17 | | 08:59 |
| | 16:46 | 17:51 | 76 10:38 (1) | 18:48 | | | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | 7 10:00 (1) | 16:22 | | 16:05 |
| 22 | 08:44 | 07:44 | 09:22 (1) | 06:34 | | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | 09:55 (1) | 08:19 | | 08:59 |
| | 16:48 | 17:53 | 77 10:39 (1) | 18:50 | | | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 | 7 10:02 (1) | 16:20 | | 16:05 |
| 23 | 08:42 | 07:41 | 09:20 (1) | 06:31 | | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 09:56 (1) | 08:21 | | 09:00 |
| | 16:50 | 17:55 | 80 10:40 (1) | 18:52 | | | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 7 10:03 (1) | 16:19 | | 16:06 |
| 24 | 08:41 | 07:39 | 09:20 (1) | 06:29 | | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 09:56 (1) | 08:23 | | 09:00 |
| | 16:52 | 17:57 | 81 10:41 (1) | 18:54 | | | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 9 10:05 (1) | 16:18 | | 16:07 |
| 25 | 08:40 | 07:37 | 09:18 (1) | 06:26 | | | 06:09 | 05:10 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | 08:57 (1) | 08:25 | | 09:00 |
| | 16:54 | 17:59 | 83 10:41 (1) | 18:56 | | | 20:57 | 21:52 | 22:20 | 21:52 | 20:47 | 19:28 | 17:13 | 9 09:06 (1) | 16:16 | | 16:07 |
| 26 | 08:38 | 07:34 | 09:18 (1) | 06:23 | | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:59 (1) | 08:27 | | 09:01 |
| | 16:56 | 18:01 | 84 10:42 (1) | 18:58 | | | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 9 09:08 (1) | 16:15 | | 16:08 |
| 27 | 08:36 | 07:32 | 08:13 (2) | 06:21 | | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 09:01 (1) | 08:28 | | 09:01 |
| | 16:58 | 18:03 | 100 10:42 (1) | 19:00 | | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | 12 10:00 (1) | 16:14 | | 16:09 |
| 28 | 08:35 | 07:29 | 08:10 (2) | 06:18 | | | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | 09:02 (1) | 08:30 | | 09:01 |
| | 17:00 | 18:05 | 109 10:43 (1) | 19:02 | | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | 14 09:58 (1) | 16:13 | | 16:10 |
| 29 | 08:33 | | | 07:16 | | | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 09:04 (1) | 08:32 | | 09:01 |
| | 17:02 | | | 20:04 | | | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 17 09:56 (1) | 16:12 | | 16:11 |
| 30 | 08:31 | | | 07:13 | | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 09:06 (1) | 08:34 | | 09:01 |
| | 17:04 | | | 20:06 | | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 22 09:54 (1) | 16:11 | | 16:11 |
| 31 | 08:30 | | | 07:11 | | | | 05:03 | | 05:38 | 06:36 | | 07:35 | 09:09 (1) | | | 09:01 |
| | 17:06 | | | 20:08 | | | | 22:01 | | 21:42 | 20:32 | | 17:00 | 31 09:52 (1) | | | 16:13 |
| Potential sun hours | 242 | 269 | | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | | 224 | |
| Total, worst case | | | 1408 | | 59 | | | | | | | | 219 | | 106 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | | | | | | 0,31 | | 0,16 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | 0,72 | | 0,85 | | | | | | | | 0,77 | | 0,72 | | |
| Total reduction | | | 0,18 | | 0,29 | | | | | | | | 0,23 | | 0,11 | | |
| Total, real | | | 249 | | 17 | | | | | | | | 51 | | 12 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:20 (1) | 08:28 | | 09:23 (2) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | | | 08:35 | | 11:05 (1) |
| | 16:14 | 62 | 12:22 (1) | 17:08 | 2 | 09:25 (2) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | | | 16:10 | 65 | 12:10 (1) |
| 2 | 09:01 | | 11:20 (1) | 08:26 | | 09:22 (2) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | 07:39 | | 08:50 (2) | 08:37 | | 11:04 (1) |
| | 16:15 | 62 | 12:22 (1) | 17:10 | 2 | 09:24 (2) | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 1 | 08:51 (2) | 16:09 | 66 | 12:10 (1) |
| 3 | 09:01 | | 11:20 (1) | 08:24 | | 09:22 (2) | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 | | 08:50 (2) | 08:39 | | 11:05 (1) |
| | 16:16 | 63 | 12:23 (1) | 17:12 | 2 | 09:24 (2) | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 1 | 08:51 (2) | 16:08 | 65 | 12:10 (1) |
| 4 | 09:00 | | 11:20 (1) | 08:22 | | 09:22 (2) | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | | 08:51 (2) | 08:40 | | 11:06 (1) |
| | 16:18 | 63 | 12:23 (1) | 17:15 | 1 | 09:23 (2) | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 1 | 08:52 (2) | 16:08 | 65 | 12:11 (1) |
| 5 | 09:00 | | 11:21 (1) | 08:20 | | 09:22 (2) | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:43 | 07:45 | | 08:51 (2) | 08:42 | | 11:06 (1) |
| | 16:19 | 63 | 12:24 (1) | 17:17 | 1 | 09:23 (2) | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 1 | 08:52 (2) | 16:07 | 64 | 12:10 (1) |
| 6 | 08:59 | | 11:21 (1) | 08:18 | | 09:21 (2) | 07:15 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | | 08:51 (2) | 08:43 | | 11:07 (1) |
| | 16:20 | 64 | 12:25 (1) | 17:19 | 2 | 09:23 (2) | 18:18 | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | 16:48 | 2 | 08:53 (2) | 16:06 | 64 | 12:11 (1) |
| 7 | 08:59 | | 11:21 (1) | 08:16 | | | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | | 08:51 (2) | 08:44 | | 11:07 (1) |
| | 16:22 | 64 | 12:25 (1) | 17:21 | | | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 2 | 08:53 (2) | 16:06 | 63 | 12:10 (1) |
| 8 | 08:58 | | 11:21 (1) | 08:14 | | | 07:10 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | | 08:53 (2) | 08:46 | | 11:08 (1) |
| | 16:23 | 64 | 12:25 (1) | 17:23 | | | 18:22 | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 2 | 08:55 (2) | 16:05 | 63 | 12:11 (1) |
| 9 | 08:58 | | 11:22 (1) | 08:12 | | | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | | 08:53 (2) | 08:47 | | 11:08 (1) |
| | 16:25 | 65 | 12:27 (1) | 17:25 | | | 18:24 | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 2 | 08:55 (2) | 16:05 | 63 | 12:11 (1) |
| 10 | 08:57 | | 11:22 (1) | 08:10 | | | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | | 08:53 (2) | 08:48 | | 11:10 (1) |
| | 16:26 | 66 | 12:28 (1) | 17:27 | | | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 3 | 08:56 (2) | 16:04 | 62 | 12:12 (1) |
| 11 | 08:56 | | 11:22 (1) | 08:08 | | | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | | 08:54 (2) | 08:50 | | 11:10 (1) |
| | 16:28 | 66 | 12:28 (1) | 17:30 | | | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 3 | 08:57 (2) | 16:04 | 62 | 12:12 (1) |
| 12 | 08:55 | | 11:22 (1) | 08:06 | | | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | | 08:56 (2) | 08:51 | | 11:10 (1) |
| | 16:30 | 66 | 12:28 (1) | 17:32 | | | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 3 | 08:59 (2) | 16:04 | 62 | 12:12 (1) |
| 13 | 08:54 | | 11:22 (1) | 08:04 | | | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | | 08:56 (2) | 08:52 | | 11:11 (1) |
| | 16:31 | 67 | 12:29 (1) | 17:34 | | | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 4 | 09:00 (2) | 16:04 | 61 | 12:12 (1) |
| 14 | 08:53 | | 11:22 (1) | 08:02 | | | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:04 | | 08:57 (2) | 08:53 | | 11:11 (1) |
| | 16:33 | 67 | 12:29 (1) | 17:36 | | | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 4 | 09:01 (2) | 16:04 | 61 | 12:12 (1) |
| 15 | 08:52 | | 11:23 (1) | 08:00 | | | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:06 | | 08:58 (2) | 08:54 | | 11:13 (1) |
| | 16:35 | 67 | 12:30 (1) | 17:38 | | | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 5 | 09:03 (2) | 16:04 | 61 | 12:14 (1) |
| 16 | 08:51 | | 11:22 (1) | 07:57 | | | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:08 | | 09:00 (2) | 08:55 | | 11:12 (1) |
| | 16:36 | 68 | 12:30 (1) | 17:40 | | | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 5 | 09:05 (2) | 16:04 | 61 | 12:13 (1) |
| 17 | 08:50 | | 11:23 (1) | 07:55 | | | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:10 | | 09:01 (2) | 08:56 | | 11:13 (1) |
| | 16:38 | 68 | 12:31 (1) | 17:42 | | | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 7 | 09:31 (2) | 16:04 | 60 | 12:13 (1) |
| 18 | 08:49 | | 11:24 (1) | 07:53 | | | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:12 | | 09:03 (2) | 08:57 | | 11:14 (1) |
| | 16:40 | 68 | 12:32 (1) | 17:44 | | | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 | 9 | 09:29 (2) | 16:04 | 60 | 12:14 (1) |
| 19 | 08:48 | | 11:23 (1) | 07:51 | | | 06:42 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | | 09:04 (2) | 08:57 | | 11:15 (1) |
| | 16:42 | 69 | 12:32 (1) | 17:47 | | | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 13 | 09:28 (2) | 16:04 | 60 | 12:15 (1) |
| 20 | 08:47 | | 09:38 (2) | 07:48 | | | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | | 09:06 (2) | 08:58 | | 11:14 (1) |
| | 16:44 | 74 | 12:32 (1) | 17:49 | | | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 20 | 09:26 (2) | 16:05 | 60 | 12:14 (1) |
| 21 | 08:45 | | 09:34 (2) | 07:46 | | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | | 09:10 (2) | 08:59 | | 11:15 (1) |
| | 16:46 | 82 | 12:32 (1) | 17:51 | | | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 | 16:22 | 15 | 09:25 (2) | 16:05 | 60 | 12:15 (1) |
| 22 | 08:44 | | 09:31 (2) | 07:44 | | | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | | 09:14 (2) | 08:59 | | 11:16 (1) |
| | 16:48 | 88 | 12:32 (1) | 17:53 | | | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 7 | 09:21 (2) | 16:05 | 60 | 12:16 (1) |
| 23 | 08:42 | | 09:30 (2) | 07:41 | | | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | | | 09:00 | | 11:16 (1) |
| | 16:50 | 92 | 12:33 (1) | 17:55 | | | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | | | 16:06 | 60 | 12:16 (1) |
| 24 | 08:41 | | 09:29 (2) | 07:39 | | | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | | | 09:00 | | 11:17 (1) |
| | 16:52 | 94 | 12:33 (1) | 17:57 | | | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | | | 16:07 | 60 | 12:17 (1) |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | | 06:26 | 06:09 | 05:10 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | | | 09:00 | | 11:17 (1) |
| | 16:54 | 98 | 12:33 (1) | 17:59 | | | 18:56 | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 | 16:16 | | | 16:07 | 60 | 12:17 (1) |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:27 | | | 09:01 | | 11:18 (1) |
| | 16:56 | 100 | 12:34 (1) | 18:01 | | | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | | | 16:08 | 60 | 12:18 (1) |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | | | 09:01 | | 11:18 (1) |
| | 16:58 | 102 | 12:34 (1) | 18:03 | | | 19:00 | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | | | 16:09 | 61 | 12:19 (1) |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | 08:30 | | | 09:01 | | 11:19 (1) |
| | 17:00 | 103 | 12:34 (1) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 | 16:13 | | | 16:10 | 60 | 12:19 (1) |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | 08:32 | | | 09:01 | | 11:19 (1) |
| | 17:02 | 105 | 12:34 (1) | | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 16:12 | | | 16:10 | 61 | 12:20 (1) |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 08:34 | | | 09:01 | | 11:19 (1) |
| | 17:04 | 106 | 12:34 (1) | | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 16:11 | | | 16:11 | 61 | 12:20 (1) |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | | 09:01 | | 11:19 (1) |
| | 17:06 | 106 | 12:33 (1) | | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | | 16:12 | 62 | 12:21 (1) |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | | | 224 | | |
| Total, worst case | | 2392 | | | 10 | | | | | | | | | | | 110 | | | 1913 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,27 | | | 0,71 | | | | | | | | | | | 0,71 | | | 0,20 | |
| Total reduction | | 0,05 | | | 0,17 | | | | | | | | | | | 0,11 | | | 0,03 | |
| Total, real | | 115 | | | 2 | | | | | | | | | | | 12 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | April | May | June | July | August | September | October | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:26 (2) | 08:28 | 08:57 (3) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | | 08:25 (3) | 08:35 | 11:08 (2) |
| | 16:14 | 59 | 12:25 (2) | 17:08 | 21 15:47 (1) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | | 16:58 | 20 | 15:21 (1) | 16:10 | 66 12:14 (2) |
| 2 | 09:01 | | 11:25 (2) | 08:26 | 08:55 (3) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | | 07:39 | | 08:24 (3) | 08:37 | 11:09 (2) |
| | 16:15 | 60 | 12:25 (2) | 17:10 | 23 15:47 (1) | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | | 16:56 | 23 | 15:21 (1) | 16:09 | 65 12:14 (2) |
| 3 | 09:01 | | 11:26 (2) | 08:24 | 08:54 (3) | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | | 07:41 | | 08:24 (3) | 08:38 | 11:10 (2) |
| | 16:16 | 60 | 12:26 (2) | 17:12 | 24 15:48 (1) | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | 16:54 | 22 | 15:20 (1) | 16:08 | 64 12:14 (2) |
| 4 | 09:00 | | 11:26 (2) | 08:22 | 08:54 (3) | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | | 07:43 | | 08:24 (3) | 08:40 | 11:11 (2) |
| | 16:18 | 60 | 12:26 (2) | 17:15 | 25 15:49 (1) | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | | 16:52 | 24 | 15:21 (1) | 16:08 | 64 12:15 (2) |
| 5 | 09:00 | | 11:26 (2) | 08:20 | 08:54 (3) | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | | 08:24 (3) | 08:42 | 11:11 (2) |
| | 16:19 | 62 | 12:28 (2) | 17:17 | 25 15:50 (1) | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | | 16:50 | 24 | 15:20 (1) | 16:07 | 63 12:14 (2) |
| 6 | 08:59 | | 11:26 (2) | 08:18 | 08:54 (3) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | | 08:23 (3) | 08:43 | 11:12 (2) |
| | 16:20 | 62 | 12:28 (2) | 17:19 | 24 15:50 (1) | 18:18 | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 18:59 | | 16:48 | 25 | 15:19 (1) | 16:06 | 62 12:14 (2) |
| 7 | 08:59 | | 11:26 (2) | 08:16 | 08:54 (3) | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | | 08:23 (3) | 08:44 | 11:12 (2) |
| | 16:22 | 63 | 12:29 (2) | 17:21 | 24 15:51 (1) | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | | 16:46 | 25 | 15:19 (1) | 16:06 | 62 12:14 (2) |
| 8 | 08:58 | | 11:26 (2) | 08:14 | 08:54 (3) | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | | 08:24 (3) | 08:46 | 11:14 (2) |
| | 16:23 | 64 | 12:30 (2) | 17:23 | 23 15:51 (1) | 18:22 | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | | 16:44 | 25 | 15:19 (1) | 16:05 | 61 12:15 (2) |
| 9 | 08:58 | | 11:27 (2) | 08:12 | 08:55 (3) | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | | 08:26 (3) | 08:47 | 11:14 (2) |
| | 16:25 | 64 | 12:31 (2) | 17:25 | 21 15:51 (1) | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | | 16:42 | 22 | 15:18 (1) | 16:05 | 60 12:14 (2) |
| 10 | 08:57 | | 11:27 (2) | 08:10 | 08:56 (3) | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | | 07:55 | | 08:28 (3) | 08:48 | 11:15 (2) |
| | 16:26 | 65 | 12:32 (2) | 17:27 | 19 15:52 (1) | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | 16:40 | 20 | 15:17 (1) | 16:04 | 60 12:15 (2) |
| 11 | 08:56 | | 11:27 (2) | 08:08 | 08:57 (3) | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | 07:57 | | 08:30 (3) | 08:50 | 11:16 (2) |
| | 16:28 | 66 | 12:33 (2) | 17:29 | 18 15:52 (1) | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | 16:38 | 18 | 15:16 (1) | 16:04 | 59 12:15 (2) |
| 12 | 08:55 | | 11:26 (2) | 08:06 | 08:58 (3) | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | 07:59 | | 08:33 (3) | 08:51 | 11:16 (2) |
| | 16:30 | 67 | 12:33 (2) | 17:32 | 13 09:11 (3) | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | 16:36 | 16 | 15:17 (1) | 16:04 | 59 12:15 (2) |
| 13 | 08:54 | | 11:26 (2) | 08:04 | 09:01 (3) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | 08:01 | | 08:35 (3) | 08:52 | 11:17 (2) |
| | 16:31 | 68 | 12:34 (2) | 17:34 | 8 09:09 (3) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 12 | 15:16 (1) | 16:04 | 58 12:15 (2) |
| 14 | 08:53 | | 11:26 (2) | 08:02 | | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | 08:03 | | 08:37 (3) | 08:53 | 11:18 (2) |
| | 16:33 | 69 | 12:35 (2) | 17:36 | | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | | 16:33 | 9 | 15:15 (1) | 16:04 | 57 12:15 (2) |
| 15 | 08:52 | | 11:26 (2) | 07:59 | | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | 08:06 | | 15:08 (1) | 08:54 | 11:18 (2) |
| | 16:35 | 70 | 12:36 (2) | 17:38 | | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | | 16:31 | 6 | 15:14 (1) | 16:04 | 57 12:15 (2) |
| 16 | 08:51 | | 11:26 (2) | 07:57 | | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:08 | 07:06 | 08:04 | | 08:08 | | 15:07 (1) | 08:55 | 11:19 (2) |
| | 16:36 | 70 | 12:36 (2) | 17:40 | | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | | 16:29 | 7 | 15:14 (1) | 16:04 | 56 12:15 (2) |
| 17 | 08:50 | | 11:26 (2) | 07:55 | | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 08:09 | | 14:30 (1) | 08:56 | 11:20 (2) |
| | 16:38 | 83 | 15:21 (1) | 17:42 | | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | | 16:28 | 7 | 15:12 (1) | 16:04 | 56 12:16 (2) |
| 18 | 08:49 | | 11:26 (2) | 07:53 | | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | 08:11 | | 14:31 (1) | 08:57 | 11:21 (2) |
| | 16:40 | 90 | 15:25 (1) | 17:44 | | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | | 16:26 | 9 | 15:11 (1) | 16:04 | 55 12:16 (2) |
| 19 | 08:48 | | 11:26 (2) | 07:51 | | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | 08:13 | | 14:33 (1) | 08:57 | 11:21 (2) |
| | 16:42 | 96 | 15:28 (1) | 17:47 | | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | | 16:25 | 12 | 15:10 (1) | 16:04 | 56 12:17 (2) |
| 20 | 08:47 | | 11:26 (2) | 07:48 | | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | 08:15 | | 14:34 (1) | 08:58 | 11:21 (2) |
| | 16:44 | 100 | 15:30 (1) | 17:49 | | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | | 16:23 | 14 | 15:09 (1) | 16:05 | 56 12:17 (2) |
| 21 | 08:45 | | 11:26 (2) | 07:46 | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | | 08:17 | | 11:02 (2) | 08:59 | 11:22 (2) |
| | 16:46 | 104 | 15:32 (1) | 17:51 | | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | | 16:22 | 20 | 15:08 (1) | 16:05 | 56 12:18 (2) |
| 22 | 08:44 | | 11:26 (2) | 07:44 | | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | | 08:19 | | 11:02 (2) | 08:59 | 11:22 (2) |
| | 16:48 | 109 | 15:34 (1) | 17:53 | | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | | 16:20 | 29 | 15:07 (1) | 16:05 | 55 12:17 (2) |
| 23 | 08:42 | | 11:26 (2) | 07:41 | | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 08:21 | | 11:03 (2) | 09:00 | 11:23 (2) |
| | 16:50 | 112 | 15:36 (1) | 17:55 | | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | | 16:19 | 25 | 15:05 (1) | 16:06 | 56 12:19 (2) |
| 24 | 08:41 | | 11:26 (2) | 07:39 | | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 08:23 | | 11:03 (2) | 09:00 | 11:23 (2) |
| | 16:52 | 115 | 15:37 (1) | 17:57 | | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | | 16:18 | 20 | 15:02 (1) | 16:07 | 56 12:19 (2) |
| 25 | 08:39 | | 11:26 (2) | 07:36 | | 06:26 | 06:09 | 05:10 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 | | 08:25 | | 11:04 (2) | 09:00 | 11:23 (2) |
| | 16:54 | 118 | 15:39 (1) | 17:59 | | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | | 16:16 | 14 | 14:59 (1) | 16:07 | 56 12:19 (2) |
| 26 | 08:38 | | 11:27 (2) | 07:34 | | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | 08:27 | | 11:05 (2) | 09:01 | 11:25 (2) |
| | 16:56 | 120 | 15:41 (1) | 18:01 | | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | | 16:15 | 1 | 11:06 (2) | 16:08 | 56 12:21 (2) |
| 27 | 08:36 | | 11:26 (2) | 07:32 | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | 08:28 | | 11:05 (2) | 09:01 | 11:25 (2) |
| | 16:58 | 124 | 15:42 (1) | 18:03 | | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 | | 16:14 | 2 | 11:07 (2) | 16:09 | 56 12:21 (2) |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 | | 08:30 | | 11:06 (2) | 09:01 | 11:25 (2) |
| | 17:00 | 129 | 15:43 (1) | 18:05 | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | | 16:13 | 2 | 11:08 (2) | 16:10 | 57 12:22 (2) |
| 29 | 08:33 | | 09:03 (3) | | | 07:16 | 06:00 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | | 08:32 | | 11:07 (2) | 09:01 | 11:25 (2) |
| | 17:02 | 134 | 15:44 (1) | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 11 08:40 (3) | 16:12 | 3 | 12:15 (2) | 16:10 | 57 12:22 (2) |
| 30 | 08:31 | | 09:01 (3) | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | 08:27 (3) | 08:34 | | 11:08 (2) | 09:01 | 11:25 (2) |
| | 17:04 | 140 | 15:45 (1) | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 | 14 08:41 (3) | 16:11 | 3 | 12:15 (2) | 16:11 | 57 12:22 (2) |
| 31 | 08:30 | | 08:59 (3) | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | 08:27 (3) | | | | 09:01 | 11:25 (2) |
| | 17:06 | 144 | 15:46 (1) | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | 17 15:22 (1) | | | | 16:12 | 58 12:23 (2) |
| Potential sun hours | 242 | | 269 | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 | |
| Total, worst case | | 2747 | | 268 | | | | | | | | | | 42 | | 459 | | | 1816 |
| Sun reduction | | 0,18 | | 0,25 | | | | | | | | | | 0,31 | | 0,16 | | | 0,14 |
| Oper. time red. | | 1,00 | | 1,00 | | | | | | | | | | 1,00 | | 1,00 | | | 1,00 |
| Wind dir. red. | | 0,28 | | 0,78 | | | | | | | | | | 0,80 | | 0,70 | | | 0,19 |
| Total reduction | | 0,05 | | 0,18 | | | | | | | | | | 0,23 | | 0,10 | | | 0,02 |
| Total, real | | 132 | | 49 | | | | | | | | | | 10 | | 48 | | | 43 |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 15:57 (2) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | | 07:37 | | | 08:35 | | 09:32 (3) |
| | 16:14 | 26 | 10:14 (3) | 17:08 | 3 | 16:00 (2) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:29 | 19:12 | | | 16:58 | | | 16:10 | 29 | 10:01 (3) |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 15:59 (2) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | | | 07:39 | | | 08:37 | | 09:33 (3) |
| | 16:15 | 27 | 10:14 (3) | 17:10 | 1 | 16:00 (2) | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | | | 16:56 | | | 16:09 | 29 | 10:02 (3) |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | | | 07:41 | | | 08:38 | | 09:33 (3) |
| | 16:16 | 27 | 10:15 (3) | 17:12 | | | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | | 16:54 | | | 16:08 | 29 | 10:02 (3) |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | | | 07:43 | | | 08:40 | | 09:34 (3) |
| | 16:18 | 28 | 10:16 (3) | 17:15 | | | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | | | 16:52 | | | 16:08 | 29 | 10:03 (3) |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | | 07:45 | | | 08:42 | | 09:34 (3) |
| | 16:19 | 28 | 10:17 (3) | 17:17 | | | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | | | 16:50 | | | 16:07 | 28 | 10:02 (3) |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | | 07:47 | | | 08:43 | | 09:35 (3) |
| | 16:20 | 28 | 10:17 (3) | 17:19 | | | 18:18 | 20:20 | 21:19 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | | | 16:48 | | | 16:06 | 28 | 10:03 (3) |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | | 07:49 | | | 08:44 | | 09:35 (3) |
| | 16:22 | 28 | 10:17 (3) | 17:21 | | | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | | | 16:46 | | | 16:06 | 28 | 10:03 (3) |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | | 08:46 | | 09:36 (3) |
| | 16:23 | 29 | 10:18 (3) | 17:23 | | | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | | | 16:44 | | | 16:05 | 28 | 10:04 (3) |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | | 07:53 | | 15:29 (2) | 08:47 | | 09:36 (3) |
| | 16:25 | 29 | 10:18 (3) | 17:25 | | | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | | | 16:42 | 2 | 15:31 (2) | 16:05 | 28 | 10:04 (3) |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | | 07:04 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | | 15:28 (2) | 08:48 | | 09:37 (3) |
| | 16:26 | 28 | 10:19 (3) | 17:27 | | | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | | 16:40 | 3 | 15:31 (2) | 16:04 | 27 | 10:04 (3) |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | | 07:57 | | 15:27 (2) | 08:50 | | 09:38 (3) |
| | 16:28 | 29 | 10:19 (3) | 17:29 | | | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | | 16:38 | 3 | 15:30 (2) | 16:04 | 26 | 10:04 (3) |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | | 07:59 | | 15:27 (2) | 08:51 | | 09:38 (3) |
| | 16:29 | 29 | 10:19 (3) | 17:32 | | | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | | 16:36 | 3 | 15:30 (2) | 16:04 | 27 | 10:05 (3) |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 16:46 (1) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | | 08:01 | | 15:26 (2) | 08:52 | | 09:38 (3) |
| | 16:31 | 29 | 10:20 (3) | 17:34 | 12 | 16:58 (1) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | | 16:34 | 3 | 15:29 (2) | 16:04 | 27 | 10:05 (3) |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 16:43 (1) | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | | 08:03 | | 15:25 (2) | 08:53 | | 09:39 (3) |
| | 16:33 | 28 | 10:20 (3) | 17:36 | 7 | 17:01 (1) | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | | | 16:33 | 3 | 15:28 (2) | 16:04 | 26 | 10:05 (3) |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 16:58 (1) | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 16:35 | 29 | 10:21 (3) | 17:38 | 4 | 17:02 (1) | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | | | 16:31 | 12 | 15:27 (2) | 16:04 | 26 | 10:05 (3) |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 17:01 (1) | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 16:36 | 28 | 10:20 (3) | 17:40 | 3 | 17:04 (1) | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | | | 16:29 | 16 | 15:27 (2) | 16:04 | 26 | 10:06 (3) |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 17:03 (1) | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 16:38 | 28 | 10:21 (3) | 17:42 | 3 | 17:06 (1) | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | | | 16:28 | 21 | 15:26 (2) | 16:04 | 25 | 10:06 (3) |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 17:04 (1) | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | | | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 16:40 | 37 | 15:38 (2) | 17:44 | 2 | 17:06 (1) | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 | | | 16:26 | 25 | 15:25 (2) | 16:04 | 26 | 10:07 (3) |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 17:05 (1) | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 16:42 | 44 | 15:41 (2) | 17:46 | 2 | 17:07 (1) | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | | | 16:25 | 29 | 15:24 (2) | 16:04 | 25 | 10:07 (3) |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 17:07 (1) | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 16:44 | 46 | 15:44 (2) | 17:49 | 1 | 17:08 (1) | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | | | 16:23 | 34 | 15:23 (2) | 16:05 | 25 | 10:07 (3) |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 17:07 (1) | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | | 17:37 (1) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 16:46 | 49 | 15:46 (2) | 17:51 | 1 | 17:08 (1) | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 1 | 17:38 (1) | 16:22 | 39 | 15:22 (2) | 16:05 | 25 | 10:08 (3) |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | | 17:37 (1) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 16:48 | 52 | 15:48 (2) | 17:53 | | | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 1 | 17:38 (1) | 16:20 | 47 | 15:21 (2) | 16:05 | 25 | 10:08 (3) |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | 17:35 (1) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 16:50 | 52 | 15:50 (2) | 17:55 | | | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 2 | 17:37 (1) | 16:19 | 44 | 15:19 (2) | 16:06 | 25 | 10:09 (3) |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | 17:34 (1) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 16:52 | 52 | 15:51 (2) | 17:57 | | | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 2 | 17:36 (1) | 16:18 | 38 | 15:16 (2) | 16:06 | 25 | 10:09 (3) |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:25 | 07:23 | 07:22 | | 16:32 (1) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 16:54 | 51 | 15:52 (2) | 17:59 | | | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 3 | 16:35 (1) | 16:16 | 28 | 09:59 (3) | 16:07 | 26 | 10:10 (3) |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | 16:30 (1) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 16:56 | 50 | 15:55 (2) | 18:01 | | | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 3 | 16:33 (1) | 16:15 | 28 | 09:59 (3) | 16:08 | 25 | 10:11 (3) |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | 16:28 (1) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 16:58 | 46 | 15:56 (2) | 18:03 | | | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 4 | 16:32 (1) | 16:14 | 28 | 10:00 (3) | 16:09 | 25 | 10:11 (3) |
| 28 | 08:35 | | 15:15 (2) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | | 16:13 (1) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 17:00 | 41 | 15:56 (2) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 8 | 16:30 (1) | 16:13 | 29 | 10:01 (3) | 16:10 | 26 | 10:12 (3) |
| 29 | 08:33 | | 15:14 (2) | | | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | | 16:16 (1) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 17:02 | 43 | 15:57 (2) | | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 10 | 16:26 (1) | 16:12 | 29 | 10:01 (3) | 16:10 | 26 | 10:13 (3) |
| 30 | 08:31 | | 15:14 (2) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | | | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 17:04 | 44 | 15:58 (2) | | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:34 | 19:15 | 17:02 | | | 16:11 | 29 | 10:02 (3) | 16:11 | 26 | 10:12 (3) |
| 31 | 08:30 | | 15:13 (2) | | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | | | | | 09:01 | | 09:47 (3) |
| | 17:06 | 46 | 15:59 (2) | | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | | | | | 16:12 | 26 | 10:13 (3) |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1131 | | | 39 | | | | | | | | | | 34 | | | 493 | | | 822 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,62 | | | 0,85 | | | | | | | | | | 0,87 | | | 0,61 | | | 0,59 | |
| Total reduction | | 0,11 | | | 0,21 | | | | | | | | | | 0,26 | | | 0,10 | | | 0,08 | |
| Total, real | | 125 | | | 8 | | | | | | | | | | 9 | | | 47 | | | 65 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | April | May | June | July | August | September | October | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | 09:47 (3) | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | | | 07:37 | | 15:45 (2) | 08:35 | | 09:19 (3) |
| | 16:14 | 15 | 09:54 (3) | 17:08 | 27 | 16:06 (2) | 18:07 | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:29 | 19:12 | | | 16:58 | 3 | 15:48 (2) | 16:10 | 26 | 09:45 (3) |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | | | 07:39 | | 15:43 (2) | 08:37 | | 09:20 (3) |
| | 16:15 | 16 | 09:54 (3) | 17:10 | 23 | 16:08 (2) | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | | | 16:56 | 4 | 15:47 (2) | 16:09 | 25 | 09:45 (3) |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 | | | 07:41 | | 15:42 (2) | 08:38 | | 09:21 (3) |
| | 16:16 | 18 | 09:56 (3) | 17:12 | 16 | 16:10 (2) | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | | 16:54 | 4 | 15:46 (2) | 16:08 | 24 | 09:45 (3) |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 16:05 (2) | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | | | 07:43 | | 15:41 (2) | 08:40 | | 09:22 (3) |
| | 16:18 | 18 | 09:56 (3) | 17:15 | 7 | 16:12 (2) | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | | | 16:52 | 5 | 15:46 (2) | 16:08 | 23 | 09:45 (3) |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 16:07 (2) | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | | 07:45 | | 15:39 (2) | 08:42 | | 09:22 (3) |
| | 16:19 | 20 | 09:58 (3) | 17:17 | 6 | 16:13 (2) | 18:16 | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | | | 16:50 | 5 | 15:44 (2) | 16:07 | 22 | 09:44 (3) |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 16:10 (2) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | | 07:47 | | 15:37 (2) | 08:43 | | 09:24 (3) |
| | 16:20 | 21 | 09:59 (3) | 17:19 | 5 | 16:15 (2) | 18:18 | 20:20 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | | | 16:48 | 6 | 15:43 (2) | 16:06 | 21 | 09:45 (3) |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 16:10 (2) | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | | | 07:49 | | 15:34 (2) | 08:44 | | 09:24 (3) |
| | 16:22 | 22 | 09:59 (3) | 17:21 | 5 | 16:15 (2) | 18:20 | 20:22 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | | | 16:46 | 7 | 15:41 (2) | 16:06 | 20 | 09:44 (3) |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 16:12 (2) | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 16:23 | 23 | 10:00 (3) | 17:23 | 5 | 16:17 (2) | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | | | 16:44 | 16 | 15:41 (2) | 16:05 | 18 | 09:44 (3) |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 16:14 (2) | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 16:25 | 24 | 10:01 (3) | 17:25 | 4 | 16:18 (2) | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | | | 16:42 | 24 | 15:39 (2) | 16:05 | 18 | 09:44 (3) |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 16:15 (2) | 07:04 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 | | | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 16:26 | 25 | 10:03 (3) | 17:27 | 4 | 16:19 (2) | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 | | | 16:40 | 26 | 15:36 (2) | 16:04 | 16 | 09:44 (3) |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 16:17 (2) | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | | | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 16:28 | 25 | 10:02 (3) | 17:29 | 3 | 16:20 (2) | 18:28 | 20:29 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 | | | 16:38 | 28 | 15:34 (2) | 16:04 | 15 | 09:44 (3) |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 16:17 (2) | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | | | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 16:29 | 26 | 10:03 (3) | 17:32 | 3 | 16:20 (2) | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | | | 16:36 | 27 | 15:31 (2) | 16:04 | 14 | 09:43 (3) |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 16:18 (2) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | | | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 16:31 | 27 | 10:04 (3) | 17:34 | 3 | 16:21 (2) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | | | 16:34 | 25 | 09:40 (3) | 16:04 | 13 | 09:43 (3) |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | | | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 16:33 | 28 | 10:05 (3) | 17:36 | | | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | | | 16:33 | 27 | 09:41 (3) | 16:04 | 12 | 09:43 (3) |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | | | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 16:35 | 28 | 10:06 (3) | 17:38 | | | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | | | 16:31 | 27 | 09:41 (3) | 16:04 | 11 | 09:43 (3) |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | 17:52 (1) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 16:36 | 29 | 10:06 (3) | 17:40 | | | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 3 | 17:55 (1) | 16:29 | 28 | 09:42 (3) | 16:04 | 9 | 09:43 (3) |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | 17:50 (1) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 16:38 | 30 | 10:07 (3) | 17:42 | | | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:48 | 18:32 | 3 | 17:53 (1) | 16:28 | 29 | 09:43 (3) | 16:04 | 8 | 09:43 (3) |
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| 19 | 08:48 | | 09:38 (3) | 07:50 | | | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | | 17:45 (1) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 16:42 | 30 | 10:08 (3) | 17:46 | | | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 4 | 17:49 (1) | 16:25 | 30 | 09:43 (3) | 16:04 | 6 | 09:43 (3) |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | | 17:41 (1) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 16:44 | 30 | 10:09 (3) | 17:49 | | | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 6 | 17:47 (1) | 16:23 | 31 | 09:44 (3) | 16:05 | 5 | 09:42 (3) |
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| | 16:46 | 31 | 10:09 (3) | 17:51 | 7 | 17:14 (1) | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 6 | 17:43 (1) | 16:22 | 31 | 09:45 (3) | 16:05 | 4 | 09:43 (3) |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 17:12 (1) | 06:34 | 06:16 | 05:15 | 04:52 | 05:23 | 06:19 | 07:18 | 08:16 | | | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 16:48 | 30 | 10:08 (3) | 17:53 | 5 | 17:17 (1) | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | | | 16:20 | 30 | 09:45 (3) | 16:05 | 4 | 09:43 (3) |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 17:15 (1) | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | | | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 16:50 | 30 | 10:09 (3) | 17:55 | 4 | 17:19 (1) | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | | | 16:19 | 30 | 09:45 (3) | 16:06 | 4 | 09:44 (3) |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 17:17 (1) | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | | | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 16:52 | 29 | 10:09 (3) | 17:57 | 4 | 17:21 (1) | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | | | 16:18 | 30 | 09:45 (3) | 16:06 | 6 | 09:45 (3) |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 17:18 (1) | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:25 | 07:23 | 07:22 | | | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 16:54 | 29 | 10:09 (3) | 17:59 | 3 | 17:21 (1) | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | | | 16:16 | 29 | 09:45 (3) | 16:07 | 6 | 09:45 (3) |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 17:20 (1) | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | | | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 16:56 | 29 | 10:10 (3) | 18:01 | 3 | 17:23 (1) | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | | | 16:15 | 29 | 09:45 (3) | 16:08 | 7 | 09:47 (3) |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | | | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 16:58 | 27 | 10:09 (3) | 18:03 | | | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | | | 16:14 | 28 | 09:45 (3) | 16:09 | 8 | 09:48 (3) |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | | | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 17:00 | 27 | 10:09 (3) | 18:05 | | | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | | | 16:13 | 28 | 09:45 (3) | 16:10 | 10 | 09:49 (3) |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:31 | | 15:48 (2) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 17:02 | 25 | 10:08 (3) | | | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 | 2 | 15:50 (2) | 16:12 | 27 | 09:45 (3) | 16:10 | 11 | 09:50 (3) |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 | | 15:46 (2) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 17:04 | 38 | 15:59 (2) | | | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:34 | 19:15 | 17:02 | 3 | 15:49 (2) | 16:11 | 26 | 09:45 (3) | 16:11 | 13 | 09:51 (3) |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 15:45 (2) | | | | 09:01 | | 09:38 (3) |
| | 17:06 | 43 | 16:03 (2) | | | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | 3 | 15:48 (2) | | | | 16:12 | 14 | 09:52 (3) |
| Potential sun hours | 242 | | | 269 | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 823 | | | 137 | | | | | | | | | | 33 | | | 669 | | | 400 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,65 | | | 0,74 | | | | | | | | | | 0,86 | | | 0,65 | | | 0,65 | |
| Total reduction | | 0,12 | | | 0,18 | | | | | | | | | | 0,26 | | | 0,10 | | | 0,09 | |
| Total, real | | 96 | | | 25 | | | | | | | | | | 9 | | | 69 | | | 35 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | 16:56 (2) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 09:55 (3) | 17:08 | 25 | 10:10 (3) | 18:07 | 1 | 16:57 (2) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | 16:57 (2) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 15 | 09:56 (3) | 17:10 | 24 | 10:10 (3) | 18:09 | 2 | 17:36 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | 16:57 (2) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 16 | 09:57 (3) | 17:12 | 21 | 10:09 (3) | 18:12 | 4 | 17:38 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | 16:57 (2) | 07:00 | 05:48 | 04:59 |
| | 16:18 | 18 | 09:58 (3) | 17:15 | 19 | 10:08 (3) | 18:14 | 4 | 17:40 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | 17:38 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (3) | 17:17 | 14 | 10:06 (3) | 18:16 | 3 | 17:41 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | 17:40 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 21 | 10:01 (3) | 17:19 | 6 | 10:02 (3) | 18:18 | 2 | 17:42 (1) | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | | 07:12 | 17:40 (1) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 22 | 10:01 (3) | 17:21 | | | 18:20 | 3 | 17:43 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | | 07:09 | 17:41 (1) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 23 | 10:02 (3) | 17:23 | | | 18:22 | 2 | 17:43 (1) | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | | 07:07 | 17:42 (1) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 24 | 10:03 (3) | 17:25 | | | 18:24 | 1 | 17:43 (1) | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | | 07:04 | 17:42 (1) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 25 | 10:05 (3) | 17:27 | | | 18:26 | 1 | 17:43 (1) | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | | 07:02 | 17:43 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 26 | 10:05 (3) | 17:29 | | | 18:28 | 1 | 17:44 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | | 06:59 | 17:42 (1) | 06:40 | 05:32 | 04:54 |
| | 16:29 | 27 | 10:06 (3) | 17:32 | | | 18:30 | 1 | 17:43 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | | 06:57 | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 28 | 10:07 (3) | 17:34 | | | 18:32 | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | | 06:54 | | 06:35 | 05:28 | 04:53 |
| | 16:33 | 29 | 10:08 (3) | 17:36 | | | 18:34 | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | | 06:52 | | 06:33 | 05:27 | 04:53 |
| | 16:35 | 30 | 10:09 (3) | 17:38 | | | 18:36 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | | 06:49 | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 31 | 10:09 (3) | 17:40 | | | 18:38 | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | | 06:47 | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 31 | 10:10 (3) | 17:42 | | | 18:40 | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 32 | 10:11 (3) | 17:44 | | | 18:42 | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | | 06:41 | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 32 | 10:11 (3) | 17:46 | | | 18:44 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | | 06:39 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | 33 | 10:12 (3) | 17:49 | | | 18:46 | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 33 | 10:12 (3) | 17:51 | | | 18:48 | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 16:54 (2) | 06:34 | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 33 | 10:12 (3) | 17:53 | 1 | 16:55 (2) | 18:50 | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 16:54 (2) | 06:31 | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 33 | 10:13 (3) | 17:55 | 1 | 16:55 (2) | 18:52 | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 16:55 (2) | 06:29 | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 33 | 10:13 (3) | 17:57 | 1 | 16:56 (2) | 18:54 | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 16:55 (2) | 06:26 | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 33 | 10:13 (3) | 17:59 | 1 | 16:56 (2) | 18:56 | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 16:56 (2) | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 33 | 10:14 (3) | 18:01 | 1 | 16:57 (2) | 18:58 | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 16:56 (2) | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 32 | 10:14 (3) | 18:03 | 1 | 16:57 (2) | 19:00 | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 16:56 (2) | 06:18 | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 31 | 10:13 (3) | 18:05 | 2 | 16:58 (2) | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | 30 | 10:13 (3) | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 29 | 10:12 (3) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | 05:03 | |
| | 17:06 | 28 | 10:12 (3) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 844 | | | 117 | | | 25 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,64 | | | 0,66 | | | 0,93 | | | |
| Total reduction | | 0,11 | | | 0,16 | | | 0,31 | | | |
| Total, real | | 97 | | | 19 | | | 8 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | | 08:35 | | 09:21 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | | 16:10 | 26 | 09:47 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 18:21 (1) | 07:39 | | | 08:37 | | 09:22 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 1 | 18:22 (1) | 16:56 | | | 16:09 | 25 | 09:47 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 18:20 (1) | 07:41 | | | 08:38 | | 09:23 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 1 | 18:21 (1) | 16:54 | | | 16:08 | 24 | 09:47 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 18:19 (1) | 07:43 | | | 08:40 | | 09:24 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 2 | 18:21 (1) | 16:52 | | | 16:08 | 23 | 09:47 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 18:18 (1) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 2 | 18:20 (1) | 16:50 | 7 | 09:32 (3) | 16:07 | 22 | 09:47 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 18:17 (1) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 2 | 18:19 (1) | 16:48 | 15 | 09:36 (3) | 16:06 | 21 | 09:47 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 18:16 (1) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 2 | 18:18 (1) | 16:46 | 19 | 09:38 (3) | 16:06 | 20 | 09:46 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:32 (2) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 4 | 18:17 (1) | 16:44 | 22 | 09:40 (3) | 16:05 | 18 | 09:46 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 18:12 (1) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 3 | 18:15 (1) | 16:42 | 24 | 09:41 (3) | 16:05 | 16 | 09:45 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 17:31 (2) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 4 | 18:13 (1) | 16:40 | 26 | 09:42 (3) | 16:04 | 15 | 09:46 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 17:30 (2) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 3 | 18:11 (1) | 16:38 | 28 | 09:43 (3) | 16:04 | 13 | 09:45 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 17:29 (2) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 3 | 18:08 (1) | 16:36 | 29 | 09:44 (3) | 16:04 | 12 | 09:45 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 17:29 (2) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 1 | 17:30 (2) | 16:34 | 31 | 09:45 (3) | 16:04 | 10 | 09:44 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 17:28 (2) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 2 | 17:30 (2) | 16:33 | 31 | 09:45 (3) | 16:04 | 8 | 09:43 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 17:29 (2) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 1 | 17:30 (2) | 16:31 | 31 | 09:45 (3) | 16:04 | 6 | 09:43 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 17:28 (2) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 1 | 17:29 (2) | 16:29 | 33 | 09:47 (3) | 16:04 | 3 | 09:42 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 17:27 (2) | 08:09 | | 09:14 (3) | 08:56 | | |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 1 | 17:28 (2) | 16:28 | 33 | 09:47 (3) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 17:26 (2) | 08:11 | | 09:14 (3) | 08:56 | | |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 1 | 17:27 (2) | 16:26 | 33 | 09:47 (3) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 17:25 (2) | 08:13 | | 09:14 (3) | 08:57 | | |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 1 | 17:26 (2) | 16:25 | 33 | 09:47 (3) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 17:24 (2) | 08:15 | | 09:14 (3) | 08:58 | | |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 1 | 17:25 (2) | 16:23 | 33 | 09:47 (3) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | | 08:17 | | 09:15 (3) | 08:59 | | |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | | | 16:22 | 33 | 09:48 (3) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | | 08:19 | | 09:15 (3) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | | | 16:20 | 33 | 09:48 (3) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | | 08:21 | | 09:16 (3) | 09:00 | | |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | | | 16:19 | 32 | 09:48 (3) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | | 08:23 | | 09:16 (3) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | | | 16:18 | 32 | 09:48 (3) | 16:06 | | |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | | 08:25 | | 09:17 (3) | 09:00 | | |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | | | 16:16 | 31 | 09:48 (3) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | | 08:27 | | 09:17 (3) | 09:01 | | |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | | | 16:15 | 31 | 09:48 (3) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | | 08:28 | | 09:18 (3) | 09:01 | | |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | | | 16:14 | 30 | 09:48 (3) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:28 | | | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | | | 16:13 | 29 | 09:48 (3) | 16:10 | 5 | 09:49 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | | | 16:12 | 28 | 09:48 (3) | 16:10 | 8 | 09:51 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | | | 16:11 | 27 | 09:48 (3) | 16:11 | 9 | 09:51 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | | | | | 09:01 | | 09:42 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | | | | | | 16:12 | 11 | 09:53 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 36 | | | 734 | | | 295 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,91 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | | | 0,28 | | | 0,10 | | | 0,09 | |
| Total, real | | | | | | | | 10 | | | 74 | | | 25 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | | 07:27 | 17:33 (1) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 32 | 10:29 (3) | 17:08 | | | 18:07 | 2 | 17:35 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | | 07:24 | | 17:35 (1) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 31 | 10:28 (3) | 17:10 | | | 18:09 | 2 | 17:37 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | | 07:22 | | 17:35 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 33 | 10:30 (3) | 17:12 | | | 18:12 | 2 | 17:37 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | | 07:19 | | 17:37 (1) | 07:00 | 05:48 | 04:59 |
| | 16:18 | 33 | 10:30 (3) | 17:15 | | | 18:14 | 1 | 17:38 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | | 07:17 | | | 06:58 | 05:46 | 04:58 |
| | 16:19 | 33 | 10:31 (3) | 17:17 | | | 18:16 | | | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 33 | 10:31 (3) | 17:19 | | | 18:18 | | | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | | 07:12 | | | 06:53 | 05:42 | 04:56 |
| | 16:22 | 33 | 10:31 (3) | 17:21 | | | 18:20 | | | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | | 07:09 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 34 | 10:32 (3) | 17:23 | | | 18:22 | | | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | | 07:07 | | | 06:48 | 05:38 | 04:55 |
| | 16:25 | 33 | 10:32 (3) | 17:25 | | | 18:24 | | | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | | 07:04 | | | 06:45 | 05:36 | 04:54 |
| | 16:26 | 34 | 10:34 (3) | 17:27 | | | 18:26 | | | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 16:26 (2) | 07:02 | | | 06:43 | 05:34 | 04:54 |
| | 16:28 | 34 | 10:33 (3) | 17:29 | 14 | 16:40 (2) | 18:28 | | | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 16:22 (2) | 06:59 | | | 06:40 | 05:32 | 04:54 |
| | 16:29 | 34 | 10:34 (3) | 17:32 | 17 | 16:43 (2) | 18:30 | | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 16:20 (2) | 06:57 | | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 34 | 10:34 (3) | 17:34 | 8 | 16:46 (2) | 18:32 | | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 16:42 (2) | 06:54 | | | 06:35 | 05:28 | 04:53 |
| | 16:33 | 34 | 10:35 (3) | 17:36 | 6 | 16:48 (2) | 18:34 | | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 16:44 (2) | 06:52 | | | 06:33 | 05:27 | 04:53 |
| | 16:35 | 33 | 10:35 (3) | 17:38 | 5 | 16:49 (2) | 18:36 | | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 16:47 (2) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | 33 | 10:35 (3) | 17:40 | 4 | 16:51 (2) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 16:49 (2) | 06:47 | | | 06:28 | 05:23 | 04:52 |
| | 16:38 | 32 | 10:35 (3) | 17:42 | 4 | 16:53 (2) | 18:40 | | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 16:49 (2) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | 32 | 10:36 (3) | 17:44 | 4 | 16:53 (2) | 18:42 | | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 16:51 (2) | 06:41 | | | 06:23 | 05:20 | 04:52 |
| | 16:42 | 31 | 10:35 (3) | 17:46 | 3 | 16:54 (2) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 16:53 (2) | 06:39 | | | 06:20 | 05:18 | 04:52 |
| | 16:44 | 31 | 10:36 (3) | 17:49 | 2 | 16:55 (2) | 18:46 | | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 16:53 (2) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | 30 | 10:35 (3) | 17:51 | 2 | 16:55 (2) | 18:48 | | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 16:54 (2) | 06:34 | | | 06:16 | 05:15 | 04:52 |
| | 16:48 | 28 | 10:34 (3) | 17:53 | 2 | 16:56 (2) | 18:50 | | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 16:54 (2) | 06:31 | | | 06:13 | 05:13 | 04:53 |
| | 16:50 | 28 | 10:35 (3) | 17:55 | 2 | 16:56 (2) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 16:55 (2) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 26 | 10:34 (3) | 17:57 | 2 | 16:57 (2) | 18:54 | | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 16:55 (2) | 06:26 | | | 06:09 | 05:10 | 04:53 |
| | 16:54 | 24 | 10:33 (3) | 17:59 | 1 | 16:56 (2) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 16:56 (2) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 22 | 10:33 (3) | 18:01 | 11 | 17:30 (1) | 18:58 | | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 17:28 (1) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 19 | 10:31 (3) | 18:03 | 4 | 17:32 (1) | 19:00 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 17:31 (1) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 15 | 10:29 (3) | 18:05 | 3 | 17:34 (1) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | 10 | 10:27 (3) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 859 | | | 94 | | | 7 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,56 | | | 0,85 | | | 0,94 | | | |
| Total reduction | | 0,10 | | | 0,20 | | | 0,31 | | | |
| Total, real | | 84 | | | 19 | | | 2 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | | 07:37 | | | 08:35 | | 09:41 (3) |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | | 16:10 | 34 | 10:15 (3) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | | 07:39 | | | 08:37 | | 09:42 (3) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | 16:56 | | | 16:09 | 34 | 10:16 (3) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | 07:41 | | | 08:38 | | 09:43 (3) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | | 16:54 | | | 16:08 | 33 | 10:16 (3) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | 07:43 | | | 08:40 | | 09:44 (3) |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | | | 16:52 | | | 16:08 | 33 | 10:17 (3) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | | 07:45 | | | 08:41 | | 09:43 (3) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | | | 16:07 | 34 | 10:17 (3) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | 07:47 | | | 08:43 | | 09:44 (3) |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | | | 16:48 | | | 16:06 | 33 | 10:17 (3) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | | 08:44 | | 09:44 (3) |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | | | 16:06 | 33 | 10:17 (3) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | | 07:51 | | | 08:46 | | 09:45 (3) |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | | | 16:05 | 33 | 10:18 (3) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | | 08:47 | | 09:45 (3) |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | | | 16:05 | 33 | 10:18 (3) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 18:10 (1) | 07:55 | | | 08:48 | | 09:47 (3) |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 2 | 18:12 (1) | 16:40 | | | 16:04 | 32 | 10:19 (3) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 18:09 (1) | 07:57 | | | 08:50 | | 09:47 (3) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 2 | 18:11 (1) | 16:38 | | | 16:04 | 32 | 10:19 (3) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 18:07 (1) | 07:59 | | | 08:51 | | 09:47 (3) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 2 | 18:09 (1) | 16:36 | | | 16:04 | 32 | 10:19 (3) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 18:05 (1) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 3 | 18:08 (1) | 16:34 | 10 | 09:59 (3) | 16:04 | 31 | 10:19 (3) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 18:02 (1) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 4 | 18:06 (1) | 16:33 | 15 | 10:01 (3) | 16:04 | 31 | 10:19 (3) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 17:59 (1) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 5 | 18:04 (1) | 16:31 | 19 | 10:03 (3) | 16:04 | 30 | 10:19 (3) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 17:28 (2) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 10 | 18:01 (1) | 16:29 | 22 | 10:06 (3) | 16:04 | 31 | 10:20 (3) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 17:27 (2) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 1 | 17:28 (2) | 16:28 | 24 | 10:07 (3) | 16:04 | 30 | 10:20 (3) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 17:26 (2) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | | 21:04 | | 19:46 | | 18:30 | 2 | 17:28 (2) | 16:26 | 26 | 10:08 (3) | 16:04 | 30 | 10:21 (3) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 17:25 (2) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 2 | 17:27 (2) | 16:25 | 28 | 10:09 (3) | 16:04 | 30 | 10:22 (3) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | | 17:24 (2) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 2 | 17:26 (2) | 16:23 | 28 | 10:09 (3) | 16:05 | 30 | 10:21 (3) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | | 17:23 (2) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 2 | 17:25 (2) | 16:22 | 30 | 10:11 (3) | 16:05 | 30 | 10:22 (3) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | | 17:23 (2) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 2 | 17:25 (2) | 16:20 | 31 | 10:12 (3) | 16:05 | 30 | 10:22 (3) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | | 17:21 (2) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 3 | 17:24 (2) | 16:19 | 31 | 10:12 (3) | 16:06 | 30 | 10:23 (3) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | | 17:19 (2) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 4 | 17:23 (2) | 16:18 | 32 | 10:13 (3) | 16:06 | 31 | 10:24 (3) |
| 25 | 05:27 | | 06:25 | | 07:23 | | 07:22 | | 16:18 (2) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 4 | 16:22 (2) | 16:16 | 32 | 10:13 (3) | 16:07 | 30 | 10:24 (3) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 16:16 (2) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 4 | 16:20 (2) | 16:15 | 33 | 10:14 (3) | 16:08 | 30 | 10:25 (3) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 16:14 (2) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 5 | 16:19 (2) | 16:14 | 33 | 10:14 (3) | 16:09 | 31 | 10:26 (3) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:28 | | 16:11 (2) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | | 20:39 | | 19:20 | | 17:07 | 6 | 16:17 (2) | 16:13 | 34 | 10:15 (3) | 16:10 | 30 | 10:26 (3) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | | 15:50 (2) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 10 | 16:15 (2) | 16:12 | 33 | 10:15 (3) | 16:10 | 31 | 10:27 (3) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | | 15:52 (2) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 20 | 16:12 (2) | 16:11 | 34 | 10:16 (3) | 16:11 | 32 | 10:27 (3) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 15:56 (2) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | | 20:32 | | | | 17:00 | 12 | 16:08 (2) | | | | 16:12 | 31 | 10:27 (3) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | | | 107 | | | 495 | | | 975 | |
| Sun reduction | | | | | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,86 | | | 0,56 | | | 0,56 | |
| Total reduction | | | | | | | | 0,26 | | | 0,09 | | | 0,07 | |
| Total, real | | | | | | | | 28 | | | 42 | | | 71 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 (5) | 05:40 | 21:02 (2) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 13 | 05:56 (5) | 21:40 1 | 21:03 (2) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:40 (5) | 05:41 | | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 16 | 05:56 (5) | 21:38 | | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:42 (5) | 05:43 | | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 13 | 05:55 (5) | 21:36 | | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:43 (5) | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 11 | 05:54 (5) | 21:34 | | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:44 (5) | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 8 | 05:52 (5) | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 (5) | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 1 | 05:49 (5) | 21:30 | | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 05:40 (5) | 05:02 | | 05:51 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 6 05:46 (5) | 22:15 | | 21:28 | | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 05:37 (5) | 05:03 | | 05:52 | | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 10 05:47 (5) | 22:14 | | 21:26 | | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 05:37 (5) | 05:04 | | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 12 05:49 (5) | 22:13 | | 21:24 | | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 05:35 (5) | 05:06 | | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 15 05:50 (5) | 22:12 | | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 20:54 (2) | 04:54 05:35 (5) | 05:07 | | 05:58 | | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 2 20:56 (2) | 22:13 16 05:51 (5) | 22:11 | | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05 (4) | 05:32 | 04:54 05:35 (5) | 05:08 | | 06:00 | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 6 07:11 (4) | 21:30 | 22:14 10 05:52 (5) | 22:10 | | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 07:02 (4) | 05:30 | 04:53 05:35 (5) | 05:09 | | 06:02 | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 10 07:12 (4) | 21:32 | 22:15 8 05:53 (5) | 22:09 | | 21:15 | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 07:00 (4) | 05:28 | 04:53 05:34 (5) | 05:11 | | 06:04 | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 13 07:13 (4) | 21:33 | 22:16 8 05:53 (5) | 22:08 | | 21:13 | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 06:58 (4) | 05:27 | 04:53 05:34 (5) | 05:12 | | 06:06 | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 16 07:14 (4) | 21:35 | 22:16 7 05:54 (5) | 22:07 | | 21:10 | | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:55 (4) | 05:25 | 04:52 05:34 (5) | 05:13 | | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 19 07:14 (4) | 21:37 | 22:17 7 05:55 (5) | 22:05 | | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 06:54 (4) | 05:23 | 04:52 05:34 (5) | 05:15 | | 06:09 | | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 20 07:14 (4) | 21:39 | 22:17 6 05:40 (5) | 22:04 | | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 06:53 (4) | 05:21 | 04:52 05:34 (5) | 05:16 | | 06:11 | 07:04 (4) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 21 07:14 (4) | 21:41 | 22:18 6 05:40 (5) | 22:03 | | 21:03 8 | 07:12 (4) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:53 (4) | 05:20 21:08 (2) | 04:52 05:34 (5) | 05:18 | | 06:13 | 07:02 (4) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 21 07:14 (4) | 21:42 1 21:09 (2) | 22:18 6 05:40 (5) | 22:02 | | 21:01 13 | 07:15 (4) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 06:54 (4) | 05:18 | 04:52 05:34 (5) | 05:19 | | 06:15 | 07:01 (4) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 19 07:13 (4) | 21:44 | 22:19 6 05:40 (5) | 22:00 | | 20:59 15 | 07:16 (4) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 06:54 (4) | 05:16 | 04:52 05:34 (5) | 05:21 | | 06:17 | 07:00 (4) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 19 07:13 (4) | 21:46 | 22:19 6 05:40 (5) | 21:59 | | 20:56 17 | 07:17 (4) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 06:54 (4) | 05:15 | 04:52 05:35 (5) | 05:23 21:18 (2) | | 06:19 | 06:58 (4) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 17 07:11 (4) | 21:47 | 22:19 6 05:41 (5) | 21:57 1 21:19 (2) | | 20:54 19 | 07:17 (4) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:55 (4) | 05:13 | 04:53 05:35 (5) | 05:24 | | 06:21 | 06:57 (4) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 15 07:10 (4) | 21:49 | 22:19 6 05:41 (5) | 21:56 | | 20:52 20 | 07:17 (4) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 06:57 (4) | 05:12 | 04:53 05:35 (5) | 05:26 21:18 (2) | | 06:23 | 06:57 (4) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 12 07:09 (4) | 21:51 | 22:19 7 05:57 (5) | 21:54 1 21:19 (2) | | 20:49 20 | 07:17 (4) | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 06:59 (4) | 05:10 | 04:53 05:36 (5) | 05:27 | | 06:25 | 06:57 (4) | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 7 07:06 (4) | 21:52 | 22:19 6 05:42 (5) | 21:52 | | 20:47 20 | 07:17 (4) | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 05:36 (5) | 05:29 | | 06:26 | 06:57 (4) | 07:25 | 07:24 | 08:26 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 7 05:57 (5) | 21:51 | | 20:44 20 | 07:17 (4) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 05:37 (5) | 05:31 | | 06:28 | 06:57 (4) | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 6 05:43 (5) | 21:49 | | 20:42 19 | 07:16 (4) | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 05:37 (5) | 05:33 | | 06:30 | 06:59 (4) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 7 05:57 (5) | 21:47 | | 20:39 16 | 07:15 (4) | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 05:38 (5) | 05:34 | | 06:32 | 07:01 (4) | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 9 05:57 (5) | 21:45 | | 20:37 13 | 07:14 (4) | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 05:38 (5) | 05:36 | | 06:34 | 07:03 (4) | 07:33 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 10 05:56 (5) | 21:44 | | 20:34 10 | 07:13 (4) | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | | 06:36 | 07:05 (4) | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | | 20:32 6 | 07:11 (4) | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 215 | 3 | 193 | 64 | 217 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | 0,88 | 0,79 | 0,80 | 0,98 | | | | |
| Total reduction | | | | 0,39 | 0,45 | 0,38 | 0,39 | 0,50 | | | | |
| Total, real | | | | 83 | 1 | 74 | 25 | 109 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 19:03 (3) | 05:55 | 05:02 | 04:57 | 05:40 | 07:52 (4) | 06:38 07:27 (4) | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 12 19:15 (3) | 21:09 | 22:02 | 22:18 | 21:40 6 | 07:58 (4) | 20:29 4 07:31 (4) | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 19:03 (3) | 05:53 | 05:01 | 04:57 | 05:41 | 07:50 (4) | 06:40 07:28 (4) | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 12 19:15 (3) | 21:11 | 22:04 | 22:18 | 21:38 10 | 08:00 (4) | 20:27 5 07:33 (4) | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 19:03 (3) | 05:51 | 05:00 | 04:58 | 05:43 | 07:50 (4) | 06:42 07:29 (4) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 12 19:15 (3) | 21:13 | 22:05 | 22:17 | 21:36 13 | 08:03 (4) | 20:24 6 07:35 (4) | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:04 (3) | 05:48 | 04:59 | 04:59 | 05:45 | 07:49 (4) | 06:43 07:31 (4) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 11 19:15 (3) | 21:14 | 22:06 | 22:17 | 21:34 16 | 08:05 (4) | 20:22 6 07:37 (4) | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 07:45 (4) | 05:46 | 04:58 | 05:00 | 05:47 | 07:48 (4) | 06:45 07:33 (4) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 21 19:15 (3) | 21:16 | 22:07 | 22:16 | 21:32 19 | 08:07 (4) | 20:19 8 07:41 (4) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 07:40 (4) | 05:44 | 04:57 | 05:01 | 05:49 | 07:46 (4) | 06:47 07:35 (4) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 29 19:15 (3) | 21:18 | 22:08 | 22:15 | 21:30 22 | 08:08 (4) | 20:17 18 07:54 (4) | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 07:36 (4) | 05:42 | 04:56 | 05:02 | 05:51 | 07:44 (4) | 06:49 07:40 (4) | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 35 19:15 (3) | 21:20 | 22:10 | 22:15 | 21:28 25 | 08:09 (4) | 20:14 9 07:49 (4) | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 07:34 (4) | 05:40 | 04:56 | 05:03 | 05:52 | 07:43 (4) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 38 19:15 (3) | 21:22 | 22:11 | 22:14 | 21:26 28 | 08:11 (4) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 07:31 (4) | 05:38 | 04:55 | 05:04 | 05:54 | 07:40 (4) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 41 19:15 (3) | 21:24 | 22:12 | 22:13 | 21:24 31 | 08:11 (4) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 07:30 (4) | 05:36 | 04:54 | 05:06 | 05:56 | 07:38 (4) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 39 19:15 (3) | 21:26 | 22:12 | 22:12 | 21:21 34 | 08:12 (4) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 07:28 (4) | 05:34 | 04:54 | 05:07 | 05:58 | 07:35 (4) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 39 08:07 (4) | 21:28 | 22:13 | 22:11 | 21:19 38 | 08:13 (4) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:27 (4) | 05:32 | 04:53 | 05:08 | 06:00 | 07:32 (4) | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 41 08:08 (4) | 21:30 | 22:14 | 22:10 | 21:17 42 | 08:14 (4) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 07:25 (4) | 05:30 | 04:53 | 05:09 | 06:02 | 07:29 (4) | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 43 08:08 (4) | 21:32 | 22:15 | 22:09 | 21:15 44 | 08:13 (4) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 07:24 (4) | 05:28 | 04:53 | 05:11 | 06:04 | | 07:02 19:21 (3) | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 45 08:09 (4) | 21:33 | 22:16 | 22:08 | 21:13 | | 19:56 1 19:22 (3) | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 05:12 | 06:06 | | 07:04 19:20 (3) | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | | 19:53 2 19:22 (3) | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 19:19 (3) | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 2 19:21 (3) | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 19:17 (3) | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | | 19:48 2 19:19 (3) | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 19:14 (3) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | | 19:46 2 19:16 (3) | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | | 07:12 19:10 (3) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 4 19:14 (3) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:25 (4) | 07:14 19:02 (3) | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 1 | 07:26 (4) | 19:41 9 19:11 (3) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:25 (4) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 1 | 07:26 (4) | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:22 | 06:19 | 07:24 (4) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 1 | 07:25 (4) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:17 (3) | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:24 (4) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 6 18:23 (3) | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 2 | 07:26 (4) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 18:13 (3) | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:24 (4) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 14 18:27 (3) | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 2 | 07:26 (4) | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:10 (3) | 06:09 | 05:10 | 04:53 | 05:27 | 06:24 | 07:24 (4) | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 18 18:28 (3) | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 2 | 07:26 (4) | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 18:09 (3) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 (4) | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 22 18:31 (3) | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 2 | 07:27 (4) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 18:07 (3) | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:24 (4) | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 24 18:31 (3) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 3 | 07:27 (4) | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 18:05 (3) | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:25 (4) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 26 18:31 (3) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 2 | 07:27 (4) | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 19:05 (3) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:25 (4) | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 27 19:32 (3) | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 3 | 07:28 (4) | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 19:04 (3) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:26 (4) | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 11 19:15 (3) | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 3 | 07:29 (4) | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 19:04 (3) | | 05:03 | | 05:38 | 06:36 | 07:27 (4) | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 11 19:15 (3) | | 22:01 | | 21:42 | 20:32 4 | 07:31 (4) | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | 159 | 418 | | | | 354 | 78 | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | 0,51 | 0,40 | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | 1,00 | 1,00 | | | |
| Wind dir. red. | | | 1,00 | 1,00 | | | | 1,00 | 1,00 | | | |
| Total reduction | | | 0,34 | 0,39 | | | | 0,51 | 0,39 | | | |
| Total, real | | | 54 | 164 | | | | 182 | 31 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | | May | | | June | July | | | August | | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | | 05:55 | | | 05:02 | 04:57 | | | 05:40 | | 06:49 (4) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | | 21:09 | | | 22:02 | 22:18 | | | 21:40 | 4 | 06:53 (4) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 19:40 (3) | 05:53 | | | 05:01 | 04:57 | | | 05:41 | | 06:49 (4) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 4 | 19:44 (3) | 21:11 | | | 22:04 | 22:18 | | | 21:38 | 4 | 06:53 (4) | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 19:40 (3) | 05:51 | | | 05:00 | 04:58 | | | 05:43 | | 06:50 (4) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 6 | 19:46 (3) | 21:13 | | | 22:05 | 22:17 | | | 21:36 | 5 | 06:55 (4) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 19:40 (3) | 05:48 | | | 04:59 | 04:59 | | | 05:45 | | 06:51 (4) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 6 | 19:46 (3) | 21:14 | | | 22:06 | 22:17 | | | 21:34 | 5 | 06:56 (4) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 19:40 (3) | 05:46 | | | 04:58 | 05:00 | | | 05:47 | | 06:52 (4) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 6 | 19:46 (3) | 21:16 | | | 22:07 | 22:16 | | | 21:32 | 5 | 06:57 (4) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 19:40 (3) | 05:44 | | 06:43 (4) | 04:57 | 05:01 | | | 05:49 | | 06:52 (4) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 6 | 19:46 (3) | 21:18 | 2 | 06:45 (4) | 22:08 | 22:15 | | | 21:30 | 6 | 06:58 (4) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 19:40 (3) | 05:42 | | 06:42 (4) | 04:56 | 05:02 | | | 05:51 | | 06:53 (4) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 5 | 19:45 (3) | 21:20 | 3 | 06:45 (4) | 22:10 | 22:15 | | | 21:28 | 7 | 07:00 (4) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 19:40 (3) | 05:40 | | 06:41 (4) | 04:56 | 05:03 | | | 05:52 | | 06:55 (4) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 5 | 19:45 (3) | 21:22 | 4 | 06:45 (4) | 22:11 | 22:14 | | | 21:26 | 6 | 07:01 (4) | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 19:40 (3) | 05:38 | | 06:40 (4) | 04:55 | 05:04 | | | 05:54 | | 06:55 (4) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 4 | 19:44 (3) | 21:24 | 5 | 06:45 (4) | 22:12 | 22:13 | | | 21:24 | 7 | 07:02 (4) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 19:40 (3) | 05:36 | | 06:39 (4) | 04:54 | 05:06 | | | 05:56 | | 06:57 (4) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 4 | 19:44 (3) | 21:26 | 6 | 06:45 (4) | 22:12 | 22:12 | | | 21:21 | 8 | 07:05 (4) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 19:40 (3) | 05:34 | | 06:38 (4) | 04:54 | 05:07 | | | 05:58 | | 06:59 (4) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 2 | 19:42 (3) | 21:28 | 37 | 07:15 (4) | 22:13 | 22:11 | | | 21:19 | 9 | 07:08 (4) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 19:40 (3) | 05:32 | | 06:38 (4) | 04:53 | 05:08 | | | 06:00 | | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 1 | 19:41 (3) | 21:30 | 37 | 07:15 (4) | 22:14 | 22:10 | | | 21:17 | | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | | 05:30 | | 06:37 (4) | 04:53 | 05:09 | | | 06:02 | | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | | 21:32 | 38 | 07:15 (4) | 22:15 | 22:09 | | | 21:15 | | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | | 05:28 | | 06:36 (4) | 04:53 | 05:11 | | | 06:04 | | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | | 21:33 | 39 | 07:15 (4) | 22:16 | 22:08 | | | 21:13 | | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | | 05:27 | | 06:37 (4) | 04:52 | 05:12 | | | 06:06 | | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | | 21:35 | 38 | 07:15 (4) | 22:16 | 22:07 | | | 21:10 | | | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | | 05:25 | | 06:36 (4) | 04:52 | 05:13 | | | 06:07 | | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | | 21:37 | 39 | 07:15 (4) | 22:17 | 22:05 | | | 21:08 | | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | | 05:23 | | 06:36 (4) | 04:52 | 05:15 | | | 06:09 | | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | | 21:39 | 39 | 07:15 (4) | 22:17 | 22:04 | | | 21:06 | | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | | 05:21 | | 06:35 (4) | 04:52 | 05:16 | | | 06:11 | | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | | 21:41 | 40 | 07:15 (4) | 22:18 | 22:03 | | | 21:03 | | | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | | 05:20 | | 06:35 (4) | 04:52 | 05:18 | | | 06:13 | | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | 21:42 | 40 | 07:15 (4) | 22:18 | 22:01 | | | 21:01 | | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | | 05:18 | | 06:35 (4) | 04:52 | 05:19 | | | 06:15 | | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | | 21:44 | 40 | 07:15 (4) | 22:19 | 22:00 | | | 20:59 | | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | | 05:16 | | 06:51 (4) | 04:52 | 05:21 | | | 06:17 | | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | | 21:46 | 24 | 07:15 (4) | 22:19 | 21:59 | | | 20:56 | | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | | 05:15 | | 06:54 (4) | 04:52 | 05:22 | | | 06:19 | | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | | 21:47 | 45 | 07:39 (4) | 22:19 | 21:57 | | | 20:54 | | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | | 05:13 | | 06:57 (4) | 04:53 | 05:24 | | 06:45 (4) | 06:21 | | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | | 21:49 | 42 | 07:39 (4) | 22:19 | 21:56 | 2 | 06:47 (4) | 20:52 | | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | | 05:12 | | 06:59 (4) | 04:53 | 05:26 | | 06:45 (4) | 06:23 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | | 21:51 | 41 | 07:40 (4) | 22:19 | 21:54 | 3 | 06:48 (4) | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | | 05:10 | | 07:00 (4) | 04:53 | 05:27 | | 06:46 (4) | 06:24 | | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | | 21:52 | 39 | 07:39 (4) | 22:19 | 21:52 | 3 | 06:49 (4) | 20:47 | | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | | 05:09 | | 07:02 (4) | 04:54 | 05:29 | | 06:46 (4) | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | | 21:54 | 37 | 07:39 (4) | 22:19 | 21:51 | 3 | 06:49 (4) | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | | 05:08 | | 07:03 (4) | 04:54 | 05:31 | | 06:47 (4) | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | | 21:55 | 37 | 07:40 (4) | 22:19 | 21:49 | 3 | 06:50 (4) | 20:42 | | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | | 07:03 (4) | 05:06 | | 07:05 (4) | 04:55 | 05:33 | | 06:46 (4) | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 10 | 07:13 (4) | 21:57 | 35 | 07:40 (4) | 22:19 | 21:47 | 4 | 06:50 (4) | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 06:58 (4) | 05:05 | | 07:06 (4) | 04:55 | 05:34 | | 06:47 (4) | 06:32 | | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 17 | 07:15 (4) | 21:58 | 34 | 07:40 (4) | 22:19 | 21:45 | 4 | 06:51 (4) | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:54 (4) | 05:04 | | 07:07 (4) | 04:56 | 05:36 | | 06:48 (4) | 06:34 | | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 13 | 07:07 (4) | 22:00 | 33 | 07:40 (4) | 22:18 | 21:44 | 4 | 06:52 (4) | 20:34 | | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 07:08 (4) | | 05:38 | | 06:48 (4) | 06:36 | | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | 32 | 07:40 (4) | | 21:42 | 4 | 06:52 (4) | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | | | 520 | 521 | | | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 89 | | | 806 | | | | 30 | | | 66 | | | | | |
| Sun reduction | | | | | 0,39 | | | 0,52 | | | | 0,49 | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,98 | | | 0,95 | | | | 0,95 | | | 0,95 | | | | | |
| Total reduction | | | | | 0,39 | | | 0,49 | | | | 0,46 | | | 0,49 | | | | | |
| Total, real | | | | | 34 | | | 397 | | | | 14 | | | 32 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:40 | | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:58 | 05:41 | | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | | 21:11 | 22:04 | 22:18 | 21:38 | | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 05:00 | 04:58 | 05:43 | | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | | 21:14 | 22:06 | 22:17 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 05:42 | 04:56 | 05:02 | 05:51 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | 22:10 | 22:15 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:11 | 22:14 | 21:26 | | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 19:50 (3) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 7 19:57 (3) | 21:24 | 22:12 | 22:13 | 21:24 | | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 19:48 (3) | 05:36 | 04:54 | 05:06 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 11 19:59 (3) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 19:45 (3) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 16 20:01 (3) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 19:44 (3) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 19 20:03 (3) | 21:30 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 19:42 (3) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 22 20:04 (3) | 21:32 | 22:15 | 22:09 | 21:15 | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 19:42 (3) | 05:28 | 04:53 | 05:11 | 06:04 | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 24 20:06 (3) | 21:33 | 22:16 | 22:08 | 21:13 | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 19:41 (3) | 05:27 | 04:52 | 05:12 | 06:06 | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 25 20:06 (3) | 21:35 | 22:16 | 22:07 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 19:40 (3) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 26 20:06 (3) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 19:40 (3) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 26 20:06 (3) | 21:39 | 22:17 | 22:04 | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 19:39 (3) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 26 20:05 (3) | 21:41 | 22:18 | 22:03 | 21:03 | | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 19:40 (3) | 05:20 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 25 20:05 (3) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 19:40 (3) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 25 20:05 (3) | 21:44 | 22:19 | 22:00 | 20:59 | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 19:40 (3) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 23 20:03 (3) | 21:46 | 22:19 | 21:59 | 20:56 | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 19:41 (3) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 22 20:03 (3) | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 19:42 (3) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 20 20:02 (3) | 21:49 | 22:19 | 21:55 | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 19:43 (3) | 05:12 | 04:53 | 05:26 | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 18 20:01 (3) | 21:51 | 22:19 | 21:54 | 20:49 | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 19:44 (3) | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 14 19:58 (3) | 21:52 | 22:19 | 21:52 | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 19:46 (3) | 05:09 | 04:54 | 05:29 | 06:26 | 20:08 (3) | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 9 19:55 (3) | 21:54 | 22:19 | 21:51 | 20:44 | 1 20:09 (3) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 20:07 (3) | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 | 1 20:08 (3) | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 05:06 | 04:55 | 05:33 | 06:30 | 20:06 (3) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 | 1 20:07 (3) | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 | 20:05 (3) | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 22:19 | 21:45 | 20:37 | 2 20:07 (3) | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 20:04 (3) | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 22:18 | 21:44 | 20:34 | 1 20:05 (3) | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 358 | | | | | 6 | | | | |
| Sun reduction | | | | | 0,39 | | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,99 | | | | | 0,99 | | | | |
| Total reduction | | | | | 0,39 | | | | | 0,51 | | | | |
| Total, real | | | | | 139 | | | | | 3 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | 04:57 | | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | | 22:02 | 22:18 | | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 19:42 (3) | 05:53 | 05:01 | 04:57 | | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 2 | 19:44 (3) | 21:11 | 22:04 | 22:18 | | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 19:40 (3) | 05:51 | 05:00 | 04:58 | | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 6 | 19:46 (3) | 21:13 | 22:05 | 22:17 | | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 19:40 (3) | 05:48 | 04:59 | 04:59 | | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 8 | 19:48 (3) | 21:14 | 22:06 | 22:17 | | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 19:40 (3) | 05:46 | 04:58 | 05:00 | | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 9 | 19:49 (3) | 21:16 | 22:07 | 22:16 | | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 19:40 (3) | 05:44 | 04:57 | 05:01 | | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 12 | 19:52 (3) | 21:18 | 22:08 | 22:15 | | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 19:40 (3) | 05:42 | 04:56 | 05:02 | | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 13 | 19:53 (3) | 21:20 | 22:10 | 22:15 | | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 19:40 (3) | 05:40 | 04:56 | 05:03 | | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 14 | 19:54 (3) | 21:22 | 22:11 | 22:14 | | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 19:40 (3) | 05:38 | 04:55 | 05:04 | | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 14 | 19:54 (3) | 21:24 | 22:12 | 22:13 | | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 19:40 (3) | 05:36 | 04:54 | 05:06 | | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 14 | 19:54 (3) | 21:26 | 22:12 | 22:12 | | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 19:40 (3) | 05:34 | 04:54 | 05:07 | | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 13 | 19:53 (3) | 21:28 | 22:13 | 22:11 | | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 19:40 (3) | 05:32 | 04:53 | 05:08 | | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 13 | 19:53 (3) | 21:30 | 22:14 | 22:10 | | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 19:40 (3) | 05:30 | 04:53 | 05:09 | | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 12 | 19:52 (3) | 21:32 | 22:15 | 22:09 | | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | | 19:40 (3) | 05:28 | 04:53 | 05:11 | | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 11 | 19:51 (3) | 21:33 | 22:16 | 22:08 | | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 19:40 (3) | 05:27 | 04:52 | 05:12 | | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 10 | 19:50 (3) | 21:35 | 22:16 | 22:07 | | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 19:40 (3) | 05:25 | 04:52 | 05:13 | | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 8 | 19:48 (3) | 21:37 | 22:17 | 22:05 | | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 19:40 (3) | 05:23 | 04:52 | 05:15 | | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 6 | 19:46 (3) | 21:39 | 22:17 | 22:04 | | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 19:37 (3) | 05:21 | 06:29 (4) | 04:52 | 05:16 | | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 4 | 19:41 (3) | 21:41 | 16 | 06:45 (4) | 22:18 | 22:03 | | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | | 05:20 | | 06:26 (4) | 04:52 | 05:18 | | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | | 21:42 | 23 | 06:49 (4) | 22:18 | 22:01 | | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | | 05:18 | | 06:23 (4) | 04:52 | 05:19 | | 06:35 (4) | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | | 21:44 | 27 | 06:50 (4) | 22:19 | 22:00 | 2 | 06:37 (4) | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | | 05:16 | | 06:23 (4) | 04:52 | 05:21 | | 06:35 (4) | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | | 21:46 | 13 | 06:53 (4) | 22:19 | 21:59 | 5 | 06:40 (4) | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | | 05:15 | | 06:23 (4) | 04:52 | 05:22 | | 06:33 (4) | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | | 21:47 | 7 | 06:30 (4) | 22:19 | 21:57 | 9 | 06:42 (4) | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | | 05:13 | | 06:25 (4) | 04:53 | 05:24 | | 06:33 (4) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | | 21:49 | 3 | 06:28 (4) | 22:19 | 21:55 | 14 | 06:47 (4) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | | 05:12 | | | 04:53 | 05:26 | | 06:34 (4) | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | | 21:51 | | | 22:19 | 21:54 | 14 | 06:48 (4) | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | | 05:10 | | | 04:53 | 05:27 | | 06:37 (4) | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | | 21:52 | | | 22:19 | 21:52 | 12 | 06:49 (4) | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | | 05:09 | | | 04:54 | 05:29 | | 06:41 (4) | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | | 21:54 | | | 22:19 | 21:51 | 8 | 06:49 (4) | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | | | 05:08 | | | 04:54 | 05:31 | | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | | 21:55 | | | 22:19 | 21:49 | | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | | 05:06 | | | 04:55 | 05:33 | | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | | 21:57 | | | 22:19 | 21:47 | | | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | | 05:05 | | | 04:55 | 05:34 | | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | | 21:58 | | | 22:19 | 21:45 | | | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | | 05:04 | | | 04:56 | 05:36 | | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | | 22:00 | | | 22:18 | 21:44 | | | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | | | 05:38 | | | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | | 22:01 | | | | 21:42 | | | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 169 | | 89 | | | 64 | | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | 0,49 | | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 1,00 | | 0,89 | | | 0,89 | | | | | |
| Total reduction | | | | | 0,39 | | 0,46 | | | 0,44 | | | | | |
| Total, real | | | | | 67 | | 41 | | | 28 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 19:40 (3) | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 4 19:44 (3) | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 19:40 (3) | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 6 19:46 (3) | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 19:40 (3) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 8 19:48 (3) | 21:14 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 19:40 (3) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 9 19:49 (3) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 19:40 (3) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 12 19:52 (3) | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 19:40 (3) | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 13 19:53 (3) | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 19:40 (3) | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 14 19:54 (3) | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 19:40 (3) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 13 19:53 (3) | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 19:40 (3) | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 12 19:52 (3) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 19:40 (3) | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 11 19:51 (3) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 19:40 (3) | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 10 19:50 (3) | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 19:40 (3) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 8 19:48 (3) | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 19:40 (3) | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 7 19:47 (3) | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 19:40 (3) | 05:27 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 3 19:43 (3) | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 22:19 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 130 | | | | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | | | |
| Wind dir. red. | | | | | 1,00 | | | | | | | | |
| Total reduction | | | | | 0,39 | | | | | | | | |
| Total, real | | | | | 51 | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 20:33 (3) | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 1 | 20:34 (3) | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 20:33 (3) | 05:01 | 04:58 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 1 | 20:34 (3) | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:14 | | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | | 04:55 | 05:04 | 05:54 | 20:42 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | | 22:12 | 22:13 | 21:24 1 | 20:43 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | | 04:54 | 05:06 | 05:56 | 20:42 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | | 22:12 | 22:12 | 21:21 1 | 20:43 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | | 04:54 | 05:07 | 05:58 | 20:42 (3) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | | 22:13 | 22:11 | 21:19 1 | 20:43 (3) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | | 04:53 | 05:08 | 06:00 | 20:41 (3) | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | | 22:14 | 22:10 | 21:17 2 | 20:43 (3) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | | 04:53 | 05:09 | 06:02 | 20:40 (3) | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | | 22:15 | 22:09 | 21:15 1 | 20:41 (3) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | | 04:53 | 05:11 | 06:04 | 20:39 (3) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | | 22:16 | 22:08 | 21:13 2 | 20:41 (3) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | | 04:52 | 05:12 | 06:06 | 20:38 (3) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | | 22:16 | 22:07 | 21:10 1 | 20:39 (3) | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | | 22:17 | 22:04 | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | | 04:52 | 05:16 | 06:11 | 20:31 (3) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | | 22:18 | 22:03 | 21:03 1 | 20:32 (3) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | | 04:52 | 05:18 | 06:13 | 20:23 (3) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | | 22:18 | 22:01 | 21:01 7 | 20:30 (3) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | | 04:52 | 05:19 | 06:15 | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | | 22:19 | 22:00 | 20:59 | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | | 04:52 | 05:21 | 06:17 | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | | 22:19 | 21:59 | 20:56 | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | | 04:52 | 05:23 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | | 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | | 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | | 22:19 | 21:55 | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 20:17 (3) | 05:12 | | 04:53 | 05:26 | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 8 20:25 (3) | 21:51 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 20:25 (3) | 05:10 | | 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 1 20:26 (3) | 21:52 | | 22:19 | 21:52 | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | | 04:54 | 05:29 | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | | 22:19 | 21:51 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 20:29 (3) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 1 20:30 (3) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 20:31 (3) | 05:06 | | 04:55 | 05:33 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 1 20:32 (3) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 20:32 (3) | 05:05 | | 04:55 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 1 20:33 (3) | 21:58 | | 22:19 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:32 (3) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 2 20:34 (3) | 22:00 | | 22:18 | 21:44 | 20:34 | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 14 | 2 | | | 17 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | | | 0,49 | | | | |
| Total, real | | | | 5 | 1 | | | 8 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 05:51 (4) | 04:57 | 05:40 | 20:56 (3) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 1 | 05:52 (4) | 22:18 | 21:40 2 | 20:58 (3) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 05:51 (4) | 04:58 | 05:41 | 20:55 (3) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 1 | 05:52 (4) | 22:18 | 21:38 2 | 20:57 (3) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 20:34 (3) 05:00 | 05:52 (4) | 04:58 | 05:43 | 20:54 (3) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 4 | 20:38 (3) 22:05 1 | 05:53 (4) | 22:17 | 21:36 3 | 20:57 (3) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 20:35 (3) 04:59 | | 04:59 | 05:45 | 20:54 (3) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:14 | 18:14 | 20:15 | 21:14 6 | 20:41 (3) 22:06 | | 22:17 | 21:34 2 | 20:56 (3) | 20:22 | 19:04 | 16:51 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 20:38 (3) 04:58 | 05:51 (4) | 05:00 05:57 (4) | 05:47 | 20:53 (3) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 4 | 20:42 (3) 22:07 1 | 05:52 (4) | 22:16 1 05:58 (4) | 21:32 3 | 20:56 (3) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 20:40 (3) 04:57 | 05:51 (4) | 05:01 | 05:49 | 20:51 (3) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 4 | 20:44 (3) 22:08 1 | 05:52 (4) | 22:15 | 21:30 3 | 20:54 (3) | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 20:42 (3) 04:56 | | 05:02 | 05:51 | 20:49 (3) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 3 | 20:45 (3) 22:10 | | 22:15 | 21:28 4 | 20:53 (3) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 20:43 (3) 04:56 | | 05:03 05:58 (4) | 05:52 | 20:47 (3) | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 3 | 20:46 (3) 22:11 | | 22:14 1 05:59 (4) | 21:26 4 | 20:51 (3) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 20:44 (3) 04:55 | 05:52 (4) | 05:04 05:58 (4) | 05:54 | 20:42 (3) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 2 | 20:46 (3) 22:12 1 | 05:53 (4) | 22:13 1 05:59 (4) | 21:24 6 | 20:48 (3) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 20:44 (3) 04:54 | | 05:06 05:58 (4) | 05:56 | 20:42 (3) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 3 | 20:47 (3) 22:12 | | 22:12 1 05:59 (4) | 21:21 3 | 20:45 (3) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 20:45 (3) 04:54 | 05:52 (4) | 05:07 05:59 (4) | 05:58 | | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 2 | 20:47 (3) 22:13 1 | 05:53 (4) | 22:11 2 06:01 (4) | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 20:46 (3) 04:53 | | 05:08 06:00 (4) | 06:00 | | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 2 | 20:48 (3) 22:14 | | 22:10 1 06:01 (4) | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 20:47 (3) 04:53 | 05:52 (4) | 05:09 06:00 (4) | 06:02 | | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 1 | 20:48 (3) 22:15 1 | 05:53 (4) | 22:09 1 06:01 (4) | 21:15 | | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 20:47 (3) 04:53 | | 05:11 06:00 (4) | 06:04 | | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 1 | 20:48 (3) 22:16 | | 22:08 1 06:01 (4) | 21:13 | | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:04 (4) 04:53 | | 05:12 06:00 (4) | 06:06 | | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 8 | 20:49 (3) 22:16 | | 22:07 1 06:01 (4) | 21:10 | | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:00 (4) 04:52 | | 05:13 06:01 (4) | 06:07 | | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 15 | 20:49 (3) 22:17 | | 22:05 2 06:03 (4) | 21:08 | | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 05:59 (4) 04:52 | | 05:15 06:01 (4) | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 6 | 06:05 (4) 22:17 | | 22:04 2 06:03 (4) | 21:06 | | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 05:57 (4) 04:52 | | 05:16 06:01 (4) | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 6 | 20:49 (3) 22:18 | | 22:03 2 06:03 (4) | 21:03 | | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 05:56 (4) 04:52 | | 05:18 06:02 (4) | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 4 | 06:00 (4) 22:18 | | 22:01 2 06:04 (4) | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 05:55 (4) 04:52 | | 05:19 06:02 (4) | 06:15 | | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 3 | 05:58 (4) 22:19 | | 22:00 3 06:05 (4) | 20:59 | | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 05:54 (4) 04:52 | | 05:21 06:04 (4) | 06:17 | | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 4 | 05:58 (4) 22:19 | | 21:59 2 06:06 (4) | 20:56 | | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 05:53 (4) 04:52 | | 05:23 06:04 (4) | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 3 | 05:56 (4) 22:19 | | 21:57 3 06:07 (4) | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 05:53 (4) 04:53 | | 05:24 06:05 (4) | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 3 | 05:56 (4) 22:19 | | 21:56 3 06:08 (4) | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 05:53 (4) 04:53 | | 05:26 06:06 (4) | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 2 | 05:55 (4) 22:19 | | 21:54 3 06:09 (4) | 20:49 | | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 05:53 (4) 04:53 | | 05:27 06:07 (4) | 06:24 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 2 | 05:55 (4) 22:19 | | 21:52 5 21:00 (3) | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 05:52 (4) 04:54 | | 05:29 06:08 (4) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 2 | 05:54 (4) 22:19 | | 21:51 5 06:13 (4) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 05:51 (4) 04:54 | | 05:31 06:10 (4) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 2 | 05:53 (4) 22:19 | | 21:49 9 21:00 (3) | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 05:51 (4) 04:55 | | 05:33 06:12 (4) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 2 | 05:53 (4) 22:19 | | 21:47 12 20:59 (3) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 05:51 (4) 04:55 | | 05:34 20:58 (3) | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 2 | 05:53 (4) 22:19 | | 21:45 1 20:59 (3) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 05:51 (4) 04:56 | | 05:36 20:58 (3) | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 2 | 05:53 (4) 22:18 | | 21:44 1 20:59 (3) | 20:34 | | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 05:51 (4) | | 05:38 20:57 (3) | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 1 | 05:52 (4) | | 21:42 1 20:58 (3) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 102 | 8 | 66 | 32 | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | | 0,89 | 0,87 | 0,87 | 0,92 | | | | |
| Total reduction | | | | | 0,46 | 0,42 | 0,42 | 0,47 | | | | |
| Total, real | | | | | 47 | 3 | 28 | 15 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27<br>18:07 | 07:08<br>20:09 | 05:55<br>21:09 | 05:02<br>22:02 15 21:26 (5) | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37<br>16:58 | 08:35<br>16:10 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05<br>20:11 | 05:53<br>21:11 | 05:01<br>22:04 16 21:27 (5) | 04:57<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:36<br>19:09 | 07:39<br>16:56 | 08:37<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:11 | 07:03<br>20:13 | 05:51<br>21:12 | 05:00<br>22:05 17 21:28 (5) | 04:58<br>22:17 1 21:40 (5) | 21:39 (5)<br>21:36 | 06:41<br>20:24 | 07:38<br>19:07 | 07:41<br>16:53 | 08:38<br>16:08 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19<br>18:13 | 07:00<br>20:15 | 05:48<br>21:14 | 04:59<br>22:06 17 21:29 (5) | 21:12 (5) 04:59<br>22:16 | 05:45<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 09:00<br>16:19 | 08:20<br>17:17 | 07:17<br>18:16 | 06:58<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 19 21:30 (5) | 21:11 (5) 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:18 | 06:55<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 20 21:31 (5) | 21:11 (5) 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 08:59<br>16:22 | 08:16<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 20 21:32 (5) | 21:12 (5) 05:02<br>22:14 | 05:50<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 22 21:33 (5) | 21:11 (5) 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:25 | 08:12<br>17:25 | 07:07<br>18:24 | 06:47<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 22 21:34 (5) | 21:12 (5) 05:04<br>22:13 | 05:54<br>21:23 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53<br>16:42 | 08:47<br>16:05 |
| 10 | 08:57<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:12 22 21:34 (5) | 21:12 (5) 05:05<br>22:12 | 05:56<br>21:21 | 06:55<br>20:06 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:42<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 23 21:35 (5) | 21:12 (5) 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:29 | 08:06<br>17:31 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:53<br>22:14 22 21:35 (5) | 21:13 (5) 05:08<br>22:10 | 06:00<br>21:17 | 06:58<br>20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 08:54<br>16:31 | 08:04<br>17:34 | 06:57<br>18:32 | 06:37<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 23 21:35 (5) | 21:12 (5) 05:09<br>22:09 | 06:02<br>21:15 | 07:00<br>19:59 | 07:58<br>18:42 | 08:01<br>16:34 | 08:52<br>16:04 |
| 14 | 08:53<br>16:33 | 08:01<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 | 04:53<br>22:16 22 21:35 (5) | 21:13 (5) 05:11<br>22:08 | 06:04<br>21:12 | 07:02<br>19:56 | 08:00<br>18:39 | 08:03<br>16:33 | 08:53<br>16:04 |
| 15 | 08:52<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:52<br>22:16 22 21:35 (5) | 21:13 (5) 05:12<br>22:07 | 06:05<br>21:10 | 07:04<br>19:53 | 08:02<br>18:37 | 08:05<br>16:31 | 08:54<br>16:04 |
| 16 | 08:51<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 23 21:36 (5) | 21:13 (5) 05:13<br>22:05 | 06:07<br>21:08 | 07:06<br>19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:55<br>16:04 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:46<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 22 21:36 (5) | 21:14 (5) 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06<br>18:32 | 08:09<br>16:28 | 08:55<br>16:04 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 22 21:36 (5) | 21:14 (5) 05:16<br>22:03 | 06:11<br>21:03 | 07:10<br>19:46 | 08:08<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
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| 24 | 08:41<br>16:52 | 07:39<br>17:57 | 06:28<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 22 21:37 (5) | 21:15 (5) 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:15 | 08:23<br>16:17 | 09:00<br>16:06 |
| 25 | 08:39<br>16:54 | 07:36<br>17:59 | 06:26<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 1 | 21:15 (5)<br>21:16 (5) 04:53<br>22:19 22 | 21:16 (5) 05:27<br>21:38 (5) 21:52 | 06:24<br>20:47 | 07:23<br>19:27 | 07:22<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 08:38<br>16:56 | 07:34<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 4 | 21:14 (5)<br>21:18 (5) 04:54<br>22:19 23 | 21:15 (5) 05:29<br>21:38 (5) 21:51 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 08:36<br>16:58 | 07:31<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 6 | 21:13 (5)<br>21:19 (5) 04:54<br>22:19 23 | 21:16 (5) 05:31<br>21:39 (5) 21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 8 | 21:13 (5)<br>21:21 (5) 04:55<br>22:19 22 | 21:16 (5) 05:32<br>21:38 (5) 21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 10 | 21:12 (5)<br>21:22 (5) 04:55<br>22:19 23 | 21:16 (5) 05:34<br>21:39 (5) 21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:30<br>17:04 | 08:32<br>16:12 | 09:01<br>16:10 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 12 | 21:12 (5)<br>21:24 (5) 04:56<br>22:18 22 | 21:16 (5) 05:36<br>21:38 (5) 21:43 | 06:34<br>20:34 | 07:33<br>19:15 | 07:32<br>17:02 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 08:29<br>17:06 | | 07:10<br>20:07 | | 05:03<br>22:01 13 | 21:12 (5)<br>21:25 (5) | 05:38<br>21:42 | 06:36<br>20:32 | | 07:34<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 54 | 636 | 1 | | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,82 | 0,82 | 0,82 | | | | | |
| Total reduction | | | | | 0,42 | 0,40 | 0,40 | | | | | |
| Total, real | | | | | 23 | 252 | 0 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 06:41 (6) | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 2 06:43 (6) | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:40 (6) | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 2 06:42 (6) | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 06:40 (6) | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 1 06:41 (6) | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 06:39 (6) | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 2 06:41 (6) | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 06:39 (6) | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 1 06:40 (6) | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 06:40 (6) | 04:57 | 05:01 | 05:49 | 06:49 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 1 06:41 (6) | 22:08 | 22:15 | 21:30 | 1 06:50 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | | 04:56 | 05:02 | 05:50 | 06:49 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | | 22:09 | 22:14 | 21:28 | 1 06:50 (6) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | | 04:56 | 05:03 | 05:52 | 06:50 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:10 | 22:14 | 21:25 | 1 06:51 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | | 04:55 | 05:04 | 05:54 | 06:49 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:11 | 22:13 | 21:23 | 1 06:50 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | | 04:54 | 05:05 | 05:56 | 06:49 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | 22:12 | 21:21 | 2 06:51 (6) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | | 04:54 | 05:07 | 05:58 | 06:50 (6) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | 22:11 | 21:19 | 1 06:51 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | | 04:53 | 05:08 | 06:00 | 06:49 (6) | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | | 22:14 | 22:10 | 21:17 | 2 06:51 (6) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | | 05:30 | | 04:53 | 05:09 | 06:02 | 06:50 (6) | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | | 22:15 | 22:09 | 21:15 | 2 06:52 (6) | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | | 04:53 | 05:11 | 06:03 | 06:50 (6) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | | 22:15 | 22:08 | 21:12 | 3 06:53 (6) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | | 04:52 | 05:12 | 06:05 | 06:51 (6) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | | 22:16 | 22:06 | 21:10 | 3 06:54 (6) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | | 04:52 | 05:13 | 06:07 | 06:52 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | | 22:17 | 22:05 | 21:08 | 3 06:55 (6) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | | 04:52 | 05:15 | 06:09 | 06:52 (6) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | | 22:17 | 22:04 | 21:05 | 3 06:55 (6) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | | 04:52 | 05:16 | 06:11 | 06:53 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | | 22:18 | 22:03 | 21:03 | 4 06:57 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | | 04:52 | 05:18 | 06:13 | 06:54 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | | 22:18 | 22:01 | 21:01 | 5 06:59 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 06:59 (6) | 05:18 | | 04:52 | 05:19 | 06:15 | 06:56 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 10 07:09 (6) | 21:44 | | 22:18 | 22:00 | 20:58 | 5 07:01 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 06:54 (6) | 05:16 | | 04:52 | 05:21 | 06:17 | 06:57 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 18 07:12 (6) | 21:45 | | 22:19 | 21:58 | 20:56 | 6 07:03 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 06:52 (6) | 05:15 | | 04:52 | 05:22 | 06:19 | 06:59 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 23 07:15 (6) | 21:47 | | 22:19 | 21:57 | 20:54 | 14 07:16 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:50 (6) | 05:13 | | 04:53 | 05:24 | 06:21 | 07:04 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 27 07:17 (6) | 21:49 | | 22:19 | 21:55 | 20:51 | 8 07:12 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 06:48 (6) | 05:12 | | 04:53 | 05:26 | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 30 07:18 (6) | 21:50 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 06:46 (6) | 05:10 | | 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 33 07:19 (6) | 21:52 | | 22:19 | 21:52 | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 06:45 (6) | 05:09 | | 04:54 | 05:29 | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 35 07:20 (6) | 21:53 | | 22:19 | 21:50 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 06:44 (6) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 37 07:21 (6) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:43 (6) | 05:06 | | 04:55 | 05:32 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 22 07:21 (6) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 06:43 (6) | 05:05 | | 04:55 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 15 07:22 (6) | 21:58 | | 22:18 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:42 (6) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 11 07:23 (6) | 21:59 | | 22:18 | 21:43 | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 261 | | 9 | | | | 65 | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,96 | | 0,96 | | | | 0,96 | | | | |
| Total reduction | | | | | 0,38 | | 0,50 | | | | 0,50 | | | | |
| Total, real | | | | | 99 | | 4 | | | | 32 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 06:52 (6) | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | 1 | 06:53 (6) | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | 04:52 | 05:12 | 06:05 | | 06:53 (6) | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:06 | 21:10 | 1 | 06:54 (6) | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 06:54 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | 1 | 06:55 (6) | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | 04:52 | 05:15 | 06:09 | | 06:54 (6) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:05 | 1 | 06:55 (6) | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 06:55 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | 2 | 06:57 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | 04:52 | 05:18 | 06:13 | | 06:57 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | 2 | 06:59 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:02 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 06:59 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 10 | 07:12 (6) | 21:44 | 22:18 | 22:00 | 20:58 | 2 | 07:01 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 06:57 (6) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:00 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 19 | 07:16 (6) | 21:45 | 22:19 | 21:58 | 20:56 | 3 | 07:03 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 06:55 (6) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:02 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 24 | 07:19 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 11 | 07:16 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 06:53 (6) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:07 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 28 | 07:21 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 8 | 07:15 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 06:51 (6) | 05:12 | 04:53 | 05:26 | 06:22 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 31 | 07:22 (6) | 21:50 | 22:19 | 21:54 | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 06:49 (6) | 05:10 | 04:53 | 05:27 | 06:24 | | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 34 | 07:23 (6) | 21:52 | 22:19 | 21:52 | 20:46 | | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 06:47 (6) | 05:09 | 04:54 | 05:29 | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 37 | 07:24 (6) | 21:53 | 22:19 | 21:50 | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 06:46 (6) | 05:08 | 04:54 | 05:31 | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 39 | 07:25 (6) | 21:55 | 22:19 | 21:49 | 20:42 | | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 06:45 (6) | 05:06 | 04:55 | 05:32 | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 25 | 07:26 (6) | 21:57 | 22:19 | 21:47 | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 06:45 (6) | 05:05 | 04:55 | 05:34 | 06:32 | | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 17 | 07:26 (6) | 21:58 | 22:18 | 21:45 | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:44 (6) | 05:04 | 04:56 | 05:36 | 06:34 | | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 13 | 07:27 (6) | 21:59 | 22:18 | 21:43 | 20:34 | | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 277 | | | | | | 32 | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,96 | | | | | | 0,96 | | | | | |
| Total reduction | | | | | 0,38 | | | | | | 0,50 | | | | | |
| Total, real | | | | | 105 | | | | | | 16 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:57 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 06:56 (6) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | 1 | 06:57 (6) | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | 04:52 | 05:18 | 06:13 | | 06:58 (6) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | 1 | 06:59 (6) | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:04 (6) | 05:18 | 04:52 | 05:19 | | 06:15 | 07:00 (6) | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 9 | 07:13 (6) | 21:44 | 22:18 | 22:00 | | 20:58 | 1 | 07:01 (6) | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 06:59 (6) | 05:16 | 04:52 | 05:21 | | 06:17 | | 07:01 (6) | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 18 | 07:17 (6) | 21:45 | 22:19 | 21:58 | | 20:56 | 2 | 07:03 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 06:56 (6) | 05:15 | 04:52 | 05:22 | | 06:19 | | 07:04 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 24 | 07:20 (6) | 21:47 | 22:19 | 21:57 | | 20:54 | 9 | 07:16 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 06:54 (6) | 05:13 | 04:53 | 05:24 | | 06:21 | | 07:09 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 28 | 07:22 (6) | 21:49 | 22:19 | 21:55 | | 20:51 | 7 | 07:16 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 06:52 (6) | 05:12 | 04:53 | 05:26 | | 06:22 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 32 | 07:24 (6) | 21:50 | 22:19 | 21:54 | | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 06:50 (6) | 05:10 | 04:53 | 05:27 | | 06:24 | | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 34 | 07:24 (6) | 21:52 | 22:19 | 21:52 | | 20:46 | | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 06:48 (6) | 05:09 | 04:54 | 05:29 | | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 38 | 07:26 (6) | 21:53 | 22:19 | 21:50 | | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 06:47 (6) | 05:08 | 04:54 | 05:31 | | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 40 | 07:27 (6) | 21:55 | 22:19 | 21:49 | | 20:42 | | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 06:46 (6) | 05:06 | 04:55 | 05:32 | | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 25 | 07:27 (6) | 21:57 | 22:19 | 21:47 | | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 06:46 (6) | 05:05 | 04:55 | 05:34 | | 06:32 | | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 18 | 07:28 (6) | 21:58 | 22:18 | 21:45 | | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:45 (6) | 05:04 | 04:56 | 05:36 | | 06:34 | | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 14 | 07:29 (6) | 21:59 | 22:18 | 21:43 | | 20:34 | | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 280 | | | | | | | 21 | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,96 | | | | | | | 0,96 | | | | | |
| Total reduction | | | | | 0,38 | | | | | | | 0,50 | | | | | |
| Total, real | | | | | 106 | | | | | | | 10 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:07 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 7 | 07:14 (6) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 07:00 (6) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 18 | 07:18 (6) | 21:45 | 22:19 | 21:58 | 20:56 | 1 | 07:03 (6) | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 06:57 (6) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:06 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 24 | 07:21 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 7 | 07:16 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 06:55 (6) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:12 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 29 | 07:24 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 4 | 07:16 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 06:53 (6) | 05:12 | 04:53 | 05:26 | 06:22 | | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 33 | 07:26 (6) | 21:50 | 22:19 | 21:54 | 20:49 | | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 06:51 (6) | 05:10 | 04:53 | 05:27 | 06:24 | | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 35 | 07:26 (6) | 21:52 | 22:19 | 21:52 | 20:46 | | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 06:50 (6) | 05:09 | 04:54 | 05:29 | 06:26 | | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 37 | 07:27 (6) | 21:53 | 22:19 | 21:50 | 20:44 | | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 06:48 (6) | 05:08 | 04:54 | 05:31 | 06:28 | | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 40 | 07:28 (6) | 21:55 | 22:19 | 21:49 | 20:42 | | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | | 06:47 (6) | 05:06 | 04:55 | 05:32 | 06:30 | | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 26 | 07:29 (6) | 21:57 | 22:19 | 21:47 | 20:39 | | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 06:47 (6) | 05:05 | 04:55 | 05:34 | 06:32 | | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 19 | 07:30 (6) | 21:58 | 22:18 | 21:45 | 20:37 | | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 06:46 (6) | 05:04 | 04:56 | 05:36 | 06:34 | | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 15 | 07:31 (6) | 21:59 | 22:18 | 21:43 | 20:34 | | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 283 | | | | | | 12 | | | | | |
| Sun reduction | | | | | 0,39 | | | | | | 0,51 | | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | 1,00 | | | | | |
| Wind dir. red. | | | | | 0,97 | | | | | | 0,97 | | | | | |
| Total reduction | | | | | 0,38 | | | | | | 0,50 | | | | | |
| Total, real | | | | | 107 | | | | | | 6 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:28 | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | | 07:21 (6) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 16 | 07:37 (6) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 07:17 (6) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 24 | 07:41 (6) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | | 07:14 (6) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 30 | 07:44 (6) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | | 07:11 (6) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 34 | 07:45 (6) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | | 07:10 (6) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 37 | 07:47 (6) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | | 07:08 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 41 | 07:49 (6) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 07:06 (6) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 43 | 07:49 (6) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | | 07:05 (6) | 05:15 | 04:52 | 05:22 | 06:19 | 07:13 (6) | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 45 | 07:50 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 3 07:16 (6) | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | | 07:04 (6) | 05:13 | 04:53 | 05:24 | 06:21 | 07:12 (6) | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 47 | 07:51 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 6 07:18 (6) | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | | 07:03 (6) | 05:12 | 04:53 | 05:26 | 06:22 | 07:14 (6) | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 49 | 07:52 (6) | 21:50 | 22:19 | 21:54 | 20:49 | 6 07:20 (6) | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | | 07:01 (6) | 05:10 | 04:53 | 05:27 | 06:24 | 07:15 (6) | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 51 | 07:52 (6) | 21:52 | 22:19 | 21:52 | 20:46 | 8 07:23 (6) | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | | 07:01 (6) | 05:09 | 04:54 | 05:29 | 06:26 | 07:17 (6) | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 52 | 07:53 (6) | 21:53 | 22:19 | 21:50 | 20:44 | 6 07:23 (6) | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 07:00 (6) | 05:08 | 04:54 | 05:31 | 06:28 | 07:19 (6) | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 53 | 07:53 (6) | 21:55 | 22:19 | 21:49 | 20:42 | 6 07:25 (6) | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | | 07:14 (6) | 05:06 | 04:55 | 05:32 | 06:30 | 07:23 (6) | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 40 | 07:54 (6) | 21:57 | 22:19 | 21:47 | 20:39 | 4 07:27 (6) | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | | 07:18 (6) | 05:05 | 04:55 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 36 | 07:54 (6) | 21:58 | 22:18 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | | 07:21 (6) | 05:04 | 04:56 | 05:36 | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 33 | 07:54 (6) | 21:59 | 22:18 | 21:43 | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | | 501 | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 631 | | | | | | 39 | | | | |
| Sun reduction | | | | | 0,39 | | | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,98 | | | | | | 0,98 | | | | |
| Total reduction | | | | | 0,39 | | | | | | 0,51 | | | | |
| Total, real | | | | | 244 | | | | | | 20 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:30 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 4 07:34 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:31 (6) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 17 07:48 (6) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (6) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 25 07:52 (6) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:23 (6) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 30 07:53 (6) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:21 (6) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 32 07:53 (6) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:19 (6) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 33 07:52 (6) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:17 (6) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 36 07:53 (6) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:16 (6) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 37 07:53 (6) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:14 (6) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 38 07:52 (6) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:13 (6) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 40 07:53 (6) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:12 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 41 07:53 (6) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:11 (6) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 42 07:53 (6) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:10 (6) | 05:15 | 04:52 | 05:22 | 06:19 | 07:15 (6) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 44 07:54 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 1 07:16 (6) | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:10 (6) | 05:13 | 04:53 | 05:24 | 06:21 | 07:16 (6) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 44 07:54 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 2 07:18 (6) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:09 (6) | 05:12 | 04:53 | 05:26 | 06:22 | 07:17 (6) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 46 07:55 (6) | 21:50 | 22:19 | 21:54 | 20:49 | 3 07:20 (6) | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:08 (6) | 05:10 | 04:53 | 05:27 | 06:24 | 07:18 (6) | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 47 07:55 (6) | 21:52 | 22:19 | 21:52 | 20:46 | 5 07:23 (6) | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:07 (6) | 05:09 | 04:54 | 05:29 | 06:26 | 07:18 (6) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 49 07:56 (6) | 21:53 | 22:19 | 21:50 | 20:44 | 5 07:23 (6) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:07 (6) | 05:08 | 04:54 | 05:31 | 06:28 | 07:19 (6) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 50 07:57 (6) | 21:55 | 22:19 | 21:49 | 20:42 | 6 07:25 (6) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:14 (6) | 05:06 | 04:55 | 05:32 | 06:30 | 07:21 (6) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 44 07:58 (6) | 21:57 | 22:19 | 21:47 | 20:39 | 6 07:27 (6) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:18 (6) | 05:05 | 04:55 | 05:34 | 06:32 | 07:22 (6) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 41 07:59 (6) | 21:58 | 22:18 | 21:45 | 20:37 | 7 07:29 (6) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:21 (6) | 05:04 | 04:56 | 05:36 | 06:34 | 07:24 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 39 08:00 (6) | 21:59 | 22:18 | 21:43 | 20:34 | 7 07:31 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 07:26 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 | 6 07:32 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | | 775 | | | | | 48 | | 4 | | | |
| Sun reduction | | | | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | | 0,99 | | | | | 0,99 | | 0,99 | | | |
| Total reduction | | | | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | | 302 | | | | | 24 | | 2 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:28 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 | 6 07:34 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:29 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 | 7 07:36 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:31 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 | 9 07:40 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:34 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 | 20 07:56 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:38 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 | 13 07:51 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 | | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:42 (6) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 12 07:54 (6) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:36 (6) | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 19 07:55 (6) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:33 (6) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 22 07:55 (6) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:30 (6) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 24 07:54 (6) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:29 (6) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 25 07:54 (6) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27 (6) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 27 07:54 (6) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:25 (6) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 28 07:53 (6) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24 (6) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 29 07:53 (6) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:22 (6) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 30 07:52 (6) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:21 (6) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 32 07:53 (6) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:20 (6) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 33 07:53 (6) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:19 (6) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 33 07:52 (6) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:18 (6) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 35 07:53 (6) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:18 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 35 07:53 (6) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:16 (6) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 37 07:53 (6) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:16 (6) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 38 07:54 (6) | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:16 (6) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 38 07:54 (6) | 21:49 | 22:19 | 21:55 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:16 (6) | 05:12 | 04:53 | 05:26 | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 39 07:55 (6) | 21:50 | 22:19 | 21:54 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:15 (6) | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 40 07:55 (6) | 21:52 | 22:19 | 21:52 | 20:46 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:15 (6) | 05:09 | 04:54 | 05:29 | 06:26 | 07:22 (6) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 41 07:56 (6) | 21:53 | 22:19 | 21:50 | 20:44 | 1 07:23 (6) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:15 (6) | 05:08 | 04:54 | 05:31 | 06:28 | 07:23 (6) | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 42 07:57 (6) | 21:55 | 22:19 | 21:49 | 20:42 | 2 07:25 (6) | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:15 (6) | 05:06 | 04:55 | 05:32 | 06:30 | 07:24 (6) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 43 07:58 (6) | 21:57 | 22:19 | 21:47 | 20:39 | 3 07:27 (6) | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:18 (6) | 05:05 | 04:55 | 05:34 | 06:32 | 07:25 (6) | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 41 07:59 (6) | 21:58 | 22:18 | 21:45 | 20:37 | 4 07:29 (6) | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:21 (6) | 05:04 | 04:56 | 05:36 | 06:34 | 07:26 (6) | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 39 08:00 (6) | 21:59 | 22:18 | 21:43 | 20:34 | 5 07:31 (6) | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 07:26 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 | 6 07:32 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | | 782 | | | | | 21 | | 55 | | | |
| Sun reduction | | | | | 0,39 | | | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | | | | 1,00 | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | | | 0,99 | | | | | 0,99 | | 0,99 | | | |
| Total reduction | | | | | 0,39 | | | | | 0,51 | | 0,39 | | | |
| Total, real | | | | | 306 | | | | | 11 | | 22 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | June | July | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | | 05:55 | 05:02 | 04:57 | 05:39 | | 06:38 | 07:31 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:08 | 22:02 | 22:18 | 21:40 | | 20:29 4 | 08:08 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 05:01 | 04:57 | 05:41 | | 06:39 | 07:32 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:10 | 22:03 | 22:17 | 21:38 | | 20:27 8 | 08:08 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:52 (6) | 05:50 | 05:00 | 04:58 | 05:43 | | 06:41 | 07:33 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 8 | 08:00 (6) | 21:12 | 22:05 | 22:17 | 21:36 | | 20:24 15 | 08:08 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:46 (6) | 05:48 | 04:59 | 04:59 | 05:45 | | 06:43 | 07:34 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 12 | 07:58 (6) | 21:14 | 22:06 | 22:16 | 21:34 | | 20:22 32 | 08:08 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:43 (6) | 05:46 | 04:58 | 05:00 | 05:47 | | 06:45 | 07:35 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 15 | 07:58 (6) | 21:16 | 22:07 | 22:16 | 21:32 | | 20:19 32 | 08:07 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40 (6) | 05:44 | 04:57 | 05:01 | 05:49 | | 06:47 | 07:36 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 17 | 07:57 (6) | 21:18 | 22:08 | 22:15 | 21:30 | | 20:16 31 | 08:07 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:39 (6) | 05:42 | 04:56 | 05:02 | 05:50 | | 06:49 | 07:38 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 17 | 07:56 (6) | 21:20 | 22:09 | 22:14 | 21:28 | | 20:14 29 | 08:07 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:36 (6) | 05:40 | 04:56 | 05:03 | 05:52 | | 06:51 | 07:41 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 19 | 07:55 (6) | 21:22 | 22:10 | 22:14 | 21:25 | | 20:11 23 | 08:04 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:35 (6) | 05:38 | 04:55 | 05:04 | 05:54 | | 06:53 | 07:45 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 20 | 07:55 (6) | 21:24 | 22:11 | 22:13 | 21:23 | | 20:09 15 | 08:00 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:33 (6) | 05:36 | 04:54 | 05:05 | 05:56 | | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 21 | 07:54 (6) | 21:26 | 22:12 | 22:12 | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:32 (6) | 05:34 | 04:54 | 05:07 | 05:58 | | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 22 | 07:54 (6) | 21:28 | 22:13 | 22:11 | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:31 (6) | 05:32 | 04:53 | 05:08 | 06:00 | | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 23 | 07:54 (6) | 21:29 | 22:14 | 22:10 | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:30 (6) | 05:30 | 04:53 | 05:09 | 06:02 | | 07:00 | | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 23 | 07:53 (6) | 21:31 | 22:15 | 22:09 | 21:15 | | 19:58 | | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:29 (6) | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 24 | 07:53 (6) | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:28 (6) | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 24 | 07:52 (6) | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:27 (6) | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 26 | 07:53 (6) | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:27 (6) | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 26 | 07:53 (6) | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:26 (6) | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 26 | 07:52 (6) | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:26 (6) | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 27 | 07:53 (6) | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:26 (6) | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 27 | 07:53 (6) | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:25 (6) | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 28 | 07:53 (6) | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:25 (6) | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 29 | 07:54 (6) | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:25 (6) | 05:13 | 04:53 | 05:24 | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 29 | 07:54 (6) | 21:49 | 22:19 | 21:55 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:25 (6) | 05:12 | 04:53 | 05:26 | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 30 | 07:55 (6) | 21:50 | 22:19 | 21:54 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:24 (6) | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 31 | 07:55 (6) | 21:52 | 22:19 | 21:52 | 20:46 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:24 (6) | 05:09 | 04:54 | 05:29 | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 32 | 07:56 (6) | 21:53 | 22:19 | 21:50 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:24 (6) | 05:08 | 04:54 | 05:31 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 33 | 07:57 (6) | 21:55 | 22:19 | 21:49 | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:25 (6) | 05:06 | 04:55 | 05:32 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 33 | 07:58 (6) | 21:57 | 22:19 | 21:47 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:25 (6) | 05:05 | 04:55 | 05:34 | 06:32 | | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 34 | 07:59 (6) | 21:58 | 22:18 | 21:45 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 07:26 (6) | 05:04 | 04:56 | 05:36 | 06:34 | | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 34 | 08:00 (6) | 21:59 | 22:18 | 21:43 | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | 07:30 (6) | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 2 | 07:32 (6) | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | | 690 | | | | 2 | | | 189 | | | |
| Sun reduction | | | | | 0,39 | | | | 0,51 | | | 0,40 | | | |
| Oper. time red. | | | | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | | | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Total reduction | | | | | 0,39 | | | | 0,51 | | | 0,40 | | | |
| Total, real | | | | | 271 | | | | 1 | | | 75 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 07:54 (6) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:07 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 8 | 08:02 (6) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 1 | 08:08 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 07:51 (6) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:04 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 11 | 08:02 (6) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 4 | 08:08 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 07:48 (6) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:37 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 12 | 08:00 (6) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 11 | 08:08 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 07:46 (6) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:38 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 12 | 07:58 (6) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 28 | 08:08 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 07:45 (6) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:38 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 13 | 07:58 (6) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 29 | 08:07 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:43 (6) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:39 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 14 | 07:57 (6) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 28 | 08:07 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 07:42 (6) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:40 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 14 | 07:56 (6) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 27 | 08:07 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:40 (6) | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:41 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 15 | 07:55 (6) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 26 | 08:07 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:39 (6) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:42 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 16 | 07:55 (6) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 25 | 08:07 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 07:38 (6) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:43 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 16 | 07:54 (6) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 23 | 08:06 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:37 (6) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:46 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 17 | 07:54 (6) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 21 | 08:07 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:37 (6) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:49 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 17 | 07:54 (6) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 18 | 08:07 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 07:36 (6) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:54 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 17 | 07:53 (6) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 10 | 08:04 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:35 (6) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 18 | 07:53 (6) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 07:34 (6) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 18 | 07:52 (6) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:34 (6) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 19 | 07:53 (6) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 07:34 (6) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 19 | 07:53 (6) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 07:33 (6) | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 19 | 07:52 (6) | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 07:33 (6) | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 20 | 07:53 (6) | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:34 (6) | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 19 | 07:53 (6) | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:33 (6) | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 20 | 07:53 (6) | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 07:33 (6) | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 21 | 07:54 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:34 (6) | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 20 | 07:54 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 07:34 (6) | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 21 | 07:55 (6) | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 07:34 (6) | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 21 | 07:55 (6) | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 07:34 (6) | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 22 | 07:56 (6) | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:35 (6) | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 22 | 07:57 (6) | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 07:35 (6) | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 23 | 07:58 (6) | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 07:36 (6) | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 23 | 07:59 (6) | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 08:04 (6) | 05:57 | 07:37 (6) | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 7 08:11 (6) | 21:06 23 | 08:00 (6) | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 07:58 (6) | | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 19 08:17 (6) | | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 26 | 530 | | | | | | 251 | | | | |
| Sun reduction | | | 0,34 | 0,39 | | | | | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | 1,00 | | | | | | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | 1,00 | | | | | | 1,00 | | | | |
| Total reduction | | | 0,34 | 0,39 | | | | | | 0,40 | | | | |
| Total, real | | | 9 | 209 | | | | | | 99 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | | 07:54 (6) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 08:07 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 8 | 08:02 (6) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 1 | 08:08 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | | 07:53 (6) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 08:04 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 9 | 08:02 (6) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 4 | 08:08 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 07:51 (6) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 08:00 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 9 | 08:00 (6) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 8 | 08:08 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 07:50 (6) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 07:44 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 8 | 07:58 (6) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 22 | 08:08 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | | 07:49 (6) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | | 07:43 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 9 | 07:58 (6) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 24 | 08:07 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 07:48 (6) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:44 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 9 | 07:57 (6) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 23 | 08:07 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | | 07:47 (6) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 07:44 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 9 | 07:56 (6) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 23 | 08:07 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 07:46 (6) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 07:45 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 9 | 07:55 (6) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 22 | 08:07 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 07:46 (6) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 07:46 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 9 | 07:55 (6) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 21 | 08:07 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | | 07:44 (6) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 07:45 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 10 | 07:54 (6) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 21 | 08:06 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 07:44 (6) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 07:47 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 10 | 07:54 (6) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 20 | 08:07 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 07:44 (6) | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 07:48 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 10 | 07:54 (6) | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 19 | 08:07 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | | 07:43 (6) | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | | 07:49 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 10 | 07:53 (6) | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 19 | 08:08 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 07:44 (6) | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 07:51 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 9 | 07:53 (6) | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 17 | 08:08 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 07:43 (6) | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 07:53 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 9 | 07:52 (6) | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 16 | 08:09 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 07:43 (6) | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 07:56 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 10 | 07:53 (6) | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 13 | 08:09 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 07:43 (6) | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:01 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 10 | 07:53 (6) | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 8 | 08:09 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 07:43 (6) | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 9 | 07:52 (6) | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | | | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 07:43 (6) | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | 10 | 07:53 (6) | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | | | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 07:44 (6) | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | 9 | 07:53 (6) | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | | | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 07:43 (6) | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | 10 | 07:53 (6) | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | | | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 06:15 | | 07:44 (6) | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 10 | 07:54 (6) | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | | 07:45 (6) | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | | 20:53 | 9 | 07:54 (6) | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 06:11 | | 07:46 (6) | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | | 20:55 | 9 | 07:55 (6) | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 06:08 | | 07:46 (6) | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | | 20:57 | 9 | 07:55 (6) | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | | 06:06 | | 07:47 (6) | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | | 20:59 | 9 | 07:56 (6) | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:08 (6) | 06:04 | | 07:48 (6) | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 18 07:26 (6) | 21:01 | 9 | 07:57 (6) | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (6) | 06:01 | | 07:49 (6) | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 25 07:29 (6) | 21:03 | 9 | 07:58 (6) | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:01 (6) | 05:59 | | 07:50 (6) | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 31 08:32 (6) | 21:05 | 9 | 07:59 (6) | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 07:58 (6) | 05:57 | | 07:52 (6) | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 35 08:33 (6) | 21:06 | 8 | 08:00 (6) | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 07:57 (6) | | | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 39 08:36 (6) | | | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | | 501 | 520 | 521 | 465 | 383 | | | 326 | 253 | 224 |
| Total, worst case | | | | 148 | | 276 | | | | | | | 281 | | | | |
| Sun reduction | | | | 0,34 | | 0,39 | | | | | | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | 1,00 | | 1,00 | | | | | | | 1,00 | | | | |
| Total reduction | | | | 0,34 | | 0,39 | | | | | | | 0,40 | | | | |
| Total, real | | | | 50 | | 109 | | | | | | | 111 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | | 07:59 (6) | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 08:07 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 3 | 08:02 (6) | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 1 | 08:08 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | | 07:59 (6) | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 08:04 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 3 | 08:02 (6) | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 4 | 08:08 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 07:57 (6) | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 08:00 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 3 | 08:00 (6) | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 8 | 08:08 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 07:56 (6) | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:52 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 2 | 07:58 (6) | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 16 | 08:08 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | | 07:56 (6) | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:51 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 2 | 07:58 (6) | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 16 | 08:07 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 07:55 (6) | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:51 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 2 | 07:57 (6) | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 16 | 08:07 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | | 07:55 (6) | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:51 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 1 | 07:56 (6) | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 16 | 08:07 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 07:54 (6) | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:51 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 1 | 07:55 (6) | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 16 | 08:07 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 07:54 (6) | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:51 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 1 | 07:55 (6) | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 16 | 08:07 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | | 07:53 (6) | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:51 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 1 | 07:54 (6) | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 15 | 08:06 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 07:53 (6) | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:51 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 1 | 07:54 (6) | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 16 | 08:07 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:52 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 15 | 08:07 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | | | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:53 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | | | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 15 | 08:08 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 07:53 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 15 | 08:08 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 07:54 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | | | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 15 | 08:09 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 07:55 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 14 | 08:09 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 07:56 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 14 | 08:10 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 07:58 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 13 | 08:11 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:00 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 12 | 08:12 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:03 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 11 | 08:14 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:08 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | | | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 7 | 08:15 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 07:25 (6) | 06:15 | | | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 5 | 07:30 (6) | 20:51 | | | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 07:17 (6) | 06:13 | | | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 19 | 07:36 (6) | 20:53 | | | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 07:14 (6) | 06:11 | | | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 26 | 07:40 (6) | 20:55 | | | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 07:11 (6) | 06:08 | | | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 31 | 07:42 (6) | 20:57 | | | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 07:08 (6) | 06:06 | | | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 35 | 07:43 (6) | 20:59 | | | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 07:07 (6) | 06:04 | | | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 38 | 07:45 (6) | 21:01 | | | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 07:04 (6) | 06:01 | | | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 42 | 07:46 (6) | 21:03 | | | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 08:03 (6) | 05:59 | | | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 45 | 08:48 (6) | 21:05 | | | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 08:01 (6) | 05:57 | | | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 47 | 08:48 (6) | 21:06 | | | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | 08:01 (6) | | | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 48 | 08:49 (6) | | | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | | | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | 336 | | 20 | | | | | | | 271 | | | | |
| Sun reduction | | | 0,34 | | 0,39 | | | | | | | 0,40 | | | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | 1,00 | | 1,00 | | | | | | | 1,00 | | | | |
| Total reduction | | | 0,34 | | 0,39 | | | | | | | 0,39 | | | | |
| Total, real | | | 114 | | 8 | | | | | | | 107 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 08:07 (6) | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 1 | 08:08 (6) | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 08:04 (6) | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 4 | 08:08 (6) | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 08:02 (6) | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 6 | 08:08 (6) | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 08:02 (6) | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 6 | 08:08 (6) | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | | 08:00 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 7 | 08:07 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 08:00 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 7 | 08:07 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 08:00 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 7 | 08:07 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 08:00 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 7 | 08:07 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 08:00 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 7 | 08:07 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 07:59 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 7 | 08:06 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 07:59 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 8 | 08:07 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 07:59 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 8 | 08:07 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | | 07:59 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 9 | 08:08 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 07:59 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 9 | 08:08 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:00 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 9 | 08:09 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 07:59 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 10 | 08:09 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:00 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 10 | 08:10 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 07:34 (6) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:01 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 8 | 07:42 (6) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 10 | 08:11 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 07:28 (6) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:02 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20 | 07:48 (6) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 10 | 08:12 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 07:24 (6) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:03 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 27 | 07:51 (6) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 11 | 08:14 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:21 (6) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | 08:04 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 32 | 07:53 (6) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 11 | 08:15 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 07:19 (6) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:06 (6) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 36 | 07:55 (6) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 11 | 08:17 (6) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 07:17 (6) | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 | 07:19 | | 08:08 (6) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 39 | 07:56 (6) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 12 | 08:20 (6) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 07:15 (6) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:10 (6) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 42 | 07:57 (6) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 12 | 08:22 (6) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 07:13 (6) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 08:14 (6) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 45 | 07:58 (6) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 13 | 08:27 (6) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | | 07:12 (6) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 46 | 07:58 (6) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 07:11 (6) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | | | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 48 | 07:59 (6) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | | | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 07:09 (6) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 50 | 07:59 (6) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 08:09 (6) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 51 | 09:00 (6) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 08:08 (6) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 52 | 09:00 (6) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 08:07 (6) | | 05:03 | | 05:38 | 06:36 | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 54 | 09:01 (6) | | 22:01 | | 21:41 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | | | 326 | 253 | 224 |
| Total, worst case | | | | 550 | | | | | | | | 212 | | | | |
| Sun reduction | | | | 0,34 | | | | | | | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,99 | | | | | | | | 0,99 | | | | |
| Total reduction | | | | 0,34 | | | | | | | | 0,39 | | | | |
| Total, real | | | | 186 | | | | | | | | 83 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | | 08:07 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 1 | 08:08 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 07:42 (6) | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | | 07:02 | 08:07 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 13 | 07:55 (6) | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | | 19:56 | 1 | 08:08 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 07:37 (6) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | | 07:04 | 08:07 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 22 | 07:59 (6) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | | 19:53 | 2 | 08:09 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 07:33 (6) | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | | 07:06 | 08:06 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 28 | 08:01 (6) | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | | 19:51 | 3 | 08:09 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 07:31 (6) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 33 | 08:04 (6) | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | | 19:48 | 4 | 08:10 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 07:29 (6) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | | 07:10 | 08:07 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 36 | 08:05 (6) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | | 19:46 | 4 | 08:11 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 07:27 (6) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | | 07:12 | 08:07 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 40 | 08:07 (6) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | | 19:43 | 5 | 08:12 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 07:25 (6) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | | 07:13 | 08:08 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 43 | 08:08 (6) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | | 19:40 | 6 | 08:14 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:23 (6) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | | 07:15 | 08:08 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 45 | 08:08 (6) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | | 19:38 | 7 | 08:15 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 07:23 (6) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | | 07:17 | 08:09 (6) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 47 | 08:10 (6) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | | 19:35 | 8 | 08:17 (6) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 07:21 (6) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | | 07:19 | 08:10 (6) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 49 | 08:10 (6) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | | 19:33 | 12 | 08:53 (6) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 07:21 (6) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | | 07:21 | 08:10 (6) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 50 | 08:11 (6) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | | 19:30 | 16 | 08:50 (6) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 07:19 (6) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | | 07:23 | 08:11 (6) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 52 | 08:11 (6) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | | 19:27 | 24 | 08:49 (6) | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | | 07:18 (6) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | | 07:25 | 08:12 (6) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 52 | 08:10 (6) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | | 19:25 | 35 | 08:47 (6) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 07:18 (6) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | | 07:27 | 08:14 (6) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 53 | 08:11 (6) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | | 19:22 | 30 | 08:44 (6) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 07:17 (6) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | | 07:29 | 08:17 (6) | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 53 | 08:10 (6) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | | 19:20 | 24 | 08:41 (6) | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 08:17 (6) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | | 07:31 | 08:20 (6) | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 54 | 09:11 (6) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | | 19:17 | 17 | 08:37 (6) | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 08:16 (6) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | | 07:32 | | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 54 | 09:10 (6) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | | 19:14 | | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 08:16 (6) | | 05:03 | | 05:38 | 06:36 | | | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 54 | 09:10 (6) | | 22:01 | | 21:41 | 20:32 | | | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 778 | | | | | | | | 199 | | | | |
| Sun reduction | | | | 0,34 | | | | | | | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,98 | | | | | | | | 0,98 | | | | |
| Total reduction | | | | 0,34 | | | | | | | | 0,39 | | | | |
| Total, real | | | | 261 | | | | | | | | 77 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 08:06 (6) | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 1 08:07 (6) | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 08:06 (6) | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 1 08:07 (6) | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 08:06 (6) | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 1 08:07 (6) | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 08:06 (6) | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 1 08:07 (6) | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 08:06 (6) | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 1 08:07 (6) | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 08:05 (6) | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 1 08:06 (6) | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 08:05 (6) | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 2 08:07 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 08:05 (6) | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 2 08:07 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 08:05 (6) | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 3 08:08 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:05 (6) | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 3 08:08 (6) | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:06 (6) | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 3 08:09 (6) | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:05 (6) | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 4 08:09 (6) | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 07:39 (6) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 (6) | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 16 | 07:55 (6) | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 4 08:10 (6) | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 07:34 (6) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:06 (6) | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 25 | 07:59 (6) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 5 08:11 (6) | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 07:31 (6) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:07 (6) | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 31 | 08:02 (6) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 5 08:12 (6) | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 07:28 (6) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:08 (6) | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 36 | 08:04 (6) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 6 08:14 (6) | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 07:26 (6) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:09 (6) | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 39 | 08:05 (6) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 6 08:15 (6) | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 07:24 (6) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:11 (6) | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 43 | 08:07 (6) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 6 08:17 (6) | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 07:22 (6) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:12 (6) | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 46 | 08:08 (6) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 8 08:20 (6) | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 07:21 (6) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:13 (6) | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 49 | 08:10 (6) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 9 08:22 (6) | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 07:19 (6) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 08:16 (6) | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 51 | 08:10 (6) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 13 08:43 (6) | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | | 07:17 (6) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 08:19 (6) | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 53 | 08:10 (6) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 20 08:39 (6) | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 07:17 (6) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 08:27 (6) | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 54 | 08:11 (6) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 4 08:31 (6) | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 07:15 (6) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 56 | 08:11 (6) | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 08:15 (6) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 57 | 09:12 (6) | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 08:14 (6) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 58 | 09:12 (6) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 08:14 (6) | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | 58 | 09:12 (6) | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | 253 | 224 |
| Total, worst case | | | | 672 | | | | | | | 109 | | | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | | | |
| Wind dir. red. | | | | 0,99 | | | | | | | 0,99 | | | | |
| Total reduction | | | | 0,34 | | | | | | | 0,39 | | | | |
| Total, real | | | | 226 | | | | | | | 43 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:44 (6) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 3 | 06:47 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 06:40 (6) | 05:01 | 04:57 | 05:41 | 06:44 (6) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 2 06:42 (6) | 22:03 | 22:17 | 21:38 2 | 06:46 (6) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 06:39 (6) | 05:00 | 04:58 | 05:43 | 06:44 (6) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 2 06:41 (6) | 22:05 | 22:17 | 21:36 3 | 06:47 (6) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 06:38 (6) | 04:59 | 04:59 | 05:45 | 06:45 (6) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 3 06:41 (6) | 22:06 | 22:16 | 21:34 3 | 06:48 (6) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 06:37 (6) | 04:58 | 05:00 | 05:47 | 06:45 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 3 06:40 (6) | 22:07 | 22:16 | 21:32 3 | 06:48 (6) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 06:37 (6) | 04:57 | 05:01 | 05:49 | 06:46 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 4 06:41 (6) | 22:08 | 22:15 | 21:30 4 | 06:50 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 06:36 (6) | 04:56 | 05:02 | 05:50 | 06:47 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 4 06:40 (6) | 22:09 | 22:14 | 21:28 3 | 06:50 (6) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 06:35 (6) | 04:56 | 05:03 | 05:52 | 06:48 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 4 06:39 (6) | 22:10 | 22:14 | 21:25 3 | 06:51 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 06:35 (6) | 04:55 | 05:04 | 05:54 | 06:48 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 3 06:38 (6) | 22:11 | 22:13 | 21:23 2 | 06:50 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 06:34 (6) | 04:54 | 05:05 | 05:56 | 06:49 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 3 06:37 (6) | 22:12 | 22:12 | 21:21 2 | 06:51 (6) | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 06:33 (6) | 04:54 | 05:07 | 05:58 | 06:50 (6) | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 3 06:36 (6) | 22:13 | 22:11 | 21:19 1 | 06:51 (6) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 06:34 (6) | 04:53 | 05:08 | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 2 06:36 (6) | 22:14 | 22:10 | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 06:33 (6) | 04:53 | 05:09 | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 2 06:35 (6) | 22:15 | 22:09 | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 06:32 (6) | 04:53 | 05:11 | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 2 06:34 (6) | 22:15 | 22:08 | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 06:33 (6) | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 1 06:34 (6) | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 06:32 (6) | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 2 06:34 (6) | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 06:32 (6) | 04:52 | 05:15 | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 1 06:33 (6) | 22:17 | 22:04 | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 06:32 (6) | 04:52 | 05:16 | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 1 06:33 (6) | 22:18 | 22:03 | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 04:52 | 05:18 | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 22:18 | 22:01 | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 04:52 | 05:19 | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 22:18 | 22:00 | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 04:52 | 05:21 | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 22:19 | 21:58 | 20:56 | | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 04:52 | 05:22 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 22:19 | 21:55 | 20:51 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 04:53 | 05:26 06:42 (6) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 22:19 | 21:54 1 06:43 (6) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 04:53 | 05:27 | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 22:19 | 21:52 | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 06:56 (6) | 05:09 04:54 | 05:29 06:42 (6) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 12 07:08 (6) | 21:53 22:19 | 21:50 1 06:43 (6) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:51 (6) | 05:08 04:54 | 05:31 06:43 (6) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 21 07:12 (6) | 21:55 22:19 | 21:49 1 06:44 (6) | 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:49 (6) | 05:06 04:55 | 05:32 06:43 (6) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 10 07:15 (6) | 21:56 22:19 | 21:47 1 06:44 (6) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:46 (6) | 05:05 04:55 | 05:34 06:43 (6) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 8 06:54 (6) | 21:58 22:18 | 21:45 2 06:45 (6) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:44 (6) | 05:04 04:56 | 05:36 06:43 (6) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 7 06:51 (6) | 21:59 22:18 | 21:43 2 06:45 (6) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | 05:38 06:43 (6) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | 21:41 3 06:46 (6) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 58 | 42 | | 11 | 29 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | 0,95 | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,49 | | 0,46 | 0,49 | | | | |
| Total, real | | | | 22 | 21 | | 5 | 14 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:43 (6) | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 4 | 06:47 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:43 (6) | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 3 | 06:46 (6) | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:44 (6) | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 3 | 06:47 (6) | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 06:39 (6) | 04:59 | 04:59 | 05:45 | 06:45 (6) | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 2 06:41 (6) | 22:06 | 22:16 | 21:34 3 | 06:48 (6) | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 06:38 (6) | 04:58 | 05:00 | 05:47 | 06:45 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 2 06:40 (6) | 22:07 | 22:16 | 21:32 3 | 06:48 (6) | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 06:38 (6) | 04:57 | 05:01 | 05:49 | 06:46 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 3 06:41 (6) | 22:08 | 22:15 | 21:30 4 | 06:50 (6) | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 06:37 (6) | 04:56 | 05:02 | 05:50 | 06:47 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 3 06:40 (6) | 22:09 | 22:14 | 21:28 3 | 06:50 (6) | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 06:36 (6) | 04:56 | 05:03 | 05:52 | 06:49 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 3 06:39 (6) | 22:10 | 22:14 | 21:25 2 | 06:51 (6) | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 06:35 (6) | 04:55 | 05:04 | 05:54 | 06:49 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 3 06:38 (6) | 22:11 | 22:13 | 21:23 1 | 06:50 (6) | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 06:34 (6) | 04:54 | 05:05 | 05:56 | | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 3 06:37 (6) | 22:12 | 22:12 | 21:21 | | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 06:33 (6) | 04:54 | 05:07 | 05:58 | | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 3 06:36 (6) | 22:13 | 22:11 | 21:19 | | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 06:33 (6) | 04:53 | 05:08 06:39 (6) | 06:00 | | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 3 06:36 (6) | 22:14 | 22:10 1 06:40 (6) | 21:17 | | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 06:32 (6) | 04:53 | 05:09 06:39 (6) | 06:02 | | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 3 06:35 (6) | 22:15 | 22:09 1 06:40 (6) | 21:15 | | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 06:31 (6) | 04:53 | 05:11 06:39 (6) | 06:03 | | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 3 06:34 (6) | 22:15 | 22:08 1 06:40 (6) | 21:12 | | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 06:32 (6) | 04:52 | 05:12 | 06:05 | | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 2 06:34 (6) | 22:16 | 22:06 | 21:10 | | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 06:31 (6) | 04:52 | 05:13 | 06:07 | | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 3 06:34 (6) | 22:17 | 22:05 | 21:08 | | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 06:30 (6) | 04:52 | 05:15 06:39 (6) | 06:09 | | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 3 06:33 (6) | 22:17 | 22:04 1 06:40 (6) | 21:05 | | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 06:30 (6) | 04:52 | 05:16 06:39 (6) | 06:11 | | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 3 06:33 (6) | 22:18 | 22:03 1 06:40 (6) | 21:03 | | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 06:30 (6) | 04:52 | 05:18 06:40 (6) | 06:13 | | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 2 06:32 (6) | 22:18 | 22:01 1 06:41 (6) | 21:01 | | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 06:30 (6) | 04:52 | 05:19 06:40 (6) | 06:15 | | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 2 06:32 (6) | 22:18 | 22:00 1 06:41 (6) | 20:58 | | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 06:30 (6) | 04:52 | 05:21 06:39 (6) | 06:17 | | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 2 06:32 (6) | 22:19 | 21:58 2 06:41 (6) | 20:56 | | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 06:30 (6) | 04:52 | 05:22 06:40 (6) | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 1 06:31 (6) | 22:19 | 21:57 2 06:42 (6) | 20:54 | | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 06:30 (6) | 04:53 | 05:24 06:40 (6) | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 1 06:31 (6) | 22:19 | 21:55 2 06:42 (6) | 20:51 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 06:30 (6) | 04:53 | 05:26 06:40 (6) | 06:22 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 2 06:32 (6) | 22:19 | 21:54 3 06:43 (6) | 20:49 | | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 06:29 (6) | 04:53 | 05:27 06:40 (6) | 06:24 | | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 2 06:31 (6) | 22:19 | 21:52 2 06:42 (6) | 20:46 | | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 06:30 (6) | 04:54 | 05:29 06:41 (6) | 06:26 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 1 06:31 (6) | 22:19 | 21:50 2 06:43 (6) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 06:30 (6) | 04:54 | 05:31 06:42 (6) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 1 06:31 (6) | 22:19 | 21:49 2 06:44 (6) | 20:42 | | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:56 (6) | 05:06 06:30 (6) | 04:55 | 05:32 06:41 (6) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 2 06:58 (6) | 21:56 1 06:31 (6) | 22:19 | 21:47 3 06:44 (6) | 20:39 | | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:51 (6) | 05:05 06:30 (6) | 04:55 | 05:34 06:42 (6) | 06:32 | | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:05 3 06:54 (6) | 21:58 1 06:31 (6) | 22:18 | 21:45 3 06:45 (6) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:48 (6) | 05:04 | 04:56 | 05:36 06:42 (6) | 06:34 | | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 3 06:51 (6) | 21:59 | 22:18 | 21:43 3 06:45 (6) | 20:34 | | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 06:43 (6) | 06:36 | | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 3 06:46 (6) | 20:32 | | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Total, worst case | | | | 8 | 58 | | 34 | 26 | | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | | |
| Wind dir. red. | | | | 0,95 | 0,95 | | 0,95 | 0,95 | | | | | |
| Total reduction | | | | 0,37 | 0,49 | | 0,46 | 0,49 | | | | | |
| Total, real | | | | 3 | 28 | | 16 | 13 | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 10:11 (6) | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 2 10:13 (6) | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 10:01 (6) | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 23 10:24 (6) | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 09:57 (6) | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 32 10:29 (6) | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 09:53 (6) | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 39 10:32 (6) | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 09:50 (6) | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 45 10:35 (6) | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 09:36 (6) | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 80 10:56 (6) | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 09:35 (6) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 81 10:56 (6) | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 09:33 (6) | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 82 10:55 (6) | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 09:32 (6) | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 82 10:54 (6) | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 09:30 (6) | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 10:08 (6) | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 83 10:53 (6) | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 3 10:11 (6) | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 09:28 (6) | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 10:06 (6) | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 84 10:52 (6) | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 6 10:12 (6) | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 09:26 (6) | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 10:05 (6) | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 85 10:51 (6) | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 8 10:13 (6) | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 09:23 (6) | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 10:06 (6) | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 86 10:49 (6) | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 9 10:15 (6) | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 09:29 (6) | 06:28 09:21 (6) | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 10:08 (6) | 08:23 | 09:00 |
| | 16:51 | 17:57 1 09:30 (6) | 18:54 88 10:49 (6) | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 10 10:18 (6) | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 09:29 (6) | 06:26 09:19 (6) | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 09:09 (6) | 08:24 | 09:00 |
| | 16:53 | 17:59 1 09:30 (6) | 18:55 88 10:47 (6) | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 13 10:17 (6) | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 09:27 (6) | 06:23 09:18 (6) | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 09:10 (6) | 08:26 | 09:00 |
| | 16:55 | 18:01 3 09:30 (6) | 18:57 87 10:45 (6) | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 15 10:15 (6) | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 09:27 (6) | 06:21 09:19 (6) | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 09:12 (6) | 08:28 | 09:00 |
| | 16:58 | 18:03 3 09:30 (6) | 18:59 85 10:44 (6) | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 17 10:13 (6) | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 09:25 (6) | 06:18 09:20 (6) | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 09:13 (6) | 08:30 | 09:01 |
| | 17:00 | 18:05 5 09:30 (6) | 19:01 82 10:42 (6) | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 21 10:11 (6) | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 10:21 (6) | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 09:16 (6) | 08:31 | 09:01 |
| | 17:02 | | 20:03 79 11:40 (6) | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 25 10:09 (6) | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 10:21 (6) | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 09:18 (6) | 08:33 | 09:01 |
| | 17:04 | | 20:05 77 11:38 (6) | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 33 10:07 (6) | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 10:22 (6) | | 05:03 | | 05:38 | 06:36 | | 07:34 09:20 (6) | | 09:01 |
| | 17:06 | | 20:07 74 11:36 (6) | | 22:01 | | 21:41 | 20:32 | | 17:00 44 10:04 (6) | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 154 | 1323 | | | | | | | 204 | 90 | |
| Sun reduction | | 0,25 | 0,34 | | | | | | | 0,31 | 0,16 | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | | 1,00 | 1,00 | |
| Wind dir. red. | | 0,69 | 0,69 | | | | | | | 0,69 | 0,69 | |
| Total reduction | | 0,17 | 0,23 | | | | | | | 0,21 | 0,11 | |
| Total, real | | 26 | 310 | | | | | | | 43 | 10 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June | July | August | September | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | 08:39 (6) | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | | 07:36 | 08:35 |
| | 16:14 | 17:08 | | 18:07 | 1 08:40 (6) | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | | 07:24 | 08:38 (6) | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | | 07:38 | 08:36 |
| | 16:15 | 17:10 | | 18:09 | 1 08:39 (6) | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | | 07:22 | 08:38 (6) | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:41 | 08:38 |
| | 16:16 | 17:12 | | 18:11 | 1 08:39 (6) | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | | 07:19 | 08:37 (6) | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:43 | 08:40 |
| | 16:17 | 17:14 | | 18:13 | 1 08:38 (6) | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | | 07:17 | | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | 08:41 |
| | 16:19 | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | 08:43 |
| | 16:20 | 17:19 | | 18:17 | | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | | 07:12 | | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | | 07:49 | 08:44 |
| | 16:21 | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | | 07:09 | | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | 08:45 |
| | 16:23 | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | | 07:07 | | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | 08:47 |
| | 16:24 | 17:25 | | 18:24 | | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | | 07:04 | | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 09:12 (6) | 07:55 | 08:48 |
| | 16:26 | 17:27 | | 18:26 | | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 1 09:13 (6) | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | | 07:02 | | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 09:12 (6) | 07:57 | 08:49 |
| | 16:28 | 17:29 | | 18:28 | | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 1 09:13 (6) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 09:03 (6) | 06:59 | | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 09:12 (6) | 07:59 | 08:50 |
| | 16:29 | 17:31 | 12 09:15 (6) | 18:30 | | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 1 09:13 (6) | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 08:59 (6) | 06:56 | | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 09:12 (6) | 08:01 | 08:51 |
| | 16:31 | 17:33 | 21 09:20 (6) | 18:32 | | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 1 09:13 (6) | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 08:55 (6) | 06:54 | | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 09:12 (6) | 08:03 | 08:52 |
| | 16:33 | 17:36 | 27 09:22 (6) | 18:34 | | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 1 09:13 (6) | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 08:53 (6) | 06:51 | | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 09:12 (6) | 08:05 | 08:53 |
| | 16:34 | 17:38 | 32 09:25 (6) | 18:36 | | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 2 09:14 (6) | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 08:51 (6) | 06:49 | | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 09:12 (6) | 08:07 | 08:54 |
| | 16:36 | 17:40 | 36 09:27 (6) | 18:38 | | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 2 09:14 (6) | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 08:49 (6) | 06:46 | | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 09:12 (6) | 08:09 | 08:55 |
| | 16:38 | 17:42 | 39 09:28 (6) | 18:40 | | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 3 09:15 (6) | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 08:48 (6) | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 09:13 (6) | 08:11 | 08:56 |
| | 16:40 | 17:44 | 42 09:30 (6) | 18:42 | | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 3 09:16 (6) | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 08:47 (6) | 06:41 | | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 09:14 (6) | 08:13 | 08:57 |
| | 16:42 | 17:46 | 43 09:30 (6) | 18:44 | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 3 09:17 (6) | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 08:45 (6) | 06:39 | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 09:14 (6) | 08:15 | 08:57 |
| | 16:44 | 17:48 | 45 09:30 (6) | 18:46 | | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 4 09:18 (6) | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 08:44 (6) | 06:36 | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 09:15 (6) | 08:17 | 08:58 |
| | 16:46 | 17:50 | 46 09:30 (6) | 18:48 | | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 4 09:19 (6) | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 08:43 (6) | 06:33 | | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 09:15 (6) | 08:19 | 08:59 |
| | 16:48 | 17:53 | 47 09:30 (6) | 18:50 | | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 5 09:20 (6) | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 08:42 (6) | 06:31 | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 09:16 (6) | 08:21 | 08:59 |
| | 16:49 | 17:55 | 48 09:30 (6) | 18:52 | | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 5 09:21 (6) | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 08:41 (6) | 06:28 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 09:18 (6) | 08:23 | 09:00 |
| | 16:51 | 17:57 | 49 09:30 (6) | 18:54 | | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 6 09:24 (6) | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 08:41 (6) | 06:26 | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:20 (6) | 08:24 | 09:00 |
| | 16:53 | 17:59 | 49 09:30 (6) | 18:56 | | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 6 08:26 (6) | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 08:39 (6) | 06:23 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:21 (6) | 08:26 | 09:00 |
| | 16:55 | 18:01 | 51 09:30 (6) | 18:57 | | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 7 08:28 (6) | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 08:39 (6) | 06:21 | | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:23 (6) | 08:28 | 09:00 |
| | 16:58 | 18:03 | 51 09:30 (6) | 18:59 | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 11 08:54 (6) | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 08:38 (6) | 06:18 | | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:25 (6) | 08:30 | 09:01 |
| | 17:00 | 18:05 | 52 09:30 (6) | 19:01 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 19 08:51 (6) | 16:13 | 16:09 |
| 29 | 08:33 | | | 07:15 | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:29 (6) | 08:31 | 09:01 |
| | 17:02 | | | 20:03 | | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 19 08:48 (6) | 16:12 | 16:10 |
| 30 | 08:31 | | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:34 (6) | 08:33 | 09:01 |
| | 17:04 | | | 20:05 | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 9 08:43 (6) | 16:11 | 16:11 |
| 31 | 08:29 | | | 07:10 | | | 05:03 | | 05:38 | 06:36 | | 07:34 | | | 09:01 |
| | 17:06 | | | 20:07 | | | 22:01 | | 21:41 | 20:32 | | 17:00 | | | 16:12 |
| Potential sun hours | 242 | 269 | | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | 253 | 224 |
| Total, worst case | | | 690 | | 4 | | | | | | | | 113 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | | | | | | 0,31 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | | | | | 1,00 | | |
| Wind dir. red. | | | 0,84 | | 0,84 | | | | | | | | 0,84 | | |
| Total reduction | | | 0,21 | | 0,29 | | | | | | | | 0,26 | | |
| Total, real | | | 142 | | 1 | | | | | | | | 29 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | May | June | July | August | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 15:49 (7) | 07:26 | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | | | 07:36 | | | 08:35 |
| | 16:13 | | | 17:08 | 32 | 16:21 (7) | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | | | 16:57 | | | 16:10 |
| 2 | 09:00 | | | 08:25 | | 15:48 (7) | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | | | 07:38 | | | 08:36 |
| | 16:15 | | | 17:10 | 33 | 16:21 (7) | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | | | 16:55 | | | 16:09 |
| 3 | 09:00 | | | 08:23 | | 15:48 (7) | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | | | 07:40 | | | 08:38 |
| | 16:16 | | | 17:12 | 34 | 16:22 (7) | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | | | 16:53 | | | 16:08 |
| 4 | 08:59 | | | 08:22 | | 15:48 (7) | 07:19 | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | | | 07:42 | | | 08:39 |
| | 16:17 | | | 17:14 | 34 | 16:22 (7) | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | | | 16:51 | | | 16:07 |
| 5 | 08:59 | | | 08:20 | | 15:49 (7) | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 | | | 07:44 | | | 08:41 |
| | 16:18 | | | 17:16 | 33 | 16:22 (7) | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | | | 16:49 | | | 16:06 |
| 6 | 08:59 | | | 08:18 | | 15:49 (7) | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | | | 07:46 | | | 08:42 |
| | 16:20 | | | 17:18 | 34 | 16:23 (7) | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | | | 16:47 | | | 16:06 |
| 7 | 08:58 | | | 08:16 | | 15:49 (7) | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | | | 07:48 | | 15:52 (7) | 08:44 |
| | 16:21 | | | 17:20 | 34 | 16:23 (7) | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | | | 16:45 | 1 | 15:53 (7) | 16:05 |
| 8 | 08:57 | | | 08:14 | | 15:50 (7) | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | | | 07:51 | | | 08:45 |
| | 16:23 | | | 17:23 | 33 | 16:23 (7) | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | | | 16:43 | | | 16:05 |
| 9 | 08:57 | | | 08:12 | | 15:49 (7) | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | | | 07:53 | | 15:51 (7) | 08:46 |
| | 16:24 | | | 17:25 | 33 | 16:22 (7) | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | | | 16:41 | 1 | 15:52 (7) | 16:04 |
| 10 | 08:56 | | | 08:10 | | 15:50 (7) | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | | | 07:55 | | 15:50 (7) | 08:48 |
| | 16:26 | | | 17:27 | 31 | 16:21 (7) | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | | | 16:39 | 1 | 15:51 (7) | 16:04 |
| 11 | 08:55 | | | 08:07 | | 15:51 (7) | 07:01 | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | | | 07:57 | | 15:50 (7) | 08:49 |
| | 16:27 | | | 17:29 | 30 | 16:21 (7) | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | | | 16:38 | 2 | 15:52 (7) | 16:04 |
| 12 | 08:55 | | | 08:05 | | 15:52 (7) | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 | | | 07:59 | | 15:49 (7) | 08:50 |
| | 16:29 | | | 17:31 | 29 | 16:21 (7) | 18:29 | 20:31 | 21:29 | 22:14 | 22:09 | 21:17 | 20:01 | 18:44 | | | 16:36 | 2 | 15:51 (7) | 16:04 |
| 13 | 08:54 | | | 08:03 | | 15:53 (7) | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | | | 08:01 | | 15:48 (7) | 08:51 |
| | 16:31 | | | 17:33 | 26 | 16:19 (7) | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | | | 16:34 | 2 | 15:50 (7) | 16:03 |
| 14 | 08:53 | | | 08:01 | | 15:54 (7) | 06:54 | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | | | 08:03 | | 15:47 (7) | 08:52 |
| | 16:32 | | | 17:35 | 24 | 16:18 (7) | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | | | 16:32 | 3 | 15:50 (7) | 16:03 |
| 15 | 08:52 | | | 07:59 | | 15:56 (7) | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | | | 08:05 | | 15:47 (7) | 08:53 |
| | 16:34 | | | 17:38 | 21 | 16:17 (7) | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | | | 16:30 | 3 | 15:50 (7) | 16:03 |
| 16 | 08:51 | | | 07:57 | | 15:58 (7) | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | | | 08:07 | | 15:45 (7) | 08:54 |
| | 16:36 | | | 17:40 | 16 | 16:14 (7) | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | | | 16:29 | 4 | 15:49 (7) | 16:03 |
| 17 | 08:49 | | | 07:54 | | 16:01 (7) | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | | | 08:09 | | 15:43 (7) | 08:55 |
| | 16:38 | | | 17:42 | 10 | 16:11 (7) | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | | | 16:27 | 5 | 15:48 (7) | 16:03 |
| 18 | 08:48 | | | 07:52 | | | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | | | 08:11 | | 15:28 (7) | 08:56 |
| | 16:40 | | | 17:44 | | | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | | | 16:26 | 6 | 15:46 (7) | 16:04 |
| 19 | 08:47 | | | 07:50 | | | 06:41 | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:10 | | | 08:13 | | 15:29 (7) | 08:56 |
| | 16:42 | | | 17:46 | | | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | | | 16:24 | 13 | 15:44 (7) | 16:04 |
| 20 | 08:46 | | | 07:48 | | | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | | | 08:15 | | 15:33 (7) | 08:57 |
| | 16:43 | | | 17:48 | | | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | | | 16:23 | 10 | 15:43 (7) | 16:04 |
| 21 | 08:45 | | | 07:45 | | | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:14 | | | 08:17 | | | 08:58 |
| | 16:45 | | | 17:50 | | | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | | | 16:21 | | | 16:05 |
| 22 | 08:43 | | 15:58 (7) | 07:43 | | | 06:33 | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | | | 08:18 | | | 08:58 |
| | 16:47 | 10 | 16:08 (7) | 17:52 | | | 18:49 | 20:50 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | | | 16:20 | | | 16:05 |
| 23 | 08:42 | | 15:55 (7) | 07:41 | | | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | | | 08:20 | | | 08:59 |
| | 16:49 | 15 | 16:10 (7) | 17:54 | | | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | | | 16:18 | | | 16:06 |
| 24 | 08:40 | | 15:54 (7) | 07:38 | | | 06:28 | 06:11 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | | | 08:22 | | | 08:59 |
| | 16:51 | 18 | 16:12 (7) | 17:57 | | | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | | | 16:17 | | | 16:06 |
| 25 | 08:39 | | 15:53 (7) | 07:36 | | | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | | 15:30 (7) | 08:24 | | | 09:00 |
| | 16:53 | 22 | 16:15 (7) | 17:59 | | | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 12 | 15:42 (7) | 16:16 | | | 16:07 |
| 26 | 08:37 | | 15:52 (7) | 07:33 | | | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | | 15:28 (7) | 08:26 | | | 09:00 |
| | 16:55 | 24 | 16:16 (7) | 18:01 | | | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 17 | 15:45 (7) | 16:15 | | | 16:07 |
| 27 | 08:36 | | 15:51 (7) | 07:31 | | | 06:20 | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 07:26 | | 15:25 (7) | 08:28 | | | 09:00 |
| | 16:57 | 26 | 16:17 (7) | 18:03 | | | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 22 | 15:47 (7) | 16:14 | | | 16:08 |
| 28 | 08:34 | | 15:50 (7) | 07:29 | | | 06:18 | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 07:28 | | 15:23 (7) | 08:29 | | | 09:00 |
| | 16:59 | 28 | 16:18 (7) | 18:05 | | | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 25 | 15:48 (7) | 16:12 | | | 16:09 |
| 29 | 08:32 | | 15:50 (7) | | | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | | 15:22 (7) | 08:31 | | | 09:00 |
| | 17:01 | 29 | 16:19 (7) | | | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 27 | 15:49 (7) | 16:11 | | | 16:10 |
| 30 | 08:31 | | 15:49 (7) | | | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | | 15:22 (7) | 08:33 | | | 09:00 |
| | 17:04 | 30 | 16:19 (7) | | | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 28 | 15:50 (7) | 16:10 | | | 16:11 |
| 31 | 08:29 | | 15:49 (7) | | | | 07:10 | | 05:02 | | 05:37 | 06:35 | | 07:34 | | | | | | 09:00 |
| | 17:06 | 31 | 16:20 (7) | | | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 16:59 | | | | | | 16:12 |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 233 | | | 487 | | | | | | | | | | 131 | | | 53 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,73 | | | 0,73 | | | | | | | | | | 0,73 | | | 0,73 | | |
| Total reduction | | 0,13 | | | 0,18 | | | | | | | | | | 0,23 | | | 0,12 | | |
| Total, real | | 31 | | | 88 | | | | | | | | | | 30 | | | 6 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 17:32 (7) | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | 18:01 (7) | 07:36 | 08:34 |
| | 16:13 | 17:08 | 18:07 7 | 17:39 (7) | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 24 | 18:25 (7) | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 17:28 (7) | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 18:00 (7) | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 13 | 17:41 (7) | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 26 | 18:26 (7) | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 17:27 (7) | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 17:59 (7) | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 16 | 17:43 (7) | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:06 27 | 18:26 (7) | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 17:25 (7) | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | 17:59 (7) | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 20 | 17:45 (7) | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 26 | 18:25 (7) | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 17:23 (7) | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 | 17:57 (7) | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 23 | 17:46 (7) | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 27 | 18:24 (7) | 16:49 | 16:06 |
| 6 | 08:59 | 08:18 | 07:14 | 17:23 (7) | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 17:57 (7) | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 24 | 17:47 (7) | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 26 | 18:23 (7) | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 17:21 (7) | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 17:57 (7) | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 26 | 17:47 (7) | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 26 | 18:23 (7) | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 17:21 (7) | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 17:59 (7) | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 27 | 17:48 (7) | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 24 | 18:23 (7) | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 17:21 (7) | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 17:59 (7) | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 26 | 17:47 (7) | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:08 | 18:51 23 | 18:22 (7) | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 17:21 (7) | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 18:00 (7) | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 27 | 17:48 (7) | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 19 | 18:19 (7) | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 17:21 (7) | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 18:01 (7) | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 26 | 17:47 (7) | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 15 | 18:16 (7) | 16:37 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 17:20 (7) | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 | 18:03 (7) | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 26 | 17:46 (7) | 20:31 | 21:29 | 22:14 | 22:09 | 21:16 | 20:01 | 18:44 11 | 18:14 (7) | 16:36 | 16:03 |
| 13 | 08:54 | 08:03 | 06:56 | 17:21 (7) | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 24 | 17:45 (7) | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 17:22 (7) | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 07:59 | | 08:03 | 08:52 |
| | 16:32 | 17:35 | 18:33 22 | 17:44 (7) | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 17:23 (7) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | | 08:05 | 08:53 |
| | 16:34 | 17:37 | 18:35 20 | 17:43 (7) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | | 16:30 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 17:25 (7) | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 15 | 17:40 (7) | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 17:27 (7) | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:07 | 08:05 | | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 10 | 17:37 (7) | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:09 | | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:14 | | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | | 06:10 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | | 08:22 | 08:59 |
| | 16:51 | 17:56 | 18:53 | | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 18:11 (7) 07:24 | | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:24 7 | 18:18 (7) 17:10 | | 16:15 | 16:07 |
| 27 | 08:36 | 07:31 | 06:20 | | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 18:07 (7) 07:26 | | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 14 | 18:21 (7) 17:08 | | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 18:05 (7) 07:28 | | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 18 | 18:23 (7) 17:06 | | 16:12 | 16:09 |
| 29 | 08:32 | | 07:15 | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 18:03 (7) 07:30 | | 08:31 | 09:00 |
| | 17:01 | | 20:03 | | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 21 | 18:24 (7) 17:04 | | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 18:02 (7) 07:32 | | 08:33 | 09:00 |
| | 17:04 | | 20:05 | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 23 | 18:25 (7) 17:02 | | 16:10 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:02 | | 05:37 | 06:35 | | 07:34 | | | 09:00 |
| | 17:06 | | 20:07 | | | 22:00 | | 21:41 | 20:31 | | 16:59 | | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | 352 | | | | | | 83 | | 274 | | | |
| Sun reduction | | | 0,34 | | | | | | 0,40 | | 0,31 | | | |
| Oper. time red. | | | 1,00 | | | | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | 0,95 | | | | | | 0,95 | | 0,95 | | | |
| Total reduction | | | 0,33 | | | | | | 0,38 | | 0,29 | | | |
| Total, real | | | 115 | | | | | | 31 | | 80 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:53 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:55 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Enercon E138 (be 6 VE) Shut downShadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:14 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:11 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:28 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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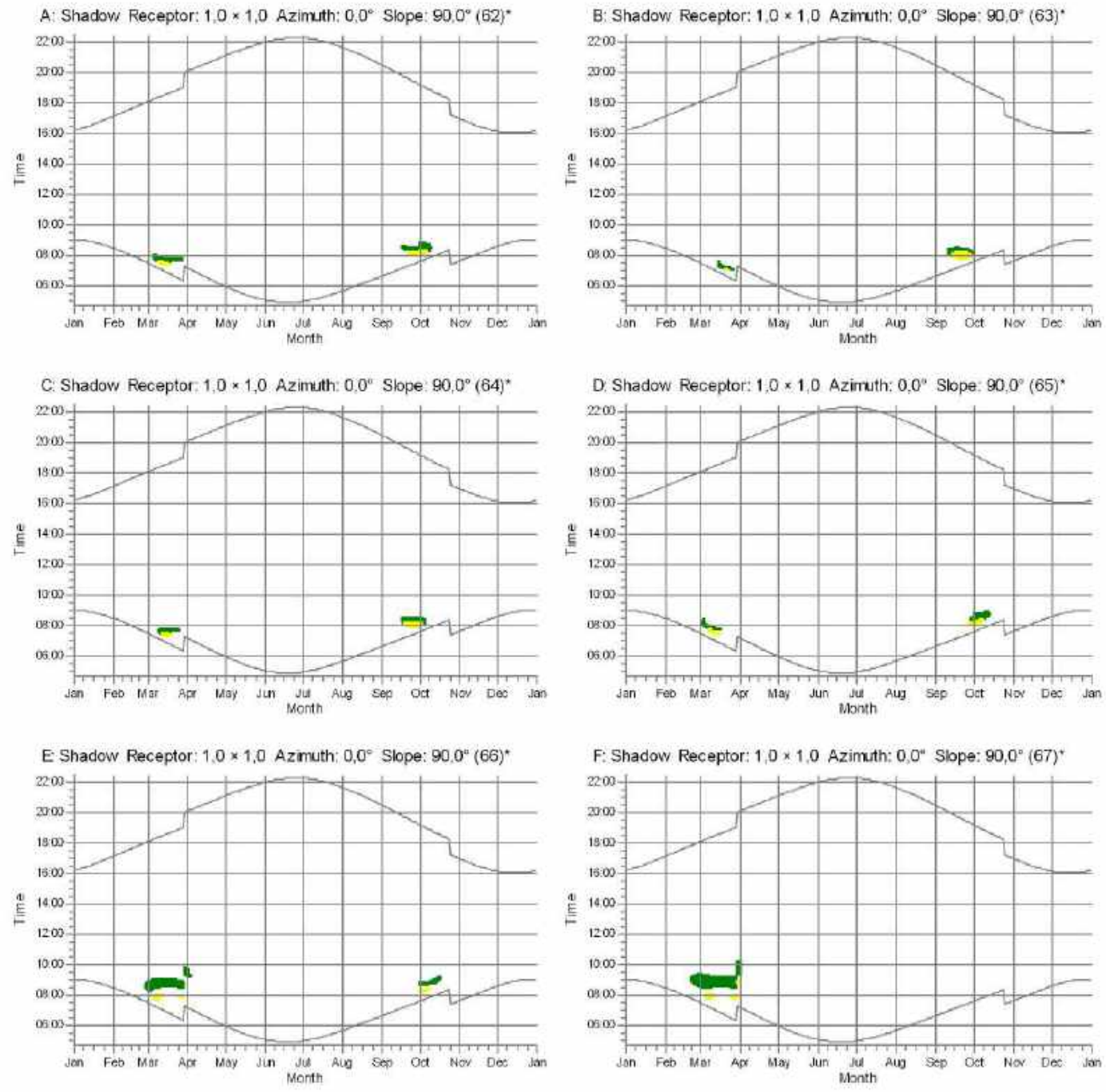
# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE) Shut down




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

* Results reduced by flicker curtailment

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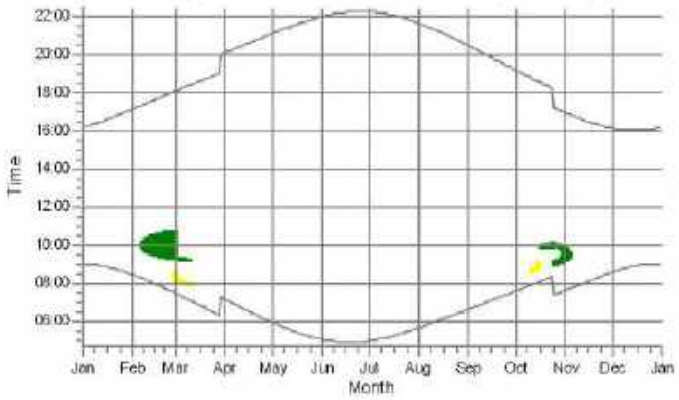
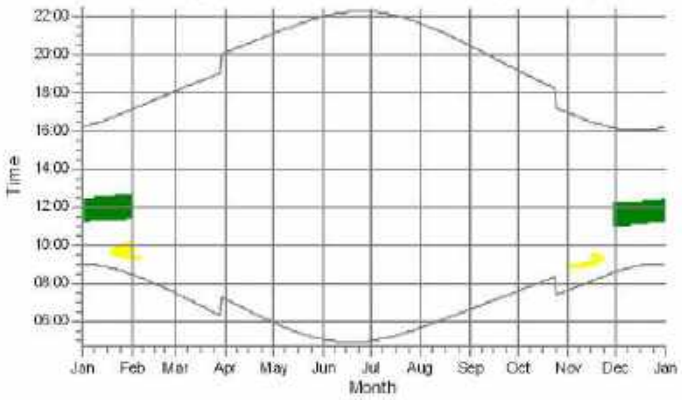
## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE) Shut down

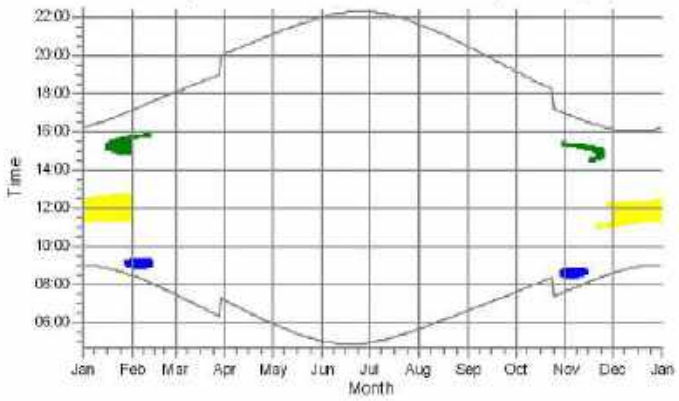
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*



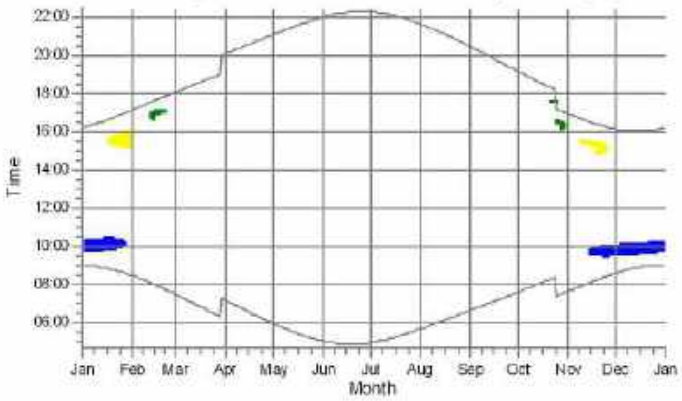

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*



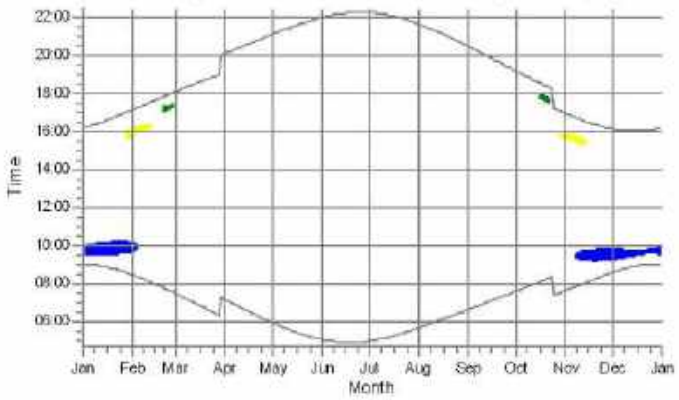

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*



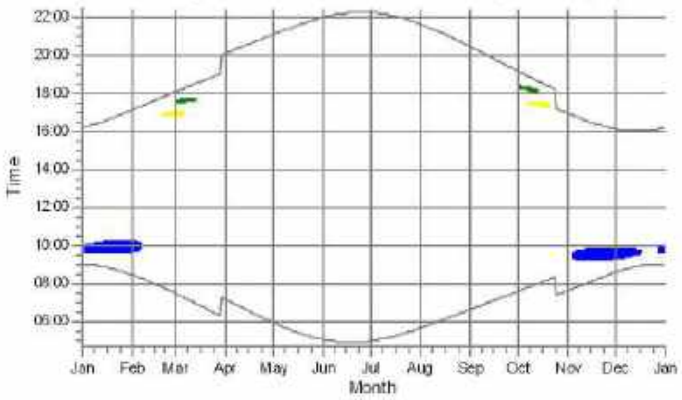

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*




WTGs

- 1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
- 2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

* Results reduced by flicker curtailment

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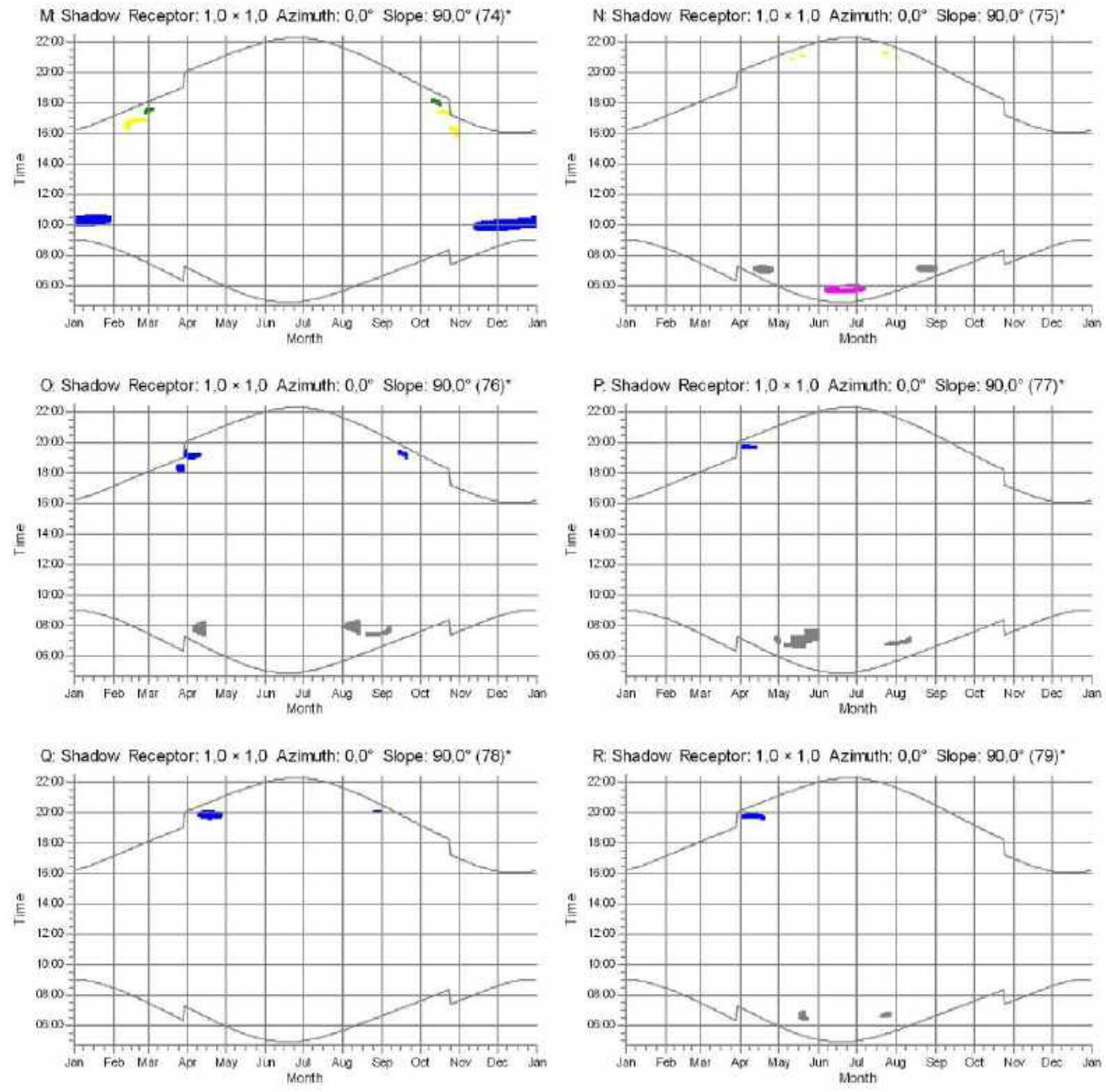
Calculated:
2021.12.03 11:21/3.5.552

## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE) Shut down




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

* Results reduced by flicker curtailment

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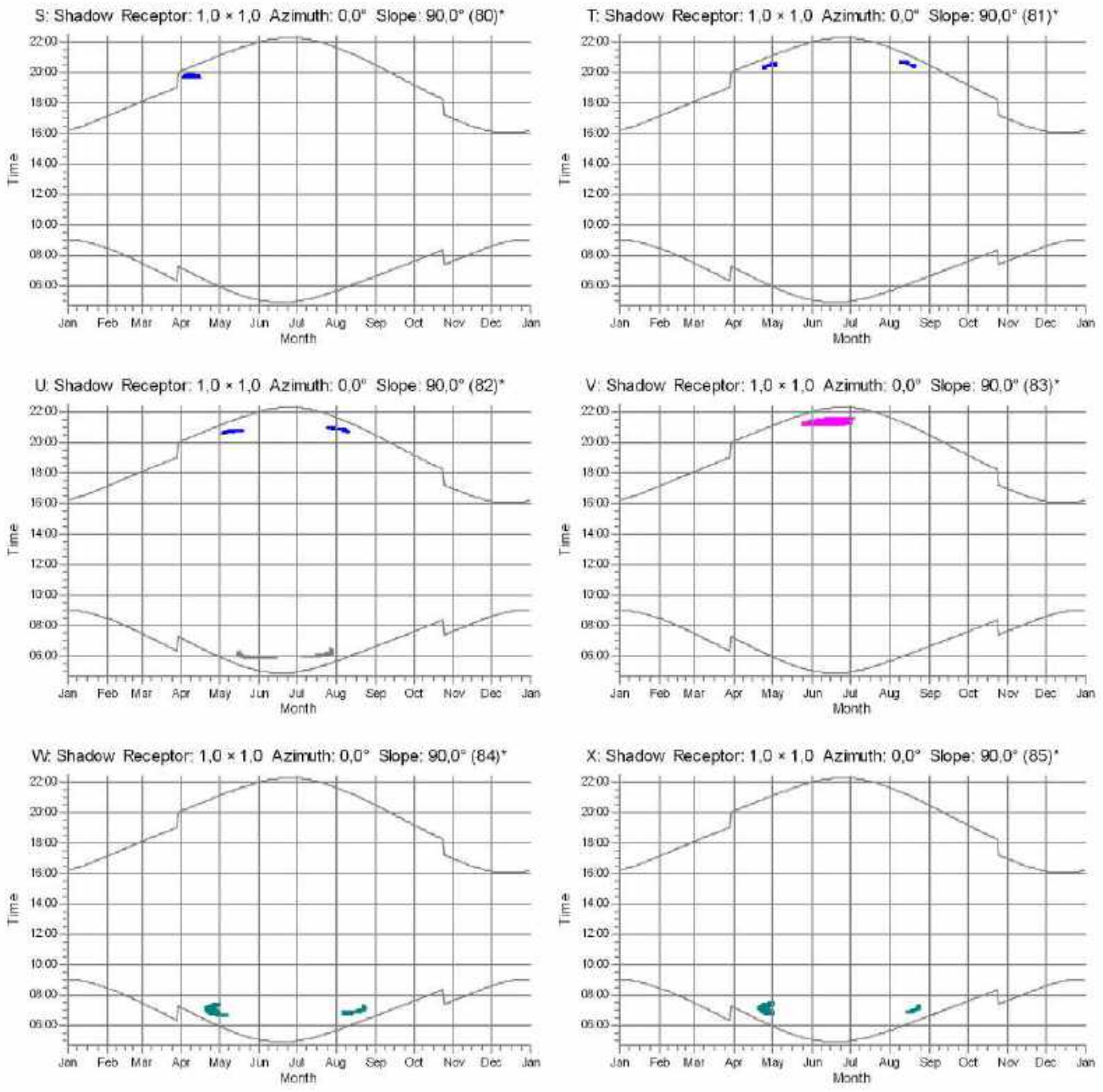
Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar, graphical

## Calculation: Enercon E138 (be 6 VE) Shut down




WTGs

- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
- 6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

* Results reduced by flicker curtailment

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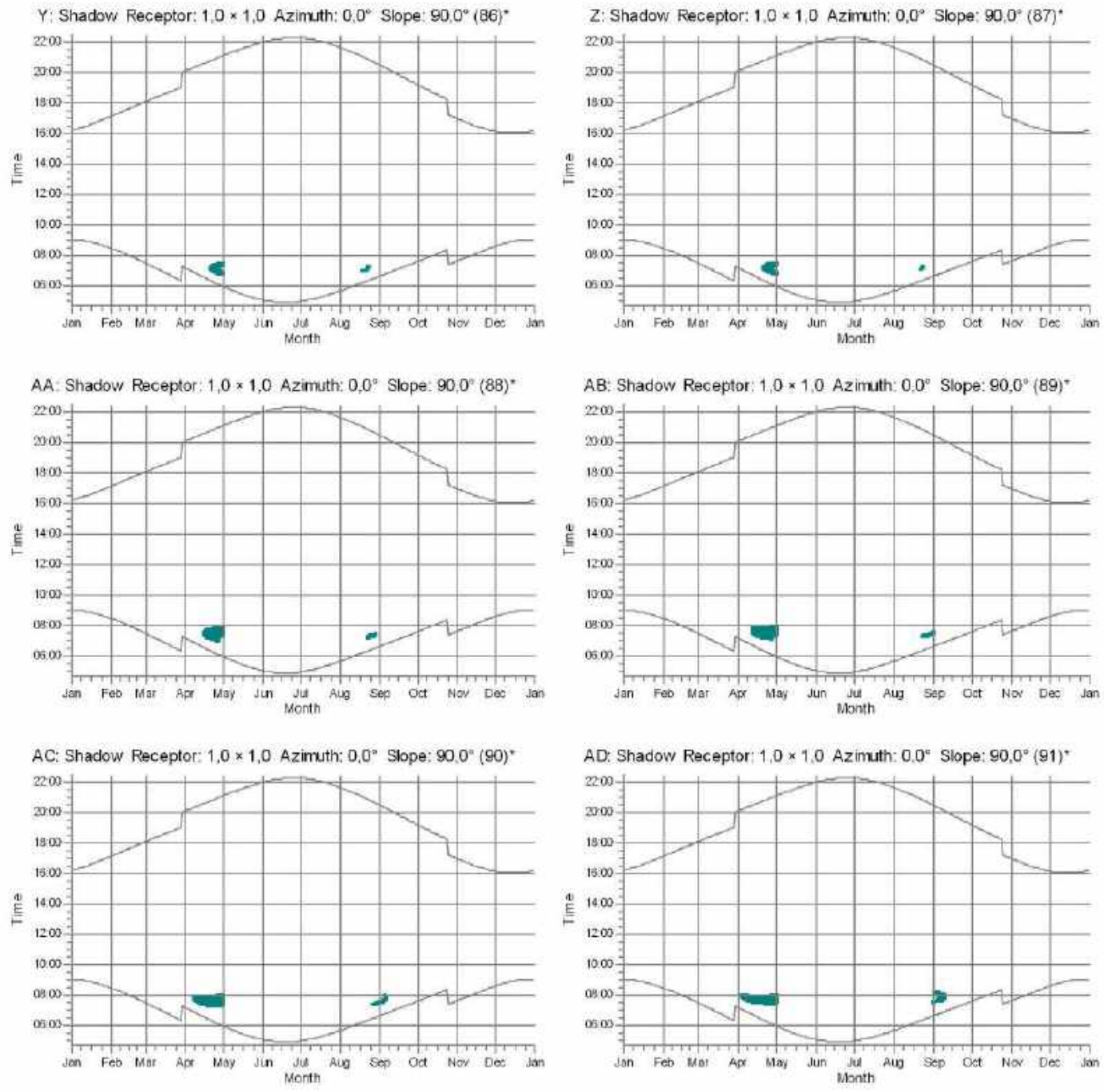
## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE) Shut down




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

* Results reduced by flicker curtailment

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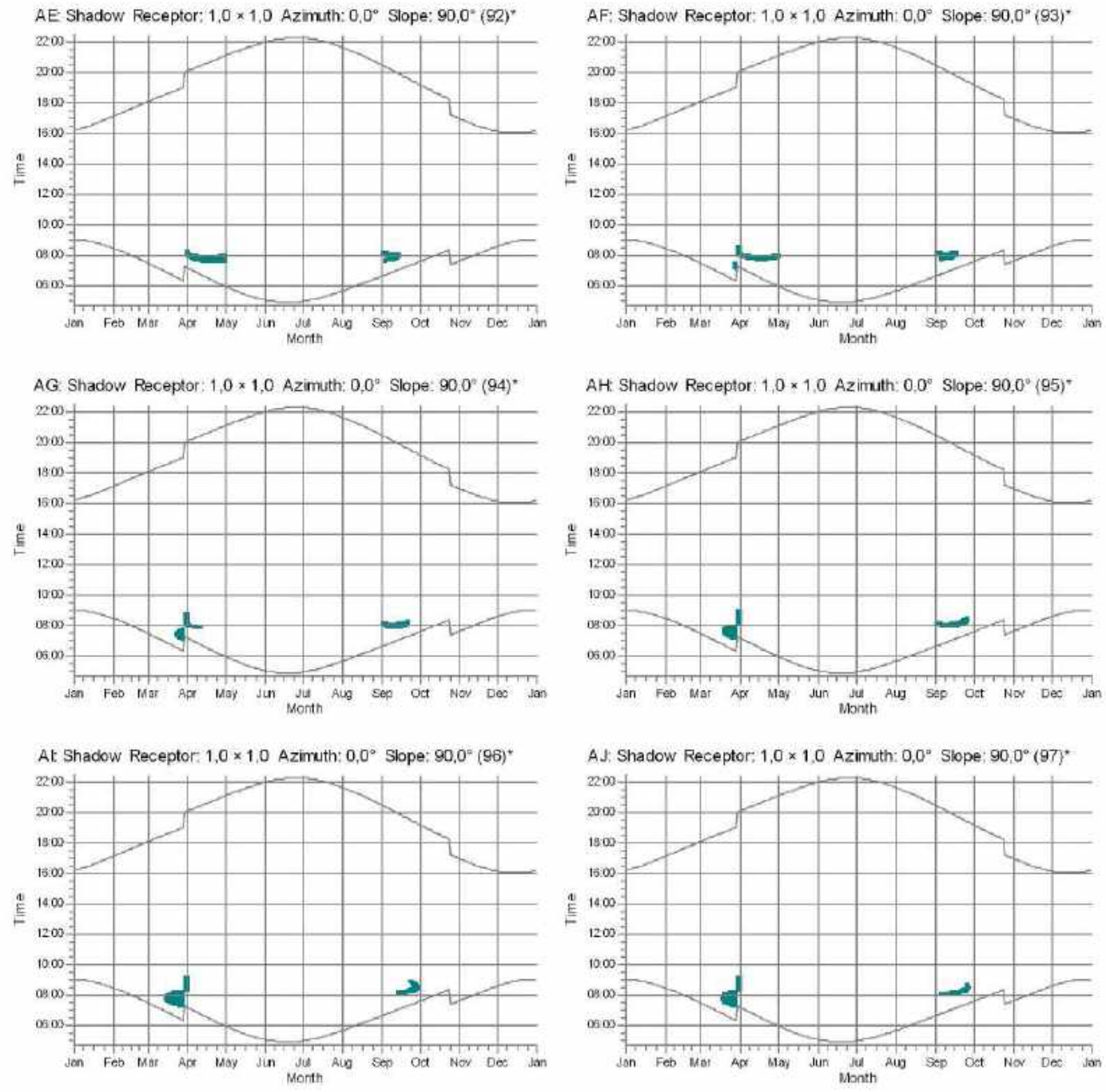
## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE) Shut down




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

* Results reduced by flicker curtailment

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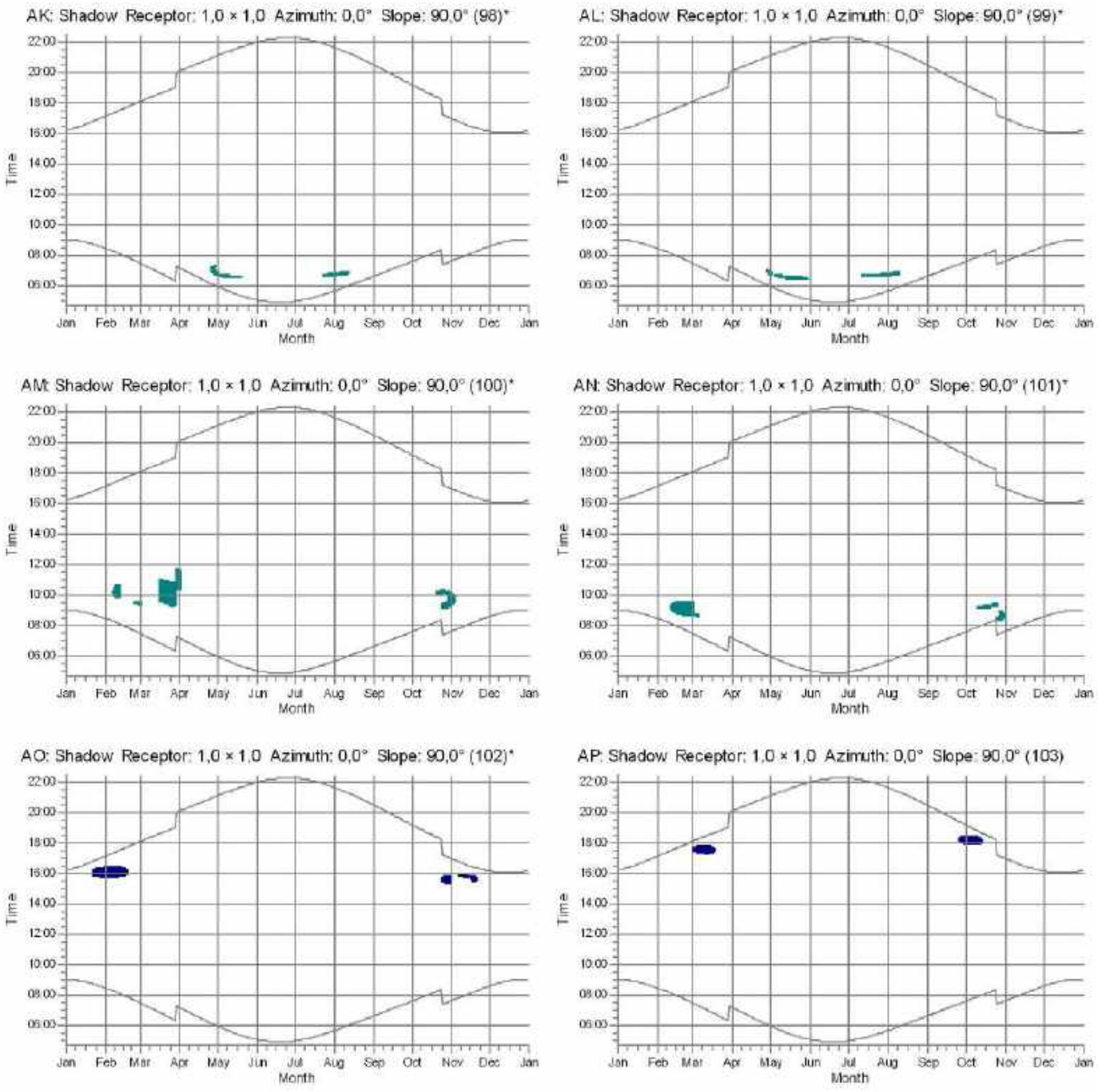
Calculated:
2021.12.03 11:21/3.5.552

## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE) Shut down




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

* Results reduced by flicker curtailment

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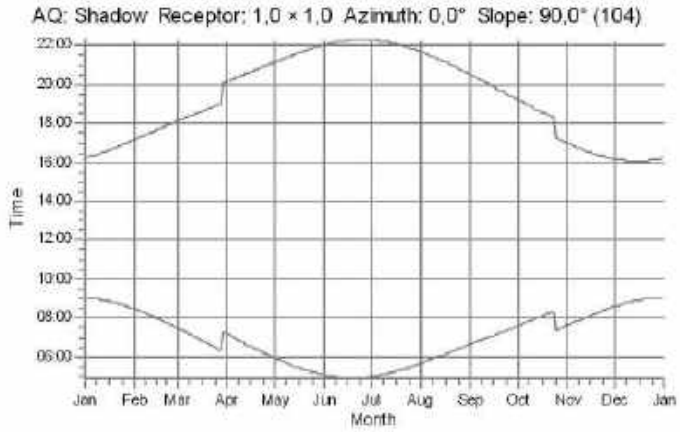
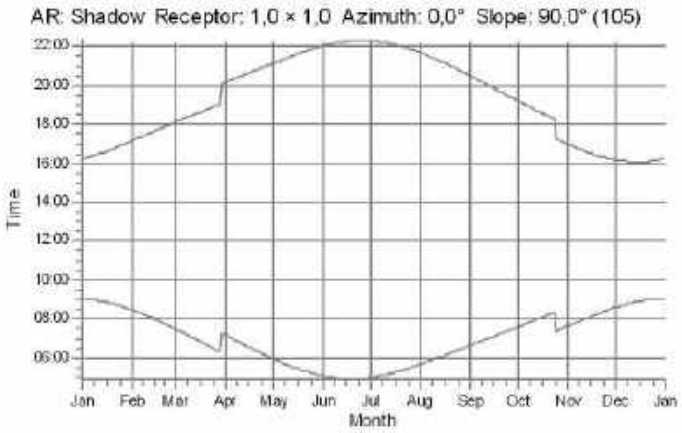
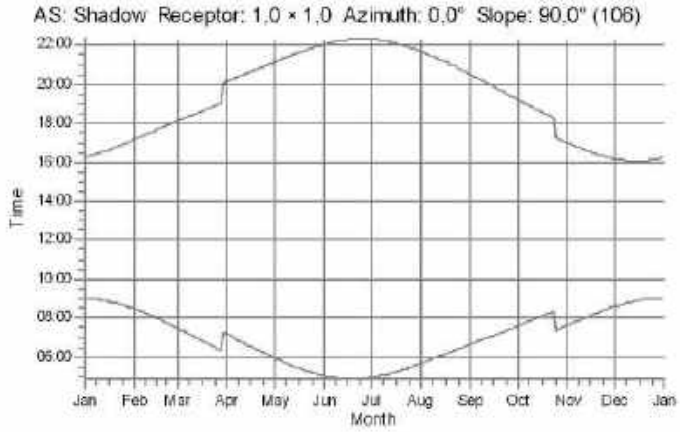
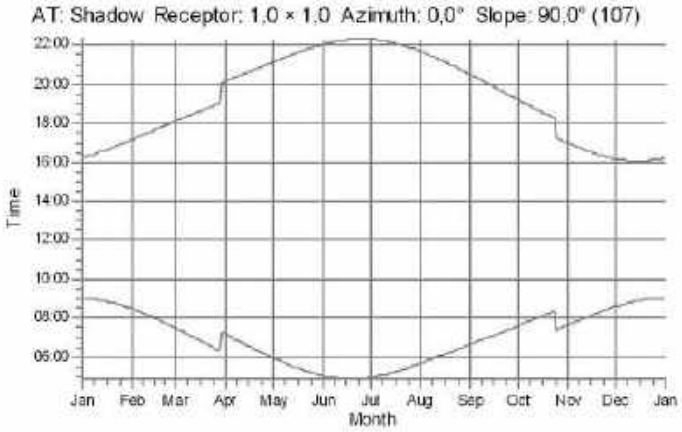
## SHADOW - Calendar, graphical

Calculation: Enercon E138 (be 6 VE) Shut down

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62 | 08:28 15:43-15:47/4 | 07:27 17:33-17:35/2 | 07:08 09:08-09:17/9 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 08:17-09:19/62 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 11:20-12:22/62 | 08:26 15:44-15:47/3 | 07:24 17:35-17:37/2 | 07:05 09:11-09:18/7 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:10 08:05-09:18/73 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 11:20-12:23/63 | 08:24 15:45-15:48/3 | 07:22 17:35-17:38/3 08:00-08:08/8 | 07:03 09:15-09:18/3 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 08:18-09:17/59 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 11:20-12:23/63 | 08:22 15:46-15:49/3 | 07:19 17:37-17:40/3 07:58-08:04/6 | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 08:23-09:17/54 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 11:21-12:24/63 | 08:20 15:47-15:50/3 | 07:17 17:38-17:41/3 07:48-08:00/12 | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 08:26-09:15/49 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 11:21-12:25/64 | 08:18 15:48-15:50/2 | 07:15 17:40-17:42/2 07:45-07:58/13 | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 08:28-09:15/47 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 11:21-12:25/64 | 08:16 15:49-15:51/2 | 07:12 17:40-17:43/3 07:42-07:55/13 | 06:53 | 05:42 | 04:56 |
| | 16:22 | 17:21 09:54-10:08/14 | 18:20 08:29-09:14/45 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 11:21-12:25/64 | 08:14 15:49-15:51/2 | 07:10 17:41-17:43/2 07:39-07:53/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 09:47-10:13/26 | 18:22 08:30-09:13/43 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 11:22-12:27/65 | 08:12 15:50-15:51/1 | 07:07 17:42-17:43/1 07:33-07:52/19 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 09:44-10:17/33 | 18:24 08:32-09:13/41 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 11:22-12:28/66 | 08:10 15:51-15:52/1 | 07:04 17:42-17:43/1 07:29-07:50/21 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 09:41-10:20/39 | 18:26 08:32-09:12/40 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 11:22-12:28/66 | 08:08 15:51-15:52/1 | 07:02 17:43-17:44/1 07:27-07:50/23 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 09:39-10:23/44 | 18:28 08:34-09:12/38 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 11:22-12:28/66 | 08:06 09:36-10:25/49 | 06:59 17:42-17:43/1 07:25-07:48/23 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 08:34-09:11/37 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 11:22-12:29/67 | 08:04 16:46-16:58/12 | 06:57 08:35-09:11/36 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 09:34-10:27/53 | 18:32 07:24-07:48/24 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 11:22-12:29/67 | 08:02 16:55-17:01/6 09:32-10:29/57 | 06:54 08:35-09:10/35 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 16:43-16:44/1 | 18:34 07:22-07:47/25 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 11:23-12:30/67 | 08:00 16:58-17:02/4 | 06:52 08:34-09:09/35 07:18-07:24/6 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 09:30-10:30/60 | 18:36 07:30-07:46/16 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 11:22-12:30/68 | 07:57 17:01-17:04/3 | 06:49 08:35-09:09/34 07:16-07:20/4 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 09:29-10:32/63 | 18:38 07:35-07:46/11 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 15:09-15:21/12 | 07:55 17:03-17:06/3 | 06:47 08:34-09:09/35 07:13-07:16/3 | 06:28 | 05:23 | 04:52 |
| | 16:38 11:23-12:31/68 | 17:42 09:28-10:34/66 | 18:40 07:37-07:45/8 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 15:07-15:25/18 | 07:53 17:04-17:06/2 | 06:44 08:35-09:09/34 07:12-07:15/3 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:24-12:32/68 | 17:44 09:26-10:35/69 | 18:42 07:39-07:45/6 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 15:04-15:28/24 | 07:51 17:05-17:07/2 | 06:42 08:34-09:08/34 07:11-07:13/2 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:23-12:32/69 | 17:47 09:25-10:36/71 | 18:44 07:40-07:44/4 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 15:03-15:30/27 | 07:48 17:07-17:08/1 | 06:39 08:33-09:08/35 07:09-07:11/2 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:24-12:32/68 | 17:49 09:24-10:38/74 | 18:46 07:41-07:44/3 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 15:01-15:32/31 | 07:46 17:07-17:14/7 | 06:36 08:33-09:08/35 07:09-07:10/1 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:24-12:32/68 | 17:51 09:22-10:38/76 | 18:48 07:42-07:44/2 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:59-15:34/35 | 07:44 17:12-17:17/5 08:50-09:09/19 | 06:34 08:32-09:08/36 07:08-07:09/1 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:24-12:32/68 | 17:53 09:22-10:39/77 | 18:50 07:42-07:44/2 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:59-15:36/37 | 07:41 17:15-17:19/4 08:45-09:13/28 | 06:31 08:32-09:08/36 07:08-07:09/1 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:25-12:33/68 | 17:55 09:20-10:40/80 | 18:52 07:43-07:44/1 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:57-15:37/40 | 07:39 17:17-17:21/4 08:42-09:16/34 | 06:29 08:31-09:08/37 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:25-12:33/68 | 17:57 09:20-10:41/81 | 18:54 07:42-07:44/2 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:56-15:39/43 | 07:36 17:18-17:21/3 | 06:26 08:29-09:08/39 07:42-07:44/2 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:25-12:33/68 | 17:59 08:39-10:41/122 | 18:56 07:06-07:07/1 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 14:56-15:41/45 | 07:34 17:20-17:30/10 | 06:23 08:28-09:08/40 | 06:06 | 05:09 | 04:54 |
| | 16:56 11:26-12:34/68 | 18:01 08:29-10:42/133 | 18:58 07:42-07:45/3 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 14:55-15:42/47 | 07:32 17:28-17:32/4 | 06:21 08:27-09:08/41 | 06:04 | 05:08 | 04:54 |
| | 16:58 11:26-12:34/68 | 18:03 08:23-10:42/139 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:54-15:43/49 | 07:29 17:31-17:34/3 | 06:18 08:26-09:09/43 | 06:02 | 05:06 | 04:55 |
| | 17:00 11:27-12:34/67 | 18:05 08:20-10:43/143 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:54-15:44/50 | | 07:16 09:24-10:09/45 | 06:00 | 05:05 | 04:55 |
| | 17:02 11:27-12:34/67 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:53-15:45/52 | | 07:13 09:22-10:10/48 | 05:57 | 05:04 | 04:56 |
| | 17:04 11:27-12:34/67 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:52-15:46/54 | | 07:11 09:19-10:09/50 | | 05:03 | |
| | 17:06 11:28-12:33/65 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 1749 | 1625 | 19 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 08:03-08:44/41 | 07:37 15:20-15:21/1 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 09:11-09:49/38 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 18:21-18:22/1 | 07:39 15:19-15:21/2 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-08:44/40 | 16:56 09:14-09:46/32 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 18:20-18:21/1 | 07:41 15:19-15:20/1 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-08:45/39 | 16:54 09:17-09:42/25 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 18:19-18:21/2 | 07:43 15:19-15:21/2 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-08:45/37 | 16:52 09:25-09:36/11 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 18:18-18:20/2 | 07:45 15:18-15:20/2 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-08:46/30 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 18:17-18:19/2 | 07:47 15:17-15:19/2 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-08:47/30 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 18:16-18:18/2 | 07:49 15:16-15:19/3 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:19-08:48/29 | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 18:14-18:17/3 | 07:51 15:16-15:19/3 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:21-08:49/28 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 18:12-18:15/3 08:26-08:30/4 | 07:53 15:15-15:18/3 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:31-08:50/19 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 08:07-08:18/11 | 07:52 18:10-18:13/3 | 07:55 15:14-15:17/3 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 | 18:49 08:33-08:52/19 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 08:04-08:21/17 | 07:54 18:09-18:11/2 | 07:57 15:12-15:16/4 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:35-08:54/19 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 08:02-08:23/21 | 07:56 18:07-18:09/2 08:41-08:46/5 | 07:59 15:12-15:17/5 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:49-08:56/7 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 07:59-08:23/24 | 07:58 18:05-18:08/3 | 08:01 15:11-15:16/5 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:51-09:00/9 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 07:58-08:24/26 | 08:00 18:02-18:06/4 | 08:03 15:09-15:15/6 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 | 18:39 08:54-09:07/13 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 07:57-08:25/28 | 08:02 17:59-18:04/5 | 08:06 15:08-15:14/6 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:58-09:08/10 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 07:56-08:25/29 | 08:04 17:52-18:01/9 09:05-09:08/3 | 08:08 15:07-15:14/7 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 | 18:35 09:52-09:55/3 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 07:55-08:26/31 | 08:06 17:50-17:53/3 | 08:10 15:06-15:12/6 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 08:31-08:34/3 | 18:32 09:51-09:56/5 | 16:28 14:30-14:31/1 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-08:33/38 | 08:08 17:48-17:51/3 | 08:11 15:04-15:11/7 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-09:57/6 | 16:26 14:31-14:33/2 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-08:31/37 | 08:10 17:45-17:49/4 | 08:13 15:01-15:10/9 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:52-09:57/5 | 16:25 14:33-14:36/3 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-08:30/37 | 08:12 17:41-17:47/6 | 08:15 14:59-15:09/10 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:52-09:59/7 | 16:23 14:34-14:38/4 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 07:53-08:29/36 | 08:14 17:37-17:43/6 | 08:17 14:56-15:08/12 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 | 18:23 09:53-10:00/7 | 16:22 14:37-14:44/7 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 07:53-08:29/36 | 08:16 17:37-17:38/1 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 | 18:20 09:55-10:02/7 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 07:54-08:28/34 | 08:18 17:35-17:37/2 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 | 18:18 09:56-10:03/7 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 07:54-08:28/34 | 08:20 17:34-17:36/2 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 | 18:16 09:56-10:05/9 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 07:55-08:28/33 | 07:22 16:32-16:35/3 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 | 17:13 08:57-09:06/9 | 16:16 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 07:56-08:27/31 | 07:24 16:30-16:33/3 | 08:27 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 | 17:11 08:59-09:08/9 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 07:57-08:27/30 | 07:26 16:28-16:32/4 09:01-09:12/11 | 08:28 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:59-10:00/1 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 07:59-08:27/28 | 07:29 16:24-16:30/6 09:56-09:58/2 | 08:30 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 | 17:07 16:13-16:15/2 09:02-09:14/12 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 08:01-08:26/25 | 07:31 16:16-16:26/10 09:04-09:17/13 | 08:32 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 | 17:04 09:52-09:56/4 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 08:03-08:27/24 | 07:33 09:47-09:54/7 | 08:34 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 | 17:02 09:06-09:21/15 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 15:21-15:22/1 09:09-09:29/20 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 09:41-09:52/11 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 613 | 652 | 304 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:57-16:06/9<br>17:08 09:23-09:25/2 | 07:27 16:56-16:57/1<br>18:07 08:07-08:13/6 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:59-16:08/9<br>17:10 09:22-09:24/2 | 07:24 16:57-16:58/1<br>18:10 08:05-08:10/5 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 16:02-16:10/8<br>17:12 09:22-09:24/2 | 07:22 16:57-16:58/1<br>18:12 08:03-08:07/4 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 16:05-16:12/7<br>17:15 09:22-09:23/1 | 07:19 16:57-16:58/1<br>18:14 08:02-08:06/4 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 16:07-16:13/6<br>17:17 09:22-09:23/1 | 07:17 07:51-08:04/13<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 16:10-16:15/5<br>17:19 09:21-09:23/2 | 07:14 07:47-08:03/16<br>18:18 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 16:10-16:15/5<br>17:21 | 07:12 07:41-08:01/20<br>18:20 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 16:12-16:17/5<br>17:23 | 07:09 07:47-07:59/12<br>18:22 07:35-07:40/5 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 16:14-16:18/4<br>17:25 | 07:07 07:52-07:59/7<br>18:24 07:32-07:36/4 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 16:15-16:19/4<br>17:27 | 07:04 07:54-07:57/3<br>18:26 07:29-07:33/4 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14<br>17:29 16:17-16:20/3 | 07:02 07:56-07:57/1<br>18:28 07:27-07:32/5 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:32-16:43/11 16:17-16:20/3<br>17:32 16:22-16:28/6 | 06:59 07:24-07:30/6<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 16:39-16:46/7<br>17:34 16:18-16:21/3 | 06:57 07:22-07:29/7<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 16:42-16:48/6<br>17:36 | 06:54 07:19-07:27/8<br>18:34 | 06:35<br>20:35 | 05:29<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 16:44-16:49/5<br>17:38 | 06:52 07:16-07:26/10<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 16:47-16:51/4<br>17:40 | 06:49 07:21-07:26/5<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 16:49-16:53/4<br>17:42 | 06:47 07:24-07:25/1<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 16:49-16:53/4<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 16:51-16:54/3<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 21:08-21:09/1<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 16:53-16:55/2<br>17:49 | 06:39 07:03-07:04/1<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 16:53-16:55/2<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 16:54-16:56/2<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 16:54-16:56/2<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 16:55-16:57/2<br>17:57 | 06:29 07:53-07:54/1<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 16:55-16:56/1<br>17:59 | 06:26 07:51-07:54/3<br>18:56 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 16:56-16:57/1<br>18:01 | 06:23 07:50-07:55/5<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 16:56-16:57/1<br>18:03 08:13-08:28/15 | 06:21 07:47-07:56/9<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 16:56-16:58/2<br>18:05 08:10-08:32/22 | 06:18 07:44-07:57/13<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 197 | 189 | 0 | 3 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:03/1<br>21:40 | 06:38<br>20:30 | 07:35 08:02-08:14/12<br>19:12 | 07:37 15:45-15:48/3<br>16:58 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 08:04-08:15/11<br>19:10 | 07:39 15:43-15:47/4<br>16:56 08:50-08:51/1 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 08:06-08:16/10<br>19:07 | 07:41 15:42-15:46/4<br>16:54 08:50-08:51/1 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 08:08-08:17/9<br>19:05 | 07:43 15:41-15:46/5<br>16:52 08:51-08:52/1 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 08:10-08:19/9<br>19:02 | 07:45 15:39-15:44/5<br>16:50 08:51-08:52/1 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 08:14-08:21/7<br>18:59 | 07:47 15:37-15:43/6<br>16:48 08:51-08:53/2 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:23/3<br>18:57 | 07:49 15:34-15:41/7<br>16:46 08:51-08:53/2 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 17:32-17:33/1<br>18:54 | 07:51 15:33-15:41/8<br>16:44 08:53-08:55/2 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 15:29-15:39/10<br>16:42 08:53-08:55/2 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 17:31-17:32/1<br>18:49 08:36-08:41/5 | 07:55 15:28-15:36/8<br>16:40 08:53-08:56/3 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:30-17:31/1<br>18:47 08:38-08:42/4 | 07:57 15:27-15:34/7<br>16:38 08:54-08:57/3 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:29-17:31/2<br>18:44 08:39-08:45/6 | 07:59 15:27-15:31/4<br>16:36 08:56-08:59/3 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:29-17:30/1<br>18:42 08:41-08:48/7 | 08:01 15:26-15:29/3<br>16:34 08:56-09:00/4 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02 07:59-08:04/5<br>19:56 | 08:00 17:28-17:30/2 08:44-08:55/11<br>18:39 09:00-09:04/4 | 08:03 15:25-15:28/3<br>16:33 08:57-09:01/4 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04 07:55-08:07/12<br>19:54 | 08:02 17:29-17:30/1<br>18:37 08:48-09:00/12 | 08:05 15:23-15:27/4<br>16:31 08:58-09:03/5 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06 07:53-08:09/16<br>19:51 | 08:04 17:28-17:29/1<br>18:35 | 08:07 15:23-15:27/4<br>16:29 09:00-09:05/5 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 07:51-08:10/19<br>19:48 | 08:06 17:27-17:28/1<br>18:32 | 08:09 15:21-15:26/5 09:01-09:07/6<br>16:28 09:30-09:31/1 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 07:50-08:11/21<br>19:46 | 08:08 17:26-17:28/2<br>18:30 | 08:11 15:19-15:25/6 09:03-09:10/7<br>16:26 09:27-09:29/2 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 07:48-08:10/22<br>19:43 | 08:10 17:25-17:27/2<br>18:27 | 08:13 15:17-15:24/7 09:24-09:28/4<br>16:25 14:53-14:54/1 09:04-09:13/9 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 07:48-08:11/23<br>19:41 | 08:12 17:24-17:26/2<br>18:25 | 08:15 15:15-15:23/8 09:06-09:26/20<br>16:23 14:54-14:57/3 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 07:47-08:10/23<br>19:38 | 08:14 17:23-17:25/2<br>18:23 | 08:17 15:12-15:22/10 11:02-11:03/1<br>16:22 14:57-15:02/5 09:10-09:25/15 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 21:18-21:19/1<br>21:57 | 06:19<br>20:54 | 07:18 07:47-08:10/23<br>19:35 | 08:16 17:23-17:25/2<br>18:20 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-11:03/1 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 07:47-08:09/22<br>19:33 | 08:18 17:21-17:24/3<br>18:18 | 08:21 15:01-15:19/18<br>16:19 11:03-11:04/1 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 21:18-21:19/1<br>21:54 | 06:23<br>20:49 | 07:21 07:49-08:08/19<br>19:30 | 08:20 17:19-17:23/4<br>18:16 | 08:23 15:05-15:16/11<br>16:18 11:03-11:05/2 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23 07:51-08:08/17<br>19:28 | 07:22 16:18-16:22/4<br>17:13 | 08:25 11:04-11:06/2<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 07:53-08:08/15<br>19:25 | 07:24 16:16-16:20/4<br>17:11 | 08:27 11:05-11:06/1<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 07:55-08:08/13<br>19:23 | 07:26 16:14-16:19/5<br>17:09 | 08:28 11:05-11:07/2<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 07:57-08:08/11<br>19:20 | 07:29 16:11-16:17/6<br>17:07 | 08:30 11:06-11:08/2<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34<br>21:46 | 06:32<br>20:37 | 07:31 07:58-08:07/9<br>19:17 | 07:31 16:07-16:15/8<br>17:04 15:48-15:52/4 | 08:32 12:14-12:15/1<br>16:12 11:07-11:09/2 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:35 | 07:33 08:00-08:08/8<br>19:15 | 07:33 15:52-16:12/20<br>17:02 15:46-15:49/3 | 08:34 12:14-12:15/1<br>16:11 11:08-11:10/2 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | <br><br> | 07:35 15:56-16:08/12<br>17:00 15:45-15:48/3 | <br><br> | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2 | 1 | 278 | 207 | 309 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:10/25<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:15/12<br>20:10 | 05:55 20:33-20:34/1<br>21:09 | 05:02<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:40-19:44/4<br>20:12 19:03-19:15/12 | 05:53 20:33-20:34/1<br>21:11 | 05:01<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:40-19:46/6<br>20:14 19:03-19:15/12 | 05:51 20:34-20:38/4<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:40-19:48/8<br>20:16 19:04-19:15/11 | 05:48 20:35-20:41/6<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:40-19:49/9<br>20:18 19:03-19:15/12 | 05:46 20:38-20:42/4<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:40-19:52/12<br>20:19 19:05-19:15/10 | 05:44 20:40-20:44/4<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:40-19:53/13<br>20:21 19:05-19:15/10 | 05:42 20:42-20:45/3<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:40-19:54/14<br>20:23 19:07-19:15/8 | 05:40 20:43-20:46/3<br>21:22 | 04:56<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:40-19:57/17<br>20:25 19:08-19:15/7 | 05:38 20:44-20:46/2<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:40-19:59/19<br>20:27 19:13-19:15/2 | 05:36 20:44-20:47/3<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:40-20:01/21<br>20:29 | 05:34 20:45-20:47/2<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:40-20:03/23<br>20:31 | 05:32 20:46-20:48/2<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:40-20:04/24<br>20:33 | 05:30 20:47-20:48/1<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:40-20:06/26<br>20:35 | 05:28 20:47-20:48/1<br>21:33 | 04:53<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:40-20:06/26<br>20:37 | 05:27 20:48-20:49/1<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:40-20:06/26<br>20:39 | 05:25 20:48-20:49/1<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:40-20:06/26<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:48-20:49/1<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:25-20:26/1<br>20:57 19:44-19:58/14 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 19:46-19:55/9<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:29-20:30/1<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:31-20:32/1<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:32-20:33/1<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:15/11<br>20:06 | 05:57 20:32-20:34/2<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:15/11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 352 | 159 | 568 | 40 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:56-20:58/2<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41 20:55-20:57/2<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 20:54-20:57/3<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45 20:54-20:56/2<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47 20:53-20:56/3<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 20:51-20:54/3<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51 20:49-20:53/4<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 20:47-20:51/4<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 20:42-20:48/6<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 20:42-20:45/3<br>21:21 | 06:55<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 20:42-20:43/1<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 20:41-20:43/2<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 20:40-20:41/1<br>21:15 | 07:00<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 20:39-20:41/2<br>21:13 | 07:02 19:21-19:22/1<br>19:56 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06 20:38-20:39/1<br>21:10 | 07:04 19:20-19:22/2<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 19:19-19:21/2<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 19:17-19:19/2<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 20:31-20:32/1<br>21:03 | 07:10 19:14-19:16/2<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13 20:23-20:30/7<br>21:01 | 07:12 19:10-19:14/4<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:59-21:00/1<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26 20:08-20:09/1<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:59-21:00/1<br>21:49 | 06:28 20:07-20:08/1<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:58-20:59/1<br>21:47 | 06:30 20:06-20:07/1<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:58-20:59/1<br>21:45 | 06:32 20:05-20:07/2<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:58-20:59/1<br>21:44 | 06:34 20:04-20:05/1<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:57-20:58/1<br>21:42 | 06:36<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 6 | 53 | 22 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | 05:51-05:52/1 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | | 05:01 | 05:51-05:52/1 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | | 05:00 | 05:52-05:53/1 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | | 04:59 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | | 04:58 | 05:51-05:52/1 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-06:45/2 | 04:57 | 05:51-05:52/1 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-06:45/3 | 04:56 | |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-06:45/4 | 04:56 | |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-06:45/5 | 04:55 | 05:52-05:53/1 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-06:45/6 | 04:54 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:15/37 | 04:54 | 05:52-05:53/1 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:15/37 | 04:53 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:15/38 | 04:53 | 05:52-05:53/1 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:15/39 | 04:53 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 06:58-07:14/16 | 05:27 | 06:04-06:11/7 | 04:52 | |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | 06:37-07:15/38 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 06:55-07:14/19 | 05:25 | 06:00-06:14/14 | 04:52 | |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 06:36-07:15/39 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 06:54-07:14/20 | 05:23 | 05:59-06:05/6 | 04:52 | |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 06:36-07:15/39 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 06:53-07:14/21 | 05:21 | 05:57-06:02/5 | 04:52 | |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 06:29-07:15/46 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 06:53-07:14/21 | 05:20 | 05:56-06:00/4 | 04:52 | |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 06:26-07:15/49 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 06:54-07:13/19 | 05:18 | 05:55-05:58/3 | 04:52 | |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 06:23-07:15/52 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 06:54-07:13/19 | 05:16 | 05:54-05:58/4 06:23-06:34/11 | 04:52 | |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 06:51-07:15/24 | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:54-07:11/17 | 05:15 | 05:53-05:56/3 06:54-07:39/45 | 04:52 | |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 06:23-06:30/7 | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:55-07:10/15 | 05:13 | 05:53-05:56/3 06:57-07:39/42 | 04:53 | |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 06:25-06:28/3 | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 06:57-07:09/12 | 05:12 | 05:53-05:55/2 | 04:53 | |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 06:59-07:40/41 | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:59-07:06/7 | 05:10 | 05:53-05:55/2 | 04:53 | |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 07:00-07:39/39 | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 05:52-05:54/2 | 04:54 | |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 07:02-07:39/37 | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 05:51-05:53/2 | 04:54 | |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 07:03-07:40/37 | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-05:53/2 | 04:55 | |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 07:05-07:40/35 | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:15/17 | 05:05 | 05:51-05:53/2 | 04:55 | |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 07:06-07:40/34 | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-07:07/13 | 05:04 | 05:51-05:53/2 | 04:56 | |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 07:07-07:40/33 | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-05:52/1 | | |
| | 17:06 | | 20:08 | | | 22:01 | 07:08-07:40/32 | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 577 | | 918 | | 8 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 06:49-06:53/4 | 06:38 07:27-07:31/4 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 07:52-07:58/6 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 06:49-06:53/4 | 06:40 07:28-07:33/5 | 07:36 | 07:39 | 08:37 |
| | 22:18 | 21:38 07:50-08:00/10 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 06:50-06:55/5 | 06:41 07:29-07:35/6 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 07:50-08:03/13 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 06:51-06:56/5 | 06:43 07:31-07:37/6 | 07:40 | 07:43 | 08:40 |
| | 22:17 | 21:34 07:49-08:05/16 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 05:57-05:58/1 | 05:47 06:52-06:57/5 | 06:45 07:33-07:41/8 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 07:48-08:07/19 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 06:52-06:58/6 | 06:47 07:49-07:54/5 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 07:46-08:08/22 | 20:17 07:35-07:48/13 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 06:53-07:00/7 | 06:49 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | 21:28 07:44-08:09/25 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 05:58-05:59/1 | 05:52 06:55-07:01/6 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 22:14 | 21:26 07:43-08:11/28 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 05:58-05:59/1 | 05:54 06:55-07:02/7 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:24 07:40-08:11/31 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 05:58-05:59/1 | 05:56 06:57-07:05/8 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 07:38-08:12/34 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 05:59-06:01/2 | 05:58 06:59-07:08/9 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 07:35-08:13/38 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 06:00-06:01/1 | 06:00 07:32-08:14/42 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 06:00-06:01/1 | 06:02 07:29-08:13/44 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 06:00-06:01/1 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 06:00-06:01/1 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 06:01-06:03/2 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 06:01-06:03/2 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 06:01-06:03/2 | 06:11 07:04-07:12/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 06:02-06:04/2 | 06:13 07:02-07:15/13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 06:02-06:05/3 | 06:15 07:25-07:26/1 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 06:35-06:37/2 | 20:59 07:01-07:16/15 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 06:04-06:06/2 | 06:17 07:25-07:26/1 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:59 06:35-06:40/5 | 20:56 07:00-07:17/17 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 06:04-06:07/3 | 06:19 07:24-07:25/1 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 06:33-06:42/9 | 20:54 06:58-07:17/19 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 06:05-06:08/3 | 06:21 07:24-07:26/2 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 06:33-06:47/14 | 20:52 06:57-07:17/20 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:06-06:09/3 | 06:23 07:24-07:26/2 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 06:34-06:48/14 | 20:49 06:57-07:17/20 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 06:07-06:11/4 | 06:24 07:24-07:26/2 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 06:37-06:49/12 | 20:47 06:57-07:17/20 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:08-06:13/5 | 06:26 07:25-07:27/2 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 06:41-06:49/8 | 20:44 06:57-07:17/20 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:25-06:26/1 06:47-06:50/3 | 06:28 07:24-07:27/3 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 06:10-06:17/7 | 20:42 06:57-07:16/19 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 06:12-06:23/11 | 06:30 07:25-07:27/2 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 06:46-06:50/4 | 20:39 06:59-07:15/16 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 06:47-06:51/4 | 06:32 07:25-07:28/3 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 07:01-07:14/13 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 06:48-06:52/4 | 06:34 07:26-07:29/3 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 07:03-07:13/10 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 06:48-06:52/4 | 06:36 07:27-07:31/4 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 07:05-07:11/6 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 143 | 636 | 56 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 21:11-21:26/15 | 04:57 05:52-05:56/4 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 05:39-05:48/9 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 21:11-21:27/16 | 04:57 05:40-05:56/16 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 21:11-21:28/17 | 04:58 21:39-21:40/1 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 21:12-21:29/17 | 04:59 05:43-05:54/11 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 21:11-21:30/19 | 05:00 05:44-05:52/8 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 21:11-21:31/20 | 05:01 05:48-05:49/1 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 21:12-21:32/20 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 21:11-21:33/22 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 21:12-21:34/22 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 21:12-21:34/22 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 05:35-05:43/8 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:50-05:52/2 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 05:35-05:42/7 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:52-05:53/1 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 05:34-05:41/7 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:52-05:53/1 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 05:34-05:40/6 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:53-05:54/1 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 05:34-05:40/6 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:54-05:55/1 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:40/6 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:40/6 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:40/6 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:40/6 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:40/6 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:41/6 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:41/6 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 05:35-05:41/6 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:56-05:57/1 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:42/6 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 05:36-05:42/6 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:56-05:57/1 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:43/6 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 05:37-05:43/6 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:56-05:57/1 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 05:38-05:45/7 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:55-05:57/2 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 05:38-05:46/8 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:54-05:56/2 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 54 | 829 | 63 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 08:39-08:40/1 | 07:08 07:54-08:02/8 | 05:55 06:41-06:43/2 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | 08:25 | 07:24 08:38-08:39/1 | 07:05 07:51-08:02/11 | 05:53 06:40-06:42/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | 07:22 08:38-08:39/1 | 07:03 07:48-08:00/12 | 05:50 06:39-06:41/2 | 05:00 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 08:37-08:38/1 | 07:00 07:46-07:58/12 | 05:48 06:38-06:41/3 | 04:59 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 07:43-07:58/15 | 05:46 06:37-06:40/3 | 04:58 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 07:40-07:57/17 | 05:44 06:37-06:41/4 | 04:57 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 10:11-10:13/2 | 07:12 | 06:52 07:39-07:56/17 | 05:42 06:36-06:40/4 | 04:56 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 10:01-10:24/23 | 07:09 | 06:50 07:36-07:55/19 | 05:40 06:35-06:39/4 | 04:55 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 09:57-10:29/32 | 07:07 | 06:47 07:33-07:55/22 | 05:38 06:35-06:38/3 | 04:55 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 09:53-10:32/39 | 07:04 | 06:45 07:30-07:54/24 | 05:36 06:34-06:37/3 | 04:54 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 09:50-10:35/45 | 07:02 | 06:42 07:29-07:54/25 | 05:34 06:33-06:36/3 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 09:03-09:15/12 | 06:59 | 06:40 07:27-07:54/27 | 05:32 06:33-06:36/3 | 04:53 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 08:59-09:20/21 | 06:56 | 06:37 07:23-07:53/30 | 05:30 06:32-06:35/3 | 04:53 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 08:55-09:22/27 | 06:54 07:42-07:55/13 | 06:35 07:21-07:53/32 | 05:28 06:31-06:34/3 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 08:53-09:25/32 | 06:51 07:37-07:59/22 | 06:32 07:19-07:52/33 | 05:26 06:32-06:34/2 | 04:52 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 08:51-09:27/36 | 06:49 09:36-10:56/80 | 06:30 07:17-07:53/36 | 05:25 06:31-06:34/3 | 04:52 |
| | 16:36 | 17:40 | 18:38 07:33-08:01/28 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 08:49-09:28/39 | 06:46 09:35-10:56/81 | 06:27 07:14-07:53/39 | 05:23 06:30-06:33/3 | 04:52 |
| | 16:38 | 17:42 | 18:40 07:31-08:04/33 | 20:41 | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 08:48-09:30/42 | 06:44 09:33-10:55/82 | 06:25 07:11-07:52/41 | 05:21 06:30-06:33/3 | 04:52 |
| | 16:40 | 17:44 | 18:42 07:29-08:05/36 | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 08:47-09:30/43 | 06:41 09:32-10:54/82 | 06:23 07:10-07:53/43 | 05:19 06:30-06:32/2 | 04:52 |
| | 16:42 | 17:46 | 18:44 07:27-08:07/40 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 08:45-09:30/45 | 06:39 09:30-10:53/83 | 06:20 06:59-07:53/54 | 05:18 06:30-06:32/2 | 04:52 |
| | 16:44 | 17:48 | 18:46 07:24-08:08/44 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:45 08:44-09:30/46 | 06:36 09:28-10:52/84 | 06:18 06:54-07:53/59 | 05:16 06:30-06:32/2 | 04:52 |
| | 16:46 | 17:50 | 18:48 07:21-08:08/47 | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 08:43-09:30/47 | 06:33 09:26-10:51/85 | 06:15 06:52-07:54/62 | 05:15 06:30-06:31/1 | 04:52 |
| | 16:47 | 17:53 | 18:50 07:19-08:10/51 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 08:42-09:30/48 | 06:31 09:23-10:49/86 | 06:13 06:50-07:54/64 | 05:13 06:30-06:31/1 | 04:52 |
| | 16:49 | 17:55 | 18:52 07:17-08:10/53 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 08:41-09:30/49 | 06:28 09:21-10:49/88 | 06:11 06:48-07:55/67 | 05:12 06:30-06:32/2 | 04:53 |
| | 16:51 | 17:57 | 18:54 07:14-08:11/57 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 08:41-09:30/49 | 06:26 09:19-10:47/88 | 06:08 06:46-07:55/69 | 05:10 06:29-06:31/2 | 04:53 |
| | 16:53 | 17:59 | 18:55 07:11-08:11/60 | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 08:39-09:30/51 | 06:23 09:18-10:45/87 | 06:06 06:45-07:56/71 | 05:09 06:30-06:31/1 | 04:54 |
| | 16:55 | 18:01 | 18:57 07:08-08:10/62 | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 08:39-09:30/51 | 06:21 09:19-10:44/85 | 06:04 06:44-07:57/73 | 05:07 06:30-06:31/1 | 04:54 |
| | 16:58 | 18:03 | 18:59 07:07-08:11/64 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 08:38-09:30/52 | 06:18 09:20-10:42/82 | 06:01 06:43-06:58/15 | 05:06 06:30-06:31/1 | 04:55 |
| | 17:00 | 18:05 | 19:01 07:04-08:11/67 | 21:03 07:14-07:58/44 | 21:56 | 22:19 |
| 29 | 08:33 | | 07:15 10:21-11:40/79 | 05:59 06:43-06:54/11 | 05:05 06:30-06:31/1 | 04:55 |
| | 17:02 | | 20:03 08:01-09:12/71 | 21:04 07:18-07:59/41 | 21:58 | 22:18 |
| 30 | 08:31 | | 07:13 10:21-11:38/77 | 05:57 06:42-06:51/9 | 05:04 | 04:56 |
| | 17:04 | | 20:05 07:58-09:12/74 | 21:06 07:21-08:00/39 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 10:22-11:36/74 | | 05:03 | |
| | 17:06 | | 20:07 07:57-09:12/75 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 831 | 2224 | 1141 | 69 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 11:21/3.5.552

# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:39 06:43-06:47/4<br>21:39 | 06:38 08:07-08:08/1<br>20:29 07:28-07:34/6 | 07:34<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57<br>22:17 | 05:41 06:43-06:46/3<br>21:38 | 06:39 08:04-08:08/4<br>20:27 07:29-07:36/7 | 07:36<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 06:44-06:47/3<br>21:36 | 06:41 08:00-08:08/8<br>20:24 07:31-07:40/9 | 07:38<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45 06:45-06:48/3<br>21:34 | 06:43 07:51-08:08/17<br>20:22 07:34-07:49/15 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00<br>22:16 | 05:47 06:45-06:48/3<br>21:32 | 06:45 07:35-08:07/32<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01<br>22:15 | 05:48 06:46-06:50/4<br>21:30 | 06:47 07:36-08:07/31<br>20:16 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02<br>22:14 | 05:50 06:47-06:50/3<br>21:27 | 06:49 07:38-08:07/29<br>20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03<br>22:13 | 05:52 06:48-06:51/3<br>21:25 | 06:51 07:41-08:07/26<br>20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 06:48-06:50/2<br>21:23 | 06:53 07:42-08:07/25<br>20:09 | 07:50<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05<br>22:12 | 05:56 06:49-06:51/2<br>21:21 | 06:55 07:43-08:06/23<br>20:06 | 07:52 09:12-09:13/1<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:50-06:51/1<br>21:19 | 06:56 07:46-08:07/21<br>20:04 | 07:54 09:12-09:13/1<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-06:40/1<br>22:10 | 06:00 06:49-06:51/2<br>21:17 | 06:58 07:48-08:07/19<br>20:01 | 07:56 09:12-09:13/1<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-06:40/1<br>22:09 | 06:02 06:50-06:52/2<br>21:15 | 07:00 07:49-08:08/19<br>19:58 | 07:58 09:12-09:13/1<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-06:40/1<br>22:08 | 06:03 06:50-06:53/3<br>21:12 | 07:02 07:51-08:08/17<br>19:56 | 08:00 09:12-09:13/1<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12<br>22:06 | 06:05 06:51-06:54/3<br>21:10 | 07:04 07:53-08:09/16<br>19:53 | 08:02 09:12-09:14/2<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13<br>22:05 | 06:07 06:52-06:55/3<br>21:08 | 07:06 07:55-08:09/14<br>19:51 | 08:04 09:12-09:14/2<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-06:40/1<br>22:04 | 06:09 06:52-06:55/3<br>21:05 | 07:08 07:56-08:10/14<br>19:48 | 08:06 09:12-09:15/3<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-06:40/1<br>22:03 | 06:11 06:53-06:57/4<br>21:03 | 07:10 07:58-08:11/13<br>19:45 | 08:08 09:13-09:16/3<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-06:41/1<br>22:01 | 06:13 06:54-06:59/5<br>21:01 | 07:11 08:00-08:12/12<br>19:43 | 08:10 09:14-09:17/3<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-06:41/1<br>22:00 | 06:15 06:56-07:01/5<br>20:58 | 07:13 08:03-08:14/11<br>19:40 | 08:12 09:14-09:18/4<br>18:25 10:08-10:11/3 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-06:41/2<br>21:58 | 06:17 06:57-07:03/6<br>20:56 | 07:15 08:04-08:15/11<br>19:38 | 08:14 09:15-09:19/4<br>18:22 10:06-10:12/6 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-06:42/2<br>21:57 | 06:19 07:13-07:16/3<br>20:54 06:59-07:10/11 | 07:17 08:06-08:17/11<br>19:35 | 08:16 09:15-09:20/5<br>18:20 10:05-10:13/8 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-06:42/2<br>21:55 | 06:20 07:04-07:18/14<br>20:51 | 07:19 08:08-08:20/12<br>19:32 08:51-08:53/2 | 08:18 09:16-09:21/5<br>18:18 10:06-10:15/9 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-06:43/3<br>21:54 | 06:22 07:14-07:20/6<br>20:49 | 07:21 08:10-08:22/12<br>19:30 08:46-08:50/4 | 08:20 09:18-09:24/6<br>18:15 10:08-10:18/10 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-06:42/2<br>21:52 | 06:24 07:15-07:23/8<br>20:46 | 07:23 08:41-08:49/8<br>19:27 08:11-08:27/16 | 07:22 08:20-08:26/6 09:09-09:20/11<br>17:13 10:15-10:17/2 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-06:43/2<br>21:50 | 06:26 07:17-07:23/6<br>20:44 | 07:25 08:12-08:47/35<br>19:25 | 07:24 08:21-08:28/7 09:10-09:22/12<br>17:11 10:12-10:15/3 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-06:44/2<br>21:49 | 06:28 07:19-07:25/6<br>20:42 | 07:27 08:14-08:44/30<br>19:22 | 07:26 08:52-08:54/2 10:09-10:13/4<br>17:08 08:23-08:32/9 09:12-09:25/13 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-06:44/3<br>21:47 | 06:30 07:21-07:27/6<br>20:39 | 07:29 08:17-08:41/24<br>19:20 | 07:28 08:45-08:51/6 10:05-10:11/6<br>17:06 08:25-08:38/13 09:13-09:28/15 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-06:45/3<br>21:45 | 06:32 07:22-07:29/7<br>20:37 | 07:31 08:20-08:37/17<br>19:17 | 07:30 08:29-08:48/19 09:16-09:33/17<br>17:04 10:01-10:09/8 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-06:45/3<br>21:43 | 06:34 07:24-07:31/7<br>20:34 | 07:32<br>19:14 | 07:32 08:34-08:43/9 09:18-09:39/21<br>17:02 09:55-10:07/12 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-06:46/3<br>21:41 | 06:36 07:26-07:32/6<br>20:32 | <br> | 07:34 09:20-10:04/44<br>17:00 | <br> | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 34 | 147 | 571 | 317 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:52-15:53/1 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:51-15:52/1 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:50-15:51/1 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:50-15:52/2 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:49-15:51/2 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:48-15:50/2 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:47-15:50/3 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:47-15:50/3 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:45-15:49/4 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:43-15:48/5 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:41-15:46/5 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 15:28-15:29/1 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:36-15:44/8 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 15:29-15:34/5 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 405 | 53 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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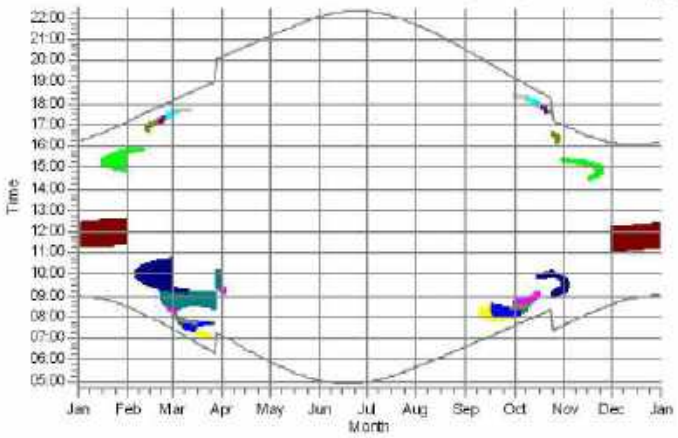
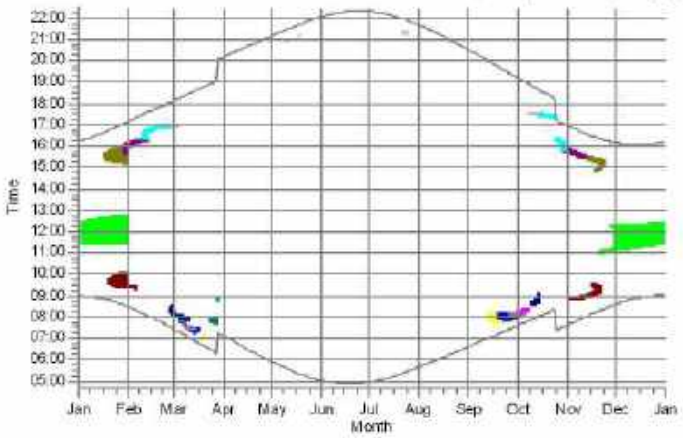
# SHADOW - Calendar per WTG, graphical

## Calculation: Enercon E138 (be 6 VE) Shut down

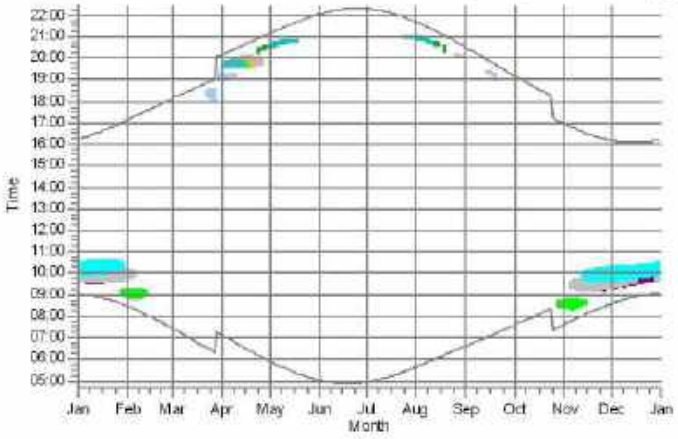
1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1



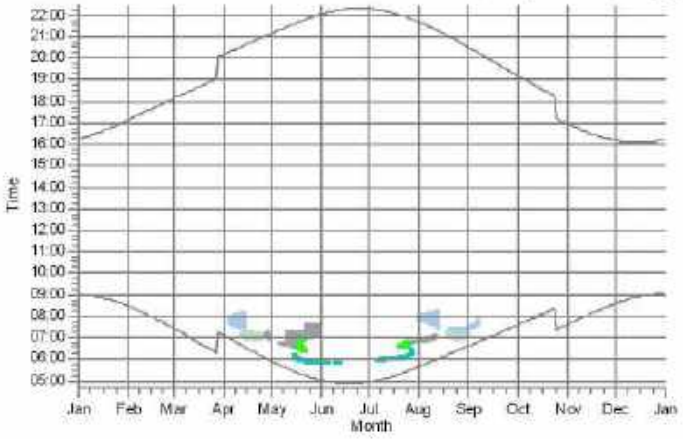

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (2



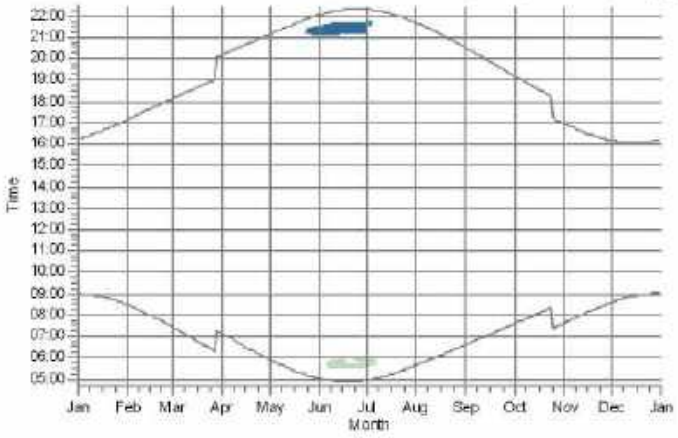

3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3



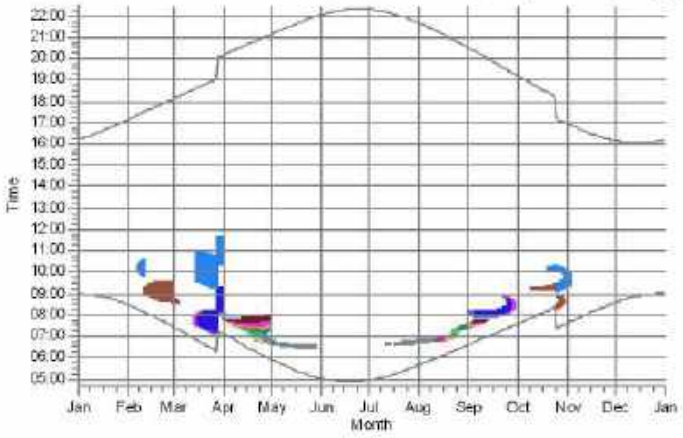

4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4




5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5




6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)*
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)*
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)*
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)*
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)*
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)*
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*

* Its reduced by flicker curtailment

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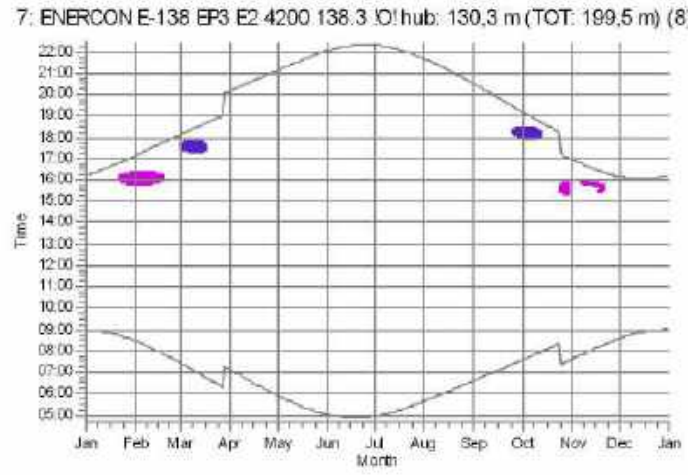
## SHADOW - Calendar per WTG, graphical

Calculation: Enercon E138 (be 6 VE) Shut down




Shadow receptors

AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*

AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

* Results reduced by flicker curtailment

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 14:52-15:43 11:28-12:33 | 16:35-17:33 15:00-15:40 09:19-10:43 | 10:21-11:08 09:17-10:11 08:11-08:28 | | |
| 2 | | 14:51-15:44 11:29-12:33 | 16:36-17:35 15:03-15:38 09:18-10:43 | 10:24-11:05 09:18-10:09 08:14-08:25 | | |
| 3 | | 14:51-15:45 11:30-12:32 | 16:36-17:35 15:06-15:35 09:17-10:43 08:08-08:18 | 10:26-11:00 09:18-10:06 | | |
| 4 | | 14:51-15:46 11:30-12:32 | 16:38-17:37 15:10-15:32 09:17-10:44 08:04-08:23 | 10:30-10:56 09:28-10:03 | | |
| 5 | | 14:50-15:47 11:31-12:32 | 16:39-17:38 15:16-15:25 09:15-10:43 08:00-08:26 | 10:37-10:46 09:30-09:59 | | |
| 6 | | 14:50-15:48 11:32-12:31 | 16:42-17:40 09:15-10:44 07:58-08:28 | 09:34-09:55 | | |
| 7 | | 14:50-15:49 11:33-12:30 | 16:45-17:40 09:14-10:43 07:55-08:29 | 09:42-09:46 | | |
| 8 | | 14:49-15:49 11:33-12:29 | 16:47-17:41 09:13-10:43 07:53-08:30 | | | |
| 9 | | 14:49-15:50 11:35-12:28 | 16:48-17:42 09:13-10:43 07:52-08:32 | | | |
| 10 | | 14:49-15:51 11:36-12:27 | 16:48-17:42 09:12-10:42 07:50-08:32 | | | |
| 11 | | 14:49-15:51 11:38-12:26 | 16:50-17:43 09:12-10:42 07:50-08:34 | | | |
| 12 | | 14:49-15:51 11:39-12:23 | 16:50-17:42 09:11-10:41 07:48-08:34 | | | |
| 13 | | 14:49-15:52 11:41-12:21 | 16:51-17:42 09:11-10:41 07:48-08:35 | | | |
| 14 | | 16:44-16:55 14:49-15:52 11:44-12:19 | 16:54-17:42 09:10-10:40 07:47-08:35 | | | |
| 15 | | 16:40-16:58 14:49-15:51 11:46-12:16 | 16:56-17:41 09:09-10:39 07:46-08:34 07:24-07:30 | | | |
| 16 | | 16:39-17:01 14:49-15:51 11:50-12:12 | 17:08-17:41 09:09-10:39 07:46-08:35 07:20-07:35 | | | |
| 17 | | 16:38-17:03 14:50-15:52 11:58-12:05 | 17:08-17:40 09:09-10:38 07:45-08:34 07:16-07:37 | | | |
| 18 | | 16:37-17:04 14:50-15:51 | 17:09-17:38 09:09-10:37 07:45-08:35 07:15-07:39 | | | |
| 19 | | 16:36-17:05 14:50-15:51 | 17:10-17:37 09:08-10:36 07:44-08:34 07:13-07:40 | | | |
| 20 | | 16:36-17:07 14:51-15:51 | 17:11-17:35 09:08-10:34 07:44-08:33 07:11-07:41 | | | |
| 21 | | 16:35-17:07 14:51-15:49 | 17:14-17:33 09:08-10:33 07:44-08:33 07:10-07:42 | | | |
| 22 | | 16:35-17:12 14:52-15:49 | 17:16-17:30 09:08-10:31 07:44-08:32 07:09-07:42 | | | |
| 23 | | 16:34-17:15 14:53-15:48 | 09:08-10:30 07:44-08:32 07:09-07:43 | | | |
| 24 | | 16:34-17:17 14:54-15:47 | 09:08-10:28 07:44-08:31 07:07-07:42 | | | |
| 25 | | 16:34-17:18 14:54-15:46 | 09:08-10:26 07:44-08:29 07:07-07:42 | | | |
| 26 | | 16:34-17:20 14:56-15:45 | 09:08-10:25 07:45-08:28 07:07-07:38 | | | |
| 27 | | 16:34-17:28 14:57-15:43 | 09:08-10:22 07:51-08:27 07:07-07:36 | | | |
| 28 | | 16:35-17:31 14:59-15:42 | 09:09-10:20 07:54-08:26 07:07-07:36 | | | |
| 29 | | | 10:09-11:18 08:58-09:24 08:08-08:34 | | | |
| 30 | | | 10:19-11:15 10:10-10:16 09:06-09:22 08:09-08:33 | | | |
| 31 | | | 10:20-11:12 10:09-10:13 09:07-09:19 08:09-08:31 | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | | | 17:30-18:22 08:44-11:20 | 14:19-15:20 11:06-11:57 | |
| 2 | | | | 17:28-18:21 08:44-11:20 | 14:19-15:19 11:04-11:58 | |
| 3 | | | | 17:27-18:20 08:45-11:20 | 14:19-15:19 11:03-11:58 | |
| 4 | | | | 17:26-18:19 08:45-11:20 | 14:20-15:19 11:03-12:00 | |
| 5 | | | 09:40-09:41 | 17:25-18:18 08:46-11:20 | 14:20-15:18 11:02-12:01 | |
| 6 | | | 09:31-09:51 | 17:24-18:17 08:47-11:19 | 14:20-15:17 11:01-12:01 | |
| 7 | | | 10:34-10:40 09:26-09:54 | 17:19-18:16 08:48-11:19 | 14:20-15:16 11:00-12:02 | |
| 8 | | | 10:25-10:49 09:23-09:57 | 17:15-18:14 08:49-11:19 | 14:22-15:16 11:00-12:03 | |
| 9 | | | 10:21-10:54 09:09-10:00 | 17:13-18:12 15:47-16:03 08:50-11:18 | 14:22-15:15 11:00-12:04 | |
| 10 | | | 10:17-10:58 09:05-10:02 | 17:11-18:10 15:42-16:07 08:52-11:18 | 14:23-15:14 10:59-12:04 | |
| 11 | | | 10:15-11:01 09:02-10:04 | 17:10-18:09 15:38-16:10 08:54-11:17 | 14:23-15:12 10:59-12:04 | |
| 12 | | | 10:11-11:03 08:59-10:05 | 17:08-18:07 15:35-16:12 08:56-11:16 | 14:25-15:12 10:59-12:05 | |
| 13 | | | 10:09-11:05 08:56-10:06 | 17:07-18:05 15:33-16:13 09:00-11:15 | 14:25-15:11 10:59-12:06 | |
| 14 | | | 10:08-11:08 08:49-10:07 | 17:06-18:02 15:31-16:16 09:07-11:16 | 14:26-15:09 10:58-12:06 | |
| 15 | | | 08:44-11:10 | 17:07-17:59 15:29-16:17 09:08-11:15 | 14:27-15:08 10:58-12:06 | |
| 16 | | | 08:41-11:11 | 17:06-17:52 15:28-16:17 09:55-11:14 09:10-09:52 | 14:29-15:07 10:59-12:07 | |
| 17 | | | 08:34-11:13 | 17:06-17:50 15:26-16:18 09:56-11:13 09:12-09:49 | 14:31-15:06 10:59-12:07 | |
| 18 | | | 08:33-11:14 | 17:05-17:48 15:25-16:19 09:57-11:12 09:14-09:46 | 14:33-15:04 10:59-12:07 | |
| 19 | | | 08:31-11:15 | 17:05-17:45 15:24-16:19 09:57-11:11 09:17-09:43 | 14:36-15:01 10:59-12:07 | |
| 20 | | | 08:30-11:16 | 17:05-17:41 15:22-16:20 09:59-11:09 09:22-09:38 | 14:38-14:59 10:59-12:07 | |
| 21 | | | 18:02-18:14 08:29-11:17 | 17:05-17:37 15:21-16:20 10:00-11:08 | 14:44-14:56 11:00-12:08 | |
| 22 | | | 17:59-18:17 08:29-11:18 | 17:06-17:37 15:21-16:21 10:02-11:08 | 11:00-12:08 | |
| 23 | | | 17:56-18:19 08:28-11:18 | 17:07-17:35 15:21-16:21 10:03-11:06 | 11:00-12:09 | |
| 24 | | | 17:54-18:20 08:28-11:19 | 17:07-17:34 15:20-16:21 10:05-11:05 | 11:01-12:09 | |
| 25 | | | 17:53-18:21 08:28-11:20 | 16:08-16:32 14:19-15:21 11:24-11:37 09:06-10:03 | 11:01-12:09 | |
| 26 | | | 17:52-18:22 08:27-11:20 | 16:09-16:30 14:19-15:21 11:18-11:43 09:08-10:01 | 11:02-12:09 | |
| 27 | | | 17:49-18:22 08:27-11:21 | 16:11-16:28 14:19-15:22 11:15-11:47 09:12-09:59 | 11:02-12:09 | |
| 28 | | | 17:39-18:22 08:27-11:20 | 16:15-16:24 14:19-15:22 11:13-11:49 09:14-09:56 | 11:03-12:09 | |
| 29 | | | 17:35-18:22 08:26-11:20 | 14:18-15:21 11:10-11:51 09:17-09:52 | 11:03-12:10 | |
| 30 | | | 17:32-18:22 08:27-11:20 | 14:18-15:21 11:08-11:53 09:21-09:47 | 11:04-12:10 | |
| 31 | | | | 14:19-15:21 11:07-11:55 09:29-09:41 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 15:13-15:57 11:27-12:44 09:25-10:05 | 15:27-16:56 08:13-08:34 | | | 20:50-21:07 |
| 2 | | 15:12-15:59 11:27-12:44 09:24-10:06 | 15:28-16:57 08:10-08:36 | | | 20:51-21:06 |
| 3 | | 15:12-16:02 11:27-12:44 09:24-10:06 | 15:28-16:57 08:07-08:37 | | | 20:52-21:07 |
| 4 | | 15:12-16:05 11:28-12:44 09:23-10:07 | 15:30-16:57 08:06-08:39 | | | 20:53-21:06 |
| 5 | | 15:12-16:07 11:28-12:44 09:23-10:08 | 15:31-16:57 08:04-08:39 | | | 20:53-21:05 |
| 6 | | 15:12-16:10 11:28-12:44 09:23-10:08 | 15:33-16:58 08:03-08:41 | | | 20:55-21:05 |
| 7 | | 15:11-16:10 11:29-12:44 09:22-10:09 | 15:35-16:57 08:01-08:41 | | | 20:56-21:04 |
| 8 | | 15:11-16:12 11:28-12:43 09:21-10:08 | 15:36-16:56 07:59-08:41 07:40-07:47 | | | 20:57-21:02 |
| 9 | | 15:11-16:14 11:29-12:43 09:21-10:08 | 15:40-16:56 07:59-08:42 07:36-07:52 | | | |
| 10 | | 15:12-16:15 11:30-12:43 09:21-10:09 | 16:01-16:55 15:44-16:00 07:57-08:41 07:33-07:54 | | | |
| 11 | | 15:12-16:17 11:31-12:43 09:21-10:09 | 16:02-16:55 07:57-08:42 07:32-07:56 | | | |
| 12 | | 16:28-16:32 15:12-16:17 11:30-12:41 09:21-10:08 | 16:02-16:53 07:30-08:41 | | 20:51-20:57 | |
| 13 | | 16:21-16:39 15:12-16:18 11:31-12:41 09:21-10:08 | 16:02-16:52 07:29-08:42 | | 20:50-20:58 | |
| 14 | | 15:13-16:42 11:32-12:40 09:22-10:08 | 16:04-16:51 07:27-08:41 | | 20:48-21:00 | |
| 15 | | 15:13-16:44 11:32-12:39 09:22-10:07 | 16:04-16:50 07:26-08:40 | | 20:48-21:02 | |
| 16 | | 15:14-16:47 11:34-12:38 09:23-10:06 | 16:06-16:49 07:26-08:40 07:14-07:21 | | 20:47-21:03 | |
| 17 | | 15:15-16:49 11:35-12:37 09:24-10:06 | 16:07-16:47 07:25-08:39 07:11-07:24 | | 20:47-21:05 | |
| 18 | | 15:15-16:49 11:36-12:35 09:24-10:05 | 16:08-16:44 07:09-08:39 | | 20:47-21:07 | |
| 19 | | 15:16-16:51 11:37-12:34 09:25-10:04 | 16:11-16:43 07:06-08:37 | | 20:47-21:08 | |
| 20 | | 15:17-16:53 11:39-12:33 09:26-10:03 | 16:13-16:39 07:04-08:36 | | 20:46-21:08 | |
| 21 | | 15:18-16:53 11:40-12:30 09:27-10:01 | 16:17-16:36 07:03-08:35 | | 20:47-21:09 | |
| 22 | | 15:20-16:54 11:43-12:28 09:29-10:00 | 16:25-16:27 07:02-08:33 | | 20:46-21:08 | |
| 23 | | 15:21-16:54 11:44-12:25 09:30-09:57 | 07:02-08:32 | | 20:46-21:09 | |
| 24 | | 15:24-16:55 11:48-12:22 09:33-09:55 | 07:54-08:30 07:30-07:53 07:02-07:25 | | 20:47-21:09 | |
| 25 | | 15:24-16:55 11:51-12:17 09:36-09:50 | 07:54-08:27 07:33-07:51 07:02-07:22 | | 20:47-21:09 | |
| 26 | | 15:25-16:56 12:00-12:09 | 07:55-08:25 07:35-07:50 07:03-07:22 | | 20:47-21:08 | |
| 27 | | 15:25-16:56 | 08:04-08:21 07:56-08:03 07:37-07:47 07:03-07:20 | | 20:47-21:08 | |
| 28 | | 15:26-16:56 | 07:57-08:01 07:05-07:18 | | 20:48-21:08 | |
| 29 | | | 08:08-08:14 | | 20:48-21:08 | |
| 30 | | | | | 20:49-21:08 | |
| 31 | | | | | 20:49-21:07 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | 21:03-21:07 | | 16:42-17:32 08:14-09:20 | 14:41-15:45 10:59-12:12 08:51-09:38 | |
| 2 | | | | 16:40-17:32 08:15-09:20 | 14:41-15:43 10:59-12:13 08:51-09:38 | |
| 3 | | | | 16:39-17:33 16:25-16:35 08:16-09:20 | 14:41-15:42 10:58-12:13 08:51-09:38 | |
| 4 | 21:04-21:08 | | | 16:19-17:33 08:17-09:19 | 14:42-15:41 10:58-12:14 08:52-09:38 | |
| 5 | 21:02-21:09 | | | 16:15-17:33 08:19-09:18 | 14:42-15:39 10:58-12:14 08:52-09:38 | |
| 6 | 21:01-21:10 | | | 16:12-17:33 08:21-09:17 | 14:42-15:37 10:58-12:14 08:53-09:37 | |
| 7 | 21:00-21:11 | | | 16:09-17:33 08:23-09:16 | 14:42-15:34 10:57-12:14 08:53-09:37 | |
| 8 | 20:59-21:12 | | | 16:07-17:32 08:25-09:15 | 14:43-15:33 10:58-12:15 08:55-09:37 | |
| 9 | 20:59-21:13 | | | 16:05-17:32 08:29-09:14 | 14:43-15:29 10:58-12:15 08:55-09:36 | |
| 10 | 20:58-21:13 | | | 16:03-17:31 08:41-09:12 | 14:44-15:28 10:58-12:14 08:56-09:36 | |
| 11 | 20:59-21:15 | | | 16:02-17:30 08:42-09:11 | 14:44-15:27 10:57-12:14 08:57-09:35 | |
| 12 | 20:58-21:16 | | | 16:00-17:29 08:45-09:09 | 14:46-15:27 10:58-12:15 08:59-09:35 | |
| 13 | 20:58-21:16 | | | 15:59-17:29 08:48-09:06 | 14:46-15:26 10:58-12:15 09:00-09:34 | |
| 14 | 20:57-21:16 | | 08:41-08:43 | 15:58-17:28 08:55-09:00 | 14:47-15:25 10:58-12:15 09:01-09:33 | |
| 15 | 20:57-21:16 | | 08:34-08:49 | 15:58-17:29 | 14:48-15:23 10:58-12:15 09:03-09:32 | |
| 16 | 20:57-21:18 | | 08:55-09:09 08:27-08:52 | 15:57-17:28 12:28-12:45 10:13-10:18 | 14:50-15:23 11:00-12:15 09:05-09:32 | |
| 17 | 20:57-21:18 | | 08:24-09:13 | 15:56-17:27 12:22-12:51 10:06-10:24 | 14:51-15:21 11:00-12:15 09:07-09:30 | |
| 18 | 20:56-21:18 | | 08:22-09:15 | 15:54-17:26 12:18-12:54 10:03-10:27 | 14:52-15:19 11:00-12:15 09:10-09:27 | |
| 19 | 20:57-21:19 | | 08:17-09:16 | 15:52-17:25 12:15-12:57 10:01-10:29 | 14:54-15:17 11:00-12:15 09:13-09:24 | |
| 20 | 20:56-21:18 | | 08:11-09:17 | 15:50-17:24 12:12-12:59 09:59-10:30 | 14:57-15:15 11:01-12:15 | |
| 21 | 20:57-21:19 | | 08:10-09:19 | 15:48-17:23 12:10-13:01 09:57-10:32 | 15:02-15:12 11:03-12:15 | |
| 22 | 20:56-21:18 | | 17:03-17:19 08:10-09:20 | 15:47-17:23 12:09-13:04 09:56-10:34 | 11:03-12:15 | |
| 23 | 20:57-21:19 | | 16:59-17:23 08:09-09:20 | 15:46-17:21 12:07-13:05 09:55-10:35 | 11:04-12:15 | |
| 24 | 20:57-21:18 | | 16:56-17:26 08:08-09:21 | 15:45-17:19 12:06-13:06 09:54-10:35 | 11:05-12:15 | |
| 25 | 20:57-21:18 | | 16:53-17:27 08:08-09:21 | 14:44-16:18 11:04-12:07 08:53-09:36 | 11:06-12:15 | |
| 26 | 20:57-21:16 | | 16:51-17:29 08:08-09:22 | 14:43-16:16 11:03-12:08 08:52-09:36 | 11:06-12:15 | |
| 27 | 20:58-21:15 | | 16:48-17:29 08:08-09:22 | 14:43-16:14 11:03-12:09 08:52-09:37 | 11:07-12:15 | |
| 28 | 20:58-21:13 | | 16:46-17:30 08:08-09:21 | 14:42-16:11 11:02-12:10 08:52-09:37 | 11:08-12:15 | |
| 29 | 20:59-21:12 | | 16:44-17:31 08:07-09:21 | 15:52-16:07 14:42-15:48 11:01-12:10 08:51-09:38 | 11:09-12:14 | |
| 30 | 21:00-21:10 | | 16:43-17:31 08:08-09:21 | 14:41-15:46 11:00-12:11 08:50-09:38 | 11:10-12:14 | |
| 31 | 21:00-21:08 | | | 14:41-15:45 11:00-12:12 08:51-09:38 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 10:10-10:11 | | 19:15-19:42 | 20:08-20:33 | 20:20-20:46 | 20:32-20:46 | 20:20-20:56 | 19:20-20:00 | | | |
| 2 | | | | 19:15-19:40 | 20:07-20:33 | 20:21-20:46 | 20:32-20:47 | 20:18-20:55 | 19:19-19:57 19:10-19:16 | | | |
| 3 | | | | 19:15-19:40 | 20:07-20:34 | 20:22-20:46 | 20:32-20:48 | 20:18-20:54 | 19:06-19:55 | | | |
| 4 | | | | 19:15-19:40 | 20:07-20:35 | 20:23-20:46 | 20:31-20:48 | 20:18-20:54 | 19:04-19:51 | | | |
| 5 | | | | 19:15-19:40 | 20:07-20:38 | 20:23-20:45 | 20:30-20:49 | 20:17-20:53 | 19:02-19:50 | | | |
| 6 | | | | 19:15-19:40 | 20:07-20:40 | 20:23-20:44 | 20:30-20:50 | 20:16-20:51 | 19:00-19:47 | | | |
| 7 | | | | 19:15-19:40 | 20:07-20:42 | 20:25-20:44 | 20:30-20:51 | 20:16-20:49 | 18:59-19:45 | | | |
| 8 | | | | 19:15-19:40 | 20:07-20:43 | 20:25-20:43 | 20:29-20:52 | 20:16-20:47 | 18:58-19:42 | | | |
| 9 | | | | 19:15-19:40 | 20:07-20:44 | 20:26-20:43 | 20:29-20:52 | 20:15-20:42 | 18:57-19:40 | | | |
| 10 | | | | 19:21-19:40 19:15-19:18 | 20:08-20:44 | 20:27-20:42 | 20:28-20:53 | 20:15-20:42 | 18:57-19:38 | | | |
| 11 | | | | 19:21-19:40 | 20:08-20:45 | 20:28-20:42 | 20:29-20:54 | 20:16-20:42 | 18:55-19:34 | | | |
| 12 | | | | 19:23-19:40 | 20:10-20:46 | 20:29-20:42 | 20:28-20:55 | 20:16-20:41 | 18:55-19:32 | | | |
| 13 | | | | 19:24-19:40 | 20:11-20:47 | 20:29-20:41 | 20:28-20:55 | 20:16-20:40 | 18:55-19:29 | | | |
| 14 | | | | 19:26-19:40 | 20:12-20:47 | 20:30-20:41 | 20:27-20:56 | 20:16-20:39 | 19:24-19:27 18:55-19:21 | | | |
| 15 | | | | 19:31-19:40 | 20:14-20:48 | 20:31-20:41 | 20:27-20:56 | 20:17-20:38 | 18:56-19:20 | | | |
| 16 | | | | 19:32-19:40 | 20:15-20:48 | 20:32-20:40 | 20:27-20:57 | 20:18-20:37 | 18:56-19:19 | | | |
| 17 | | | | 19:34-19:40 | 20:15-20:49 | 20:33-20:40 | 20:26-20:57 | 20:18-20:34 19:52-20:03 | 18:57-19:17 | | | |
| 18 | | | | | 20:15-20:48 | 20:34-20:40 | 20:26-20:57 | 20:20-20:31 19:50-20:05 | 18:57-19:14 | | | |
| 19 | | | | | 20:15-20:49 | 20:34-20:39 | 20:26-20:58 | 19:48-20:06 | 18:59-19:10 | | | |
| 20 | | | | | 20:15-20:49 | 20:35-20:39 | 20:26-20:58 | 19:47-20:08 | | | | |
| 21 | | | | | 20:16-20:49 | 20:35-20:39 | 20:26-20:59 | 19:46-20:08 | | | | |
| 22 | | | | | 20:15-20:48 | 20:36-20:40 | 20:25-20:59 | 19:44-20:08 | | | | |
| 23 | | | | | 20:16-20:49 | 20:36-20:40 | 20:26-20:59 | 19:44-20:09 | | | | |
| 24 | | | | | 20:16-20:49 | 20:35-20:40 | 20:25-20:59 | 19:43-20:09 | | | | |
| 25 | | | | 20:13-20:25 | 20:17-20:49 | 20:35-20:42 | 20:26-20:59 | 19:40-20:09 | | | | |
| 26 | | | | 20:12-20:28 | 20:17-20:48 | 20:35-20:42 | 20:25-20:59 | 19:37-20:08 | | | | |
| 27 | | | | 20:10-20:29 | 20:17-20:48 | 20:35-20:44 | 20:26-20:59 | 19:34-20:07 | | | | |
| 28 | | | | 20:09-20:31 | 20:18-20:47 | 20:34-20:44 | 20:25-20:58 | 19:32-20:06 | | | | |
| 29 | | | | 20:09-20:32 | 20:18-20:47 | 20:34-20:45 | 20:24-20:58 | 19:27-20:05 | | | | |
| 30 | | | 19:15-19:38 | 20:08-20:32 | 20:19-20:47 | 20:33-20:45 | 20:22-20:58 | 19:24-20:04 | | | | |
| 31 | | | 19:15-19:40 | | 20:20-20:47 | | 20:21-20:57 | 19:23-20:03 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 06:52-08:05 | 05:52-07:40 | 05:57-07:46 | 06:53-07:52 | 07:31-08:06 | | | |
| 2 | | | | | 06:50-08:04 | 05:52-07:40 | 05:57-07:46 | 06:53-07:50 | 07:33-08:05 | | | |
| 3 | | | | | 06:48-08:03 | 05:53-07:41 | 05:58-07:47 | 06:55-07:50 | 07:35-08:03 | | | |
| 4 | | | | | 06:46-08:02 | 05:52-07:41 | 05:57-07:46 | 06:56-07:49 | 07:37-08:01 | | | |
| 5 | | | | | 06:45-08:01 | 05:52-07:41 | 05:58-07:46 | 06:57-07:48 | 07:41-07:59 | | | |
| 6 | | | | | 06:45-07:59 | 05:52-07:40 | 05:58-07:47 | 06:58-07:46 | 07:48-07:49 | | | |
| 7 | | | | | 06:45-07:58 | 05:52-07:41 | 05:58-07:47 | 07:00-07:44 | | | | |
| 8 | | | | | 06:45-07:56 | 05:52-07:41 | 05:59-07:47 | 07:01-07:43 | | | | |
| 9 | | | | | 06:45-07:54 | 05:53-07:41 | 05:59-07:47 | 07:02-07:40 | | | | |
| 10 | | | | | 06:45-07:52 | 05:52-07:41 | 05:59-07:48 | 07:05-07:38 | | | | |
| 11 | | | | | 07:15-07:49 | 05:53-07:41 | 06:01-07:49 | 07:08-07:35 | | | | |
| 12 | | | | | 07:37-07:45 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:01-07:32 | | | | |
| 13 | | | | | 07:15-07:36 | 05:53-07:41 | 06:01-07:49 | 07:03-07:29 | | | | |
| 14 | | | | | 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:27-08:14 07:06-07:25 | | | | |
| 15 | | | | 07:24-08:10 | 07:15-07:37 | 05:53-07:42 | 06:01-07:49 | 07:27-08:15 07:13-07:18 | | | | |
| 16 | | | | 07:22-08:10 | 07:15-07:37 | 05:54-07:42 | 06:03-07:49 | 07:27-08:15 | | | | |
| 17 | | | | 07:22-08:10 | 07:15-07:38 06:05-06:16 | 05:54-07:42 | 06:03-07:49 | 07:25-08:15 | | | | |
| 18 | | | | 07:21-08:10 | 07:15-07:38 06:02-06:17 | 05:54-07:43 | 06:03-07:49 | 07:25-08:15 | | | | |
| 19 | | | | 07:20-08:10 | 07:15-07:39 06:00-06:19 | 05:54-07:43 | 06:04-07:49 | 07:25-08:15 | | | | |
| 20 | | | | 07:20-08:11 | 07:15-07:39 05:58-06:20 | 05:54-07:43 | 06:37-07:49 06:05-06:35 | 07:26-08:15 | | | | |
| 21 | | | | 07:19-08:10 | 07:15-07:39 06:34-06:51 05:58-06:23 | 05:54-07:43 | 06:40-07:50 06:06-06:35 | 07:26-08:15 | | | | |
| 22 | | | | 07:19-08:10 | 06:30-06:54 05:56-06:23 | 05:55-07:44 | 06:42-07:49 06:07-06:33 | 07:25-08:14 | | | | |
| 23 | | | | 07:19-08:10 | 06:28-06:57 05:56-06:25 | 05:55-07:44 | 06:47-07:49 06:08-06:31 | 07:26-08:14 | | | | |
| 24 | | | | 07:19-08:10 | 05:55-06:59 | 05:55-07:44 | 06:48-07:49 06:09-06:30 | 07:26-08:14 | | | | |
| 25 | | | | 07:19-08:08 | 05:55-07:00 | 05:56-07:44 | 06:49-07:49 06:11-06:29 | 07:26-08:14 | | | | |
| 26 | | | | 07:19-08:08 | 05:54-07:02 | 05:56-07:44 | 06:49-07:48 06:13-06:27 | 07:27-08:13 | | | | |
| 27 | | | | 07:19-08:08 | 05:53-07:03 | 05:56-07:45 | 06:50-07:48 06:17-06:25 | 07:27-08:12 | | | | |
| 28 | | | | 07:20-08:07 | 05:53-07:05 | 05:56-07:45 | 06:50-07:48 | 07:27-08:11 | | | | |
| 29 | | | | 07:20-08:07 07:15-07:19 | 05:53-07:06 | 05:57-07:45 | 06:51-07:48 | 07:28-08:10 | | | | |
| 30 | | | | 07:07-08:06 | 05:53-07:07 | 05:56-07:45 | 06:52-07:47 | 07:29-08:09 | | | | |
| 31 | | | | | 05:52-07:08 | | 06:52-07:46 | 07:31-08:08 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 07:52-08:15 | | | | 21:16-21:39 05:48-05:52 | | | | | |
| 2 | | | 07:50-08:15 | | | | 21:17-21:39 | | | | | |
| 3 | | | 07:47-08:14 | | | | 21:17-21:39 | | | 08:26-08:34 | | |
| 4 | | | 07:45-08:14 | | | | 21:17-21:38 | | | 08:24-08:36 | | |
| 5 | | | 07:44-08:12 | | | | 21:17-21:38 | | | 08:22-08:37 | | |
| 6 | | | 07:44-08:11 | | | | 21:17-21:38 | | | 08:21-08:38 | | |
| 7 | | | 07:44-08:06 | | | | 21:18-21:37 | | | 08:20-08:44 | | |
| 8 | | | 07:44-08:01 | | | | 21:18-21:36 | | | 08:19-08:46 | | |
| 9 | | | 07:46-08:00 | | | | 21:18-21:35 | | | 08:19-08:48 | | |
| 10 | | | 07:47-07:57 | | | | 21:19-21:35 | | | 08:20-08:48 | | |
| 11 | | | | | | | 21:19-21:34 | | | 08:22-08:49 | | |
| 12 | | | | | | 05:43-05:50 | 21:20-21:34 | | | 08:24-08:49 | | |
| 13 | | | | | | 05:42-05:52 | 21:20-21:33 | | | 08:26-08:48 | | |
| 14 | | | | | | 05:41-05:52 | 21:21-21:31 | | | 08:28-08:48 | | |
| 15 | | | | | | 05:40-05:53 | 21:21-21:30 | | | 08:31-08:48 | | |
| 16 | | | | | | 05:40-05:54 | 21:22-21:30 | | | 08:33-08:47 | | |
| 17 | | | | | | 05:40-05:55 | 21:23-21:28 | | | 08:35-08:46 | | |
| 18 | | | | | | 05:40-05:55 | 21:24-21:27 | | | 08:37-08:45 | | |
| 19 | | | | | | 05:40-05:56 | | | | 08:39-08:42 | | |
| 20 | | | | | | 05:40-05:56 | | | | | | |
| 21 | | | | | | 05:40-05:56 | | | | | | |
| 22 | | | | | | 05:41-05:57 | | | | | | |
| 23 | | 08:07-08:12 | | | | 05:41-05:57 | | | | | | |
| 24 | | 08:05-08:14 | | | | 05:41-05:56 | | | | | | |
| 25 | | 08:02-08:14 | | | | 05:42-05:57 | | | | | | |
| 26 | | 08:00-08:16 | | | | 05:42-05:56 | | | | | | |
| 27 | | 07:57-08:15 | | | | 05:43-05:57 | | | | | | |
| 28 | | 07:55-08:16 | | | | 05:43-05:56 | | | | | | |
| 29 | | | | | | 05:45-05:55 | | | | | | |
| 30 | | | | | | 05:46-05:54 | | | | | | |
| 31 | | | | | | | | | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | | 08:40-10:58 | 10:23-11:33 08:02-09:12 | 06:43-08:20 | 06:31-07:40 |
| 2 | | | 08:39-10:58 | 10:23-11:30 08:02-09:12 | 06:42-08:18 | 06:31-07:39 |
| 3 | | | 08:39-10:59 | 10:25-11:28 08:00-09:12 | 06:41-08:16 | 06:31-07:38 |
| 4 | | | 08:38-10:59 | 10:26-11:24 07:58-09:11 | 06:41-08:14 | 06:32-07:38 |
| 5 | | | 08:38-10:59 | 10:28-11:22 07:58-09:11 | 06:40-08:13 | 06:32-07:36 |
| 6 | | | 08:37-10:59 | 10:29-11:18 07:57-09:10 | 06:41-08:11 | 06:32-07:35 |
| 7 | | | 08:38-11:00 | 10:32-11:14 07:56-09:10 | 06:40-08:10 | 06:33-07:34 |
| 8 | | | 08:38-10:59 | 10:34-11:09 07:55-09:09 | 06:39-08:08 | 06:32-07:33 |
| 9 | | | 08:37-10:59 | 10:39-11:04 07:55-09:09 | 06:38-08:07 | 06:33-07:32 |
| 10 | | | 08:38-10:59 | 10:47-10:52 07:54-09:07 | 06:37-08:05 | 06:33-07:31 |
| 11 | | | 08:38-10:58 | 07:54-09:07 | 06:36-08:03 | 06:33-07:31 |
| 12 | | 09:48-10:38 | 08:39-10:59 | 07:54-09:06 | 06:36-08:02 | 06:34-07:32 |
| 13 | | 09:46-10:40 | 08:40-10:58 | 07:53-09:05 | 06:35-08:00 | 06:34-07:31 |
| 14 | | 09:43-10:42 | 08:41-10:58 | 07:53-09:04 | 06:34-07:59 | 06:34-07:31 |
| 15 | | 09:42-10:44 | 08:41-10:57 | 07:52-09:02 | 06:34-07:58 | 06:34-07:32 |
| 16 | | 09:40-10:46 | 08:42-09:36 | 07:53-09:01 | 06:34-07:56 | 06:35-07:32 |
| 17 | | 09:38-10:47 | 08:44-09:35 | 07:53-09:00 | 06:33-07:54 | 06:35-07:32 |
| 18 | | 09:37-10:49 | 08:45-09:33 | 07:52-08:58 | 06:33-07:53 | 06:35-07:32 |
| 19 | | 09:36-10:50 09:30-09:31 | 09:18-09:32 08:48-09:15 | 07:53-08:56 | 06:32-07:52 | 06:36-07:32 |
| 20 | | 09:34-10:51 09:30-09:32 | 09:18-09:30 08:51-09:11 | 07:53-08:55 | 06:32-07:51 | 06:36-07:32 |
| 21 | | 09:30-10:52 | 09:17-09:28 08:56-09:04 | 07:53-08:52 | 06:32-07:51 | 06:36-07:33 |
| 22 | | 09:30-10:53 | 09:18-09:26 | 07:54-08:50 | 06:31-07:49 | 06:36-07:32 |
| 23 | | 09:30-10:54 | 09:18-09:23 | 07:54-08:47 | 06:31-07:48 | 06:37-07:33 |
| 24 | | 09:30-10:55 | 09:19-09:21 | 07:55-08:43 | 06:32-07:47 | 06:36-07:33 |
| 25 | | 09:30-10:56 | | 08:31-08:35 07:55-08:30 | 06:31-07:45 | 06:37-07:34 |
| 26 | | 09:30-10:56 | | 07:56-08:29 | 06:31-07:44 | 06:37-07:34 |
| 27 | | 09:30-10:57 | | 07:57-08:27 | 06:31-07:44 | 06:37-07:34 |
| 28 | | 09:30-10:57 | | 07:58-08:26 06:58-07:14 | 06:31-07:43 | 06:37-07:35 |
| 29 | | | | 07:59-08:24 06:54-07:18 | 06:31-07:42 | 06:38-07:35 |
| 30 | | | | 08:00-08:22 06:51-07:21 | 06:31-07:42 | 06:37-07:35 |
| 31 | | | | | 06:31-07:41 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 06:38-07:35 | 06:47-08:13 | 08:08-09:06 07:34-08:07 | 09:19-11:38 | | |
| 2 | 06:38-07:36 | 06:46-08:14 | 10:46-10:51 08:08-09:06 07:36-08:04 | 09:17-11:37 | | |
| 3 | 06:37-07:36 | 06:47-08:16 | 10:37-11:02 08:08-09:07 07:40-08:00 | 09:17-11:37 | | |
| 4 | 06:38-07:37 | 06:48-08:18 | 10:32-11:07 08:08-09:07 07:49-07:51 | 09:16-11:37 | | |
| 5 | 06:38-07:39 | 06:48-08:18 | 10:28-11:10 08:07-09:06 | 09:15-11:36 | | |
| 6 | 06:38-07:41 | 06:50-08:20 | 10:25-11:14 08:07-09:06 | 09:14-11:36 | | |
| 7 | 06:38-07:42 | 06:50-08:22 | 10:23-11:17 08:07-09:06 | 09:14-11:35 | | |
| 8 | 06:38-07:43 | 06:51-08:24 | 10:21-11:19 08:07-09:06 | 09:13-11:35 | | |
| 9 | 06:38-07:45 | 06:50-08:24 | 10:19-11:22 08:07-09:06 | 09:13-11:34 | | |
| 10 | 06:38-07:46 | 06:51-08:26 | 10:17-11:23 08:06-09:05 | 09:13-11:33 | | |
| 11 | 06:38-07:47 | 06:51-08:27 | 10:15-11:25 08:07-09:04 | 09:13-11:33 | | |
| 12 | 06:40-07:49 | 06:51-08:28 | 10:14-11:27 08:07-09:04 | 09:13-11:32 | | |
| 13 | 06:40-07:50 | 06:52-08:30 | 10:12-11:29 08:08-09:03 | 09:13-11:31 | | |
| 14 | 06:40-07:50 | 06:53-08:32 | 10:11-11:30 08:08-09:03 | 09:13-11:30 | | |
| 15 | 06:39-07:51 | 06:54-08:34 | 10:10-11:32 08:09-09:02 | 09:14-11:29 | | |
| 16 | 06:40-07:53 | 06:55-08:35 | 10:08-11:32 08:09-09:00 | 09:14-11:28 | | |
| 17 | 06:40-07:53 | 06:55-08:35 | 10:07-11:33 08:10-08:59 | 09:15-11:27 | | |
| 18 | 06:40-07:54 | 06:57-08:44 | 10:06-11:34 08:11-08:58 | 09:16-11:26 | | |
| 19 | 06:41-07:56 | 06:59-08:50 | 10:05-11:35 08:12-08:57 | 09:17-11:25 | | |
| 20 | 06:41-07:57 | 07:01-08:53 | 10:05-11:36 08:14-08:56 | 10:11-11:24 09:18-10:08 | | |
| 21 | 06:41-07:58 | 07:03-08:55 | 10:04-11:36 08:15-08:55 | 10:12-11:22 10:04-10:06 09:19-10:03 | | |
| 22 | 06:42-08:00 | 07:16-08:57 07:10-07:13 | 10:03-11:37 08:17-08:54 | 10:13-11:21 09:20-10:02 | | |
| 23 | 06:42-08:00 | 07:18-08:59 | 10:02-11:38 09:37-09:54 08:20-08:51 | 10:15-11:19 09:21-10:00 | | |
| 24 | 06:43-08:02 | 07:20-09:00 | 10:01-11:37 09:32-09:57 08:22-08:46 | 10:18-11:18 09:24-10:00 | | |
| 25 | 06:42-08:03 | 07:23-09:02 | 09:29-11:37 08:27-08:41 | 09:20-10:15 08:26-08:58 | | |
| 26 | 06:43-08:04 | 07:23-09:02 | 09:26-11:38 | 09:22-10:12 08:28-08:56 | | |
| 27 | 06:44-08:06 | 07:25-09:03 | 09:24-11:38 | 09:25-10:09 08:32-08:52 | | |
| 28 | 06:44-08:07 | 07:27-09:04 | 09:23-11:38 | 09:28-10:05 08:38-08:45 | | |
| 29 | 06:45-08:09 | 07:29-09:05 | 09:21-11:38 | 09:33-10:01 | | |
| 30 | 06:45-08:09 | 07:31-09:06 | 09:20-11:38 | 09:39-09:55 | | |
| 31 | 06:46-08:11 | 07:32-09:05 | | | | |

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## SHADOW - Flicker curtailment calendar

Calculation: Enercon E138 (be 6 VE) Shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | 15:20-15:51 | |
| 2 | | | | | | | | | | | 15:19-15:51 | |
| 3 | | | | | | | | | | | 15:19-15:52 | |
| 4 | | | | | | | | | | | 15:19-15:52 | |
| 5 | | | | | | | | | | | 15:19-15:52 | |
| 6 | | | | | | | | | | | 15:18-15:52 | |
| 7 | | | | | | | | | | | 15:19-15:52 | |
| 8 | | | | | | | | | | | 15:19-15:52 | |
| 9 | | | | | | | | | | | 15:19-15:51 | |
| 10 | | | | | | | | | | | 15:19-15:50 | |
| 11 | | | | | | | | | | | 15:21-15:50 | |
| 12 | | | | | | | | | | | 15:21-15:49 | |
| 13 | | | | | | | | | | | 15:22-15:48 | |
| 14 | | | | | | | | | | | 15:22-15:47 | |
| 15 | | | | | | | | | | | 15:24-15:47 | |
| 16 | | | | | | | | | | | 15:25-15:45 | |
| 17 | | | | | | | | | | | 15:26-15:43 | |
| 18 | | | | | | | | | | | 15:29-15:41 | |
| 19 | | | | | | | | | | | 15:34-15:36 | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | | | | | | | | | | 15:21-15:51 | | |

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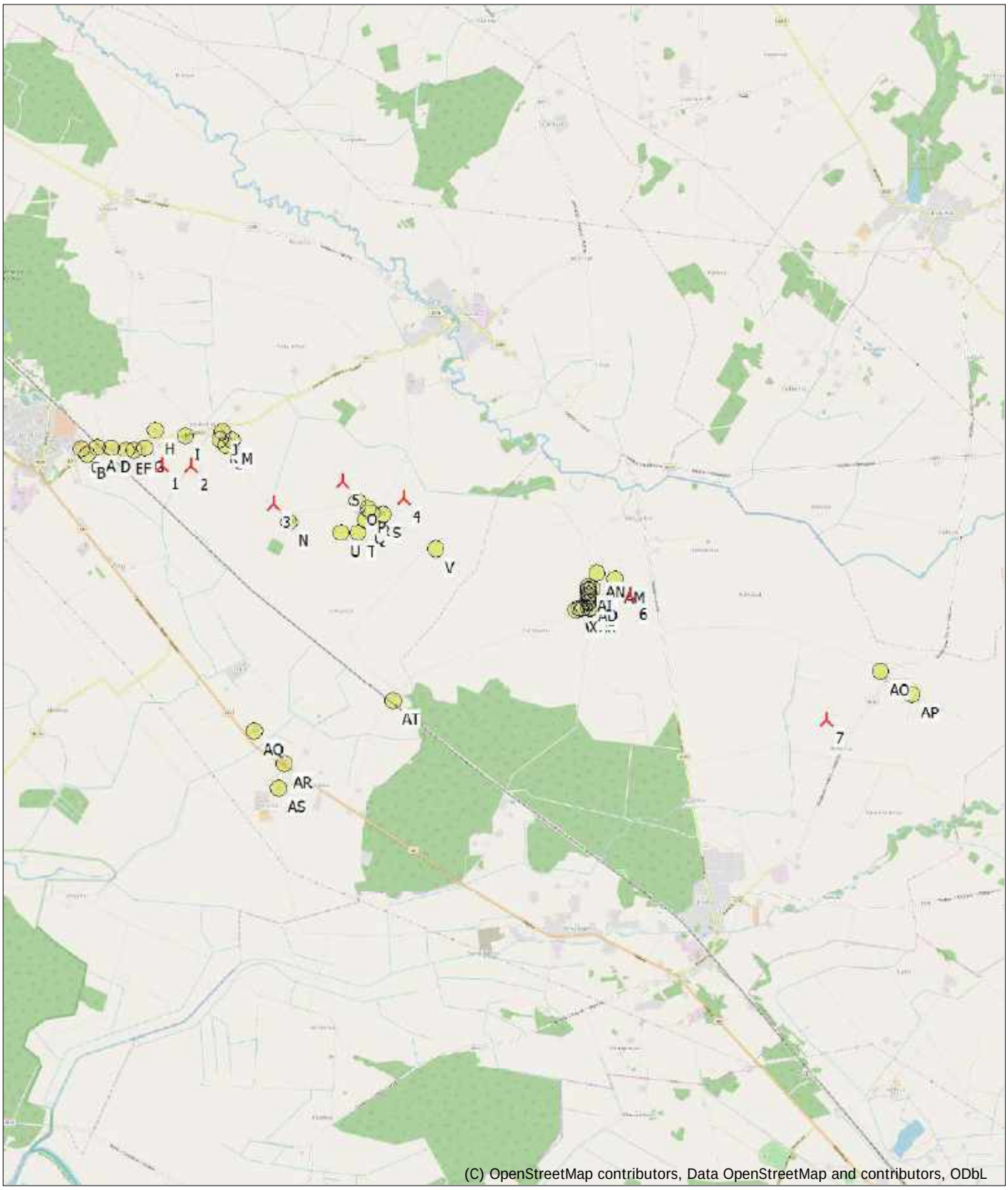
Calculated:
2021.12.03 11:21/3.5.552

## SHADOW - Map

Calculation: Enercon E138 (be 6 VE) Shut down




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.410 North: 6.128.477

New WTG  Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

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# SHADOW - Main Result

## Calculation: Foninës VE

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

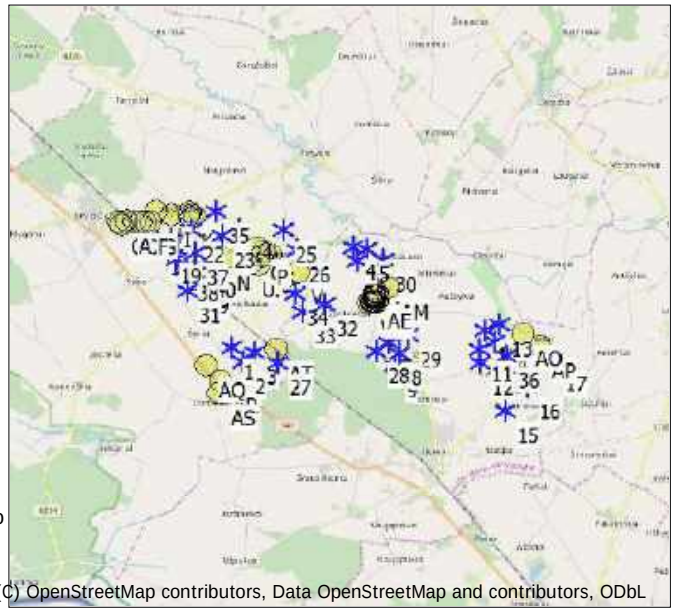
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




Scale 1:200.000
Existing WTG
Shadow receptor

### WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 2 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 3 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 4 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 5 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 6 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 7 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 8 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 9 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 10 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 11 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 12 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 13 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 14 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 15 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 16 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 17 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 18 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 19 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 20 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 21 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 22 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 23 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 24 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 25 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 26 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 27 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 28 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 29 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 30 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 31 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 32 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 33 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 34 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 35 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 36 | 357.043 | 6.126.794 | 20,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 37 | 348.872 | 6.129.782 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Foninës VE

...continued from previous page

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 38 | 348.589 | 6.129.372 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 39 | 348.873 | 6.129.055 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 40 | 349.068 | 6.129.458 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |

## Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

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# SHADOW - Main Result

## Calculation: Foninës VE

### Calculation Results

Shadow receptor

Shadow, expected values

| No. | Shadow hours per year [h/year] |
|---|---|
| A | 6:30 |
| B | 7:35 |
| C | 4:18 |
| D | 9:54 |
| E | 14:01 |
| F | 17:04 |
| G | 19:36 |
| H | 10:06 |
| I | 22:41 |
| J | 26:59 |
| K | 36:44 |
| L | 53:27 |
| M | 68:16 |
| N | 49:13 |
| O | 22:15 |
| P | 21:08 |
| Q | 28:09 |
| R | 23:29 |
| S | 27:44 |
| T | 19:32 |
| U | 19:28 |
| V | 10:14 |
| W | 10:14 |
| X | 7:10 |
| Y | 6:57 |
| Z | 6:43 |
| AA | 6:02 |
| AB | 5:58 |
| AC | 5:54 |
| AD | 5:55 |
| AE | 5:58 |
| AF | 5:59 |
| AG | 5:47 |
| AH | 5:35 |
| AI | 5:23 |
| AJ | 5:06 |
| AK | 6:25 |
| AL | 6:09 |
| AM | 2:07 |
| AN | 2:52 |
| AO | 48:58 |
| AP | 33:00 |
| AQ | 17:45 |
| AR | 3:32 |
| AS | 0:00 |
| AT | 19:52 |

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 1 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1) | 30:12 | 11:54 |
| 2 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2) | 28:24 | 9:56 |
| 3 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3) | 45:23 | 18:09 |
| 4 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4) | 8:47 | 3:52 |
| 5 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5) | 2:45 | 1:11 |
| 6 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6) | 5:51 | 2:28 |
| 7 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7) | 7:59 | 0:30 |
| 8 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8) | 1:25 | 0:06 |
| 9 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9) | 0:00 | 0:00 |
| 10 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10) | 18:09 | 7:48 |
| 11 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11) | 11:25 | 3:40 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Foninës VE

...continued from previous page

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 12 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12) | 10:09 | 2:23 |
| 13 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13) | 77:56 | 35:00 |
| 14 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14) | 29:48 | 10:59 |
| 15 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15) | 0:00 | 0:00 |
| 16 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16) | 0:00 | 0:00 |
| 17 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17) | 64:51 | 12:34 |
| 18 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18) | 358:56 | 38:01 |
| 19 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19) | 217:46 | 24:32 |
| 20 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20) | 114:40 | 14:14 |
| 21 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21) | 252:37 | 32:14 |
| 22 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22) | 440:06 | 40:32 |
| 23 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23) | 120:01 | 43:37 |
| 24 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24) | 22:09 | 7:26 |
| 25 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25) | 2:31 | 0:59 |
| 26 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26) | 111:10 | 50:29 |
| 27 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27) | 142:46 | 6:31 |
| 28 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28) | 0:00 | 0:00 |
| 29 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29) | 84:01 | 9:16 |
| 30 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30) | 0:00 | 0:00 |
| 31 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31) | 24:25 | 4:41 |
| 32 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32) | 85:15 | 22:20 |
| 33 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33) | 68:52 | 6:53 |
| 34 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34) | 232:46 | 17:08 |
| 35 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35) | 202:36 | 93:59 |
| 36 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37) | 56:58 | 10:42 |
| 37 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38) | 134:33 | 26:15 |
| 38 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39) | 53:05 | 8:14 |
| 39 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40) | 26:37 | 6:02 |
| 40 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41) | 81:17 | 25:21 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 08:57 (20) | 07:27 | 08:02 (21) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 16 | 09:13 (20) | 18:08 | 18 08:20 (21) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 08:55 (20) | 07:24 | 08:03 (21) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 18 | 09:13 (20) | 18:10 | 17 08:20 (21) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 08:54 (19) | 07:22 | 08:03 (21) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:13 | 20 | 09:14 (20) | 18:12 | 16 08:19 (21) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 08:53 (19) | 07:20 | 08:05 (21) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 21 | 09:14 (20) | 18:14 | 12 08:17 (21) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 08:53 (19) | 07:17 | 08:07 (21) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 22 | 09:15 (20) | 18:16 | 7 08:14 (21) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 08:52 (19) | 07:15 | | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 23 | 09:15 (20) | 18:18 | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 08:52 (19) | 07:12 | | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 23 | 09:15 (20) | 18:20 | | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 08:51 (19) | 07:10 | | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 23 | 09:14 (19) | 18:22 | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 08:50 (18) | 07:07 | | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 24 | 09:14 (19) | 18:24 | | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 08:49 (18) | 07:05 | | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 26 | 09:15 (19) | 18:26 | | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 08:48 (18) | 07:02 | | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 27 | 09:15 (19) | 18:28 | | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 08:46 (18) | 06:59 | | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 28 | 09:14 (19) | 18:30 | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 08:46 (18) | 06:57 | | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 28 | 09:14 (18) | 18:32 | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 08:46 (18) | 06:54 | | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 29 | 09:15 (18) | 18:34 | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 08:45 (18) | 06:52 | | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 31 | 09:16 (18) | 18:36 | | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 08:45 (18) | 06:49 | | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 30 | 09:15 (18) | 18:38 | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 08:45 (18) | 06:47 | | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 31 | 09:16 (18) | 18:40 | | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:44 (18) | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 31 | 09:15 (18) | 18:42 | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:44 (18) | 06:42 | | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 31 | 09:15 (18) | 18:44 | | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:45 (18) | 06:39 | | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 30 | 09:15 (18) | 18:46 | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 07:46 | | 08:12 (21) | 06:36 | | 06:18 | 05:17 | 04:52 |
| | 16:46 | | 17:51 | 32 | 09:14 (18) | 18:48 | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 07:44 | | 08:10 (21) | 06:34 | | 06:16 | 05:15 | 04:53 |
| | 16:48 | | 17:53 | 36 | 09:14 (18) | 18:50 | | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | | 07:41 | | 08:07 (21) | 06:31 | | 06:13 | 05:13 | 04:53 |
| | 16:50 | | 17:55 | 38 | 09:12 (18) | 18:52 | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 07:39 | | 08:05 (21) | 06:29 | | 06:11 | 05:12 | 04:53 |
| | 16:52 | | 17:57 | 41 | 09:12 (18) | 18:54 | | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | | 07:37 | | 08:03 (21) | 06:26 | | 06:09 | 05:11 | 04:53 |
| | 16:54 | | 17:59 | 40 | 09:10 (18) | 18:56 | | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 07:34 | | 08:03 (21) | 06:24 | | 06:06 | 05:09 | 04:54 |
| | 16:56 | | 18:01 | 37 | 09:08 (18) | 18:58 | | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | | 07:32 | | 08:02 (21) | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | | 18:03 | 32 | 09:05 (18) | 19:00 | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:05 (20) | 07:29 | | 08:02 (21) | 06:18 | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 2 09:07 (20) | 18:05 | 22 | 09:00 (18) | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:03 (20) | | | | 07:16 | | 06:00 | 05:05 | 04:56 |
| | 17:02 | 6 09:09 (20) | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:01 (20) | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 10 09:11 (20) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 08:59 (20) | | | | 07:11 | | | 05:03 | |
| | 17:06 | 13 09:12 (20) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 31 | | 790 | | | 70 | | | |
| Sun reduction | | 0,18 | | 0,25 | | | 0,34 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,80 | | 0,84 | | | 0,93 | | | |
| Total reduction | | 0,14 | | 0,20 | | | 0,32 | | | |
| Total, real | | 4 | | 162 | | | 22 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | | November | | December |
|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | 08:19 (18) | 08:35 |
| | 22:18 | 21:40 | 20:30 | 19:12 | | 16:58 | 25 08:44 (19) | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | | 07:39 | 08:20 (18) | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:10 | | 16:56 | 24 08:44 (19) | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 | | 07:41 | 08:21 (19) | 08:39 |
| | 22:17 | 21:36 | 20:25 | 19:07 | | 16:54 | 23 08:44 (19) | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 | | 07:43 | 08:22 (19) | 08:40 |
| | 22:17 | 21:34 | 20:22 | 19:05 | | 16:52 | 22 08:44 (20) | 16:08 |
| 5 | 05:00 | 05:47 | 06:46 | 07:43 | | 07:45 | 08:22 (19) | 08:42 |
| | 22:16 | 21:32 | 20:19 | 19:02 | | 16:50 | 22 08:44 (20) | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:45 | | 07:47 | 08:23 (19) | 08:43 |
| | 22:16 | 21:30 | 20:17 | 19:00 | | 16:48 | 21 08:44 (20) | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | 08:23 (19) | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 | | 16:46 | 21 08:44 (20) | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 | | 07:51 | 08:25 (19) | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 | | 16:44 | 20 08:45 (20) | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 | 08:40 (21) | 07:53 | 08:26 (20) | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 11 08:51 (21) | 16:42 | 18 08:44 (20) | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 08:38 (21) | 07:55 | 08:28 (20) | 08:48 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 14 08:52 (21) | 16:40 | 15 08:43 (20) | 16:05 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 08:37 (21) | 07:57 | 08:31 (20) | 08:50 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16 08:53 (21) | 16:38 | 13 08:44 (20) | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 | 08:35 (21) | 08:00 | 08:33 (20) | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 18 08:53 (21) | 16:36 | 9 08:42 (20) | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 | 08:36 (21) | 08:02 | 08:35 (20) | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 19 08:55 (21) | 16:34 | 6 08:41 (20) | 16:04 |
| 14 | 05:11 | 06:04 | 07:03 | 08:00 | 08:35 (21) | 08:04 | 08:37 (20) | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:40 | 29 09:36 (18) | 16:33 | 2 08:39 (20) | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 | 08:35 (21) | 08:06 | | 08:54 |
| | 22:07 | 21:11 | 19:54 | 18:37 | 34 09:39 (18) | 16:31 | | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 | 08:35 (21) | 08:08 | | 08:55 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 39 09:41 (18) | 16:29 | | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:35 (21) | 08:10 | | 08:56 |
| | 22:04 | 21:06 | 19:49 | 18:32 | 41 09:42 (18) | 16:28 | | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:37 (21) | 08:12 | | 08:57 |
| | 22:03 | 21:04 | 19:46 | 18:30 | 40 09:43 (18) | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:39 (21) | 08:14 | | 08:57 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 38 09:44 (18) | 16:25 | | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 08:12 | 08:41 (21) | 08:15 | | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 35 09:44 (18) | 16:23 | | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 09:15 (18) | 08:17 | | 08:59 |
| | 21:59 | 20:57 | 19:38 | 18:23 | 30 09:45 (18) | 16:22 | | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 | 09:15 (18) | 08:19 | | 08:59 |
| | 21:57 | 20:54 | 19:36 | 18:20 | 31 09:46 (18) | 16:20 | | 16:05 |
| 23 | 05:24 | 06:21 | 07:20 | 08:18 | 09:15 (18) | 08:21 | | 09:00 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 31 09:46 (18) | 16:19 | | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 09:14 (18) | 08:23 | | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 31 09:45 (18) | 16:18 | | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 | 08:14 (18) | 08:25 | | 09:00 |
| | 21:53 | 20:47 | 19:28 | 17:13 | 31 08:45 (18) | 16:16 | | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 | 08:14 (18) | 08:27 | | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 30 08:44 (18) | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:27 | 08:15 (18) | 08:28 | | 09:01 |
| | 21:49 | 20:42 | 19:23 | 17:09 | 30 08:45 (18) | 16:14 | | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:29 | 08:15 (18) | 08:30 | | 09:01 |
| | 21:47 | 20:40 | 19:20 | 17:07 | 29 08:44 (18) | 16:13 | | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 | 08:16 (18) | 08:32 | | 09:01 |
| | 21:46 | 20:37 | 19:17 | 17:04 | 27 08:43 (19) | 16:12 | | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 | 08:16 (18) | 08:34 | | 09:01 |
| | 21:44 | 20:35 | 19:15 | 17:02 | 27 08:43 (19) | 16:11 | | 16:12 |
| 31 | 05:38 | 06:36 | | 07:35 | 08:18 (18) | | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | 26 08:44 (19) | | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | | 253 | | 224 |
| Total, worst case | | | | 657 | | 241 | | |
| Sun reduction | | | | 0,31 | | 0,16 | | |
| Oper. time red. | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,86 | | 0,81 | | |
| Total reduction | | | | 0,26 | | 0,13 | | |
| Total, real | | | | 172 | | 31 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

# SHADOW - Calendar

## Calculation: Foninės VEShadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:52 (21) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 08:08 (20) | 08:35 |
| | 16:14 | 17:08 | 18:08 36 08:42 (18) | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 16 08:24 (20) | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 07:50 (21) | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 08:10 (20) | 08:37 |
| | 16:15 | 17:10 | 18:10 40 08:42 (18) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 13 08:23 (20) | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 07:47 (21) | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 08:26 (21) | 07:41 08:12 (20) | 08:39 |
| | 16:16 | 17:13 | 18:12 42 08:41 (18) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 9 08:35 (21) | 16:54 10 08:22 (20) | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 07:46 (21) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 08:24 (21) | 07:43 08:15 (20) | 08:40 |
| | 16:18 | 17:15 | 18:14 43 08:41 (18) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 13 08:37 (21) | 16:52 6 08:21 (20) | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 07:45 (21) | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 08:22 (21) | 07:45 08:17 (20) | 08:42 |
| | 16:19 | 17:17 | 18:16 42 08:39 (18) | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 27 09:09 (18) | 16:50 2 08:19 (20) | 16:07 |
| 6 | 08:59 | 08:18 08:47 (20) | 07:15 07:45 (21) | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:45 08:21 (21) | 07:47 | 08:43 |
| | 16:20 | 17:19 3 08:50 (20) | 18:18 39 08:38 (18) | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 19:00 33 09:11 (18) | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 08:45 (20) | 07:12 07:45 (21) | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 08:20 (21) | 07:49 | 08:44 |
| | 16:22 | 17:21 7 08:52 (20) | 18:20 35 08:36 (18) | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 38 09:13 (18) | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 08:42 (20) | 07:10 07:46 (21) | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 08:20 (21) | 07:51 | 08:46 |
| | 16:23 | 17:23 10 08:52 (20) | 18:22 30 08:34 (18) | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 41 09:14 (18) | 16:44 | 16:05 |
| 9 | 08:58 | 08:12 08:40 (20) | 07:07 07:46 (21) | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 08:20 (21) | 07:53 | 08:47 |
| | 16:25 | 17:25 14 08:54 (20) | 18:24 19 08:29 (18) | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 43 09:15 (18) | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 08:38 (20) | 07:05 07:47 (21) | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 08:20 (21) | 07:55 | 08:48 |
| | 16:26 | 17:27 16 08:54 (20) | 18:26 11 07:58 (21) | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 43 09:15 (18) | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 08:36 (19) | 07:02 07:50 (21) | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:22 (21) | 07:57 | 08:50 |
| | 16:28 | 17:30 19 08:55 (20) | 18:28 5 07:55 (21) | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 41 09:15 (18) | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 08:33 (19) | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 08:24 (21) | 08:00 | 08:51 |
| | 16:30 | 17:32 22 08:55 (20) | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 39 09:15 (18) | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 08:32 (19) | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 08:27 (21) | 08:02 | 08:52 |
| | 16:31 | 17:34 23 08:55 (20) | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 35 09:16 (18) | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 08:31 (19) | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 08:00 08:47 (18) | 08:04 | 08:53 |
| | 16:33 | 17:36 24 08:55 (20) | 18:34 | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:40 29 09:16 (18) | 16:33 | 16:04 |
| 15 | 08:52 | 08:00 08:31 (19) | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 08:47 (18) | 08:06 | 08:54 |
| | 16:35 | 17:38 24 08:55 (20) | 18:36 | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 18:37 28 09:15 (18) | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 08:29 (19) | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 08:47 (18) | 08:08 | 08:55 |
| | 16:37 | 17:40 24 08:53 (20) | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 28 09:15 (18) | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 08:29 (19) | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 08:47 (18) | 08:10 | 08:56 |
| | 16:38 | 17:42 23 08:52 (20) | 18:40 | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 18:32 28 09:15 (19) | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 08:29 (19) | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 08:48 (18) | 08:12 | 08:57 |
| | 16:40 | 17:44 21 08:50 (19) | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 30 09:18 (19) | 16:26 | 16:04 |
| 19 | 08:48 | 07:51 08:25 (18) | 06:42 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 08:48 (18) | 08:14 | 08:57 |
| | 16:42 | 17:47 26 08:51 (19) | 18:44 | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 31 09:19 (19) | 16:25 | 16:04 |
| 20 | 08:47 | 07:48 08:22 (18) | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 08:49 (18) | 08:15 | 08:58 |
| | 16:44 | 17:49 29 08:51 (19) | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 30 09:19 (19) | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 08:20 (18) | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 08:50 (18) | 08:17 | 08:59 |
| | 16:46 | 17:51 29 08:49 (19) | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 30 09:20 (19) | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 08:18 (18) | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 08:53 (18) | 08:19 | 08:59 |
| | 16:48 | 17:53 31 08:49 (19) | 18:50 | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 28 09:21 (19) | 16:20 | 16:06 |
| 23 | 08:43 | 07:41 08:17 (18) | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 08:18 08:56 (18) | 08:21 | 09:00 |
| | 16:50 | 17:55 30 08:47 (19) | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 25 09:21 (19) | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 08:16 (18) | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 08:59 (19) | 08:23 | 09:00 |
| | 16:52 | 17:57 30 08:46 (19) | 18:54 | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 18:16 22 09:21 (19) | 16:18 | 16:07 |
| 25 | 08:40 | 07:37 08:15 (18) | 06:26 | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 07:59 (19) | 08:25 | 09:00 |
| | 16:54 | 17:59 27 08:42 (19) | 18:56 | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 23 08:22 (20) | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 08:15 (18) | 06:24 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 07:59 (19) | 08:27 | 09:01 |
| | 16:56 | 18:01 28 08:43 (18) | 18:58 | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 17:11 24 08:23 (20) | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 08:14 (18) | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:27 08:00 (19) | 08:28 | 09:01 |
| | 16:58 | 18:03 28 08:42 (18) | 19:00 | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 24 08:24 (20) | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 07:55 (21) | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 08:01 (19) | 08:30 | 09:01 |
| | 17:00 | 18:05 33 08:43 (18) | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 23 08:24 (20) | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:31 08:01 (19) | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 23 08:24 (20) | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 08:03 (19) | 08:34 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 21 08:24 (20) | 16:11 | 16:12 |
| 31 | 08:30 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 08:06 (19) | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 19 08:25 (20) | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | 521 | 342 | | | | | | | 828 | 47 | |
| Sun reduction | | 0,25 | 0,34 | | | | | | | 0,31 | 0,16 | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | | 1,00 | 1,00 | |
| Wind dir. red. | | 0,88 | 0,93 | | | | | | | 0,90 | 0,85 | |
| Total reduction | | 0,22 | 0,32 | | | | | | | 0,28 | 0,13 | |
| Total, real | | 112 | 108 | | | | | | | 229 | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 08:22 (18) | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:08 (19) | 08:35 |
| | 16:14 | 17:08 | 18:08 | 22 08:44 (18) | 20:10 | 21:09 | 22:03 | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 | 12 08:20 (19) | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 08:24 (18) | 07:06 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:10 (19) | 08:37 |
| | 16:15 | 17:10 | 18:10 | 19 08:43 (18) | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 8 08:18 (19) | 16:09 |
| 3 | 09:01 | 08:24 | 07:22 | 08:25 (18) | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:12 (19) | 08:39 |
| | 16:16 | 17:13 | 18:12 | 15 08:40 (18) | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:25 | 19:07 | 16:54 | 2 08:14 (19) | 16:08 |
| 4 | 09:00 | 08:22 | 07:20 | 08:29 (18) | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 | | 08:40 |
| | 16:18 | 17:15 | 18:14 | 8 08:37 (18) | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:46 | 07:43 | 07:45 | | 08:42 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | 21:17 | 22:08 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | | 16:07 |
| 6 | 08:59 | 08:18 | 07:15 | | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:45 | 07:47 | | 08:43 |
| | 16:20 | 17:19 | 18:18 | | 20:20 | 21:19 | 22:09 | 22:16 | 21:30 | 20:17 | 19:00 | 16:48 | | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | | 08:44 |
| | 16:22 | 17:21 | 18:20 | | 20:22 | 21:21 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | | 16:06 |
| 8 | 08:58 | 08:14 08:42 (19) | 07:10 | | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | | 08:46 |
| | 16:23 | 17:23 3 08:45 (19) | 18:22 | | 20:24 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | | 16:05 |
| 9 | 08:58 | 08:12 08:40 (19) | 07:07 | | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | | 08:47 |
| | 16:25 | 17:25 9 08:49 (19) | 18:24 | | 20:26 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | | 16:05 |
| 10 | 08:57 | 08:10 08:38 (19) | 07:05 | | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 09:01 (18) | 07:55 | | 08:48 |
| | 16:26 | 17:27 13 08:51 (19) | 18:26 | | 20:28 | 21:26 | 22:13 | 22:12 | 21:22 | 20:07 | 18:49 12 09:13 (18) | 16:40 | | 16:05 |
| 11 | 08:56 | 08:08 08:36 (19) | 07:02 | | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:58 (18) | 07:57 | | 08:50 |
| | 16:28 | 17:30 16 08:52 (19) | 18:28 | | 20:30 | 21:28 | 22:14 | 22:11 | 21:19 | 20:04 | 18:47 17 09:15 (18) | 16:38 | | 16:04 |
| 12 | 08:55 | 08:06 08:34 (19) | 06:59 | | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 08:56 (18) | 08:00 | | 08:51 |
| | 16:30 | 17:32 18 08:52 (19) | 18:30 | | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:02 | 18:44 20 09:16 (18) | 16:36 | | 16:04 |
| 13 | 08:54 | 08:04 08:34 (19) | 06:57 | | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 08:56 (18) | 08:02 | | 08:52 |
| | 16:31 | 17:34 19 08:53 (19) | 18:32 | | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 22 09:18 (18) | 16:34 | | 16:04 |
| 14 | 08:54 | 08:02 08:34 (19) | 06:54 | | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:03 | 08:00 08:55 (18) | 08:04 | | 08:53 |
| | 16:33 | 17:36 20 08:54 (19) | 18:34 | | 20:35 | 21:34 | 22:16 | 22:08 | 21:13 | 19:56 | 18:40 24 09:19 (18) | 16:33 | | 16:04 |
| 15 | 08:52 | 08:00 08:33 (18) | 06:52 | | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 08:54 (18) | 08:06 | | 08:54 |
| | 16:35 | 17:38 21 08:54 (19) | 18:36 | | 20:37 | 21:35 | 22:17 | 22:07 | 21:11 | 19:54 | 18:37 25 09:19 (18) | 16:31 | | 16:04 |
| 16 | 08:51 | 07:57 08:28 (18) | 06:49 | | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 08:53 (18) | 08:08 | | 08:55 |
| | 16:37 | 17:40 25 08:53 (19) | 18:38 | | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 26 09:19 (18) | 16:29 | | 16:04 |
| 17 | 08:50 | 07:55 08:27 (18) | 06:47 | | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 08:53 (18) | 08:10 | | 08:56 |
| | 16:38 | 17:42 27 08:54 (19) | 18:40 | | 20:41 | 21:39 | 22:18 | 22:04 | 21:06 | 19:49 | 18:32 26 09:19 (18) | 16:28 | | 16:04 |
| 18 | 08:49 | 07:53 08:24 (18) | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 08:52 (18) | 08:12 | | 08:57 |
| | 16:40 | 17:44 28 08:52 (19) | 18:42 | | 20:43 | 21:41 | 22:18 | 22:03 | 21:04 | 19:46 | 18:30 27 09:19 (18) | 16:26 | | 16:04 |
| 19 | 08:48 | 07:51 08:24 (18) | 06:42 | | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 08:52 (18) | 08:14 | | 08:57 |
| | 16:42 | 17:47 28 08:52 (19) | 18:44 | | 20:45 | 21:43 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 26 09:18 (18) | 16:25 | | 16:04 |
| 20 | 08:47 | 07:48 08:23 (18) | 06:39 | | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 08:52 (18) | 08:15 | | 08:58 |
| | 16:44 | 17:49 28 08:51 (19) | 18:46 | | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 26 09:18 (19) | 16:23 | | 16:05 |
| 21 | 08:45 | 07:46 08:22 (18) | 06:36 | | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 08:52 (18) | 08:17 | | 08:59 |
| | 16:46 | 17:51 27 08:49 (19) | 18:48 | | 20:49 | 21:46 | 22:19 | 21:59 | 20:57 | 19:38 | 18:23 28 09:20 (19) | 16:22 | | 16:05 |
| 22 | 08:44 | 07:44 08:22 (18) | 06:34 | | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 08:54 (18) | 08:19 | | 08:59 |
| | 16:48 | 17:53 26 08:48 (18) | 18:50 | | 20:51 | 21:48 | 22:19 | 21:57 | 20:54 | 19:36 | 18:20 28 09:22 (19) | 16:20 | | 16:06 |
| 23 | 08:43 | 07:41 08:21 (18) | 06:31 | | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:20 | 08:18 08:54 (18) | 08:21 | | 09:00 |
| | 16:50 | 17:55 26 08:47 (18) | 18:52 | | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 29 09:23 (19) | 16:19 | | 16:06 |
| 24 | 08:41 | 07:39 08:21 (18) | 06:29 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 08:55 (18) | 08:23 | | 09:00 |
| | 16:52 | 17:57 27 08:48 (18) | 18:54 | | 20:55 | 21:51 | 22:20 | 21:54 | 20:49 | 19:30 | 18:16 28 09:23 (19) | 16:18 | | 16:07 |
| 25 | 08:40 | 07:37 08:21 (18) | 06:26 | | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 07:56 (18) | 08:25 | | 09:00 |
| | 16:54 | 17:59 26 08:47 (18) | 18:56 | | 20:57 | 21:52 | 22:20 | 21:53 | 20:47 | 19:28 | 17:13 27 08:23 (19) | 16:16 | | 16:07 |
| 26 | 08:38 | 07:34 08:21 (18) | 06:24 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 07:59 (18) | 08:27 | | 09:01 |
| | 16:56 | 18:01 26 08:47 (18) | 18:58 | | 20:59 | 21:54 | 22:20 | 21:51 | 20:44 | 19:25 | 17:11 24 08:23 (19) | 16:15 | | 16:08 |
| 27 | 08:36 | 07:32 08:21 (18) | 06:21 | | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:27 08:03 (19) | 08:29 | | 09:01 |
| | 16:58 | 18:03 25 08:46 (18) | 19:00 | | 21:01 | 21:56 | 22:19 | 21:49 | 20:42 | 19:23 | 17:09 21 08:24 (19) | 16:14 | | 16:09 |
| 28 | 08:35 | 07:29 08:22 (18) | 06:18 | | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:29 08:03 (19) | 08:30 | | 09:01 |
| | 17:00 | 18:05 23 08:45 (18) | 19:02 | | 21:03 | 21:57 | 22:19 | 21:47 | 20:40 | 19:20 | 17:07 20 08:23 (19) | 16:13 | | 16:10 |
| 29 | 08:33 | | 07:16 | | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:31 08:03 (19) | 08:32 | | 09:01 |
| | 17:02 | | 20:04 | | 21:05 | 21:59 | 22:19 | 21:46 | 20:37 | 19:17 | 17:04 19 08:22 (19) | 16:12 | | 16:11 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 08:04 (19) | 08:34 | | 09:01 |
| | 17:04 | | 20:06 | | 21:07 | 22:00 | 22:19 | 21:44 | 20:35 | 19:15 | 17:02 18 08:22 (19) | 16:11 | | 16:12 |
| 31 | 08:30 | | 07:11 | | | 05:03 | | 05:38 | 06:36 | | 07:35 08:06 (19) | | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | 21:42 | 20:32 | | 17:00 15 08:21 (19) | | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | | 224 |
| Total, worst case | | 461 | 64 | | | | | | | | 508 | 22 | | |
| Sun reduction | | 0,25 | 0,34 | | | | | | | | 0,31 | 0,16 | | |
| Oper. time red. | | 1,00 | 1,00 | | | | | | | | 1,00 | 1,00 | | |
| Wind dir. red. | | 0,88 | 0,89 | | | | | | | | 0,88 | 0,86 | | |
| Total reduction | | 0,22 | 0,30 | | | | | | | | 0,27 | 0,14 | | |
| Total, real | | 99 | 19 | | | | | | | | 137 | 3 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:10 (19) | 07:27 | | 08:13 (21) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 29 | 09:39 (18) | 18:08 | 18 | 08:31 (21) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | | 08:26 | | 09:10 (19) | 07:24 | | 08:15 (21) | 07:06 | | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 31 | 09:41 (18) | 18:10 | 15 | 08:30 (21) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | | 08:24 | | 09:10 (19) | 07:22 | | 08:16 (21) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | | | 17:12 | 32 | 09:42 (18) | 18:12 | 12 | 08:28 (21) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | | 08:22 | | 09:10 (19) | 07:20 | | 08:20 (21) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | | | 17:15 | 33 | 09:43 (18) | 18:14 | 4 | 08:24 (21) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | | 08:20 | | 09:11 (19) | 07:17 | | | 06:58 | | 05:46 | 04:58 |
| | 16:19 | | | 17:17 | 33 | 09:44 (18) | 18:16 | | | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | | 08:18 | | 09:11 (19) | 07:15 | | | 06:55 | | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | 34 | 09:45 (18) | 18:18 | | | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | | 08:16 | | 09:12 (19) | 07:12 | | | 06:53 | | 05:42 | 04:56 |
| | 16:22 | | | 17:21 | 34 | 09:46 (18) | 18:20 | | | 20:22 | | 21:21 | 22:10 |
| 8 | 08:58 | | | 08:14 | | 09:11 (19) | 07:10 | | | 06:50 | | 05:40 | 04:56 |
| | 16:23 | | | 17:23 | 35 | 09:46 (18) | 18:22 | | | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | | | 08:12 | | 09:11 (18) | 07:07 | | | 06:48 | | 05:38 | 04:55 |
| | 16:25 | | | 17:25 | 36 | 09:47 (18) | 18:24 | | | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | | | 08:10 | | 09:11 (18) | 07:05 | | | 06:45 | | 05:36 | 04:55 |
| | 16:26 | | | 17:27 | 36 | 09:47 (18) | 18:26 | | | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | | | 08:08 | | 09:11 (18) | 07:02 | | | 06:43 | | 05:34 | 04:54 |
| | 16:28 | | | 17:30 | 37 | 09:48 (18) | 18:28 | | | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | | 08:06 | | 09:10 (18) | 06:59 | | | 06:40 | | 05:32 | 04:54 |
| | 16:30 | | | 17:32 | 37 | 09:47 (18) | 18:30 | | | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | | 08:04 | | 09:10 (18) | 06:57 | | 07:22 (22) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | | | 17:34 | 37 | 09:47 (18) | 18:32 | 4 | 07:26 (22) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | | 08:02 | | 09:11 (18) | 06:54 | | 07:19 (22) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | | | 17:36 | 36 | 09:47 (18) | 18:34 | 10 | 07:29 (22) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | | 08:00 | | 09:10 (18) | 06:52 | | 07:16 (22) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | | | 17:38 | 36 | 09:46 (18) | 18:36 | 14 | 07:30 (22) | 20:37 | | 21:35 | 22:17 |
| 16 | 08:51 | | | 07:57 | | 09:11 (18) | 06:49 | | 07:14 (22) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | | | 17:40 | 35 | 09:46 (18) | 18:38 | 17 | 07:31 (22) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | 09:12 (18) | 06:47 | | 07:13 (22) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | 34 | 09:46 (18) | 18:40 | 18 | 07:31 (22) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | | 07:53 | | 08:20 (21) | 06:44 | | 07:13 (22) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | 40 | 09:45 (18) | 18:42 | 19 | 07:32 (22) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | | 07:51 | | 08:17 (21) | 06:42 | | 07:12 (22) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | | | 17:47 | 44 | 09:44 (18) | 18:44 | 19 | 07:31 (22) | 20:45 | | 21:43 | 22:18 |
| 20 | 08:47 | | | 07:48 | | 08:16 (21) | 06:39 | | 07:11 (22) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | | | 17:49 | 46 | 09:44 (18) | 18:46 | 20 | 07:31 (22) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:17 (20) | 07:46 | | 08:14 (21) | 06:36 | | 07:12 (22) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | 5 | 09:22 (20) | 17:51 | 46 | 09:42 (18) | 18:48 | 19 | 07:31 (22) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:16 (20) | 07:44 | | 08:14 (21) | 06:34 | | 07:12 (22) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 9 | 09:25 (20) | 17:53 | 44 | 09:40 (18) | 18:50 | 17 | 07:29 (22) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:43 | | 09:14 (20) | 07:41 | | 08:12 (21) | 06:31 | | 07:13 (22) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 12 | 09:26 (20) | 17:55 | 42 | 09:38 (18) | 18:52 | 15 | 07:28 (22) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:12 (20) | 07:39 | | 08:13 (21) | 06:29 | | 07:14 (22) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 15 | 09:27 (20) | 17:57 | 35 | 09:35 (18) | 18:54 | 12 | 07:26 (22) | 20:55 | | 21:51 | 22:20 |
| 25 | 08:40 | | 09:11 (20) | 07:37 | | 08:12 (21) | 06:26 | | 07:16 (22) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | 17 | 09:28 (20) | 17:59 | 22 | 08:34 (21) | 18:56 | 6 | 07:22 (22) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:11 (20) | 07:34 | | 08:12 (21) | 06:24 | | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 19 | 09:30 (20) | 18:01 | 22 | 08:34 (21) | 18:58 | | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:11 (20) | 07:32 | | 08:12 (21) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 20 | 09:31 (19) | 18:03 | 21 | 08:33 (21) | 19:00 | | | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:11 (20) | 07:29 | | 08:13 (21) | 06:18 | | | 06:02 | | 05:07 | 04:55 |
| | 17:00 | 22 | 09:33 (19) | 18:05 | 20 | 08:33 (21) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:10 (20) | | | | 07:16 | | | 06:00 | | 05:05 | 04:56 |
| | 17:02 | 23 | 09:33 (19) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:10 (20) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 25 | 09:35 (18) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:10 (19) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 27 | 09:37 (18) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 194 | | | 967 | | | 239 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,75 | | | 0,79 | | | 0,97 | | | | | |
| Total reduction | | 0,13 | | | 0,19 | | | 0,33 | | | | | |
| Total, real | | 26 | | | 183 | | | 78 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | | 08:40 (18) | 08:35 |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | 16:58 | 37 | 09:17 (18) | 16:10 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 07:39 | | 08:40 (18) | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | 16:56 | 36 | 09:16 (18) | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 07:41 | | 08:40 (18) | 08:39 |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | | 16:54 | 35 | 09:15 (18) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 07:43 | | 08:41 (19) | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | 16:52 | 35 | 09:16 (18) | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 07:45 | | 08:41 (19) | 08:42 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | 16:50 | 34 | 09:15 (18) | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 07:47 | | 08:40 (19) | 08:43 |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | | 16:48 | 34 | 09:14 (18) | 16:06 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 07:49 | | 08:40 (19) | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | 16:46 | 33 | 09:13 (18) | 16:06 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 07:51 | | 08:41 (19) | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | 16:44 | 32 | 09:13 (18) | 16:05 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 07:53 | | 08:41 (19) | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | 16:42 | 30 | 09:11 (18) | 16:05 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:52 (21) | | 07:55 | 08:41 (19) | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 8 | 09:00 (21) | | 16:40 | 29 | 09:10 (18) | 16:05 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:49 (21) | | 07:57 | 08:41 (20) | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 14 | 09:03 (21) | | 16:38 | 27 | 09:08 (18) | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:47 (21) | | 07:59 | 08:42 (20) | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 17 | 09:04 (21) | | 16:36 | 25 | 09:07 (18) | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:46 (21) | | 08:02 | 08:42 (20) | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 09:05 (21) | | 16:34 | 23 | 09:05 (19) | 16:04 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:46 (21) | | 08:04 | 08:42 (20) | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 20 | 09:06 (21) | | 16:33 | 22 | 09:04 (19) | 16:04 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:45 (21) | | 08:06 | 08:43 (20) | 08:54 |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 21 | 09:06 (21) | | 16:31 | 20 | 09:03 (19) | 16:04 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:44 (21) | | 08:08 | 08:44 (20) | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 22 | 09:06 (21) | | 16:29 | 19 | 09:03 (20) | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 08:44 (21) | | 08:10 | 08:45 (20) | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | | 18:32 | 31 | 10:04 (18) | | 16:28 | 17 | 09:02 (20) | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:06 (22) | | 08:08 | | 08:44 (21) | | 08:12 | 08:46 (20) | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 3 | 08:09 (22) | | 18:30 | 37 | 10:07 (18) | | 16:26 | 15 | 09:01 (20) | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:01 (22) | | 08:10 | | 08:44 (21) | | 08:13 | 08:48 (20) | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 11 | 08:12 (22) | | 18:27 | 43 | 10:10 (18) | | 16:25 | 12 | 09:00 (20) | 16:04 |
| 20 | 05:20 | | 06:15 | | 07:14 | | 07:59 (22) | | 08:12 | | 08:44 (21) | | 08:15 | 08:50 (20) | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 15 | 08:14 (22) | | 18:25 | 45 | 10:11 (18) | | 16:23 | 9 | 08:59 (20) | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | | 07:58 (22) | | 08:14 | | 08:45 (21) | | 08:17 | 08:53 (20) | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 16 | 08:14 (22) | | 18:23 | 46 | 10:12 (18) | | 16:22 | 5 | 08:58 (20) | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | | 07:57 (22) | | 08:16 | | 08:47 (21) | | 08:19 | | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 18 | 08:15 (22) | | 18:20 | 45 | 10:14 (18) | | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:20 | | 07:56 (22) | | 08:18 | | 08:48 (21) | | 08:21 | | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 19 | 08:15 (22) | | 18:18 | 44 | 10:15 (18) | | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | | 07:55 (22) | | 08:20 | | 08:51 (21) | | 08:23 | | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 20 | 08:15 (22) | | 18:16 | 38 | 10:15 (18) | | 16:18 | | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:55 (22) | | 07:22 | | 08:41 (18) | | 08:25 | | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 20 | 08:15 (22) | | 17:13 | 35 | 09:16 (18) | | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:55 (22) | | 07:24 | | 08:40 (18) | | 08:27 | | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 19 | 08:14 (22) | | 17:11 | 36 | 09:16 (18) | | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:56 (22) | | 07:27 | | 08:41 (18) | | 08:28 | | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 17 | 08:13 (22) | | 17:09 | 36 | 09:17 (18) | | 16:14 | | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:57 (22) | | 07:29 | | 08:40 (18) | | 08:30 | | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 15 | 08:12 (22) | | 17:07 | 37 | 09:17 (18) | | 16:13 | | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:58 (22) | | 07:31 | | 08:40 (18) | | 08:32 | | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 11 | 08:09 (22) | | 17:04 | 37 | 09:17 (18) | | 16:12 | | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | | 08:00 (22) | | 07:33 | | 08:39 (18) | | 08:34 | | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | 7 | 08:07 (22) | | 17:02 | 37 | 09:16 (18) | | 16:11 | | | 16:12 |
| 31 | 05:38 | | 06:36 | | | | | | 07:35 | | 08:40 (18) | | | | | 09:01 |
| | 21:42 | | 20:32 | | | | | | 17:00 | 37 | 09:17 (18) | | | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | | | 326 | | | 253 | | | | 224 |
| Total, worst case | | | | | | 191 | | | | 705 | | | | 529 | | |
| Sun reduction | | | | | | 0,40 | | | | 0,31 | | | | 0,16 | | |
| Oper. time red. | | | | | | 1,00 | | | | 1,00 | | | | 1,00 | | |
| Wind dir. red. | | | | | | 0,99 | | | | 0,81 | | | | 0,75 | | |
| Total reduction | | | | | | 0,38 | | | | 0,24 | | | | 0,12 | | |
| Total, real | | | | | | 73 | | | | 172 | | | | 62 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:33 (20) | 07:27 | | 08:26 (21) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 56 | 10:29 (18) | 18:08 | 16 | 08:42 (21) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | | 08:26 | | 09:34 (20) | 07:24 | | 08:29 (21) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 55 | 10:29 (18) | 18:10 | 11 | 08:40 (21) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | | 08:24 | | 09:35 (19) | 07:22 | | | 07:03 | 05:51 | 05:00 |
| | 16:16 | | | 17:12 | 55 | 10:30 (18) | 18:12 | | | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | | 08:22 | | 09:36 (19) | 07:20 | | | 07:00 | 05:49 | 04:59 |
| | 16:18 | | | 17:15 | 54 | 10:30 (18) | 18:14 | | | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | | 08:20 | | 09:37 (19) | 07:17 | | | 06:58 | 05:46 | 04:58 |
| | 16:19 | | | 17:17 | 53 | 10:30 (18) | 18:16 | | | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:35 (38) | 08:18 | | 09:38 (19) | 07:15 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 1 | 09:36 (38) | 17:19 | 52 | 10:30 (18) | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 09:34 (38) | 08:16 | | 09:40 (19) | 07:12 | | | 06:53 | 05:42 | 04:56 |
| | 16:22 | 4 | 09:38 (38) | 17:21 | 51 | 10:31 (18) | 18:20 | | | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:33 (38) | 08:14 | | 09:41 (19) | 07:10 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 6 | 09:39 (38) | 17:23 | 49 | 10:30 (18) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:33 (38) | 08:12 | | 09:44 (19) | 07:07 | | | 06:48 | 05:38 | 04:55 |
| | 16:25 | 8 | 09:41 (38) | 17:25 | 46 | 10:30 (18) | 18:24 | | | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:32 (38) | 08:10 | | 08:38 (37) | 07:05 | | | 06:45 | 05:36 | 04:55 |
| | 16:26 | 10 | 09:42 (38) | 17:27 | 50 | 10:30 (18) | 18:26 | | | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:31 (38) | 08:08 | | 08:36 (37) | 07:02 | | | 06:43 | 05:34 | 04:54 |
| | 16:28 | 12 | 09:43 (38) | 17:30 | 53 | 10:30 (18) | 18:28 | | | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:29 (38) | 08:06 | | 08:33 (37) | 06:59 | | | 06:40 | 05:32 | 04:54 |
| | 16:30 | 14 | 09:43 (38) | 17:32 | 56 | 10:28 (18) | 18:30 | | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:28 (38) | 08:04 | | 08:31 (37) | 06:57 | | 07:24 (22) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 19 | 09:47 (19) | 17:34 | 58 | 10:28 (18) | 18:32 | 6 | 07:30 (22) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:28 (38) | 08:02 | | 08:31 (37) | 06:54 | | 07:20 (22) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 22 | 09:50 (19) | 17:36 | 58 | 10:28 (18) | 18:34 | 13 | 07:33 (22) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:28 (20) | 08:00 | | 08:30 (37) | 06:52 | | 07:17 (22) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 24 | 09:52 (19) | 17:38 | 57 | 10:26 (18) | 18:36 | 17 | 07:34 (22) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:27 (20) | 07:57 | | 08:28 (21) | 06:49 | | 07:16 (22) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 35 | 10:07 (18) | 17:40 | 56 | 10:25 (18) | 18:38 | 19 | 07:35 (22) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:27 (20) | 07:55 | | 08:27 (21) | 06:47 | | 07:15 (22) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 41 | 10:10 (18) | 17:42 | 55 | 10:24 (18) | 18:40 | 20 | 07:35 (22) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:28 (20) | 07:53 | | 08:25 (21) | 06:44 | | 07:15 (22) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 45 | 10:13 (18) | 17:44 | 53 | 10:22 (18) | 18:42 | 21 | 07:36 (22) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:27 (20) | 07:51 | | 08:25 (21) | 06:42 | | 07:13 (22) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 48 | 10:15 (18) | 17:47 | 49 | 10:20 (18) | 18:44 | 23 | 07:36 (22) | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:27 (20) | 07:48 | | 08:24 (21) | 06:39 | | 07:13 (22) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 50 | 10:17 (18) | 17:49 | 45 | 10:18 (18) | 18:46 | 22 | 07:35 (22) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:27 (20) | 07:46 | | 08:23 (21) | 06:36 | | 07:13 (22) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 51 | 10:18 (18) | 17:51 | 38 | 10:13 (18) | 18:48 | 22 | 07:35 (22) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:27 (20) | 07:44 | | 08:23 (21) | 06:34 | | 07:13 (22) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 52 | 10:19 (18) | 17:53 | 26 | 08:49 (21) | 18:50 | 21 | 07:34 (22) | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:27 (20) | 07:41 | | 08:23 (21) | 06:31 | | 07:14 (22) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 54 | 10:21 (18) | 17:55 | 25 | 08:48 (21) | 18:52 | 20 | 07:34 (22) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:27 (20) | 07:39 | | 08:23 (21) | 06:29 | | 07:14 (22) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 55 | 10:22 (18) | 17:57 | 25 | 08:48 (21) | 18:54 | 18 | 07:32 (22) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | | 09:27 (20) | 07:37 | | 08:23 (21) | 06:26 | | 07:14 (22) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 56 | 10:23 (18) | 17:59 | 24 | 08:47 (21) | 18:56 | 16 | 07:30 (22) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 09:28 (20) | 07:34 | | 08:24 (21) | 06:24 | | 07:17 (22) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 57 | 10:25 (18) | 18:01 | 23 | 08:47 (21) | 18:58 | 11 | 07:28 (22) | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:29 (20) | 07:32 | | 08:24 (21) | 06:21 | | 07:20 (22) | 06:04 | 05:08 | 04:54 |
| | 16:58 | 57 | 10:26 (18) | 18:03 | 21 | 08:45 (21) | 19:00 | 3 | 07:23 (22) | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | | 09:29 (20) | 07:29 | | 08:26 (21) | 06:18 | | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 57 | 10:26 (18) | 18:05 | 19 | 08:45 (21) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:30 (20) | | | | 07:16 | | | 06:00 | 05:05 | 04:55 |
| | 17:02 | 57 | 10:27 (18) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:30 (20) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 58 | 10:28 (18) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:31 (20) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 57 | 10:28 (18) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 950 | | | 1262 | | | 279 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,67 | | | 0,73 | | | 0,98 | | | | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,32 | | | | |
| Total, real | | 111 | | | 217 | | | 90 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | | 08:08 (37) | 08:35 | 09:13 (38) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | 16:58 | 49 | 09:59 (18) | 16:10 | 12 09:25 (38) |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 07:39 | | 09:13 (19) | 08:37 | 09:14 (38) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | 16:56 | 46 | 09:59 (18) | 16:09 | 10 09:24 (38) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 07:41 | | 09:10 (19) | 08:39 | 09:16 (38) |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | | 16:54 | 49 | 09:59 (18) | 16:08 | 8 09:24 (38) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 07:43 | | 09:09 (19) | 08:40 | 09:18 (38) |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | 16:52 | 51 | 10:00 (18) | 16:08 | 6 09:24 (38) |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 07:45 | | 09:08 (19) | 08:42 | 09:19 (38) |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | 16:50 | 52 | 10:00 (18) | 16:07 | 4 09:23 (38) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 07:47 | | 09:06 (19) | 08:43 | 09:21 (38) |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | 16:48 | 54 | 10:00 (18) | 16:06 | 1 09:22 (38) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 07:49 | | 09:05 (19) | 08:44 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | 16:46 | 55 | 10:00 (18) | 16:06 | |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 07:51 | | 09:06 (19) | 08:46 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | 16:44 | 54 | 10:00 (18) | 16:05 | |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 07:53 | | 09:05 (20) | 08:47 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | 16:42 | 55 | 10:00 (18) | 16:05 | |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 07:55 | | 09:03 (20) | 08:48 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | | 16:40 | 56 | 09:59 (18) | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 09:05 (21) | 07:57 | 09:02 (20) | 08:50 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 6 | 09:11 (21) | 16:38 | 57 09:59 (18) | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 09:01 (21) | 07:59 | 09:02 (20) | 08:51 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 13 | 09:14 (21) | 16:36 | 57 09:59 (18) | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:59 (21) | 08:02 | 09:02 (20) | 08:52 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 17 | 09:16 (21) | 16:34 | 57 09:59 (18) | 16:04 | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:58 (21) | 08:04 | 09:01 (20) | 08:53 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 20 | 09:18 (21) | 16:33 | 57 09:58 (18) | 16:04 | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:57 (21) | 08:06 | 09:01 (20) | 08:54 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 22 | 09:19 (21) | 16:31 | 56 09:57 (18) | 16:04 | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:56 (21) | 08:08 | 09:01 (20) | 08:55 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 23 | 09:19 (21) | 16:29 | 57 09:58 (18) | 16:04 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:06 (22) | 08:06 | | 08:55 (21) | 08:10 | 09:01 (20) | 08:56 | |
| | 22:04 | | 21:06 | | 19:49 | 10 08:16 (22) | 18:32 | 24 | 09:19 (21) | 16:28 | 56 09:57 (18) | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:03 (22) | 08:08 | | 08:54 (21) | 08:12 | 09:01 (20) | 08:57 | |
| | 22:03 | | 21:04 | | 19:46 | 15 08:18 (22) | 18:30 | 25 | 09:19 (21) | 16:26 | 55 09:56 (18) | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:01 (22) | 08:10 | | 08:54 (21) | 08:13 | 09:01 (20) | 08:57 | |
| | 22:02 | | 21:01 | | 19:43 | 18 08:19 (22) | 18:27 | 25 | 09:19 (21) | 16:25 | 54 09:55 (18) | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:14 | 07:59 (22) | 08:12 | | 08:54 (21) | 08:15 | 09:02 (20) | 08:58 | |
| | 22:00 | | 20:59 | | 19:41 | 20 08:19 (22) | 18:25 | 25 | 09:19 (21) | 16:23 | 52 09:54 (18) | 16:05 | |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (22) | 08:14 | | 08:54 (21) | 08:17 | 09:03 (20) | 08:59 | |
| | 21:59 | | 20:57 | | 19:38 | 21 08:20 (22) | 18:23 | 40 | 10:45 (18) | 16:22 | 51 09:54 (18) | 16:05 | |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:58 (22) | 08:16 | | 08:55 (21) | 08:19 | 09:03 (20) | 08:59 | |
| | 21:57 | | 20:54 | | 19:36 | 22 08:20 (22) | 18:20 | 46 | 10:49 (18) | 16:20 | 50 09:53 (18) | 16:05 | |
| 23 | 05:24 | | 06:21 | | 07:19 | 07:57 (22) | 08:18 | | 08:55 (21) | 08:21 | 09:04 (20) | 09:00 | |
| | 21:56 | | 20:52 | | 19:33 | 23 08:20 (22) | 18:18 | 50 | 10:51 (18) | 16:19 | 48 09:52 (18) | 16:06 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:57 (22) | 08:20 | | 08:56 (21) | 08:23 | 09:05 (20) | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | 23 08:20 (22) | 18:16 | 54 | 10:53 (18) | 16:18 | 45 09:50 (18) | 16:07 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:57 (22) | 07:22 | | 07:56 (21) | 08:25 | 09:05 (20) | 09:00 | |
| | 21:53 | | 20:47 | | 19:28 | 22 08:19 (22) | 17:13 | 57 | 09:54 (18) | 16:16 | 42 09:49 (18) | 16:07 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:57 (22) | 07:24 | | 07:58 (21) | 08:27 | 09:06 (20) | 09:01 | |
| | 21:51 | | 20:44 | | 19:25 | 21 08:18 (22) | 17:11 | 56 | 09:55 (18) | 16:15 | 35 09:46 (18) | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:58 (22) | 07:27 | | 08:00 (37) | 08:28 | 09:07 (20) | 09:01 | |
| | 21:49 | | 20:42 | | 19:23 | 19 08:17 (22) | 17:09 | 57 | 09:57 (18) | 16:14 | 24 09:31 (19) | 16:09 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:58 (22) | 07:29 | | 08:00 (37) | 08:30 | 09:08 (38) | 09:01 | |
| | 21:47 | | 20:40 | | 19:20 | 17 08:15 (22) | 17:07 | 57 | 09:57 (18) | 16:13 | 22 09:30 (19) | 16:10 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:59 (22) | 07:31 | | 08:01 (37) | 08:32 | 09:09 (38) | 09:01 | |
| | 21:46 | | 20:37 | | 19:17 | 14 08:13 (22) | 17:04 | 57 | 09:58 (18) | 16:12 | 19 09:28 (19) | 16:11 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:01 (22) | 07:33 | | 08:03 (37) | 08:34 | 09:11 (38) | 09:01 | |
| | 21:44 | | 20:35 | | 19:15 | 9 08:10 (22) | 17:02 | 55 | 09:58 (18) | 16:11 | 14 09:25 (38) | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:06 (37) | | | 09:01 | |
| | 21:42 | | 20:32 | | | | 17:00 | 53 | 09:59 (18) | | | 16:13 | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 | |
| Total, worst case | | | | | 254 | | 782 | | | 1429 | | 41 | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | 0,14 | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | | 0,99 | | 0,78 | | | 0,66 | | 0,69 | |
| Total reduction | | | | | 0,38 | | 0,23 | | | 0,10 | | 0,09 | |
| Total, real | | | | | 96 | | 180 | | | 144 | | 4 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (38) | 08:28 | | 09:54 (19) | 07:27 | | 08:40 (21) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 27 | 10:32 (18) | 17:08 | 69 | 11:03 (18) | 18:07 | 9 | 08:49 (21) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:37 (38) | 08:26 | | 09:55 (19) | 07:24 | | | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 36 | 10:34 (18) | 17:10 | 68 | 11:03 (18) | 18:10 | | | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:37 (38) | 08:24 | | 09:56 (19) | 07:22 | | | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 41 | 10:36 (18) | 17:12 | 67 | 11:03 (18) | 18:12 | | | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:36 (38) | 08:22 | | 09:58 (19) | 07:20 | | | 07:00 | | 05:49 | 04:59 |
| | 16:18 | 45 | 10:37 (18) | 17:15 | 66 | 11:04 (18) | 18:14 | | | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:36 (38) | 08:20 | | 10:00 (19) | 07:17 | | | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 51 | 10:40 (18) | 17:17 | 63 | 11:03 (18) | 18:16 | | | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:36 (38) | 08:18 | | 10:04 (19) | 07:15 | | | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 54 | 10:41 (18) | 17:19 | 56 | 11:03 (18) | 18:18 | | | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | 09:36 (38) | 08:16 | | 08:45 (37) | 07:12 | | | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 56 | 10:42 (18) | 17:21 | 53 | 11:03 (18) | 18:20 | | | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:36 (38) | 08:14 | | 08:42 (37) | 07:10 | | | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 60 | 10:44 (18) | 17:23 | 58 | 11:02 (18) | 18:22 | | | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:37 (38) | 08:12 | | 08:40 (37) | 07:07 | | | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 63 | 10:46 (18) | 17:25 | 60 | 11:02 (18) | 18:24 | | | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:37 (38) | 08:10 | | 08:39 (37) | 07:04 | | | 06:45 | | 05:36 | 04:55 |
| | 16:26 | 65 | 10:47 (18) | 17:27 | 61 | 11:01 (18) | 18:26 | | | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:37 (38) | 08:08 | | 08:38 (37) | 07:02 | | | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 68 | 10:48 (18) | 17:30 | 62 | 11:01 (18) | 18:28 | | | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:37 (38) | 08:06 | | 08:37 (37) | 06:59 | | | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 70 | 10:49 (18) | 17:32 | 60 | 10:59 (18) | 18:30 | | | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:37 (38) | 08:04 | | 08:37 (37) | 06:57 | | 07:25 (22) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 73 | 10:50 (18) | 17:34 | 58 | 10:58 (18) | 18:32 | 10 | 07:35 (22) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:38 (20) | 08:02 | | 08:36 (21) | 06:54 | | 07:22 (22) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 73 | 10:51 (18) | 17:36 | 57 | 10:57 (18) | 18:34 | 15 | 07:37 (22) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:38 (38) | 08:00 | | 08:34 (21) | 06:52 | | 07:20 (22) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 75 | 10:53 (18) | 17:38 | 55 | 10:54 (18) | 18:36 | 18 | 07:38 (22) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (20) | 07:57 | | 08:34 (21) | 06:49 | | 07:19 (22) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 75 | 10:53 (18) | 17:40 | 53 | 10:53 (18) | 18:38 | 21 | 07:40 (22) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (20) | 07:55 | | 08:33 (21) | 06:47 | | 07:17 (22) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 75 | 10:54 (18) | 17:42 | 49 | 10:50 (18) | 18:40 | 23 | 07:40 (22) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (20) | 07:53 | | 08:32 (21) | 06:44 | | 07:17 (22) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 77 | 10:56 (18) | 17:44 | 43 | 10:46 (18) | 18:42 | 24 | 07:41 (22) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (20) | 07:51 | | 08:32 (21) | 06:42 | | 07:16 (22) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 77 | 10:56 (18) | 17:47 | 28 | 09:00 (21) | 18:44 | 24 | 07:40 (22) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:40 (20) | 07:48 | | 08:33 (21) | 06:39 | | 07:15 (22) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 78 | 10:58 (18) | 17:49 | 27 | 09:00 (21) | 18:46 | 25 | 07:40 (22) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:40 (20) | 07:46 | | 08:32 (21) | 06:36 | | 07:15 (22) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | 78 | 10:58 (18) | 17:51 | 27 | 08:59 (21) | 18:48 | 25 | 07:40 (22) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:40 (20) | 07:44 | | 08:32 (21) | 06:34 | | 07:15 (22) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 78 | 10:58 (18) | 17:53 | 28 | 09:00 (21) | 18:50 | 24 | 07:39 (22) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:41 (20) | 07:41 | | 08:32 (21) | 06:31 | | 07:16 (22) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 79 | 11:00 (18) | 17:55 | 26 | 08:58 (21) | 18:52 | 22 | 07:38 (22) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (20) | 07:39 | | 08:33 (21) | 06:29 | | 07:16 (22) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 79 | 11:00 (18) | 17:57 | 25 | 08:58 (21) | 18:54 | 21 | 07:37 (22) | 20:55 | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:42 (20) | 07:37 | | 08:33 (21) | 06:26 | | 07:16 (22) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | 78 | 11:00 (18) | 17:59 | 24 | 08:57 (21) | 18:56 | 19 | 07:35 (22) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:43 (20) | 07:34 | | 08:34 (21) | 06:23 | | 07:18 (22) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 79 | 11:02 (18) | 18:01 | 22 | 08:56 (21) | 18:58 | 16 | 07:34 (22) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:44 (20) | 07:32 | | 08:35 (21) | 06:21 | | 07:20 (22) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:02 (18) | 18:03 | 19 | 08:54 (21) | 19:00 | 11 | 07:31 (22) | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:45 (20) | 07:29 | | 08:37 (21) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 77 | 11:02 (18) | 18:05 | 15 | 08:52 (21) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:46 (20) | | | | 07:16 | | | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 77 | 11:03 (18) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:48 (20) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 75 | 11:03 (18) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:51 (20) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 72 | 11:03 (18) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 2089 | | | 1299 | | | 307 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,59 | | | 0,67 | | | 0,98 | | | | | |
| Total reduction | | 0,10 | | | 0,16 | | | 0,32 | | | | | |
| Total, real | | 213 | | | 203 | | | 98 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (22) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 4 | 08:11 (22) | | 16:58 | 62 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | | 16:56 | 59 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | | | | 16:54 | 57 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | | 16:52 | 53 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | | 16:50 | 57 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | | 16:48 | 63 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | | 16:46 | 66 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | | 16:44 | 67 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | | 16:42 | 69 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | | | | 16:40 | 70 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | | 16:38 | 73 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | | | 16:36 | 75 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 09:11 (21) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 12 | 09:23 (21) | | 16:34 | 77 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 09:10 (21) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16 | 09:26 (21) | | 16:33 | 77 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 09:08 (21) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 20 | 09:28 (21) | | 16:31 | 78 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:10 (22) | 08:04 | | 09:06 (21) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 9 08:19 (22) | 18:35 | 23 | 09:29 (21) | | 16:29 | 79 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:07 (22) | 08:06 | | 09:05 (21) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:48 | 15 08:22 (22) | 18:32 | 24 | 09:29 (21) | | 16:28 | 78 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:05 (22) | 08:08 | | 09:04 (21) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 18 08:23 (22) | 18:30 | 26 | 09:30 (21) | | 16:26 | 79 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:03 (22) | 08:10 | | 09:03 (21) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 20 08:23 (22) | 18:27 | 27 | 09:30 (21) | | 16:25 | 79 |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:02 (22) | 08:12 | | 09:03 (21) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 22 08:24 (22) | 18:25 | 27 | 09:30 (21) | | 16:23 | 78 |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:01 (22) | 08:14 | | 09:02 (21) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 23 08:24 (22) | 18:23 | 28 | 09:30 (21) | | 16:22 | 78 |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:00 (22) | 08:16 | | 09:03 (21) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 24 08:24 (22) | 18:20 | 27 | 09:30 (21) | | 16:20 | 78 |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:00 (22) | 08:18 | | 09:03 (21) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 24 08:24 (22) | 18:18 | 34 | 11:12 (18) | | 16:19 | 77 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:59 (22) | 08:20 | | 09:03 (21) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 25 08:24 (22) | 18:16 | 45 | 11:18 (18) | | 16:18 | 77 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:59 (22) | 07:22 | | 08:03 (21) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 24 08:23 (22) | 17:13 | 50 | 10:21 (18) | | 16:16 | 76 |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:00 (22) | 07:24 | | 08:03 (21) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 23 08:23 (22) | 17:11 | 54 | 10:23 (18) | | 16:15 | 75 |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:00 (22) | 07:27 | | 08:05 (21) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 22 08:22 (22) | 17:09 | 55 | 10:25 (18) | | 16:14 | 75 |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:00 (22) | 07:29 | | 08:06 (21) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 19 08:19 (22) | 17:07 | 58 | 10:27 (18) | | 16:13 | 73 |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (22) | 07:31 | | 08:07 (37) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 17 08:18 (22) | 17:04 | 58 | 10:28 (18) | | 16:12 | 72 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:03 (22) | 07:33 | | 08:07 (37) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 12 08:15 (22) | 17:02 | 60 | 10:29 (18) | | 16:11 | 70 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:08 (37) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 61 | 10:30 (18) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 297 | | 709 | | | | 2147 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,99 | | 0,76 | | | | 0,58 |
| Total reduction | | | | | | 0,37 | | 0,22 | | | | 0,09 |
| Total, real | | | | | | 110 | | 157 | | | | 188 |

| | December | | |
|---|---|---|---|
| 1 | 08:35 | | 09:19 (38) |
| | 16:10 | 69 | 10:31 (18) |
| 2 | 08:37 | | 09:19 (38) |
| | 16:09 | 65 | 10:29 (18) |
| 3 | 08:39 | | 09:20 (38) |
| | 16:08 | 63 | 10:29 (18) |
| 4 | 08:40 | | 09:21 (38) |
| | 16:08 | 60 | 10:29 (18) |
| 5 | 08:42 | | 09:21 (38) |
| | 16:07 | 56 | 10:27 (18) |
| 6 | 08:43 | | 09:22 (38) |
| | 16:06 | 54 | 10:27 (18) |
| 7 | 08:44 | | 09:22 (38) |
| | 16:06 | 51 | 10:26 (18) |
| 8 | 08:46 | | 09:24 (38) |
| | 16:05 | 47 | 10:26 (18) |
| 9 | 08:47 | | 09:25 (38) |
| | 16:05 | 42 | 10:24 (18) |
| 10 | 08:48 | | 09:27 (38) |
| | 16:04 | 36 | 10:24 (18) |
| 11 | 08:50 | | 09:28 (38) |
| | 16:04 | 27 | 10:22 (18) |
| 12 | 08:51 | | 09:29 (38) |
| | 16:04 | 17 | 09:51 (19) |
| 13 | 08:52 | | 09:30 (38) |
| | 16:04 | 10 | 09:48 (19) |
| 14 | 08:53 | | 09:31 (38) |
| | 16:04 | 8 | 09:39 (38) |
| 15 | 08:54 | | 09:33 (38) |
| | 16:04 | 7 | 09:40 (38) |
| 16 | 08:55 | | 09:33 (38) |
| | 16:04 | 6 | 09:39 (38) |
| 17 | 08:56 | | 09:34 (38) |
| | 16:04 | 5 | 09:39 (38) |
| 18 | 08:57 | | 09:35 (38) |
| | 16:04 | 5 | 09:40 (38) |
| 19 | 08:57 | | 09:36 (38) |
| | 16:04 | 4 | 09:40 (38) |
| 20 | 08:58 | | 09:36 (38) |
| | 16:05 | 4 | 09:40 (38) |
| 21 | 08:59 | | 09:37 (38) |
| | 16:05 | 4 | 09:41 (38) |
| 22 | 08:59 | | 09:38 (38) |
| | 16:05 | 4 | 09:42 (38) |
| 23 | 09:00 | | 09:38 (38) |
| | 16:06 | 4 | 09:42 (38) |
| 24 | 09:00 | | 09:38 (38) |
| | 16:07 | 4 | 09:42 (38) |
| 25 | 09:00 | | 09:38 (38) |
| | 16:07 | 5 | 09:43 (38) |
| 26 | 09:01 | | 09:39 (38) |
| | 16:08 | 5 | 09:44 (38) |
| 27 | 09:01 | | 09:39 (38) |
| | 16:09 | 6 | 09:45 (38) |
| 28 | 09:01 | | 09:39 (38) |
| | 16:10 | 7 | 09:46 (38) |
| 29 | 09:01 | | 09:39 (38) |
| | 16:11 | 8 | 09:47 (38) |
| 30 | 09:01 | | 09:38 (38) |
| | 16:11 | 9 | 09:47 (38) |
| 31 | 09:01 | | 09:38 (38) |
| | 16:13 | 16 | 09:59 (19) |
| Potential sun hours | 224 | | |
| Total, worst case | | 708 | |
| Sun reduction | | 0,14 | |
| Oper. time red. | | 1,00 | |
| Wind dir. red. | | 0,61 | |
| Total reduction | | 0,08 | |
| Total, real | | 56 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (38) | 08:28 | | 08:58 (37) | 07:27 | | | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 101 | 11:45 (18) | 17:08 | 53 | 11:56 (18) | 18:07 | | | 20:10 | | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:50 (38) | 08:26 | | 08:55 (37) | 07:24 | | | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | 102 | 11:45 (18) | 17:10 | 60 | 11:56 (18) | 18:10 | | | 20:12 | | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:51 (38) | 08:24 | | 08:53 (37) | 07:22 | | | 07:03 | | | 05:51 | 05:00 |
| | 16:16 | 103 | 11:46 (18) | 17:12 | 62 | 11:56 (18) | 18:12 | | | 20:14 | | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:51 (38) | 08:22 | | 08:52 (37) | 07:19 | | | 07:00 | | | 05:49 | 04:59 |
| | 16:18 | 103 | 11:46 (18) | 17:15 | 63 | 11:55 (18) | 18:14 | | | 20:16 | | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:52 (38) | 08:20 | | 08:52 (37) | 07:17 | | | 06:58 | | | 05:46 | 04:58 |
| | 16:19 | 104 | 11:48 (18) | 17:17 | 65 | 11:54 (18) | 18:16 | | | 20:18 | | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:52 (38) | 08:18 | | 08:51 (37) | 07:15 | | | 06:55 | | 07:20 (35) | 05:44 | 04:57 |
| | 16:20 | 104 | 11:48 (18) | 17:19 | 65 | 11:53 (18) | 18:18 | | | 20:20 | 6 | 07:26 (35) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:53 (38) | 08:16 | | 08:51 (37) | 07:12 | | | 06:53 | | 07:17 (35) | 05:42 | 04:56 |
| | 16:22 | 104 | 11:48 (18) | 17:21 | 65 | 11:52 (18) | 18:20 | | | 20:22 | 10 | 07:27 (35) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:53 (38) | 08:14 | | 08:50 (37) | 07:10 | | | 06:50 | | 07:15 (35) | 05:40 | 04:56 |
| | 16:23 | 106 | 11:49 (18) | 17:23 | 63 | 11:50 (18) | 18:22 | | | 20:24 | 14 | 07:29 (35) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:54 (38) | 08:12 | | 08:50 (37) | 07:07 | | | 06:48 | | 07:12 (35) | 05:38 | 04:55 |
| | 16:25 | 107 | 11:51 (18) | 17:25 | 61 | 11:49 (18) | 18:24 | | | 20:26 | 17 | 07:29 (35) | 21:24 | 22:12 |
| 10 | 08:57 | | 09:55 (38) | 08:10 | | 08:50 (37) | 07:04 | | 07:36 (22) | 06:45 | | 07:10 (35) | 05:36 | 04:55 |
| | 16:26 | 106 | 11:51 (18) | 17:27 | 58 | 11:47 (18) | 18:26 | 8 | 07:44 (22) | 20:27 | 20 | 07:30 (35) | 21:26 | 22:13 |
| 11 | 08:56 | | 09:56 (38) | 08:08 | | 08:51 (37) | 07:02 | | 07:33 (22) | 06:43 | | 07:09 (35) | 05:34 | 04:54 |
| | 16:28 | 106 | 11:52 (18) | 17:30 | 52 | 11:44 (18) | 18:28 | 15 | 07:48 (22) | 20:29 | 20 | 07:29 (35) | 21:28 | 22:14 |
| 12 | 08:55 | | 09:56 (38) | 08:06 | | 08:51 (37) | 06:59 | | 07:30 (22) | 06:40 | | 07:09 (35) | 05:32 | 04:54 |
| | 16:30 | 107 | 11:52 (18) | 17:32 | 44 | 11:39 (18) | 18:30 | 19 | 07:49 (22) | 20:31 | 21 | 07:30 (35) | 21:30 | 22:14 |
| 13 | 08:54 | | 09:56 (38) | 08:04 | | 08:51 (37) | 06:57 | | 07:29 (22) | 06:38 | | 07:09 (35) | 05:30 | 04:53 |
| | 16:31 | 107 | 11:52 (18) | 17:34 | 30 | 09:21 (21) | 18:32 | 22 | 07:51 (22) | 20:33 | 21 | 07:30 (35) | 21:32 | 22:15 |
| 14 | 08:53 | | 09:58 (38) | 08:02 | | 08:51 (21) | 06:54 | | 07:27 (22) | 06:35 | | 07:08 (35) | 05:29 | 04:53 |
| | 16:33 | 106 | 11:53 (18) | 17:36 | 30 | 09:21 (21) | 18:34 | 24 | 07:51 (22) | 20:35 | 21 | 07:29 (35) | 21:34 | 22:16 |
| 15 | 08:52 | | 09:59 (38) | 08:00 | | 08:50 (21) | 06:52 | | 07:26 (22) | 06:33 | | 07:09 (35) | 05:27 | 04:53 |
| | 16:35 | 106 | 11:54 (18) | 17:38 | 31 | 09:21 (21) | 18:36 | 25 | 07:51 (22) | 20:37 | 19 | 07:28 (35) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:59 (38) | 07:57 | | 08:50 (21) | 06:49 | | 07:25 (22) | 06:30 | | 07:09 (35) | 05:25 | 04:52 |
| | 16:37 | 106 | 11:54 (18) | 17:40 | 31 | 09:21 (21) | 18:38 | 27 | 07:52 (22) | 20:39 | 18 | 07:27 (35) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:01 (38) | 07:55 | | 08:51 (21) | 06:47 | | 07:24 (22) | 06:28 | | 07:10 (35) | 05:23 | 04:52 |
| | 16:38 | 106 | 11:55 (18) | 17:42 | 30 | 09:21 (21) | 18:40 | 28 | 07:52 (22) | 20:41 | 16 | 07:26 (35) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:03 (38) | 07:53 | | 08:51 (21) | 06:44 | | 07:25 (22) | 06:25 | | 07:11 (35) | 05:21 | 04:52 |
| | 16:40 | 104 | 11:56 (18) | 17:44 | 29 | 09:20 (21) | 18:42 | 27 | 07:52 (22) | 20:43 | 14 | 07:25 (35) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (20) | 07:51 | | 08:52 (21) | 06:42 | | 07:24 (22) | 06:23 | | 07:13 (35) | 05:20 | 04:52 |
| | 16:42 | 103 | 11:55 (18) | 17:47 | 28 | 09:20 (21) | 18:44 | 27 | 07:51 (22) | 20:45 | 8 | 07:21 (35) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (20) | 07:48 | | 08:53 (21) | 06:39 | | 07:23 (22) | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 102 | 11:56 (18) | 17:49 | 26 | 09:19 (21) | 18:46 | 27 | 07:50 (22) | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:06 (20) | 07:46 | | 08:53 (21) | 06:36 | | 07:24 (22) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 101 | 11:56 (18) | 17:51 | 25 | 09:18 (21) | 18:48 | 26 | 07:50 (22) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:07 (20) | 07:44 | | 08:54 (21) | 06:34 | | 07:24 (22) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 99 | 11:56 (18) | 17:53 | 23 | 09:17 (21) | 18:50 | 25 | 07:49 (22) | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:09 (20) | 07:41 | | 08:55 (21) | 06:31 | | 07:25 (22) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 97 | 11:57 (18) | 17:55 | 20 | 09:15 (21) | 18:52 | 23 | 07:48 (22) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:11 (20) | 07:39 | | 08:57 (21) | 06:29 | | 07:25 (22) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 94 | 11:57 (18) | 17:57 | 16 | 09:13 (21) | 18:54 | 21 | 07:46 (22) | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 10:14 (20) | 07:37 | | 09:00 (21) | 06:26 | | 07:26 (22) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 87 | 11:57 (18) | 17:59 | 9 | 09:09 (21) | 18:56 | 18 | 07:44 (22) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 10:25 (19) | 07:34 | | | 06:23 | | 07:29 (22) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 80 | 11:58 (18) | 18:01 | | | 18:58 | 13 | 07:42 (22) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:26 (19) | 07:32 | | | 06:21 | | 07:33 (22) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:58 (18) | 18:03 | | | 19:00 | 3 | 07:36 (22) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:28 (19) | 07:29 | | | 06:18 | | | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 74 | 11:58 (18) | 18:05 | | | 19:02 | | | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:30 (19) | | | | 07:16 | | | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 69 | 11:57 (18) | | | | 20:04 | | | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 10:32 (19) | | | | 07:13 | | | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 63 | 11:57 (18) | | | | 20:06 | | | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 11:06 (18) | | | | 07:11 | | | | | | 05:03 | |
| | 17:06 | 51 | 11:57 (18) | | | | 20:08 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 2986 | | | 1039 | | | 378 | | | 225 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,43 | | | 0,63 | | | 0,98 | | | 0,99 | | | |
| Total reduction | | 0,07 | | | 0,14 | | | 0,30 | | | 0,35 | | | |
| Total, real | | 207 | | | 142 | | | 112 | | | 78 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:09 (35) | 07:35 | | 08:08 (22) | 07:37 | | 08:20 (37) | 08:35 | | 09:37 (38) |
| | 22:18 | | 21:40 | | | 20:30 | 20 | 07:29 (35) | 19:12 | 20 | 08:28 (22) | 16:58 | 59 | 11:17 (18) | 16:10 | 106 | 11:33 (18) |
| 2 | 04:58 | | 05:42 | | | 06:40 | | 07:08 (35) | 07:37 | | 08:10 (22) | 07:39 | | 08:20 (37) | 08:37 | | 09:37 (38) |
| | 22:18 | | 21:38 | | | 20:27 | 20 | 07:28 (35) | 19:10 | 16 | 08:26 (22) | 16:56 | 61 | 11:18 (18) | 16:09 | 106 | 11:33 (18) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:10 (35) | 07:39 | | 08:12 (22) | 07:41 | | 08:20 (37) | 08:39 | | 09:38 (38) |
| | 22:17 | | 21:36 | | | 20:25 | 17 | 07:27 (35) | 19:07 | 12 | 08:24 (22) | 16:54 | 64 | 11:20 (18) | 16:08 | 105 | 11:34 (18) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:12 (35) | 07:41 | | | 07:43 | | 08:21 (37) | 08:40 | | 09:38 (38) |
| | 22:17 | | 21:34 | | | 20:22 | 14 | 07:26 (35) | 19:05 | | | 16:52 | 64 | 11:22 (18) | 16:08 | 105 | 11:34 (18) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:14 (35) | 07:43 | | | 07:45 | | 08:21 (37) | 08:42 | | 09:38 (38) |
| | 22:16 | | 21:32 | | | 20:19 | 10 | 07:24 (35) | 19:02 | | | 16:50 | 65 | 11:23 (18) | 16:07 | 105 | 11:34 (18) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:16 (35) | 07:44 | | | 07:47 | | 08:22 (37) | 08:43 | | 09:38 (38) |
| | 22:16 | | 21:30 | | | 20:17 | 6 | 07:22 (35) | 18:59 | | | 16:48 | 64 | 11:24 (18) | 16:06 | 104 | 11:34 (18) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | | 07:46 | | | 07:49 | | 08:22 (37) | 08:44 | | 09:38 (38) |
| | 22:15 | | 21:28 | | | 20:14 | | | 18:57 | | | 16:46 | 63 | 11:25 (18) | 16:06 | 104 | 11:34 (18) |
| 8 | 05:03 | | 05:53 | | | 06:51 | | | 07:48 | | | 07:51 | | 08:24 (37) | 08:46 | | 09:39 (38) |
| | 22:14 | | 21:26 | | | 20:12 | | | 18:54 | | | 16:44 | 61 | 11:26 (18) | 16:05 | 103 | 11:34 (18) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | | 07:53 | | 08:26 (37) | 08:47 | | 09:39 (38) |
| | 22:13 | | 21:24 | | | 20:09 | | | 18:52 | | | 16:42 | 59 | 11:27 (18) | 16:05 | 103 | 11:34 (18) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | | 07:52 | | | 07:55 | | 08:30 (37) | 08:48 | | 09:40 (38) |
| | 22:12 | | 21:22 | | | 20:07 | | | 18:49 | | | 16:40 | 52 | 11:27 (18) | 16:04 | 103 | 11:35 (18) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | | 07:54 | | | 07:57 | | 10:37 (18) | 08:50 | | 09:40 (38) |
| | 22:11 | | 21:19 | | | 20:04 | | | 18:47 | | | 16:38 | 51 | 11:28 (18) | 16:04 | 102 | 11:35 (18) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | | 07:59 | | 10:04 (19) | 08:51 | | 09:41 (38) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | | | 16:36 | 64 | 11:29 (18) | 16:04 | 101 | 11:35 (18) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | | 08:01 | | 10:02 (19) | 08:52 | | 09:41 (38) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | | | 16:34 | 69 | 11:29 (18) | 16:04 | 100 | 11:35 (18) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | | 08:04 | | 10:00 (19) | 08:53 | | 09:41 (38) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | | | 16:33 | 74 | 11:30 (18) | 16:04 | 100 | 11:35 (18) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | | 08:06 | | 09:58 (19) | 08:54 | | 09:43 (38) |
| | 22:07 | | 21:11 | | | 19:54 | | | 18:37 | | | 16:31 | 78 | 11:30 (18) | 16:04 | 98 | 11:36 (18) |
| 16 | 05:14 | | 06:08 | | | 07:06 | | | 08:04 | | | 08:08 | | 09:58 (19) | 08:55 | | 09:42 (38) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | | | 16:29 | 80 | 11:31 (18) | 16:04 | 99 | 11:36 (18) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:18 (22) | 08:06 | | 09:31 (21) | 08:10 | | 09:48 (20) | 08:56 | | 09:43 (38) |
| | 22:04 | | 21:06 | | | 19:48 | 12 | 08:30 (22) | 18:32 | 12 | 09:43 (21) | 16:28 | 87 | 11:31 (18) | 16:04 | 98 | 11:36 (18) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:15 (22) | 08:08 | | 09:28 (21) | 08:12 | | 09:45 (20) | 08:57 | | 09:44 (38) |
| | 22:03 | | 21:04 | | | 19:46 | 17 | 08:32 (22) | 18:30 | 17 | 09:45 (21) | 16:26 | 94 | 11:31 (18) | 16:04 | 98 | 11:37 (18) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:12 (22) | 08:10 | | 09:26 (21) | 08:13 | | 09:43 (20) | 08:57 | | 09:45 (38) |
| | 22:02 | | 21:01 | | | 19:43 | 20 | 08:32 (22) | 18:27 | 21 | 09:47 (21) | 16:25 | 97 | 11:31 (18) | 16:04 | 97 | 11:37 (18) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 08:11 (22) | 08:12 | | 09:24 (21) | 08:15 | | 09:42 (20) | 08:58 | | 09:44 (38) |
| | 22:00 | | 20:59 | | | 19:41 | 23 | 08:34 (22) | 18:25 | 24 | 09:48 (21) | 16:23 | 99 | 11:31 (18) | 16:05 | 97 | 11:37 (18) |
| 21 | 05:21 | | 06:17 | | | 07:16 | | 08:10 (22) | 08:14 | | 09:23 (21) | 08:17 | | 09:42 (20) | 08:59 | | 09:45 (38) |
| | 21:59 | | 20:57 | | | 19:38 | 24 | 08:34 (22) | 18:23 | 25 | 09:48 (21) | 16:22 | 101 | 11:32 (18) | 16:05 | 97 | 11:38 (18) |
| 22 | 05:23 | | 06:19 | | | 07:18 | | 08:09 (22) | 08:16 | | 09:23 (21) | 08:19 | | 09:41 (20) | 08:59 | | 09:46 (38) |
| | 21:57 | | 20:54 | | | 19:36 | 26 | 08:35 (22) | 18:20 | 27 | 09:50 (21) | 16:20 | 102 | 11:32 (18) | 16:05 | 97 | 11:39 (18) |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 08:08 (22) | 08:18 | | 09:22 (21) | 08:21 | | 09:41 (20) | 09:00 | | 09:46 (38) |
| | 21:56 | | 20:52 | | | 19:33 | 27 | 08:35 (22) | 18:18 | 28 | 09:50 (21) | 16:19 | 104 | 11:33 (18) | 16:06 | 97 | 11:39 (18) |
| 24 | 05:26 | | 06:23 | | 07:16 (35) | 07:21 | | 08:08 (22) | 08:20 | | 09:21 (21) | 08:23 | | 09:41 (20) | 09:00 | | 09:46 (38) |
| | 21:54 | | 20:49 | 9 | 07:25 (35) | 19:30 | 27 | 08:35 (22) | 18:16 | 29 | 09:50 (21) | 16:18 | 103 | 11:33 (18) | 16:07 | 97 | 11:39 (18) |
| 25 | 05:28 | | 06:25 | | 07:14 (35) | 07:23 | | 08:07 (22) | 07:22 | | 08:20 (21) | 08:25 | | 09:39 (38) | 09:00 | | 09:47 (38) |
| | 21:52 | | 20:47 | 13 | 07:27 (35) | 19:28 | 28 | 08:35 (22) | 17:13 | 30 | 08:50 (21) | 16:16 | 106 | 11:33 (18) | 16:07 | 98 | 11:40 (18) |
| 26 | 05:29 | | 06:27 | | 07:13 (35) | 07:25 | | 08:07 (22) | 07:24 | | 08:20 (21) | 08:27 | | 09:38 (38) | 09:01 | | 09:48 (38) |
| | 21:51 | | 20:44 | 16 | 07:29 (35) | 19:25 | 27 | 08:34 (22) | 17:11 | 30 | 08:50 (21) | 16:15 | 106 | 11:33 (18) | 16:08 | 98 | 11:41 (18) |
| 27 | 05:31 | | 06:28 | | 07:11 (35) | 07:27 | | 08:07 (22) | 07:26 | | 08:21 (21) | 08:28 | | 09:38 (38) | 09:01 | | 09:48 (38) |
| | 21:49 | | 20:42 | 18 | 07:29 (35) | 19:23 | 27 | 08:34 (22) | 17:09 | 30 | 08:51 (21) | 16:14 | 106 | 11:33 (18) | 16:09 | 100 | 11:42 (18) |
| 28 | 05:33 | | 06:30 | | 07:10 (35) | 07:29 | | 08:06 (22) | 07:29 | | 08:20 (21) | 08:30 | | 09:38 (38) | 09:01 | | 09:49 (38) |
| | 21:47 | | 20:40 | 19 | 07:29 (35) | 19:20 | 26 | 08:32 (22) | 17:07 | 31 | 08:51 (21) | 16:13 | 106 | 11:33 (18) | 16:10 | 98 | 11:42 (18) |
| 29 | 05:34 | | 06:32 | | 07:09 (35) | 07:31 | | 08:07 (22) | 07:31 | | 08:20 (21) | 08:32 | | 09:38 (38) | 09:01 | | 09:49 (38) |
| | 21:46 | | 20:37 | 21 | 07:30 (35) | 19:17 | 24 | 08:31 (22) | 17:04 | 30 | 08:50 (21) | 16:12 | 106 | 11:33 (18) | 16:11 | 100 | 11:43 (18) |
| 30 | 05:36 | | 06:34 | | 07:09 (35) | 07:33 | | 08:07 (22) | 07:33 | | 08:20 (37) | 08:34 | | 09:38 (38) | 09:01 | | 09:49 (38) |
| | 21:44 | | 20:35 | 21 | 07:30 (35) | 19:15 | 23 | 08:30 (22) | 17:02 | 47 | 11:10 (18) | 16:11 | 107 | 11:34 (18) | 16:11 | 100 | 11:43 (18) |
| 31 | 05:38 | | 06:36 | | 07:09 (35) | | | | 07:35 | | 08:20 (37) | | | | 09:01 | | 09:49 (38) |
| | 21:42 | | 20:32 | 21 | 07:30 (35) | | | | 17:00 | 54 | 11:14 (18) | | | | 16:13 | 101 | 11:44 (18) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 138 | | | 418 | | | 483 | | | 2452 | | | 3117 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,98 | | | 0,80 | | | 0,44 | | | 0,46 | |
| Total reduction | | | | 0,45 | | | 0,35 | | | 0,22 | | | 0,06 | | | 0,06 | |
| Total, real | | | | 62 | | | 144 | | | 106 | | | 152 | | | 173 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:47 (21) | 08:28 | | 09:38 (37) | 07:27 | | 08:18 (22) | 07:08 | | 07:38 (35) | 05:55 | 05:02 |
| | 16:14 | 59 | 12:43 (18) | 17:08 | 24 | 10:10 (21) | 18:07 | 28 | 08:46 (22) | 20:10 | 23 | 08:01 (35) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:46 (21) | 08:26 | | 09:51 (21) | 07:24 | | 08:19 (22) | 07:05 | | 07:38 (35) | 05:53 | 05:01 |
| | 16:15 | 59 | 12:43 (18) | 17:10 | 18 | 10:09 (21) | 18:10 | 27 | 08:46 (22) | 20:12 | 23 | 08:01 (35) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:45 (21) | 08:24 | | 09:53 (21) | 07:22 | | 08:19 (22) | 07:03 | | 07:38 (35) | 05:51 | 05:00 |
| | 16:16 | 60 | 12:44 (18) | 17:12 | 14 | 10:07 (21) | 18:12 | 26 | 08:45 (22) | 20:14 | 22 | 08:00 (35) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:44 (21) | 08:22 | | 09:56 (21) | 07:19 | | 08:20 (22) | 07:00 | | 07:38 (35) | 05:49 | 04:59 |
| | 16:18 | 59 | 12:44 (18) | 17:15 | 8 | 10:04 (21) | 18:14 | 24 | 08:44 (22) | 20:16 | 22 | 08:00 (35) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:44 (21) | 08:20 | | | 07:17 | | 08:21 (22) | 06:58 | | 07:38 (35) | 05:46 | 04:58 |
| | 16:19 | 56 | 12:44 (18) | 17:17 | | | 18:16 | 21 | 08:42 (22) | 20:18 | 20 | 07:58 (35) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:44 (21) | 08:18 | | | 07:15 | | 08:23 (22) | 06:55 | | 07:40 (35) | 05:44 | 04:57 |
| | 16:20 | 51 | 12:44 (18) | 17:19 | | | 18:18 | 17 | 08:40 (22) | 20:20 | 17 | 07:57 (35) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:43 (21) | 08:16 | | | 07:12 | | 08:25 (22) | 06:53 | | 07:40 (35) | 05:42 | 04:56 |
| | 16:22 | 53 | 12:44 (18) | 17:21 | | | 18:20 | 12 | 08:37 (22) | 20:22 | 15 | 07:55 (35) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:43 (21) | 08:14 | | | 07:10 | | | 06:50 | | 07:43 (35) | 05:40 | 04:56 |
| | 16:23 | 53 | 12:44 (18) | 17:23 | | | 18:22 | | | 20:24 | 9 | 07:52 (35) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:33 (37) | 08:12 | | | 07:07 | | | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 55 | 12:45 (18) | 17:25 | | | 18:24 | | | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:32 (37) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 60 | 12:45 (18) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:31 (37) | 08:08 | | | 07:02 | | | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 61 | 12:44 (18) | 17:30 | | | 18:28 | | | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:29 (37) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 64 | 12:43 (18) | 17:32 | | | 18:30 | | | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:28 (37) | 08:04 | | | 06:57 | | | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 66 | 12:43 (18) | 17:34 | | | 18:32 | | | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:27 (37) | 08:02 | | | 06:54 | | | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 67 | 12:43 (18) | 17:36 | | | 18:34 | | | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:27 (37) | 08:00 | | | 06:52 | | | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 66 | 12:42 (18) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:26 (37) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 64 | 12:40 (18) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:26 (37) | 07:55 | | 08:30 (22) | 06:47 | | | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 61 | 12:39 (18) | 17:42 | 9 | 08:39 (22) | 18:40 | | | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:27 (37) | 07:53 | | 08:26 (22) | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 57 | 12:38 (18) | 17:44 | 15 | 08:41 (22) | 18:42 | | | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:26 (37) | 07:51 | | 08:24 (22) | 06:42 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 50 | 12:34 (18) | 17:47 | 19 | 08:43 (22) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:27 (37) | 07:48 | | 08:23 (22) | 06:39 | | | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 45 | 10:12 (21) | 17:49 | 22 | 08:45 (22) | 18:46 | | | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:26 (37) | 07:46 | | 08:21 (22) | 06:36 | | | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 46 | 10:12 (21) | 17:51 | 25 | 08:46 (22) | 18:48 | | | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:26 (37) | 07:44 | | 08:21 (22) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 46 | 10:12 (21) | 17:53 | 26 | 08:47 (22) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:27 (37) | 07:41 | | 08:19 (22) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 46 | 10:13 (21) | 17:55 | 28 | 08:47 (22) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:27 (37) | 07:39 | | 08:19 (22) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 46 | 10:13 (21) | 17:57 | 29 | 08:48 (22) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:28 (37) | 07:37 | | 08:18 (22) | 06:26 | | 06:50 (35) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 45 | 10:13 (21) | 17:59 | 29 | 08:47 (22) | 18:56 | 4 | 06:54 (35) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:29 (37) | 07:34 | | 08:19 (22) | 06:23 | | 06:48 (35) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 45 | 10:14 (21) | 18:01 | 29 | 08:48 (22) | 18:58 | 10 | 06:58 (35) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:29 (37) | 07:32 | | 08:18 (22) | 06:21 | | 06:45 (35) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 44 | 10:13 (21) | 18:03 | 29 | 08:47 (22) | 19:00 | 14 | 06:59 (35) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:30 (37) | 07:29 | | 08:18 (22) | 06:18 | | 06:43 (35) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 43 | 10:13 (21) | 18:05 | 29 | 08:47 (22) | 19:02 | 18 | 07:01 (35) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:31 (37) | | | | 07:16 | | 07:40 (35) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 41 | 10:12 (21) | | | | 20:04 | 21 | 08:01 (35) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:32 (37) | | | | 07:13 | | 07:40 (35) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 39 | 10:12 (21) | | | | 20:06 | 22 | 08:02 (35) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:34 (37) | | | | 07:11 | | 07:39 (35) | | | | 05:03 | |
| | 17:06 | 34 | 10:11 (21) | | | | 20:08 | 22 | 08:01 (35) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 1641 | | | 353 | | | 266 | | | 151 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,45 | | | 0,85 | | | 0,94 | | | 1,00 | | | |
| Total reduction | | 0,07 | | | 0,17 | | | 0,27 | | | 0,33 | | | |
| Total, real | | 110 | | | 62 | | | 71 | | | 50 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninės VEShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | | 07:35 | | | 07:37 | | | 08:35 | | 09:13 (37) |
| | 22:18 | 21:40 | 20:30 | | | 19:12 | | | 16:58 | | | 16:10 | 62 | 12:26 (18) |
| 2 | 04:58 | 05:41 | 06:40 | | | 07:37 | | | 07:39 | | | 08:37 | | 09:14 (37) |
| | 22:18 | 21:38 | 20:27 | | | 19:10 | | | 16:56 | | | 16:09 | 60 | 12:27 (18) |
| 3 | 04:58 | 05:43 | 06:42 | | | 07:39 | | | 07:41 | | | 08:39 | | 09:16 (37) |
| | 22:17 | 21:36 | 20:24 | | | 19:07 | | | 16:54 | | | 16:08 | 56 | 12:28 (18) |
| 4 | 04:59 | 05:45 | 06:44 | | 07:40 (35) | 07:41 | | | 07:43 | | | 08:40 | | 09:28 (21) |
| | 22:17 | 21:34 | 20:22 | 9 | 07:49 (35) | 19:05 | | | 16:52 | | | 16:08 | 53 | 12:29 (18) |
| 5 | 05:00 | 05:47 | 06:45 | | 07:38 (35) | 07:43 | | | 07:45 | | | 08:42 | | 09:28 (21) |
| | 22:16 | 21:32 | 20:19 | 14 | 07:52 (35) | 19:02 | | | 16:50 | | | 16:07 | 53 | 12:29 (18) |
| 6 | 05:01 | 05:49 | 06:47 | | 07:36 (35) | 07:44 | | 09:03 (22) | 07:47 | | | 08:43 | | 09:30 (21) |
| | 22:16 | 21:30 | 20:17 | 17 | 07:53 (35) | 18:59 | 8 | 09:11 (22) | 16:48 | | | 16:06 | 51 | 12:30 (18) |
| 7 | 05:02 | 05:51 | 06:49 | | 07:34 (35) | 07:46 | | 08:59 (22) | 07:49 | | 09:26 (21) | 08:44 | | 09:30 (21) |
| | 22:15 | 21:28 | 20:14 | 19 | 07:53 (35) | 18:57 | 15 | 09:14 (22) | 16:46 | 8 | 09:34 (21) | 16:06 | 56 | 12:30 (18) |
| 8 | 05:03 | 05:53 | 06:51 | | 07:33 (35) | 07:48 | | 08:57 (22) | 07:51 | | 09:24 (21) | 08:46 | | 09:32 (21) |
| | 22:14 | 21:26 | 20:12 | 21 | 07:54 (35) | 18:54 | 19 | 09:16 (22) | 16:44 | 14 | 09:38 (21) | 16:05 | 59 | 12:32 (18) |
| 9 | 05:04 | 05:54 | 06:53 | | 07:32 (35) | 07:50 | | 08:55 (22) | 07:53 | | 09:22 (21) | 08:47 | | 09:33 (21) |
| | 22:13 | 21:24 | 20:09 | 22 | 07:54 (35) | 18:52 | 23 | 09:18 (22) | 16:42 | 18 | 09:40 (21) | 16:05 | 60 | 12:32 (18) |
| 10 | 05:06 | 05:56 | 06:55 | | 07:31 (35) | 07:52 | | 08:54 (22) | 07:55 | | 09:08 (37) | 08:48 | | 09:35 (21) |
| | 22:12 | 21:22 | 20:07 | 23 | 07:54 (35) | 18:49 | 24 | 09:18 (22) | 16:40 | 26 | 09:41 (21) | 16:04 | 60 | 12:33 (18) |
| 11 | 05:07 | 05:58 | 06:57 | | 07:31 (35) | 07:54 | | 08:53 (22) | 07:57 | | 09:05 (37) | 08:50 | | 09:37 (21) |
| | 22:11 | 21:19 | 20:04 | 23 | 07:54 (35) | 18:47 | 26 | 09:19 (22) | 16:38 | 34 | 09:42 (21) | 16:04 | 58 | 12:33 (18) |
| 12 | 05:08 | 06:00 | 06:59 | | 07:30 (35) | 07:56 | | 08:52 (22) | 07:59 | | 09:04 (37) | 08:51 | | 11:04 (19) |
| | 22:10 | 21:17 | 20:01 | 23 | 07:53 (35) | 18:44 | 27 | 09:19 (22) | 16:36 | 39 | 09:44 (21) | 16:04 | 54 | 12:34 (18) |
| 13 | 05:09 | 06:02 | 07:01 | | 07:30 (35) | 07:58 | | 08:51 (22) | 08:01 | | 09:03 (37) | 08:52 | | 11:04 (19) |
| | 22:09 | 21:15 | 19:59 | 22 | 07:52 (35) | 18:42 | 28 | 09:19 (22) | 16:34 | 41 | 09:44 (21) | 16:04 | 55 | 12:34 (18) |
| 14 | 05:11 | 06:04 | 07:02 | | 07:31 (35) | 08:00 | | 08:51 (22) | 08:04 | | 09:02 (37) | 08:53 | | 10:42 (20) |
| | 22:08 | 21:13 | 19:56 | 20 | 07:51 (35) | 18:39 | 29 | 09:20 (22) | 16:33 | 43 | 09:45 (21) | 16:04 | 59 | 12:35 (18) |
| 15 | 05:12 | 06:06 | 07:04 | | 07:32 (35) | 08:02 | | 08:51 (22) | 08:06 | | 09:01 (37) | 08:54 | | 10:42 (20) |
| | 22:07 | 21:10 | 19:54 | 18 | 07:50 (35) | 18:37 | 29 | 09:20 (22) | 16:31 | 44 | 09:45 (21) | 16:04 | 63 | 12:36 (18) |
| 16 | 05:14 | 06:08 | 07:06 | | 07:34 (35) | 08:04 | | 08:51 (22) | 08:08 | | 09:02 (37) | 08:55 | | 10:40 (20) |
| | 22:06 | 21:08 | 19:51 | 15 | 07:49 (35) | 18:35 | 29 | 09:20 (22) | 16:29 | 45 | 09:47 (21) | 16:04 | 65 | 12:36 (18) |
| 17 | 05:15 | 06:09 | 07:08 | | 07:36 (35) | 08:06 | | 08:51 (22) | 08:10 | | 09:02 (37) | 08:56 | | 10:40 (20) |
| | 22:04 | 21:06 | 19:48 | 11 | 07:47 (35) | 18:32 | 28 | 09:19 (22) | 16:28 | 45 | 09:47 (21) | 16:04 | 68 | 12:36 (18) |
| 18 | 05:16 | 06:11 | 07:10 | | 07:38 (35) | 08:08 | | 08:51 (22) | 08:12 | | 09:01 (37) | 08:57 | | 10:41 (20) |
| | 22:03 | 21:04 | 19:46 | 6 | 07:44 (35) | 18:30 | 28 | 09:19 (22) | 16:26 | 46 | 09:47 (21) | 16:04 | 68 | 12:37 (18) |
| 19 | 05:18 | 06:13 | 07:12 | | | 08:10 | | 08:51 (22) | 08:13 | | 09:01 (37) | 08:57 | | 10:41 (20) |
| | 22:02 | 21:01 | 19:43 | | | 18:27 | 27 | 09:18 (22) | 16:25 | 46 | 09:47 (21) | 16:04 | 69 | 12:38 (18) |
| 20 | 05:19 | 06:15 | 07:14 | | | 08:12 | | 08:51 (22) | 08:15 | | 09:01 (37) | 08:58 | | 10:41 (20) |
| | 22:00 | 20:59 | 19:41 | | | 18:25 | 26 | 09:17 (22) | 16:23 | 46 | 09:47 (21) | 16:05 | 71 | 12:38 (18) |
| 21 | 05:21 | 06:17 | 07:16 | | | 08:14 | | 08:52 (22) | 08:17 | | 09:03 (37) | 08:59 | | 10:42 (20) |
| | 21:59 | 20:57 | 19:38 | | | 18:23 | 24 | 09:16 (22) | 16:22 | 45 | 09:48 (21) | 16:05 | 71 | 12:39 (18) |
| 22 | 05:23 | 06:19 | 07:18 | | | 08:16 | | 08:54 (22) | 08:19 | | 09:03 (37) | 08:59 | | 10:43 (20) |
| | 21:57 | 20:54 | 19:35 | | | 18:20 | 21 | 09:15 (22) | 16:20 | 45 | 09:48 (21) | 16:05 | 71 | 12:40 (18) |
| 23 | 05:24 | 06:21 | 07:19 | | | 08:18 | | 08:55 (22) | 08:21 | | 09:03 (37) | 09:00 | | 10:43 (20) |
| | 21:56 | 20:52 | 19:33 | | | 18:18 | 18 | 09:13 (22) | 16:19 | 49 | 12:10 (18) | 16:06 | 71 | 12:40 (18) |
| 24 | 05:26 | 06:23 | 07:21 | | | 08:20 | | 08:57 (22) | 08:23 | | 09:04 (37) | 09:00 | | 10:43 (20) |
| | 21:54 | 20:49 | 19:30 | | | 18:16 | 14 | 09:11 (22) | 16:18 | 57 | 12:15 (18) | 16:07 | 70 | 12:40 (18) |
| 25 | 05:28 | 06:25 | 07:23 | | | 07:22 | | 08:00 (22) | 08:25 | | 09:04 (37) | 09:00 | | 10:43 (20) |
| | 21:53 | 20:47 | 19:28 | | | 17:13 | 7 | 08:07 (22) | 16:16 | 61 | 12:17 (18) | 16:07 | 69 | 12:40 (18) |
| 26 | 05:29 | 06:27 | 07:25 | | | 07:24 | | | 08:27 | | 09:05 (37) | 09:01 | | 10:45 (20) |
| | 21:51 | 20:44 | 19:25 | | | 17:11 | | | 16:15 | 64 | 12:19 (18) | 16:08 | 68 | 12:41 (18) |
| 27 | 05:31 | 06:28 | 07:27 | | | 07:26 | | | 08:28 | | 09:06 (37) | 09:01 | | 10:46 (20) |
| | 21:49 | 20:42 | 19:23 | | | 17:09 | | | 16:14 | 66 | 12:21 (18) | 16:09 | 66 | 12:42 (18) |
| 28 | 05:33 | 06:30 | 07:29 | | | 07:29 | | | 08:30 | | 09:07 (37) | 09:01 | | 10:47 (20) |
| | 21:47 | 20:40 | 19:20 | | | 17:07 | | | 16:13 | 67 | 12:23 (18) | 16:10 | 64 | 12:42 (18) |
| 29 | 05:34 | 06:32 | 07:31 | | | 07:31 | | | 08:32 | | 09:09 (37) | 09:01 | | 10:49 (20) |
| | 21:46 | 20:37 | 19:17 | | | 17:04 | | | 16:12 | 67 | 12:24 (18) | 16:10 | 62 | 12:43 (18) |
| 30 | 05:36 | 06:34 | 07:33 | | | 07:33 | | | 08:34 | | 09:11 (37) | 09:01 | | 11:11 (19) |
| | 21:44 | 20:35 | 19:15 | | | 17:02 | | | 16:11 | 64 | 12:25 (18) | 16:11 | 56 | 12:42 (18) |
| 31 | 05:38 | 06:36 | | | | 07:35 | | | | | | 09:01 | | 11:13 (19) |
| | 21:42 | 20:32 | | | | 17:00 | | | | | | 16:12 | 55 | 12:43 (18) |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 263 | | | 450 | | | 1080 | | | 1923 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,90 | | | 0,57 | | | 0,19 | |
| Total reduction | | | | 0,33 | | | 0,23 | | | 0,08 | | | 0,02 | |
| Total, real | | | | 87 | | | 104 | | | 81 | | | 42 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:05 (37) | 08:28 | | 14:32 (18) | 07:27 | | 08:02 (23) | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 121 | 14:50 (18) | 17:08 | 21 | 14:53 (18) | 18:07 | 64 | 09:39 (22) | 20:10 | | | 21:09 | 22:03 |
| 2 | 09:01 | | 10:05 (37) | 08:26 | | 14:35 (18) | 07:24 | | 08:03 (23) | 07:05 | | 07:36 (35) | 05:53 | 05:01 |
| | 16:15 | 120 | 14:50 (18) | 17:10 | 16 | 14:51 (18) | 18:10 | 61 | 09:38 (22) | 20:12 | 13 | 07:49 (35) | 21:11 | 22:04 |
| 3 | 09:01 | | 10:06 (37) | 08:24 | | 14:39 (18) | 07:22 | | 08:03 (23) | 07:03 | | 07:32 (35) | 05:51 | 05:00 |
| | 16:16 | 118 | 14:51 (18) | 17:12 | 8 | 14:47 (18) | 18:12 | 59 | 09:37 (22) | 20:14 | 18 | 07:50 (35) | 21:13 | 22:05 |
| 4 | 09:00 | | 10:06 (37) | 08:22 | | | 07:19 | | 08:04 (23) | 07:00 | | 07:31 (35) | 05:49 | 04:59 |
| | 16:18 | 117 | 14:51 (18) | 17:15 | | | 18:14 | 55 | 09:36 (22) | 20:16 | 21 | 07:52 (35) | 21:15 | 22:06 |
| 5 | 09:00 | | 10:07 (37) | 08:20 | | | 07:17 | | 08:04 (23) | 06:58 | | 07:29 (35) | 05:46 | 04:58 |
| | 16:19 | 114 | 14:53 (18) | 17:17 | | | 18:16 | 51 | 09:34 (22) | 20:18 | 24 | 07:53 (35) | 21:17 | 22:08 |
| 6 | 08:59 | | 10:07 (37) | 08:18 | | | 07:14 | | 08:07 (23) | 06:55 | | 07:28 (35) | 05:44 | 04:57 |
| | 16:20 | 106 | 14:53 (18) | 17:19 | | | 18:18 | 43 | 09:33 (22) | 20:20 | 26 | 07:54 (35) | 21:19 | 22:09 |
| 7 | 08:59 | | 10:08 (37) | 08:16 | | | 07:12 | | 09:01 (22) | 06:53 | | 07:26 (35) | 05:42 | 04:56 |
| | 16:22 | 105 | 14:53 (18) | 17:21 | | | 18:20 | 29 | 09:30 (22) | 20:22 | 28 | 07:54 (35) | 21:20 | 22:10 |
| 8 | 08:58 | | 10:08 (37) | 08:14 | | 09:13 (22) | 07:09 | | 09:02 (22) | 06:50 | | 07:26 (35) | 05:40 | 04:56 |
| | 16:23 | 106 | 14:54 (18) | 17:23 | 11 | 09:24 (22) | 18:22 | 25 | 09:27 (22) | 20:24 | 29 | 07:55 (35) | 21:22 | 22:11 |
| 9 | 08:58 | | 10:09 (37) | 08:12 | | 09:09 (22) | 07:07 | | 09:05 (22) | 06:48 | | 07:25 (35) | 05:38 | 04:55 |
| | 16:25 | 105 | 14:55 (18) | 17:25 | 19 | 09:28 (22) | 18:24 | 20 | 09:25 (22) | 20:25 | 30 | 07:55 (35) | 21:24 | 22:12 |
| 10 | 08:57 | | 10:10 (37) | 08:10 | | 09:07 (22) | 07:04 | | 09:09 (22) | 06:45 | | 07:24 (35) | 05:36 | 04:55 |
| | 16:26 | 105 | 14:56 (18) | 17:27 | 24 | 09:31 (22) | 18:26 | 10 | 09:19 (22) | 20:27 | 31 | 07:55 (35) | 21:26 | 22:13 |
| 11 | 08:56 | | 10:10 (37) | 08:08 | | 09:05 (22) | 07:02 | | | 06:43 | | 07:24 (35) | 05:34 | 04:54 |
| | 16:28 | 105 | 14:56 (18) | 17:29 | 28 | 09:33 (22) | 18:28 | | | 20:29 | 30 | 07:54 (35) | 21:28 | 22:14 |
| 12 | 08:55 | | 10:10 (37) | 08:06 | | 09:03 (22) | 06:59 | | | 06:40 | | 07:24 (35) | 05:32 | 04:54 |
| | 16:30 | 104 | 14:56 (18) | 17:32 | 31 | 09:34 (22) | 18:30 | | | 20:31 | 30 | 07:54 (35) | 21:30 | 22:14 |
| 13 | 08:54 | | 10:11 (37) | 08:04 | | 09:02 (22) | 06:57 | | | 06:38 | | 07:23 (35) | 05:30 | 04:53 |
| | 16:31 | 104 | 14:57 (18) | 17:34 | 34 | 09:36 (22) | 18:32 | | | 20:33 | 30 | 07:53 (35) | 21:32 | 22:15 |
| 14 | 08:53 | | 10:12 (37) | 08:02 | | 09:01 (22) | 06:54 | | | 06:35 | | 07:24 (35) | 05:29 | 04:53 |
| | 16:33 | 103 | 14:57 (18) | 17:36 | 36 | 09:37 (22) | 18:34 | | | 20:35 | 29 | 07:53 (35) | 21:34 | 22:16 |
| 15 | 08:52 | | 10:13 (37) | 07:59 | | 08:59 (22) | 06:52 | | | 06:33 | | 07:24 (35) | 05:27 | 04:53 |
| | 16:35 | 102 | 14:58 (18) | 17:38 | 39 | 09:38 (22) | 18:36 | | | 20:37 | 29 | 07:53 (35) | 21:35 | 22:16 |
| 16 | 08:51 | | 10:13 (37) | 07:57 | | 08:59 (22) | 06:49 | | | 06:30 | | 07:24 (35) | 05:25 | 04:52 |
| | 16:36 | 100 | 14:58 (18) | 17:40 | 40 | 09:39 (22) | 18:38 | | | 20:39 | 27 | 07:51 (35) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:14 (37) | 07:55 | | 08:58 (22) | 06:47 | | | 06:28 | | 07:25 (35) | 05:23 | 04:52 |
| | 16:38 | 97 | 14:58 (18) | 17:42 | 42 | 09:40 (22) | 18:40 | | | 20:41 | 25 | 07:50 (35) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:15 (37) | 07:53 | | 08:57 (22) | 06:44 | | | 06:25 | | 07:26 (35) | 05:21 | 04:52 |
| | 16:40 | 96 | 14:59 (18) | 17:44 | 43 | 09:40 (22) | 18:42 | | | 20:43 | 23 | 07:49 (35) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:16 (37) | 07:51 | | 08:57 (22) | 06:41 | | | 06:23 | | 07:26 (35) | 05:20 | 04:52 |
| | 16:42 | 93 | 14:59 (18) | 17:47 | 44 | 09:41 (22) | 18:44 | | | 20:45 | 21 | 07:47 (35) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:18 (37) | 07:48 | | 08:57 (22) | 06:39 | | | 06:21 | | 07:28 (35) | 05:18 | 04:52 |
| | 16:44 | 88 | 14:59 (18) | 17:49 | 44 | 09:41 (22) | 18:46 | | | 20:47 | 17 | 07:45 (35) | 21:44 | 22:19 |
| 21 | 08:45 | | 10:19 (37) | 07:46 | | 08:56 (22) | 06:36 | | | 06:18 | | 07:31 (35) | 05:16 | 04:52 |
| | 16:46 | 85 | 14:59 (18) | 17:51 | 45 | 09:41 (22) | 18:48 | | | 20:49 | 12 | 07:43 (35) | 21:46 | 22:19 |
| 22 | 08:44 | | 10:21 (37) | 07:44 | | 08:10 (23) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 78 | 14:59 (18) | 17:53 | 55 | 09:42 (22) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:25 (37) | 07:41 | | 08:07 (23) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 69 | 14:59 (18) | 17:55 | 59 | 09:41 (22) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 11:08 (21) | 07:39 | | 08:05 (23) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 61 | 14:59 (18) | 17:57 | 63 | 09:41 (22) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:39 | | 11:10 (21) | 07:36 | | 08:04 (23) | 06:26 | | | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 56 | 14:58 (18) | 17:59 | 64 | 09:41 (22) | 18:56 | | | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | 11:13 (21) | 07:34 | | 08:03 (23) | 06:23 | | | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 52 | 14:59 (18) | 18:01 | 66 | 09:41 (22) | 18:58 | | | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 11:16 (21) | 07:32 | | 08:02 (23) | 06:21 | | | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 43 | 14:58 (18) | 18:03 | 66 | 09:40 (22) | 19:00 | | | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:35 | | 14:26 (18) | 07:29 | | 08:03 (23) | 06:18 | | | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 32 | 14:58 (18) | 18:05 | 65 | 09:40 (22) | 19:02 | | | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 14:27 (18) | | | | 07:16 | | | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 30 | 14:57 (18) | | | | 20:04 | | | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 14:29 (18) | | | | 07:13 | | | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 27 | 14:56 (18) | | | | 20:06 | | | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 14:30 (18) | | | | 07:11 | | | | | | 05:03 | |
| | 17:06 | 24 | 14:54 (18) | | | | 20:08 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 2666 | | | 963 | | | 417 | | | 493 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,43 | | | 0,80 | | | 0,83 | | | 1,00 | | | |
| Total reduction | | 0,07 | | | 0,17 | | | 0,25 | | | 0,34 | | | |
| Total, real | | 178 | | | 164 | | | 102 | | | 167 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:22 (35) | 07:35 | | | 07:37 | | 08:37 (22) | 08:35 | | 09:51 (37) |
| | 22:18 | | 21:40 | | | 20:30 | 31 | 07:53 (35) | 19:12 | | | 16:58 | 23 | 09:00 (22) | 16:10 | 105 | 14:37 (18) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:22 (35) | 07:37 | | | 07:39 | | 08:40 (22) | 08:37 | | 09:52 (37) |
| | 22:18 | | 21:38 | | | 20:27 | 31 | 07:53 (35) | 19:10 | | | 16:56 | 17 | 08:57 (22) | 16:09 | 105 | 14:38 (18) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:23 (35) | 07:39 | | | 07:41 | | 08:44 (22) | 08:38 | | 09:52 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 30 | 07:53 (35) | 19:07 | | | 16:54 | 9 | 08:53 (22) | 16:08 | 106 | 14:38 (18) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:23 (35) | 07:41 | | 09:44 (22) | 07:43 | | | 08:40 | | 09:53 (37) |
| | 22:17 | | 21:34 | | | 20:22 | 29 | 07:52 (35) | 19:05 | 16 | 10:00 (22) | 16:52 | | | 16:08 | 105 | 14:39 (18) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:23 (35) | 07:42 | | 09:41 (22) | 07:45 | | | 08:42 | | 09:53 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 28 | 07:51 (35) | 19:02 | 22 | 10:03 (22) | 16:50 | | | 16:07 | 107 | 14:39 (18) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:24 (35) | 07:44 | | 09:38 (22) | 07:47 | | | 08:43 | | 09:53 (37) |
| | 22:16 | | 21:30 | | | 20:17 | 26 | 07:50 (35) | 18:59 | 27 | 10:05 (22) | 16:48 | | | 16:06 | 106 | 14:39 (18) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 07:24 (35) | 07:46 | | 08:43 (23) | 07:49 | | | 08:44 | | 09:53 (37) |
| | 22:15 | | 21:28 | | | 20:14 | 24 | 07:48 (35) | 18:57 | 39 | 10:07 (22) | 16:46 | | | 16:06 | 114 | 14:39 (18) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:25 (35) | 07:48 | | 08:40 (23) | 07:51 | | 14:09 (18) | 08:46 | | 09:54 (37) |
| | 22:14 | | 21:26 | | | 20:12 | 22 | 07:47 (35) | 18:54 | 47 | 10:08 (22) | 16:44 | 9 | 14:18 (18) | 16:05 | 117 | 14:40 (18) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:26 (35) | 07:50 | | 08:39 (23) | 07:53 | | 14:05 (18) | 08:47 | | 09:54 (37) |
| | 22:13 | | 21:24 | | | 20:09 | 19 | 07:45 (35) | 18:52 | 52 | 10:09 (22) | 16:42 | 17 | 14:22 (18) | 16:05 | 118 | 14:39 (18) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 07:29 (35) | 07:52 | | 08:37 (23) | 07:55 | | 14:03 (18) | 08:48 | | 09:55 (37) |
| | 22:12 | | 21:22 | | | 20:07 | 13 | 07:42 (35) | 18:49 | 57 | 10:10 (22) | 16:40 | 21 | 14:24 (18) | 16:04 | 120 | 14:40 (18) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 07:34 (35) | 07:54 | | 08:36 (23) | 07:57 | | 14:01 (18) | 08:50 | | 09:56 (40) |
| | 22:11 | | 21:19 | | | 20:04 | 3 | 07:37 (35) | 18:47 | 61 | 10:11 (22) | 16:38 | 24 | 14:25 (18) | 16:04 | 121 | 14:40 (18) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:35 (23) | 07:59 | | 14:00 (18) | 08:51 | | 09:56 (40) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 63 | 10:11 (22) | 16:36 | 28 | 14:28 (18) | 16:04 | 122 | 14:40 (18) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:35 (23) | 08:01 | | 13:59 (18) | 08:52 | | 09:56 (40) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 65 | 10:12 (22) | 16:34 | 30 | 14:29 (18) | 16:04 | 121 | 14:40 (18) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:36 (23) | 08:03 | | 13:58 (18) | 08:53 | | 09:56 (40) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 65 | 10:13 (22) | 16:33 | 31 | 14:29 (18) | 16:04 | 123 | 14:41 (18) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:36 (23) | 08:06 | | 10:48 (21) | 08:54 | | 09:57 (40) |
| | 22:07 | | 21:10 | | | 19:54 | | | 18:37 | 65 | 10:13 (22) | 16:31 | 43 | 14:30 (18) | 16:04 | 123 | 14:41 (18) |
| 16 | 05:13 | | 06:08 | | | 07:06 | | | 08:04 | | 08:36 (23) | 08:08 | | 10:46 (21) | 08:55 | | 09:57 (40) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 65 | 10:13 (22) | 16:29 | 52 | 14:32 (18) | 16:04 | 123 | 14:41 (18) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | | 08:06 | | 08:36 (23) | 08:09 | | 10:44 (21) | 08:56 | | 09:58 (40) |
| | 22:04 | | 21:06 | | | 19:48 | | | 18:32 | 64 | 10:13 (22) | 16:28 | 56 | 14:32 (18) | 16:04 | 123 | 14:42 (18) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | | 08:08 | | 08:37 (23) | 08:11 | | 10:42 (21) | 08:57 | | 09:58 (40) |
| | 22:03 | | 21:04 | | | 19:46 | | | 18:30 | 62 | 10:13 (22) | 16:26 | 61 | 14:33 (18) | 16:04 | 124 | 14:42 (18) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | | 08:10 | | 08:39 (23) | 08:13 | | 09:59 (37) | 08:57 | | 09:59 (40) |
| | 22:02 | | 21:01 | | | 19:43 | | | 18:27 | 58 | 10:12 (22) | 16:25 | 69 | 14:33 (18) | 16:04 | 123 | 14:43 (18) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | | 08:12 | | 08:41 (23) | 08:15 | | 09:56 (37) | 08:58 | | 09:59 (40) |
| | 22:00 | | 20:59 | | | 19:41 | | | 18:25 | 53 | 10:12 (22) | 16:23 | 78 | 14:34 (18) | 16:05 | 123 | 14:43 (18) |
| 21 | 05:21 | | 06:17 | | 07:41 (35) | 07:16 | | | 08:14 | | 09:26 (22) | 08:17 | | 09:55 (37) | 08:59 | | 10:00 (40) |
| | 21:59 | | 20:56 | 1 | 07:42 (35) | 19:38 | | | 18:23 | 45 | 10:11 (22) | 16:22 | 85 | 14:35 (18) | 16:05 | 124 | 14:44 (18) |
| 22 | 05:23 | | 06:19 | | 07:34 (35) | 07:18 | | | 08:16 | | 09:27 (22) | 08:19 | | 09:54 (37) | 08:59 | | 10:00 (40) |
| | 21:57 | | 20:54 | 13 | 07:47 (35) | 19:35 | | | 18:20 | 45 | 10:12 (22) | 16:20 | 88 | 14:35 (18) | 16:05 | 124 | 14:44 (18) |
| 23 | 05:24 | | 06:21 | | 07:32 (35) | 07:19 | | | 08:18 | | 09:27 (22) | 08:21 | | 09:53 (37) | 09:00 | | 10:01 (40) |
| | 21:56 | | 20:52 | 17 | 07:49 (35) | 19:33 | | | 18:18 | 44 | 10:11 (22) | 16:19 | 94 | 14:36 (18) | 16:06 | 124 | 14:45 (18) |
| 24 | 05:26 | | 06:23 | | 07:30 (35) | 07:21 | | | 08:20 | | 09:28 (22) | 08:23 | | 09:52 (37) | 09:00 | | 10:01 (40) |
| | 21:54 | | 20:49 | 21 | 07:51 (35) | 19:30 | | | 18:16 | 42 | 10:10 (22) | 16:18 | 96 | 14:36 (18) | 16:07 | 123 | 14:45 (18) |
| 25 | 05:28 | | 06:25 | | 07:29 (35) | 07:23 | | | 07:22 | | 08:28 (22) | 08:25 | | 09:52 (37) | 09:00 | | 10:01 (40) |
| | 21:52 | | 20:47 | 23 | 07:52 (35) | 19:28 | | | 17:13 | 41 | 09:09 (22) | 16:16 | 96 | 14:36 (18) | 16:07 | 123 | 14:45 (18) |
| 26 | 05:29 | | 06:26 | | 07:28 (35) | 07:25 | | | 07:24 | | 08:28 (22) | 08:27 | | 09:52 (37) | 09:01 | | 10:02 (40) |
| | 21:51 | | 20:44 | 25 | 07:53 (35) | 19:25 | | | 17:11 | 40 | 09:08 (22) | 16:15 | 100 | 14:37 (18) | 16:08 | 125 | 14:47 (18) |
| 27 | 05:31 | | 06:28 | | 07:26 (35) | 07:27 | | | 07:26 | | 08:30 (22) | 08:28 | | 09:52 (37) | 09:01 | | 10:03 (40) |
| | 21:49 | | 20:42 | 27 | 07:53 (35) | 19:23 | | | 17:09 | 38 | 09:08 (22) | 16:14 | 102 | 14:37 (18) | 16:09 | 123 | 14:47 (18) |
| 28 | 05:33 | | 06:30 | | 07:25 (35) | 07:29 | | | 07:29 | | 08:31 (22) | 08:30 | | 09:52 (37) | 09:01 | | 10:03 (40) |
| | 21:47 | | 20:39 | 29 | 07:54 (35) | 19:20 | | | 17:07 | 35 | 09:06 (22) | 16:13 | 101 | 14:37 (18) | 16:10 | 125 | 14:48 (18) |
| 29 | 05:34 | | 06:32 | | 07:24 (35) | 07:31 | | | 07:31 | | 08:32 (22) | 08:32 | | 09:52 (37) | 09:01 | | 10:04 (40) |
| | 21:46 | | 20:37 | 30 | 07:54 (35) | 19:17 | | | 17:04 | 33 | 09:05 (22) | 16:12 | 104 | 14:38 (18) | 16:10 | 122 | 14:48 (18) |
| 30 | 05:36 | | 06:34 | | 07:24 (35) | 07:33 | | | 07:33 | | 08:33 (22) | 08:34 | | 09:52 (37) | 09:01 | | 10:04 (40) |
| | 21:44 | | 20:35 | 30 | 07:54 (35) | 19:15 | | | 17:02 | 30 | 09:03 (22) | 16:11 | 104 | 14:38 (18) | 16:11 | 122 | 14:48 (18) |
| 31 | 05:38 | | 06:36 | | 07:24 (35) | | | | 07:35 | | 08:35 (22) | | | | 09:01 | | 10:04 (40) |
| | 21:42 | | 20:32 | 30 | 07:54 (35) | | | | 17:00 | 27 | 09:02 (22) | | | | 16:12 | 123 | 14:49 (18) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 246 | | | 256 | | | 1301 | | | 1538 | | | 3687 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,82 | | | 0,44 | | | 0,41 | |
| Total reduction | | | | 0,44 | | | 0,34 | | | 0,22 | | | 0,06 | | | 0,05 | |
| Total, real | | | | 109 | | | 87 | | | 285 | | | 93 | | | 175 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:59 (22) | 08:28 | | 12:00 (22) | 07:27 | | 07:53 (24) | 07:08 | | | 05:55 | | 07:32 (35) | 05:02 | | |
| | 16:14 | 115 | 15:01 (19) | 17:08 | 93 | 16:21 (18) | 18:07 | 10 | 08:03 (24) | 20:10 | | | 21:09 | 43 | 08:15 (35) | 22:03 | | |
| 2 | 09:01 | | 11:58 (22) | 08:26 | | 12:00 (22) | 07:24 | | 07:51 (24) | 07:05 | | | 05:53 | | 07:33 (35) | 05:01 | | |
| | 16:15 | 115 | 15:01 (19) | 17:10 | 93 | 16:21 (18) | 18:09 | 14 | 08:05 (24) | 20:12 | | | 21:11 | 40 | 08:13 (35) | 22:04 | | |
| 3 | 09:01 | | 11:59 (22) | 08:24 | | 12:00 (22) | 07:22 | | 07:49 (24) | 07:03 | | 07:54 (35) | 05:51 | | 07:34 (35) | 05:00 | | |
| | 16:16 | 115 | 15:02 (19) | 17:12 | 94 | 16:22 (18) | 18:12 | 17 | 08:06 (24) | 20:14 | 13 | 08:07 (35) | 21:13 | 38 | 08:12 (35) | 22:05 | | |
| 4 | 09:00 | | 11:58 (22) | 08:22 | | 09:01 (23) | 07:19 | | 07:48 (24) | 07:00 | | 07:50 (35) | 05:48 | | 07:35 (35) | 04:59 | | |
| | 16:18 | 117 | 15:02 (19) | 17:15 | 99 | 16:22 (18) | 18:14 | 20 | 08:08 (24) | 20:16 | 21 | 08:11 (35) | 21:15 | 36 | 08:11 (35) | 22:06 | | |
| 5 | 09:00 | | 11:59 (22) | 08:20 | | 08:58 (23) | 07:17 | | 07:47 (24) | 06:58 | | 07:46 (35) | 05:46 | | 07:36 (35) | 04:58 | | |
| | 16:19 | 117 | 15:03 (19) | 17:17 | 106 | 16:22 (18) | 18:16 | 21 | 08:08 (24) | 20:18 | 27 | 08:13 (35) | 21:17 | 33 | 08:09 (35) | 22:08 | | |
| 6 | 08:59 | | 11:59 (22) | 08:18 | | 08:56 (23) | 07:14 | | 07:47 (24) | 06:55 | | 07:44 (35) | 05:44 | | 07:37 (35) | 04:57 | | |
| | 16:20 | 117 | 15:03 (19) | 17:19 | 108 | 16:22 (18) | 18:18 | 21 | 08:08 (24) | 20:20 | 32 | 08:16 (35) | 21:19 | 31 | 08:08 (35) | 22:09 | | |
| 7 | 08:59 | | 11:59 (22) | 08:16 | | 08:54 (23) | 07:12 | | 07:46 (24) | 06:53 | | 07:42 (35) | 05:42 | | 07:38 (35) | 04:56 | | |
| | 16:22 | 116 | 15:03 (19) | 17:21 | 111 | 16:21 (18) | 18:20 | 22 | 08:08 (24) | 20:22 | 35 | 08:17 (35) | 21:20 | 28 | 08:06 (35) | 22:10 | | |
| 8 | 08:58 | | 11:58 (22) | 08:14 | | 08:53 (23) | 07:09 | | 07:45 (24) | 06:50 | | 07:40 (35) | 05:40 | | 07:40 (35) | 04:56 | | |
| | 16:23 | 117 | 15:03 (19) | 17:23 | 111 | 16:21 (18) | 18:22 | 22 | 08:07 (24) | 20:23 | 39 | 08:19 (35) | 21:22 | 23 | 08:03 (35) | 22:11 | | |
| 9 | 08:58 | | 11:58 (22) | 08:12 | | 08:52 (23) | 07:07 | | 07:46 (24) | 06:48 | | 07:38 (35) | 05:38 | | 07:42 (35) | 04:55 | | |
| | 16:25 | 117 | 15:03 (19) | 17:25 | 111 | 16:21 (18) | 18:24 | 21 | 08:07 (24) | 20:25 | 41 | 08:19 (35) | 21:24 | 19 | 08:01 (35) | 22:12 | | |
| 10 | 08:57 | | 11:59 (22) | 08:10 | | 08:52 (23) | 07:04 | | 07:46 (24) | 06:45 | | 07:37 (35) | 05:36 | | 07:45 (35) | 04:54 | | |
| | 16:26 | 116 | 15:04 (19) | 17:27 | 109 | 16:20 (18) | 18:26 | 20 | 08:06 (24) | 20:27 | 43 | 08:20 (35) | 21:26 | 12 | 07:57 (35) | 22:13 | | |
| 11 | 08:56 | | 11:58 (22) | 08:08 | | 08:51 (23) | 07:02 | | 07:47 (24) | 06:43 | | 07:35 (35) | 05:34 | | | 04:54 | | |
| | 16:28 | 115 | 15:03 (19) | 17:29 | 108 | 16:20 (18) | 18:28 | 18 | 08:05 (24) | 20:29 | 45 | 08:20 (35) | 21:28 | | | 22:14 | | |
| 12 | 08:55 | | 11:58 (22) | 08:06 | | 08:50 (23) | 06:59 | | 07:47 (24) | 06:40 | | 07:35 (35) | 05:32 | | | 04:54 | | |
| | 16:29 | 114 | 15:03 (19) | 17:32 | 104 | 16:17 (18) | 18:30 | 16 | 08:03 (24) | 20:31 | 46 | 08:21 (35) | 21:30 | | | 22:14 | | |
| 13 | 08:54 | | 11:58 (22) | 08:04 | | 08:50 (23) | 06:57 | | 07:48 (24) | 06:38 | | 07:33 (35) | 05:30 | | | 04:53 | | |
| | 16:31 | 114 | 15:04 (19) | 17:34 | 99 | 16:16 (18) | 18:32 | 13 | 08:01 (24) | 20:33 | 48 | 08:21 (35) | 21:32 | | | 22:15 | | |
| 14 | 08:53 | | 11:59 (22) | 08:02 | | 08:50 (23) | 06:54 | | 07:52 (24) | 06:35 | | 07:33 (35) | 05:28 | | | 04:53 | | |
| | 16:33 | 112 | 15:04 (19) | 17:36 | 90 | 16:13 (18) | 18:34 | 6 | 07:58 (24) | 20:35 | 49 | 08:22 (35) | 21:34 | | | 22:16 | | |
| 15 | 08:52 | | 11:59 (22) | 07:59 | | 08:50 (23) | 06:52 | | | 06:33 | | 07:32 (35) | 05:27 | | | 04:53 | | |
| | 16:35 | 110 | 15:04 (19) | 17:38 | 80 | 12:59 (22) | 18:36 | | | 20:37 | 50 | 08:22 (35) | 21:35 | | | 22:16 | | |
| 16 | 08:51 | | 11:58 (22) | 07:57 | | 08:50 (23) | 06:49 | | | 06:30 | | 07:31 (35) | 05:25 | | | 04:52 | | |
| | 16:36 | 108 | 15:03 (19) | 17:40 | 77 | 12:58 (22) | 18:38 | | | 20:39 | 51 | 08:22 (35) | 21:37 | | | 22:17 | | |
| 17 | 08:50 | | 11:58 (22) | 07:55 | | 08:51 (23) | 06:47 | | | 06:28 | | 07:31 (35) | 05:23 | | | 04:52 | | |
| | 16:38 | 106 | 15:03 (19) | 17:42 | 73 | 12:57 (22) | 18:40 | | | 20:41 | 51 | 08:22 (35) | 21:39 | | | 22:18 | | |
| 18 | 08:49 | | 11:59 (22) | 07:53 | | 08:50 (23) | 06:44 | | | 06:25 | | 07:31 (35) | 05:21 | | | 04:52 | | |
| | 16:40 | 100 | 15:02 (19) | 17:44 | 69 | 12:54 (22) | 18:42 | | | 20:43 | 52 | 08:23 (35) | 21:41 | | | 22:18 | | |
| 19 | 08:48 | | 11:58 (22) | 07:50 | | 08:51 (23) | 06:41 | | | 06:23 | | 07:30 (35) | 05:20 | | | 04:52 | | |
| | 16:42 | 98 | 15:01 (19) | 17:46 | 63 | 12:52 (22) | 18:44 | | | 20:45 | 52 | 08:22 (35) | 21:42 | | | 22:18 | | |
| 20 | 08:47 | | 11:59 (22) | 07:48 | | 08:52 (23) | 06:39 | | | 06:20 | | 07:30 (35) | 05:18 | | | 04:52 | | |
| | 16:44 | 90 | 15:00 (19) | 17:49 | 55 | 12:49 (22) | 18:46 | | | 20:47 | 52 | 08:22 (35) | 21:44 | | | 22:19 | | |
| 21 | 08:45 | | 11:58 (22) | 07:46 | | 08:53 (23) | 06:36 | | | 06:18 | | 07:30 (35) | 05:16 | | | 04:52 | | |
| | 16:46 | 76 | 13:56 (21) | 17:51 | 45 | 12:45 (22) | 18:48 | | | 20:49 | 52 | 08:22 (35) | 21:46 | | | 22:19 | | |
| 22 | 08:44 | | 11:58 (22) | 07:44 | | 08:54 (23) | 06:34 | | | 06:16 | | 07:29 (35) | 05:15 | | | 04:52 | | |
| | 16:48 | 65 | 13:03 (22) | 17:53 | 23 | 12:35 (22) | 18:50 | | | 20:51 | 52 | 08:21 (35) | 21:48 | | | 22:19 | | |
| 23 | 08:42 | | 11:59 (22) | 07:41 | | 08:55 (23) | 06:31 | | | 06:13 | | 07:29 (35) | 05:13 | | | 04:53 | | |
| | 16:50 | 65 | 13:04 (22) | 17:55 | 17 | 09:12 (23) | 18:52 | | | 20:53 | 51 | 08:20 (35) | 21:49 | | | 22:19 | | |
| 24 | 08:41 | | 11:58 (22) | 07:39 | | 08:58 (23) | 06:29 | | | 06:11 | | 07:29 (35) | 05:12 | | | 04:53 | | |
| | 16:52 | 75 | 16:11 (18) | 17:57 | 12 | 09:10 (23) | 18:54 | | | 20:55 | 51 | 08:20 (35) | 21:51 | | | 22:19 | | |
| 25 | 08:39 | | 11:58 (22) | 07:36 | | | 06:26 | | | 06:09 | | 07:30 (35) | 05:10 | | | 04:53 | | |
| | 16:54 | 81 | 16:13 (18) | 17:59 | | | 18:56 | | | 20:57 | 50 | 08:20 (35) | 21:52 | | | 22:19 | | |
| 26 | 08:38 | | 11:59 (22) | 07:34 | | | 06:23 | | | 06:06 | | 07:29 (35) | 05:09 | | | 04:54 | | |
| | 16:56 | 83 | 16:15 (18) | 18:01 | | | 18:58 | | | 20:59 | 49 | 08:18 (35) | 21:54 | | | 22:19 | | |
| 27 | 08:36 | | 11:59 (22) | 07:32 | | | 06:21 | | | 06:04 | | 07:30 (35) | 05:08 | | | 04:54 | | |
| | 16:58 | 86 | 16:17 (18) | 18:03 | | | 19:00 | | | 21:01 | 48 | 08:18 (35) | 21:55 | | | 22:19 | | |
| 28 | 08:35 | | 11:59 (22) | 07:29 | | | 06:18 | | | 06:02 | | 07:30 (35) | 05:06 | | | 04:55 | | |
| | 17:00 | 88 | 16:18 (18) | 18:05 | | | 19:02 | | | 21:03 | 47 | 08:17 (35) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 11:59 (22) | | | | 07:16 | | | 05:59 | | 07:31 (35) | 05:05 | | | 04:55 | | |
| | 17:02 | 90 | 16:19 (18) | | | | 20:04 | | | 21:05 | 45 | 08:16 (35) | 21:58 | | | 22:19 | | |
| 30 | 08:31 | | 11:59 (22) | | | | 07:13 | | | 05:57 | | 07:31 (35) | 05:04 | | | 04:56 | | |
| | 17:04 | 92 | 16:20 (18) | | | | 20:06 | | | 21:07 | 44 | 08:15 (35) | 22:00 | | | 22:19 | | |
| 31 | 08:30 | | 11:59 (22) | | | | 07:11 | | | | | | 05:03 | | | | | |
| | 17:06 | 93 | 16:20 (18) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3123 | | | 1950 | | | 241 | | | 1236 | | | 303 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,20 | | | 0,36 | | | 0,95 | | | 1,00 | | | 1,00 | | | | |
| Total reduction | | 0,03 | | | 0,07 | | | 0,24 | | | 0,29 | | | 0,38 | | | | |
| Total, real | | 84 | | | 129 | | | 58 | | | 361 | | | 116 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:34 (35) | 07:35 | | 08:27 (24) | 07:37 | | 08:21 (23) | 08:35 | | 11:40 (22) |
| | 22:18 | | 21:40 | | | 20:29 | 45 | 08:19 (35) | 19:12 | 15 | 08:42 (24) | 16:58 | 111 | 15:50 (18) | 16:10 | 115 | 14:45 (19) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:35 (35) | 07:37 | | 08:25 (24) | 07:39 | | 08:22 (23) | 08:37 | | 11:41 (22) |
| | 22:18 | | 21:38 | | | 20:27 | 43 | 08:18 (35) | 19:10 | 18 | 08:43 (24) | 16:56 | 111 | 15:50 (18) | 16:09 | 117 | 14:46 (19) |
| 3 | 04:58 | | 05:43 | | 07:54 (35) | 06:42 | | 07:36 (35) | 07:39 | | 08:24 (24) | 07:41 | | 08:23 (23) | 08:38 | | 11:42 (22) |
| | 22:17 | | 21:36 | 15 | 08:09 (35) | 20:24 | 41 | 08:17 (35) | 19:07 | 20 | 08:44 (24) | 16:54 | 111 | 15:51 (18) | 16:08 | 116 | 14:47 (19) |
| 4 | 04:59 | | 05:45 | | 07:52 (35) | 06:44 | | 07:37 (35) | 07:41 | | 08:23 (24) | 07:43 | | 08:24 (23) | 08:40 | | 11:43 (22) |
| | 22:17 | | 21:34 | 20 | 08:12 (35) | 20:22 | 39 | 08:16 (35) | 19:04 | 21 | 08:44 (24) | 16:52 | 111 | 15:52 (18) | 16:08 | 117 | 14:48 (19) |
| 5 | 05:00 | | 05:47 | | 07:50 (35) | 06:45 | | 07:39 (35) | 07:42 | | 08:22 (24) | 07:45 | | 08:26 (23) | 08:42 | | 11:44 (22) |
| | 22:16 | | 21:32 | 25 | 08:15 (35) | 20:19 | 35 | 08:14 (35) | 19:02 | 22 | 08:44 (24) | 16:50 | 110 | 15:52 (18) | 16:07 | 116 | 14:48 (19) |
| 6 | 05:01 | | 05:49 | | 07:47 (35) | 06:47 | | 07:39 (35) | 07:44 | | 08:22 (24) | 07:47 | | 08:28 (23) | 08:43 | | 11:45 (22) |
| | 22:15 | | 21:30 | 29 | 08:16 (35) | 20:17 | 32 | 08:11 (35) | 18:59 | 22 | 08:44 (24) | 16:48 | 106 | 15:52 (18) | 16:06 | 116 | 14:49 (19) |
| 7 | 05:02 | | 05:51 | | 07:46 (35) | 06:49 | | 07:41 (35) | 07:46 | | 08:22 (24) | 07:49 | | 08:31 (23) | 08:44 | | 11:45 (22) |
| | 22:15 | | 21:28 | 32 | 08:18 (35) | 20:14 | 28 | 08:09 (35) | 18:57 | 22 | 08:44 (24) | 16:46 | 100 | 15:52 (18) | 16:06 | 116 | 14:49 (19) |
| 8 | 05:03 | | 05:52 | | 07:45 (35) | 06:51 | | 07:44 (35) | 07:48 | | 08:22 (24) | 07:51 | | 11:31 (22) | 08:46 | | 11:46 (22) |
| | 22:14 | | 21:26 | 34 | 08:19 (35) | 20:12 | 22 | 08:06 (35) | 18:54 | 21 | 08:43 (24) | 16:44 | 93 | 15:52 (18) | 16:05 | 117 | 14:50 (19) |
| 9 | 05:04 | | 05:54 | | 07:43 (35) | 06:53 | | 07:48 (35) | 07:50 | | 08:22 (24) | 07:53 | | 11:31 (22) | 08:47 | | 11:47 (22) |
| | 22:13 | | 21:24 | 37 | 08:20 (35) | 20:09 | 13 | 08:01 (35) | 18:52 | 20 | 08:42 (24) | 16:42 | 93 | 15:52 (18) | 16:05 | 115 | 14:50 (19) |
| 10 | 05:06 | | 05:56 | | 07:42 (35) | 06:55 | | | 07:52 | | 08:22 (24) | 07:55 | | 11:30 (22) | 08:48 | | 11:48 (22) |
| | 22:12 | | 21:22 | 39 | 08:21 (35) | 20:07 | | | 18:49 | 19 | 08:41 (24) | 16:40 | 94 | 15:52 (18) | 16:04 | 115 | 14:51 (19) |
| 11 | 05:07 | | 05:58 | | 07:41 (35) | 06:57 | | | 07:54 | | 08:23 (24) | 07:57 | | 11:30 (22) | 08:50 | | 11:49 (22) |
| | 22:11 | | 21:19 | 41 | 08:22 (35) | 20:04 | | | 18:47 | 17 | 08:40 (24) | 16:38 | 93 | 15:51 (18) | 16:04 | 115 | 14:51 (19) |
| 12 | 05:08 | | 06:00 | | 07:40 (35) | 06:59 | | | 07:56 | | 08:25 (24) | 07:59 | | 11:31 (22) | 08:51 | | 11:49 (22) |
| | 22:10 | | 21:17 | 43 | 08:23 (35) | 20:01 | | | 18:44 | 13 | 08:38 (24) | 16:36 | 91 | 15:51 (18) | 16:04 | 114 | 14:51 (19) |
| 13 | 05:09 | | 06:02 | | 07:39 (35) | 07:01 | | | 07:58 | | 08:27 (24) | 08:01 | | 11:31 (22) | 08:52 | | 11:50 (22) |
| | 22:09 | | 21:15 | 44 | 08:23 (35) | 19:59 | | | 18:42 | 7 | 08:34 (24) | 16:34 | 90 | 15:51 (18) | 16:04 | 113 | 14:52 (19) |
| 14 | 05:11 | | 06:04 | | 07:38 (35) | 07:02 | | | 08:00 | | | 08:03 | | 11:31 (22) | 08:53 | | 11:50 (22) |
| | 22:08 | | 21:13 | 46 | 08:24 (35) | 19:56 | | | 18:39 | | | 16:33 | 88 | 15:50 (18) | 16:04 | 114 | 14:52 (19) |
| 15 | 05:12 | | 06:06 | | 07:37 (35) | 07:04 | | | 08:02 | | | 08:05 | | 11:31 (22) | 08:54 | | 11:51 (22) |
| | 22:07 | | 21:10 | 48 | 08:25 (35) | 19:54 | | | 18:37 | | | 16:31 | 86 | 15:49 (18) | 16:04 | 112 | 14:52 (19) |
| 16 | 05:13 | | 06:07 | | 07:37 (35) | 07:06 | | | 08:04 | | | 08:07 | | 11:32 (22) | 08:55 | | 11:52 (22) |
| | 22:06 | | 21:08 | 48 | 08:25 (35) | 19:51 | | | 18:35 | | | 16:29 | 83 | 15:48 (18) | 16:04 | 112 | 14:53 (19) |
| 17 | 05:15 | | 06:09 | | 07:37 (35) | 07:08 | | | 08:06 | | 09:33 (23) | 08:09 | | 11:32 (22) | 08:56 | | 11:53 (22) |
| | 22:04 | | 21:06 | 49 | 08:26 (35) | 19:48 | | | 18:32 | 5 | 09:38 (23) | 16:28 | 81 | 15:47 (18) | 16:04 | 112 | 14:54 (19) |
| 18 | 05:16 | | 06:11 | | 07:35 (35) | 07:10 | | | 08:08 | | 09:28 (23) | 08:11 | | 11:32 (22) | 08:56 | | 11:53 (22) |
| | 22:03 | | 21:04 | 50 | 08:25 (35) | 19:46 | | | 18:30 | 14 | 09:42 (23) | 16:26 | 75 | 15:45 (18) | 16:04 | 112 | 14:54 (19) |
| 19 | 05:18 | | 06:13 | | 07:35 (35) | 07:12 | | | 08:10 | | 09:26 (23) | 08:13 | | 11:33 (22) | 08:57 | | 11:54 (22) |
| | 22:02 | | 21:01 | 51 | 08:26 (35) | 19:43 | | | 18:27 | 18 | 09:44 (23) | 16:25 | 65 | 12:38 (22) | 16:04 | 112 | 14:55 (19) |
| 20 | 05:19 | | 06:15 | | 07:35 (35) | 07:14 | | | 08:12 | | 09:24 (23) | 08:15 | | 11:33 (22) | 08:58 | | 11:54 (22) |
| | 22:00 | | 20:59 | 51 | 08:26 (35) | 19:41 | | | 18:25 | 34 | 13:11 (22) | 16:23 | 65 | 12:38 (22) | 16:05 | 113 | 14:55 (19) |
| 21 | 05:21 | | 06:17 | | 07:35 (35) | 07:16 | | | 08:14 | | 09:23 (23) | 08:17 | | 11:34 (22) | 08:59 | | 11:55 (22) |
| | 21:59 | | 20:56 | 51 | 08:26 (35) | 19:38 | | | 18:23 | 48 | 13:16 (22) | 16:22 | 76 | 13:32 (21) | 16:05 | 112 | 14:56 (19) |
| 22 | 05:23 | | 06:19 | | 07:33 (35) | 07:18 | | | 08:16 | | 09:22 (23) | 08:19 | | 11:35 (22) | 08:59 | | 11:55 (22) |
| | 21:57 | | 20:54 | 52 | 08:25 (35) | 19:35 | | | 18:20 | 58 | 13:21 (22) | 16:20 | 90 | 14:36 (19) | 16:05 | 112 | 14:56 (19) |
| 23 | 05:24 | | 06:21 | | 07:33 (35) | 07:19 | | | 08:18 | | 09:21 (23) | 08:21 | | 11:35 (22) | 09:00 | | 11:56 (22) |
| | 21:56 | | 20:52 | 53 | 08:26 (35) | 19:33 | | | 18:18 | 64 | 13:23 (22) | 16:19 | 98 | 14:38 (19) | 16:06 | 113 | 14:57 (19) |
| 24 | 05:26 | | 06:23 | | 07:33 (35) | 07:21 | | | 08:20 | | 09:21 (23) | 08:23 | | 11:36 (22) | 09:00 | | 11:56 (22) |
| | 21:54 | | 20:49 | 52 | 08:25 (35) | 19:30 | | | 18:16 | 70 | 13:25 (22) | 16:18 | 101 | 14:39 (19) | 16:06 | 112 | 14:57 (19) |
| 25 | 05:27 | | 06:25 | | 07:33 (35) | 07:23 | | | 07:22 | | 08:20 (23) | 08:25 | | 11:36 (22) | 09:00 | | 11:56 (22) |
| | 21:52 | | 20:47 | 52 | 08:25 (35) | 19:28 | | | 17:13 | 75 | 12:27 (22) | 16:16 | 106 | 14:41 (19) | 16:07 | 112 | 14:57 (19) |
| 26 | 05:29 | | 06:26 | | 07:34 (35) | 07:25 | | | 07:24 | | 08:19 (23) | 08:27 | | 11:37 (22) | 09:01 | | 11:58 (22) |
| | 21:51 | | 20:44 | 51 | 08:25 (35) | 19:25 | | | 17:11 | 79 | 12:28 (22) | 16:15 | 108 | 14:42 (19) | 16:08 | 111 | 14:58 (19) |
| 27 | 05:31 | | 06:28 | | 07:33 (35) | 07:27 | | | 07:26 | | 08:20 (23) | 08:28 | | 11:38 (22) | 09:01 | | 11:58 (22) |
| | 21:49 | | 20:42 | 51 | 08:24 (35) | 19:22 | | | 17:09 | 81 | 12:30 (22) | 16:14 | 110 | 14:43 (19) | 16:09 | 112 | 14:59 (19) |
| 28 | 05:33 | | 06:30 | | 07:33 (35) | 07:29 | | | 07:28 | | 08:20 (23) | 08:30 | | 11:39 (22) | 09:01 | | 11:58 (22) |
| | 21:47 | | 20:39 | 50 | 08:23 (35) | 19:20 | | | 17:07 | 91 | 15:43 (18) | 16:13 | 112 | 14:44 (19) | 16:10 | 113 | 14:59 (19) |
| 29 | 05:34 | | 06:32 | | 07:34 (35) | 07:31 | | | 07:31 | | 08:20 (23) | 08:32 | | 11:39 (22) | 09:01 | | 11:58 (22) |
| | 21:46 | | 20:37 | 49 | 08:23 (35) | 19:17 | | | 17:04 | 100 | 15:46 (18) | 16:12 | 114 | 14:45 (19) | 16:10 | 114 | 15:00 (19) |
| 30 | 05:36 | | 06:34 | | 07:34 (35) | 07:33 | | 08:29 (24) | 07:33 | | 08:20 (23) | 08:34 | | 11:40 (22) | 09:01 | | 11:58 (22) |
| | 21:44 | | 20:34 | 48 | 08:22 (35) | 19:15 | 11 | 08:40 (24) | 17:02 | 105 | 15:47 (18) | 16:11 | 115 | 14:46 (19) | 16:11 | 112 | 14:59 (19) |
| 31 | 05:38 | | 06:36 | | 07:35 (35) | | | | 07:35 | | 08:20 (23) | | | | 09:01 | | 11:58 (22) |
| | 21:42 | | 20:32 | 46 | 08:21 (35) | | | | 17:00 | 107 | 15:48 (18) | | | | 16:12 | 114 | 15:00 (19) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1257 | | | 309 | | | 1186 | | | 2887 | | | 3526 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,51 | | | 0,24 | | | 0,23 | |
| Total reduction | | | | 0,38 | | | 0,29 | | | 0,12 | | | 0,03 | | | 0,02 | |
| Total, real | | | | 481 | | | 91 | | | 138 | | | 80 | | | 82 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:47 (37) | 08:28 | | 11:39 (22) | 07:27 | | 08:33 (23) | 07:08 | | | 05:55 | | 07:02 (35) | 05:02 | | |
| | 16:14 | 93 | 15:07 (19) | 17:08 | 92 | 16:27 (18) | 18:07 | 88 | 12:48 (22) | 20:10 | | | 21:09 | 51 | 07:53 (35) | 22:03 | | |
| 2 | 09:01 | | 11:48 (37) | 08:26 | | 11:39 (22) | 07:24 | | 08:35 (23) | 07:05 | | | 05:53 | | 07:02 (35) | 05:01 | | |
| | 16:15 | 91 | 15:07 (19) | 17:10 | 95 | 16:29 (18) | 18:09 | 82 | 12:47 (22) | 20:12 | | | 21:11 | 50 | 07:52 (35) | 22:04 | | |
| 3 | 09:01 | | 11:49 (37) | 08:24 | | 11:39 (22) | 07:22 | | 08:36 (23) | 07:03 | | | 05:51 | | 07:02 (35) | 05:00 | | |
| | 16:16 | 91 | 15:08 (19) | 17:12 | 98 | 16:30 (18) | 18:12 | 75 | 12:45 (22) | 20:14 | | | 21:13 | 50 | 07:52 (35) | 22:05 | | |
| 4 | 09:00 | | 11:50 (37) | 08:22 | | 11:38 (22) | 07:19 | | 08:40 (23) | 07:00 | | | 05:49 | | 07:02 (35) | 04:59 | | |
| | 16:18 | 94 | 15:08 (19) | 17:15 | 102 | 16:31 (18) | 18:14 | 64 | 12:43 (22) | 20:16 | | | 21:15 | 50 | 07:52 (35) | 22:06 | | |
| 5 | 09:00 | | 11:52 (37) | 08:20 | | 11:38 (22) | 07:17 | | 11:49 (22) | 06:58 | | | 05:46 | | 07:01 (35) | 04:58 | | |
| | 16:19 | 97 | 15:10 (19) | 17:17 | 104 | 16:32 (18) | 18:16 | 51 | 12:40 (22) | 20:18 | | | 21:17 | 51 | 07:52 (35) | 22:08 | | |
| 6 | 08:59 | | 11:53 (37) | 08:18 | | 11:38 (22) | 07:14 | | 11:52 (22) | 06:55 | | | 05:44 | | 07:01 (35) | 04:57 | | |
| | 16:20 | 98 | 15:10 (19) | 17:19 | 106 | 16:33 (18) | 18:18 | 45 | 12:37 (22) | 20:20 | | | 21:18 | 50 | 07:51 (35) | 22:09 | | |
| 7 | 08:59 | | 11:55 (37) | 08:16 | | 11:37 (22) | 07:12 | | 07:38 (24) | 06:53 | | | 05:42 | | 07:02 (35) | 04:56 | | |
| | 16:22 | 98 | 15:10 (19) | 17:21 | 108 | 16:33 (18) | 18:20 | 48 | 12:33 (22) | 20:22 | | | 21:20 | 49 | 07:51 (35) | 22:10 | | |
| 8 | 08:58 | | 11:56 (22) | 08:14 | | 11:37 (22) | 07:09 | | 07:35 (24) | 06:50 | | | 05:40 | | 07:02 (35) | 04:56 | | |
| | 16:23 | 99 | 15:10 (19) | 17:23 | 108 | 16:33 (18) | 18:22 | 44 | 12:28 (22) | 20:23 | | | 21:22 | 48 | 07:50 (35) | 22:11 | | |
| 9 | 08:58 | | 11:54 (22) | 08:12 | | 11:37 (22) | 07:07 | | 07:34 (24) | 06:48 | | | 05:38 | | 07:02 (35) | 04:55 | | |
| | 16:25 | 104 | 15:11 (19) | 17:25 | 110 | 16:34 (18) | 18:24 | 32 | 12:21 (22) | 20:25 | | | 21:24 | 48 | 07:50 (35) | 22:12 | | |
| 10 | 08:57 | | 11:54 (22) | 08:10 | | 11:37 (22) | 07:04 | | 07:32 (24) | 06:45 | | | 05:36 | | 07:02 (35) | 04:54 | | |
| | 16:26 | 106 | 15:12 (19) | 17:27 | 110 | 16:34 (18) | 18:26 | 19 | 07:51 (24) | 20:27 | | | 21:26 | 47 | 07:49 (35) | 22:13 | | |
| 11 | 08:56 | | 11:52 (22) | 08:08 | | 11:37 (22) | 07:02 | | 07:32 (24) | 06:43 | | | 05:34 | | 07:03 (35) | 04:54 | | |
| | 16:28 | 108 | 15:11 (19) | 17:29 | 110 | 16:34 (18) | 18:28 | 20 | 07:52 (24) | 20:29 | | | 21:28 | 46 | 07:49 (35) | 22:14 | | |
| 12 | 08:55 | | 11:51 (22) | 08:06 | | 11:37 (22) | 06:59 | | 07:30 (24) | 06:40 | | | 05:32 | | 07:03 (35) | 04:54 | | |
| | 16:29 | 112 | 15:12 (19) | 17:32 | 109 | 16:33 (18) | 18:30 | 22 | 07:52 (24) | 20:31 | | | 21:30 | 46 | 07:49 (35) | 22:14 | | |
| 13 | 08:54 | | 11:51 (22) | 08:04 | | 08:41 (23) | 06:57 | | 07:30 (24) | 06:38 | | | 05:30 | | 07:03 (35) | 04:53 | | |
| | 16:31 | 112 | 15:12 (19) | 17:34 | 119 | 16:33 (18) | 18:32 | 22 | 07:52 (24) | 20:33 | | | 21:32 | 45 | 07:48 (35) | 22:15 | | |
| 14 | 08:53 | | 11:50 (22) | 08:02 | | 08:38 (23) | 06:54 | | 07:30 (24) | 06:35 | | 07:28 (35) | 05:28 | | 07:04 (35) | 04:53 | | |
| | 16:33 | 114 | 15:13 (19) | 17:36 | 125 | 16:33 (18) | 18:34 | 22 | 07:52 (24) | 20:35 | 6 | 07:34 (35) | 21:34 | 43 | 07:47 (35) | 22:16 | | |
| 15 | 08:52 | | 11:49 (22) | 07:59 | | 08:36 (23) | 06:52 | | 07:30 (24) | 06:33 | | 07:22 (35) | 05:27 | | 07:05 (35) | 04:53 | | |
| | 16:35 | 116 | 15:13 (19) | 17:38 | 127 | 16:32 (18) | 18:36 | 21 | 07:51 (24) | 20:37 | 18 | 07:40 (35) | 21:35 | 42 | 07:47 (35) | 22:16 | | |
| 16 | 08:51 | | 11:48 (22) | 07:57 | | 08:35 (23) | 06:49 | | 07:30 (24) | 06:30 | | 07:18 (35) | 05:25 | | 07:05 (35) | 04:52 | | |
| | 16:36 | 116 | 15:12 (19) | 17:40 | 127 | 16:31 (18) | 18:38 | 21 | 07:51 (24) | 20:39 | 24 | 07:42 (35) | 21:37 | 40 | 07:45 (35) | 22:17 | | |
| 17 | 08:50 | | 11:48 (22) | 07:55 | | 08:34 (23) | 06:47 | | 07:31 (24) | 06:28 | | 07:16 (35) | 05:23 | | 07:06 (35) | 04:52 | | |
| | 16:38 | 117 | 15:13 (19) | 17:42 | 128 | 16:31 (18) | 18:40 | 18 | 07:49 (24) | 20:41 | 28 | 07:44 (35) | 21:39 | 39 | 07:45 (35) | 22:18 | | |
| 18 | 08:49 | | 11:47 (22) | 07:53 | | 08:33 (23) | 06:44 | | 07:31 (24) | 06:25 | | 07:14 (35) | 05:21 | | 07:07 (35) | 04:52 | | |
| | 16:40 | 119 | 15:13 (19) | 17:44 | 126 | 16:28 (18) | 18:42 | 16 | 07:47 (24) | 20:43 | 32 | 07:46 (35) | 21:41 | 37 | 07:44 (35) | 22:18 | | |
| 19 | 08:48 | | 11:46 (22) | 07:50 | | 08:32 (23) | 06:41 | | 07:33 (24) | 06:23 | | 07:11 (35) | 05:20 | | 07:08 (35) | 04:52 | | |
| | 16:42 | 118 | 15:13 (19) | 17:46 | 123 | 16:27 (18) | 18:44 | 13 | 07:46 (24) | 20:45 | 36 | 07:47 (35) | 21:42 | 35 | 07:43 (35) | 22:18 | | |
| 20 | 08:47 | | 11:46 (22) | 07:48 | | 08:32 (23) | 06:39 | | 07:36 (24) | 06:20 | | 07:10 (35) | 05:18 | | 07:08 (35) | 04:52 | | |
| | 16:44 | 117 | 15:13 (19) | 17:49 | 115 | 16:23 (18) | 18:46 | 5 | 07:41 (24) | 20:47 | 38 | 07:48 (35) | 21:44 | 34 | 07:42 (35) | 22:19 | | |
| 21 | 08:45 | | 11:45 (22) | 07:46 | | 08:31 (23) | 06:36 | | | 06:18 | | 07:09 (35) | 05:16 | | 07:10 (35) | 04:52 | | |
| | 16:46 | 116 | 15:12 (19) | 17:51 | 108 | 12:56 (22) | 18:48 | | | 20:49 | 41 | 07:50 (35) | 21:46 | 31 | 07:41 (35) | 22:19 | | |
| 22 | 08:44 | | 11:44 (22) | 07:44 | | 08:31 (23) | 06:34 | | | 06:16 | | 07:07 (35) | 05:15 | | 07:10 (35) | 04:52 | | |
| | 16:48 | 116 | 15:11 (19) | 17:53 | 107 | 12:56 (22) | 18:50 | | | 20:51 | 43 | 07:50 (35) | 21:48 | 29 | 07:39 (35) | 22:19 | | |
| 23 | 08:42 | | 11:44 (22) | 07:41 | | 08:31 (23) | 06:31 | | | 06:13 | | 07:06 (35) | 05:13 | | 07:12 (35) | 04:53 | | |
| | 16:50 | 114 | 15:11 (19) | 17:55 | 107 | 12:55 (22) | 18:52 | | | 20:53 | 45 | 07:51 (35) | 21:49 | 27 | 07:39 (35) | 22:19 | | |
| 24 | 08:41 | | 11:43 (22) | 07:39 | | 08:31 (23) | 06:29 | | | 06:11 | | 07:06 (35) | 05:12 | | 07:14 (35) | 04:53 | | |
| | 16:52 | 111 | 15:10 (19) | 17:57 | 106 | 12:55 (22) | 18:54 | | | 20:55 | 45 | 07:51 (35) | 21:51 | 23 | 07:37 (35) | 22:19 | | |
| 25 | 08:39 | | 11:42 (22) | 07:36 | | 08:31 (23) | 06:26 | | | 06:09 | | 07:05 (35) | 05:10 | | 07:15 (35) | 04:53 | | |
| | 16:54 | 105 | 15:08 (19) | 17:59 | 102 | 12:53 (22) | 18:56 | | | 20:57 | 47 | 07:52 (35) | 21:52 | 21 | 07:36 (35) | 22:19 | | |
| 26 | 08:38 | | 11:43 (22) | 07:34 | | 08:32 (23) | 06:23 | | | 06:06 | | 07:03 (35) | 05:09 | | 07:16 (35) | 04:54 | | |
| | 16:56 | 98 | 15:06 (19) | 18:01 | 100 | 12:53 (22) | 18:58 | | | 20:59 | 48 | 07:51 (35) | 21:54 | 18 | 07:34 (35) | 22:19 | | |
| 27 | 08:36 | | 11:42 (22) | 07:32 | | 08:32 (23) | 06:21 | | | 06:04 | | 07:03 (35) | 05:08 | | 07:19 (35) | 04:54 | | |
| | 16:58 | 88 | 14:03 (21) | 18:03 | 97 | 12:51 (22) | 19:00 | | | 21:01 | 49 | 07:52 (35) | 21:55 | 12 | 07:31 (35) | 22:19 | | |
| 28 | 08:35 | | 11:41 (22) | 07:29 | | 08:33 (23) | 06:18 | | | 06:02 | | 07:03 (35) | 05:06 | | 07:23 (35) | 04:55 | | |
| | 17:00 | 85 | 14:01 (21) | 18:05 | 93 | 12:50 (22) | 19:02 | | | 21:03 | 49 | 07:52 (35) | 21:57 | 5 | 07:28 (35) | 22:19 | | |
| 29 | 08:33 | | 11:41 (22) | | | | 07:16 | | | 05:59 | | 07:02 (35) | 05:05 | | | 04:55 | | |
| | 17:02 | 74 | 13:55 (21) | | | | 20:04 | | | 21:05 | 50 | 07:52 (35) | 21:58 | | | 22:19 | | |
| 30 | 08:31 | | 11:40 (22) | | | | 07:13 | | | 05:57 | | 07:02 (35) | 05:04 | | | 04:56 | | |
| | 17:04 | 80 | 16:22 (18) | | | | 20:06 | | | 21:07 | 50 | 07:52 (35) | 22:00 | | | 22:19 | | |
| 31 | 08:30 | | 11:40 (22) | | | | 07:11 | | | | | | 05:03 | | | | | |
| | 17:06 | 87 | 16:25 (18) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3194 | | | 3062 | | | 728 | | | 649 | | | 1067 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,27 | | | 0,34 | | | 0,49 | | | 0,98 | | | 0,98 | | | | |
| Total reduction | | 0,04 | | | 0,07 | | | 0,13 | | | 0,31 | | | 0,40 | | | | |
| Total, real | | 122 | | | 200 | | | 95 | | | 199 | | | 429 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:13 (35) | 06:38 | | | 07:35 | | 08:09 (24) | 07:37 | | 11:07 (22) | 08:35 | | 11:34 (22) |
| | 22:18 | | | 21:40 | 46 | 07:59 (35) | 20:29 | | | 19:12 | 22 | 08:31 (24) | 16:58 | 110 | 16:04 (18) | 16:10 | 108 | 14:53 (19) |
| 2 | 04:58 | | | 05:41 | | 07:13 (35) | 06:40 | | | 07:37 | | 08:09 (24) | 07:39 | | 11:07 (22) | 08:37 | | 11:36 (22) |
| | 22:18 | | | 21:38 | 47 | 08:00 (35) | 20:27 | | | 19:10 | 22 | 08:31 (24) | 16:56 | 108 | 16:03 (18) | 16:09 | 106 | 14:54 (19) |
| 3 | 04:58 | | | 05:43 | | 07:12 (35) | 06:42 | | | 07:39 | | 08:10 (24) | 07:41 | | 11:07 (22) | 08:38 | | 11:38 (22) |
| | 22:17 | | | 21:36 | 48 | 08:00 (35) | 20:24 | | | 19:07 | 20 | 08:30 (24) | 16:54 | 108 | 16:03 (18) | 16:08 | 103 | 14:55 (19) |
| 4 | 04:59 | | | 05:45 | | 07:12 (35) | 06:44 | | | 07:41 | | 08:10 (24) | 07:43 | | 11:08 (22) | 08:40 | | 11:41 (22) |
| | 22:17 | | | 21:34 | 48 | 08:00 (35) | 20:22 | | | 19:04 | 19 | 08:29 (24) | 16:52 | 106 | 16:03 (18) | 16:08 | 100 | 14:55 (19) |
| 5 | 05:00 | | | 05:47 | | 07:12 (35) | 06:45 | | | 07:42 | | 08:11 (24) | 07:45 | | 11:08 (22) | 08:42 | | 11:40 (37) |
| | 22:16 | | | 21:32 | 49 | 08:01 (35) | 20:19 | | | 19:02 | 40 | 13:02 (22) | 16:50 | 105 | 16:02 (18) | 16:07 | 99 | 14:55 (19) |
| 6 | 05:01 | | | 05:49 | | 07:11 (35) | 06:47 | | | 07:44 | | 08:13 (24) | 07:47 | | 11:08 (22) | 08:43 | | 11:39 (37) |
| | 22:15 | | | 21:30 | 49 | 08:00 (35) | 20:17 | | | 18:59 | 46 | 13:07 (22) | 16:48 | 104 | 16:02 (18) | 16:06 | 98 | 14:56 (19) |
| 7 | 05:02 | | | 05:51 | | 07:11 (35) | 06:49 | | | 07:46 | | 08:15 (24) | 07:49 | | 11:08 (22) | 08:44 | | 11:38 (37) |
| | 22:15 | | | 21:28 | 50 | 08:01 (35) | 20:14 | | | 18:57 | 49 | 13:11 (22) | 16:46 | 102 | 16:01 (18) | 16:06 | 97 | 14:56 (19) |
| 8 | 05:03 | | | 05:52 | | 07:11 (35) | 06:51 | | | 07:48 | | 12:26 (22) | 07:51 | | 11:10 (22) | 08:46 | | 11:38 (37) |
| | 22:14 | | | 21:26 | 50 | 08:01 (35) | 20:12 | | | 18:54 | 48 | 13:14 (22) | 16:44 | 99 | 16:01 (18) | 16:05 | 93 | 14:56 (19) |
| 9 | 05:04 | | | 05:54 | | 07:10 (35) | 06:53 | | | 07:50 | | 12:23 (22) | 07:53 | | 11:10 (22) | 08:47 | | 11:37 (37) |
| | 22:13 | | | 21:24 | 51 | 08:01 (35) | 20:09 | | | 18:52 | 53 | 13:16 (22) | 16:42 | 95 | 15:59 (18) | 16:05 | 90 | 14:56 (19) |
| 10 | 05:06 | | | 05:56 | | 07:10 (35) | 06:55 | | | 07:52 | | 09:12 (23) | 07:55 | | 11:10 (22) | 08:48 | | 11:38 (37) |
| | 22:12 | | | 21:22 | 51 | 08:01 (35) | 20:07 | | | 18:49 | 70 | 13:18 (22) | 16:40 | 92 | 15:58 (18) | 16:04 | 91 | 14:57 (19) |
| 11 | 05:07 | | | 05:58 | | 07:10 (35) | 06:57 | | | 07:54 | | 09:09 (23) | 07:57 | | 11:11 (22) | 08:50 | | 11:37 (37) |
| | 22:11 | | | 21:19 | 51 | 08:01 (35) | 20:04 | | | 18:47 | 78 | 13:19 (22) | 16:38 | 87 | 15:56 (18) | 16:04 | 93 | 14:57 (19) |
| 12 | 05:08 | | | 06:00 | | 07:10 (35) | 06:59 | | | 07:56 | | 09:07 (23) | 07:59 | | 11:12 (22) | 08:51 | | 11:37 (37) |
| | 22:10 | | | 21:17 | 51 | 08:01 (35) | 20:01 | | | 18:44 | 86 | 13:21 (22) | 16:36 | 79 | 15:53 (18) | 16:04 | 93 | 14:58 (19) |
| 13 | 05:09 | | | 06:02 | | 07:10 (35) | 07:01 | | | 07:58 | | 09:06 (23) | 08:01 | | 11:13 (22) | 08:52 | | 11:37 (37) |
| | 22:09 | | | 21:15 | 50 | 08:00 (35) | 19:59 | | | 18:42 | 91 | 13:22 (22) | 16:34 | 75 | 13:28 (21) | 16:04 | 95 | 14:58 (19) |
| 14 | 05:11 | | | 06:04 | | 07:10 (35) | 07:02 | | | 08:00 | | 09:05 (23) | 08:03 | | 11:13 (22) | 08:53 | | 11:37 (37) |
| | 22:08 | | | 21:13 | 50 | 08:00 (35) | 19:56 | | | 18:39 | 94 | 13:23 (22) | 16:33 | 85 | 13:33 (21) | 16:04 | 94 | 14:58 (19) |
| 15 | 05:12 | | | 06:06 | | 07:10 (35) | 07:04 | | | 08:02 | | 09:04 (23) | 08:05 | | 11:14 (22) | 08:54 | | 11:37 (37) |
| | 22:07 | | | 21:10 | 50 | 08:00 (35) | 19:54 | | | 18:37 | 98 | 13:24 (22) | 16:31 | 88 | 13:35 (21) | 16:04 | 95 | 14:58 (19) |
| 16 | 05:13 | | 07:30 (35) | 06:07 | | 07:11 (35) | 07:06 | | | 08:04 | | 09:04 (23) | 08:07 | | 11:16 (22) | 08:55 | | 11:37 (37) |
| | 22:06 | 9 | 07:39 (35) | 21:08 | 48 | 07:59 (35) | 19:51 | | | 18:35 | 101 | 13:25 (22) | 16:29 | 98 | 14:39 (19) | 16:04 | 95 | 14:59 (19) |
| 17 | 05:15 | | 07:27 (35) | 06:09 | | 07:11 (35) | 07:08 | | | 08:06 | | 09:03 (23) | 08:09 | | 11:16 (22) | 08:56 | | 11:38 (37) |
| | 22:04 | 15 | 07:42 (35) | 21:06 | 48 | 07:59 (35) | 19:48 | | | 18:32 | 104 | 13:26 (22) | 16:28 | 106 | 14:42 (19) | 16:04 | 96 | 14:59 (19) |
| 18 | 05:16 | | 07:25 (35) | 06:11 | | 07:11 (35) | 07:10 | | | 08:08 | | 09:02 (23) | 08:11 | | 11:17 (22) | 08:56 | | 11:38 (37) |
| | 22:03 | 19 | 07:44 (35) | 21:04 | 46 | 07:57 (35) | 19:46 | | | 18:30 | 106 | 13:26 (22) | 16:26 | 111 | 14:44 (19) | 16:04 | 96 | 15:00 (19) |
| 19 | 05:18 | | 07:24 (35) | 06:13 | | 07:11 (35) | 07:12 | | | 08:10 | | 09:02 (23) | 08:13 | | 11:18 (22) | 08:57 | | 11:39 (37) |
| | 22:02 | 22 | 07:46 (35) | 21:01 | 46 | 07:57 (35) | 19:43 | | | 18:27 | 106 | 13:26 (22) | 16:25 | 114 | 14:45 (19) | 16:04 | 96 | 15:01 (19) |
| 20 | 05:19 | | 07:22 (35) | 06:15 | | 07:12 (35) | 07:14 | | | 08:12 | | 09:02 (23) | 08:15 | | 11:19 (22) | 08:58 | | 11:39 (37) |
| | 22:00 | 26 | 07:48 (35) | 20:59 | 44 | 07:56 (35) | 19:41 | | | 18:25 | 108 | 13:27 (22) | 16:23 | 116 | 14:46 (19) | 16:05 | 95 | 15:00 (19) |
| 21 | 05:21 | | 07:22 (35) | 06:17 | | 07:13 (35) | 07:16 | | | 08:14 | | 09:02 (23) | 08:17 | | 11:21 (22) | 08:59 | | 11:40 (37) |
| | 21:59 | 27 | 07:49 (35) | 20:56 | 42 | 07:55 (35) | 19:38 | | | 18:23 | 108 | 13:27 (22) | 16:22 | 116 | 14:48 (19) | 16:05 | 96 | 15:01 (19) |
| 22 | 05:23 | | 07:20 (35) | 06:19 | | 07:13 (35) | 07:18 | | | 08:16 | | 09:03 (23) | 08:19 | | 11:22 (22) | 08:59 | | 11:40 (37) |
| | 21:57 | 30 | 07:50 (35) | 20:54 | 40 | 07:53 (35) | 19:35 | | | 18:20 | 117 | 16:55 (18) | 16:20 | 117 | 14:49 (19) | 16:05 | 96 | 15:01 (19) |
| 23 | 05:24 | | 07:20 (35) | 06:21 | | 07:14 (35) | 07:19 | | | 08:18 | | 09:03 (23) | 08:21 | | 11:23 (22) | 09:00 | | 11:41 (37) |
| | 21:56 | 32 | 07:52 (35) | 20:52 | 38 | 07:52 (35) | 19:33 | | | 18:18 | 124 | 16:58 (18) | 16:19 | 118 | 14:50 (19) | 16:06 | 96 | 15:02 (19) |
| 24 | 05:26 | | 07:18 (35) | 06:23 | | 07:15 (35) | 07:21 | | 08:18 (24) | 08:20 | | 09:03 (23) | 08:23 | | 11:24 (22) | 09:00 | | 11:41 (37) |
| | 21:54 | 35 | 07:53 (35) | 20:49 | 36 | 07:51 (35) | 19:30 | 10 | 08:28 (24) | 18:16 | 127 | 16:59 (18) | 16:18 | 119 | 14:50 (19) | 16:06 | 95 | 15:02 (19) |
| 25 | 05:27 | | 07:18 (35) | 06:25 | | 07:17 (35) | 07:23 | | 08:15 (24) | 07:22 | | 08:04 (23) | 08:25 | | 11:26 (22) | 09:00 | | 11:41 (37) |
| | 21:52 | 36 | 07:54 (35) | 20:47 | 32 | 07:49 (35) | 19:28 | 15 | 08:30 (24) | 17:13 | 127 | 16:00 (18) | 16:16 | 117 | 14:51 (19) | 16:07 | 96 | 15:03 (19) |
| 26 | 05:29 | | 07:17 (35) | 06:26 | | 07:19 (35) | 07:25 | | 08:14 (24) | 07:24 | | 08:05 (23) | 08:27 | | 11:27 (22) | 09:01 | | 11:43 (37) |
| | 21:51 | 38 | 07:55 (35) | 20:44 | 28 | 07:47 (35) | 19:25 | 18 | 08:32 (24) | 17:11 | 128 | 16:01 (18) | 16:15 | 116 | 14:51 (19) | 16:08 | 95 | 15:04 (19) |
| 27 | 05:31 | | 07:16 (35) | 06:28 | | 07:20 (35) | 07:27 | | 08:12 (24) | 07:26 | | 08:07 (23) | 08:28 | | 11:28 (22) | 09:01 | | 11:43 (37) |
| | 21:49 | 40 | 07:56 (35) | 20:42 | 24 | 07:44 (35) | 19:22 | 19 | 08:31 (24) | 17:09 | 125 | 16:02 (18) | 16:14 | 116 | 14:52 (19) | 16:09 | 96 | 15:05 (19) |
| 28 | 05:33 | | 07:15 (35) | 06:30 | | 07:23 (35) | 07:29 | | 08:11 (24) | 07:28 | | 08:08 (23) | 08:30 | | 11:30 (22) | 09:01 | | 11:44 (37) |
| | 21:47 | 41 | 07:56 (35) | 20:39 | 17 | 07:40 (35) | 19:20 | 21 | 08:32 (24) | 17:07 | 124 | 16:03 (18) | 16:13 | 115 | 14:53 (19) | 16:10 | 94 | 15:05 (19) |
| 29 | 05:34 | | 07:15 (35) | 06:32 | | 07:29 (35) | 07:31 | | 08:10 (24) | 07:31 | | 08:11 (23) | 08:32 | | 11:32 (22) | 09:01 | | 11:45 (37) |
| | 21:46 | 42 | 07:57 (35) | 20:37 | 5 | 07:34 (35) | 19:17 | 22 | 08:32 (24) | 17:04 | 120 | 16:03 (18) | 16:12 | 112 | 14:53 (19) | 16:10 | 96 | 15:06 (19) |
| 30 | 05:36 | | 07:15 (35) | 06:34 | | | 07:33 | | 08:10 (24) | 07:33 | | 11:06 (22) | 08:34 | | 11:33 (22) | 09:01 | | 11:45 (37) |
| | 21:44 | 43 | 07:58 (35) | 20:34 | | | 19:15 | 22 | 08:32 (24) | 17:02 | 110 | 16:03 (18) | 16:11 | 112 | 14:54 (19) | 16:11 | 93 | 15:05 (19) |
| 31 | 05:38 | | 07:13 (35) | 06:36 | | | | | | 07:35 | | 11:06 (22) | | | | 09:01 | | 11:46 (37) |
| | 21:42 | 45 | 07:58 (35) | 20:32 | | | | | | 17:00 | 110 | 16:03 (18) | | | | 16:12 | 93 | 15:06 (19) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 500 | | | 1235 | | | 127 | | | 2681 | | | 3146 | | | 2979 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,98 | | | 0,97 | | | 0,36 | | | 0,26 | | | 0,31 | |
| Total reduction | | 0,38 | | | 0,40 | | | 0,30 | | | 0,09 | | | 0,03 | | | 0,03 | |
| Total, real | | 189 | | | 495 | | | 39 | | | 237 | | | 103 | | | 99 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:59 (37) | 08:28 | | 12:30 (22) | 07:27 | | 08:24 (23) | 07:08 | | | 05:55 | | 06:49 (35) | 05:02 | | 06:38 (35) |
| | 16:14 | 87 | 15:22 (19) | 17:08 | 112 | 15:32 (19) | 18:07 | 130 | 13:50 (22) | 20:10 | | | 21:09 | 33 | 07:22 (35) | 22:03 | 54 | 07:32 (35) |
| 2 | 09:01 | | 11:59 (37) | 08:26 | | 12:29 (22) | 07:24 | | 08:25 (23) | 07:05 | | | 05:53 | | 06:47 (35) | 05:01 | | 06:38 (35) |
| | 16:15 | 90 | 15:23 (19) | 17:10 | 106 | 15:30 (19) | 18:09 | 130 | 13:51 (22) | 20:12 | | | 21:11 | 37 | 07:24 (35) | 22:04 | 53 | 07:31 (35) |
| 3 | 09:01 | | 12:00 (37) | 08:24 | | 12:27 (22) | 07:22 | | 08:24 (23) | 07:03 | | | 05:51 | | 06:46 (35) | 05:00 | | 06:39 (35) |
| | 16:16 | 89 | 15:24 (19) | 17:12 | 97 | 14:37 (21) | 18:12 | 129 | 13:50 (22) | 20:14 | | | 21:13 | 39 | 07:25 (35) | 22:05 | 53 | 07:32 (35) |
| 4 | 09:00 | | 12:01 (37) | 08:22 | | 12:26 (22) | 07:19 | | 08:25 (23) | 07:00 | | | 05:48 | | 06:44 (35) | 04:59 | | 06:39 (35) |
| | 16:18 | 90 | 15:25 (19) | 17:15 | 94 | 14:35 (21) | 18:14 | 128 | 13:50 (22) | 20:16 | | | 21:15 | 42 | 07:26 (35) | 22:06 | 53 | 07:32 (35) |
| 5 | 09:00 | | 12:02 (37) | 08:20 | | 12:26 (22) | 07:17 | | 08:26 (23) | 06:58 | | | 05:46 | | 06:43 (35) | 04:58 | | 06:39 (35) |
| | 16:19 | 89 | 15:26 (19) | 17:17 | 91 | 14:33 (21) | 18:16 | 124 | 13:49 (22) | 20:18 | | | 21:17 | 44 | 07:27 (35) | 22:08 | 53 | 07:32 (35) |
| 6 | 08:59 | | 12:03 (37) | 08:18 | | 12:25 (22) | 07:14 | | 08:27 (23) | 06:55 | | | 05:44 | | 06:42 (35) | 04:57 | | 06:40 (35) |
| | 16:20 | 90 | 15:27 (19) | 17:19 | 85 | 14:29 (21) | 18:18 | 122 | 13:49 (22) | 20:20 | | | 21:18 | 45 | 07:27 (35) | 22:09 | 52 | 07:32 (35) |
| 7 | 08:59 | | 12:04 (37) | 08:16 | | 12:23 (22) | 07:12 | | 08:28 (23) | 06:53 | | | 05:42 | | 06:41 (35) | 04:56 | | 06:40 (35) |
| | 16:22 | 90 | 15:28 (19) | 17:21 | 79 | 16:39 (18) | 18:20 | 118 | 13:48 (22) | 20:22 | | | 21:20 | 47 | 07:28 (35) | 22:10 | 52 | 07:32 (35) |
| 8 | 08:58 | | 12:05 (37) | 08:14 | | 12:22 (22) | 07:09 | | 08:30 (23) | 06:50 | | | 05:40 | | 06:40 (35) | 04:56 | | 06:40 (35) |
| | 16:23 | 90 | 15:28 (19) | 17:23 | 92 | 16:44 (18) | 18:22 | 112 | 13:47 (22) | 20:23 | | | 21:22 | 49 | 07:29 (35) | 22:11 | 51 | 07:31 (35) |
| 9 | 08:58 | | 12:06 (37) | 08:12 | | 12:22 (22) | 07:07 | | 08:33 (23) | 06:48 | | | 05:38 | | 06:39 (35) | 04:55 | | 06:41 (35) |
| | 16:25 | 89 | 15:29 (19) | 17:25 | 98 | 16:47 (18) | 18:24 | 105 | 13:47 (22) | 20:25 | | | 21:24 | 50 | 07:29 (35) | 22:12 | 51 | 07:32 (35) |
| 10 | 08:57 | | 12:09 (37) | 08:10 | | 12:21 (22) | 07:04 | | 12:13 (22) | 06:45 | | | 05:36 | | 06:39 (35) | 04:54 | | 06:41 (35) |
| | 16:26 | 89 | 15:31 (19) | 17:27 | 103 | 16:49 (18) | 18:26 | 93 | 13:46 (22) | 20:27 | | | 21:26 | 50 | 07:29 (35) | 22:13 | 50 | 07:31 (35) |
| 11 | 08:56 | | 12:09 (37) | 08:08 | | 12:20 (22) | 07:02 | | 07:29 (24) | 06:43 | | | 05:34 | | 06:39 (35) | 04:54 | | 06:41 (35) |
| | 16:28 | 88 | 15:31 (19) | 17:29 | 107 | 16:50 (18) | 18:28 | 102 | 13:45 (22) | 20:29 | | | 21:28 | 52 | 07:31 (35) | 22:14 | 51 | 07:32 (35) |
| 12 | 08:55 | | 12:12 (37) | 08:06 | | 12:19 (22) | 06:59 | | 07:26 (24) | 06:40 | | | 05:32 | | 06:38 (35) | 04:54 | | 06:42 (35) |
| | 16:29 | 83 | 15:31 (19) | 17:32 | 110 | 16:50 (18) | 18:30 | 106 | 13:44 (22) | 20:31 | | | 21:30 | 53 | 07:31 (35) | 22:14 | 50 | 07:32 (35) |
| 13 | 08:54 | | 12:16 (37) | 08:04 | | 12:18 (22) | 06:57 | | 07:24 (24) | 06:38 | | | 05:30 | | 06:37 (35) | 04:53 | | 06:43 (35) |
| | 16:31 | 77 | 15:32 (19) | 17:34 | 114 | 16:52 (18) | 18:32 | 106 | 13:42 (22) | 20:33 | | | 21:32 | 54 | 07:31 (35) | 22:15 | 49 | 07:32 (35) |
| 14 | 08:53 | | 13:55 (21) | 08:02 | | 12:18 (22) | 06:54 | | 07:23 (24) | 06:35 | | | 05:28 | | 06:37 (35) | 04:53 | | 06:42 (35) |
| | 16:33 | 73 | 15:33 (19) | 17:36 | 115 | 16:52 (18) | 18:34 | 106 | 13:41 (22) | 20:35 | | | 21:34 | 54 | 07:31 (35) | 22:16 | 50 | 07:32 (35) |
| 15 | 08:52 | | 13:55 (21) | 07:59 | | 12:17 (22) | 06:52 | | 07:22 (24) | 06:33 | | | 05:27 | | 06:37 (35) | 04:53 | | 06:43 (35) |
| | 16:35 | 75 | 15:34 (19) | 17:38 | 117 | 16:52 (18) | 18:36 | 106 | 13:40 (22) | 20:37 | | | 21:35 | 55 | 07:32 (35) | 22:16 | 49 | 07:32 (35) |
| 16 | 08:51 | | 13:55 (21) | 07:57 | | 08:39 (23) | 06:49 | | 07:22 (24) | 06:30 | | | 05:25 | | 06:37 (35) | 04:52 | | 06:43 (35) |
| | 16:36 | 76 | 15:34 (19) | 17:40 | 125 | 16:53 (18) | 18:38 | 104 | 13:39 (22) | 20:39 | | | 21:37 | 54 | 07:31 (35) | 22:17 | 49 | 07:32 (35) |
| 17 | 08:50 | | 13:56 (21) | 07:55 | | 08:35 (23) | 06:47 | | 07:21 (24) | 06:28 | | | 05:23 | | 06:37 (35) | 04:52 | | 06:43 (35) |
| | 16:38 | 75 | 15:35 (19) | 17:42 | 135 | 16:53 (18) | 18:40 | 100 | 13:36 (22) | 20:41 | | | 21:39 | 55 | 07:32 (35) | 22:18 | 49 | 07:32 (35) |
| 18 | 08:49 | | 13:56 (21) | 07:53 | | 08:32 (23) | 06:44 | | 07:20 (24) | 06:25 | | | 05:21 | | 06:36 (35) | 04:52 | | 06:44 (35) |
| | 16:40 | 76 | 15:36 (19) | 17:44 | 142 | 16:53 (18) | 18:42 | 97 | 13:34 (22) | 20:43 | | | 21:41 | 56 | 07:32 (35) | 22:18 | 48 | 07:32 (35) |
| 19 | 08:48 | | 13:56 (21) | 07:50 | | 08:30 (23) | 06:41 | | 07:20 (24) | 06:23 | | | 05:20 | | 06:37 (35) | 04:52 | | 06:44 (35) |
| | 16:42 | 77 | 15:36 (19) | 17:46 | 146 | 16:53 (18) | 18:44 | 93 | 13:32 (22) | 20:45 | | | 21:42 | 55 | 07:32 (35) | 22:18 | 48 | 07:32 (35) |
| 20 | 08:47 | | 13:57 (21) | 07:48 | | 08:29 (23) | 06:39 | | 07:20 (24) | 06:20 | | | 05:18 | | 06:36 (35) | 04:52 | | 06:44 (35) |
| | 16:44 | 76 | 15:36 (19) | 17:49 | 149 | 16:53 (18) | 18:46 | 87 | 13:30 (22) | 20:47 | | | 21:44 | 56 | 07:32 (35) | 22:19 | 48 | 07:32 (35) |
| 21 | 08:45 | | 13:57 (21) | 07:46 | | 08:27 (23) | 06:36 | | 07:21 (24) | 06:18 | | | 05:16 | | 06:37 (35) | 04:52 | | 06:44 (35) |
| | 16:46 | 75 | 15:36 (19) | 17:51 | 150 | 16:52 (18) | 18:48 | 80 | 13:27 (22) | 20:49 | | | 21:46 | 55 | 07:32 (35) | 22:19 | 48 | 07:32 (35) |
| 22 | 08:44 | | 12:50 (22) | 07:44 | | 08:27 (23) | 06:34 | | 07:21 (24) | 06:16 | | | 05:15 | | 06:36 (35) | 04:52 | | 06:45 (35) |
| | 16:48 | 92 | 15:36 (19) | 17:53 | 150 | 16:51 (18) | 18:50 | 71 | 13:23 (22) | 20:51 | | | 21:47 | 56 | 07:32 (35) | 22:19 | 48 | 07:33 (35) |
| 23 | 08:42 | | 12:47 (22) | 07:41 | | 08:26 (23) | 06:31 | | 07:23 (24) | 06:13 | | | 05:13 | | 06:36 (35) | 04:53 | | 06:45 (35) |
| | 16:50 | 101 | 15:37 (19) | 17:55 | 151 | 16:50 (18) | 18:52 | 60 | 13:19 (22) | 20:53 | | | 21:49 | 56 | 07:32 (35) | 22:19 | 48 | 07:33 (35) |
| 24 | 08:41 | | 12:43 (22) | 07:39 | | 08:25 (23) | 06:29 | | 07:25 (24) | 06:11 | | | 05:12 | | 06:37 (35) | 04:53 | | 06:45 (35) |
| | 16:52 | 106 | 15:37 (19) | 17:57 | 150 | 16:49 (18) | 18:54 | 43 | 13:13 (22) | 20:55 | | | 21:51 | 55 | 07:32 (35) | 22:19 | 48 | 07:33 (35) |
| 25 | 08:39 | | 12:41 (22) | 07:36 | | 08:24 (23) | 06:26 | | 12:55 (22) | 06:09 | | | 05:10 | | 06:37 (35) | 04:53 | | 06:45 (35) |
| | 16:54 | 108 | 15:36 (19) | 17:59 | 148 | 16:46 (18) | 18:56 | 4 | 12:59 (22) | 20:57 | | | 21:52 | 56 | 07:33 (35) | 22:19 | 49 | 07:34 (35) |
| 26 | 08:38 | | 12:39 (22) | 07:34 | | 08:25 (23) | 06:23 | | | 06:06 | | | 05:09 | | 06:36 (35) | 04:54 | | 06:45 (35) |
| | 16:56 | 113 | 15:37 (19) | 18:01 | 141 | 16:44 (18) | 18:58 | | | 20:59 | | | 21:54 | 56 | 07:32 (35) | 22:19 | 49 | 07:34 (35) |
| 27 | 08:36 | | 12:37 (22) | 07:32 | | 08:24 (23) | 06:21 | | | 06:04 | | 07:01 (35) | 05:08 | | 06:37 (35) | 04:54 | | 06:46 (35) |
| | 16:58 | 115 | 15:37 (19) | 18:03 | 132 | 13:51 (22) | 19:00 | | | 21:01 | 9 | 07:10 (35) | 21:55 | 55 | 07:32 (35) | 22:19 | 49 | 07:35 (35) |
| 28 | 08:35 | | 12:36 (22) | 07:29 | | 08:24 (23) | 06:18 | | | 06:02 | | 06:56 (35) | 05:06 | | 06:37 (35) | 04:55 | | 06:45 (35) |
| | 17:00 | 115 | 15:36 (19) | 18:05 | 132 | 13:51 (22) | 19:02 | | | 21:03 | 19 | 07:15 (35) | 21:57 | 55 | 07:32 (35) | 22:19 | 50 | 07:35 (35) |
| 29 | 08:33 | | 12:34 (22) | | | | 07:16 | | | 05:59 | | 06:53 (35) | 05:05 | | 06:37 (35) | 04:55 | | 06:46 (35) |
| | 17:02 | 116 | 15:35 (19) | | | | 20:04 | | | 21:05 | 25 | 07:18 (35) | 21:58 | 55 | 07:32 (35) | 22:19 | 49 | 07:35 (35) |
| 30 | 08:31 | | 12:32 (22) | | | | 07:13 | | | 05:57 | | 06:51 (35) | 05:04 | | 06:38 (35) | 04:56 | | 06:45 (35) |
| | 17:04 | 116 | 15:34 (19) | | | | 20:06 | | | 21:07 | 29 | 07:20 (35) | 22:00 | 54 | 07:32 (35) | 22:19 | 50 | 07:35 (35) |
| 31 | 08:30 | | 12:31 (22) | | | | 07:11 | | | | | | 05:03 | | 06:38 (35) | | | |
| | 17:06 | 114 | 15:33 (19) | | | | 20:08 | | | | | | 22:01 | 54 | 07:32 (35) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 2840 | | | 3371 | | | 2456 | | | 82 | | | 1587 | | | 1501 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,37 | | | 0,26 | | | 0,24 | | | 0,95 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,05 | | | 0,05 | | | 0,07 | | | 0,31 | | | 0,41 | | | 0,38 | |
| Total, real | | 155 | | | 180 | | | 167 | | | 26 | | | 648 | | | 573 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

# SHADOW - Calendar

## Calculation: Foninės VEShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:46 (35) | 05:40 | 06:49 (35) | 06:38 | | 07:35 | 08:04 (24) | 07:37 | 11:51 (22) | 08:35 | 11:52 (37) |
| | 22:18 50 | 07:36 (35) | 21:40 52 | 07:41 (35) | 20:29 | | 19:12 106 | 14:22 (22) | 16:58 101 | 16:18 (18) | 16:10 86 | 15:13 (19) |
| 2 | 04:58 | 06:46 (35) | 05:41 | 06:49 (35) | 06:40 | | 07:37 | 08:06 (24) | 07:39 | 11:51 (22) | 08:37 | 11:51 (37) |
| | 22:18 50 | 07:36 (35) | 21:38 52 | 07:41 (35) | 20:27 | | 19:10 104 | 14:23 (22) | 16:56 97 | 16:16 (18) | 16:09 89 | 15:13 (19) |
| 3 | 04:58 | 06:46 (35) | 05:43 | 06:49 (35) | 06:42 | | 07:39 | 08:09 (24) | 07:41 | 11:52 (22) | 08:38 | 11:50 (37) |
| | 22:17 51 | 07:37 (35) | 21:36 50 | 07:39 (35) | 20:24 | | 19:07 99 | 14:23 (22) | 16:54 90 | 16:13 (18) | 16:08 89 | 15:13 (19) |
| 4 | 04:59 | 06:46 (35) | 05:45 | 06:50 (35) | 06:44 | | 07:41 | 09:13 (23) | 07:43 | 11:54 (22) | 08:40 | 11:50 (37) |
| | 22:17 51 | 07:37 (35) | 21:34 49 | 07:39 (35) | 20:22 | | 19:04 99 | 14:24 (22) | 16:52 77 | 13:11 (22) | 16:08 90 | 15:13 (19) |
| 5 | 05:00 | 06:46 (35) | 05:47 | 06:51 (35) | 06:45 | | 07:42 | 09:08 (23) | 07:45 | 11:55 (22) | 08:41 | 11:49 (37) |
| | 22:16 51 | 07:37 (35) | 21:32 48 | 07:39 (35) | 20:19 | | 19:02 110 | 14:24 (22) | 16:50 86 | 13:59 (21) | 16:07 90 | 15:13 (19) |
| 6 | 05:01 | 06:46 (35) | 05:49 | 06:51 (35) | 06:47 | | 07:44 | 09:05 (23) | 07:47 | 11:55 (22) | 08:43 | 11:49 (37) |
| | 22:15 51 | 07:37 (35) | 21:30 46 | 07:37 (35) | 20:17 | | 18:59 116 | 14:24 (22) | 16:48 92 | 14:03 (21) | 16:06 90 | 15:13 (19) |
| 7 | 05:02 | 06:46 (35) | 05:51 | 06:52 (35) | 06:49 | | 07:46 | 09:03 (23) | 07:49 | 11:56 (22) | 08:44 | 11:49 (37) |
| | 22:15 52 | 07:38 (35) | 21:28 45 | 07:37 (35) | 20:14 | | 18:57 119 | 14:24 (22) | 16:46 95 | 14:05 (21) | 16:06 89 | 15:12 (19) |
| 8 | 05:03 | 06:46 (35) | 05:52 | 06:53 (35) | 06:51 | | 07:48 | 09:01 (23) | 07:51 | 11:58 (22) | 08:46 | 11:49 (37) |
| | 22:14 52 | 07:38 (35) | 21:26 43 | 07:36 (35) | 20:12 | | 18:54 123 | 14:24 (22) | 16:44 97 | 14:08 (21) | 16:05 90 | 15:13 (19) |
| 9 | 05:04 | 06:46 (35) | 05:54 | 06:53 (35) | 06:53 | | 07:50 | 09:00 (23) | 07:53 | 11:59 (22) | 08:47 | 11:49 (37) |
| | 22:13 52 | 07:38 (35) | 21:24 41 | 07:34 (35) | 20:09 | | 18:52 126 | 14:24 (22) | 16:42 109 | 15:01 (19) | 16:05 88 | 15:12 (19) |
| 10 | 05:06 | 06:46 (35) | 05:56 | 06:54 (35) | 06:55 | | 07:52 | 08:59 (23) | 07:55 | 12:01 (22) | 08:48 | 11:49 (37) |
| | 22:12 53 | 07:39 (35) | 21:22 39 | 07:33 (35) | 20:07 | | 18:49 128 | 14:24 (22) | 16:40 112 | 15:03 (19) | 16:04 90 | 15:13 (19) |
| 11 | 05:07 | 06:47 (35) | 05:58 | 06:56 (35) | 06:57 | | 07:54 | 08:58 (23) | 07:57 | 12:02 (22) | 08:50 | 11:49 (37) |
| | 22:11 53 | 07:40 (35) | 21:19 36 | 07:32 (35) | 20:04 | | 18:47 130 | 14:24 (22) | 16:38 114 | 15:04 (19) | 16:04 88 | 15:13 (19) |
| 12 | 05:08 | 06:46 (35) | 06:00 | 06:58 (35) | 06:59 | | 07:56 | 08:57 (23) | 07:59 | 12:04 (22) | 08:51 | 11:49 (37) |
| | 22:10 54 | 07:40 (35) | 21:17 32 | 07:30 (35) | 20:01 | | 18:44 131 | 14:24 (22) | 16:36 117 | 15:06 (19) | 16:04 87 | 15:12 (19) |
| 13 | 05:09 | 06:46 (35) | 06:02 | 06:59 (35) | 07:01 | | 07:58 | 08:57 (23) | 08:01 | 12:06 (22) | 08:52 | 11:49 (37) |
| | 22:09 54 | 07:40 (35) | 21:15 28 | 07:27 (35) | 19:59 | | 18:42 130 | 14:23 (22) | 16:34 116 | 15:07 (19) | 16:04 85 | 15:12 (19) |
| 14 | 05:11 | 06:46 (35) | 06:04 | 07:01 (35) | 07:02 | | 08:00 | 08:56 (23) | 08:03 | 12:08 (22) | 08:53 | 11:49 (37) |
| | 22:08 54 | 07:40 (35) | 21:13 24 | 07:25 (35) | 19:56 | | 18:39 132 | 14:23 (22) | 16:33 116 | 15:08 (19) | 16:04 86 | 15:12 (19) |
| 15 | 05:12 | 06:46 (35) | 06:06 | 07:05 (35) | 07:04 | | 08:02 | 08:57 (23) | 08:05 | 12:09 (22) | 08:54 | 11:50 (37) |
| | 22:07 54 | 07:40 (35) | 21:10 17 | 07:22 (35) | 19:54 | | 18:37 137 | 17:13 (18) | 16:31 114 | 15:08 (19) | 16:04 84 | 15:12 (19) |
| 16 | 05:13 | 06:46 (35) | 06:07 | 07:12 (35) | 07:06 | | 08:04 | 08:57 (23) | 08:07 | 12:12 (22) | 08:55 | 11:50 (37) |
| | 22:06 55 | 07:41 (35) | 21:08 2 | 07:14 (35) | 19:51 | | 18:35 144 | 17:17 (18) | 16:29 113 | 15:10 (19) | 16:04 84 | 15:12 (19) |
| 17 | 05:15 | 06:46 (35) | 06:09 | | 07:08 | | 08:06 | 08:57 (23) | 08:09 | 12:15 (22) | 08:56 | 11:50 (37) |
| | 22:04 55 | 07:41 (35) | 21:06 | | 19:48 | | 18:32 148 | 17:19 (18) | 16:28 108 | 15:10 (19) | 16:04 84 | 15:12 (19) |
| 18 | 05:16 | 06:46 (35) | 06:11 | | 07:10 | | 08:08 | 08:57 (23) | 08:11 | 12:17 (22) | 08:56 | 11:51 (37) |
| | 22:03 55 | 07:41 (35) | 21:04 | | 19:46 | | 18:30 150 | 17:20 (18) | 16:26 106 | 15:11 (19) | 16:04 81 | 15:12 (19) |
| 19 | 05:18 | 06:46 (35) | 06:13 | | 07:12 | 08:12 (24) | 08:10 | 08:57 (23) | 08:13 | 12:21 (22) | 08:57 | 11:52 (37) |
| | 22:02 56 | 07:42 (35) | 21:01 | | 19:43 39 | 13:58 (22) | 18:27 151 | 17:21 (18) | 16:25 101 | 15:11 (19) | 16:04 82 | 15:13 (19) |
| 20 | 05:19 | 06:46 (35) | 06:15 | | 07:14 | 08:09 (24) | 08:12 | 08:57 (23) | 08:15 | 12:25 (22) | 08:58 | 11:51 (37) |
| | 22:00 56 | 07:42 (35) | 20:59 | | 19:41 57 | 14:04 (22) | 18:25 151 | 17:22 (18) | 16:23 92 | 15:11 (19) | 16:05 82 | 15:12 (19) |
| 21 | 05:21 | 06:47 (35) | 06:17 | | 07:16 | 08:07 (24) | 08:14 | 08:58 (23) | 08:17 | 13:33 (21) | 08:59 | 11:52 (37) |
| | 21:59 55 | 07:42 (35) | 20:56 | | 19:38 69 | 14:08 (22) | 18:23 149 | 17:22 (18) | 16:22 75 | 15:12 (19) | 16:05 82 | 15:13 (19) |
| 22 | 05:23 | 06:46 (35) | 06:19 | | 07:18 | 08:06 (24) | 08:16 | 09:00 (23) | 08:19 | 13:33 (21) | 08:59 | 11:52 (37) |
| | 21:57 56 | 07:42 (35) | 20:54 | | 19:35 78 | 14:11 (22) | 18:20 148 | 17:23 (18) | 16:20 77 | 15:13 (19) | 16:05 82 | 15:13 (19) |
| 23 | 05:24 | 06:47 (35) | 06:21 | | 07:19 | 08:05 (24) | 08:18 | 09:01 (23) | 08:21 | 13:33 (21) | 09:00 | 11:53 (37) |
| | 21:56 56 | 07:43 (35) | 20:52 | | 19:33 85 | 14:13 (22) | 18:18 145 | 17:23 (18) | 16:19 77 | 15:13 (19) | 16:06 82 | 15:14 (19) |
| 24 | 05:26 | 06:47 (35) | 06:23 | | 07:21 | 08:04 (24) | 08:20 | 09:03 (23) | 08:23 | 13:33 (21) | 09:00 | 11:54 (37) |
| | 21:54 55 | 07:42 (35) | 20:49 | | 19:30 92 | 14:16 (22) | 18:16 139 | 17:23 (18) | 16:18 76 | 15:13 (19) | 16:06 82 | 15:15 (19) |
| 25 | 05:27 | 06:47 (35) | 06:25 | | 07:23 | 08:04 (24) | 07:22 | 08:05 (23) | 08:25 | 13:34 (21) | 09:00 | 11:54 (37) |
| | 21:52 56 | 07:43 (35) | 20:47 | | 19:28 95 | 14:17 (22) | 17:13 134 | 16:23 (18) | 16:16 75 | 15:13 (19) | 16:07 81 | 15:15 (19) |
| 26 | 05:29 | 06:47 (35) | 06:26 | | 07:25 | 08:03 (24) | 07:24 | 11:46 (22) | 08:27 | 13:34 (21) | 09:01 | 11:55 (37) |
| | 21:51 55 | 07:42 (35) | 20:44 | | 19:25 100 | 14:19 (22) | 17:11 119 | 16:22 (18) | 16:15 75 | 15:13 (19) | 16:08 83 | 15:17 (19) |
| 27 | 05:31 | 06:47 (35) | 06:28 | | 07:27 | 08:02 (24) | 07:26 | 11:47 (22) | 08:28 | 13:34 (21) | 09:01 | 11:56 (37) |
| | 21:49 55 | 07:42 (35) | 20:42 | | 19:22 103 | 14:19 (22) | 17:09 119 | 16:23 (18) | 16:14 75 | 15:13 (19) | 16:09 84 | 15:18 (19) |
| 28 | 05:33 | 06:47 (35) | 06:30 | | 07:29 | 08:02 (24) | 07:28 | 11:48 (22) | 08:30 | 13:35 (21) | 09:01 | 11:56 (37) |
| | 21:47 55 | 07:42 (35) | 20:39 | | 19:20 105 | 14:20 (22) | 17:07 116 | 16:22 (18) | 16:13 73 | 15:13 (19) | 16:10 84 | 15:18 (19) |
| 29 | 05:34 | 06:48 (35) | 06:32 | | 07:31 | 08:03 (24) | 07:31 | 11:48 (22) | 08:32 | 11:57 (37) | 09:01 | 11:57 (37) |
| | 21:45 54 | 07:42 (35) | 20:37 | | 19:17 106 | 14:21 (22) | 17:04 113 | 16:21 (18) | 16:12 78 | 15:13 (19) | 16:10 85 | 15:19 (19) |
| 30 | 05:36 | 06:48 (35) | 06:34 | | 07:33 | 08:03 (24) | 07:33 | 11:49 (22) | 08:34 | 11:54 (37) | 09:01 | 11:57 (37) |
| | 21:44 54 | 07:42 (35) | 20:34 | | 19:15 107 | 14:22 (22) | 17:02 110 | 16:20 (18) | 16:11 84 | 15:14 (19) | 16:11 86 | 15:20 (19) |
| 31 | 05:38 | 06:48 (35) | 06:36 | | | | 07:35 | 11:49 (22) | | | 09:01 | 11:58 (37) |
| | 21:42 53 | 07:41 (35) | 20:32 | | | | 17:00 107 | 16:19 (18) | | | 16:12 86 | 15:21 (19) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | 1663 | | 604 | | 1036 | | 3933 | | 2818 | | 2651 | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | 0,31 | | 0,16 | | 0,14 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,95 | | 0,95 | | 0,28 | | 0,27 | | 0,30 | | 0,33 | |
| Total reduction | 0,38 | | 0,41 | | 0,09 | | 0,07 | | 0,04 | | 0,04 | |
| Total, real | 638 | | 246 | | 95 | | 269 | | 111 | | 99 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 12:29 (37) | 08:28 | | 13:19 (22) | 07:27 | | 08:54 (23) | 07:08 | | | 05:55 | | 06:59 (35) | 05:02 | | 06:51 (35) |
| | 16:14 | 68 | 15:27 (19) | 17:08 | 100 | 15:36 (19) | 18:07 | 89 | 14:29 (22) | 20:10 | | | 21:09 | 48 | 07:47 (35) | 22:03 | 62 | 07:53 (35) |
| 2 | 09:01 | | 12:29 (37) | 08:26 | | 13:19 (22) | 07:24 | | 08:57 (23) | 07:05 | | | 05:53 | | 06:58 (35) | 05:01 | | 06:51 (35) |
| | 16:15 | 69 | 15:28 (19) | 17:10 | 88 | 14:50 (21) | 18:09 | 81 | 14:28 (22) | 20:12 | | | 21:11 | 50 | 07:48 (35) | 22:04 | 62 | 07:53 (35) |
| 3 | 09:01 | | 12:31 (37) | 08:24 | | 13:18 (22) | 07:22 | | 13:21 (22) | 07:03 | | | 05:51 | | 06:57 (35) | 05:00 | | 06:52 (35) |
| | 16:16 | 68 | 15:29 (19) | 17:12 | 84 | 14:47 (21) | 18:12 | 66 | 14:27 (22) | 20:14 | | | 21:13 | 52 | 07:49 (35) | 22:05 | 62 | 07:54 (35) |
| 4 | 09:00 | | 12:32 (37) | 08:22 | | 13:18 (22) | 07:19 | | 13:23 (22) | 07:00 | | | 05:48 | | 06:56 (35) | 04:59 | | 06:52 (35) |
| | 16:18 | 67 | 15:30 (19) | 17:15 | 72 | 14:30 (22) | 18:14 | 63 | 14:26 (22) | 20:16 | | | 21:15 | 54 | 07:50 (35) | 22:06 | 62 | 07:54 (35) |
| 5 | 09:00 | | 12:34 (37) | 08:20 | | 13:17 (22) | 07:17 | | 13:24 (22) | 06:58 | | | 05:46 | | 06:55 (35) | 04:58 | | 06:52 (35) |
| | 16:19 | 68 | 15:32 (19) | 17:17 | 74 | 14:31 (22) | 18:16 | 60 | 14:24 (22) | 20:18 | | | 21:17 | 55 | 07:50 (35) | 22:08 | 61 | 07:53 (35) |
| 6 | 08:59 | | 12:36 (37) | 08:18 | | 13:17 (22) | 07:14 | | 07:44 (24) | 06:55 | | | 05:44 | | 06:54 (35) | 04:57 | | 06:53 (35) |
| | 16:20 | 65 | 15:32 (19) | 17:19 | 80 | 16:42 (18) | 18:18 | 68 | 14:23 (22) | 20:20 | | | 21:18 | 57 | 07:51 (35) | 22:09 | 61 | 07:54 (35) |
| 7 | 08:59 | | 14:13 (21) | 08:16 | | 09:01 (23) | 07:12 | | 07:41 (24) | 06:53 | | | 05:42 | | 06:53 (35) | 04:56 | | 06:53 (35) |
| | 16:22 | 59 | 15:33 (19) | 17:21 | 96 | 16:45 (18) | 18:20 | 68 | 14:20 (22) | 20:21 | | | 21:20 | 58 | 07:51 (35) | 22:10 | 60 | 07:53 (35) |
| 8 | 08:58 | | 14:14 (21) | 08:14 | | 08:57 (23) | 07:09 | | 07:38 (24) | 06:50 | | | 05:40 | | 06:52 (35) | 04:56 | | 06:53 (35) |
| | 16:23 | 59 | 15:34 (19) | 17:23 | 108 | 16:47 (18) | 18:22 | 66 | 14:17 (22) | 20:23 | | | 21:22 | 60 | 07:52 (35) | 22:11 | 60 | 07:53 (35) |
| 9 | 08:58 | | 14:14 (21) | 08:12 | | 08:55 (23) | 07:07 | | 07:38 (24) | 06:48 | | | 05:38 | | 06:52 (35) | 04:55 | | 06:54 (35) |
| | 16:25 | 61 | 15:35 (19) | 17:25 | 116 | 16:49 (18) | 18:24 | 63 | 14:15 (22) | 20:25 | | | 21:24 | 60 | 07:52 (35) | 22:12 | 59 | 07:53 (35) |
| 10 | 08:57 | | 14:15 (21) | 08:10 | | 08:54 (23) | 07:04 | | 07:36 (24) | 06:45 | | | 05:36 | | 06:51 (35) | 04:54 | | 06:53 (35) |
| | 16:26 | 62 | 15:37 (19) | 17:27 | 123 | 16:50 (18) | 18:26 | 57 | 14:11 (22) | 20:27 | | | 21:26 | 61 | 07:52 (35) | 22:13 | 60 | 07:53 (35) |
| 11 | 08:56 | | 14:14 (21) | 08:08 | | 08:53 (23) | 07:02 | | 07:36 (24) | 06:43 | | | 05:34 | | 06:51 (35) | 04:54 | | 06:54 (35) |
| | 16:28 | 63 | 15:36 (19) | 17:29 | 127 | 16:51 (18) | 18:28 | 49 | 14:07 (22) | 20:29 | | | 21:28 | 62 | 07:53 (35) | 22:14 | 59 | 07:53 (35) |
| 12 | 08:55 | | 13:45 (22) | 08:06 | | 08:51 (23) | 06:59 | | 07:35 (24) | 06:40 | | | 05:32 | | 06:51 (35) | 04:54 | | 06:55 (35) |
| | 16:29 | 69 | 15:37 (19) | 17:32 | 131 | 16:51 (18) | 18:30 | 25 | 08:00 (24) | 20:31 | | | 21:30 | 62 | 07:53 (35) | 22:14 | 59 | 07:54 (35) |
| 13 | 08:54 | | 13:40 (22) | 08:04 | | 08:50 (23) | 06:57 | | 07:34 (24) | 06:38 | | | 05:30 | | 06:50 (35) | 04:53 | | 06:55 (35) |
| | 16:31 | 81 | 15:38 (19) | 17:34 | 135 | 16:52 (18) | 18:32 | 25 | 07:59 (24) | 20:33 | | | 21:32 | 63 | 07:53 (35) | 22:15 | 59 | 07:54 (35) |
| 14 | 08:53 | | 13:38 (22) | 08:02 | | 08:50 (23) | 06:54 | | 07:34 (24) | 06:35 | | | 05:28 | | 06:49 (35) | 04:53 | | 06:55 (35) |
| | 16:33 | 88 | 15:39 (19) | 17:36 | 136 | 16:52 (18) | 18:34 | 25 | 07:59 (24) | 20:35 | | | 21:34 | 64 | 07:53 (35) | 22:16 | 58 | 07:53 (35) |
| 15 | 08:52 | | 13:36 (22) | 07:59 | | 08:48 (23) | 06:52 | | 07:34 (24) | 06:33 | | | 05:27 | | 06:50 (35) | 04:53 | | 06:55 (35) |
| | 16:35 | 94 | 15:40 (19) | 17:38 | 140 | 16:52 (18) | 18:36 | 24 | 07:58 (24) | 20:37 | | | 21:35 | 64 | 07:54 (35) | 22:16 | 58 | 07:53 (35) |
| 16 | 08:51 | | 13:33 (22) | 07:57 | | 08:48 (23) | 06:49 | | 07:35 (24) | 06:30 | | | 05:25 | | 06:49 (35) | 04:52 | | 06:56 (35) |
| | 16:36 | 98 | 15:40 (19) | 17:40 | 141 | 16:52 (18) | 18:38 | 23 | 07:58 (24) | 20:39 | | | 21:37 | 65 | 07:54 (35) | 22:17 | 58 | 07:54 (35) |
| 17 | 08:50 | | 13:32 (22) | 07:55 | | 08:48 (23) | 06:47 | | 07:35 (24) | 06:28 | | | 05:23 | | 06:50 (35) | 04:52 | | 06:56 (35) |
| | 16:38 | 102 | 15:41 (19) | 17:42 | 140 | 16:52 (18) | 18:40 | 21 | 07:56 (24) | 20:41 | | | 21:39 | 64 | 07:54 (35) | 22:18 | 58 | 07:54 (35) |
| 18 | 08:49 | | 13:31 (22) | 07:53 | | 08:47 (23) | 06:44 | | 07:35 (24) | 06:25 | | | 05:21 | | 06:49 (35) | 04:52 | | 06:56 (35) |
| | 16:40 | 107 | 15:42 (19) | 17:44 | 140 | 16:51 (18) | 18:42 | 20 | 07:55 (24) | 20:43 | | | 21:41 | 65 | 07:54 (35) | 22:18 | 58 | 07:54 (35) |
| 19 | 08:48 | | 13:30 (22) | 07:50 | | 08:48 (23) | 06:41 | | 07:37 (24) | 06:23 | | | 05:20 | | 06:50 (35) | 04:52 | | 06:56 (35) |
| | 16:42 | 109 | 15:42 (19) | 17:46 | 138 | 16:51 (18) | 18:44 | 16 | 07:53 (24) | 20:45 | | | 21:42 | 64 | 07:54 (35) | 22:18 | 58 | 07:54 (35) |
| 20 | 08:47 | | 13:29 (22) | 07:48 | | 08:48 (23) | 06:39 | | 07:39 (24) | 06:20 | | | 05:18 | | 06:49 (35) | 04:52 | | 06:57 (35) |
| | 16:44 | 111 | 15:42 (19) | 17:49 | 137 | 16:51 (18) | 18:46 | 11 | 07:50 (24) | 20:47 | | | 21:44 | 65 | 07:54 (35) | 22:19 | 57 | 07:54 (35) |
| 21 | 08:45 | | 13:28 (22) | 07:46 | | 08:47 (23) | 06:36 | | | 06:18 | | | 05:16 | | 06:49 (35) | 04:52 | | 06:57 (35) |
| | 16:46 | 113 | 15:42 (19) | 17:51 | 134 | 16:49 (18) | 18:48 | | | 20:49 | | | 21:46 | 65 | 07:54 (35) | 22:19 | 57 | 07:54 (35) |
| 22 | 08:44 | | 13:26 (22) | 07:44 | | 08:48 (23) | 06:34 | | | 06:16 | | | 05:15 | | 06:49 (35) | 04:52 | | 06:58 (35) |
| | 16:48 | 115 | 15:42 (19) | 17:53 | 130 | 16:48 (18) | 18:50 | | | 20:51 | | | 21:47 | 65 | 07:54 (35) | 22:19 | 57 | 07:55 (35) |
| 23 | 08:42 | | 13:26 (22) | 07:41 | | 08:48 (23) | 06:31 | | | 06:13 | | 07:20 (35) | 05:13 | | 06:49 (35) | 04:53 | | 06:58 (35) |
| | 16:50 | 117 | 15:43 (19) | 17:55 | 123 | 16:45 (18) | 18:52 | | | 20:53 | 8 | 07:28 (35) | 21:49 | 65 | 07:54 (35) | 22:19 | 57 | 07:55 (35) |
| 24 | 08:41 | | 13:25 (22) | 07:39 | | 08:49 (23) | 06:29 | | | 06:11 | | 07:14 (35) | 05:12 | | 06:50 (35) | 04:53 | | 06:57 (35) |
| | 16:52 | 119 | 15:43 (19) | 17:57 | 113 | 16:41 (18) | 18:54 | | | 20:55 | 20 | 07:34 (35) | 21:51 | 64 | 07:54 (35) | 22:19 | 58 | 07:55 (35) |
| 25 | 08:39 | | 13:24 (22) | 07:36 | | 08:49 (23) | 06:26 | | | 06:09 | | 07:11 (35) | 05:10 | | 06:50 (35) | 04:53 | | 06:58 (35) |
| | 16:54 | 117 | 15:42 (19) | 17:59 | 106 | 14:32 (22) | 18:56 | | | 20:57 | 27 | 07:38 (35) | 21:52 | 64 | 07:54 (35) | 22:19 | 58 | 07:56 (35) |
| 26 | 08:38 | | 13:24 (22) | 07:34 | | 08:50 (23) | 06:23 | | | 06:06 | | 07:07 (35) | 05:09 | | 06:49 (35) | 04:54 | | 06:58 (35) |
| | 16:56 | 119 | 15:43 (19) | 18:01 | 104 | 14:32 (22) | 18:58 | | | 20:59 | 32 | 07:39 (35) | 21:54 | 64 | 07:53 (35) | 22:19 | 58 | 07:56 (35) |
| 27 | 08:36 | | 13:23 (22) | 07:32 | | 08:51 (23) | 06:21 | | | 06:04 | | 07:05 (35) | 05:08 | | 06:50 (35) | 04:54 | | 06:59 (35) |
| | 16:58 | 117 | 15:42 (19) | 18:03 | 100 | 14:31 (22) | 19:00 | | | 21:01 | 37 | 07:42 (35) | 21:55 | 64 | 07:54 (35) | 22:19 | 58 | 07:57 (35) |
| 28 | 08:35 | | 13:22 (22) | 07:29 | | 08:52 (23) | 06:18 | | | 06:02 | | 07:03 (35) | 05:06 | | 06:50 (35) | 04:55 | | 06:58 (35) |
| | 17:00 | 116 | 15:42 (19) | 18:05 | 95 | 14:30 (22) | 19:02 | | | 21:03 | 40 | 07:43 (35) | 21:57 | 64 | 07:54 (35) | 22:19 | 58 | 07:56 (35) |
| 29 | 08:33 | | 13:21 (22) | | | | 07:16 | | | 05:59 | | 07:01 (35) | 05:05 | | 06:50 (35) | 04:55 | | 06:59 (35) |
| | 17:02 | 115 | 15:41 (19) | | | | 20:04 | | | 21:05 | 44 | 07:45 (35) | 21:58 | 64 | 07:54 (35) | 22:19 | 58 | 07:57 (35) |
| 30 | 08:31 | | 13:20 (22) | | | | 07:13 | | | 05:57 | | 07:00 (35) | 05:04 | | 06:51 (35) | 04:56 | | 06:58 (35) |
| | 17:04 | 113 | 15:40 (19) | | | | 20:06 | | | 21:07 | 46 | 07:46 (35) | 22:00 | 63 | 07:54 (35) | 22:19 | 59 | 07:57 (35) |
| 31 | 08:30 | | 13:20 (22) | | | | 07:11 | | | | | | 05:03 | | 06:51 (35) | | | |
| | 17:06 | 107 | 15:38 (19) | | | | 20:08 | | | | | | 22:01 | 62 | 07:53 (35) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 2836 | | | 3211 | | | 920 | | | 254 | | | 1897 | | | 1769 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,43 | | | 0,46 | | | 0,54 | | | 0,97 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,07 | | | 0,10 | | | 0,16 | | | 0,32 | | | 0,43 | | | 0,40 | |
| Total, real | | 185 | | | 310 | | | 143 | | | 82 | | | 808 | | | 704 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:58 (35) | 05:40 | 07:01 (35) | 06:38 | | 07:35 | 08:14 (24) | 07:37 | 08:24 (23) | 08:35 | 13:56 (21) |
| | 22:18 59 | 07:57 (35) | 21:40 62 | 08:03 (35) | 20:29 | | 19:12 25 | 08:39 (24) | 16:58 120 | 16:19 (18) | 16:10 64 | 15:19 (19) |
| 2 | 04:58 | 06:59 (35) | 05:41 | 07:02 (35) | 06:40 | | 07:37 | 08:14 (24) | 07:39 | 08:25 (23) | 08:37 | 13:57 (21) |
| | 22:18 59 | 07:58 (35) | 21:38 61 | 08:03 (35) | 20:27 | | 19:10 42 | 14:42 (22) | 16:56 116 | 16:18 (18) | 16:09 63 | 15:19 (19) |
| 3 | 04:58 | 06:59 (35) | 05:43 | 07:01 (35) | 06:42 | | 07:39 | 08:14 (24) | 07:41 | 08:27 (23) | 08:38 | 13:58 (21) |
| | 22:17 60 | 07:59 (35) | 21:36 61 | 08:02 (35) | 20:24 | | 19:07 53 | 14:47 (22) | 16:54 106 | 16:16 (18) | 16:08 61 | 15:19 (19) |
| 4 | 04:59 | 06:59 (35) | 05:45 | 07:02 (35) | 06:44 | | 07:41 | 08:14 (24) | 07:43 | 08:33 (23) | 08:40 | 13:59 (21) |
| | 22:17 60 | 07:59 (35) | 21:34 60 | 08:02 (35) | 20:22 | | 19:04 61 | 14:51 (22) | 16:52 91 | 16:15 (18) | 16:08 60 | 15:19 (19) |
| 5 | 05:00 | 06:58 (35) | 05:47 | 07:03 (35) | 06:45 | | 07:42 | 08:15 (24) | 07:45 | 12:47 (22) | 08:41 | 13:59 (21) |
| | 22:16 61 | 07:59 (35) | 21:32 59 | 08:02 (35) | 20:19 | | 19:02 65 | 14:53 (22) | 16:50 79 | 16:11 (18) | 16:07 58 | 15:18 (19) |
| 6 | 05:01 | 06:59 (35) | 05:49 | 07:03 (35) | 06:47 | | 07:44 | 08:16 (24) | 07:47 | 12:47 (22) | 08:43 | 12:23 (37) |
| | 22:15 60 | 07:59 (35) | 21:30 58 | 08:01 (35) | 20:17 | | 18:59 67 | 14:55 (22) | 16:48 74 | 14:01 (22) | 16:06 65 | 15:19 (19) |
| 7 | 05:02 | 06:59 (35) | 05:51 | 07:03 (35) | 06:49 | | 07:46 | 08:17 (24) | 07:49 | 12:47 (22) | 08:44 | 12:21 (37) |
| | 22:15 60 | 07:59 (35) | 21:28 57 | 08:00 (35) | 20:14 | | 18:57 68 | 14:57 (22) | 16:46 73 | 14:00 (22) | 16:06 66 | 15:18 (19) |
| 8 | 05:03 | 06:59 (35) | 05:52 | 07:04 (35) | 06:51 | | 07:48 | 08:20 (24) | 07:51 | 12:49 (22) | 08:46 | 12:20 (37) |
| | 22:14 61 | 08:00 (35) | 21:26 56 | 08:00 (35) | 20:12 | | 18:54 66 | 14:58 (22) | 16:44 84 | 14:19 (21) | 16:05 67 | 15:18 (19) |
| 9 | 05:04 | 06:59 (35) | 05:54 | 07:04 (35) | 06:53 | | 07:50 | 13:58 (22) | 07:53 | 12:49 (22) | 08:47 | 12:19 (37) |
| | 22:13 61 | 08:00 (35) | 21:24 54 | 07:58 (35) | 20:09 | | 18:52 61 | 14:59 (22) | 16:42 89 | 14:21 (21) | 16:05 69 | 15:18 (19) |
| 10 | 05:06 | 06:59 (35) | 05:56 | 07:05 (35) | 06:55 | | 07:52 | 13:56 (22) | 07:55 | 12:50 (22) | 08:48 | 12:20 (37) |
| | 22:12 61 | 08:00 (35) | 21:22 52 | 07:57 (35) | 20:07 | | 18:49 64 | 15:00 (22) | 16:40 102 | 15:07 (19) | 16:04 68 | 15:18 (19) |
| 11 | 05:07 | 06:59 (35) | 05:58 | 07:06 (35) | 06:57 | | 07:54 | 09:33 (23) | 07:57 | 12:51 (22) | 08:50 | 12:19 (37) |
| | 22:11 63 | 08:02 (35) | 21:19 50 | 07:56 (35) | 20:04 | | 18:47 75 | 15:01 (22) | 16:38 108 | 15:09 (19) | 16:04 69 | 15:18 (19) |
| 12 | 05:08 | 06:59 (35) | 06:00 | 07:08 (35) | 06:59 | | 07:56 | 09:29 (23) | 07:59 | 12:52 (22) | 08:51 | 12:19 (37) |
| | 22:10 63 | 08:02 (35) | 21:17 47 | 07:55 (35) | 20:01 | | 18:44 84 | 15:02 (22) | 16:36 113 | 15:12 (19) | 16:04 67 | 15:17 (19) |
| 13 | 05:09 | 06:59 (35) | 06:02 | 07:08 (35) | 07:01 | | 07:58 | 09:26 (23) | 08:01 | 12:53 (22) | 08:52 | 12:19 (37) |
| | 22:09 63 | 08:02 (35) | 21:15 45 | 07:53 (35) | 19:59 | | 18:42 92 | 15:02 (22) | 16:34 116 | 15:13 (19) | 16:04 66 | 15:17 (19) |
| 14 | 05:11 | 06:59 (35) | 06:04 | 07:09 (35) | 07:02 | | 08:00 | 09:24 (23) | 08:03 | 12:54 (22) | 08:53 | 12:19 (37) |
| | 22:08 63 | 08:02 (35) | 21:13 43 | 07:52 (35) | 19:56 | | 18:39 97 | 15:03 (22) | 16:33 117 | 15:14 (19) | 16:04 65 | 15:16 (19) |
| 15 | 05:12 | 06:59 (35) | 06:06 | 07:11 (35) | 07:04 | | 08:02 | 09:23 (23) | 08:05 | 12:55 (22) | 08:54 | 12:19 (37) |
| | 22:07 63 | 08:02 (35) | 21:10 39 | 07:50 (35) | 19:54 | | 18:37 101 | 15:04 (22) | 16:31 117 | 15:14 (19) | 16:04 66 | 15:16 (19) |
| 16 | 05:13 | 06:59 (35) | 06:07 | 07:13 (35) | 07:06 | | 08:04 | 09:22 (23) | 08:07 | 12:57 (22) | 08:55 | 12:19 (37) |
| | 22:06 64 | 08:03 (35) | 21:08 36 | 07:49 (35) | 19:51 | | 18:35 104 | 15:04 (22) | 16:29 119 | 15:16 (19) | 16:04 64 | 15:15 (19) |
| 17 | 05:15 | 06:59 (35) | 06:09 | 07:15 (35) | 07:08 | | 08:06 | 09:21 (23) | 08:09 | 12:58 (22) | 08:56 | 12:19 (37) |
| | 22:04 64 | 08:03 (35) | 21:06 32 | 07:47 (35) | 19:48 | | 18:32 108 | 15:05 (22) | 16:28 117 | 15:16 (19) | 16:04 59 | 14:40 (21) |
| 18 | 05:16 | 06:59 (35) | 06:11 | 07:17 (35) | 07:10 | | 08:08 | 09:20 (23) | 08:11 | 12:59 (22) | 08:56 | 12:20 (37) |
| | 22:03 64 | 08:03 (35) | 21:04 26 | 07:43 (35) | 19:46 | | 18:30 119 | 17:15 (18) | 16:26 119 | 15:17 (19) | 16:04 60 | 14:41 (21) |
| 19 | 05:18 | 06:59 (35) | 06:13 | 07:20 (35) | 07:12 | | 08:10 | 09:19 (23) | 08:13 | 13:00 (22) | 08:57 | 12:20 (37) |
| | 22:02 65 | 08:04 (35) | 21:01 19 | 07:39 (35) | 19:43 | | 18:27 126 | 17:17 (18) | 16:25 117 | 15:17 (19) | 16:04 61 | 14:42 (21) |
| 20 | 05:19 | 06:59 (35) | 06:15 | 07:28 (35) | 07:14 | | 08:12 | 09:18 (23) | 08:15 | 13:01 (22) | 08:58 | 12:20 (37) |
| | 22:00 65 | 08:04 (35) | 20:59 3 | 07:31 (35) | 19:41 | | 18:25 131 | 17:19 (18) | 16:23 115 | 15:17 (19) | 16:05 60 | 14:41 (21) |
| 21 | 05:21 | 07:00 (35) | 06:17 | | 07:16 | | 08:14 | 09:18 (23) | 08:17 | 13:04 (22) | 08:59 | 12:21 (37) |
| | 21:59 64 | 08:04 (35) | 20:56 | | 19:38 | | 18:23 135 | 17:20 (18) | 16:22 113 | 15:18 (19) | 16:05 60 | 14:42 (21) |
| 22 | 05:23 | 06:59 (35) | 06:19 | | 07:18 | | 08:16 | 09:18 (23) | 08:19 | 13:05 (22) | 08:59 | 12:21 (37) |
| | 21:57 65 | 08:04 (35) | 20:54 | | 19:35 | | 18:20 137 | 17:21 (18) | 16:20 112 | 15:19 (19) | 16:05 60 | 14:42 (21) |
| 23 | 05:24 | 07:00 (35) | 06:21 | | 07:19 | 08:24 (24) | 08:18 | 09:18 (23) | 08:21 | 13:07 (22) | 09:00 | 12:22 (37) |
| | 21:56 65 | 08:05 (35) | 20:52 | | 19:33 10 | 08:34 (24) | 18:18 139 | 17:22 (18) | 16:19 109 | 15:19 (19) | 16:06 60 | 14:43 (21) |
| 24 | 05:26 | 06:59 (35) | 06:23 | | 07:21 | 08:21 (24) | 08:20 | 09:18 (23) | 08:23 | 13:08 (22) | 09:00 | 12:22 (37) |
| | 21:54 65 | 08:04 (35) | 20:49 | | 19:30 15 | 08:36 (24) | 18:16 140 | 17:22 (18) | 16:18 108 | 15:19 (19) | 16:06 61 | 14:44 (21) |
| 25 | 05:27 | 07:00 (35) | 06:25 | | 07:23 | 08:20 (24) | 07:22 | 08:18 (23) | 08:25 | 13:10 (22) | 09:00 | 12:23 (37) |
| | 21:52 65 | 08:05 (35) | 20:47 | | 19:28 18 | 08:38 (24) | 17:13 141 | 16:22 (18) | 16:16 102 | 15:19 (19) | 16:07 60 | 14:44 (21) |
| 26 | 05:29 | 07:00 (35) | 06:26 | | 07:25 | 08:18 (24) | 07:24 | 08:18 (23) | 08:27 | 13:12 (22) | 09:01 | 12:24 (37) |
| | 21:51 64 | 08:04 (35) | 20:44 | | 19:25 21 | 08:39 (24) | 17:11 139 | 16:22 (18) | 16:15 99 | 15:19 (19) | 16:08 59 | 14:45 (21) |
| 27 | 05:31 | 07:00 (35) | 06:28 | | 07:27 | 08:16 (24) | 07:26 | 08:19 (23) | 08:28 | 13:15 (22) | 09:01 | 12:25 (37) |
| | 21:49 64 | 08:04 (35) | 20:42 | | 19:22 22 | 08:38 (24) | 17:09 137 | 16:22 (18) | 16:14 94 | 15:19 (19) | 16:09 63 | 15:20 (19) |
| 28 | 05:33 | 07:00 (35) | 06:30 | | 07:29 | 08:15 (24) | 07:28 | 08:19 (23) | 08:30 | 13:18 (22) | 09:01 | 12:25 (37) |
| | 21:47 64 | 08:04 (35) | 20:39 | | 19:20 24 | 08:39 (24) | 17:07 138 | 16:22 (18) | 16:13 88 | 15:19 (19) | 16:10 65 | 15:22 (19) |
| 29 | 05:34 | 07:00 (35) | 06:32 | | 07:31 | 08:14 (24) | 07:31 | 08:20 (23) | 08:32 | 13:21 (22) | 09:01 | 12:26 (37) |
| | 21:45 64 | 08:04 (35) | 20:37 | | 19:17 25 | 08:39 (24) | 17:04 134 | 16:21 (18) | 16:12 81 | 15:19 (19) | 16:10 66 | 15:24 (19) |
| 30 | 05:36 | 07:01 (35) | 06:34 | | 07:33 | 08:14 (24) | 07:33 | 08:21 (23) | 08:34 | 13:26 (22) | 09:01 | 12:26 (37) |
| | 21:44 63 | 08:04 (35) | 20:34 | | 19:15 25 | 08:39 (24) | 17:02 130 | 16:20 (18) | 16:11 71 | 15:19 (19) | 16:11 67 | 15:24 (19) |
| 31 | 05:38 | 07:00 (35) | 06:36 | | | | 07:35 | 08:21 (23) | | | 09:01 | 12:27 (37) |
| | 21:42 63 | 08:03 (35) | 20:32 | | | | 17:00 127 | 16:19 (18) | | | 16:12 68 | 15:25 (19) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | 1945 | | 920 | | 160 | | 3106 | | 3069 | | 1967 | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | 0,31 | | 0,16 | | 0,14 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,97 | | 0,97 | | 0,97 | | 0,48 | | 0,41 | | 0,36 | |
| Total reduction | 0,40 | | 0,42 | | 0,33 | | 0,13 | | 0,05 | | 0,04 | |
| Total, real | 778 | | 390 | | 52 | | 392 | | 169 | | 82 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 16:00 (31) | | 07:27 | | 07:08 | | 17:50 (40) | | 05:55 | | 19:22 (37) | | 05:02 | |
| | 16:14 | | 17:08 | 26 | 16:26 (31) | | 18:07 | | 20:10 | 66 | 19:32 (20) | | 21:09 | 62 | 20:31 (21) | | 22:02 | |
| 2 | 09:01 | | 08:26 | | 15:59 (31) | | 07:24 | | 07:05 | | 17:52 (40) | | 05:53 | | 19:22 (37) | | 05:01 | |
| | 16:15 | | 17:10 | 27 | 16:26 (31) | | 18:09 | | 20:12 | 64 | 19:33 (20) | | 21:11 | 62 | 20:31 (21) | | 22:04 | |
| 3 | 09:00 | | 08:24 | | 15:59 (31) | | 07:22 | | 07:03 | | 17:52 (40) | | 05:51 | | 19:22 (37) | | 05:00 | |
| | 16:16 | | 17:12 | 28 | 16:27 (31) | | 18:12 | | 20:14 | 63 | 19:32 (20) | | 21:13 | 63 | 20:32 (21) | | 22:05 | |
| 4 | 09:00 | | 08:22 | | 15:59 (31) | | 07:19 | | 07:00 | | 17:54 (40) | | 05:48 | | 19:23 (37) | | 04:59 | |
| | 16:18 | | 17:15 | 30 | 16:29 (39) | | 18:14 | | 20:16 | 59 | 19:32 (20) | | 21:15 | 62 | 20:32 (21) | | 22:06 | |
| 5 | 09:00 | | 08:20 | | 15:59 (31) | | 07:17 | | 06:58 | | 17:55 (40) | | 05:46 | | 19:23 (37) | | 04:58 | |
| | 16:19 | | 17:17 | 32 | 16:31 (39) | | 18:16 | | 20:17 | 56 | 19:49 (19) | | 21:16 | 61 | 20:32 (21) | | 22:07 | |
| 6 | 08:59 | | 08:18 | | 15:59 (31) | | 07:14 | | 06:55 | | 17:57 (40) | | 05:44 | | 19:24 (37) | | 04:57 | |
| | 16:20 | | 17:19 | 33 | 16:32 (39) | | 18:18 | | 20:19 | 58 | 19:52 (19) | | 21:18 | 61 | 20:32 (21) | | 22:09 | |
| 7 | 08:59 | | 08:16 | | 15:58 (31) | | 07:12 | | 17:33 (38) | | 06:53 | | 17:58 (40) | | 05:42 | | 19:24 (37) | | 04:56 |
| | 16:22 | | 17:21 | 34 | 16:32 (39) | | 18:20 | 12 | 17:45 (38) | | 20:21 | 55 | 19:53 (19) | | 21:20 | 59 | 20:31 (21) | | 22:10 |
| 8 | 08:58 | | 08:14 | | 15:59 (31) | | 07:09 | | 17:30 (38) | | 06:50 | | 18:02 (40) | | 05:40 | | 19:25 (37) | | 04:56 |
| | 16:23 | | 17:23 | 35 | 16:34 (39) | | 18:22 | 17 | 17:47 (38) | | 20:23 | 49 | 19:56 (19) | | 21:22 | 57 | 20:31 (21) | | 22:11 |
| 9 | 08:57 | | 08:12 | | 15:59 (31) | | 07:07 | | 17:29 (38) | | 06:48 | | 18:06 (40) | | 05:38 | | 19:25 (37) | | 04:55 |
| | 16:25 | | 17:25 | 36 | 16:35 (39) | | 18:24 | 20 | 17:49 (38) | | 20:25 | 35 | 19:56 (19) | | 21:24 | 54 | 20:30 (21) | | 22:12 |
| 10 | 08:57 | | 08:10 | | 16:00 (31) | | 07:04 | | 17:09 (40) | | 06:45 | | 19:37 (19) | | 05:36 | | 19:26 (37) | | 04:54 |
| | 16:26 | | 17:27 | 35 | 16:35 (39) | | 18:26 | 39 | 17:49 (38) | | 20:27 | 20 | 19:57 (19) | | 21:26 | 51 | 20:30 (21) | | 22:13 |
| 11 | 08:56 | | 08:08 | | 16:01 (31) | | 07:02 | | 17:06 (40) | | 06:43 | | 19:36 (19) | | 05:34 | | 19:28 (37) | | 04:54 |
| | 16:28 | | 17:29 | 35 | 16:36 (39) | | 18:28 | 45 | 17:51 (38) | | 20:29 | 20 | 19:56 (19) | | 21:28 | 48 | 20:30 (21) | | 22:13 |
| 12 | 08:55 | | 08:06 | | 16:01 (31) | | 06:59 | | 17:03 (40) | | 06:40 | | 19:36 (19) | | 05:32 | | 19:30 (37) | | 04:54 |
| | 16:29 | | 17:32 | 35 | 16:36 (39) | | 18:30 | 48 | 17:51 (38) | | 20:31 | 20 | 19:56 (19) | | 21:30 | 43 | 20:29 (21) | | 22:14 |
| 13 | 08:54 | | 08:04 | | 16:02 (31) | | 06:57 | | 17:00 (40) | | 06:38 | | 19:35 (19) | | 05:30 | | 19:31 (37) | | 04:53 |
| | 16:31 | | 17:34 | 34 | 16:36 (39) | | 18:32 | 51 | 17:51 (38) | | 20:33 | 20 | 19:55 (19) | | 21:32 | 38 | 20:28 (21) | | 22:15 |
| 14 | 08:53 | | 08:02 | | 16:04 (31) | | 06:54 | | 16:59 (40) | | 06:35 | | 19:36 (19) | | 05:28 | | 19:33 (37) | | 04:53 |
| | 16:33 | | 17:36 | 33 | 16:37 (39) | | 18:34 | 52 | 17:51 (38) | | 20:35 | 19 | 19:55 (19) | | 21:33 | 32 | 20:27 (21) | | 22:16 |
| 15 | 08:52 | | 07:59 | | 16:04 (31) | | 06:52 | | 16:57 (40) | | 06:33 | | 19:37 (19) | | 05:27 | | 19:37 (37) | | 04:53 |
| | 16:35 | | 17:38 | 32 | 16:36 (39) | | 18:36 | 54 | 17:51 (38) | | 20:37 | 17 | 19:54 (19) | | 21:35 | 23 | 20:26 (21) | | 22:16 |
| 16 | 08:51 | | 07:57 | | 16:04 (39) | | 06:49 | | 16:56 (40) | | 06:30 | | 19:35 (37) | | 05:25 | | 20:11 (21) | | 04:52 |
| | 16:36 | | 17:40 | 32 | 16:36 (39) | | 18:38 | 55 | 17:51 (38) | | 20:39 | 18 | 19:53 (19) | | 21:37 | 13 | 20:24 (21) | | 22:17 |
| 17 | 08:50 | | 07:55 | | 16:05 (39) | | 06:47 | | 16:54 (40) | | 06:28 | | 19:32 (37) | | 05:23 | | 20:14 (21) | | 04:52 |
| | 16:38 | | 17:42 | 31 | 16:36 (39) | | 18:40 | 56 | 17:50 (38) | | 20:41 | 23 | 19:55 (37) | | 21:39 | 9 | 20:23 (21) | | 22:17 |
| 18 | 08:49 | | 07:53 | | 16:05 (39) | | 06:44 | | 16:53 (40) | | 06:25 | | 19:30 (37) | | 05:21 | | | | 04:52 |
| | 16:40 | | 17:44 | 30 | 16:35 (39) | | 18:42 | 56 | 17:49 (38) | | 20:43 | 25 | 19:55 (37) | | 21:41 | | | | 22:18 |
| 19 | 08:48 | | 07:50 | | 16:06 (39) | | 06:41 | | 16:53 (40) | | 06:23 | | 19:28 (37) | | 05:20 | | | | 04:52 |
| | 16:42 | | 17:46 | 29 | 16:35 (39) | | 18:44 | 55 | 17:48 (38) | | 20:45 | 29 | 19:57 (37) | | 21:42 | | | | 22:18 |
| 20 | 08:46 | | 07:48 | | 16:06 (39) | | 06:39 | | 16:51 (40) | | 06:20 | | 19:27 (37) | | 05:18 | | | | 04:52 |
| | 16:44 | | 17:49 | 27 | 16:33 (39) | | 18:46 | 56 | 17:47 (38) | | 20:47 | 31 | 19:58 (37) | | 21:44 | | | | 22:19 |
| 21 | 08:45 | | 07:46 | | 16:07 (39) | | 06:36 | | 16:51 (40) | | 06:18 | | 19:26 (37) | | 05:16 | | | | 04:52 |
| | 16:46 | | 17:51 | 26 | 16:33 (39) | | 18:48 | 55 | 17:46 (38) | | 20:49 | 33 | 19:59 (37) | | 21:46 | | | | 22:19 |
| 22 | 08:44 | | 07:43 | | 16:09 (39) | | 06:34 | | 16:50 (40) | | 06:16 | | 19:25 (37) | | 05:15 | | | | 04:52 |
| | 16:48 | | 17:53 | 23 | 16:32 (39) | | 18:50 | 53 | 17:43 (38) | | 20:51 | 34 | 19:59 (37) | | 21:47 | | | | 22:19 |
| 23 | 08:42 | | 07:41 | | 16:10 (39) | | 06:31 | | 16:49 (40) | | 06:13 | | 19:24 (37) | | 05:13 | | | | 04:53 |
| | 16:50 | | 17:55 | 20 | 16:30 (39) | | 18:52 | 51 | 17:40 (38) | | 20:53 | 36 | 20:00 (37) | | 21:49 | | | | 22:19 |
| 24 | 08:41 | | 07:39 | | 16:13 (39) | | 06:29 | | 16:50 (40) | | 06:11 | | 19:24 (37) | | 05:12 | | | | 04:53 |
| | 16:52 | | 17:57 | 15 | 16:28 (39) | | 18:54 | 49 | 17:39 (40) | | 20:55 | 36 | 20:00 (37) | | 21:51 | | | | 22:19 |
| 25 | 08:39 | | 16:10 (31) | | 07:36 | | 16:26 | | 16:49 (40) | | 06:09 | | 19:23 (37) | | 05:10 | | | | 04:53 |
| | 16:54 | 2 | 16:12 (31) | | 17:59 | 5 | 16:22 (39) | | 18:56 | 49 | 17:38 (40) | | 20:57 | 38 | 20:01 (37) | | 21:52 | | | 22:19 |
| 26 | 08:38 | | 16:05 (31) | | 07:34 | | | | 06:23 | | 16:49 (40) | | 06:06 | | 19:22 (37) | | 05:09 | | | 04:54 |
| | 16:56 | 11 | 16:16 (31) | | 18:01 | | | | 18:58 | 61 | 18:29 (20) | | 20:59 | 49 | 20:25 (21) | | 21:54 | | | 22:19 |
| 27 | 08:36 | | 16:04 (31) | | 07:32 | | | | 06:21 | | 16:49 (40) | | 06:04 | | 19:22 (37) | | 05:08 | | | 04:54 |
| | 16:58 | 16 | 16:20 (31) | | 18:03 | | | | 19:00 | 64 | 18:30 (20) | | 21:01 | 53 | 20:27 (21) | | 21:55 | | | 22:19 |
| 28 | 08:35 | | 16:03 (31) | | 07:29 | | | | 06:18 | | 16:49 (40) | | 06:02 | | 19:22 (37) | | 05:06 | | | 04:55 |
| | 17:00 | 18 | 16:21 (31) | | 18:05 | | | | 19:02 | 67 | 18:32 (20) | | 21:03 | 56 | 20:28 (21) | | 21:57 | | | 22:19 |
| 29 | 08:33 | | 16:02 (31) | | | | | | 07:16 | | 17:49 (40) | | 05:59 | | 19:22 (37) | | 05:05 | | | 04:55 |
| | 17:02 | 21 | 16:23 (31) | | | | | | 20:04 | 68 | 19:32 (20) | | 21:05 | 59 | 20:30 (21) | | 21:58 | | | 22:19 |
| 30 | 08:31 | | 16:01 (31) | | | | | | 07:13 | | 17:49 (40) | | 05:57 | | 19:22 (37) | | 05:04 | | | 04:56 |
| | 17:04 | 23 | 16:24 (31) | | | | | | 20:06 | 68 | 19:32 (20) | | 21:07 | 60 | 20:30 (21) | | 22:00 | | | 22:18 |
| 31 | 08:29 | | 16:00 (31) | | | | | | 07:11 | | 17:50 (40) | | | | | | 05:03 | | | |
| | 17:06 | 25 | 16:25 (31) | | | | | | 20:08 | 68 | 19:33 (20) | | | | | | 22:01 | | | |
| Potential sun hours | 242 | | | | 269 | | | | 366 | | | | 423 | | | | 501 | | | 520 |
| Total, worst case | | 116 | | | | 723 | | | | 1269 | | | | 1201 | | | | 798 | | |
| Sun reduction | | 0,18 | | | | 0,25 | | | | 0,34 | | | | 0,39 | | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | 1,00 | | | | 1,00 | | | | 1,00 | | |
| Wind dir. red. | | 0,76 | | | | 0,77 | | | | 0,96 | | | | 0,98 | | | | 0,97 | | |
| Total reduction | | 0,13 | | | | 0,19 | | | | 0,32 | | | | 0,38 | | | | 0,49 | | |
| Total, real | | 16 | | | | 135 | | | | 409 | | | | 454 | | | | 392 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 19:39 (37) | 06:38 | | 19:35 (19) | 07:35 | | 17:41 (40) | 07:37 | | 15:29 (31) | 08:35 |
| | 22:18 | | | 21:40 | 46 | 20:40 (21) | 20:29 | 20 | 19:55 (19) | 19:12 | 49 | 18:30 (38) | 16:58 | 36 | 16:05 (39) | 16:10 |
| 2 | 04:58 | | | 05:41 | | 19:38 (37) | 06:40 | | 19:35 (19) | 07:37 | | 17:43 (40) | 07:39 | | 15:29 (31) | 08:37 |
| | 22:18 | | | 21:38 | 50 | 20:41 (21) | 20:27 | 20 | 19:55 (19) | 19:10 | 46 | 18:29 (38) | 16:56 | 35 | 16:04 (39) | 16:09 |
| 3 | 04:58 | | | 05:43 | | 19:36 (37) | 06:42 | | 18:04 (40) | 07:39 | | 17:46 (40) | 07:41 | | 15:28 (31) | 08:38 |
| | 22:17 | | | 21:36 | 52 | 20:40 (21) | 20:24 | 34 | 19:54 (19) | 19:07 | 42 | 18:28 (38) | 16:54 | 35 | 16:03 (39) | 16:08 |
| 4 | 04:59 | | | 05:45 | | 19:35 (37) | 06:43 | | 17:59 (40) | 07:40 | | 17:50 (40) | 07:43 | | 15:28 (31) | 08:40 |
| | 22:17 | | | 21:34 | 55 | 20:41 (21) | 20:22 | 49 | 19:53 (19) | 19:04 | 32 | 18:26 (38) | 16:52 | 34 | 16:02 (39) | 16:08 |
| 5 | 05:00 | | | 05:47 | | 19:35 (37) | 06:45 | | 17:56 (40) | 07:42 | | 18:06 (38) | 07:45 | | 15:29 (31) | 08:41 |
| | 22:16 | | | 21:32 | 56 | 20:41 (21) | 20:19 | 54 | 19:50 (19) | 19:02 | 19 | 18:25 (38) | 16:49 | 33 | 16:02 (39) | 16:07 |
| 6 | 05:01 | | | 05:49 | | 19:33 (37) | 06:47 | | 17:52 (40) | 07:44 | | 18:08 (38) | 07:47 | | 15:29 (31) | 08:43 |
| | 22:15 | | | 21:30 | 59 | 20:41 (21) | 20:17 | 58 | 19:47 (19) | 18:59 | 14 | 18:22 (38) | 16:47 | 31 | 16:00 (39) | 16:06 |
| 7 | 05:02 | | | 05:51 | | 19:33 (37) | 06:49 | | 17:50 (40) | 07:46 | | 18:11 (38) | 07:49 | | 15:29 (31) | 08:44 |
| | 22:15 | | | 21:28 | 60 | 20:41 (21) | 20:14 | 57 | 19:45 (19) | 18:57 | 7 | 18:18 (38) | 16:46 | 29 | 15:58 (39) | 16:06 |
| 8 | 05:03 | | | 05:52 | | 19:32 (37) | 06:51 | | 17:48 (40) | 07:48 | | | 07:51 | | 15:30 (31) | 08:46 |
| | 22:14 | | | 21:26 | 62 | 20:41 (21) | 20:12 | 59 | 19:26 (20) | 18:54 | | | 16:44 | 28 | 15:58 (31) | 16:05 |
| 9 | 05:04 | | | 05:54 | | 19:31 (37) | 06:53 | | 17:46 (40) | 07:50 | | | 07:53 | | 15:30 (31) | 08:47 |
| | 22:13 | | | 21:24 | 62 | 20:40 (21) | 20:09 | 63 | 19:26 (20) | 18:52 | | | 16:42 | 27 | 15:57 (31) | 16:05 |
| 10 | 05:06 | | | 05:56 | | 19:31 (37) | 06:55 | | 17:45 (40) | 07:52 | | | 07:55 | | 15:30 (31) | 08:48 |
| | 22:12 | | | 21:21 | 62 | 20:40 (21) | 20:06 | 65 | 19:26 (20) | 18:49 | | | 16:40 | 26 | 15:56 (31) | 16:04 |
| 11 | 05:07 | | | 05:58 | | 19:30 (37) | 06:57 | | 17:44 (40) | 07:54 | | | 07:57 | | 15:31 (31) | 08:49 |
| | 22:11 | | | 21:19 | 63 | 20:40 (21) | 20:04 | 66 | 19:26 (20) | 18:47 | | | 16:38 | 25 | 15:56 (31) | 16:04 |
| 12 | 05:08 | | | 06:00 | | 19:30 (37) | 06:59 | | 17:42 (40) | 07:56 | | | 07:59 | | 15:33 (31) | 08:51 |
| | 22:10 | | | 21:17 | 62 | 20:39 (21) | 20:01 | 67 | 19:24 (20) | 18:44 | | | 16:36 | 23 | 15:56 (31) | 16:04 |
| 13 | 05:09 | | | 06:02 | | 19:29 (37) | 07:00 | | 17:41 (40) | 07:58 | | | 08:01 | | 15:34 (31) | 08:52 |
| | 22:09 | | | 21:15 | 61 | 20:38 (21) | 19:59 | 68 | 19:24 (20) | 18:42 | | | 16:34 | 20 | 15:54 (31) | 16:04 |
| 14 | 05:11 | | | 06:04 | | 19:29 (37) | 07:02 | | 17:40 (40) | 08:00 | | | 08:03 | | 15:35 (31) | 08:53 |
| | 22:08 | | | 21:13 | 59 | 20:37 (21) | 19:56 | 67 | 19:23 (20) | 18:39 | | | 16:33 | 18 | 15:53 (31) | 16:04 |
| 15 | 05:12 | | | 06:06 | | 19:29 (37) | 07:04 | | 17:39 (40) | 08:02 | | | 08:05 | | 15:36 (31) | 08:54 |
| | 22:07 | | | 21:10 | 57 | 20:36 (21) | 19:54 | 68 | 19:22 (20) | 18:37 | | | 16:31 | 15 | 15:51 (31) | 16:04 |
| 16 | 05:13 | | | 06:07 | | 19:29 (37) | 07:06 | | 17:38 (40) | 08:04 | | | 08:07 | | 15:39 (31) | 08:55 |
| | 22:05 | | | 21:08 | 53 | 20:34 (21) | 19:51 | 66 | 19:20 (20) | 18:34 | | | 16:29 | 11 | 15:50 (31) | 16:04 |
| 17 | 05:15 | | | 06:09 | | 19:30 (37) | 07:08 | | 17:38 (40) | 08:06 | | 16:47 (39) | 08:09 | | 15:44 (31) | 08:56 |
| | 22:04 | | | 21:06 | 47 | 20:31 (21) | 19:48 | 62 | 19:18 (20) | 18:32 | 10 | 16:57 (39) | 16:28 | 1 | 15:45 (31) | 16:04 |
| 18 | 05:16 | | | 06:11 | | 19:29 (37) | 07:10 | | 17:36 (40) | 08:08 | | 16:43 (39) | 08:11 | | | 08:56 |
| | 22:03 | | | 21:03 | 37 | 20:06 (37) | 19:46 | 56 | 19:13 (20) | 18:30 | 17 | 17:00 (39) | 16:26 | | | 16:04 |
| 19 | 05:18 | | | 06:13 | | 19:29 (37) | 07:12 | | 17:36 (40) | 08:10 | | 16:41 (39) | 08:13 | | | 08:57 |
| | 22:02 | | | 21:01 | 37 | 20:06 (37) | 19:43 | 49 | 18:25 (40) | 18:27 | 20 | 17:01 (39) | 16:25 | | | 16:04 |
| 20 | 05:19 | | | 06:15 | | 19:30 (37) | 07:14 | | 17:36 (40) | 08:12 | | 16:39 (39) | 08:15 | | | 08:58 |
| | 22:00 | | | 20:59 | 35 | 20:05 (37) | 19:41 | 50 | 18:26 (38) | 18:25 | 24 | 17:03 (39) | 16:23 | | | 16:05 |
| 21 | 05:21 | | | 06:17 | | 19:30 (37) | 07:16 | | 17:36 (40) | 08:14 | | 16:37 (39) | 08:17 | | | 08:58 |
| | 21:59 | | | 20:56 | 35 | 20:05 (37) | 19:38 | 52 | 18:28 (38) | 18:23 | 26 | 17:03 (39) | 16:22 | | | 16:05 |
| 22 | 05:23 | | | 06:19 | | 19:30 (37) | 07:17 | | 17:36 (40) | 08:16 | | 16:36 (39) | 08:19 | | | 08:59 |
| | 21:57 | | | 20:54 | 33 | 20:03 (37) | 19:35 | 54 | 18:30 (38) | 18:20 | 28 | 17:04 (39) | 16:20 | | | 16:05 |
| 23 | 05:24 | | | 06:21 | | 19:31 (37) | 07:19 | | 17:36 (40) | 08:18 | | 16:36 (39) | 08:21 | | | 08:59 |
| | 21:56 | | | 20:52 | 31 | 20:02 (37) | 19:33 | 55 | 18:31 (38) | 18:18 | 29 | 17:05 (39) | 16:19 | | | 16:06 |
| 24 | 05:26 | | | 06:23 | | 19:32 (37) | 07:21 | | 17:36 (40) | 08:20 | | 16:35 (39) | 08:23 | | | 09:00 |
| | 21:54 | | | 20:49 | 29 | 20:01 (37) | 19:30 | 56 | 18:32 (38) | 18:16 | 31 | 17:06 (39) | 16:18 | | | 16:06 |
| 25 | 05:27 | | | 06:25 | | 19:34 (37) | 07:23 | | 17:36 (40) | 07:22 | | 15:34 (39) | 08:25 | | | 09:00 |
| | 21:52 | | | 20:47 | 25 | 19:59 (37) | 19:28 | 56 | 18:32 (38) | 17:13 | 32 | 16:06 (39) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:26 (21) | 06:26 | | 19:35 (37) | 07:25 | | 17:37 (40) | 07:24 | | 15:34 (39) | 08:26 | | | 09:01 |
| | 21:51 | 5 | 20:31 (21) | 20:44 | 22 | 19:57 (37) | 19:25 | 55 | 18:32 (38) | 17:11 | 32 | 16:06 (39) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 20:23 (21) | 06:28 | | 19:37 (37) | 07:27 | | 17:37 (40) | 07:26 | | 15:33 (31) | 08:28 | | | 09:01 |
| | 21:49 | 11 | 20:34 (21) | 20:42 | 17 | 19:54 (37) | 19:22 | 55 | 18:32 (38) | 17:09 | 33 | 16:06 (39) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 20:21 (21) | 06:30 | | 19:38 (19) | 07:29 | | 17:37 (40) | 07:28 | | 15:33 (31) | 08:30 | | | 09:01 |
| | 21:47 | 14 | 20:35 (21) | 20:39 | 17 | 19:55 (19) | 19:20 | 54 | 18:31 (38) | 17:06 | 33 | 16:06 (39) | 16:13 | | | 16:10 |
| 29 | 05:34 | | 19:46 (37) | 06:32 | | 19:37 (19) | 07:31 | | 17:38 (40) | 07:30 | | 15:31 (31) | 08:32 | | | 09:01 |
| | 21:45 | 27 | 20:37 (21) | 20:37 | 19 | 19:56 (19) | 19:17 | 53 | 18:31 (38) | 17:04 | 35 | 16:06 (39) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 19:43 (37) | 06:34 | | 19:36 (19) | 07:33 | | 17:40 (40) | 07:33 | | 15:30 (31) | 08:33 | | | 09:01 |
| | 21:44 | 35 | 20:38 (21) | 20:34 | 20 | 19:56 (19) | 19:15 | 51 | 18:31 (38) | 17:02 | 35 | 16:05 (39) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 19:41 (37) | 06:36 | | 19:36 (19) | | | | 07:35 | | 15:29 (31) | | | | 09:01 |
| | 21:42 | 41 | 20:39 (21) | 20:32 | 20 | 19:56 (19) | | | | 17:00 | 36 | 16:05 (39) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 133 | | | 1343 | | | 1639 | | | 630 | | | 427 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,96 | | | 0,97 | | | 0,97 | | | 0,84 | | | 0,76 | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | 0,25 | | | 0,12 | | |
| Total, real | | 61 | | | 662 | | | 616 | | | 159 | | | 51 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (34) | 08:28 | | 07:27 | | 17:35 (40) | 07:08 | | 07:50 (26) | 05:55 | | 19:59 (23) | 05:02 | | |
| | 16:14 | 16 | 09:55 (34) | 17:08 | | 18:07 | 4 | 17:39 (40) | 20:10 | 29 | 08:19 (26) | 21:09 | 28 | 20:27 (23) | 22:02 | | |
| 2 | 09:01 | | 09:38 (34) | 08:26 | | 07:24 | | 17:32 (40) | 07:05 | | 07:50 (26) | 05:53 | | 19:59 (23) | 05:01 | | |
| | 16:15 | 17 | 09:55 (34) | 17:10 | | 18:09 | 10 | 17:42 (40) | 20:12 | 29 | 08:19 (26) | 21:11 | 28 | 20:27 (23) | 22:04 | | |
| 3 | 09:00 | | 09:39 (34) | 08:24 | | 07:22 | | 17:30 (40) | 07:03 | | 07:49 (26) | 05:51 | | 19:58 (23) | 05:00 | | |
| | 16:16 | 18 | 09:57 (34) | 17:12 | | 18:11 | 13 | 17:43 (40) | 20:13 | 29 | 08:18 (26) | 21:13 | 30 | 20:28 (23) | 22:05 | | |
| 4 | 09:00 | | 09:38 (34) | 08:22 | | 07:19 | | 17:29 (40) | 07:00 | | 07:49 (26) | 05:48 | | 19:58 (23) | 04:59 | | |
| | 16:17 | 19 | 09:57 (34) | 17:14 | | 18:14 | 17 | 17:46 (40) | 20:15 | 30 | 08:19 (26) | 21:14 | 30 | 20:28 (23) | 22:06 | | |
| 5 | 09:00 | | 09:39 (34) | 08:20 | | 07:17 | | 17:28 (40) | 06:58 | | 07:49 (26) | 05:46 | | 19:57 (23) | 04:58 | | |
| | 16:19 | 19 | 09:58 (34) | 17:17 | | 18:16 | 18 | 17:46 (40) | 20:17 | 28 | 08:17 (26) | 21:16 | 31 | 20:28 (23) | 22:07 | | |
| 6 | 08:59 | | 09:39 (34) | 08:18 | | 07:14 | | 17:27 (40) | 06:55 | | 07:50 (26) | 05:44 | | 19:57 (23) | 04:57 | | |
| | 16:20 | 20 | 09:59 (34) | 17:19 | | 18:18 | 19 | 17:46 (40) | 20:19 | 27 | 08:17 (26) | 21:18 | 31 | 20:28 (23) | 22:08 | | |
| 7 | 08:59 | | 09:38 (34) | 08:16 | | 07:12 | | 17:27 (40) | 06:53 | | 07:49 (26) | 05:42 | | 19:57 (23) | 04:56 | | |
| | 16:22 | 22 | 10:00 (34) | 17:21 | | 18:20 | 19 | 17:46 (40) | 20:21 | 27 | 08:16 (26) | 21:20 | 31 | 20:28 (23) | 22:10 | | |
| 8 | 08:58 | | 09:38 (34) | 08:14 | | 07:09 | | 17:26 (40) | 06:50 | | 07:51 (26) | 05:40 | | 19:57 (23) | 04:56 | | |
| | 16:23 | 22 | 10:00 (34) | 17:23 | | 18:22 | 20 | 17:46 (40) | 20:23 | 24 | 08:15 (26) | 21:22 | 31 | 20:28 (23) | 22:11 | | |
| 9 | 08:57 | | 09:38 (34) | 08:12 | | 07:07 | | 17:27 (40) | 06:48 | | 07:51 (26) | 05:38 | | 19:57 (23) | 04:55 | | |
| | 16:25 | 23 | 10:01 (34) | 17:25 | | 18:24 | 19 | 17:46 (40) | 20:25 | 22 | 08:13 (26) | 21:24 | 30 | 20:27 (23) | 22:12 | | |
| 10 | 08:57 | | 09:38 (34) | 08:10 | | 07:04 | | 17:27 (40) | 06:45 | | 07:53 (26) | 05:36 | | 19:57 (23) | 04:54 | | |
| | 16:26 | 23 | 10:01 (34) | 17:27 | | 18:26 | 17 | 17:44 (40) | 20:27 | 18 | 08:11 (26) | 21:26 | 30 | 20:27 (23) | 22:12 | | |
| 11 | 08:56 | | 09:39 (34) | 08:08 | | 07:02 | | 17:28 (40) | 06:43 | | 07:54 (26) | 05:34 | | 19:57 (23) | 04:54 | | |
| | 16:28 | 23 | 10:02 (34) | 17:29 | | 18:28 | 15 | 17:43 (40) | 20:29 | 14 | 08:08 (26) | 21:28 | 29 | 20:26 (23) | 22:13 | | |
| 12 | 08:55 | | 09:39 (34) | 08:06 | | 06:59 | | 17:29 (40) | 06:40 | | 07:58 (26) | 05:32 | | 19:58 (23) | 04:53 | | |
| | 16:29 | 24 | 10:03 (34) | 17:32 | | 18:30 | 12 | 17:41 (40) | 20:31 | 7 | 08:05 (26) | 21:30 | 29 | 20:27 (23) | 22:14 | | |
| 13 | 08:54 | | 09:39 (34) | 08:04 | | 06:57 | | 17:32 (40) | 06:38 | | | 05:30 | | 19:58 (23) | 04:53 | | |
| | 16:31 | 25 | 10:04 (34) | 17:34 | | 18:32 | 6 | 17:38 (40) | 20:33 | | | 21:32 | 28 | 20:26 (23) | 22:15 | | |
| 14 | 08:53 | | 09:40 (34) | 08:02 | | 06:54 | | | 06:35 | | | 05:28 | | 19:58 (23) | 04:53 | | 05:51 (25) |
| | 16:33 | 24 | 10:04 (34) | 17:36 | | 18:34 | | | 20:35 | | | 21:33 | 27 | 20:25 (23) | 22:16 | 5 | 05:56 (25) |
| 15 | 08:52 | | 09:40 (34) | 07:59 | | 06:52 | | | 06:33 | | | 05:27 | | 20:00 (23) | 04:52 | | 05:50 (25) |
| | 16:35 | 25 | 10:05 (34) | 17:38 | | 18:36 | | | 20:37 | | | 21:35 | 25 | 20:25 (23) | 22:16 | 8 | 05:58 (25) |
| 16 | 08:51 | | 09:40 (34) | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 20:00 (23) | 04:52 | | 05:50 (25) |
| | 16:36 | 25 | 10:05 (34) | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | 24 | 20:24 (23) | 22:17 | 9 | 05:59 (25) |
| 17 | 08:50 | | 09:40 (34) | 07:55 | | 06:46 | | | 06:28 | | | 05:23 | | 20:01 (23) | 04:52 | | 05:49 (25) |
| | 16:38 | 26 | 10:06 (34) | 17:42 | | 18:40 | | | 20:41 | | | 21:39 | 23 | 20:24 (23) | 22:17 | 11 | 06:00 (25) |
| 18 | 08:49 | | 09:40 (34) | 07:53 | | 06:44 | | | 06:25 | | | 05:21 | | 20:02 (23) | 04:52 | | 05:49 (25) |
| | 16:40 | 25 | 10:05 (34) | 17:44 | | 18:42 | | | 20:43 | | | 21:41 | 20 | 20:22 (23) | 22:18 | 11 | 06:00 (25) |
| 19 | 08:48 | | 09:41 (34) | 07:50 | | 06:41 | | 18:11 (37) | 06:23 | | | 05:20 | | 20:04 (23) | 04:52 | | 05:49 (25) |
| | 16:42 | 25 | 10:06 (34) | 17:46 | | 18:44 | 6 | 18:17 (37) | 20:45 | | | 21:42 | 18 | 20:22 (23) | 22:18 | 12 | 06:01 (25) |
| 20 | 08:46 | | 09:41 (34) | 07:48 | | 06:39 | | 18:08 (37) | 06:20 | | | 05:18 | | 20:05 (23) | 04:52 | | 05:49 (25) |
| | 16:44 | 25 | 10:06 (34) | 17:49 | | 18:46 | 10 | 18:18 (37) | 20:47 | | | 21:44 | 15 | 20:20 (23) | 22:19 | 12 | 06:01 (25) |
| 21 | 08:45 | | 09:42 (34) | 07:46 | | 06:36 | | 18:07 (37) | 06:18 | | | 05:16 | | 20:07 (23) | 04:52 | | 05:49 (25) |
| | 16:46 | 24 | 10:06 (34) | 17:51 | | 18:48 | 14 | 18:21 (37) | 20:49 | | | 21:46 | 11 | 20:18 (23) | 22:19 | 12 | 06:01 (25) |
| 22 | 08:44 | | 09:42 (34) | 07:43 | | 06:34 | | 18:06 (37) | 06:16 | | | 05:15 | | 20:10 (23) | 04:52 | | 05:50 (25) |
| | 16:48 | 24 | 10:06 (34) | 17:53 | | 18:50 | 16 | 18:22 (37) | 20:51 | | | 21:47 | 5 | 20:15 (23) | 22:19 | 12 | 06:02 (25) |
| 23 | 08:42 | | 09:44 (34) | 07:41 | | 06:31 | | 18:05 (37) | 06:13 | | | 05:13 | | | 04:53 | | 05:50 (25) |
| | 16:50 | 22 | 10:06 (34) | 17:55 | | 18:52 | 17 | 18:22 (37) | 20:53 | | | 21:49 | | | 22:19 | 12 | 06:02 (25) |
| 24 | 08:41 | | 09:44 (34) | 07:39 | | 06:28 | | 18:05 (37) | 06:11 | | | 05:12 | | | 04:53 | | 05:50 (25) |
| | 16:52 | 22 | 10:06 (34) | 17:57 | | 18:54 | 18 | 18:23 (37) | 20:55 | | | 21:51 | | | 22:19 | 11 | 06:01 (25) |
| 25 | 08:39 | | 09:45 (34) | 07:36 | | 06:26 | | 07:01 (26) | 06:09 | | 20:09 (23) | 05:10 | | | 04:53 | | 05:51 (25) |
| | 16:54 | 20 | 10:05 (34) | 17:59 | | 18:56 | 30 | 18:22 (37) | 20:57 | 8 | 20:17 (23) | 21:52 | | | 22:19 | 11 | 06:02 (25) |
| 26 | 08:38 | | 09:46 (34) | 07:34 | | 06:23 | | 06:58 (26) | 06:06 | | 20:06 (23) | 05:09 | | | 04:54 | | 05:51 (25) |
| | 16:56 | 18 | 10:04 (34) | 18:01 | | 18:58 | 35 | 18:22 (37) | 20:59 | 15 | 20:21 (23) | 21:54 | | | 22:19 | 10 | 06:01 (25) |
| 27 | 08:36 | | 09:48 (34) | 07:32 | | 06:21 | | 06:56 (26) | 06:04 | | 20:04 (23) | 05:08 | | | 04:54 | | 05:53 (25) |
| | 16:58 | 16 | 10:04 (34) | 18:03 | | 19:00 | 36 | 18:20 (37) | 21:01 | 19 | 20:23 (23) | 21:55 | | | 22:19 | 8 | 06:01 (25) |
| 28 | 08:35 | | 09:50 (34) | 07:29 | | 06:18 | | 06:54 (26) | 06:02 | | 20:02 (23) | 05:06 | | | 04:55 | | 05:54 (25) |
| | 17:00 | 12 | 10:02 (34) | 18:05 | | 19:02 | 35 | 18:18 (37) | 21:03 | 22 | 20:24 (23) | 21:57 | | | 22:19 | 6 | 06:00 (25) |
| 29 | 08:33 | | 09:53 (34) | | | 07:16 | | 07:53 (26) | 05:59 | | 20:01 (23) | 05:05 | | | 04:55 | | 05:57 (25) |
| | 17:02 | 7 | 10:00 (34) | | | 20:04 | 32 | 19:16 (37) | 21:05 | 24 | 20:25 (23) | 21:58 | | | 22:19 | 1 | 05:58 (25) |
| 30 | 08:31 | | | | | 07:13 | | 07:51 (26) | 05:57 | | 20:00 (23) | 05:04 | | | 04:56 | | |
| | 17:04 | | | | | 20:06 | 27 | 08:18 (26) | 21:07 | 26 | 20:26 (23) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | | | | 07:10 | | 07:51 (26) | | | | 05:03 | | | | | |
| | 17:06 | | | | | 20:08 | 28 | 08:19 (26) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 611 | | | | | 493 | | | 398 | | | 554 | | | 151 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | | | 0,98 | | | 0,99 | | | 0,95 | | | 0,81 | |
| Total reduction | | 0,11 | | | | | 0,31 | | | 0,37 | | | 0,46 | | | 0,37 | |
| Total, real | | 67 | | | | | 155 | | | 145 | | | 257 | | | 56 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:08 (23) | 06:38 | | 07:53 (26) | 07:35 | | 18:09 (40) | 07:37 | | | 08:35 | | 09:21 (34) |
| | 22:18 | | | 21:40 | 29 | 20:37 (23) | 20:29 | 14 | 08:07 (26) | 19:12 | 10 | 18:19 (40) | 16:58 | | | 16:10 | 23 | 09:44 (34) |
| 2 | 04:57 | | | 05:41 | | 20:07 (23) | 06:40 | | 07:51 (26) | 07:37 | | 18:07 (40) | 07:39 | | | 08:37 | | 09:21 (34) |
| | 22:18 | | | 21:38 | 30 | 20:37 (23) | 20:27 | 18 | 08:09 (26) | 19:09 | 14 | 18:21 (40) | 16:56 | | | 16:09 | 24 | 09:45 (34) |
| 3 | 04:58 | | | 05:43 | | 20:07 (23) | 06:42 | | 07:49 (26) | 07:38 | | 18:05 (40) | 07:41 | | | 08:38 | | 09:22 (34) |
| | 22:17 | | | 21:36 | 30 | 20:37 (23) | 20:24 | 22 | 08:11 (26) | 19:07 | 17 | 18:22 (40) | 16:54 | | | 16:08 | 23 | 09:45 (34) |
| 4 | 04:59 | | | 05:45 | | 20:07 (23) | 06:43 | | 07:48 (26) | 07:40 | | 18:04 (40) | 07:43 | | | 08:40 | | 09:22 (34) |
| | 22:17 | | | 21:34 | 31 | 20:38 (23) | 20:22 | 24 | 08:12 (26) | 19:04 | 18 | 18:22 (40) | 16:51 | | | 16:07 | 22 | 09:44 (34) |
| 5 | 05:00 | | | 05:47 | | 20:07 (23) | 06:45 | | 07:47 (26) | 07:42 | | 18:03 (40) | 07:45 | | | 08:41 | | 09:23 (34) |
| | 22:16 | | | 21:32 | 31 | 20:38 (23) | 20:19 | 26 | 08:13 (26) | 19:02 | 20 | 18:23 (40) | 16:49 | | | 16:07 | 22 | 09:45 (34) |
| 6 | 05:01 | | | 05:49 | | 20:06 (23) | 06:47 | | 07:45 (26) | 07:44 | | 18:03 (40) | 07:47 | | | 08:43 | | 09:25 (34) |
| | 22:15 | | | 21:30 | 31 | 20:37 (23) | 20:17 | 27 | 08:12 (26) | 18:59 | 19 | 18:22 (40) | 16:47 | | | 16:06 | 20 | 09:45 (34) |
| 7 | 05:02 | | | 05:51 | | 20:07 (23) | 06:49 | | 07:44 (26) | 07:46 | | 18:03 (40) | 07:49 | | | 08:44 | | 09:25 (34) |
| | 22:15 | | | 21:28 | 30 | 20:37 (23) | 20:14 | 28 | 08:12 (26) | 18:57 | 19 | 18:22 (40) | 16:45 | | | 16:06 | 20 | 09:45 (34) |
| 8 | 05:03 | | | 05:52 | | 20:07 (23) | 06:51 | | 07:44 (26) | 07:48 | | 18:03 (40) | 07:51 | | | 08:46 | | 09:26 (34) |
| | 22:14 | | | 21:26 | 30 | 20:37 (23) | 20:12 | 29 | 08:13 (26) | 18:54 | 19 | 18:22 (40) | 16:44 | | | 16:05 | 19 | 09:45 (34) |
| 9 | 05:04 | | | 05:54 | | 20:06 (23) | 06:53 | | 07:43 (26) | 07:50 | | 18:03 (40) | 07:53 | | | 08:47 | | 09:27 (34) |
| | 22:13 | | | 21:24 | 30 | 20:36 (23) | 20:09 | 30 | 08:13 (26) | 18:52 | 18 | 18:21 (40) | 16:42 | | | 16:05 | 18 | 09:45 (34) |
| 10 | 05:06 | | | 05:56 | | 20:07 (23) | 06:55 | | 07:43 (26) | 07:52 | | 18:03 (40) | 07:55 | | | 08:48 | | 09:28 (34) |
| | 22:12 | | | 21:21 | 29 | 20:36 (23) | 20:06 | 29 | 08:12 (26) | 18:49 | 16 | 18:19 (40) | 16:40 | | | 16:04 | 17 | 09:45 (34) |
| 11 | 05:07 | | | 05:58 | | 20:07 (23) | 06:57 | | 07:42 (26) | 07:54 | | 18:04 (40) | 07:57 | | | 08:49 | | 09:29 (34) |
| | 22:11 | | | 21:19 | 29 | 20:36 (23) | 20:04 | 29 | 08:11 (26) | 18:47 | 12 | 18:16 (40) | 16:38 | | | 16:04 | 16 | 09:45 (34) |
| 12 | 05:08 | | | 06:00 | | 20:08 (23) | 06:59 | | 07:42 (26) | 07:56 | | 18:06 (40) | 07:59 | | | 08:51 | | 09:29 (34) |
| | 22:10 | | | 21:17 | 27 | 20:35 (23) | 20:01 | 29 | 08:11 (26) | 18:44 | 8 | 18:14 (40) | 16:36 | | | 16:04 | 16 | 09:45 (34) |
| 13 | 05:09 | | | 06:02 | | 20:08 (23) | 07:00 | | 07:42 (26) | 07:58 | | | 08:01 | | 09:24 (34) | 08:52 | | 09:30 (34) |
| | 22:09 | | | 21:15 | 25 | 20:33 (23) | 19:59 | 28 | 08:10 (26) | 18:42 | | | 16:34 | 8 | 09:32 (34) | 16:04 | 15 | 09:45 (34) |
| 14 | 05:11 | | | 06:04 | | 20:09 (23) | 07:02 | | 07:43 (26) | 08:00 | | | 08:03 | | 09:22 (34) | 08:53 | | 09:31 (34) |
| | 22:08 | | | 21:13 | 23 | 20:32 (23) | 19:56 | 31 | 19:05 (37) | 18:39 | | | 16:33 | 12 | 09:34 (34) | 16:04 | 14 | 09:45 (34) |
| 15 | 05:12 | | | 06:06 | | 20:10 (23) | 07:04 | | 07:44 (26) | 08:02 | | | 08:05 | | 09:20 (34) | 08:54 | | 09:32 (34) |
| | 22:07 | | | 21:10 | 21 | 20:31 (23) | 19:53 | 35 | 19:08 (37) | 18:37 | | | 16:31 | 16 | 09:36 (34) | 16:04 | 13 | 09:45 (34) |
| 16 | 05:13 | | | 06:07 | | 20:12 (23) | 07:06 | | 07:45 (26) | 08:04 | | | 08:07 | | 09:19 (34) | 08:55 | | 09:33 (34) |
| | 22:05 | | | 21:08 | 18 | 20:30 (23) | 19:51 | 35 | 19:09 (37) | 18:34 | | | 16:29 | 18 | 09:37 (34) | 16:04 | 12 | 09:45 (34) |
| 17 | 05:15 | | | 06:09 | | 20:13 (23) | 07:08 | | 07:46 (26) | 08:06 | | | 08:09 | | 09:19 (34) | 08:56 | | 09:34 (34) |
| | 22:04 | | | 21:06 | 14 | 20:27 (23) | 19:48 | 34 | 19:10 (37) | 18:32 | | | 16:28 | 20 | 09:39 (34) | 16:04 | 11 | 09:45 (34) |
| 18 | 05:16 | | | 06:11 | | 20:17 (23) | 07:10 | | 07:47 (26) | 08:08 | | | 08:11 | | 09:18 (34) | 08:56 | | 09:35 (34) |
| | 22:03 | | | 21:03 | 6 | 20:23 (23) | 19:46 | 31 | 19:09 (37) | 18:30 | | | 16:26 | 22 | 09:40 (34) | 16:04 | 11 | 09:46 (34) |
| 19 | 05:18 | | | 06:13 | | | 07:12 | | 07:52 (26) | 08:10 | | | 08:13 | | 09:18 (34) | 08:57 | | 09:36 (34) |
| | 22:01 | | | 21:01 | | | 19:43 | 20 | 19:09 (37) | 18:27 | | | 16:24 | 22 | 09:40 (34) | 16:04 | 10 | 09:46 (34) |
| 20 | 05:19 | | | 06:15 | | | 07:14 | | 18:51 (37) | 08:12 | | | 08:15 | | 09:17 (34) | 08:58 | | 09:36 (34) |
| | 22:00 | | | 20:59 | | | 19:41 | 18 | 19:09 (37) | 18:25 | | | 16:23 | 24 | 09:41 (34) | 16:04 | 10 | 09:46 (34) |
| 21 | 05:21 | | | 06:17 | | | 07:16 | | 18:51 (37) | 08:14 | | | 08:17 | | 09:17 (34) | 08:58 | | 09:37 (34) |
| | 21:59 | | | 20:56 | | | 19:38 | 18 | 19:09 (37) | 18:22 | | | 16:22 | 24 | 09:41 (34) | 16:05 | 10 | 09:47 (34) |
| 22 | 05:22 | | 20:18 (23) | 06:19 | | | 07:17 | | 18:52 (37) | 08:16 | | | 08:19 | | 09:17 (34) | 08:59 | | 09:37 (34) |
| | 21:57 | 9 | 20:27 (23) | 20:54 | | | 19:35 | 14 | 19:06 (37) | 18:20 | | | 16:20 | 25 | 09:42 (34) | 16:05 | 10 | 09:47 (34) |
| 23 | 05:24 | | 20:16 (23) | 06:21 | | | 07:19 | | 18:52 (37) | 08:18 | | | 08:21 | | 09:18 (34) | 08:59 | | 09:38 (34) |
| | 21:56 | 14 | 20:30 (23) | 20:52 | | | 19:33 | 12 | 19:04 (37) | 18:18 | | | 16:19 | 25 | 09:43 (34) | 16:06 | 10 | 09:48 (34) |
| 24 | 05:26 | | 20:14 (23) | 06:23 | | | 07:21 | | 18:54 (37) | 08:20 | | | 08:23 | | 09:18 (34) | 09:00 | | 09:38 (34) |
| | 21:54 | 17 | 20:31 (23) | 20:49 | | | 19:30 | 7 | 19:01 (37) | 18:15 | | | 16:17 | 25 | 09:43 (34) | 16:06 | 10 | 09:48 (34) |
| 25 | 05:27 | | 20:14 (23) | 06:24 | | | 07:23 | | 18:56 (37) | 07:22 | | | 08:25 | | 09:18 (34) | 09:00 | | 09:38 (34) |
| | 21:52 | 18 | 20:32 (23) | 20:47 | | | 19:28 | 3 | 18:59 (37) | 17:13 | | | 16:16 | 26 | 09:44 (34) | 16:07 | 10 | 09:48 (34) |
| 26 | 05:29 | | 20:12 (23) | 06:26 | | | 07:25 | | | 07:24 | | | 08:26 | | 09:19 (34) | 09:00 | | 09:38 (34) |
| | 21:51 | 21 | 20:33 (23) | 20:44 | | | 19:25 | | | 17:11 | | | 16:15 | 25 | 09:44 (34) | 16:08 | 11 | 09:49 (34) |
| 27 | 05:31 | | 20:11 (23) | 06:28 | | | 07:27 | | | 07:26 | | | 08:28 | | 09:19 (34) | 09:01 | | 09:38 (34) |
| | 21:49 | 23 | 20:34 (23) | 20:42 | | | 19:22 | | | 17:09 | | | 16:14 | 25 | 09:44 (34) | 16:09 | 12 | 09:50 (34) |
| 28 | 05:33 | | 20:10 (23) | 06:30 | | | 07:29 | | | 07:28 | | | 08:30 | | 09:20 (34) | 09:01 | | 09:38 (34) |
| | 21:47 | 24 | 20:34 (23) | 20:39 | | | 19:20 | | | 17:06 | | | 16:13 | 24 | 09:44 (34) | 16:09 | 12 | 09:50 (34) |
| 29 | 05:34 | | 20:10 (23) | 06:32 | | | 07:31 | | | 07:30 | | | 08:32 | | 09:20 (34) | 09:01 | | 09:38 (34) |
| | 21:45 | 26 | 20:36 (23) | 20:37 | | | 19:17 | | | 17:04 | | | 16:12 | 25 | 09:45 (34) | 16:10 | 13 | 09:51 (34) |
| 30 | 05:36 | | 20:09 (23) | 06:34 | | | 07:33 | | | 07:32 | | | 08:33 | | 09:20 (34) | 09:01 | | 09:38 (34) |
| | 21:44 | 28 | 20:37 (23) | 20:34 | | | 19:15 | | | 17:02 | | | 16:11 | 24 | 09:44 (34) | 16:11 | 14 | 09:52 (34) |
| 31 | 05:38 | | 20:08 (23) | 06:36 | | 07:57 (26) | | | | 07:35 | | | | | | 09:01 | | 09:38 (34) |
| | 21:42 | 28 | 20:36 (23) | 20:32 | 8 | 08:05 (26) | | | | 17:00 | | | | | | 16:12 | 16 | 09:54 (34) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 208 | | | 472 | | | 591 | | | 190 | | | 390 | | | 464 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 1,00 | | | 0,95 | | | 0,64 | | | 0,64 | |
| Total reduction | | 0,44 | | | 0,46 | | | 0,37 | | | 0,28 | | | 0,10 | | | 0,08 | |
| Total, real | | 91 | | | 218 | | | 220 | | | 52 | | | 37 | | | 38 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (34) | 08:28 | | 07:27 | | | 07:08 | | 07:32 (4) | 05:55 | | 20:14 (23) | 05:02 | | |
| | 16:14 | 22 | 10:07 (34) | 17:08 | | 18:07 | | | 20:10 | 7 | 07:39 (4) | 21:09 | 20 | 20:34 (23) | 22:02 | | |
| 2 | 09:01 | | 09:45 (34) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (4) | 05:53 | | 20:13 (23) | 05:01 | | |
| | 16:15 | 23 | 10:08 (34) | 17:10 | | 18:09 | | | 20:12 | 8 | 07:38 (4) | 21:11 | 22 | 20:35 (23) | 22:04 | | |
| 3 | 09:00 | | 09:45 (34) | 08:24 | | 07:22 | | | 07:03 | | 07:30 (4) | 05:51 | | 20:12 (23) | 05:00 | | |
| | 16:16 | 24 | 10:09 (34) | 17:12 | | 18:11 | | | 20:13 | 6 | 07:36 (4) | 21:13 | 24 | 20:36 (23) | 22:05 | | |
| 4 | 09:00 | | 09:45 (34) | 08:22 | | 07:19 | | | 07:00 | | 07:41 (26) | 05:48 | | 20:11 (23) | 04:59 | | |
| | 16:17 | 24 | 10:09 (34) | 17:14 | | 18:14 | | | 20:15 | 12 | 07:53 (26) | 21:14 | 25 | 20:36 (23) | 22:06 | | |
| 5 | 09:00 | | 09:46 (34) | 08:20 | | 07:17 | | | 06:58 | | 07:37 (26) | 05:46 | | 20:11 (23) | 04:58 | | |
| | 16:19 | 24 | 10:10 (34) | 17:17 | | 18:16 | | | 20:17 | 18 | 07:55 (26) | 21:16 | 25 | 20:36 (23) | 22:07 | | |
| 6 | 08:59 | | 09:46 (34) | 08:18 | | 07:14 | | | 06:55 | | 07:35 (26) | 05:44 | | 20:10 (23) | 04:57 | | |
| | 16:20 | 25 | 10:11 (34) | 17:19 | | 18:18 | | | 20:19 | 22 | 07:57 (26) | 21:18 | 27 | 20:37 (23) | 22:08 | | |
| 7 | 08:59 | | 09:46 (34) | 08:16 | | 07:12 | | | 06:53 | | 07:33 (26) | 05:42 | | 20:10 (23) | 04:56 | | |
| | 16:22 | 25 | 10:11 (34) | 17:21 | | 18:20 | | | 20:21 | 25 | 07:58 (26) | 21:20 | 27 | 20:37 (23) | 22:10 | | |
| 8 | 08:58 | | 09:46 (34) | 08:14 | | 07:09 | | 17:48 (40) | 06:50 | | 07:32 (26) | 05:40 | | 20:10 (23) | 04:56 | | |
| | 16:23 | 26 | 10:12 (34) | 17:23 | | 18:22 | 6 | 17:54 (40) | 20:23 | 28 | 08:00 (26) | 21:22 | 26 | 20:36 (23) | 22:11 | | |
| 9 | 08:57 | | 09:46 (34) | 08:12 | | 07:07 | | 17:47 (40) | 06:48 | | 07:30 (26) | 05:38 | | 20:10 (23) | 04:55 | | |
| | 16:25 | 26 | 10:12 (34) | 17:25 | | 18:24 | 9 | 17:56 (40) | 20:25 | 30 | 08:00 (26) | 21:24 | 26 | 20:36 (23) | 22:12 | | |
| 10 | 08:57 | | 09:46 (34) | 08:10 | | 07:04 | | 17:45 (40) | 06:45 | | 07:29 (26) | 05:36 | | 20:10 (23) | 04:54 | | |
| | 16:26 | 27 | 10:13 (34) | 17:27 | | 18:26 | 13 | 17:58 (40) | 20:27 | 32 | 08:01 (26) | 21:26 | 26 | 20:36 (23) | 22:12 | | |
| 11 | 08:56 | | 09:46 (34) | 08:08 | | 07:02 | | 17:44 (40) | 06:42 | | 07:28 (26) | 05:34 | | 20:10 (23) | 04:54 | | |
| | 16:28 | 28 | 10:14 (34) | 17:29 | | 18:28 | 17 | 18:01 (40) | 20:29 | 33 | 08:01 (26) | 21:28 | 25 | 20:35 (23) | 22:13 | | |
| 12 | 08:55 | | 09:46 (34) | 08:06 | | 06:59 | | 17:43 (40) | 06:40 | | 07:28 (26) | 05:32 | | 20:11 (23) | 04:53 | | |
| | 16:29 | 28 | 10:14 (34) | 17:31 | | 18:30 | 18 | 18:01 (40) | 20:31 | 33 | 08:01 (26) | 21:30 | 25 | 20:36 (23) | 22:14 | | |
| 13 | 08:54 | | 09:47 (34) | 08:04 | | 06:57 | | 17:42 (40) | 06:38 | | 07:26 (26) | 05:30 | | 20:11 (23) | 04:53 | | |
| | 16:31 | 28 | 10:15 (34) | 17:34 | | 18:32 | 19 | 18:01 (40) | 20:33 | 35 | 08:01 (26) | 21:32 | 24 | 20:35 (23) | 22:15 | | |
| 14 | 08:53 | | 09:47 (34) | 08:02 | | 06:54 | | 17:43 (40) | 06:35 | | 07:26 (26) | 05:28 | | 20:11 (23) | 04:53 | | |
| | 16:33 | 29 | 10:16 (34) | 17:36 | | 18:34 | 18 | 18:01 (40) | 20:35 | 35 | 08:01 (26) | 21:33 | 23 | 20:34 (23) | 22:16 | | |
| 15 | 08:52 | | 09:48 (34) | 07:59 | | 06:52 | | 17:43 (40) | 06:33 | | 07:26 (26) | 05:27 | | 20:12 (23) | 04:52 | | 21:37 (35) |
| | 16:35 | 28 | 10:16 (34) | 17:38 | | 18:36 | 17 | 18:00 (40) | 20:37 | 35 | 08:01 (26) | 21:35 | 22 | 20:34 (23) | 22:16 | 1 | 21:38 (35) |
| 16 | 08:51 | | 09:48 (34) | 07:57 | | 06:49 | | 17:44 (40) | 06:30 | | 07:26 (26) | 05:25 | | 20:13 (23) | 04:52 | | 21:36 (35) |
| | 16:36 | 28 | 10:16 (34) | 17:40 | | 18:38 | 15 | 17:59 (40) | 20:39 | 34 | 08:00 (26) | 21:37 | 20 | 20:33 (23) | 22:17 | 3 | 21:39 (35) |
| 17 | 08:50 | | 09:48 (34) | 07:55 | | 06:46 | | 17:44 (40) | 06:28 | | 07:26 (26) | 05:23 | | 20:14 (23) | 04:52 | | 21:36 (35) |
| | 16:38 | 29 | 10:17 (34) | 17:42 | | 18:40 | 13 | 17:57 (40) | 20:41 | 34 | 08:00 (26) | 21:39 | 19 | 20:33 (23) | 22:17 | 3 | 21:39 (35) |
| 18 | 08:49 | | 09:48 (34) | 07:53 | | 06:44 | | 07:08 (6) | 06:25 | | 07:25 (26) | 05:21 | | 20:15 (23) | 04:52 | | 21:36 (35) |
| | 16:40 | 28 | 10:16 (34) | 17:44 | | 18:42 | 11 | 17:55 (40) | 20:43 | 34 | 07:59 (26) | 21:41 | 16 | 20:31 (23) | 22:18 | 4 | 21:40 (35) |
| 19 | 08:48 | | 09:49 (34) | 07:50 | | 06:41 | | 07:06 (6) | 06:23 | | 07:26 (26) | 05:20 | | 20:16 (23) | 04:52 | | 21:36 (35) |
| | 16:42 | 28 | 10:17 (34) | 17:46 | | 18:44 | 4 | 07:10 (6) | 20:45 | 32 | 07:58 (26) | 21:42 | 15 | 20:31 (23) | 22:18 | 4 | 21:40 (35) |
| 20 | 08:46 | | 09:49 (34) | 07:48 | | 06:39 | | 07:03 (6) | 06:20 | | 07:26 (26) | 05:18 | | 20:18 (23) | 04:52 | | 21:36 (35) |
| | 16:44 | 28 | 10:17 (34) | 17:48 | | 18:46 | 6 | 07:09 (6) | 20:47 | 32 | 07:58 (26) | 21:44 | 11 | 20:29 (23) | 22:19 | 4 | 21:40 (35) |
| 21 | 08:45 | | 09:50 (34) | 07:46 | | 06:36 | | 07:01 (6) | 06:18 | | 07:26 (26) | 05:16 | | 20:21 (23) | 04:52 | | 21:36 (35) |
| | 16:46 | 27 | 10:17 (34) | 17:51 | | 18:48 | 7 | 07:08 (6) | 20:49 | 30 | 07:56 (26) | 21:46 | 6 | 20:27 (23) | 22:19 | 4 | 21:40 (35) |
| 22 | 08:44 | | 09:51 (34) | 07:43 | | 06:34 | | 07:01 (6) | 06:16 | | 07:27 (26) | 05:15 | | | 04:52 | | 21:37 (35) |
| | 16:48 | 26 | 10:17 (34) | 17:53 | | 18:50 | 4 | 07:05 (6) | 20:51 | 28 | 07:55 (26) | 21:47 | | | 22:19 | 4 | 21:41 (35) |
| 23 | 08:42 | | 09:52 (34) | 07:41 | | 06:31 | | | 06:13 | | 07:28 (26) | 05:13 | | | 04:53 | | 21:37 (35) |
| | 16:50 | 25 | 10:17 (34) | 17:55 | | 18:52 | | | 20:53 | 26 | 07:54 (26) | 21:49 | | | 22:19 | 4 | 21:41 (35) |
| 24 | 08:41 | | 09:52 (34) | 07:39 | | 06:28 | | | 06:11 | | 07:30 (26) | 05:12 | | | 04:53 | | 21:37 (35) |
| | 16:52 | 25 | 10:17 (34) | 17:57 | | 18:54 | | | 20:55 | 23 | 07:53 (26) | 21:51 | | | 22:19 | 4 | 21:41 (35) |
| 25 | 08:39 | | 09:53 (34) | 07:36 | | 06:26 | | | 06:09 | | 07:30 (26) | 05:10 | | | 04:53 | | 21:38 (35) |
| | 16:54 | 23 | 10:16 (34) | 17:59 | | 18:56 | | | 20:57 | 20 | 07:50 (26) | 21:52 | | | 22:19 | 3 | 21:41 (35) |
| 26 | 08:38 | | 09:54 (34) | 07:34 | | 06:23 | | | 06:06 | | 07:33 (26) | 05:09 | | | 04:54 | | 21:38 (35) |
| | 16:56 | 21 | 10:15 (34) | 18:01 | | 18:58 | | | 20:59 | 14 | 07:47 (26) | 21:54 | | | 22:19 | 3 | 21:41 (35) |
| 27 | 08:36 | | 09:56 (34) | 07:32 | | 06:21 | | | 06:04 | | 07:36 (26) | 05:08 | | | 04:54 | | 21:40 (35) |
| | 16:58 | 19 | 10:15 (34) | 18:03 | | 19:00 | | | 21:01 | 8 | 07:44 (26) | 21:55 | | | 22:19 | 1 | 21:41 (35) |
| 28 | 08:35 | | 09:58 (34) | 07:29 | | 06:18 | | | 06:02 | | 20:20 (23) | 05:06 | | | 04:55 | | |
| | 17:00 | 16 | 10:14 (34) | 18:05 | | 19:02 | | | 21:03 | 9 | 20:29 (23) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 10:00 (34) | | | 07:16 | | | 05:59 | | 20:17 (23) | 05:05 | | | 04:55 | | |
| | 17:02 | 12 | 10:12 (34) | | | 20:04 | | | 21:05 | 14 | 20:31 (23) | 21:58 | | | 22:19 | | |
| 30 | 08:31 | | 10:04 (34) | | | 07:13 | | 07:37 (4) | 05:57 | | 20:15 (23) | 05:04 | | | 04:56 | | |
| | 17:04 | 4 | 10:08 (34) | | | 20:06 | 3 | 07:40 (4) | 21:07 | 18 | 20:33 (23) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | | | | 07:10 | | 07:35 (4) | | | | 05:03 | | | | | |
| | 17:06 | | | | | 20:08 | 5 | 07:40 (4) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 726 | | | | | 185 | | | 715 | | | 454 | | | 42 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,61 | | | | | 0,98 | | | 0,99 | | | 0,94 | | | 0,78 | |
| Total reduction | | 0,10 | | | | | 0,31 | | | 0,36 | | | 0,45 | | | 0,34 | |
| Total, real | | 74 | | | | | 57 | | | 257 | | | 202 | | | 14 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:21 (23) | 06:38 | | 07:27 (26) | 07:35 | | 18:22 (40) | 07:37 | | | 08:35 | | 09:28 (34) |
| | 22:18 | | | 21:40 | 25 | 20:46 (23) | 20:29 | 32 | 07:59 (26) | 19:12 | 18 | 18:40 (40) | 16:58 | | | 16:10 | 28 | 09:56 (34) |
| 2 | 04:57 | | | 05:41 | | 20:20 (23) | 06:40 | | 07:27 (26) | 07:37 | | 18:22 (40) | 07:39 | | | 08:37 | | 09:29 (34) |
| | 22:18 | | | 21:38 | 26 | 20:46 (23) | 20:27 | 32 | 07:59 (26) | 19:09 | 18 | 18:40 (40) | 16:56 | | | 16:09 | 27 | 09:56 (34) |
| 3 | 04:58 | | | 05:43 | | 20:20 (23) | 06:42 | | 07:28 (26) | 07:38 | | 18:22 (40) | 07:41 | | | 08:38 | | 09:30 (34) |
| | 22:17 | | | 21:36 | 26 | 20:46 (23) | 20:24 | 30 | 07:58 (26) | 19:07 | 15 | 18:37 (40) | 16:54 | | | 16:08 | 26 | 09:56 (34) |
| 4 | 04:59 | | | 05:45 | | 20:20 (23) | 06:43 | | 07:29 (26) | 07:40 | | 18:23 (40) | 07:43 | | | 08:40 | | 09:30 (34) |
| | 22:17 | | | 21:34 | 27 | 20:47 (23) | 20:22 | 28 | 07:57 (26) | 19:04 | 12 | 18:35 (40) | 16:51 | | | 16:07 | 26 | 09:56 (34) |
| 5 | 05:00 | | | 05:47 | | 20:20 (23) | 06:45 | | 07:30 (26) | 07:42 | | 18:24 (40) | 07:45 | | | 08:41 | | 09:31 (34) |
| | 22:16 | | | 21:32 | 27 | 20:47 (23) | 20:19 | 25 | 07:55 (26) | 19:02 | 8 | 18:32 (40) | 16:49 | | | 16:07 | 25 | 09:56 (34) |
| 6 | 05:01 | | | 05:49 | | 20:20 (23) | 06:47 | | 07:30 (26) | 07:44 | | 18:27 (40) | 07:47 | | | 08:43 | | 09:32 (34) |
| | 22:15 | | | 21:30 | 26 | 20:46 (23) | 20:17 | 23 | 07:53 (26) | 18:59 | 2 | 18:29 (40) | 16:47 | | | 16:06 | 25 | 09:57 (34) |
| 7 | 05:02 | | | 05:51 | | 20:20 (23) | 06:49 | | 07:32 (26) | 07:46 | | | 07:49 | | | 08:44 | | 09:32 (34) |
| | 22:15 | | | 21:28 | 26 | 20:46 (23) | 20:14 | 18 | 07:50 (26) | 18:57 | | | 16:45 | | | 16:06 | 25 | 09:57 (34) |
| 8 | 05:03 | | | 05:52 | | 20:20 (23) | 06:51 | | 07:35 (26) | 07:48 | | | 07:51 | | | 08:46 | | 09:33 (34) |
| | 22:14 | | | 21:26 | 26 | 20:46 (23) | 20:12 | 12 | 07:47 (26) | 18:54 | | | 16:43 | | | 16:05 | 24 | 09:57 (34) |
| 9 | 05:04 | | | 05:54 | | 20:20 (23) | 06:53 | | 07:24 (4) | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (34) |
| | 22:13 | | | 21:24 | 24 | 20:44 (23) | 20:09 | 6 | 07:30 (4) | 18:52 | | | 16:42 | | | 16:05 | 23 | 09:57 (34) |
| 10 | 05:06 | | | 05:56 | | 20:21 (23) | 06:55 | | 07:23 (4) | 07:52 | | | 07:55 | | | 08:48 | | 09:34 (34) |
| | 22:12 | | | 21:21 | 23 | 20:44 (23) | 20:06 | 9 | 07:32 (4) | 18:49 | | | 16:40 | | | 16:04 | 23 | 09:57 (34) |
| 11 | 05:07 | | | 05:58 | | 20:22 (23) | 06:57 | | 07:24 (4) | 07:54 | | | 07:57 | | | 08:49 | | 09:35 (34) |
| | 22:11 | | | 21:19 | 21 | 20:43 (23) | 20:04 | 7 | 07:31 (4) | 18:47 | | | 16:38 | | | 16:04 | 23 | 09:58 (34) |
| 12 | 05:08 | | | 06:00 | | 20:23 (23) | 06:59 | | 07:26 (4) | 07:56 | | | 07:59 | | 09:35 (34) | 08:51 | | 09:36 (34) |
| | 22:10 | | | 21:17 | 19 | 20:42 (23) | 20:01 | 5 | 07:31 (4) | 18:44 | | | 16:36 | 5 | 09:40 (34) | 16:04 | 22 | 09:58 (34) |
| 13 | 05:09 | | | 06:02 | | 20:23 (23) | 07:00 | | 07:28 (4) | 07:58 | | | 08:01 | | 09:31 (34) | 08:52 | | 09:36 (34) |
| | 22:09 | | | 21:15 | 17 | 20:40 (23) | 19:59 | 3 | 07:31 (4) | 18:42 | | | 16:34 | 13 | 09:44 (34) | 16:04 | 22 | 09:58 (34) |
| 14 | 05:11 | | | 06:04 | | 20:25 (23) | 07:02 | | | 08:00 | | | 08:03 | | 09:29 (34) | 08:53 | | 09:37 (34) |
| | 22:08 | | | 21:13 | 13 | 20:38 (23) | 19:56 | | | 18:39 | | | 16:33 | 17 | 09:46 (34) | 16:04 | 21 | 09:58 (34) |
| 15 | 05:12 | | | 06:06 | | 20:28 (23) | 07:04 | | | 08:02 | | | 08:05 | | 09:28 (34) | 08:54 | | 09:38 (34) |
| | 22:07 | | | 21:10 | 7 | 20:35 (23) | 19:53 | | | 18:37 | | | 16:31 | 19 | 09:47 (34) | 16:04 | 20 | 09:58 (34) |
| 16 | 05:13 | | | 06:07 | | 07:43 (26) | 07:06 | | | 08:04 | | | 08:07 | | 09:27 (34) | 08:55 | | 09:38 (34) |
| | 22:05 | | | 21:08 | 9 | 07:52 (26) | 19:51 | | | 18:34 | | | 16:29 | 21 | 09:48 (34) | 16:04 | 20 | 09:58 (34) |
| 17 | 05:15 | | | 06:09 | | 07:39 (26) | 07:08 | | | 08:06 | | | 08:09 | | 09:27 (34) | 08:55 | | 09:39 (34) |
| | 22:04 | | | 21:06 | 16 | 07:55 (26) | 19:48 | | | 18:32 | | | 16:28 | 23 | 09:50 (34) | 16:04 | 20 | 09:59 (34) |
| 18 | 05:16 | | | 06:11 | | 07:37 (26) | 07:10 | | | 08:08 | | | 08:11 | | 09:26 (34) | 08:56 | | 09:40 (34) |
| | 22:03 | | | 21:03 | 20 | 07:57 (26) | 19:46 | | | 18:30 | | | 16:26 | 25 | 09:51 (34) | 16:04 | 19 | 09:59 (34) |
| 19 | 05:18 | | | 06:13 | | 07:35 (26) | 07:12 | | | 08:10 | | | 08:13 | | 09:26 (34) | 08:57 | | 09:41 (34) |
| | 22:01 | | | 21:01 | 23 | 07:58 (26) | 19:43 | | | 18:27 | | | 16:24 | 25 | 09:51 (34) | 16:04 | 19 | 10:00 (34) |
| 20 | 05:19 | | | 06:15 | | 07:34 (26) | 07:14 | | | 08:12 | | | 08:15 | | 09:26 (34) | 08:58 | | 09:41 (34) |
| | 22:00 | | | 20:59 | 26 | 08:00 (26) | 19:41 | | | 18:25 | | | 16:23 | 26 | 09:52 (34) | 16:04 | 18 | 09:59 (34) |
| 21 | 05:21 | | | 06:17 | | 07:33 (26) | 07:15 | | | 08:14 | | | 08:17 | | 09:25 (34) | 08:58 | | 09:42 (34) |
| | 21:59 | | | 20:56 | 28 | 08:01 (26) | 19:38 | | | 18:22 | | | 16:22 | 27 | 09:52 (34) | 16:05 | 18 | 10:00 (34) |
| 22 | 05:22 | | | 06:19 | | 07:31 (26) | 07:17 | | 07:45 (6) | 08:16 | | | 08:19 | | 09:25 (34) | 08:59 | | 09:42 (34) |
| | 21:57 | | | 20:54 | 30 | 08:01 (26) | 19:35 | 7 | 07:52 (6) | 18:20 | | | 16:20 | 28 | 09:53 (34) | 16:05 | 18 | 10:00 (34) |
| 23 | 05:24 | | 20:30 (23) | 06:21 | | 07:30 (26) | 07:19 | | 07:47 (6) | 08:18 | | | 08:21 | | 09:26 (34) | 08:59 | | 09:43 (34) |
| | 21:56 | 8 | 20:38 (23) | 20:52 | 31 | 08:01 (26) | 19:33 | 6 | 07:53 (6) | 18:18 | | | 16:19 | 28 | 09:54 (34) | 16:06 | 18 | 10:01 (34) |
| 24 | 05:26 | | 20:27 (23) | 06:23 | | 07:29 (26) | 07:21 | | 07:49 (6) | 08:20 | | | 08:23 | | 09:26 (34) | 09:00 | | 09:43 (34) |
| | 21:54 | 13 | 20:40 (23) | 20:49 | 33 | 08:02 (26) | 19:30 | 5 | 07:54 (6) | 18:15 | | | 16:17 | 28 | 09:54 (34) | 16:06 | 19 | 10:02 (34) |
| 25 | 05:27 | | 20:26 (23) | 06:24 | | 07:29 (26) | 07:23 | | 07:51 (6) | 07:22 | | | 08:25 | | 09:26 (34) | 09:00 | | 09:43 (34) |
| | 21:52 | 16 | 20:42 (23) | 20:47 | 33 | 08:02 (26) | 19:28 | 8 | 18:37 (40) | 17:13 | | | 16:16 | 29 | 09:55 (34) | 16:07 | 19 | 10:02 (34) |
| 26 | 05:29 | | 20:24 (23) | 06:26 | | 07:29 (26) | 07:25 | | 18:27 (40) | 07:24 | | | 08:26 | | 09:27 (34) | 09:00 | | 09:43 (34) |
| | 21:51 | 18 | 20:42 (23) | 20:44 | 34 | 08:03 (26) | 19:25 | 11 | 18:38 (40) | 17:11 | | | 16:15 | 28 | 09:55 (34) | 16:08 | 19 | 10:02 (34) |
| 27 | 05:31 | | 20:24 (23) | 06:28 | | 07:27 (26) | 07:27 | | 18:25 (40) | 07:26 | | | 08:28 | | 09:27 (34) | 09:01 | | 09:43 (34) |
| | 21:49 | 20 | 20:44 (23) | 20:42 | 35 | 08:02 (26) | 19:22 | 15 | 18:40 (40) | 17:09 | | | 16:14 | 28 | 09:55 (34) | 16:09 | 20 | 10:03 (34) |
| 28 | 05:33 | | 20:23 (23) | 06:30 | | 07:27 (26) | 07:29 | | 18:24 (40) | 07:28 | | | 08:30 | | 09:27 (34) | 09:01 | | 09:44 (34) |
| | 21:47 | 21 | 20:44 (23) | 20:39 | 35 | 08:02 (26) | 19:20 | 16 | 18:40 (40) | 17:06 | | | 16:13 | 29 | 09:56 (34) | 16:09 | 20 | 10:04 (34) |
| 29 | 05:34 | | 20:22 (23) | 06:32 | | 07:27 (26) | 07:31 | | 18:23 (40) | 07:30 | | | 08:32 | | 09:28 (34) | 09:01 | | 09:44 (34) |
| | 21:45 | 23 | 20:45 (23) | 20:37 | 35 | 08:02 (26) | 19:17 | 18 | 18:41 (40) | 17:04 | | | 16:12 | 28 | 09:56 (34) | 16:10 | 20 | 10:04 (34) |
| 30 | 05:36 | | 20:22 (23) | 06:34 | | 07:27 (26) | 07:33 | | 18:22 (40) | 07:32 | | | 08:33 | | 09:28 (34) | 09:01 | | 09:44 (34) |
| | 21:44 | 24 | 20:46 (23) | 20:34 | 34 | 08:01 (26) | 19:15 | 18 | 18:40 (40) | 17:02 | | | 16:11 | 27 | 09:55 (34) | 16:11 | 21 | 10:05 (34) |
| 31 | 05:38 | | 20:21 (23) | 06:36 | | 07:27 (26) | | | | 07:35 | | | | | | 09:01 | | 09:45 (34) |
| | 21:42 | 25 | 20:46 (23) | 20:32 | 34 | 08:01 (26) | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (34) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 168 | | | 789 | | | 334 | | | 73 | | | 454 | | | 669 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,94 | | | 0,97 | | | 0,99 | | | 0,98 | | | 0,61 | | | 0,61 | |
| Total reduction | | 0,42 | | | 0,46 | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | 70 | | | 363 | | | 120 | | | 20 | | | 40 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (33) | 08:28 | | 09:32 (34) | 07:27 | | | 07:08 | | | 05:55 | | 06:53 (26) | 05:02 | | 20:37 (23) |
| | 16:14 | 22 | 10:08 (33) | 17:08 | 28 | 10:00 (34) | 18:07 | | | 20:10 | | | 21:09 | 32 | 07:25 (26) | 22:02 | 25 | 21:02 (23) |
| 2 | 09:01 | | 09:46 (33) | 08:26 | | 09:33 (34) | 07:24 | | | 07:05 | | | 05:53 | | 06:53 (26) | 05:01 | | 20:38 (23) |
| | 16:15 | 22 | 10:08 (33) | 17:10 | 26 | 09:59 (34) | 18:09 | | | 20:12 | | | 21:11 | 32 | 07:25 (26) | 22:04 | 24 | 21:02 (23) |
| 3 | 09:00 | | 09:47 (33) | 08:24 | | 09:34 (34) | 07:22 | | | 07:03 | | | 05:51 | | 06:53 (26) | 05:00 | | 20:39 (23) |
| | 16:16 | 22 | 10:09 (33) | 17:12 | 25 | 09:59 (34) | 18:11 | | | 20:13 | | | 21:13 | 31 | 07:24 (26) | 22:05 | 24 | 21:03 (23) |
| 4 | 09:00 | | 09:47 (33) | 08:22 | | 09:35 (34) | 07:19 | | | 07:00 | | 07:25 (4) | 05:48 | | 06:53 (26) | 04:59 | | 20:39 (23) |
| | 16:17 | 22 | 10:09 (33) | 17:14 | 23 | 09:58 (34) | 18:14 | | | 20:15 | 2 | 07:27 (4) | 21:14 | 31 | 07:24 (26) | 22:06 | 23 | 21:02 (23) |
| 5 | 09:00 | | 09:47 (33) | 08:20 | | 09:36 (34) | 07:17 | | | 06:58 | | 07:22 (4) | 05:46 | | 06:54 (26) | 04:58 | | 20:39 (23) |
| | 16:19 | 22 | 10:09 (33) | 17:17 | 21 | 09:57 (34) | 18:16 | | | 20:17 | 4 | 07:26 (4) | 21:16 | 29 | 07:23 (26) | 22:07 | 23 | 21:02 (23) |
| 6 | 08:59 | | 09:48 (33) | 08:18 | | 09:37 (34) | 07:14 | | | 06:55 | | 07:20 (4) | 05:44 | | 06:54 (26) | 04:57 | | 20:39 (23) |
| | 16:20 | 22 | 10:10 (33) | 17:19 | 18 | 09:55 (34) | 18:18 | | | 20:19 | 6 | 07:26 (4) | 21:18 | 28 | 07:22 (26) | 22:08 | 22 | 21:01 (23) |
| 7 | 08:59 | | 09:48 (33) | 08:16 | | 09:39 (34) | 07:12 | | | 06:53 | | 07:17 (4) | 05:42 | | 06:55 (26) | 04:56 | | 20:40 (23) |
| | 16:22 | 22 | 10:10 (33) | 17:21 | 14 | 09:53 (34) | 18:20 | | | 20:21 | 8 | 07:25 (4) | 21:20 | 26 | 07:21 (26) | 22:10 | 22 | 21:02 (23) |
| 8 | 08:58 | | 09:48 (33) | 08:14 | | 09:43 (34) | 07:09 | | | 06:50 | | 07:17 (4) | 05:40 | | 06:56 (26) | 04:56 | | 20:40 (23) |
| | 16:23 | 22 | 10:10 (33) | 17:23 | 7 | 09:50 (34) | 18:22 | | | 20:23 | 6 | 07:23 (4) | 21:22 | 24 | 07:20 (26) | 22:11 | 21 | 21:01 (23) |
| 9 | 08:57 | | 09:49 (33) | 08:12 | | | 07:07 | | | 06:48 | | | 05:38 | | 06:57 (26) | 04:55 | | 20:41 (23) |
| | 16:25 | 21 | 10:10 (33) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 21 | 07:18 (26) | 22:12 | 21 | 21:02 (23) |
| 10 | 08:57 | | 09:49 (33) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:58 (26) | 04:54 | | 20:41 (23) |
| | 16:26 | 21 | 10:10 (33) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 19 | 07:17 (26) | 22:12 | 20 | 21:01 (23) |
| 11 | 08:56 | | 09:35 (34) | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:59 (26) | 04:54 | | 20:42 (23) |
| | 16:28 | 30 | 10:11 (33) | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 20 | 20:50 (23) | 22:13 | 19 | 21:01 (23) |
| 12 | 08:55 | | 09:34 (34) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 07:02 (26) | 04:53 | | 20:43 (23) |
| | 16:29 | 32 | 10:11 (33) | 17:32 | | | 18:30 | | | 20:31 | | | 21:30 | 22 | 20:54 (23) | 22:14 | 19 | 21:02 (23) |
| 13 | 08:54 | | 09:33 (34) | 08:04 | | | 06:57 | | | 06:38 | | | 05:30 | | 20:41 (23) | 04:53 | | 20:43 (23) |
| | 16:31 | 34 | 10:11 (33) | 17:34 | | | 18:32 | | | 20:33 | | | 21:32 | 15 | 20:56 (23) | 22:15 | 18 | 21:01 (23) |
| 14 | 08:53 | | 09:33 (34) | 08:02 | | | 06:54 | | | 06:35 | | | 05:28 | | 20:40 (23) | 04:53 | | 20:43 (23) |
| | 16:33 | 35 | 10:11 (33) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 17 | 20:57 (23) | 22:16 | 18 | 21:01 (23) |
| 15 | 08:52 | | 09:32 (34) | 07:59 | | | 06:52 | | 18:03 (40) | 06:33 | | | 05:27 | | 20:39 (23) | 04:52 | | 20:44 (23) |
| | 16:35 | 36 | 10:11 (33) | 17:38 | | | 18:36 | 5 | 18:08 (40) | 20:37 | | | 21:35 | 20 | 20:59 (23) | 22:16 | 17 | 21:01 (23) |
| 16 | 08:51 | | 09:31 (34) | 07:57 | | | 06:49 | | 18:01 (40) | 06:30 | | | 05:25 | | 20:38 (23) | 04:52 | | 20:45 (23) |
| | 16:36 | 37 | 10:10 (33) | 17:40 | | | 18:38 | 10 | 18:11 (40) | 20:39 | | | 21:37 | 21 | 20:59 (23) | 22:17 | 16 | 21:01 (23) |
| 17 | 08:50 | | 09:31 (34) | 07:55 | | | 06:46 | | 17:59 (40) | 06:28 | | 07:08 (26) | 05:23 | | 20:38 (23) | 04:52 | | 20:45 (23) |
| | 16:38 | 36 | 10:10 (33) | 17:42 | | | 18:40 | 14 | 18:13 (40) | 20:41 | 7 | 07:15 (26) | 21:39 | 22 | 21:00 (23) | 22:17 | 16 | 21:01 (23) |
| 18 | 08:49 | | 09:30 (34) | 07:53 | | | 06:44 | | 17:57 (40) | 06:25 | | 07:03 (26) | 05:21 | | 20:37 (23) | 04:52 | | 20:45 (23) |
| | 16:40 | 36 | 10:09 (33) | 17:44 | | | 18:42 | 17 | 18:14 (40) | 20:43 | 15 | 07:18 (26) | 21:41 | 23 | 21:00 (23) | 22:18 | 16 | 21:01 (23) |
| 19 | 08:48 | | 09:30 (34) | 07:50 | | | 06:41 | | 17:57 (40) | 06:23 | | 07:01 (26) | 05:20 | | 20:37 (23) | 04:52 | | 20:46 (23) |
| | 16:42 | 34 | 10:08 (33) | 17:46 | | | 18:44 | 18 | 18:15 (40) | 20:45 | 20 | 07:21 (26) | 21:42 | 24 | 21:01 (23) | 22:18 | 15 | 21:01 (23) |
| 20 | 08:46 | | 09:29 (34) | 07:48 | | | 06:39 | | 17:56 (40) | 06:20 | | 07:00 (26) | 05:18 | | 20:36 (23) | 04:52 | | 20:46 (23) |
| | 16:44 | 27 | 09:56 (34) | 17:49 | | | 18:46 | 19 | 18:15 (40) | 20:47 | 23 | 07:23 (26) | 21:44 | 25 | 21:01 (23) | 22:19 | 15 | 21:01 (23) |
| 21 | 08:45 | | 09:30 (34) | 07:46 | | | 06:36 | | 17:56 (40) | 06:18 | | 06:57 (26) | 05:16 | | 20:36 (23) | 04:52 | | 20:46 (23) |
| | 16:46 | 27 | 09:57 (34) | 17:51 | | | 18:48 | 19 | 18:15 (40) | 20:49 | 26 | 07:23 (26) | 21:46 | 26 | 21:02 (23) | 22:19 | 15 | 21:01 (23) |
| 22 | 08:44 | | 09:29 (34) | 07:43 | | | 06:34 | | 17:56 (40) | 06:16 | | 06:56 (26) | 05:15 | | 20:36 (23) | 04:52 | | 20:47 (23) |
| | 16:48 | 28 | 09:57 (34) | 17:53 | | | 18:50 | 18 | 18:14 (40) | 20:51 | 28 | 07:24 (26) | 21:47 | 26 | 21:02 (23) | 22:19 | 15 | 21:02 (23) |
| 23 | 08:42 | | 09:30 (34) | 07:41 | | | 06:31 | | 17:56 (40) | 06:13 | | 06:56 (26) | 05:13 | | 20:36 (23) | 04:53 | | 20:47 (23) |
| | 16:50 | 29 | 09:59 (34) | 17:55 | | | 18:52 | 17 | 18:13 (40) | 20:53 | 29 | 07:25 (26) | 21:49 | 26 | 21:02 (23) | 22:19 | 15 | 21:02 (23) |
| 24 | 08:41 | | 09:30 (34) | 07:39 | | | 06:28 | | 17:57 (40) | 06:11 | | 06:55 (26) | 05:12 | | 20:36 (23) | 04:53 | | 20:47 (23) |
| | 16:52 | 29 | 09:59 (34) | 17:57 | | | 18:54 | 15 | 18:12 (40) | 20:55 | 30 | 07:25 (26) | 21:51 | 27 | 21:03 (23) | 22:19 | 15 | 21:02 (23) |
| 25 | 08:39 | | 09:29 (34) | 07:36 | | | 06:26 | | 17:58 (40) | 06:09 | | 06:53 (26) | 05:10 | | 20:35 (23) | 04:53 | | 20:47 (23) |
| | 16:54 | 30 | 09:59 (34) | 17:59 | | | 18:56 | 12 | 18:10 (40) | 20:57 | 32 | 07:25 (26) | 21:52 | 27 | 21:02 (23) | 22:19 | 16 | 21:03 (23) |
| 26 | 08:38 | | 09:29 (34) | 07:34 | | | 06:23 | | 18:01 (40) | 06:06 | | 06:53 (26) | 05:09 | | 20:36 (23) | 04:54 | | 20:47 (23) |
| | 16:56 | 30 | 09:59 (34) | 18:01 | | | 18:58 | 6 | 18:07 (40) | 20:59 | 32 | 07:25 (26) | 21:54 | 26 | 21:02 (23) | 22:19 | 16 | 21:03 (23) |
| 27 | 08:36 | | 09:30 (34) | 07:32 | | | 06:21 | | | 06:04 | | 06:53 (26) | 05:08 | | 20:36 (23) | 04:54 | | 20:47 (23) |
| | 16:58 | 30 | 10:00 (34) | 18:03 | | | 19:00 | | | 21:01 | 33 | 07:26 (26) | 21:55 | 26 | 21:02 (23) | 22:19 | 17 | 21:04 (23) |
| 28 | 08:34 | | 09:31 (34) | 07:29 | | | 06:18 | | | 06:02 | | 06:53 (26) | 05:06 | | 20:36 (23) | 04:55 | | 20:47 (23) |
| | 17:00 | 29 | 10:00 (34) | 18:05 | | | 19:02 | | | 21:03 | 33 | 07:26 (26) | 21:57 | 27 | 21:03 (23) | 22:19 | 17 | 21:04 (23) |
| 29 | 08:33 | | 09:31 (34) | | | | 07:16 | | | 05:59 | | 06:53 (26) | 05:05 | | 20:37 (23) | 04:55 | | 20:47 (23) |
| | 17:02 | 29 | 10:00 (34) | | | | 20:04 | | | 21:05 | 33 | 07:26 (26) | 21:58 | 26 | 21:03 (23) | 22:19 | 18 | 21:05 (23) |
| 30 | 08:31 | | 09:31 (34) | | | | 07:13 | | | 05:57 | | 06:53 (26) | 05:04 | | 20:37 (23) | 04:56 | | 20:46 (23) |
| | 17:04 | 29 | 10:00 (34) | | | | 20:06 | | | 21:07 | 33 | 07:26 (26) | 22:00 | 26 | 21:03 (23) | 22:18 | 19 | 21:05 (23) |
| 31 | 08:29 | | 09:32 (34) | | | | 07:10 | | | | | | 05:03 | | 20:37 (23) | | | |
| | 17:06 | 28 | 10:00 (34) | | | | 20:08 | | | | | | 22:01 | 25 | 21:02 (23) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | 873 | | | 162 | | | 170 | | | 400 | | | 770 | | | 557 | | |
| Sun reduction | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | 0,65 | | | 0,68 | | | 0,99 | | | 0,98 | | | 0,92 | | | 0,89 | | |
| Total reduction | 0,11 | | | 0,16 | | | 0,31 | | | 0,36 | | | 0,44 | | | 0,40 | | |
| Total, real | 95 | | | 25 | | | 53 | | | 143 | | | 341 | | | 222 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 20:47 (23) | 05:40 | | 07:12 (26) | 06:38 | | | 07:35 | 07:37 | | | 08:35 | | 09:17 (34) |
| | 22:18 | 18 | 21:05 (23) | 21:40 | 21 | 21:04 (23) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 30 | 09:53 (33) |
| 2 | 04:58 | | 20:47 (23) | 05:41 | | 07:09 (26) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:32 (33) |
| | 22:18 | 19 | 21:06 (23) | 21:38 | 17 | 07:26 (26) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 22 | 09:54 (33) |
| 3 | 04:58 | | 20:47 (23) | 05:43 | | 07:08 (26) | 06:42 | | | 07:38 | 07:41 | | 09:12 (34) | 08:38 | | 09:33 (33) |
| | 22:17 | 20 | 21:07 (23) | 21:36 | 20 | 07:28 (26) | 20:24 | | | 19:07 | 16:54 | 8 | 09:20 (34) | 16:08 | 21 | 09:54 (33) |
| 4 | 04:59 | | 20:46 (23) | 05:45 | | 07:07 (26) | 06:43 | | 07:14 (4) | 07:40 | 07:43 | | 09:08 (34) | 08:40 | | 09:32 (33) |
| | 22:17 | 21 | 21:07 (23) | 21:34 | 22 | 07:29 (26) | 20:22 | 6 | 07:20 (4) | 19:04 | 16:51 | 15 | 09:23 (34) | 16:07 | 22 | 09:54 (33) |
| 5 | 05:00 | | 20:46 (23) | 05:47 | | 07:06 (26) | 06:45 | | 07:14 (4) | 07:42 | 07:45 | | 09:07 (34) | 08:41 | | 09:33 (33) |
| | 22:16 | 21 | 21:07 (23) | 21:32 | 25 | 07:31 (26) | 20:19 | 8 | 07:22 (4) | 19:02 | 16:49 | 19 | 09:26 (34) | 16:07 | 22 | 09:55 (33) |
| 6 | 05:01 | | 20:46 (23) | 05:49 | | 07:04 (26) | 06:47 | | 07:15 (4) | 07:44 | 07:47 | | 09:06 (34) | 08:43 | | 09:34 (33) |
| | 22:15 | 22 | 21:08 (23) | 21:30 | 27 | 07:31 (26) | 20:17 | 6 | 07:21 (4) | 18:59 | 16:47 | 21 | 09:27 (34) | 16:06 | 22 | 09:56 (33) |
| 7 | 05:02 | | 20:46 (23) | 05:51 | | 07:04 (26) | 06:49 | | 07:17 (4) | 07:46 | 07:49 | | 09:04 (34) | 08:44 | | 09:34 (33) |
| | 22:15 | 22 | 21:08 (23) | 21:28 | 28 | 07:32 (26) | 20:14 | 5 | 07:22 (4) | 18:57 | 16:45 | 24 | 09:28 (34) | 16:06 | 22 | 09:56 (33) |
| 8 | 05:03 | | 20:46 (23) | 05:52 | | 07:03 (26) | 06:51 | | 07:19 (4) | 07:48 | 07:51 | | 09:03 (34) | 08:46 | | 09:35 (33) |
| | 22:14 | 23 | 21:09 (23) | 21:26 | 30 | 07:33 (26) | 20:12 | 2 | 07:21 (4) | 18:54 | 16:44 | 26 | 09:29 (34) | 16:05 | 22 | 09:57 (33) |
| 9 | 05:04 | | 20:45 (23) | 05:54 | | 07:02 (26) | 06:53 | | | 07:50 | 07:53 | | 09:04 (34) | 08:47 | | 09:35 (33) |
| | 22:13 | 24 | 21:09 (23) | 21:24 | 30 | 07:32 (26) | 20:09 | | | 18:52 | 16:42 | 26 | 09:30 (34) | 16:05 | 22 | 09:57 (33) |
| 10 | 05:06 | | 20:45 (23) | 05:56 | | 07:01 (26) | 06:55 | | | 07:52 | 07:55 | | 09:03 (34) | 08:48 | | 09:35 (33) |
| | 22:12 | 24 | 21:09 (23) | 21:21 | 32 | 07:33 (26) | 20:06 | | | 18:49 | 16:40 | 28 | 09:31 (34) | 16:04 | 22 | 09:57 (33) |
| 11 | 05:07 | | 20:46 (23) | 05:58 | | 07:01 (26) | 06:57 | | | 07:54 | 07:57 | | 09:02 (34) | 08:49 | | 09:36 (33) |
| | 22:11 | 25 | 21:11 (23) | 21:19 | 32 | 07:33 (26) | 20:04 | | | 18:47 | 16:38 | 29 | 09:31 (34) | 16:04 | 22 | 09:58 (33) |
| 12 | 05:08 | | 20:46 (23) | 06:00 | | 07:01 (26) | 06:59 | | | 07:56 | 07:59 | | 09:02 (34) | 08:51 | | 09:36 (33) |
| | 22:10 | 25 | 21:11 (23) | 21:17 | 33 | 07:34 (26) | 20:01 | | | 18:44 | 16:36 | 29 | 09:31 (34) | 16:04 | 22 | 09:58 (33) |
| 13 | 05:09 | | 20:46 (23) | 06:02 | | 07:00 (26) | 07:00 | | | 07:58 | 08:01 | | 09:03 (34) | 08:52 | | 09:37 (33) |
| | 22:09 | 25 | 21:11 (23) | 21:15 | 33 | 07:33 (26) | 19:59 | | | 18:42 | 16:34 | 29 | 09:32 (34) | 16:04 | 21 | 09:58 (33) |
| 14 | 05:11 | | 20:45 (23) | 06:04 | | 07:00 (26) | 07:02 | | | 08:00 | 08:03 | | 09:02 (34) | 08:53 | | 09:37 (33) |
| | 22:08 | 26 | 21:11 (23) | 21:13 | 33 | 07:33 (26) | 19:56 | | | 18:39 | 16:33 | 30 | 09:32 (34) | 16:04 | 22 | 09:59 (33) |
| 15 | 05:12 | | 20:45 (23) | 06:06 | | 07:00 (26) | 07:04 | | | 08:02 | 08:05 | | 09:02 (34) | 08:54 | | 09:37 (33) |
| | 22:07 | 26 | 21:11 (23) | 21:10 | 33 | 07:33 (26) | 19:53 | | | 18:37 | 16:31 | 30 | 09:32 (34) | 16:04 | 22 | 09:59 (33) |
| 16 | 05:13 | | 20:46 (23) | 06:07 | | 07:00 (26) | 07:06 | | | 08:04 | 08:07 | | 09:02 (34) | 08:55 | | 09:38 (33) |
| | 22:05 | 26 | 21:12 (23) | 21:08 | 33 | 07:33 (26) | 19:51 | | | 18:34 | 16:29 | 30 | 09:32 (34) | 16:04 | 21 | 09:59 (33) |
| 17 | 05:15 | | 20:45 (23) | 06:09 | | 07:00 (26) | 07:08 | | 18:51 (40) | 08:06 | 08:09 | | 09:03 (34) | 08:55 | | 09:39 (33) |
| | 22:04 | 27 | 21:12 (23) | 21:06 | 32 | 07:32 (26) | 19:48 | 4 | 18:55 (40) | 18:32 | 16:28 | 30 | 09:33 (34) | 16:04 | 21 | 10:00 (33) |
| 18 | 05:16 | | 20:45 (23) | 06:11 | | 07:00 (26) | 07:10 | | 18:46 (40) | 08:08 | 08:11 | | 09:04 (34) | 08:56 | | 09:39 (33) |
| | 22:03 | 27 | 21:12 (23) | 21:03 | 31 | 07:31 (26) | 19:46 | 11 | 18:57 (40) | 18:30 | 16:26 | 29 | 09:33 (34) | 16:04 | 22 | 10:01 (33) |
| 19 | 05:18 | | 20:46 (23) | 06:13 | | 07:01 (26) | 07:12 | | 18:44 (40) | 08:10 | 08:13 | | 09:04 (34) | 08:57 | | 09:40 (33) |
| | 22:01 | 26 | 21:12 (23) | 21:01 | 30 | 07:31 (26) | 19:43 | 14 | 18:58 (40) | 18:27 | 16:24 | 29 | 09:33 (34) | 16:04 | 21 | 10:01 (33) |
| 20 | 05:19 | | 20:45 (23) | 06:15 | | 07:01 (26) | 07:14 | | 18:43 (40) | 08:12 | 08:15 | | 09:04 (34) | 08:58 | | 09:40 (33) |
| | 22:00 | 27 | 21:12 (23) | 20:59 | 29 | 07:30 (26) | 19:41 | 16 | 18:59 (40) | 18:25 | 16:23 | 28 | 09:32 (34) | 16:04 | 21 | 10:01 (33) |
| 21 | 05:21 | | 20:46 (23) | 06:17 | | 07:02 (26) | 07:16 | | 18:42 (40) | 08:14 | 08:17 | | 09:05 (34) | 08:58 | | 09:41 (33) |
| | 21:59 | 26 | 21:12 (23) | 20:56 | 27 | 07:29 (26) | 19:38 | 18 | 19:00 (40) | 18:22 | 16:22 | 27 | 09:32 (34) | 16:05 | 21 | 10:02 (33) |
| 22 | 05:22 | | 20:46 (23) | 06:19 | | 07:02 (26) | 07:17 | | 18:41 (40) | 08:16 | 08:19 | | 09:05 (34) | 08:59 | | 09:41 (33) |
| | 21:57 | 26 | 21:12 (23) | 20:54 | 25 | 07:27 (26) | 19:35 | 19 | 19:00 (40) | 18:20 | 16:20 | 27 | 09:32 (34) | 16:05 | 21 | 10:02 (33) |
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| 25 | 05:27 | | 20:47 (23) | 06:24 | | 07:07 (26) | 07:23 | | 18:41 (40) | 07:22 | 08:25 | | 09:09 (34) | 09:00 | | 09:42 (33) |
| | 21:52 | 25 | 21:12 (23) | 20:47 | 15 | 07:22 (26) | 19:28 | 18 | 18:59 (40) | 17:13 | 16:16 | 37 | 09:48 (33) | 16:07 | 21 | 10:03 (33) |
| 26 | 05:29 | | 20:47 (23) | 06:26 | | 07:12 (26) | 07:25 | | 18:40 (40) | 07:24 | 08:26 | | 09:10 (34) | 09:00 | | 09:42 (33) |
| | 21:51 | 24 | 21:11 (23) | 20:44 | 6 | 07:18 (26) | 19:25 | 15 | 18:55 (40) | 17:11 | 16:15 | 37 | 09:49 (33) | 16:08 | 22 | 10:04 (33) |
| 27 | 05:31 | | 20:48 (23) | 06:28 | | | 07:27 | | 18:41 (40) | 07:26 | 08:28 | | 09:11 (34) | 09:01 | | 09:43 (33) |
| | 21:49 | 22 | 21:10 (23) | 20:42 | | | 19:22 | 12 | 18:53 (40) | 17:09 | 16:14 | 37 | 09:50 (33) | 16:09 | 21 | 10:04 (33) |
| 28 | 05:33 | | 20:49 (23) | 06:30 | | | 07:29 | | 18:43 (40) | 07:28 | 08:30 | | 09:13 (34) | 09:01 | | 09:43 (33) |
| | 21:47 | 20 | 21:09 (23) | 20:39 | | | 19:20 | 7 | 18:50 (40) | 17:06 | 16:13 | 35 | 09:51 (33) | 16:09 | 22 | 10:05 (33) |
| 29 | 05:34 | | 20:50 (23) | 06:32 | | | 07:31 | | | 07:30 | 08:32 | | 09:14 (34) | 09:01 | | 09:44 (33) |
| | 21:45 | 19 | 21:09 (23) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | 34 | 09:52 (33) | 16:10 | 21 | 10:05 (33) |
| 30 | 05:36 | | 20:51 (23) | 06:34 | | | 07:33 | | | 07:32 | 08:33 | | 09:15 (34) | 09:01 | | 09:44 (33) |
| | 21:44 | 17 | 21:08 (23) | 20:34 | | | 19:15 | | | 17:02 | 16:11 | 32 | 09:52 (33) | 16:11 | 22 | 10:06 (33) |
| 31 | 05:38 | | 07:15 (26) | 06:36 | | | | | | 07:35 | | | | 09:01 | | 09:45 (33) |
| | 21:42 | 19 | 21:06 (23) | 20:32 | | | | | | 17:00 | | | | 16:12 | 22 | 10:07 (33) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 721 | | | 686 | | | 198 | | | | 796 | | | 677 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,89 | | | 0,97 | | | 0,99 | | | | 0,67 | | | 0,60 | |
| Total reduction | | 0,40 | | | 0,47 | | | 0,36 | | | | 0,10 | | | 0,08 | |
| Total, real | | 289 | | | 319 | | | 72 | | | | 78 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (34) | 08:28 | | 10:04 (34) | 07:27 | | | 07:08 | | 07:32 (4) | 05:55 | | 07:10 (26) | 05:02 | | |
| | 16:14 | 36 | 10:22 (33) | 17:08 | 5 | 10:09 (34) | 18:07 | | | 20:10 | 2 | 07:34 (4) | 21:09 | 39 | 20:36 (23) | 22:02 | | |
| 2 | 09:01 | | 09:46 (34) | 08:26 | | | 07:24 | | | 07:05 | | 07:30 (4) | 05:53 | | 07:11 (26) | 05:01 | | |
| | 16:15 | 36 | 10:22 (33) | 17:10 | | | 18:09 | | | 20:11 | 4 | 07:34 (4) | 21:11 | 42 | 20:38 (23) | 22:04 | | |
| 3 | 09:00 | | 09:46 (34) | 08:24 | | | 07:22 | | | 07:03 | | 07:27 (4) | 05:51 | | 07:12 (26) | 05:00 | | |
| | 16:16 | 36 | 10:22 (33) | 17:12 | | | 18:11 | | | 20:13 | 6 | 07:33 (4) | 21:13 | 44 | 20:40 (23) | 22:05 | | |
| 4 | 09:00 | | 09:46 (34) | 08:22 | | | 07:19 | | | 07:00 | | 07:25 (4) | 05:48 | | 07:13 (26) | 04:59 | | |
| | 16:17 | 36 | 10:22 (33) | 17:14 | | | 18:13 | | | 20:15 | 8 | 07:33 (4) | 21:14 | 44 | 20:41 (23) | 22:06 | | |
| 5 | 09:00 | | 09:45 (34) | 08:20 | | | 07:17 | | | 06:58 | | 07:23 (4) | 05:46 | | 07:14 (26) | 04:58 | | |
| | 16:19 | 37 | 10:22 (33) | 17:17 | | | 18:16 | | | 20:17 | 8 | 07:31 (4) | 21:16 | 43 | 20:42 (23) | 22:07 | | |
| 6 | 08:59 | | 09:46 (34) | 08:18 | | | 07:14 | | | 06:55 | | 07:25 (4) | 05:44 | | 07:16 (26) | 04:57 | | |
| | 16:20 | 37 | 10:23 (33) | 17:19 | | | 18:18 | | | 20:19 | 4 | 07:29 (4) | 21:18 | 41 | 20:43 (23) | 22:08 | | |
| 7 | 08:59 | | 09:46 (34) | 08:16 | | | 07:12 | | | 06:53 | | | 05:42 | | 07:18 (26) | 04:56 | | |
| | 16:22 | 36 | 10:22 (33) | 17:21 | | | 18:20 | | | 20:21 | | | 21:20 | 37 | 20:43 (23) | 22:10 | | |
| 8 | 08:58 | | 09:46 (34) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | | 07:21 (26) | 04:56 | | |
| | 16:23 | 36 | 10:22 (33) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 30 | 20:43 (23) | 22:11 | | |
| 9 | 08:57 | | 09:46 (34) | 08:12 | | | 07:07 | | | 06:48 | | | 05:38 | | 20:18 (23) | 04:55 | | |
| | 16:25 | 36 | 10:22 (33) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 25 | 20:43 (23) | 22:12 | | |
| 10 | 08:57 | | 09:46 (34) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 20:18 (23) | 04:54 | | |
| | 16:26 | 35 | 10:21 (33) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 25 | 20:43 (23) | 22:12 | | |
| 11 | 08:56 | | 09:46 (34) | 08:08 | | | 07:02 | | 17:58 (40) | 06:42 | | 07:27 (26) | 05:34 | | 20:18 (23) | 04:54 | | |
| | 16:28 | 34 | 10:20 (33) | 17:29 | | | 18:28 | 3 | 18:01 (40) | 20:29 | 6 | 07:33 (26) | 21:28 | 25 | 20:43 (23) | 22:13 | | |
| 12 | 08:55 | | 09:46 (34) | 08:06 | | | 06:59 | | 17:55 (40) | 06:40 | | 07:22 (26) | 05:32 | | 20:18 (23) | 04:53 | | |
| | 16:29 | 33 | 10:19 (33) | 17:31 | | | 18:30 | 7 | 18:02 (40) | 20:31 | 16 | 07:38 (26) | 21:30 | 26 | 20:44 (23) | 22:14 | | |
| 13 | 08:54 | | 09:47 (34) | 08:04 | | | 06:57 | | 17:53 (40) | 06:38 | | 07:19 (26) | 05:30 | | 20:18 (23) | 04:53 | | |
| | 16:31 | 29 | 10:16 (34) | 17:34 | | | 18:32 | 11 | 18:04 (40) | 20:33 | 20 | 07:39 (26) | 21:32 | 25 | 20:43 (23) | 22:15 | | |
| 14 | 08:53 | | 09:47 (34) | 08:02 | | | 06:54 | | 17:52 (40) | 06:35 | | 07:17 (26) | 05:28 | | 20:18 (23) | 04:53 | | |
| | 16:33 | 30 | 10:17 (34) | 17:36 | | | 18:34 | 15 | 18:07 (40) | 20:35 | 24 | 07:41 (26) | 21:33 | 25 | 20:43 (23) | 22:16 | | |
| 15 | 08:52 | | 09:48 (34) | 07:59 | | | 06:52 | | 17:51 (40) | 06:33 | | 07:16 (26) | 05:27 | | 20:19 (23) | 04:52 | | |
| | 16:35 | 29 | 10:17 (34) | 17:38 | | | 18:36 | 17 | 18:08 (40) | 20:37 | 27 | 07:43 (26) | 21:35 | 24 | 20:43 (23) | 22:16 | | |
| 16 | 08:51 | | 09:47 (34) | 07:57 | | | 06:49 | | 17:51 (40) | 06:30 | | 07:14 (26) | 05:25 | | 20:19 (23) | 04:52 | | |
| | 16:36 | 30 | 10:17 (34) | 17:40 | | | 18:38 | 18 | 18:09 (40) | 20:39 | 29 | 07:43 (26) | 21:37 | 23 | 20:42 (23) | 22:17 | | |
| 17 | 08:50 | | 09:48 (34) | 07:55 | | | 06:46 | | 17:50 (40) | 06:28 | | 07:13 (26) | 05:23 | | 20:20 (23) | 04:52 | | |
| | 16:38 | 30 | 10:18 (34) | 17:42 | | | 18:40 | 18 | 18:08 (40) | 20:41 | 31 | 07:44 (26) | 21:39 | 22 | 20:42 (23) | 22:17 | | |
| 18 | 08:49 | | 09:48 (34) | 07:53 | | | 06:44 | | 17:50 (40) | 06:25 | | 07:11 (26) | 05:21 | | 20:20 (23) | 04:52 | | |
| | 16:40 | 30 | 10:18 (34) | 17:44 | | | 18:42 | 17 | 18:07 (40) | 20:43 | 33 | 07:44 (26) | 21:41 | 21 | 20:41 (23) | 22:18 | | |
| 19 | 08:48 | | 09:48 (34) | 07:50 | | | 06:41 | | 17:51 (40) | 06:23 | | 07:11 (26) | 05:20 | | 20:21 (23) | 04:52 | | |
| | 16:42 | 31 | 10:19 (34) | 17:46 | | | 18:44 | 16 | 18:07 (40) | 20:45 | 34 | 07:45 (26) | 21:42 | 20 | 20:41 (23) | 22:18 | | |
| 20 | 08:46 | | 09:48 (34) | 07:48 | | | 06:39 | | 07:03 (6) | 06:20 | | 07:10 (26) | 05:18 | | 20:22 (23) | 04:52 | | |
| | 16:44 | 30 | 10:18 (34) | 17:48 | | | 18:46 | 15 | 18:05 (40) | 20:47 | 35 | 07:45 (26) | 21:44 | 18 | 20:40 (23) | 22:19 | | |
| 21 | 08:45 | | 09:49 (34) | 07:46 | | | 06:36 | | 07:01 (6) | 06:18 | | 07:09 (26) | 05:16 | | 20:23 (23) | 04:52 | | |
| | 16:46 | 30 | 10:19 (34) | 17:51 | | | 18:48 | 13 | 18:03 (40) | 20:49 | 36 | 07:45 (26) | 21:46 | 16 | 20:39 (23) | 22:19 | | |
| 22 | 08:44 | | 09:50 (34) | 07:43 | | | 06:34 | | 06:58 (6) | 06:16 | | 07:09 (26) | 05:15 | | 20:24 (23) | 04:52 | | |
| | 16:48 | 29 | 10:19 (34) | 17:53 | | | 18:50 | 6 | 07:04 (6) | 20:51 | 36 | 07:45 (26) | 21:47 | 14 | 20:38 (23) | 22:19 | | |
| 23 | 08:42 | | 09:51 (34) | 07:41 | | | 06:31 | | 06:55 (6) | 06:13 | | 07:09 (26) | 05:13 | | 20:26 (23) | 04:53 | | |
| | 16:50 | 28 | 10:19 (34) | 17:55 | | | 18:52 | 7 | 07:02 (6) | 20:53 | 36 | 07:45 (26) | 21:49 | 11 | 20:37 (23) | 22:19 | | |
| 24 | 08:41 | | 09:51 (34) | 07:39 | | | 06:28 | | 06:56 (6) | 06:11 | | 07:09 (26) | 05:12 | | 20:28 (23) | 04:53 | | |
| | 16:52 | 28 | 10:19 (34) | 17:57 | | | 18:54 | 5 | 07:01 (6) | 20:55 | 36 | 07:45 (26) | 21:51 | 7 | 20:35 (23) | 22:19 | | |
| 25 | 08:39 | | 09:52 (34) | 07:36 | | | 06:26 | | | 06:09 | | 07:08 (26) | 05:10 | | | 04:53 | | |
| | 16:54 | 26 | 10:18 (34) | 17:59 | | | 18:56 | | | 20:57 | 36 | 07:44 (26) | 21:52 | | | 22:19 | | |
| 26 | 08:38 | | 09:52 (34) | 07:34 | | | 06:23 | | | 06:06 | | 07:08 (26) | 05:09 | | | 04:54 | | |
| | 16:56 | 26 | 10:18 (34) | 18:01 | | | 18:58 | | | 20:59 | 36 | 07:44 (26) | 21:54 | | | 22:19 | | |
| 27 | 08:36 | | 09:54 (34) | 07:32 | | | 06:21 | | | 06:04 | | 07:08 (26) | 05:08 | | | 04:54 | | |
| | 16:58 | 24 | 10:18 (34) | 18:03 | | | 19:00 | | | 21:01 | 36 | 07:44 (26) | 21:55 | | | 22:19 | | |
| 28 | 08:34 | | 09:55 (34) | 07:29 | | | 06:18 | | | 06:02 | | 07:09 (26) | 05:06 | | | 04:55 | | |
| | 17:00 | 22 | 10:17 (34) | 18:05 | | | 19:02 | | | 21:03 | 34 | 07:43 (26) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 09:56 (34) | | | | 07:16 | | | 05:59 | | 07:09 (26) | 05:05 | | | 04:55 | | |
| | 17:02 | 20 | 10:16 (34) | | | | 20:04 | | | 21:05 | 34 | 07:43 (26) | 21:58 | | | 22:19 | | |
| 30 | 08:31 | | 09:58 (34) | | | | 07:13 | | | 05:57 | | 07:10 (26) | 05:04 | | | 04:56 | | |
| | 17:04 | 17 | 10:15 (34) | | | | 20:06 | | | 21:07 | 32 | 07:42 (26) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | 10:00 (34) | | | | 07:10 | | | | | | 05:03 | | | | | |
| | 17:06 | 13 | 10:13 (34) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 930 | | | 5 | | | 168 | | | 639 | | | 647 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,60 | | | 0,61 | | | 0,99 | | | 0,99 | | | 0,94 | | | | |
| Total reduction | | 0,10 | | | 0,14 | | | 0,30 | | | 0,35 | | | 0,44 | | | | |
| Total, real | | 91 | | | 1 | | | 51 | | | 224 | | | 283 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:29 (23) | 06:38 | | 07:26 (26) | 07:35 | | 18:33 (40) | 07:37 | | | 08:35 | | 09:28 (34) |
| | 22:18 | | | 21:40 | 25 | 20:54 (23) | 20:29 | 5 | 07:31 (26) | 19:12 | 9 | 18:42 (40) | 16:58 | | | 16:10 | 34 | 10:02 (33) |
| 2 | 04:57 | | | 05:41 | | 20:28 (23) | 06:40 | | | 07:37 | | 18:35 (40) | 07:39 | | | 08:37 | | 09:29 (34) |
| | 22:18 | | | 21:38 | 25 | 20:53 (23) | 20:27 | | | 19:09 | 5 | 18:40 (40) | 16:56 | | | 16:09 | 35 | 10:04 (33) |
| 3 | 04:58 | | | 05:43 | | 20:28 (23) | 06:42 | | | 07:38 | | | 07:41 | | | 08:38 | | 09:30 (34) |
| | 22:17 | | | 21:36 | 25 | 20:53 (23) | 20:24 | | | 19:07 | | | 16:54 | | | 16:08 | 36 | 10:06 (33) |
| 4 | 04:59 | | | 05:45 | | 20:29 (23) | 06:43 | | | 07:40 | | | 07:43 | | | 08:40 | | 09:30 (34) |
| | 22:17 | | | 21:34 | 24 | 20:53 (23) | 20:22 | | | 19:04 | | | 16:51 | | | 16:07 | 36 | 10:06 (33) |
| 5 | 05:00 | | | 05:47 | | 07:30 (26) | 06:45 | | | 07:42 | | | 07:45 | | | 08:41 | | 09:31 (34) |
| | 22:16 | | | 21:32 | 34 | 20:53 (23) | 20:19 | | | 19:02 | | | 16:49 | | | 16:07 | 36 | 10:07 (33) |
| 6 | 05:01 | | | 05:49 | | 07:26 (26) | 06:47 | | 07:20 (4) | 07:44 | | | 07:47 | | | 08:43 | | 09:32 (34) |
| | 22:15 | | | 21:30 | 39 | 20:52 (23) | 20:17 | 4 | 07:24 (4) | 18:59 | | | 16:47 | | | 16:06 | 37 | 10:09 (33) |
| 7 | 05:02 | | | 05:51 | | 07:24 (26) | 06:49 | | 07:18 (4) | 07:46 | | | 07:49 | | | 08:44 | | 09:32 (34) |
| | 22:15 | | | 21:28 | 42 | 20:52 (23) | 20:14 | 8 | 07:26 (4) | 18:57 | | | 16:45 | | | 16:06 | 37 | 10:09 (33) |
| 8 | 05:03 | | | 05:52 | | 07:23 (26) | 06:51 | | 07:19 (4) | 07:48 | | | 07:51 | | | 08:46 | | 09:34 (34) |
| | 22:14 | | | 21:26 | 43 | 20:51 (23) | 20:12 | 8 | 07:27 (4) | 18:54 | | | 16:43 | | | 16:05 | 36 | 10:10 (33) |
| 9 | 05:04 | | | 05:54 | | 07:21 (26) | 06:53 | | 07:21 (4) | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (34) |
| | 22:13 | | | 21:24 | 43 | 20:49 (23) | 20:09 | 7 | 07:28 (4) | 18:52 | | | 16:42 | | | 16:05 | 36 | 10:10 (33) |
| 10 | 05:06 | | | 05:56 | | 07:20 (26) | 06:55 | | 07:23 (4) | 07:52 | | | 07:55 | | 09:34 (34) | 08:48 | | 09:35 (34) |
| | 22:12 | | | 21:21 | 44 | 20:48 (23) | 20:06 | 5 | 07:28 (4) | 18:49 | | | 16:40 | 7 | 09:41 (34) | 16:04 | 36 | 10:11 (33) |
| 11 | 05:07 | | | 05:58 | | 07:19 (26) | 06:57 | | 07:24 (4) | 07:54 | | | 07:57 | | 09:31 (34) | 08:49 | | 09:36 (34) |
| | 22:11 | | | 21:19 | 42 | 20:46 (23) | 20:04 | 2 | 07:26 (4) | 18:47 | | | 16:38 | 13 | 09:44 (34) | 16:04 | 36 | 10:12 (33) |
| 12 | 05:08 | | | 06:00 | | 07:18 (26) | 06:59 | | | 07:56 | | | 07:59 | | 09:29 (34) | 08:51 | | 09:37 (34) |
| | 22:10 | | | 21:17 | 37 | 20:43 (23) | 20:01 | | | 18:44 | | | 16:36 | 17 | 09:46 (34) | 16:04 | 35 | 10:12 (33) |
| 13 | 05:09 | | | 06:02 | | 07:17 (26) | 07:00 | | | 07:58 | | | 08:01 | | 09:28 (34) | 08:52 | | 09:37 (34) |
| | 22:09 | | | 21:15 | 33 | 07:50 (26) | 19:59 | | | 18:42 | | | 16:34 | 20 | 09:48 (34) | 16:04 | 36 | 10:13 (33) |
| 14 | 05:11 | | | 06:04 | | 07:16 (26) | 07:02 | | | 08:00 | | | 08:03 | | 09:27 (34) | 08:53 | | 09:38 (34) |
| | 22:08 | | | 21:13 | 34 | 07:50 (26) | 19:56 | | | 18:39 | | | 16:33 | 22 | 09:49 (34) | 16:04 | 35 | 10:13 (33) |
| 15 | 05:12 | | | 06:05 | | 07:16 (26) | 07:04 | | | 08:02 | | | 08:05 | | 09:26 (34) | 08:54 | | 09:39 (34) |
| | 22:07 | | | 21:10 | 35 | 07:51 (26) | 19:53 | | | 18:37 | | | 16:31 | 24 | 09:50 (34) | 16:04 | 35 | 10:14 (33) |
| 16 | 05:13 | | | 06:07 | | 07:16 (26) | 07:06 | | | 08:04 | | | 08:07 | | 09:25 (34) | 08:55 | | 09:39 (34) |
| | 22:05 | | | 21:08 | 35 | 07:51 (26) | 19:51 | | | 18:34 | | | 16:29 | 26 | 09:51 (34) | 16:04 | 35 | 10:14 (33) |
| 17 | 05:15 | | | 06:09 | | 07:14 (26) | 07:08 | | | 08:06 | | | 08:09 | | 09:26 (34) | 08:55 | | 09:40 (34) |
| | 22:04 | | | 21:06 | 37 | 07:51 (26) | 19:48 | | | 18:32 | | | 16:28 | 26 | 09:52 (34) | 16:04 | 35 | 10:15 (33) |
| 18 | 05:16 | | | 06:11 | | 07:14 (26) | 07:10 | | | 08:08 | | | 08:11 | | 09:25 (34) | 08:56 | | 09:41 (34) |
| | 22:03 | | | 21:03 | 37 | 07:51 (26) | 19:46 | | | 18:30 | | | 16:26 | 28 | 09:53 (34) | 16:04 | 35 | 10:16 (33) |
| 19 | 05:18 | | 20:39 (23) | 06:13 | | 07:14 (26) | 07:12 | | 07:43 (6) | 08:10 | | | 08:13 | | 09:25 (34) | 08:57 | | 09:42 (34) |
| | 22:01 | 4 | 20:43 (23) | 21:01 | 37 | 07:51 (26) | 19:43 | 4 | 07:47 (6) | 18:27 | | | 16:24 | 28 | 09:53 (34) | 16:04 | 35 | 10:17 (33) |
| 20 | 05:19 | | 20:36 (23) | 06:15 | | 07:14 (26) | 07:14 | | 07:41 (6) | 08:12 | | | 08:15 | | 09:25 (34) | 08:58 | | 09:42 (34) |
| | 22:00 | 10 | 20:46 (23) | 20:59 | 37 | 07:51 (26) | 19:41 | 8 | 07:49 (6) | 18:25 | | | 16:23 | 29 | 09:54 (34) | 16:04 | 34 | 10:16 (33) |
| 21 | 05:21 | | 20:35 (23) | 06:17 | | 07:14 (26) | 07:15 | | 07:43 (6) | 08:14 | | | 08:17 | | 09:24 (34) | 08:58 | | 09:43 (34) |
| | 21:59 | 13 | 20:48 (23) | 20:56 | 37 | 07:51 (26) | 19:38 | 7 | 07:50 (6) | 18:22 | | | 16:22 | 30 | 09:54 (34) | 16:05 | 34 | 10:17 (33) |
| 22 | 05:22 | | 20:34 (23) | 06:19 | | 07:14 (26) | 07:17 | | 07:45 (6) | 08:16 | | | 08:19 | | 09:24 (34) | 08:59 | | 09:43 (34) |
| | 21:57 | 15 | 20:49 (23) | 20:54 | 36 | 07:50 (26) | 19:35 | 13 | 18:47 (40) | 18:20 | | | 16:20 | 30 | 09:54 (34) | 16:05 | 34 | 10:17 (33) |
| 23 | 05:24 | | 20:33 (23) | 06:21 | | 07:14 (26) | 07:19 | | 07:47 (6) | 08:18 | | | 08:21 | | 09:26 (34) | 08:59 | | 09:44 (34) |
| | 21:55 | 17 | 20:50 (23) | 20:52 | 35 | 07:49 (26) | 19:33 | 14 | 18:49 (40) | 18:18 | | | 16:19 | 30 | 09:56 (34) | 16:06 | 34 | 10:18 (33) |
| 24 | 05:26 | | 20:32 (23) | 06:23 | | 07:14 (26) | 07:21 | | 18:35 (40) | 08:20 | | | 08:23 | | 09:26 (34) | 09:00 | | 09:44 (34) |
| | 21:54 | 19 | 20:51 (23) | 20:49 | 35 | 07:49 (26) | 19:30 | 15 | 18:50 (40) | 18:15 | | | 16:17 | 30 | 09:56 (34) | 16:06 | 34 | 10:18 (33) |
| 25 | 05:27 | | 20:31 (23) | 06:24 | | 07:15 (26) | 07:23 | | 18:34 (40) | 07:22 | | | 08:25 | | 09:26 (34) | 09:00 | | 09:44 (34) |
| | 21:52 | 21 | 20:52 (23) | 20:47 | 33 | 07:48 (26) | 19:28 | 17 | 18:51 (40) | 17:13 | | | 16:16 | 30 | 09:56 (34) | 16:07 | 35 | 10:19 (33) |
| 26 | 05:29 | | 20:30 (23) | 06:26 | | 07:16 (26) | 07:25 | | 18:32 (40) | 07:24 | | | 08:26 | | 09:26 (34) | 09:00 | | 09:44 (34) |
| | 21:51 | 22 | 20:52 (23) | 20:44 | 31 | 07:47 (26) | 19:25 | 18 | 18:50 (40) | 17:11 | | | 16:15 | 30 | 09:56 (34) | 16:08 | 35 | 10:19 (33) |
| 27 | 05:31 | | 20:30 (23) | 06:28 | | 07:16 (26) | 07:27 | | 18:32 (40) | 07:26 | | | 08:28 | | 09:27 (34) | 09:01 | | 09:44 (34) |
| | 21:49 | 23 | 20:53 (23) | 20:42 | 29 | 07:45 (26) | 19:22 | 18 | 18:50 (40) | 17:09 | | | 16:14 | 29 | 09:56 (34) | 16:09 | 35 | 10:19 (33) |
| 28 | 05:33 | | 20:29 (23) | 06:30 | | 07:17 (26) | 07:29 | | 18:32 (40) | 07:28 | | | 08:30 | | 09:27 (34) | 09:01 | | 09:45 (34) |
| | 21:47 | 24 | 20:53 (23) | 20:39 | 27 | 07:44 (26) | 19:20 | 17 | 18:49 (40) | 17:06 | | | 16:13 | 30 | 09:57 (34) | 16:09 | 35 | 10:20 (33) |
| 29 | 05:34 | | 20:29 (23) | 06:32 | | 07:18 (26) | 07:31 | | 18:32 (40) | 07:30 | | | 08:32 | | 09:28 (34) | 09:01 | | 09:45 (34) |
| | 21:45 | 24 | 20:53 (23) | 20:37 | 24 | 07:42 (26) | 19:17 | 15 | 18:47 (40) | 17:04 | | | 16:12 | 29 | 09:57 (34) | 16:10 | 35 | 10:20 (33) |
| 30 | 05:36 | | 20:29 (23) | 06:34 | | 07:20 (26) | 07:33 | | 18:32 (40) | 07:32 | | | 08:33 | | 09:28 (34) | 09:01 | | 09:45 (34) |
| | 21:44 | 25 | 20:54 (23) | 20:34 | 20 | 07:40 (26) | 19:15 | 13 | 18:45 (40) | 17:02 | | | 16:11 | 32 | 10:00 (33) | 16:11 | 36 | 10:21 (33) |
| 31 | 05:38 | | 20:29 (23) | 06:36 | | 07:22 (26) | | | | 07:35 | | | | | | 09:01 | | 09:45 (34) |
| | 21:42 | 25 | 20:54 (23) | 20:32 | 15 | 07:37 (26) | | | | 17:00 | | | | | | 16:12 | 36 | 10:21 (33) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 242 | | | 1030 | | | 198 | | | 14 | | | 540 | | | 1093 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,93 | | | 0,97 | | | 0,99 | | | 0,98 | | | 0,61 | | | 0,58 | |
| Total reduction | | 0,40 | | | 0,45 | | | 0,35 | | | 0,27 | | | 0,09 | | | 0,07 | |
| Total, real | | 98 | | | 465 | | | 70 | | | 4 | | | 47 | | | 77 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:05 (34) | 08:28 | | 07:27 | | | 07:08 | | | 05:55 | | 07:01 (26) | 05:02 | |
| | 16:14 | 32 | 10:37 (34) | 17:08 | | 18:07 | | | 20:10 | | | 21:09 | 64 | 20:36 (23) | 22:02 | |
| 2 | 09:01 | | 10:05 (34) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (4) | 05:53 | | 07:00 (26) | 05:01 | |
| | 16:15 | 32 | 10:37 (34) | 17:10 | | 18:09 | | | 20:11 | 3 | 07:33 (4) | 21:11 | 66 | 20:36 (23) | 22:04 | |
| 3 | 09:00 | | 10:06 (34) | 08:24 | | 07:22 | | | 07:03 | | 07:27 (4) | 05:51 | | 07:00 (26) | 05:00 | |
| | 16:16 | 32 | 10:38 (34) | 17:12 | | 18:11 | | | 20:13 | 6 | 07:33 (4) | 21:13 | 67 | 20:37 (23) | 22:05 | |
| 4 | 09:00 | | 10:05 (34) | 08:22 | | 07:19 | | | 07:00 | | 07:25 (4) | 05:48 | | 07:00 (26) | 04:59 | |
| | 16:17 | 33 | 10:38 (34) | 17:14 | | 18:13 | | | 20:15 | 8 | 07:33 (4) | 21:14 | 68 | 20:37 (23) | 22:06 | |
| 5 | 09:00 | | 10:05 (34) | 08:20 | | 07:17 | | | 06:58 | | 07:22 (4) | 05:46 | | 07:00 (26) | 04:58 | |
| | 16:19 | 33 | 10:38 (34) | 17:17 | | 18:16 | | | 20:17 | 10 | 07:32 (4) | 21:16 | 68 | 20:37 (23) | 22:07 | |
| 6 | 08:59 | | 10:06 (34) | 08:18 | | 07:14 | | | 06:55 | | 07:21 (4) | 05:44 | | 07:00 (26) | 04:57 | |
| | 16:20 | 33 | 10:39 (34) | 17:19 | | 18:18 | | | 20:19 | 10 | 07:31 (4) | 21:18 | 67 | 20:36 (23) | 22:08 | |
| 7 | 08:59 | | 10:07 (34) | 08:16 | | 07:12 | | | 06:53 | | 07:22 (4) | 05:42 | | 07:00 (26) | 04:56 | |
| | 16:22 | 32 | 10:39 (34) | 17:21 | | 18:20 | | | 20:21 | 6 | 07:28 (4) | 21:20 | 66 | 20:36 (23) | 22:10 | |
| 8 | 08:58 | | 10:07 (34) | 08:14 | | 07:09 | | | 06:50 | | | 05:40 | | 07:00 (26) | 04:56 | |
| | 16:23 | 33 | 10:40 (34) | 17:23 | | 18:22 | | | 20:23 | | | 21:22 | 65 | 20:35 (23) | 22:11 | |
| 9 | 08:57 | | 10:07 (34) | 08:12 | | 07:07 | | | 06:48 | | | 05:38 | | 07:00 (26) | 04:55 | |
| | 16:25 | 33 | 10:40 (34) | 17:25 | | 18:24 | | | 20:25 | | | 21:24 | 63 | 20:35 (23) | 22:12 | |
| 10 | 08:57 | | 10:08 (34) | 08:10 | | 07:04 | | | 06:45 | | | 05:36 | | 07:00 (26) | 04:54 | |
| | 16:26 | 32 | 10:40 (34) | 17:27 | | 18:26 | | | 20:27 | | | 21:26 | 61 | 20:34 (23) | 22:12 | |
| 11 | 08:56 | | 10:08 (34) | 08:08 | | 07:02 | | | 06:42 | | | 05:34 | | 07:00 (26) | 04:54 | |
| | 16:28 | 33 | 10:41 (34) | 17:29 | | 18:28 | | | 20:29 | | | 21:28 | 59 | 20:33 (23) | 22:13 | |
| 12 | 08:55 | | 10:09 (34) | 08:06 | | 06:59 | | | 06:40 | | | 05:32 | | 07:01 (26) | 04:53 | |
| | 16:29 | 32 | 10:41 (34) | 17:31 | | 18:30 | | | 20:31 | | | 21:30 | 55 | 20:32 (23) | 22:14 | |
| 13 | 08:54 | | 10:09 (34) | 08:04 | | 06:57 | | | 06:37 | | | 05:30 | | 07:02 (26) | 04:53 | |
| | 16:31 | 33 | 10:42 (34) | 17:34 | | 18:32 | | | 20:33 | | | 21:32 | 51 | 20:31 (23) | 22:15 | |
| 14 | 08:53 | | 10:10 (34) | 08:01 | | 06:54 | | | 06:35 | | | 05:28 | | 07:02 (26) | 04:53 | |
| | 16:33 | 32 | 10:42 (34) | 17:36 | | 18:34 | | | 20:35 | | | 21:33 | 45 | 20:28 (23) | 22:16 | |
| 15 | 08:52 | | 10:11 (34) | 07:59 | | 06:52 | | | 06:33 | | | 05:27 | | 07:03 (26) | 04:52 | |
| | 16:35 | 31 | 10:42 (34) | 17:38 | | 18:36 | | | 20:37 | | | 21:35 | 37 | 07:40 (26) | 22:16 | |
| 16 | 08:51 | | 10:11 (34) | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 07:04 (26) | 04:52 | |
| | 16:36 | 31 | 10:42 (34) | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | 35 | 07:39 (26) | 22:17 | |
| 17 | 08:50 | | 10:12 (34) | 07:55 | | 06:46 | | | 06:28 | | 07:21 (26) | 05:23 | | 07:05 (26) | 04:52 | |
| | 16:38 | 30 | 10:42 (34) | 17:42 | | 18:40 | | | 20:41 | 10 | 07:31 (26) | 21:39 | 33 | 07:38 (26) | 22:17 | |
| 18 | 08:49 | | 10:12 (34) | 07:53 | | 06:44 | | | 06:25 | | 07:16 (26) | 05:21 | | 07:05 (26) | 04:52 | |
| | 16:40 | 30 | 10:42 (34) | 17:44 | | 18:42 | | | 20:43 | 18 | 07:34 (26) | 21:40 | 32 | 07:37 (26) | 22:18 | |
| 19 | 08:48 | | 10:13 (34) | 07:50 | | 06:41 | | | 06:23 | | 07:13 (26) | 05:20 | | 07:06 (26) | 04:52 | |
| | 16:42 | 29 | 10:42 (34) | 17:46 | | 18:44 | | | 20:45 | 24 | 07:37 (26) | 21:42 | 29 | 07:35 (26) | 22:18 | |
| 20 | 08:46 | | 10:13 (34) | 07:48 | | 06:39 | | 07:03 (6) | 06:20 | | 07:11 (26) | 05:18 | | 07:07 (26) | 04:52 | |
| | 16:44 | 28 | 10:41 (34) | 17:48 | | 18:46 | 3 | 07:06 (6) | 20:47 | 28 | 07:39 (26) | 21:44 | 28 | 07:35 (26) | 22:19 | |
| 21 | 08:45 | | 10:15 (34) | 07:46 | | 06:36 | | 07:01 (6) | 06:18 | | 07:09 (26) | 05:16 | | 07:09 (26) | 04:52 | |
| | 16:46 | 26 | 10:41 (34) | 17:51 | | 18:48 | 5 | 07:06 (6) | 20:49 | 31 | 07:40 (26) | 21:46 | 25 | 07:34 (26) | 22:19 | |
| 22 | 08:44 | | 10:15 (34) | 07:43 | | 06:34 | | 06:58 (6) | 06:16 | | 07:07 (26) | 05:15 | | 07:09 (26) | 04:52 | |
| | 16:48 | 26 | 10:41 (34) | 17:53 | | 18:50 | 7 | 07:05 (6) | 20:51 | 34 | 07:41 (26) | 21:47 | 23 | 07:32 (26) | 22:19 | |
| 23 | 08:42 | | 10:17 (34) | 07:41 | | 06:31 | | 06:55 (6) | 06:13 | | 07:06 (26) | 05:13 | | 07:11 (26) | 04:53 | |
| | 16:50 | 24 | 10:41 (34) | 17:55 | | 18:52 | 9 | 07:04 (6) | 20:53 | 36 | 07:42 (26) | 21:49 | 20 | 07:31 (26) | 22:19 | |
| 24 | 08:41 | | 10:18 (34) | 07:39 | | 06:28 | | 06:55 (6) | 06:11 | | 07:05 (26) | 05:12 | | 07:13 (26) | 04:53 | |
| | 16:52 | 21 | 10:39 (34) | 17:57 | | 18:54 | 8 | 07:03 (6) | 20:55 | 38 | 07:43 (26) | 21:51 | 16 | 07:29 (26) | 22:19 | |
| 25 | 08:39 | | 10:20 (34) | 07:36 | | 06:26 | | | 06:09 | | 07:03 (26) | 05:10 | | 07:15 (26) | 04:53 | |
| | 16:54 | 18 | 10:38 (34) | 17:59 | | 18:56 | | | 20:57 | 40 | 07:43 (26) | 21:52 | 11 | 07:26 (26) | 22:19 | |
| 26 | 08:38 | | 10:21 (34) | 07:34 | | 06:23 | | | 06:06 | | 07:03 (26) | 05:09 | | | 04:54 | |
| | 16:56 | 15 | 10:36 (34) | 18:01 | | 18:58 | | | 20:59 | 46 | 20:28 (23) | 21:54 | | | 22:19 | |
| 27 | 08:36 | | 10:25 (34) | 07:31 | | 06:21 | | | 06:04 | | 07:02 (26) | 05:08 | | | 04:54 | |
| | 16:58 | 9 | 10:34 (34) | 18:03 | | 19:00 | | | 21:01 | 52 | 20:30 (23) | 21:55 | | | 22:19 | |
| 28 | 08:34 | | | 07:29 | | 06:18 | | | 06:02 | | 07:02 (26) | 05:06 | | | 04:55 | |
| | 17:00 | | | 18:05 | | 19:02 | | | 21:03 | 57 | 20:32 (23) | 21:57 | | | 22:19 | |
| 29 | 08:33 | | | | | 07:16 | | | 05:59 | | 07:01 (26) | 05:05 | | | 04:55 | |
| | 17:02 | | | | | 20:04 | | | 21:05 | 61 | 20:34 (23) | 21:58 | | | 22:19 | |
| 30 | 08:31 | | | | | 07:13 | | | 05:57 | | 07:01 (26) | 05:04 | | | 04:56 | |
| | 17:04 | | | | | 20:06 | | | 21:07 | 64 | 20:36 (23) | 22:00 | | | 22:18 | |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | | | | |
| | 17:06 | | | | | 20:08 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 773 | | | | | 32 | | | 582 | | | 1154 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,53 | | | | | 1,00 | | | 0,98 | | | 0,97 | | | |
| Total reduction | | 0,08 | | | | | 0,30 | | | 0,34 | | | 0,45 | | | |
| Total, real | | 65 | | | | | 10 | | | 199 | | | 516 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:12 (26) | 06:38 | | | 07:35 | 07:37 | | | 08:35 | | 09:50 (34) |
| | 22:18 | | | 21:40 | 55 | 20:43 (23) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 33 | 10:23 (34) |
| 2 | 04:57 | | | 05:41 | | 07:10 (26) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:51 (34) |
| | 22:18 | | | 21:38 | 59 | 20:43 (23) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 32 | 10:23 (34) |
| 3 | 04:58 | | | 05:43 | | 07:10 (26) | 06:42 | | | 07:38 | 07:41 | | | 08:38 | | 09:51 (34) |
| | 22:17 | | | 21:36 | 62 | 20:44 (23) | 20:24 | | | 19:07 | 16:54 | | | 16:08 | 33 | 10:24 (34) |
| 4 | 04:59 | | | 05:45 | | 07:10 (26) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:51 (34) |
| | 22:17 | | | 21:34 | 64 | 20:45 (23) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 33 | 10:24 (34) |
| 5 | 05:00 | | | 05:47 | | 07:10 (26) | 06:45 | | 07:19 (4) | 07:42 | 07:45 | | | 08:41 | | 09:52 (34) |
| | 22:16 | | | 21:32 | 65 | 20:46 (23) | 20:19 | 6 | 07:25 (4) | 19:02 | 16:49 | | | 16:07 | 32 | 10:24 (34) |
| 6 | 05:01 | | | 05:49 | | 07:09 (26) | 06:47 | | 07:16 (4) | 07:44 | 07:47 | | | 08:43 | | 09:53 (34) |
| | 22:15 | | | 21:30 | 66 | 20:45 (23) | 20:17 | 10 | 07:26 (4) | 18:59 | 16:47 | | | 16:06 | 32 | 10:25 (34) |
| 7 | 05:02 | | | 05:51 | | 07:09 (26) | 06:49 | | 07:17 (4) | 07:46 | 07:49 | | | 08:44 | | 09:53 (34) |
| | 22:15 | | | 21:28 | 67 | 20:46 (23) | 20:14 | 10 | 07:27 (4) | 18:57 | 16:45 | | | 16:06 | 32 | 10:25 (34) |
| 8 | 05:03 | | | 05:52 | | 07:09 (26) | 06:51 | | 07:19 (4) | 07:48 | 07:51 | | | 08:46 | | 09:54 (34) |
| | 22:14 | | | 21:26 | 67 | 20:46 (23) | 20:12 | 8 | 07:27 (4) | 18:54 | 16:43 | | | 16:05 | 32 | 10:26 (34) |
| 9 | 05:04 | | | 05:54 | | 07:08 (26) | 06:53 | | 07:21 (4) | 07:50 | 07:53 | | | 08:47 | | 09:54 (34) |
| | 22:13 | | | 21:24 | 68 | 20:45 (23) | 20:09 | 6 | 07:27 (4) | 18:52 | 16:42 | | | 16:05 | 32 | 10:26 (34) |
| 10 | 05:06 | | | 05:56 | | 07:09 (26) | 06:55 | | 07:23 (4) | 07:52 | 07:55 | | | 08:48 | | 09:54 (34) |
| | 22:12 | | | 21:21 | 67 | 20:45 (23) | 20:06 | 3 | 07:26 (4) | 18:49 | 16:40 | | | 16:04 | 32 | 10:26 (34) |
| 11 | 05:07 | | | 05:58 | | 07:09 (26) | 06:57 | | | 07:54 | 07:57 | | | 08:49 | | 09:55 (34) |
| | 22:11 | | | 21:19 | 66 | 20:45 (23) | 20:04 | | | 18:47 | 16:38 | | | 16:04 | 32 | 10:27 (34) |
| 12 | 05:08 | | | 06:00 | | 07:09 (26) | 06:59 | | | 07:56 | 07:59 | | | 08:51 | | 09:55 (34) |
| | 22:10 | | | 21:17 | 65 | 20:44 (23) | 20:01 | | | 18:44 | 16:36 | | | 16:04 | 32 | 10:27 (33) |
| 13 | 05:09 | | | 06:02 | | 07:08 (26) | 07:00 | | | 07:58 | 08:01 | | | 08:52 | | 09:56 (34) |
| | 22:09 | | | 21:15 | 64 | 20:43 (23) | 19:59 | | | 18:42 | 16:34 | | | 16:04 | 32 | 10:28 (33) |
| 14 | 05:11 | | | 06:04 | | 07:09 (26) | 07:02 | | | 08:00 | 08:03 | | | 08:53 | | 09:56 (34) |
| | 22:08 | | | 21:13 | 59 | 20:41 (23) | 19:56 | | | 18:39 | 16:33 | | | 16:04 | 33 | 10:29 (33) |
| 15 | 05:12 | | | 06:05 | | 07:09 (26) | 07:04 | | | 08:02 | 08:05 | | 09:57 (34) | 08:54 | | 09:57 (34) |
| | 22:07 | | | 21:10 | 56 | 20:39 (23) | 19:53 | | | 18:37 | 16:31 | 9 | 10:06 (34) | 16:04 | 32 | 10:29 (33) |
| 16 | 05:13 | | | 06:07 | | 07:10 (26) | 07:06 | | | 08:04 | 08:07 | | 09:54 (34) | 08:55 | | 09:57 (34) |
| | 22:05 | | | 21:08 | 51 | 20:37 (23) | 19:51 | | | 18:34 | 16:29 | 15 | 10:09 (34) | 16:04 | 33 | 10:30 (33) |
| 17 | 05:15 | | | 06:09 | | 07:09 (26) | 07:08 | | | 08:06 | 08:09 | | 09:54 (34) | 08:55 | | 09:58 (34) |
| | 22:04 | | | 21:06 | 44 | 20:34 (23) | 19:48 | | | 18:32 | 16:28 | 18 | 10:12 (34) | 16:04 | 33 | 10:31 (33) |
| 18 | 05:16 | | 07:27 (26) | 06:11 | | 07:10 (26) | 07:10 | | | 08:08 | 08:11 | | 09:52 (34) | 08:56 | | 09:59 (34) |
| | 22:03 | 7 | 07:34 (26) | 21:03 | 39 | 07:49 (26) | 19:46 | | | 18:30 | 16:26 | 21 | 10:13 (34) | 16:04 | 33 | 10:32 (33) |
| 19 | 05:18 | | 07:24 (26) | 06:13 | | 07:11 (26) | 07:12 | | 07:42 (6) | 08:10 | 08:13 | | 09:51 (34) | 08:57 | | 09:59 (34) |
| | 22:01 | 14 | 07:38 (26) | 21:01 | 38 | 07:49 (26) | 19:43 | 7 | 07:49 (6) | 18:27 | 16:24 | 24 | 10:15 (34) | 16:04 | 33 | 10:32 (33) |
| 20 | 05:19 | | 07:22 (26) | 06:15 | | 07:12 (26) | 07:14 | | 07:41 (6) | 08:12 | 08:15 | | 09:50 (34) | 08:58 | | 09:59 (34) |
| | 22:00 | 18 | 07:40 (26) | 20:59 | 36 | 07:48 (26) | 19:40 | 9 | 07:50 (6) | 18:25 | 16:23 | 26 | 10:16 (34) | 16:04 | 33 | 10:32 (33) |
| 21 | 05:21 | | 07:21 (26) | 06:17 | | 07:13 (26) | 07:15 | | 07:43 (6) | 08:14 | 08:17 | | 09:50 (34) | 08:58 | | 10:00 (34) |
| | 21:59 | 21 | 07:42 (26) | 20:56 | 33 | 07:46 (26) | 19:38 | 8 | 07:51 (6) | 18:22 | 16:22 | 27 | 10:17 (34) | 16:05 | 33 | 10:33 (33) |
| 22 | 05:22 | | 07:19 (26) | 06:19 | | 07:14 (26) | 07:17 | | 07:45 (6) | 08:16 | 08:19 | | 09:49 (34) | 08:59 | | 10:00 (34) |
| | 21:57 | 24 | 07:43 (26) | 20:54 | 30 | 07:44 (26) | 19:35 | 6 | 07:51 (6) | 18:20 | 16:20 | 28 | 10:17 (34) | 16:05 | 33 | 10:33 (33) |
| 23 | 05:24 | | 07:19 (26) | 06:21 | | 07:15 (26) | 07:19 | | 07:47 (6) | 08:18 | 08:21 | | 09:50 (34) | 08:59 | | 10:01 (34) |
| | 21:55 | 26 | 07:45 (26) | 20:52 | 27 | 07:42 (26) | 19:33 | 3 | 07:50 (6) | 18:18 | 16:19 | 29 | 10:19 (34) | 16:06 | 33 | 10:34 (33) |
| 24 | 05:26 | | 07:17 (26) | 06:23 | | 07:17 (26) | 07:21 | | 07:49 (6) | 08:20 | 08:23 | | 09:50 (34) | 09:00 | | 10:01 (34) |
| | 21:54 | 29 | 07:46 (26) | 20:49 | 23 | 07:40 (26) | 19:30 | 1 | 07:50 (6) | 18:15 | 16:17 | 30 | 10:20 (34) | 16:06 | 33 | 10:34 (33) |
| 25 | 05:27 | | 07:17 (26) | 06:24 | | 07:20 (26) | 07:23 | | | 07:22 | 08:25 | | 09:50 (34) | 09:00 | | 10:01 (34) |
| | 21:52 | 30 | 07:47 (26) | 20:47 | 17 | 07:37 (26) | 19:28 | | | 17:13 | 16:16 | 30 | 10:20 (34) | 16:07 | 33 | 10:34 (33) |
| 26 | 05:29 | | 07:15 (26) | 06:26 | | 07:25 (26) | 07:25 | | | 07:24 | 08:26 | | 09:50 (34) | 09:00 | | 10:02 (34) |
| | 21:51 | 33 | 07:48 (26) | 20:44 | 8 | 07:33 (26) | 19:25 | | | 17:11 | 16:15 | 31 | 10:21 (34) | 16:08 | 33 | 10:35 (33) |
| 27 | 05:31 | | 07:15 (26) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | 09:50 (34) | 09:01 | | 10:02 (34) |
| | 21:49 | 34 | 07:49 (26) | 20:42 | | | 19:22 | | | 17:09 | 16:14 | 31 | 10:21 (34) | 16:09 | 33 | 10:35 (33) |
| 28 | 05:32 | | 07:14 (26) | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | 09:50 (34) | 09:01 | | 10:02 (34) |
| | 21:47 | 35 | 07:49 (26) | 20:39 | | | 19:20 | | | 17:06 | 16:13 | 32 | 10:22 (34) | 16:09 | 33 | 10:35 (33) |
| 29 | 05:34 | | 07:13 (26) | 06:32 | | | 07:31 | | | 07:30 | 08:32 | | 09:50 (34) | 09:01 | | 10:03 (34) |
| | 21:45 | 41 | 20:37 (23) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | 33 | 10:23 (34) | 16:10 | 32 | 10:35 (33) |
| 30 | 05:36 | | 07:13 (26) | 06:34 | | | 07:33 | | | 07:32 | 08:33 | | 09:50 (34) | 09:01 | | 10:03 (34) |
| | 21:43 | 48 | 20:40 (23) | 20:34 | | | 19:15 | | | 17:02 | 16:11 | 32 | 10:22 (34) | 16:11 | 33 | 10:36 (33) |
| 31 | 05:38 | | 07:12 (26) | 06:36 | | | | | | 07:35 | | | | 09:01 | | 10:04 (34) |
| | 21:42 | 53 | 20:41 (23) | 20:32 | | | | | | 17:00 | | | | 16:12 | 32 | 10:36 (33) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 413 | | | 1296 | | | 77 | | | | 416 | | | 1010 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,97 | | | 1,00 | | | | 0,53 | | | 0,52 | |
| Total reduction | | 0,42 | | | 0,45 | | | 0,35 | | | | 0,07 | | | 0,06 | |
| Total, real | | 175 | | | 578 | | | 27 | | | | 31 | | | 63 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:03 (34) | 07:27 | | | 07:08 | | 19:12 (40) | 05:55 | | 06:31 (26) | 05:02 | | |
| | 16:14 | | | 17:08 | 20 | 09:23 (34) | 18:07 | | | 20:10 | 19 | 19:31 (40) | 21:09 | 16 | 06:47 (26) | 22:02 | | |
| 2 | 09:01 | | | 08:26 | | 09:02 (34) | 07:24 | | | 07:05 | | 19:13 (40) | 05:53 | | 06:29 (26) | 05:01 | | |
| | 16:15 | | | 17:10 | 22 | 09:24 (34) | 18:09 | | | 20:12 | 18 | 19:31 (40) | 21:11 | 19 | 06:48 (26) | 22:04 | | |
| 3 | 09:00 | | | 08:24 | | 09:01 (34) | 07:22 | | | 07:03 | | 19:13 (40) | 05:51 | | 06:28 (26) | 05:00 | | |
| | 16:16 | | | 17:12 | 25 | 09:26 (34) | 18:11 | | | 20:13 | 16 | 19:29 (40) | 21:13 | 21 | 06:49 (26) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:01 (34) | 07:19 | | | 07:00 | | 19:14 (40) | 05:48 | | 06:27 (26) | 04:59 | | |
| | 16:17 | | | 17:14 | 26 | 09:27 (34) | 18:14 | | | 20:15 | 14 | 19:28 (40) | 21:14 | 23 | 06:50 (26) | 22:06 | | |
| 5 | 09:00 | | 09:35 (33) | 08:20 | | 09:00 (34) | 07:17 | | | 06:58 | | 19:16 (40) | 05:46 | | 06:26 (26) | 04:58 | | |
| | 16:19 | 2 | 09:37 (33) | 17:17 | 28 | 09:28 (34) | 18:16 | | | 20:17 | 9 | 19:25 (40) | 21:16 | 25 | 06:51 (26) | 22:07 | | |
| 6 | 08:59 | | 09:35 (33) | 08:18 | | 08:59 (34) | 07:14 | | | 06:55 | | | 05:44 | | 06:25 (26) | 04:57 | | |
| | 16:20 | 4 | 09:39 (33) | 17:19 | 28 | 09:27 (34) | 18:18 | | | 20:19 | | | 21:18 | 26 | 06:51 (26) | 22:08 | | |
| 7 | 08:59 | | 09:34 (33) | 08:16 | | 08:59 (34) | 07:12 | | | 06:53 | | | 05:42 | | 06:24 (26) | 04:56 | | 21:25 (23) |
| | 16:22 | 7 | 09:41 (33) | 17:21 | 29 | 09:28 (34) | 18:20 | | | 20:21 | | | 21:20 | 28 | 06:52 (26) | 22:10 | 2 | 21:27 (23) |
| 8 | 08:58 | | 09:33 (33) | 08:14 | | 08:59 (34) | 07:09 | | | 06:50 | | | 05:40 | | 06:24 (26) | 04:56 | | 21:22 (23) |
| | 16:23 | 9 | 09:42 (33) | 17:23 | 30 | 09:29 (34) | 18:22 | | | 20:23 | | | 21:22 | 28 | 06:52 (26) | 22:11 | 7 | 21:29 (23) |
| 9 | 08:57 | | 09:32 (33) | 08:12 | | 08:59 (34) | 07:07 | | | 06:48 | | | 05:38 | | 06:23 (26) | 04:55 | | 21:22 (23) |
| | 16:25 | 11 | 09:43 (33) | 17:25 | 30 | 09:29 (34) | 18:24 | | | 20:25 | | | 21:24 | 29 | 06:52 (26) | 22:12 | 9 | 21:31 (23) |
| 10 | 08:57 | | 09:31 (33) | 08:10 | | 08:59 (34) | 07:04 | | | 06:45 | | | 05:36 | | 06:23 (26) | 04:54 | | 21:21 (23) |
| | 16:26 | 13 | 09:44 (33) | 17:27 | 30 | 09:29 (34) | 18:26 | | | 20:27 | | | 21:26 | 29 | 06:52 (26) | 22:12 | 11 | 21:32 (23) |
| 11 | 08:56 | | 09:30 (33) | 08:08 | | 08:58 (34) | 07:02 | | | 06:43 | | | 05:34 | | 06:22 (26) | 04:54 | | 21:21 (23) |
| | 16:28 | 15 | 09:45 (33) | 17:29 | 31 | 09:29 (34) | 18:28 | | | 20:29 | | | 21:28 | 30 | 06:52 (26) | 22:13 | 12 | 21:33 (23) |
| 12 | 08:55 | | 09:29 (33) | 08:06 | | 08:59 (34) | 06:59 | | | 06:40 | | | 05:32 | | 06:23 (26) | 04:53 | | 21:21 (23) |
| | 16:29 | 17 | 09:46 (33) | 17:32 | 30 | 09:29 (34) | 18:30 | | | 20:31 | | | 21:30 | 29 | 06:52 (26) | 22:14 | 13 | 21:34 (23) |
| 13 | 08:54 | | 09:28 (33) | 08:04 | | 08:59 (34) | 06:57 | | | 06:38 | | | 05:30 | | 06:23 (26) | 04:53 | | 21:20 (23) |
| | 16:31 | 19 | 09:47 (33) | 17:34 | 30 | 09:29 (34) | 18:32 | | | 20:33 | | | 21:32 | 29 | 06:52 (26) | 22:15 | 14 | 21:34 (23) |
| 14 | 08:53 | | 09:28 (33) | 08:02 | | 09:00 (34) | 06:54 | | | 06:35 | | | 05:28 | | 06:23 (26) | 04:53 | | 21:20 (23) |
| | 16:33 | 20 | 09:48 (33) | 17:36 | 29 | 09:29 (34) | 18:34 | | | 20:35 | | | 21:33 | 29 | 06:52 (26) | 22:16 | 15 | 21:35 (23) |
| 15 | 08:52 | | 09:28 (33) | 07:59 | | 09:00 (34) | 06:52 | | | 06:33 | | | 05:27 | | 06:24 (26) | 04:52 | | 21:20 (23) |
| | 16:35 | 21 | 09:49 (33) | 17:38 | 27 | 09:27 (34) | 18:36 | | | 20:37 | | | 21:35 | 28 | 06:52 (26) | 22:16 | 15 | 21:35 (23) |
| 16 | 08:51 | | 09:28 (33) | 07:57 | | 09:01 (34) | 06:49 | | | 06:30 | | | 05:25 | | 06:23 (26) | 04:52 | | 21:20 (23) |
| | 16:36 | 21 | 09:49 (33) | 17:40 | 26 | 09:27 (34) | 18:38 | | | 20:39 | | | 21:37 | 28 | 06:51 (26) | 22:17 | 16 | 21:36 (23) |
| 17 | 08:50 | | 09:28 (33) | 07:55 | | 09:02 (34) | 06:46 | | | 06:28 | | | 05:23 | | 06:24 (26) | 04:52 | | 21:20 (23) |
| | 16:38 | 22 | 09:50 (33) | 17:42 | 24 | 09:26 (34) | 18:40 | | | 20:41 | | | 21:39 | 27 | 06:51 (26) | 22:17 | 16 | 21:36 (23) |
| 18 | 08:49 | | 09:28 (33) | 07:53 | | 09:03 (34) | 06:44 | | | 06:25 | | | 05:21 | | 06:24 (26) | 04:52 | | 21:20 (23) |
| | 16:40 | 22 | 09:50 (33) | 17:44 | 21 | 09:24 (34) | 18:42 | | | 20:43 | | | 21:41 | 27 | 06:51 (26) | 22:18 | 17 | 21:37 (23) |
| 19 | 08:48 | | 09:28 (33) | 07:50 | | 09:05 (34) | 06:41 | | | 06:23 | | | 05:20 | | 06:25 (26) | 04:52 | | 21:20 (23) |
| | 16:42 | 23 | 09:51 (33) | 17:46 | 18 | 09:23 (34) | 18:44 | | | 20:45 | | | 21:42 | 26 | 06:51 (26) | 22:18 | 17 | 21:37 (23) |
| 20 | 08:46 | | 09:28 (33) | 07:48 | | 09:07 (34) | 06:39 | | | 06:20 | | | 05:18 | | 06:25 (26) | 04:52 | | 21:20 (23) |
| | 16:44 | 23 | 09:51 (33) | 17:49 | 12 | 09:19 (34) | 18:46 | | | 20:47 | | | 21:44 | 24 | 06:49 (26) | 22:19 | 17 | 21:37 (23) |
| 21 | 08:45 | | 09:29 (33) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:27 (26) | 04:52 | | 21:20 (23) |
| | 16:46 | 23 | 09:52 (33) | 17:51 | | | 18:48 | | | 20:49 | | | 21:46 | 22 | 06:49 (26) | 22:19 | 17 | 21:37 (23) |
| 22 | 08:44 | | 09:29 (33) | 07:43 | | | 06:34 | | | 06:16 | | | 05:15 | | 06:27 (26) | 04:52 | | 21:21 (23) |
| | 16:48 | 22 | 09:51 (33) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 21 | 06:48 (26) | 22:19 | 17 | 21:38 (23) |
| 23 | 08:42 | | 09:30 (33) | 07:41 | | | 06:31 | | | 06:13 | | | 05:13 | | 06:28 (26) | 04:53 | | 21:21 (23) |
| | 16:50 | 22 | 09:52 (33) | 17:55 | | | 18:52 | | | 20:53 | | | 21:49 | 19 | 06:47 (26) | 22:19 | 17 | 21:38 (23) |
| 24 | 08:41 | | 09:30 (33) | 07:39 | | | 06:28 | | 18:22 (40) | 06:11 | | | 05:12 | | 06:29 (26) | 04:53 | | 21:21 (23) |
| | 16:52 | 22 | 09:52 (33) | 17:57 | | | 18:54 | 5 | 18:27 (40) | 20:55 | | | 21:51 | 18 | 06:47 (26) | 22:19 | 17 | 21:38 (23) |
| 25 | 08:39 | | 09:31 (33) | 07:36 | | | 06:26 | | 18:18 (40) | 06:09 | | | 05:10 | | 06:30 (26) | 04:53 | | 21:22 (23) |
| | 16:54 | 20 | 09:51 (33) | 17:59 | | | 18:56 | 10 | 18:28 (40) | 20:57 | | | 21:52 | 15 | 06:45 (26) | 22:19 | 16 | 21:38 (23) |
| 26 | 08:38 | | 09:31 (33) | 07:34 | | | 06:23 | | 18:16 (40) | 06:06 | | | 05:09 | | 06:31 (26) | 04:54 | | 21:22 (23) |
| | 16:56 | 20 | 09:51 (33) | 18:01 | | | 18:58 | 15 | 18:31 (40) | 20:59 | | | 21:54 | 13 | 06:44 (26) | 22:19 | 16 | 21:38 (23) |
| 27 | 08:36 | | 09:33 (33) | 07:32 | | | 06:21 | | 18:14 (40) | 06:04 | | | 05:08 | | 06:33 (26) | 04:54 | | 21:23 (23) |
| | 16:58 | 18 | 09:51 (33) | 18:03 | | | 19:00 | 18 | 18:32 (40) | 21:01 | | | 21:55 | 9 | 06:42 (26) | 22:19 | 16 | 21:39 (23) |
| 28 | 08:34 | | 09:34 (33) | 07:29 | | | 06:18 | | 18:13 (40) | 06:02 | | | 05:06 | | | 04:55 | | 21:23 (23) |
| | 17:00 | 16 | 09:50 (33) | 18:05 | | | 19:02 | 19 | 18:32 (40) | 21:03 | | | 21:57 | | | 22:19 | 15 | 21:38 (23) |
| 29 | 08:33 | | 09:11 (34) | | | | 07:16 | | 19:13 (40) | 05:59 | | | 05:05 | | | 04:55 | | 21:24 (23) |
| | 17:02 | 16 | 09:49 (33) | | | | 20:04 | 20 | 19:33 (40) | 21:05 | | | 21:58 | | | 22:19 | 14 | 21:38 (23) |
| 30 | 08:31 | | 09:07 (34) | | | | 07:13 | | 19:12 (40) | 05:57 | | 06:33 (26) | 05:04 | | | 04:56 | | 21:24 (23) |
| | 17:04 | 21 | 09:47 (33) | | | | 20:06 | 20 | 19:32 (40) | 21:07 | 11 | 06:44 (26) | 22:00 | | | 22:18 | 13 | 21:37 (23) |
| 31 | 08:29 | | 09:05 (34) | | | | 07:10 | | 19:12 (40) | | | | 05:03 | | | | | |
| | 17:06 | 16 | 09:21 (34) | | | | 20:08 | 20 | 19:32 (40) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 465 | | | 516 | | | 127 | | | 87 | | | 638 | | | 339 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,79 | | | 1,00 | | | 0,99 | | | 0,93 | | | 0,80 | |
| Total reduction | | 0,12 | | | 0,19 | | | 0,33 | | | 0,37 | | | 0,46 | | | 0,37 | |
| Total, real | | 56 | | | 96 | | | 42 | | | 33 | | | 295 | | | 126 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:25 (23) | 05:40 | | 06:34 (26) | 06:38 | | | 07:35 | | | 07:37 | | 08:29 (34) | 08:35 | | 09:12 (33) |
| | 22:18 | 12 | 21:37 (23) | 21:40 | 29 | 07:03 (26) | 20:29 | | | 19:12 | | | 16:58 | 30 | 08:59 (34) | 16:10 | 15 | 09:27 (33) |
| 2 | 04:58 | | 21:26 (23) | 05:41 | | 06:33 (26) | 06:40 | | | 07:37 | | | 07:39 | | 08:28 (34) | 08:37 | | 09:14 (33) |
| | 22:18 | 11 | 21:37 (23) | 21:38 | 29 | 07:02 (26) | 20:27 | | | 19:10 | | | 16:56 | 31 | 08:59 (34) | 16:09 | 13 | 09:27 (33) |
| 3 | 04:58 | | 21:27 (23) | 05:43 | | 06:33 (26) | 06:42 | | | 07:38 | | | 07:41 | | 08:28 (34) | 08:38 | | 09:16 (33) |
| | 22:17 | 10 | 21:37 (23) | 21:36 | 29 | 07:02 (26) | 20:24 | | | 19:07 | | | 16:54 | 30 | 08:58 (34) | 16:08 | 11 | 09:27 (33) |
| 4 | 04:59 | | 21:27 (23) | 05:45 | | 06:34 (26) | 06:43 | | | 07:40 | | | 07:43 | | 08:28 (34) | 08:40 | | 09:17 (33) |
| | 22:17 | 8 | 21:35 (23) | 21:34 | 28 | 07:02 (26) | 20:22 | | | 19:04 | | | 16:51 | 30 | 08:58 (34) | 16:07 | 9 | 09:26 (33) |
| 5 | 05:00 | | 21:29 (23) | 05:47 | | 06:34 (26) | 06:45 | | | 07:42 | | | 07:45 | | 08:30 (34) | 08:41 | | 09:19 (33) |
| | 22:16 | 5 | 21:34 (23) | 21:32 | 28 | 07:02 (26) | 20:19 | | | 19:02 | | | 16:49 | 28 | 08:58 (34) | 16:07 | 7 | 09:26 (33) |
| 6 | 05:01 | | | 05:49 | | 06:34 (26) | 06:47 | | | 07:44 | | | 07:47 | | 08:30 (34) | 08:43 | | 09:21 (33) |
| | 22:15 | | | 21:30 | 27 | 07:01 (26) | 20:17 | | | 18:59 | | | 16:47 | 27 | 08:57 (34) | 16:06 | 5 | 09:26 (33) |
| 7 | 05:02 | | | 05:51 | | 06:35 (26) | 06:49 | | 19:11 (40) | 07:46 | | | 07:49 | | 08:31 (34) | 08:44 | | 09:22 (33) |
| | 22:15 | | | 21:28 | 26 | 07:01 (26) | 20:14 | 9 | 19:20 (40) | 18:57 | | | 16:45 | 25 | 08:56 (34) | 16:06 | 2 | 09:24 (33) |
| 8 | 05:03 | | | 05:52 | | 06:35 (26) | 06:51 | | 19:09 (40) | 07:48 | | | 07:51 | | 08:31 (34) | 08:46 | | |
| | 22:14 | | | 21:26 | 25 | 07:00 (26) | 20:12 | 13 | 19:22 (40) | 18:54 | | | 16:44 | 24 | 08:55 (34) | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 06:35 (26) | 06:53 | | 19:07 (40) | 07:50 | | | 07:53 | | 08:33 (34) | 08:47 | | |
| | 22:13 | | | 21:24 | 23 | 06:58 (26) | 20:09 | 16 | 19:23 (40) | 18:52 | | | 16:42 | 22 | 08:55 (34) | 16:05 | | |
| 10 | 05:06 | | | 05:56 | | 06:37 (26) | 06:55 | | 19:06 (40) | 07:52 | | | 07:55 | | 08:34 (34) | 08:48 | | |
| | 22:12 | | | 21:21 | 21 | 06:58 (26) | 20:06 | 18 | 19:24 (40) | 18:49 | | | 16:40 | 20 | 08:54 (34) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 06:38 (26) | 06:57 | | 19:04 (40) | 07:54 | | | 07:57 | | 08:36 (34) | 08:49 | | |
| | 22:11 | | | 21:19 | 18 | 06:56 (26) | 20:04 | 19 | 19:23 (40) | 18:47 | | | 16:38 | 16 | 08:52 (34) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 06:40 (26) | 06:59 | | 19:03 (40) | 07:56 | | | 07:59 | | 08:38 (34) | 08:51 | | |
| | 22:10 | | | 21:17 | 15 | 06:55 (26) | 20:01 | 21 | 19:24 (40) | 18:44 | | | 16:36 | 20 | 09:18 (33) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 06:42 (26) | 07:00 | | 19:03 (40) | 07:58 | | | 08:01 | | 09:08 (33) | 08:52 | | |
| | 22:09 | | | 21:15 | 9 | 06:51 (26) | 19:59 | 20 | 19:23 (40) | 18:42 | | | 16:34 | 13 | 09:21 (33) | 16:04 | | |
| 14 | 05:11 | | | 06:04 | | | 07:02 | | 19:03 (40) | 08:00 | | | 08:03 | | 09:06 (33) | 08:53 | | |
| | 22:08 | | | 21:13 | | | 19:56 | 20 | 19:23 (40) | 18:39 | | | 16:33 | 16 | 09:22 (33) | 16:04 | | |
| 15 | 05:12 | | | 06:06 | | | 07:04 | | 19:03 (40) | 08:02 | | | 08:05 | | 09:05 (33) | 08:54 | | |
| | 22:07 | | | 21:10 | | | 19:53 | 19 | 19:22 (40) | 18:37 | | | 16:31 | 18 | 09:23 (33) | 16:04 | | |
| 16 | 05:13 | | 06:44 (26) | 06:07 | | | 07:06 | | 19:04 (40) | 08:04 | | | 08:07 | | 09:04 (33) | 08:55 | | |
| | 22:05 | 6 | 06:50 (26) | 21:08 | | | 19:51 | 18 | 19:22 (40) | 18:34 | | | 16:29 | 20 | 09:24 (33) | 16:04 | | |
| 17 | 05:15 | | 06:42 (26) | 06:09 | | | 07:08 | | 19:05 (40) | 08:06 | | | 08:09 | | 09:05 (33) | 08:55 | | |
| | 22:04 | 11 | 06:53 (26) | 21:06 | | | 19:48 | 15 | 19:20 (40) | 18:32 | | | 16:28 | 20 | 09:25 (33) | 16:04 | | |
| 18 | 05:16 | | 06:40 (26) | 06:11 | | | 07:10 | | 19:05 (40) | 08:08 | | | 08:11 | | 09:04 (33) | 08:56 | | |
| | 22:03 | 14 | 06:54 (26) | 21:03 | | | 19:46 | 11 | 19:16 (40) | 18:30 | | | 16:26 | 22 | 09:26 (33) | 16:04 | | |
| 19 | 05:18 | | 06:39 (26) | 06:13 | | | 07:12 | | 19:07 (40) | 08:10 | | | 08:13 | | 09:04 (33) | 08:57 | | |
| | 22:01 | 17 | 06:56 (26) | 21:01 | | | 19:43 | 7 | 19:14 (40) | 18:27 | | | 16:24 | 22 | 09:26 (33) | 16:04 | | |
| 20 | 05:19 | | 06:38 (26) | 06:15 | | | 07:14 | | | 08:12 | | | 08:15 | | 09:04 (33) | 08:58 | | |
| | 22:00 | 19 | 06:57 (26) | 20:59 | | | 19:41 | | | 18:25 | | | 16:23 | 22 | 09:26 (33) | 16:04 | | |
| 21 | 05:21 | | 06:38 (26) | 06:17 | | | 07:16 | | | 08:14 | | 09:41 (34) | 08:17 | | 09:04 (33) | 08:58 | | |
| | 21:59 | 20 | 06:58 (26) | 20:56 | | | 19:38 | | | 18:22 | 6 | 09:47 (34) | 16:22 | 23 | 09:27 (33) | 16:05 | | |
| 22 | 05:23 | | 06:37 (26) | 06:19 | | | 07:17 | | | 08:16 | | 09:36 (34) | 08:19 | | 09:04 (33) | 08:59 | | |
| | 21:57 | 22 | 06:59 (26) | 20:54 | | | 19:35 | | | 18:20 | 15 | 09:51 (34) | 16:20 | 23 | 09:27 (33) | 16:05 | | |
| 23 | 05:24 | | 06:37 (26) | 06:21 | | | 07:19 | | | 08:18 | | 09:35 (34) | 08:21 | | 09:05 (33) | 08:59 | | |
| | 21:55 | 23 | 07:00 (26) | 20:52 | | | 19:33 | | | 18:18 | 19 | 09:54 (34) | 16:19 | 23 | 09:28 (33) | 16:06 | | |
| 24 | 05:26 | | 06:36 (26) | 06:23 | | | 07:21 | | | 08:20 | | 09:33 (34) | 08:23 | | 09:06 (33) | 09:00 | | |
| | 21:54 | 24 | 07:00 (26) | 20:49 | | | 19:30 | | | 18:15 | 22 | 09:55 (34) | 16:18 | 22 | 09:28 (33) | 16:06 | | |
| 25 | 05:27 | | 06:36 (26) | 06:24 | | | 07:23 | | | 07:22 | | 08:32 (34) | 08:25 | | 09:06 (33) | 09:00 | | |
| | 21:52 | 25 | 07:01 (26) | 20:47 | | | 19:28 | | | 17:13 | 24 | 08:56 (34) | 16:16 | 22 | 09:28 (33) | 16:07 | | |
| 26 | 05:29 | | 06:35 (26) | 06:26 | | | 07:25 | | | 07:24 | | 08:30 (34) | 08:26 | | 09:07 (33) | 09:00 | | |
| | 21:51 | 26 | 07:01 (26) | 20:44 | | | 19:25 | | | 17:11 | 27 | 08:57 (34) | 16:15 | 21 | 09:28 (33) | 16:08 | | |
| 27 | 05:31 | | 06:35 (26) | 06:28 | | | 07:27 | | | 07:26 | | 08:29 (34) | 08:28 | | 09:07 (33) | 09:01 | | |
| | 21:49 | 27 | 07:02 (26) | 20:42 | | | 19:22 | | | 17:09 | 28 | 08:57 (34) | 16:14 | 21 | 09:28 (33) | 16:09 | | |
| 28 | 05:33 | | 06:34 (26) | 06:30 | | | 07:29 | | | 07:28 | | 08:29 (34) | 08:30 | | 09:08 (33) | 09:01 | | |
| | 21:47 | 28 | 07:02 (26) | 20:39 | | | 19:20 | | | 17:06 | 29 | 08:58 (34) | 16:13 | 20 | 09:28 (33) | 16:09 | | |
| 29 | 05:34 | | 06:34 (26) | 06:32 | | | 07:31 | | | 07:30 | | 08:29 (34) | 08:32 | | 09:09 (33) | 09:01 | | |
| | 21:45 | 28 | 07:02 (26) | 20:37 | | | 19:17 | | | 17:04 | 29 | 08:58 (34) | 16:12 | 19 | 09:28 (33) | 16:10 | | |
| 30 | 05:36 | | 06:34 (26) | 06:34 | | | 07:33 | | | 07:32 | | 08:28 (34) | 08:33 | | 09:10 (33) | 09:01 | | |
| | 21:44 | 29 | 07:03 (26) | 20:34 | | | 19:15 | | | 17:02 | 30 | 08:58 (34) | 16:11 | 17 | 09:27 (33) | 16:11 | | |
| 31 | 05:38 | | 06:33 (26) | 06:36 | | | | | | 07:35 | | 08:28 (34) | | | | 09:01 | | |
| | 21:42 | 29 | 07:02 (26) | 20:32 | | | | | | 17:00 | 30 | 08:58 (34) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 394 | | | 307 | | | 206 | | | 259 | | | 667 | | | 62 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,93 | | | 1,00 | | | 0,79 | | | 0,73 | | | 0,68 | |
| Total reduction | | 0,43 | | | 0,46 | | | 0,38 | | | 0,23 | | | 0,11 | | | 0,09 | |
| Total, real | | 168 | | | 141 | | | 78 | | | 60 | | | 74 | | | 6 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 17:11 (31) | 07:08 | | 19:07 (40) | 05:55 | 06:36 (26) | 05:02 |
| | 16:14 | 17:08 | | | 18:07 | 19 | 17:30 (31) | 20:10 | 24 | 19:31 (40) | 21:09 | 24 07:00 (26) | 22:02 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 17:12 (31) | 07:05 | | 19:07 (40) | 05:53 | 06:36 (26) | 05:01 |
| | 16:15 | 17:10 | | | 18:09 | 26 | 17:42 (39) | 20:12 | 24 | 19:31 (40) | 21:11 | 24 07:00 (26) | 22:04 |
| 3 | 09:00 | 08:24 | | | 07:22 | | 17:12 (31) | 07:03 | | 19:06 (40) | 05:51 | 06:36 (26) | 05:00 |
| | 16:16 | 17:12 | | | 18:11 | 29 | 17:43 (39) | 20:13 | 24 | 19:30 (40) | 21:13 | 24 07:00 (26) | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:19 | | 17:14 (31) | 07:00 | | 19:07 (40) | 05:48 | 06:36 (26) | 04:59 |
| | 16:18 | 17:14 | | | 18:14 | 30 | 17:46 (39) | 20:15 | 22 | 19:29 (40) | 21:14 | 23 06:59 (26) | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | 17:15 (31) | 06:58 | | 19:07 (40) | 05:46 | 06:37 (26) | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | 28 | 17:47 (39) | 20:17 | 21 | 19:28 (40) | 21:16 | 22 06:59 (26) | 22:07 |
| 6 | 08:59 | 08:18 | | | 07:14 | | 17:27 (39) | 06:55 | | 19:08 (40) | 05:44 | 06:37 (26) | 04:57 |
| | 16:20 | 17:19 | | | 18:18 | 20 | 17:47 (39) | 20:19 | 19 | 19:27 (40) | 21:18 | 21 06:58 (26) | 22:08 |
| 7 | 08:59 | 08:16 | | 08:46 (34) | 07:12 | | 17:27 (39) | 06:53 | | 19:09 (40) | 05:42 | 06:38 (26) | 04:56 |
| | 16:22 | 17:21 | 9 | 08:55 (34) | 18:20 | 20 | 17:47 (39) | 20:21 | 16 | 19:25 (40) | 21:20 | 19 06:57 (26) | 22:10 |
| 8 | 08:58 | 08:14 | | 08:44 (34) | 07:09 | | 17:27 (39) | 06:50 | | 19:11 (40) | 05:40 | 06:39 (26) | 04:56 |
| | 16:23 | 17:23 | 14 | 08:58 (34) | 18:22 | 20 | 17:47 (39) | 20:23 | 12 | 19:23 (40) | 21:22 | 16 06:55 (26) | 22:11 |
| 9 | 08:57 | 08:12 | | 08:42 (34) | 07:07 | | 17:27 (39) | 06:48 | | 19:15 (40) | 05:38 | 06:40 (26) | 04:55 |
| | 16:25 | 17:25 | 18 | 09:00 (34) | 18:24 | 20 | 17:47 (39) | 20:25 | 2 | 19:17 (40) | 21:24 | 14 06:54 (26) | 22:12 |
| 10 | 08:57 | 08:10 | | 08:41 (34) | 07:04 | | 17:27 (39) | 06:45 | | | 05:36 | 06:41 (26) | 04:54 |
| | 16:26 | 17:27 | 21 | 09:02 (34) | 18:26 | 19 | 17:46 (39) | 20:27 | | | 21:26 | 11 06:52 (26) | 22:12 |
| 11 | 08:56 | 08:08 | | 08:40 (34) | 07:02 | | 17:28 (39) | 06:43 | | | 05:34 | 06:45 (26) | 04:54 |
| | 16:28 | 17:29 | 22 | 09:02 (34) | 18:28 | 17 | 17:45 (39) | 20:29 | | | 21:28 | 3 06:48 (26) | 22:13 |
| 12 | 08:55 | 08:06 | | 08:39 (34) | 06:59 | | 17:28 (39) | 06:40 | | 19:54 (37) | 05:32 | | 04:53 |
| | 16:29 | 17:32 | 24 | 09:03 (34) | 18:30 | 16 | 17:44 (39) | 20:31 | 9 | 20:03 (37) | 21:30 | | 22:14 |
| 13 | 08:54 | 08:04 | | 08:39 (34) | 06:57 | | 17:29 (39) | 06:38 | | 19:51 (37) | 05:30 | | 04:53 |
| | 16:31 | 17:34 | 25 | 09:04 (34) | 18:32 | 12 | 17:41 (39) | 20:33 | 13 | 20:04 (37) | 21:32 | | 22:15 |
| 14 | 08:53 | 08:02 | | 08:39 (34) | 06:54 | | 17:33 (39) | 06:35 | | 19:50 (37) | 05:28 | | 04:53 |
| | 16:33 | 17:36 | 26 | 09:05 (34) | 18:34 | 5 | 17:38 (39) | 20:35 | 16 | 20:06 (37) | 21:33 | | 22:16 |
| 15 | 08:52 | 07:59 | | 08:38 (34) | 06:52 | | | 06:33 | | 19:49 (37) | 05:27 | | 04:53 |
| | 16:35 | 17:38 | 26 | 09:04 (34) | 18:36 | | | 20:37 | 18 | 20:07 (37) | 21:35 | | 22:16 |
| 16 | 08:51 | 07:57 | | 08:38 (34) | 06:49 | | | 06:30 | | 19:48 (37) | 05:25 | | 04:52 |
| | 16:36 | 17:40 | 27 | 09:05 (34) | 18:38 | | | 20:39 | 19 | 20:07 (37) | 21:37 | | 22:17 |
| 17 | 08:50 | 07:55 | | 08:39 (34) | 06:46 | | | 06:28 | | 19:47 (37) | 05:23 | | 04:52 |
| | 16:38 | 17:42 | 26 | 09:05 (34) | 18:40 | | | 20:41 | 21 | 20:08 (37) | 21:39 | | 22:17 |
| 18 | 08:49 | 07:53 | | 08:38 (34) | 06:44 | | | 06:25 | | 19:46 (37) | 05:21 | | 04:52 |
| | 16:40 | 17:44 | 26 | 09:04 (34) | 18:42 | | | 20:43 | 21 | 20:07 (37) | 21:41 | | 22:18 |
| 19 | 08:48 | 07:50 | | 08:39 (34) | 06:41 | | | 06:23 | | 19:47 (37) | 05:20 | | 04:52 |
| | 16:42 | 17:46 | 25 | 09:04 (34) | 18:44 | | | 20:45 | 20 | 20:07 (37) | 21:42 | | 22:18 |
| 20 | 08:46 | 07:48 | | 08:39 (34) | 06:39 | | | 06:20 | | 19:47 (37) | 05:18 | | 04:52 |
| | 16:44 | 17:49 | 24 | 09:03 (34) | 18:46 | | | 20:47 | 20 | 20:07 (37) | 21:44 | | 22:19 |
| 21 | 08:45 | 07:46 | | 08:40 (34) | 06:36 | | | 06:18 | | 19:47 (37) | 05:16 | | 04:52 |
| | 16:46 | 17:51 | 25 | 17:21 (31) | 18:48 | | | 20:49 | 19 | 20:06 (37) | 21:46 | | 22:19 |
| 22 | 08:44 | 07:43 | | 08:42 (34) | 06:34 | | | 06:16 | | 06:46 (26) | 05:15 | | 04:52 |
| | 16:48 | 17:53 | 27 | 17:24 (31) | 18:50 | | | 20:51 | 24 | 20:05 (37) | 21:47 | | 22:19 |
| 23 | 08:42 | 07:41 | | 08:42 (34) | 06:31 | | | 06:13 | | 06:43 (26) | 05:13 | | 04:53 |
| | 16:50 | 17:55 | 29 | 17:26 (31) | 18:52 | | | 20:53 | 28 | 20:04 (37) | 21:49 | | 22:19 |
| 24 | 08:41 | 07:39 | | 08:45 (34) | 06:28 | | | 06:11 | | 06:41 (26) | 05:12 | | 04:53 |
| | 16:52 | 17:57 | 27 | 17:28 (31) | 18:54 | | | 20:55 | 28 | 20:02 (37) | 21:51 | | 22:19 |
| 25 | 08:39 | 07:36 | | 17:12 (31) | 06:26 | | 18:17 (40) | 06:09 | | 06:40 (26) | 05:10 | | 04:53 |
| | 16:54 | 17:59 | 18 | 17:30 (31) | 18:56 | 8 | 18:25 (40) | 20:57 | 26 | 20:00 (37) | 21:52 | | 22:19 |
| 26 | 08:38 | 07:34 | | 17:12 (31) | 06:23 | | 18:14 (40) | 06:06 | | 06:38 (26) | 05:09 | | 04:54 |
| | 16:56 | 18:01 | 20 | 17:32 (31) | 18:58 | 14 | 18:28 (40) | 20:59 | 21 | 06:59 (26) | 21:54 | | 22:19 |
| 27 | 08:36 | 07:32 | | 17:11 (31) | 06:21 | | 18:12 (40) | 06:04 | | 06:37 (26) | 05:08 | | 04:54 |
| | 16:58 | 18:03 | 20 | 17:31 (31) | 19:00 | 17 | 18:29 (40) | 21:01 | 22 | 06:59 (26) | 21:55 | | 22:19 |
| 28 | 08:35 | 07:29 | | 17:11 (31) | 06:18 | | 18:10 (40) | 06:02 | | 06:37 (26) | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 20 | 17:31 (31) | 19:02 | 20 | 18:30 (40) | 21:03 | 23 | 07:00 (26) | 21:57 | | 22:19 |
| 29 | 08:33 | | | | 07:16 | | 19:09 (40) | 05:59 | | 06:36 (26) | 05:05 | | 04:55 |
| | 17:02 | | | | 20:04 | 22 | 19:31 (40) | 21:05 | 24 | 07:00 (26) | 21:58 | | 22:19 |
| 30 | 08:31 | | | | 07:13 | | 19:08 (40) | 05:57 | | 06:36 (26) | 05:04 | | 04:56 |
| | 17:04 | | | | 20:06 | 23 | 19:31 (40) | 21:07 | 24 | 07:00 (26) | 22:00 | | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 19:08 (40) | | | | 05:03 | | |
| | 17:06 | | | | 20:08 | 23 | 19:31 (40) | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | | | 501 | | 520 |
| Total, worst case | | | 499 | | | 408 | | | 560 | | | 201 | |
| Sun reduction | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | 0,86 | | | 0,96 | | | 0,98 | | | 0,95 | |
| Total reduction | | | 0,21 | | | 0,33 | | | 0,38 | | | 0,49 | |
| Total, real | | | 105 | | | 133 | | | 214 | | | 98 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 14 | 18:22 (39) | 20 | 16:10 |
| 2 | 04:58 | | 05:41 | 06:53 (26) | 06:40 | | 07:37 | | 18:06 (39) | 08:31 (34) | 08:37 |
| | 22:18 | | 21:38 | 7 07:00 (26) | 20:27 | | 19:10 | 17 | 18:23 (39) | 16:56 18 | 08:30 (34) 16:09 |
| 3 | 04:58 | | 05:43 | 06:51 (26) | 06:42 | 19:14 (40) | 07:38 | | 18:05 (39) | 07:41 | 08:14 (34) 08:38 |
| | 22:17 | | 21:36 | 12 07:03 (26) | 20:24 | 1 19:15 (40) | 19:07 | 18 | 18:23 (39) | 16:54 14 | 08:28 (34) 16:08 |
| 4 | 04:59 | | 05:45 | 06:50 (26) | 06:43 | 19:08 (40) | 07:40 | | 18:04 (39) | 07:43 | 08:16 (34) 08:40 |
| | 22:17 | | 21:34 | 15 07:05 (26) | 20:22 | 12 19:20 (40) | 19:04 | 20 | 18:24 (39) | 16:51 8 | 08:24 (34) 16:08 |
| 5 | 05:00 | | 05:47 | 06:49 (26) | 06:45 | 19:06 (40) | 07:42 | | 18:04 (39) | 07:45 | 08:41 |
| | 22:16 | | 21:32 | 17 07:06 (26) | 20:19 | 16 19:22 (40) | 19:02 | 20 | 18:24 (39) | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:47 (26) | 06:47 | 19:04 (40) | 07:44 | | 18:03 (39) | 07:47 | 08:43 |
| | 22:15 | | 21:30 | 19 07:06 (26) | 20:17 | 18 19:22 (40) | 18:59 | 20 | 18:23 (39) | 16:47 | 16:06 |
| 7 | 05:02 | | 05:51 | 06:46 (26) | 06:49 | 19:02 (40) | 07:46 | | 18:03 (39) | 07:49 | 08:44 |
| | 22:15 | | 21:28 | 21 07:07 (26) | 20:14 | 21 19:23 (40) | 18:57 | 20 | 18:23 (39) | 16:45 | 16:06 |
| 8 | 05:03 | | 05:52 | 06:46 (26) | 06:51 | 19:01 (40) | 07:48 | | 17:52 (31) | 07:51 | 08:46 |
| | 22:14 | | 21:26 | 22 07:08 (26) | 20:12 | 23 19:24 (40) | 18:54 | 26 | 18:22 (39) | 16:44 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:45 (26) | 06:53 | 19:01 (40) | 07:50 | | 17:49 (31) | 07:53 | 08:47 |
| | 22:13 | | 21:24 | 23 07:08 (26) | 20:09 | 23 19:24 (40) | 18:52 | 29 | 18:21 (39) | 16:42 | 16:05 |
| 10 | 05:06 | | 05:56 | 06:45 (26) | 06:55 | 19:00 (40) | 07:52 | | 17:47 (31) | 07:55 | 08:48 |
| | 22:12 | | 21:21 | 23 07:08 (26) | 20:06 | 24 19:24 (40) | 18:49 | 29 | 18:19 (39) | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:44 (26) | 06:57 | 19:00 (40) | 07:54 | | 17:45 (31) | 07:57 | 08:49 |
| | 22:11 | | 21:19 | 24 07:08 (26) | 20:04 | 24 19:24 (40) | 18:47 | 28 | 18:16 (39) | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | 06:45 (26) | 06:59 | 18:59 (40) | 07:56 | | 17:44 (31) | 07:59 | 08:51 |
| | 22:10 | | 21:17 | 24 07:09 (26) | 20:01 | 23 19:22 (40) | 18:44 | 25 | 18:14 (39) | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | 06:44 (26) | 07:00 | 18:59 (40) | 07:58 | | 17:44 (31) | 08:01 | 08:52 |
| | 22:09 | | 21:15 | 24 07:08 (26) | 19:59 | 23 19:22 (40) | 18:42 | 20 | 18:04 (31) | 16:34 | 16:04 |
| 14 | 05:11 | | 06:04 | 06:44 (26) | 07:02 | 18:59 (40) | 08:00 | | 17:43 (31) | 08:03 | 08:53 |
| | 22:08 | | 21:13 | 23 07:07 (26) | 19:56 | 22 19:21 (40) | 18:39 | 21 | 18:04 (31) | 16:33 | 16:04 |
| 15 | 05:12 | | 06:06 | 06:44 (26) | 07:04 | 19:00 (40) | 08:02 | | 17:43 (31) | 08:05 | 08:54 |
| | 22:07 | | 21:10 | 23 07:07 (26) | 19:54 | 20 19:20 (40) | 18:37 | 20 | 18:03 (31) | 16:31 | 16:04 |
| 16 | 05:13 | | 06:07 | 06:45 (26) | 07:06 | 19:01 (40) | 08:04 | | 17:44 (31) | 08:07 | 08:55 |
| | 22:05 | | 21:08 | 22 07:07 (26) | 19:51 | 18 19:19 (40) | 18:34 | 20 | 18:04 (31) | 16:29 | 16:04 |
| 17 | 05:15 | | 06:09 | 06:45 (26) | 07:08 | 19:02 (40) | 08:06 | | 09:19 (34) | 08:09 | 08:55 |
| | 22:04 | | 21:06 | 20 07:05 (26) | 19:48 | 15 19:17 (40) | 18:32 | 24 | 18:01 (31) | 16:28 | 16:04 |
| 18 | 05:16 | | 06:11 | 06:46 (26) | 07:10 | 19:03 (40) | 08:08 | | 09:15 (34) | 08:11 | 08:56 |
| | 22:03 | | 21:03 | 27 20:06 (37) | 19:46 | 10 19:13 (40) | 18:30 | 28 | 17:59 (31) | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | 06:47 (26) | 07:12 | | 08:10 | | 09:13 (34) | 08:13 | 08:57 |
| | 22:01 | | 21:01 | 29 20:08 (37) | 19:43 | | 18:27 | 29 | 17:56 (31) | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | 06:49 (26) | 07:14 | | 08:12 | | 09:11 (34) | 08:15 | 08:58 |
| | 22:00 | | 20:59 | 27 20:09 (37) | 19:41 | | 18:25 | 28 | 17:54 (31) | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | 06:53 (26) | 07:16 | | 08:14 | | 09:10 (34) | 08:17 | 08:58 |
| | 21:59 | | 20:56 | 21 20:10 (37) | 19:38 | | 18:22 | 24 | 17:51 (31) | 16:22 | 16:05 |
| 22 | 05:23 | | 06:19 | 19:51 (37) | 07:17 | | 08:16 | | 09:09 (34) | 08:19 | 08:59 |
| | 21:57 | | 20:54 | 19 20:10 (37) | 19:35 | | 18:20 | 24 | 09:33 (34) | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | 19:51 (37) | 07:19 | | 08:18 | | 09:09 (34) | 08:21 | 08:59 |
| | 21:56 | | 20:52 | 19 20:10 (37) | 19:33 | | 18:18 | 25 | 09:34 (34) | 16:19 | 16:06 |
| 24 | 05:26 | | 06:23 | 19:50 (37) | 07:21 | | 08:20 | | 09:09 (34) | 08:23 | 09:00 |
| | 21:54 | | 20:49 | 21 20:11 (37) | 19:30 | | 18:15 | 25 | 09:34 (34) | 16:18 | 16:06 |
| 25 | 05:27 | | 06:24 | 19:50 (37) | 07:23 | | 07:22 | | 08:08 (34) | 08:25 | 09:00 |
| | 21:52 | | 20:47 | 21 20:11 (37) | 19:28 | | 17:13 | 26 | 08:34 (34) | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | 19:50 (37) | 07:25 | | 07:24 | | 08:08 (34) | 08:26 | 09:00 |
| | 21:51 | | 20:44 | 20 20:10 (37) | 19:25 | | 17:11 | 26 | 08:34 (34) | 16:15 | 16:08 |
| 27 | 05:31 | | 06:28 | 19:49 (37) | 07:27 | | 07:26 | | 08:08 (34) | 08:28 | 09:01 |
| | 21:49 | | 20:42 | 20 20:09 (37) | 19:22 | | 17:09 | 26 | 08:34 (34) | 16:14 | 16:09 |
| 28 | 05:33 | | 06:30 | 19:50 (37) | 07:29 | | 07:28 | | 08:09 (34) | 08:30 | 09:01 |
| | 21:47 | | 20:39 | 18 20:08 (37) | 19:20 | | 17:06 | 25 | 08:34 (34) | 16:13 | 16:09 |
| 29 | 05:34 | | 06:32 | 19:51 (37) | 07:31 | | 07:30 | | 08:09 (34) | 08:32 | 09:01 |
| | 21:45 | | 20:37 | 16 20:07 (37) | 19:17 | | 17:04 | 24 | 08:33 (34) | 16:12 | 16:10 |
| 30 | 05:36 | | 06:34 | 19:52 (37) | 07:33 | 18:10 (39) | 07:32 | | 08:09 (34) | 08:33 | 09:01 |
| | 21:44 | | 20:34 | 13 20:05 (37) | 19:15 | 10 18:20 (39) | 17:02 | 23 | 08:32 (34) | 16:11 | 16:11 |
| 31 | 05:38 | | 06:36 | 19:54 (37) | | | 07:35 | | 08:10 (34) | | 09:01 |
| | 21:42 | | 20:32 | 9 20:03 (37) | | | 17:00 | 21 | 08:31 (34) | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 |
| Total, worst case | | | 599 | | 303 | | 725 | | 60 | | |
| Sun reduction | | | 0,51 | | 0,40 | | 0,31 | | 0,16 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | 0,96 | | 1,00 | | 0,90 | | 0,85 | | |
| Total reduction | | | 0,49 | | 0,39 | | 0,27 | | 0,13 | | |
| Total, real | | | 295 | | 119 | | 198 | | 8 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:58 (33) | 08:28 | | 09:43 (32) | 07:27 | 07:08 | | | 05:55 | | 06:32 (5) | 05:02 |
| | 16:14 | 81 | 13:42 (34) | 17:08 | 98 | 13:57 (34) | 18:07 | 20:09 | | | 21:09 | 6 | 06:38 (5) | 22:02 |
| 2 | 09:01 | | 12:00 (33) | 08:26 | | 09:44 (32) | 07:24 | 07:05 | | | 05:53 | | 06:20 (4) | 05:01 |
| | 16:15 | 79 | 13:43 (34) | 17:10 | 94 | 13:56 (34) | 18:09 | 20:11 | | | 21:11 | 2 | 06:22 (4) | 22:04 |
| 3 | 09:00 | | 12:01 (33) | 08:24 | | 09:45 (32) | 07:22 | 07:03 | | | 05:51 | | 06:18 (4) | 05:00 |
| | 16:16 | 79 | 13:45 (34) | 17:12 | 93 | 13:56 (34) | 18:11 | 20:13 | | | 21:12 | 6 | 06:24 (4) | 22:05 |
| 4 | 09:00 | | 09:48 (32) | 08:22 | | 09:46 (32) | 07:19 | 07:00 | | | 05:48 | | 06:16 (4) | 04:59 |
| | 16:17 | 83 | 13:45 (34) | 17:14 | 90 | 13:56 (34) | 18:13 | 20:15 | | | 21:14 | 8 | 06:24 (4) | 22:06 |
| 5 | 09:00 | | 09:46 (32) | 08:20 | | 09:47 (32) | 07:17 | 06:58 | | | 05:46 | | 06:14 (4) | 04:58 |
| | 16:19 | 85 | 13:45 (34) | 17:17 | 87 | 13:56 (34) | 18:16 | 20:17 | | | 21:16 | 11 | 06:25 (4) | 22:07 |
| 6 | 08:59 | | 09:45 (32) | 08:18 | | 09:48 (32) | 07:14 | 06:55 | | | 05:44 | | 06:12 (4) | 04:57 |
| | 16:20 | 86 | 13:46 (34) | 17:19 | 82 | 13:54 (34) | 18:18 | 20:19 | | | 21:18 | 13 | 06:25 (4) | 22:08 |
| 7 | 08:59 | | 09:44 (32) | 08:16 | | 09:50 (32) | 07:12 | 06:53 | | | 05:42 | | 06:10 (4) | 04:56 |
| | 16:22 | 87 | 13:47 (34) | 17:21 | 77 | 13:54 (34) | 18:20 | 20:21 | | | 21:20 | 15 | 06:25 (4) | 22:09 |
| 8 | 08:58 | | 09:43 (32) | 08:14 | | 09:52 (32) | 07:09 | 06:50 | | | 05:40 | | 06:08 (4) | 04:56 |
| | 16:23 | 82 | 13:47 (34) | 17:23 | 71 | 13:53 (34) | 18:22 | 20:23 | | | 21:22 | 17 | 06:25 (4) | 22:10 |
| 9 | 08:57 | | 09:43 (32) | 08:12 | | 09:56 (32) | 07:07 | 06:47 | | | 05:38 | | 06:07 (4) | 04:55 |
| | 16:25 | 81 | 13:48 (34) | 17:25 | 62 | 13:52 (34) | 18:24 | 20:25 | | | 21:24 | 18 | 06:25 (4) | 22:11 |
| 10 | 08:57 | | 09:42 (32) | 08:10 | | 13:00 (34) | 07:04 | 06:45 | | 07:10 (6) | 05:36 | | 06:07 (4) | 04:54 |
| | 16:26 | 84 | 13:49 (34) | 17:27 | 52 | 13:52 (34) | 18:26 | 20:27 | 1 | 07:11 (6) | 21:26 | 17 | 06:24 (4) | 22:12 |
| 11 | 08:56 | | 09:42 (32) | 08:08 | | 13:00 (34) | 07:02 | 06:42 | | 07:07 (6) | 05:34 | | 06:07 (4) | 04:54 |
| | 16:28 | 85 | 13:49 (34) | 17:29 | 50 | 13:50 (34) | 18:28 | 20:29 | 5 | 07:12 (6) | 21:28 | 17 | 06:24 (4) | 22:13 |
| 12 | 08:55 | | 09:42 (32) | 08:06 | | 13:02 (34) | 06:59 | 06:40 | | 07:05 (6) | 05:32 | | 06:08 (4) | 04:53 |
| | 16:29 | 87 | 13:50 (34) | 17:31 | 47 | 13:49 (34) | 18:30 | 20:31 | 8 | 07:13 (6) | 21:30 | 16 | 06:24 (4) | 22:14 |
| 13 | 08:54 | | 09:41 (32) | 08:04 | | 13:04 (34) | 06:57 | 06:37 | | 07:02 (6) | 05:30 | | 06:08 (4) | 04:53 |
| | 16:31 | 90 | 13:51 (34) | 17:34 | 43 | 13:47 (34) | 18:32 | 20:33 | 11 | 07:13 (6) | 21:31 | 15 | 06:23 (4) | 22:15 |
| 14 | 08:53 | | 09:41 (32) | 08:01 | | 13:07 (34) | 06:54 | 06:35 | | 07:00 (6) | 05:28 | | 06:09 (4) | 04:53 |
| | 16:33 | 92 | 13:52 (34) | 17:36 | 39 | 13:46 (34) | 18:34 | 20:35 | 14 | 07:14 (6) | 21:33 | 13 | 06:22 (4) | 22:16 |
| 15 | 08:52 | | 09:40 (32) | 07:59 | | 13:09 (34) | 06:52 | 06:33 | | 06:57 (6) | 05:27 | | 06:11 (4) | 04:52 |
| | 16:35 | 92 | 13:51 (34) | 17:38 | 34 | 13:43 (34) | 18:36 | 20:37 | 16 | 07:13 (6) | 21:35 | 10 | 06:21 (4) | 22:16 |
| 16 | 08:51 | | 09:40 (32) | 07:57 | | 13:12 (34) | 06:49 | 06:30 | | 06:56 (6) | 05:25 | | 06:12 (4) | 04:52 |
| | 16:36 | 95 | 13:52 (34) | 17:40 | 28 | 13:40 (34) | 18:38 | 20:39 | 17 | 07:13 (6) | 21:37 | 7 | 06:19 (4) | 22:17 |
| 17 | 08:50 | | 09:41 (32) | 07:55 | | 13:16 (34) | 06:46 | 06:28 | | 06:56 (6) | 05:23 | | | 04:52 |
| | 16:38 | 95 | 13:53 (34) | 17:42 | 19 | 13:35 (34) | 18:40 | 20:41 | 17 | 07:13 (6) | 21:39 | | | 22:17 |
| 18 | 08:49 | | 09:40 (32) | 07:53 | | | 06:44 | 06:25 | | 06:56 (6) | 05:21 | | | 04:52 |
| | 16:40 | 97 | 13:53 (34) | 17:44 | | | 18:42 | 20:43 | 15 | 07:11 (6) | 21:40 | | | 22:18 |
| 19 | 08:48 | | 09:40 (32) | 07:50 | | | 06:41 | 06:23 | | 06:57 (6) | 05:20 | | | 04:52 |
| | 16:42 | 98 | 13:54 (34) | 17:46 | | | 18:44 | 20:45 | 13 | 07:10 (6) | 21:42 | | | 22:18 |
| 20 | 08:46 | | 09:40 (32) | 07:48 | | | 06:39 | 06:20 | | 06:59 (6) | 05:18 | | | 04:52 |
| | 16:44 | 98 | 13:54 (34) | 17:48 | | | 18:46 | 20:47 | 10 | 07:09 (6) | 21:44 | | | 22:18 |
| 21 | 08:45 | | 09:40 (32) | 07:46 | | | 06:36 | 06:18 | | 07:01 (6) | 05:16 | | | 04:52 |
| | 16:46 | 101 | 13:55 (34) | 17:51 | | | 18:48 | 20:49 | 3 | 07:04 (6) | 21:46 | | | 22:19 |
| 22 | 08:44 | | 09:40 (32) | 07:43 | | | 06:34 | 06:16 | | | 05:15 | | | 04:52 |
| | 16:48 | 101 | 13:55 (34) | 17:53 | | | 18:50 | 20:51 | | | 21:47 | | | 22:19 |
| 23 | 08:42 | | 09:40 (32) | 07:41 | | | 06:31 | 06:13 | | 06:39 (5) | 05:13 | | | 04:53 |
| | 16:50 | 101 | 13:55 (34) | 17:55 | | | 18:52 | 20:53 | 3 | 06:42 (5) | 21:49 | | | 22:19 |
| 24 | 08:41 | | 09:41 (32) | 07:39 | | | 06:28 | 06:11 | | 06:37 (5) | 05:12 | | | 04:53 |
| | 16:52 | 101 | 13:56 (34) | 17:57 | | | 18:54 | 20:55 | 6 | 06:43 (5) | 21:51 | | | 22:19 |
| 25 | 08:39 | | 09:40 (32) | 07:36 | | | 06:26 | 06:08 | | 06:34 (5) | 05:10 | | | 04:53 |
| | 16:54 | 102 | 13:56 (34) | 17:59 | | | 18:56 | 20:57 | 8 | 06:42 (5) | 21:52 | | | 22:19 |
| 26 | 08:38 | | 09:40 (32) | 07:34 | | | 06:23 | 06:06 | | 06:32 (5) | 05:09 | | | 04:54 |
| | 16:56 | 102 | 13:56 (34) | 18:01 | | | 18:58 | 20:59 | 10 | 06:42 (5) | 21:54 | | | 22:19 |
| 27 | 08:36 | | 09:41 (32) | 07:31 | | | 06:21 | 06:04 | | 06:30 (5) | 05:08 | | | 04:54 |
| | 16:58 | 101 | 13:56 (34) | 18:03 | | | 19:00 | 21:01 | 12 | 06:42 (5) | 21:55 | | | 22:19 |
| 28 | 08:34 | | 09:42 (32) | 07:29 | | | 06:18 | 06:02 | | 06:28 (5) | 05:06 | | | 04:55 |
| | 17:00 | 100 | 13:57 (34) | 18:05 | | | 19:02 | 21:03 | 14 | 06:42 (5) | 21:57 | | | 22:19 |
| 29 | 08:33 | | 09:42 (32) | | | | 07:16 | 05:59 | | 06:29 (5) | 05:05 | | | 04:55 |
| | 17:02 | 100 | 13:57 (34) | | | | 20:04 | 21:05 | 12 | 06:41 (5) | 21:58 | | | 22:19 |
| 30 | 08:31 | | 09:42 (32) | | | | 07:13 | 05:57 | | 06:30 (5) | 05:04 | | | 04:56 |
| | 17:04 | 100 | 13:57 (34) | | | | 20:06 | 21:07 | 10 | 06:40 (5) | 22:00 | | | 22:18 |
| 31 | 08:29 | | 09:43 (32) | | | | 07:10 | | | | 05:03 | | | |
| | 17:06 | 98 | 13:57 (34) | | | | 20:07 | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 |
| Total, worst case | | 2863 | | | 1066 | | | | 205 | | | 191 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,28 | | | 0,25 | | | | 0,97 | | | 0,91 | | |
| Total reduction | | 0,04 | | | 0,05 | | | | 0,30 | | | 0,37 | | |
| Total, real | | 115 | | | 52 | | | | 62 | | | 71 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 06:18 (4) | 06:38 | | 07:06 (6) | 07:35 | | | 07:37 | | 12:28 (34) | 08:35 | | 09:24 (32) |
| | 22:18 | | | 21:40 | 16 | 06:34 (4) | 20:29 | 5 | 07:11 (6) | 19:12 | | | 16:58 | 52 | 13:20 (34) | 16:10 | 86 | 13:31 (34) |
| 2 | 04:57 | | | 05:41 | | 06:17 (4) | 06:40 | | 07:08 (6) | 07:36 | | | 07:39 | | 09:25 (32) | 08:37 | | 09:25 (32) |
| | 22:18 | | | 21:38 | 17 | 06:34 (4) | 20:27 | 1 | 07:09 (6) | 19:09 | | | 16:56 | 63 | 13:22 (34) | 16:09 | 84 | 13:32 (34) |
| 3 | 04:58 | | | 05:43 | | 06:17 (4) | 06:41 | | | 07:38 | | | 07:41 | | 09:22 (32) | 08:38 | | 09:27 (32) |
| | 22:17 | | | 21:36 | 18 | 06:35 (4) | 20:24 | | | 19:07 | | | 16:53 | 71 | 13:23 (34) | 16:08 | 81 | 13:32 (34) |
| 4 | 04:59 | | | 05:45 | | 06:17 (4) | 06:43 | | | 07:40 | | | 07:43 | | 09:19 (32) | 08:40 | | 09:27 (32) |
| | 22:16 | | | 21:34 | 18 | 06:35 (4) | 20:22 | | | 19:04 | | | 16:51 | 78 | 13:23 (34) | 16:07 | 82 | 13:32 (34) |
| 5 | 05:00 | | | 05:47 | | 06:18 (4) | 06:45 | | | 07:42 | | | 07:45 | | 09:18 (32) | 08:41 | | 09:29 (32) |
| | 22:16 | | | 21:32 | 16 | 06:34 (4) | 20:19 | | | 19:02 | | | 16:49 | 84 | 13:25 (34) | 16:07 | 87 | 13:32 (34) |
| 6 | 05:01 | | | 05:49 | | 06:20 (4) | 06:47 | | | 07:44 | | | 07:47 | | 09:17 (32) | 08:43 | | 09:31 (32) |
| | 22:15 | | | 21:30 | 14 | 06:34 (4) | 20:17 | | | 18:59 | | | 16:47 | 86 | 13:25 (34) | 16:06 | 87 | 13:33 (34) |
| 7 | 05:02 | | | 05:50 | | 06:22 (4) | 06:49 | | | 07:46 | | | 07:49 | | 09:16 (32) | 08:44 | | 09:33 (32) |
| | 22:14 | | | 21:28 | 12 | 06:34 (4) | 20:14 | | | 18:57 | | | 16:45 | 90 | 13:26 (34) | 16:06 | 86 | 13:32 (34) |
| 8 | 05:03 | | | 05:52 | | 06:24 (4) | 06:51 | | | 07:48 | | | 07:51 | | 09:15 (32) | 08:45 | | 09:36 (32) |
| | 22:14 | | | 21:26 | 10 | 06:34 (4) | 20:11 | | | 18:54 | | | 16:43 | 92 | 13:26 (34) | 16:05 | 83 | 13:33 (34) |
| 9 | 05:04 | | | 05:54 | | 06:25 (4) | 06:53 | | | 07:50 | | | 07:53 | | 09:15 (32) | 08:47 | | 11:50 (33) |
| | 22:13 | | | 21:23 | 8 | 06:33 (4) | 20:09 | | | 18:52 | | | 16:42 | 95 | 13:27 (34) | 16:05 | 78 | 13:33 (34) |
| 10 | 05:05 | | | 05:56 | | 06:27 (4) | 06:55 | | | 07:52 | | | 07:55 | | 09:14 (32) | 08:48 | | 11:49 (33) |
| | 22:12 | | | 21:21 | 5 | 06:32 (4) | 20:06 | | | 18:49 | | | 16:40 | 96 | 13:27 (34) | 16:04 | 80 | 13:33 (34) |
| 11 | 05:07 | | | 05:58 | | 06:29 (4) | 06:57 | | | 07:54 | | | 07:57 | | 09:14 (32) | 08:49 | | 11:49 (33) |
| | 22:11 | | | 21:19 | 1 | 06:30 (4) | 20:04 | | | 18:47 | | | 16:38 | 99 | 13:28 (34) | 16:04 | 81 | 13:33 (34) |
| 12 | 05:08 | | | 06:00 | | 06:39 (5) | 06:58 | | | 07:56 | | | 07:59 | | 09:13 (32) | 08:50 | | 11:49 (33) |
| | 22:10 | | | 21:17 | 8 | 06:47 (5) | 20:01 | | | 18:44 | | | 16:36 | 100 | 13:28 (34) | 16:04 | 81 | 13:34 (34) |
| 13 | 05:09 | | | 06:02 | | 06:37 (5) | 07:00 | | | 07:58 | | | 08:01 | | 09:14 (32) | 08:52 | | 11:49 (33) |
| | 22:09 | | | 21:15 | 11 | 06:48 (5) | 19:59 | | | 18:42 | | | 16:34 | 100 | 13:29 (34) | 16:04 | 82 | 13:34 (34) |
| 14 | 05:11 | | | 06:04 | | 06:36 (5) | 07:02 | | | 08:00 | | | 08:03 | | 09:14 (32) | 08:53 | | 11:49 (33) |
| | 22:08 | | | 21:12 | 13 | 06:49 (5) | 19:56 | | | 18:39 | | | 16:33 | 100 | 13:29 (34) | 16:04 | 82 | 13:34 (34) |
| 15 | 05:12 | | | 06:05 | | 06:36 (5) | 07:04 | | | 08:02 | | | 08:05 | | 09:13 (32) | 08:54 | | 11:49 (33) |
| | 22:07 | | | 21:10 | 13 | 06:49 (5) | 19:53 | | | 18:37 | | | 16:31 | 102 | 13:29 (34) | 16:04 | 82 | 13:34 (34) |
| 16 | 05:13 | | | 06:07 | | 06:38 (5) | 07:06 | | | 08:04 | | | 08:07 | | 09:13 (32) | 08:55 | | 11:49 (33) |
| | 22:05 | | | 21:08 | 12 | 06:50 (5) | 19:51 | | | 18:34 | | | 16:29 | 102 | 13:29 (34) | 16:04 | 82 | 13:34 (34) |
| 17 | 05:15 | | | 06:09 | | 06:39 (5) | 07:08 | | | 08:06 | | | 08:09 | | 09:14 (32) | 08:55 | | 11:50 (33) |
| | 22:04 | | | 21:06 | 10 | 06:49 (5) | 19:48 | | | 18:32 | | | 16:28 | 102 | 13:30 (34) | 16:04 | 82 | 13:35 (34) |
| 18 | 05:16 | | | 06:11 | | 06:41 (5) | 07:10 | | | 08:08 | | | 08:11 | | 09:15 (32) | 08:56 | | 11:50 (33) |
| | 22:03 | | | 21:03 | 8 | 06:49 (5) | 19:46 | | | 18:30 | | | 16:26 | 101 | 13:30 (34) | 16:04 | 84 | 13:36 (34) |
| 19 | 05:18 | | | 06:13 | | 06:43 (5) | 07:12 | | | 08:10 | | | 08:13 | | 09:15 (32) | 08:57 | | 11:50 (33) |
| | 22:01 | | | 21:01 | 6 | 06:49 (5) | 19:43 | | | 18:27 | | | 16:24 | 101 | 13:30 (34) | 16:04 | 83 | 13:35 (34) |
| 20 | 05:19 | | | 06:15 | | 06:45 (5) | 07:14 | | | 08:12 | | | 08:15 | | 09:15 (32) | 08:58 | | 11:51 (33) |
| | 22:00 | | | 20:59 | 3 | 06:48 (5) | 19:40 | | | 18:25 | | | 16:23 | 101 | 13:30 (34) | 16:04 | 83 | 13:36 (34) |
| 21 | 05:21 | | | 06:17 | | | 07:15 | | | 08:14 | | | 08:17 | | 09:15 (32) | 08:58 | | 11:52 (33) |
| | 21:58 | | | 20:56 | | | 19:38 | | | 18:22 | | | 16:21 | 101 | 13:30 (34) | 16:05 | 82 | 13:37 (34) |
| 22 | 05:22 | | | 06:19 | | 07:05 (6) | 07:17 | | | 08:16 | | | 08:19 | | 09:16 (32) | 08:59 | | 11:52 (33) |
| | 21:57 | | | 20:54 | 5 | 07:10 (6) | 19:35 | | | 18:20 | | | 16:20 | 99 | 13:30 (34) | 16:05 | 82 | 13:37 (34) |
| 23 | 05:24 | | | 06:21 | | 07:02 (6) | 07:19 | | | 08:18 | | | 08:21 | | 09:16 (32) | 08:59 | | 11:53 (33) |
| | 21:55 | | | 20:51 | 11 | 07:13 (6) | 19:33 | | | 18:18 | | | 16:19 | 98 | 13:30 (34) | 16:06 | 82 | 13:38 (34) |
| 24 | 05:26 | | | 06:23 | | 07:01 (6) | 07:21 | | | 08:20 | | 13:54 (34) | 08:23 | | 09:18 (32) | 09:00 | | 11:53 (33) |
| | 21:54 | | | 20:49 | 13 | 07:14 (6) | 19:30 | | | 18:15 | 5 | 13:59 (34) | 16:17 | 97 | 13:31 (34) | 16:06 | 83 | 13:38 (34) |
| 25 | 05:27 | | | 06:24 | | 07:00 (6) | 07:23 | | | 07:22 | | 12:45 (34) | 08:25 | | 09:19 (32) | 09:00 | | 11:53 (33) |
| | 21:52 | | | 20:47 | 15 | 07:15 (6) | 19:27 | | | 17:13 | 22 | 13:07 (34) | 16:16 | 95 | 13:31 (34) | 16:07 | 83 | 13:38 (34) |
| 26 | 05:29 | | | 06:26 | | 06:58 (6) | 07:25 | | | 07:24 | | 12:41 (34) | 08:26 | | 09:20 (32) | 09:00 | | 11:54 (33) |
| | 21:51 | | | 20:44 | 17 | 07:15 (6) | 19:25 | | | 17:11 | 29 | 13:10 (34) | 16:15 | 94 | 13:31 (34) | 16:08 | 82 | 13:39 (34) |
| 27 | 05:31 | | 06:25 (4) | 06:28 | | 06:57 (6) | 07:27 | | | 07:26 | | 12:37 (34) | 08:28 | | 09:20 (32) | 09:01 | | 11:54 (33) |
| | 21:49 | 2 | 06:27 (4) | 20:42 | 18 | 07:15 (6) | 19:22 | | | 17:09 | 36 | 13:13 (34) | 16:14 | 93 | 13:31 (34) | 16:09 | 82 | 13:39 (34) |
| 28 | 05:32 | | 06:22 (4) | 06:30 | | 06:59 (6) | 07:29 | | | 07:28 | | 12:36 (34) | 08:30 | | 09:21 (32) | 09:01 | | 11:55 (33) |
| | 21:47 | 8 | 06:30 (4) | 20:39 | 16 | 07:15 (6) | 19:20 | | | 17:06 | 40 | 13:16 (34) | 16:13 | 92 | 13:32 (34) | 16:09 | 82 | 13:40 (34) |
| 29 | 05:34 | | 06:20 (4) | 06:32 | | 07:01 (6) | 07:31 | | | 07:30 | | 12:33 (34) | 08:32 | | 09:21 (32) | 09:01 | | 11:56 (33) |
| | 21:45 | 12 | 06:32 (4) | 20:37 | 14 | 07:15 (6) | 19:17 | | | 17:04 | 44 | 13:17 (34) | 16:12 | 90 | 13:31 (34) | 16:10 | 82 | 13:41 (34) |
| 30 | 05:36 | | 06:19 (4) | 06:34 | | 07:03 (6) | 07:33 | | | 07:32 | | 12:32 (34) | 08:33 | | 09:23 (32) | 09:01 | | 11:57 (33) |
| | 21:43 | 13 | 06:32 (4) | 20:34 | 11 | 07:14 (6) | 19:15 | | | 17:02 | 46 | 13:18 (34) | 16:11 | 87 | 13:31 (34) | 16:11 | 81 | 13:41 (34) |
| 31 | 05:38 | | 06:18 (4) | 06:36 | | 07:04 (6) | | | | 07:34 | | 12:30 (34) | | | | 09:01 | | 11:58 (33) |
| | 21:42 | 15 | 06:33 (4) | 20:32 | 8 | 07:12 (6) | | | | 17:00 | 50 | 13:20 (34) | | | | 16:12 | 80 | 13:42 (34) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 50 | | | 347 | | | 6 | | | 272 | | | 2761 | | | 2557 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,91 | | | 0,94 | | | 0,98 | | | 0,15 | | | 0,30 | | | 0,17 | |
| Total reduction | | 0,35 | | | 0,39 | | | 0,31 | | | 0,04 | | | 0,04 | | | 0,02 | |
| Total, real | | 17 | | | 134 | | | 2 | | | 10 | | | 105 | | | 46 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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LT-54469 Kauno r. sav.
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:27 (7) | 08:27 | | 09:03 (29) | 07:26 | | | 07:08 | | 19:02 (32) | 05:55 | 05:02 |
| | 16:14 | 14 | 10:41 (7) | 17:08 | 21 | 09:24 (29) | 18:07 | | | 20:09 | 30 | 19:32 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 10:29 (7) | 08:26 | | 09:02 (29) | 07:24 | | | 07:05 | | 19:02 (32) | 05:53 | 05:01 |
| | 16:15 | 12 | 10:41 (7) | 17:10 | 23 | 09:25 (29) | 18:09 | | | 20:11 | 31 | 19:33 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 10:30 (7) | 08:24 | | 09:02 (29) | 07:22 | | | 07:03 | | 19:01 (32) | 05:50 | 05:00 |
| | 16:16 | 10 | 10:40 (7) | 17:12 | 23 | 09:25 (29) | 18:11 | | | 20:13 | 31 | 19:32 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | 10:32 (7) | 08:22 | | 09:01 (29) | 07:19 | | | 07:00 | | 19:00 (32) | 05:48 | 04:59 |
| | 16:17 | 8 | 10:40 (7) | 17:14 | 24 | 09:25 (29) | 18:13 | | | 20:15 | 31 | 19:31 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | 10:34 (7) | 08:20 | | 09:01 (29) | 07:17 | | | 06:57 | | 19:01 (32) | 05:46 | 04:58 |
| | 16:19 | 3 | 10:37 (7) | 17:16 | 24 | 09:25 (29) | 18:15 | | | 20:17 | 30 | 19:31 (32) | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | 09:02 (29) | 07:14 | | | 06:55 | | 19:00 (32) | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | 23 | 09:25 (29) | 18:17 | | | 20:19 | 30 | 19:30 (32) | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | 09:02 (29) | 07:12 | | | 06:52 | | 19:01 (32) | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | 24 | 09:26 (29) | 18:19 | | | 20:21 | 29 | 19:30 (32) | 21:20 | 22:09 |
| 8 | 08:58 | | | 08:14 | | 09:03 (29) | 07:09 | | | 06:50 | | 19:01 (32) | 05:40 | 04:56 |
| | 16:23 | | | 17:23 | 22 | 09:25 (29) | 18:22 | | | 20:23 | 27 | 19:28 (32) | 21:22 | 22:10 |
| 9 | 08:57 | | | 08:12 | | 09:03 (29) | 07:07 | | | 06:47 | | 19:02 (32) | 05:38 | 04:55 |
| | 16:24 | | | 17:25 | 22 | 09:25 (29) | 18:24 | | | 20:25 | 26 | 19:28 (32) | 21:24 | 22:11 |
| 10 | 08:56 | | | 08:10 | | 09:03 (29) | 07:04 | | | 06:45 | | 19:02 (32) | 05:36 | 04:54 |
| | 16:26 | | | 17:27 | 21 | 09:24 (29) | 18:26 | | | 20:27 | 24 | 19:26 (32) | 21:26 | 22:12 |
| 11 | 08:56 | | | 08:08 | | 09:05 (29) | 07:02 | | | 06:42 | | 19:04 (32) | 05:34 | 04:54 |
| | 16:28 | | | 17:29 | 18 | 09:23 (29) | 18:28 | | | 20:29 | 20 | 19:24 (32) | 21:28 | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:06 (29) | 06:59 | | | 06:40 | | 19:06 (32) | 05:32 | 04:53 |
| | 16:29 | | | 17:31 | 16 | 09:22 (29) | 18:30 | | | 20:31 | 17 | 19:23 (32) | 21:29 | 22:14 |
| 13 | 08:54 | | | 08:03 | | 09:08 (29) | 06:57 | | | 06:37 | | 19:08 (32) | 05:30 | 04:53 |
| | 16:31 | | | 17:33 | 12 | 09:20 (29) | 18:32 | | | 20:33 | 11 | 19:19 (32) | 21:31 | 22:15 |
| 14 | 08:53 | | | 08:01 | | 09:11 (29) | 06:54 | | 18:04 (33) | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | | | 17:36 | 5 | 09:16 (29) | 18:34 | 3 | 18:07 (33) | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | 18:01 (33) | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | | | 17:38 | | | 18:36 | 7 | 18:08 (33) | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | 17:59 (33) | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | | | 17:40 | | | 18:38 | 11 | 18:10 (33) | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | 17:58 (33) | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | | | 18:40 | 15 | 18:13 (33) | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | 17:57 (33) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | | | 18:42 | 17 | 18:14 (33) | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:57 (33) | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | | | 17:46 | | | 18:44 | 20 | 18:17 (33) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | 17:56 (33) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | | | 17:48 | | | 18:46 | 21 | 18:17 (33) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | 17:56 (33) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | | | 17:50 | | | 18:48 | 20 | 18:16 (33) | 20:49 | | | 21:45 | 22:19 |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | 17:56 (33) | 06:15 | | | 05:15 | 04:52 |
| | 16:48 | | | 17:53 | | | 18:50 | 20 | 18:16 (33) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | | 06:31 | | 17:56 (33) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | | | 17:55 | | | 18:52 | 18 | 18:14 (33) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | | 06:28 | | 17:58 (33) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | | | 17:57 | | | 18:54 | 15 | 18:13 (33) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | | 06:26 | | 17:59 (33) | 06:08 | | | 05:10 | 04:53 |
| | 16:54 | | | 17:59 | | | 18:56 | 21 | 18:24 (32) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | | | 06:23 | | 18:01 (33) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | | | 18:58 | 21 | 18:26 (32) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | 09:07 (29) | 07:31 | | | 06:21 | | 18:09 (32) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 10 | 09:17 (29) | 18:03 | | | 18:59 | 20 | 18:29 (32) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | 09:05 (29) | 07:29 | | | 06:18 | | 18:06 (32) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 14 | 09:19 (29) | 18:05 | | | 19:01 | 24 | 18:30 (32) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:05 (29) | | | | 07:15 | | 19:06 (32) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | 16 | 09:21 (29) | | | | 20:03 | 25 | 19:31 (32) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | 09:04 (29) | | | | 07:13 | | 19:04 (32) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 18 | 09:22 (29) | | | | 20:05 | 27 | 19:31 (32) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | 09:03 (29) | | | | 07:10 | | 19:03 (32) | | | | 05:03 | |
| | 17:06 | 20 | 09:23 (29) | | | | 20:07 | 29 | 19:32 (32) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 125 | | | 278 | | | 334 | | | 337 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,66 | | | 0,78 | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,31 | | | 0,36 | | | |
| Total, real | | 14 | | | 49 | | | 105 | | | 122 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 19:03 (32) | 07:34 | | | 07:36 | | 08:33 (29) | 08:35 | | |
| | 22:18 | | 21:40 | | | 20:29 | 20 | 19:23 (32) | 19:12 | | | 16:58 | 21 | 08:54 (29) | 16:10 | | |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 19:01 (32) | 07:36 | | | 07:38 | | 08:33 (29) | 08:36 | | |
| | 22:17 | | 21:38 | | | 20:27 | 24 | 19:25 (32) | 19:09 | | | 16:55 | 22 | 08:55 (29) | 16:09 | | |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 19:00 (32) | 07:38 | | | 07:41 | | 08:32 (29) | 08:38 | | |
| | 22:17 | | 21:36 | | | 20:24 | 26 | 19:26 (32) | 19:07 | | | 16:53 | 23 | 08:55 (29) | 16:08 | | |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:59 (32) | 07:40 | | | 07:43 | | 08:32 (29) | 08:40 | | |
| | 22:16 | | 21:34 | | | 20:22 | 27 | 19:26 (32) | 19:04 | | | 16:51 | 23 | 08:55 (29) | 16:07 | | |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:57 (32) | 07:42 | | | 07:45 | | 08:31 (29) | 08:41 | | |
| | 22:16 | | 21:32 | | | 20:19 | 29 | 19:26 (32) | 19:02 | | | 16:49 | 24 | 08:55 (29) | 16:07 | | |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 18:56 (32) | 07:44 | | | 07:47 | | 08:32 (29) | 08:43 | | |
| | 22:15 | | 21:30 | | | 20:16 | 30 | 19:26 (32) | 18:59 | | | 16:47 | 24 | 08:56 (29) | 16:06 | | |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 18:56 (32) | 07:46 | | | 07:49 | | 08:32 (29) | 08:44 | | 10:22 (7) |
| | 22:14 | | 21:28 | | | 20:14 | 30 | 19:26 (32) | 18:57 | | | 16:45 | 24 | 08:56 (29) | 16:06 | 2 | 10:24 (7) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:56 (32) | 07:48 | | | 07:51 | | 08:32 (29) | 08:45 | | 10:19 (7) |
| | 22:14 | | 21:25 | | | 20:11 | 30 | 19:26 (32) | 18:54 | | | 16:43 | 23 | 08:55 (29) | 16:05 | 8 | 10:27 (7) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:55 (32) | 07:50 | | | 07:53 | | 08:32 (29) | 08:47 | | 10:19 (7) |
| | 22:13 | | 21:23 | | | 20:09 | 31 | 19:26 (32) | 18:52 | | | 16:41 | 23 | 08:55 (29) | 16:05 | 10 | 10:29 (7) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 18:54 (32) | 07:52 | | | 07:55 | | 08:34 (29) | 08:48 | | 10:18 (7) |
| | 22:12 | | 21:21 | | | 20:06 | 31 | 19:25 (32) | 18:49 | | | 16:40 | 21 | 08:55 (29) | 16:04 | 12 | 10:30 (7) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 18:54 (32) | 07:54 | | | 07:57 | | 08:34 (29) | 08:49 | | 10:18 (7) |
| | 22:11 | | 21:19 | | | 20:04 | 30 | 19:24 (32) | 18:47 | | | 16:38 | 20 | 08:54 (29) | 16:04 | 13 | 10:31 (7) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:55 (32) | 07:56 | | | 07:59 | | 08:35 (29) | 08:50 | | 10:18 (7) |
| | 22:10 | | 21:17 | | | 20:01 | 29 | 19:24 (32) | 18:44 | | | 16:36 | 18 | 08:53 (29) | 16:04 | 15 | 10:33 (7) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:55 (32) | 07:58 | | | 08:01 | | 08:37 (29) | 08:51 | | 10:18 (7) |
| | 22:09 | | 21:15 | | | 19:58 | 28 | 19:23 (32) | 18:42 | | | 16:34 | 16 | 08:53 (29) | 16:04 | 15 | 10:33 (7) |
| 14 | 05:11 | | 06:03 | | | 07:02 | | 18:56 (32) | 08:00 | | | 08:03 | | 08:38 (29) | 08:52 | | 10:18 (7) |
| | 22:08 | | 21:12 | | | 19:56 | 26 | 19:22 (32) | 18:39 | | | 16:32 | 14 | 08:52 (29) | 16:03 | 16 | 10:34 (7) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:57 (32) | 08:02 | | | 08:05 | | 08:40 (29) | 08:53 | | 10:05 (8) |
| | 22:06 | | 21:10 | | | 19:53 | 23 | 19:20 (32) | 18:37 | | | 16:31 | 9 | 08:49 (29) | 16:03 | 18 | 10:35 (7) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:57 (32) | 08:04 | | | 08:07 | | | 08:54 | | 10:04 (8) |
| | 22:05 | | 21:08 | | | 19:51 | 21 | 19:18 (32) | 18:34 | | | 16:29 | | | 16:03 | 22 | 10:36 (7) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:51 (33) | 08:06 | | | 08:09 | | | 08:55 | | 10:04 (8) |
| | 22:04 | | 21:05 | | | 19:48 | 20 | 19:15 (32) | 18:32 | | | 16:27 | | | 16:04 | 24 | 10:37 (7) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:47 (33) | 08:08 | | | 08:11 | | | 08:56 | | 10:04 (8) |
| | 22:03 | | 21:03 | | | 19:46 | 22 | 19:12 (32) | 18:29 | | | 16:26 | | | 16:04 | 25 | 10:37 (7) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:45 (33) | 08:10 | | | 08:13 | | | 08:57 | | 10:04 (8) |
| | 22:01 | | 21:01 | | | 19:43 | 15 | 19:00 (33) | 18:27 | | | 16:24 | | | 16:04 | 25 | 10:37 (7) |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:43 (33) | 08:12 | | | 08:15 | | | 08:57 | | 10:04 (8) |
| | 22:00 | | 20:58 | | | 19:40 | 18 | 19:01 (33) | 18:25 | | | 16:23 | | | 16:04 | 26 | 10:38 (7) |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:42 (33) | 08:14 | | | 08:17 | | | 08:58 | | 10:04 (8) |
| | 21:58 | | 20:56 | | | 19:38 | 19 | 19:01 (33) | 18:22 | | | 16:21 | | | 16:05 | 27 | 10:38 (7) |
| 22 | 05:22 | | 06:19 | | | 07:17 | | 18:41 (33) | 08:16 | | | 08:19 | | | 08:59 | | 10:05 (8) |
| | 21:57 | | 20:54 | | | 19:35 | 20 | 19:01 (33) | 18:20 | | | 16:20 | | | 16:05 | 27 | 10:39 (7) |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:41 (33) | 08:18 | | | 08:21 | | | 08:59 | | 10:05 (8) |
| | 21:55 | | 20:51 | | | 19:33 | 20 | 19:01 (33) | 18:18 | | | 16:19 | | | 16:06 | 26 | 10:39 (7) |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 18:40 (33) | 08:20 | | | 08:23 | | | 09:00 | | 10:06 (8) |
| | 21:54 | | 20:49 | | | 19:30 | 20 | 19:00 (33) | 18:15 | | | 16:17 | | | 16:06 | 26 | 10:40 (7) |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 18:40 (33) | 07:22 | | | 08:24 | | | 09:00 | | 10:07 (8) |
| | 21:52 | | 20:46 | | | 19:27 | 18 | 18:58 (33) | 17:13 | | | 16:16 | | | 16:07 | 25 | 10:40 (7) |
| 26 | 05:29 | | 06:26 | | | 07:25 | | 18:40 (33) | 07:24 | | | 08:26 | | | 09:00 | | 10:08 (8) |
| | 21:50 | | 20:44 | | | 19:25 | 15 | 18:55 (33) | 17:11 | | | 16:15 | | | 16:08 | 23 | 10:40 (7) |
| 27 | 05:31 | | 06:28 | | | 07:27 | | 18:40 (33) | 07:26 | | | 08:28 | | | 09:00 | | 10:09 (8) |
| | 21:49 | | 20:42 | | | 19:22 | 13 | 18:53 (33) | 17:09 | | | 16:14 | | | 16:08 | 22 | 10:41 (7) |
| 28 | 05:32 | | 06:30 | | | 07:29 | | 18:41 (33) | 07:28 | | 08:39 (29) | 08:30 | | | 09:01 | | 10:10 (8) |
| | 21:47 | | 20:39 | | | 19:20 | 9 | 18:50 (33) | 17:06 | 8 | 08:47 (29) | 16:13 | | | 16:09 | 20 | 10:41 (7) |
| 29 | 05:34 | | 06:32 | | | 07:31 | | 18:43 (33) | 07:30 | | 08:37 (29) | 08:31 | | | 09:01 | | 10:25 (7) |
| | 21:45 | | 20:37 | | | 19:17 | 4 | 18:47 (33) | 17:04 | 13 | 08:50 (29) | 16:12 | | | 16:10 | 16 | 10:41 (7) |
| 30 | 05:36 | | 06:34 | | 19:09 (32) | 07:32 | | | 07:32 | | 08:35 (29) | 08:33 | | | 09:01 | | 10:26 (7) |
| | 21:43 | | 20:34 | 11 | 19:20 (32) | 19:14 | | | 17:02 | 17 | 08:52 (29) | 16:11 | | | 16:11 | 15 | 10:41 (7) |
| 31 | 05:38 | | 06:36 | | 19:05 (32) | | | | 07:34 | | 08:34 (29) | | | | 09:01 | | 10:27 (7) |
| | 21:41 | | 20:32 | 17 | 19:22 (32) | | | | 17:00 | 19 | 08:53 (29) | | | | 16:12 | 15 | 10:42 (7) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 28 | | | 648 | | | 57 | | | 305 | | | 473 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,78 | | | 0,78 | | | 0,48 | |
| Total reduction | | | | 0,47 | | | 0,36 | | | 0,22 | | | 0,11 | | | 0,06 | |
| Total, real | | | | 13 | | | 236 | | | 13 | | | 35 | | | 28 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:10 (29) | 07:26 | | 07:08 | 19:00 (32) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 24 09:34 (29) | 18:07 | | 20:09 | 30 19:30 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:10 (29) | 07:24 | | 07:05 | 19:01 (32) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 25 09:35 (29) | 18:09 | | 20:11 | 29 19:30 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:10 (29) | 07:22 | | 07:03 | 19:00 (32) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 25 09:35 (29) | 18:11 | | 20:13 | 29 19:29 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:10 (29) | 07:19 | | 07:00 | 19:00 (32) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 24 09:34 (29) | 18:13 | | 20:15 | 28 19:28 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:10 (29) | 07:17 | | 06:57 | 19:00 (32) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 24 09:34 (29) | 18:15 | | 20:17 | 28 19:28 (32) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:11 (29) | 07:14 | | 06:55 | 19:00 (32) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 22 09:33 (29) | 18:17 | | 20:19 | 26 19:26 (32) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:12 (29) | 07:12 | | 06:52 | 19:01 (32) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 21 09:33 (29) | 18:19 | | 20:21 | 24 19:25 (32) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 09:13 (29) | 07:09 | | 06:50 | 19:02 (32) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 19 09:32 (29) | 18:22 | | 20:23 | 21 19:23 (32) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 09:14 (29) | 07:07 | | 06:47 | 19:04 (32) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | 18 09:32 (29) | 18:24 | | 20:25 | 18 19:22 (32) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 09:15 (29) | 07:04 | | 06:45 | 19:05 (32) | 05:36 | 04:54 |
| | 16:26 | | 17:27 | 14 09:29 (29) | 18:26 | | 20:27 | 14 19:19 (32) | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | 09:18 (29) | 07:02 | | 06:42 | 19:10 (32) | 05:34 | 04:54 |
| | 16:28 | | 17:29 | 9 09:27 (29) | 18:28 | | 20:29 | 4 19:14 (32) | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:57 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:46 | | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | | 17:50 | | 18:48 | | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | | 07:43 | | 06:33 | | 06:15 | | 05:15 | 04:52 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:15 (29) | 07:41 | | 06:31 | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 9 09:24 (29) | 17:55 | | 18:52 | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:14 (29) | 07:38 | | 06:28 | 18:12 (32) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 13 09:27 (29) | 17:57 | | 18:54 | 12 18:24 (32) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:12 (29) | 07:36 | | 06:26 | 18:08 (32) | 06:08 | | 05:10 | 04:53 |
| | 16:54 | 16 09:28 (29) | 17:59 | | 18:56 | 18 18:26 (32) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:11 (29) | 07:34 | | 06:23 | 18:06 (32) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 18 09:29 (29) | 18:01 | | 18:57 | 21 18:27 (32) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 09:10 (29) | 07:31 | | 06:21 | 18:05 (32) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 20 09:30 (29) | 18:03 | | 18:59 | 24 18:29 (32) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 09:10 (29) | 07:29 | | 06:18 | 18:03 (32) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 21 09:31 (29) | 18:05 | | 19:01 | 26 18:29 (32) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 09:10 (29) | | | 07:15 | 19:03 (32) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 23 09:33 (29) | | | 20:03 | 27 19:30 (32) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | 09:10 (29) | | | 07:13 | 19:01 (32) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 23 09:33 (29) | | | 20:05 | 29 19:30 (32) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | 09:10 (29) | | | 07:10 | 19:01 (32) | | | 05:03 | |
| | 17:06 | 24 09:34 (29) | | | 20:07 | 29 19:30 (32) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 167 | | 225 | | 186 | | 251 | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,76 | | 0,76 | | 1,00 | | 1,00 | | |
| Total reduction | | 0,13 | | 0,18 | | 0,32 | | 0,37 | | |
| Total, real | | 22 | | 40 | | 60 | | 94 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 19:09 (32) | 07:34 | | | 07:36 | | 08:44 (29) | 08:35 | | |
| | 22:18 | | 21:40 | | 20:29 | 4 | 19:13 (32) | 19:12 | | | 16:58 | 15 | 08:59 (29) | 16:10 | | |
| 2 | 04:57 | | 05:41 | | 06:39 | | 19:04 (32) | 07:36 | | | 07:38 | | 08:43 (29) | 08:36 | | |
| | 22:17 | | 21:38 | | 20:27 | 14 | 19:18 (32) | 19:09 | | | 16:55 | 18 | 09:01 (29) | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 19:02 (32) | 07:38 | | | 07:41 | | 08:42 (29) | 08:38 | | |
| | 22:17 | | 21:36 | | 20:24 | 18 | 19:20 (32) | 19:07 | | | 16:53 | 20 | 09:02 (29) | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 19:00 (32) | 07:40 | | | 07:43 | | 08:41 (29) | 08:40 | | |
| | 22:16 | | 21:34 | | 20:22 | 21 | 19:21 (32) | 19:04 | | | 16:51 | 22 | 09:03 (29) | 16:07 | | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 18:58 (32) | 07:42 | | | 07:45 | | 08:40 (29) | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | 23 | 19:21 (32) | 19:02 | | | 16:49 | 23 | 09:03 (29) | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 18:56 (32) | 07:44 | | | 07:47 | | 08:41 (29) | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | 26 | 19:22 (32) | 18:59 | | | 16:47 | 23 | 09:04 (29) | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 18:56 (32) | 07:46 | | | 07:49 | | 08:40 (29) | 08:44 | | |
| | 22:14 | | 21:28 | | 20:14 | 27 | 19:23 (32) | 18:57 | | | 16:45 | 25 | 09:05 (29) | 16:06 | | |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:55 (32) | 07:48 | | | 07:51 | | 08:40 (29) | 08:45 | | |
| | 22:14 | | 21:25 | | 20:11 | 28 | 19:23 (32) | 18:54 | | | 16:43 | 24 | 09:04 (29) | 16:05 | | |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:54 (32) | 07:50 | | | 07:53 | | 08:40 (29) | 08:47 | | |
| | 22:13 | | 21:23 | | 20:09 | 29 | 19:23 (32) | 18:52 | | | 16:41 | 24 | 09:04 (29) | 16:05 | | |
| 10 | 05:05 | | 05:56 | | 06:55 | | 18:53 (32) | 07:52 | | | 07:55 | | 08:41 (29) | 08:48 | | |
| | 22:12 | | 21:21 | | 20:06 | 29 | 19:22 (32) | 18:49 | | | 16:40 | 24 | 09:05 (29) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | 06:56 | | 18:53 (32) | 07:54 | | | 07:57 | | 08:41 (29) | 08:49 | | |
| | 22:11 | | 21:19 | | 20:04 | 29 | 19:22 (32) | 18:47 | | | 16:38 | 24 | 09:05 (29) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:53 (32) | 07:56 | | | 07:59 | | 08:41 (29) | 08:50 | | |
| | 22:10 | | 21:17 | | 20:01 | 29 | 19:22 (32) | 18:44 | | | 16:36 | 23 | 09:04 (29) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:53 (32) | 07:58 | | | 08:01 | | 08:42 (29) | 08:51 | | |
| | 22:09 | | 21:15 | | 19:58 | 28 | 19:21 (32) | 18:42 | | | 16:34 | 23 | 09:05 (29) | 16:04 | | |
| 14 | 05:11 | | 06:03 | | 07:02 | | 18:53 (32) | 08:00 | | | 08:03 | | 08:43 (29) | 08:52 | | |
| | 22:08 | | 21:12 | | 19:56 | 27 | 19:20 (32) | 18:39 | | | 16:32 | 21 | 09:04 (29) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:53 (32) | 08:02 | | | 08:05 | | 08:43 (29) | 08:53 | | |
| | 22:06 | | 21:10 | | 19:53 | 26 | 19:19 (32) | 18:37 | | | 16:31 | 20 | 09:03 (29) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:53 (32) | 08:04 | | | 08:07 | | 08:44 (29) | 08:54 | | |
| | 22:05 | | 21:08 | | 19:51 | 24 | 19:17 (32) | 18:34 | | | 16:29 | 18 | 09:02 (29) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:54 (32) | 08:06 | | | 08:09 | | 08:45 (29) | 08:55 | | |
| | 22:04 | | 21:05 | | 19:48 | 22 | 19:16 (32) | 18:32 | | | 16:27 | 16 | 09:01 (29) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:55 (32) | 08:08 | | | 08:11 | | 08:48 (29) | 08:56 | | 10:39 (7) |
| | 22:03 | | 21:03 | | 19:46 | 19 | 19:14 (32) | 18:29 | | | 16:26 | 13 | 09:01 (29) | 16:04 | 4 | 10:43 (7) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:57 (32) | 08:10 | | | 08:13 | | 08:50 (29) | 08:57 | | 10:38 (7) |
| | 22:01 | | 21:01 | | 19:43 | 15 | 19:12 (32) | 18:27 | | | 16:24 | 9 | 08:59 (29) | 16:04 | 5 | 10:43 (7) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 19:01 (32) | 08:12 | | | 08:15 | | | 08:57 | | 10:38 (7) |
| | 22:00 | | 20:58 | | 19:40 | 6 | 19:07 (32) | 18:25 | | | 16:23 | | | 16:04 | 6 | 10:44 (7) |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | | 08:17 | | | 08:58 | | 10:38 (7) |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | | | 16:21 | | | 16:05 | 6 | 10:44 (7) |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 | | 10:39 (7) |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 | 6 | 10:45 (7) |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 | | 10:39 (7) |
| | 21:55 | | 20:51 | | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 | 6 | 10:45 (7) |
| 24 | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 | | 10:41 (7) |
| | 21:54 | | 20:49 | | 19:30 | | | 18:15 | | | 16:17 | | | 16:06 | 5 | 10:46 (7) |
| 25 | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | | 08:24 | | | 09:00 | | 10:42 (7) |
| | 21:52 | | 20:46 | | 19:27 | | | 17:13 | | | 16:16 | | | 16:07 | 4 | 10:46 (7) |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | | 08:26 | | | 09:00 | | 10:43 (7) |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | | 16:15 | | | 16:08 | 2 | 10:45 (7) |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | | 08:28 | | | 09:00 | | |
| | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | | 16:14 | | | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | | 08:30 | | | 09:01 | | |
| | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | | 16:13 | | | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | | 08:31 | | | 09:01 | | |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | | 16:12 | | | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | | 08:33 | | | 09:01 | | |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | | 16:11 | | | 16:11 | | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | 08:47 (29) | | | | 09:01 | | |
| | 21:41 | | 20:32 | | | | | 17:00 | 10 | 08:57 (29) | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 444 | | | 10 | | | 385 | | | 44 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 1,00 | | | 0,76 | | | 0,76 | | | 0,42 | |
| Total reduction | | | | | | 0,38 | | | 0,22 | | | 0,11 | | | 0,05 | |
| Total, real | | | | | | 167 | | | 2 | | | 44 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:13 (29) | 07:26 | | 07:08 | 19:00 (32) | 05:55 | 05:02 |
| | 16:14 | | 17:08 25 | 09:38 (29) | 18:07 | | 20:09 29 | 19:29 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:13 (29) | 07:24 | | 07:05 | 19:00 (32) | 05:53 | 05:01 |
| | 16:15 | | 17:10 25 | 09:38 (29) | 18:09 | | 20:11 29 | 19:29 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:14 (29) | 07:22 | | 07:03 | 19:00 (32) | 05:50 | 05:00 |
| | 16:16 | | 17:12 24 | 09:38 (29) | 18:11 | | 20:13 28 | 19:28 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:13 (29) | 07:19 | | 07:00 | 18:59 (32) | 05:48 | 04:59 |
| | 16:17 | | 17:14 24 | 09:37 (29) | 18:13 | | 20:15 27 | 19:26 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:14 (29) | 07:17 | | 06:57 | 19:00 (32) | 05:46 | 04:58 |
| | 16:19 | | 17:16 23 | 09:37 (29) | 18:15 | | 20:17 26 | 19:26 (32) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:15 (29) | 07:14 | | 06:55 | 19:01 (32) | 05:44 | 04:57 |
| | 16:20 | | 17:19 21 | 09:36 (29) | 18:17 | | 20:19 23 | 19:24 (32) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:16 (29) | 07:12 | | 06:52 | 19:02 (32) | 05:42 | 04:56 |
| | 16:21 | | 17:21 20 | 09:36 (29) | 18:19 | | 20:21 21 | 19:23 (32) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 09:17 (29) | 07:09 | | 06:50 | 19:03 (32) | 05:40 | 04:56 |
| | 16:23 | | 17:23 18 | 09:35 (29) | 18:22 | | 20:23 18 | 19:21 (32) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 09:19 (29) | 07:07 | | 06:47 | 19:05 (32) | 05:38 | 04:55 |
| | 16:24 | | 17:25 15 | 09:34 (29) | 18:24 | | 20:25 14 | 19:19 (32) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 09:21 (29) | 07:04 | | 06:45 | 19:09 (32) | 05:36 | 04:54 |
| | 16:26 | | 17:27 9 | 09:30 (29) | 18:26 | | 20:27 5 | 19:14 (32) | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:57 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:46 | | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 09:19 (29) | 07:46 | | 06:36 | | 06:18 | | 05:16 | 04:52 |
| | 16:46 8 | 09:27 (29) | 17:50 | | 18:48 | | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 09:17 (29) | 07:43 | | 06:33 | | 06:15 | | 05:15 | 04:52 |
| | 16:48 12 | 09:29 (29) | 17:53 | | 18:50 | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:15 (29) | 07:41 | | 06:31 | 18:12 (32) | 06:13 | | 05:13 | 04:53 |
| | 16:50 16 | 09:31 (29) | 17:55 | | 18:52 9 | 18:21 (32) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:15 (29) | 07:38 | | 06:28 | 18:09 (32) | 06:11 | | 05:12 | 04:53 |
| | 16:51 18 | 09:33 (29) | 17:57 | | 18:54 16 | 18:25 (32) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:14 (29) | 07:36 | | 06:26 | 18:07 (32) | 06:08 | | 05:10 | 04:53 |
| | 16:54 20 | 09:34 (29) | 17:59 | | 18:56 19 | 18:26 (32) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:14 (29) | 07:34 | | 06:23 | 18:04 (32) | 06:06 | | 05:09 | 04:54 |
| | 16:56 20 | 09:34 (29) | 18:01 | | 18:57 23 | 18:27 (32) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 09:13 (29) | 07:31 | | 06:21 | 18:04 (32) | 06:04 | | 05:08 | 04:54 |
| | 16:58 22 | 09:35 (29) | 18:03 | | 18:59 24 | 18:28 (32) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 09:13 (29) | 07:29 | | 06:18 | 18:02 (32) | 06:02 | | 05:06 | 04:55 |
| | 17:00 23 | 09:36 (29) | 18:05 | | 19:01 26 | 18:28 (32) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 09:13 (29) | | | 07:15 | 19:02 (32) | 05:59 | | 05:05 | 04:55 |
| | 17:02 24 | 09:37 (29) | | | 20:03 27 | 19:29 (32) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | 09:13 (29) | | | 07:13 | 19:01 (32) | 05:57 | | 05:04 | 04:56 |
| | 17:04 25 | 09:38 (29) | | | 20:05 28 | 19:29 (32) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | 09:13 (29) | | | 07:10 | 19:01 (32) | | | 05:03 | |
| | 17:06 25 | 09:38 (29) | | | 20:07 28 | 19:29 (32) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 213 | | 204 | | 200 | | 220 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,74 | | 0,74 | | 1,00 | | 1,00 | | | |
| Total reduction | 0,13 | | 0,17 | | 0,32 | | 0,37 | | | |
| Total, real | 27 | | 35 | | 65 | | 82 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 07:36 | | 08:50 (29) | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | 11 | 09:01 (29) | 16:10 |
| 2 | 04:57 | | 05:41 | | 06:39 | | 19:08 (32) | 07:36 | | 07:38 | | 08:49 (29) | 08:36 |
| | 22:17 | | 21:38 | | 20:27 | 5 | 19:13 (32) | 19:09 | | 16:55 | 15 | 09:04 (29) | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:41 | | 19:03 (32) | 07:38 | | 07:41 | | 08:47 (29) | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | 14 | 19:17 (32) | 19:07 | | 16:53 | 18 | 09:05 (29) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:43 | | 19:01 (32) | 07:40 | | 07:43 | | 08:46 (29) | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | 18 | 19:19 (32) | 19:04 | | 16:51 | 20 | 09:06 (29) | 16:07 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 18:58 (32) | 07:42 | | 07:45 | | 08:45 (29) | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | 21 | 19:19 (32) | 19:02 | | 16:49 | 21 | 09:06 (29) | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 18:57 (32) | 07:44 | | 07:47 | | 08:45 (29) | 08:43 |
| | 22:15 | | 21:30 | | 20:16 | 23 | 19:20 (32) | 18:59 | | 16:47 | 23 | 09:08 (29) | 16:06 |
| 7 | 05:02 | | 05:50 | | 06:49 | | 18:56 (32) | 07:46 | | 07:49 | | 08:44 (29) | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | 25 | 19:21 (32) | 18:57 | | 16:45 | 24 | 09:08 (29) | 16:06 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:55 (32) | 07:48 | | 07:51 | | 08:44 (29) | 08:45 |
| | 22:14 | | 21:25 | | 20:11 | 27 | 19:22 (32) | 18:54 | | 16:43 | 24 | 09:08 (29) | 16:05 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:54 (32) | 07:50 | | 07:53 | | 08:43 (29) | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | 28 | 19:22 (32) | 18:52 | | 16:41 | 25 | 09:08 (29) | 16:05 |
| 10 | 05:05 | | 05:56 | | 06:55 | | 18:52 (32) | 07:52 | | 07:55 | | 08:44 (29) | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | 29 | 19:21 (32) | 18:49 | | 16:40 | 25 | 09:09 (29) | 16:04 |
| 11 | 05:07 | | 05:58 | | 06:56 | | 18:52 (32) | 07:54 | | 07:57 | | 08:44 (29) | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | 29 | 19:21 (32) | 18:47 | | 16:38 | 25 | 09:09 (29) | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:52 (32) | 07:56 | | 07:59 | | 08:44 (29) | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | 29 | 19:21 (32) | 18:44 | | 16:36 | 24 | 09:08 (29) | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:52 (32) | 07:58 | | 08:01 | | 08:45 (29) | 08:51 |
| | 22:09 | | 21:15 | | 19:58 | 28 | 19:20 (32) | 18:42 | | 16:34 | 24 | 09:09 (29) | 16:04 |
| 14 | 05:11 | | 06:03 | | 07:02 | | 18:52 (32) | 08:00 | | 08:03 | | 08:45 (29) | 08:52 |
| | 22:08 | | 21:12 | | 19:56 | 28 | 19:20 (32) | 18:39 | | 16:32 | 24 | 09:09 (29) | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:52 (32) | 08:02 | | 08:05 | | 08:46 (29) | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | 27 | 19:19 (32) | 18:37 | | 16:31 | 22 | 09:08 (29) | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:52 (32) | 08:04 | | 08:07 | | 08:47 (29) | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | 25 | 19:17 (32) | 18:34 | | 16:29 | 20 | 09:07 (29) | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:53 (32) | 08:06 | | 08:09 | | 08:47 (29) | 08:55 |
| | 22:04 | | 21:05 | | 19:48 | 23 | 19:16 (32) | 18:32 | | 16:27 | 20 | 09:07 (29) | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:54 (32) | 08:08 | | 08:11 | | 08:49 (29) | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | 20 | 19:14 (32) | 18:29 | | 16:26 | 18 | 09:07 (29) | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:55 (32) | 08:10 | | 08:13 | | 08:50 (29) | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | 17 | 19:12 (32) | 18:27 | | 16:24 | 16 | 09:06 (29) | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:58 (32) | 08:12 | | 08:15 | | 08:52 (29) | 08:57 |
| | 22:00 | | 20:58 | | 19:40 | 11 | 19:09 (32) | 18:25 | | 16:23 | 12 | 09:04 (29) | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | 08:17 | | 08:54 (29) | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | | 16:21 | 8 | 09:02 (29) | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 08:19 | | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:21 | | | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | | 18:18 | | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | 08:23 | | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | | 18:15 | | 16:17 | | | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | 08:24 | | | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | | | 17:13 | | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 08:26 | | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 |
| | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 |
| 28 | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | 253 | | | 224 |
| Total, worst case | | | | | | 427 | | | | | 419 | | |
| Sun reduction | | | | | | 0,40 | | | | | 0,16 | | |
| Oper. time red. | | | | | | 1,00 | | | | | 1,00 | | |
| Wind dir. red. | | | | | | 1,00 | | | | | 0,74 | | |
| Total reduction | | | | | | 0,38 | | | | | 0,11 | | |
| Total, real | | | | | | 161 | | | | | 47 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:17 (29) | 07:26 | | 07:08 | 18:59 (32) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 25 09:42 (29) | 18:07 | | 20:09 | 29 19:28 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:17 (29) | 07:24 | | 07:05 | 19:00 (32) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 25 09:42 (29) | 18:09 | | 20:11 | 28 19:28 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:18 (29) | 07:22 | | 07:03 | 19:00 (32) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 24 09:42 (29) | 18:11 | | 20:13 | 26 19:26 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:18 (29) | 07:19 | | 07:00 | 19:00 (32) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 22 09:40 (29) | 18:13 | | 20:15 | 25 19:25 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:19 (29) | 07:17 | | 06:57 | 19:01 (32) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 21 09:40 (29) | 18:15 | | 20:17 | 23 19:24 (32) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:20 (29) | 07:14 | | 06:55 | 19:01 (32) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 19 09:39 (29) | 18:17 | | 20:19 | 21 19:22 (32) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:21 (29) | 07:12 | | 06:52 | 19:03 (32) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 17 09:38 (29) | 18:19 | | 20:21 | 18 19:21 (32) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 09:23 (29) | 07:09 | | 06:50 | 19:04 (32) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 14 09:37 (29) | 18:22 | | 20:23 | 14 19:18 (32) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 09:26 (29) | 07:07 | | 06:47 | 19:08 (32) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | 9 09:35 (29) | 18:24 | | 20:25 | 6 19:14 (32) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:23 (29) | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 7 09:30 (29) | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:20 (29) | 07:48 | | 06:39 | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 12 09:32 (29) | 17:48 | | 18:46 | | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 09:20 (29) | 07:46 | | 06:36 | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 14 09:34 (29) | 17:50 | | 18:48 | | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 09:18 (29) | 07:43 | | 06:33 | 18:16 (32) | 06:15 | | 05:15 | 04:52 |
| | 16:48 | 17 09:35 (29) | 17:53 | | 18:50 | 2 18:18 (32) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:17 (29) | 07:41 | | 06:31 | 18:10 (32) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 19 09:36 (29) | 17:55 | | 18:52 | 13 18:23 (32) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:18 (29) | 07:38 | | 06:28 | 18:08 (32) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 20 09:38 (29) | 17:57 | | 18:54 | 17 18:25 (32) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:17 (29) | 07:36 | | 06:26 | 18:05 (32) | 06:08 | | 05:10 | 04:53 |
| | 16:54 | 22 09:39 (29) | 17:59 | | 18:56 | 21 18:26 (32) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:16 (29) | 07:34 | | 06:23 | 18:03 (32) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 23 09:39 (29) | 18:01 | | 18:57 | 24 18:27 (32) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 09:16 (29) | 07:31 | | 06:21 | 18:03 (32) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 24 09:40 (29) | 18:03 | | 18:59 | 25 18:28 (32) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 09:16 (29) | 07:29 | | 06:18 | 18:01 (32) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 24 09:40 (29) | 18:05 | | 19:01 | 27 18:28 (32) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 09:17 (29) | | | 07:15 | 19:01 (32) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 25 09:42 (29) | | | 20:03 | 28 19:29 (32) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | 09:17 (29) | | | 07:13 | 19:00 (32) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 25 09:42 (29) | | | 20:05 | 28 19:28 (32) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | 09:17 (29) | | | 07:10 | 19:00 (32) | | | 05:03 | |
| | 17:06 | 25 09:42 (29) | | | 20:07 | 28 19:28 (32) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 257 | | 176 | | 213 | | 190 | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,73 | | 0,73 | | 1,00 | | 1,00 | | |
| Total reduction | | 0,13 | | 0,17 | | 0,32 | | 0,37 | | |
| Total, real | | 32 | | 30 | | 69 | | 71 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 07:38 | | 08:55 (29) | 08:36 | |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | 16:55 | 10 | 09:05 (29) | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 19:06 (32) | 07:38 | | 07:41 | | 08:52 (29) | 08:38 | |
| | 22:17 | | 21:36 | | 20:24 | 6 | 19:12 (32) | 19:07 | | 16:53 | 15 | 09:07 (29) | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 19:02 (32) | 07:40 | | 07:43 | | 08:51 (29) | 08:40 | |
| | 22:16 | | 21:34 | | 20:22 | 14 | 19:16 (32) | 19:04 | | 16:51 | 17 | 09:08 (29) | 16:07 | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 18:59 (32) | 07:42 | | 07:45 | | 08:49 (29) | 08:41 | |
| | 22:16 | | 21:32 | | 20:19 | 18 | 19:17 (32) | 19:02 | | 16:49 | 20 | 09:09 (29) | 16:07 | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 18:57 (32) | 07:44 | | 07:47 | | 08:49 (29) | 08:43 | |
| | 22:15 | | 21:30 | | 20:16 | 21 | 19:18 (32) | 18:59 | | 16:47 | 22 | 09:11 (29) | 16:06 | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 18:56 (32) | 07:46 | | 07:49 | | 08:48 (29) | 08:44 | |
| | 22:14 | | 21:28 | | 20:14 | 23 | 19:19 (32) | 18:57 | | 16:45 | 23 | 09:11 (29) | 16:06 | |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:55 (32) | 07:48 | | 07:51 | | 08:48 (29) | 08:45 | |
| | 22:14 | | 21:25 | | 20:11 | 25 | 19:20 (32) | 18:54 | | 16:43 | 24 | 09:12 (29) | 16:05 | |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:54 (32) | 07:50 | | 07:53 | | 08:47 (29) | 08:47 | |
| | 22:13 | | 21:23 | | 20:09 | 27 | 19:21 (32) | 18:52 | | 16:41 | 25 | 09:12 (29) | 16:05 | |
| 10 | 05:05 | | 05:56 | | 06:55 | | 18:52 (32) | 07:52 | | 07:55 | | 08:48 (29) | 08:48 | |
| | 22:12 | | 21:21 | | 20:06 | 28 | 19:20 (32) | 18:49 | | 16:40 | 25 | 09:13 (29) | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:56 | | 18:52 (32) | 07:54 | | 07:57 | | 08:48 (29) | 08:49 | |
| | 22:11 | | 21:19 | | 20:04 | 28 | 19:20 (32) | 18:47 | | 16:38 | 25 | 09:13 (29) | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:51 (32) | 07:56 | | 07:59 | | 08:47 (29) | 08:50 | |
| | 22:10 | | 21:17 | | 20:01 | 29 | 19:20 (32) | 18:44 | | 16:36 | 26 | 09:13 (29) | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:51 (32) | 07:58 | | 08:01 | | 08:49 (29) | 08:51 | |
| | 22:09 | | 21:15 | | 19:58 | 28 | 19:19 (32) | 18:42 | | 16:34 | 24 | 09:13 (29) | 16:04 | |
| 14 | 05:11 | | 06:03 | | 07:02 | | 18:51 (32) | 08:00 | | 08:03 | | 08:49 (29) | 08:52 | |
| | 22:08 | | 21:12 | | 19:56 | 28 | 19:19 (32) | 18:39 | | 16:32 | 24 | 09:13 (29) | 16:03 | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:52 (32) | 08:02 | | 08:05 | | 08:49 (29) | 08:53 | |
| | 22:06 | | 21:10 | | 19:53 | 26 | 19:18 (32) | 18:37 | | 16:31 | 24 | 09:13 (29) | 16:03 | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:51 (32) | 08:04 | | 08:07 | | 08:49 (29) | 08:54 | |
| | 22:05 | | 21:08 | | 19:51 | 26 | 19:17 (32) | 18:34 | | 16:29 | 23 | 09:12 (29) | 16:03 | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:52 (32) | 08:06 | | 08:09 | | 08:50 (29) | 08:55 | |
| | 22:04 | | 21:05 | | 19:48 | 23 | 19:15 (32) | 18:32 | | 16:27 | 22 | 09:12 (29) | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:52 (32) | 08:08 | | 08:11 | | 08:52 (29) | 08:56 | |
| | 22:03 | | 21:03 | | 19:46 | 22 | 19:14 (32) | 18:29 | | 16:26 | 20 | 09:12 (29) | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:54 (32) | 08:10 | | 08:13 | | 08:52 (29) | 08:57 | |
| | 22:01 | | 21:01 | | 19:43 | 18 | 19:12 (32) | 18:27 | | 16:24 | 19 | 09:11 (29) | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:56 (32) | 08:12 | | 08:15 | | 08:53 (29) | 08:57 | |
| | 22:00 | | 20:58 | | 19:40 | 14 | 19:10 (32) | 18:25 | | 16:23 | 17 | 09:10 (29) | 16:04 | |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:59 (32) | 08:14 | | 08:17 | | 08:55 (29) | 08:58 | |
| | 21:58 | | 20:56 | | 19:38 | 7 | 19:06 (32) | 18:22 | | 16:21 | 14 | 09:09 (29) | 16:05 | |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 08:19 | | 08:56 (29) | 08:59 | |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | 16:20 | 12 | 09:08 (29) | 16:05 | |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:21 | | 08:59 (29) | 08:59 | |
| | 21:55 | | 20:51 | | 19:33 | | | 18:18 | | 16:19 | 7 | 09:06 (29) | 16:06 | |
| 24 | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | 08:23 | | | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | | | 18:15 | | 16:17 | | | 16:06 | |
| 25 | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | 08:24 | | | 09:00 | |
| | 21:52 | | 20:46 | | 19:27 | | | 17:13 | | 16:16 | | | 16:07 | |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 08:26 | | | 09:00 | |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | | | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 | |
| | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 | |
| | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 | |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 | |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 | |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | 253 | | | 224 | |
| Total, worst case | | | | | | 411 | | | | | 438 | | | |
| Sun reduction | | | | | | 0,40 | | | | | 0,16 | | | |
| Oper. time red. | | | | | | 1,00 | | | | | 1,00 | | | |
| Wind dir. red. | | | | | | 1,00 | | | | | 0,73 | | | |
| Total reduction | | | | | | 0,37 | | | | | 0,11 | | | |
| Total, real | | | | | | 154 | | | | | 48 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:37 (29) | 07:26 | | | 07:08 | | 18:56 (32) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 18 | 09:55 (29) | 18:07 | | | 20:09 | 21 | 19:17 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | | 08:26 | | 09:39 (29) | 07:24 | | | 07:05 | | 18:58 (32) | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 15 | 09:54 (29) | 18:09 | | | 20:11 | 17 | 19:15 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | | 08:24 | | 09:41 (29) | 07:22 | | | 07:03 | | 18:59 (32) | 05:50 | 05:00 |
| | 16:16 | | | 17:12 | 11 | 09:52 (29) | 18:11 | | | 20:13 | 13 | 19:12 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | | 08:22 | | | 07:19 | | | 07:00 | | 19:03 (32) | 05:48 | 04:59 |
| | 16:17 | | | 17:14 | | | 18:13 | | | 20:15 | 5 | 19:08 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | 04:58 |
| | 16:19 | | | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | | 06:52 | | | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | | | 20:21 | | | 21:20 | 22:09 |
| 8 | 08:58 | | 09:37 (29) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 3 | 09:40 (29) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 22:10 |
| 9 | 08:57 | | 09:35 (29) | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | 04:55 |
| | 16:24 | 8 | 09:43 (29) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 22:11 |
| 10 | 08:56 | | 09:34 (29) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | 04:54 |
| | 16:26 | 11 | 09:45 (29) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 22:12 |
| 11 | 08:56 | | 09:33 (29) | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | 04:54 |
| | 16:28 | 14 | 09:47 (29) | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 22:13 |
| 12 | 08:55 | | 09:32 (29) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | 16 | 09:48 (29) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 09:32 (29) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | 17 | 09:49 (29) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 09:32 (29) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | 19 | 09:51 (29) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 09:31 (29) | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | 20 | 09:51 (29) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:31 (29) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 21 | 09:52 (29) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:31 (29) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | 22 | 09:53 (29) | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | 09:30 (29) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 24 | 09:54 (29) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 09:31 (29) | 07:50 | | | 06:41 | | 18:05 (32) | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | 24 | 09:55 (29) | 17:46 | | | 18:44 | 12 | 18:17 (32) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 09:30 (29) | 07:48 | | | 06:39 | | 18:02 (32) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | 25 | 09:55 (29) | 17:48 | | | 18:46 | 16 | 18:18 (32) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | 09:31 (29) | 07:46 | | | 06:36 | | 17:59 (32) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 25 | 09:56 (29) | 17:50 | | | 18:48 | 20 | 18:19 (32) | 20:49 | | | 21:45 | 22:19 |
| 22 | 08:43 | | 09:31 (29) | 07:43 | | | 06:33 | | 17:58 (32) | 06:15 | | | 05:15 | 04:52 |
| | 16:48 | 25 | 09:56 (29) | 17:53 | | | 18:50 | 23 | 18:21 (32) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | 09:31 (29) | 07:41 | | | 06:31 | | 17:57 (32) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 25 | 09:56 (29) | 17:55 | | | 18:52 | 24 | 18:21 (32) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:32 (29) | 07:38 | | | 06:28 | | 17:56 (32) | 06:11 | | | 05:12 | 04:53 |
| | 16:51 | 25 | 09:57 (29) | 17:57 | | | 18:54 | 26 | 18:22 (32) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | 09:32 (29) | 07:36 | | | 06:26 | | 17:55 (32) | 06:08 | | | 05:10 | 04:53 |
| | 16:53 | 25 | 09:57 (29) | 17:59 | | | 18:56 | 27 | 18:22 (32) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:37 | | 09:32 (29) | 07:34 | | | 06:23 | | 17:54 (32) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 25 | 09:57 (29) | 18:01 | | | 18:57 | 27 | 18:21 (32) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | 09:32 (29) | 07:31 | | | 06:21 | | 17:55 (32) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 25 | 09:57 (29) | 18:03 | | | 18:59 | 26 | 18:21 (32) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | 09:33 (29) | 07:29 | | | 06:18 | | 17:54 (32) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | 23 | 09:56 (29) | 18:05 | | | 19:01 | 26 | 18:20 (32) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:34 (29) | | | | 07:15 | | 18:55 (32) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | 23 | 09:57 (29) | | | | 20:03 | 25 | 19:20 (32) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | 09:35 (29) | | | | 07:13 | | 18:55 (32) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 22 | 09:57 (29) | | | | 20:05 | 24 | 19:19 (32) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | 09:36 (29) | | | | 07:10 | | 18:56 (32) | | | | 05:03 | |
| | 17:06 | 20 | 09:56 (29) | | | | 20:07 | 22 | 19:18 (32) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | 487 | | | 44 | | | 298 | | | 56 | | | | |
| Sun reduction | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | 0,68 | | | 0,68 | | | 1,00 | | | 1,00 | | | | |
| Total reduction | 0,11 | | | 0,15 | | | 0,32 | | | 0,36 | | | | |
| Total, real | 56 | | | 7 | | | 94 | | | 20 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | | 09:15 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | 14 | 09:29 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | | 09:17 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | 11 | 09:28 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | | 09:19 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | 8 | 09:27 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 07:43 | | | 08:40 | | 09:21 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | | 16:51 | | | 16:07 | 4 | 09:25 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 07:45 | | | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | 16:49 | | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | 07:49 | | 09:16 (29) | 08:44 | | |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | 16:45 | 1 | 09:17 (29) | 16:05 | | |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:59 (32) | 07:48 | | 07:51 | | 09:11 (29) | 08:45 | | |
| | 22:14 | | 21:25 | | 20:11 | 3 | 19:02 (32) | 18:54 | | 16:43 | 11 | 09:22 (29) | 16:05 | | |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:54 (32) | 07:50 | | 07:53 | | 09:08 (29) | 08:47 | | |
| | 22:13 | | 21:23 | | 20:09 | 12 | 19:06 (32) | 18:52 | | 16:41 | 16 | 09:24 (29) | 16:05 | | |
| 10 | 05:05 | | 05:56 | | 06:55 | | 18:50 (32) | 07:52 | | 07:55 | | 09:08 (29) | 08:48 | | |
| | 22:12 | | 21:21 | | 20:06 | 17 | 19:07 (32) | 18:49 | | 16:40 | 18 | 09:26 (29) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | 06:56 | | 18:48 (32) | 07:54 | | 07:57 | | 09:07 (29) | 08:49 | | |
| | 22:11 | | 21:19 | | 20:04 | 21 | 19:09 (32) | 18:47 | | 16:38 | 20 | 09:27 (29) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:47 (32) | 07:56 | | 07:59 | | 09:06 (29) | 08:50 | | |
| | 22:10 | | 21:17 | | 20:01 | 23 | 19:10 (32) | 18:44 | | 16:36 | 21 | 09:27 (29) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:46 (32) | 07:58 | | 08:01 | | 09:06 (29) | 08:51 | | |
| | 22:09 | | 21:15 | | 19:58 | 24 | 19:10 (32) | 18:42 | | 16:34 | 23 | 09:29 (29) | 16:04 | | |
| 14 | 05:11 | | 06:03 | | 07:02 | | 18:45 (32) | 08:00 | | 08:03 | | 09:06 (29) | 08:52 | | |
| | 22:08 | | 21:12 | | 19:56 | 26 | 19:11 (32) | 18:39 | | 16:32 | 23 | 09:29 (29) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:45 (32) | 08:02 | | 08:05 | | 09:05 (29) | 08:53 | | |
| | 22:06 | | 21:10 | | 19:53 | 26 | 19:11 (32) | 18:37 | | 16:31 | 25 | 09:30 (29) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:43 (32) | 08:04 | | 08:07 | | 09:05 (29) | 08:54 | | |
| | 22:05 | | 21:08 | | 19:51 | 27 | 19:10 (32) | 18:34 | | 16:29 | 25 | 09:30 (29) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:43 (32) | 08:06 | | 08:09 | | 09:05 (29) | 08:55 | | |
| | 22:04 | | 21:05 | | 19:48 | 27 | 19:10 (32) | 18:32 | | 16:27 | 25 | 09:30 (29) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:43 (32) | 08:08 | | 08:11 | | 09:06 (29) | 08:56 | | |
| | 22:03 | | 21:03 | | 19:46 | 26 | 19:09 (32) | 18:29 | | 16:26 | 25 | 09:31 (29) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:43 (32) | 08:10 | | 08:13 | | 09:06 (29) | 08:57 | | |
| | 22:01 | | 21:01 | | 19:43 | 26 | 19:09 (32) | 18:27 | | 16:24 | 25 | 09:31 (29) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:43 (32) | 08:12 | | 08:15 | | 09:06 (29) | 08:57 | | |
| | 22:00 | | 20:58 | | 19:40 | 25 | 19:08 (32) | 18:25 | | 16:23 | 25 | 09:31 (29) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:44 (32) | 08:14 | | 08:17 | | 09:06 (29) | 08:58 | | |
| | 21:58 | | 20:56 | | 19:38 | 23 | 19:07 (32) | 18:22 | | 16:21 | 25 | 09:31 (29) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:45 (32) | 08:16 | | 08:19 | | 09:06 (29) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | 20 | 19:05 (32) | 18:20 | | 16:20 | 25 | 09:31 (29) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:46 (32) | 08:18 | | 08:21 | | 09:07 (29) | 08:59 | | |
| | 21:55 | | 20:51 | | 19:33 | 18 | 19:04 (32) | 18:18 | | 16:19 | 24 | 09:31 (29) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:47 (32) | 08:20 | | 08:23 | | 09:08 (29) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 13 | 19:00 (32) | 18:15 | | 16:17 | 23 | 09:31 (29) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:50 (32) | 07:22 | | 08:24 | | 09:08 (29) | 09:00 | | |
| | 21:52 | | 20:46 | | 19:27 | 6 | 18:56 (32) | 17:13 | | 16:16 | 23 | 09:31 (29) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 08:26 | | 09:09 (29) | 09:00 | | |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | 21 | 09:30 (29) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | 09:10 (29) | 09:00 | | |
| | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | 16:14 | 20 | 09:30 (29) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | 09:11 (29) | 09:01 | | |
| | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | 16:13 | 19 | 09:30 (29) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:31 | | 09:12 (29) | 09:01 | | |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | 18 | 09:30 (29) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | 09:13 (29) | 09:01 | | |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | 16 | 09:29 (29) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | | | 363 | | | | | 497 | | | 37 | |
| Sun reduction | | | | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 1,00 | | | | | 0,68 | | | 0,68 | |
| Total reduction | | | | | | 0,37 | | | | | 0,10 | | | 0,09 | |
| Total, real | | | | | | 133 | | | | | 50 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:42 (29) | 07:26 | | 07:08 | 18:55 (32) | 05:55 | 05:02 |
| | 16:14 | | 17:08 13 | 09:55 (29) | 18:07 | | 20:09 15 | 19:10 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:45 (29) | 07:24 | | 07:05 | 18:59 (32) | 05:53 | 05:01 |
| | 16:15 | | 17:10 7 | 09:52 (29) | 18:09 | | 20:11 9 | 19:08 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 05:50 | 05:00 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:57 | | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | | 21:16 | 22:07 |
| 6 | 08:59 | 09:38 (29) | 08:18 | | 07:14 | | 06:55 | | 05:44 | 04:57 |
| | 16:20 6 | 09:44 (29) | 17:19 | | 18:17 | | 20:19 | | 21:18 | 22:08 |
| 7 | 08:58 | 09:36 (29) | 08:16 | | 07:12 | | 06:52 | | 05:42 | 04:56 |
| | 16:21 10 | 09:46 (29) | 17:21 | | 18:19 | | 20:21 | | 21:20 | 22:09 |
| 8 | 08:58 | 09:35 (29) | 08:14 | | 07:09 | | 06:50 | | 05:40 | 04:56 |
| | 16:23 12 | 09:47 (29) | 17:23 | | 18:22 | | 20:23 | | 21:22 | 22:10 |
| 9 | 08:57 | 09:35 (29) | 08:12 | | 07:07 | | 06:47 | | 05:38 | 04:55 |
| | 16:24 14 | 09:49 (29) | 17:25 | | 18:24 | | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | 09:34 (29) | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 16 | 09:50 (29) | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | 09:34 (29) | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 17 | 09:51 (29) | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 09:33 (29) | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 19 | 09:52 (29) | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 09:33 (29) | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 20 | 09:53 (29) | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 09:33 (29) | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 21 | 09:54 (29) | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 09:33 (29) | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 21 | 09:54 (29) | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:33 (29) | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 23 | 09:56 (29) | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:33 (29) | 07:55 | | 06:46 | | 06:27 18:03 (32) | | 05:23 | 04:52 |
| | 16:38 24 | 09:57 (29) | 17:42 | | 18:40 9 | | 20:41 18:12 (32) | | 21:39 | 22:17 |
| 18 | 08:49 | 09:33 (29) | 07:52 | | 06:44 | | 06:25 17:59 (32) | | 05:21 | 04:52 |
| | 16:40 24 | 09:57 (29) | 17:44 | | 18:42 15 | | 20:43 18:14 (32) | | 21:40 | 22:18 |
| 19 | 08:47 | 09:33 (29) | 07:50 | | 06:41 | | 06:23 17:58 (32) | | 05:19 | 04:52 |
| | 16:42 25 | 09:58 (29) | 17:46 | | 18:44 19 | | 20:45 18:17 (32) | | 21:42 | 22:18 |
| 20 | 08:46 | 09:33 (29) | 07:48 | | 06:39 | | 06:20 17:56 (32) | | 05:18 | 04:52 |
| | 16:44 25 | 09:58 (29) | 17:48 | | 18:46 21 | | 20:47 18:17 (32) | | 21:44 | 22:18 |
| 21 | 08:45 | 09:34 (29) | 07:46 | | 06:36 | | 06:18 17:54 (32) | | 05:16 | 04:52 |
| | 16:46 25 | 09:59 (29) | 17:50 | | 18:48 24 | | 20:49 18:18 (32) | | 21:45 | 22:19 |
| 22 | 08:43 | 09:34 (29) | 07:43 | | 06:33 | | 06:15 17:54 (32) | | 05:15 | 04:52 |
| | 16:48 25 | 09:59 (29) | 17:53 | | 18:50 25 | | 20:51 18:19 (32) | | 21:47 | 22:19 |
| 23 | 08:42 | 09:33 (29) | 07:41 | | 06:31 | | 06:13 17:52 (32) | | 05:13 | 04:53 |
| | 16:50 26 | 09:59 (29) | 17:55 | | 18:52 26 | | 20:53 18:18 (32) | | 21:49 | 22:19 |
| 24 | 08:41 | 09:35 (29) | 07:38 | | 06:28 | | 06:11 17:52 (32) | | 05:12 | 04:53 |
| | 16:51 24 | 09:59 (29) | 17:57 | | 18:54 27 | | 20:55 18:19 (32) | | 21:50 | 22:19 |
| 25 | 08:39 | 09:35 (29) | 07:36 | | 06:26 | | 06:08 17:52 (32) | | 05:10 | 04:53 |
| | 16:53 24 | 09:59 (29) | 17:59 | | 18:56 26 | | 20:57 18:18 (32) | | 21:52 | 22:19 |
| 26 | 08:37 | 09:35 (29) | 07:34 | | 06:23 | | 06:06 17:51 (32) | | 05:09 | 04:54 |
| | 16:56 24 | 09:59 (29) | 18:01 | | 18:57 26 | | 20:59 18:17 (32) | | 21:53 | 22:19 |
| 27 | 08:36 | 09:36 (29) | 07:31 | | 06:21 | | 06:04 17:51 (32) | | 05:08 | 04:54 |
| | 16:58 23 | 09:59 (29) | 18:03 | | 18:59 26 | | 21:01 18:17 (32) | | 21:55 | 22:19 |
| 28 | 08:34 | 09:36 (29) | 07:29 | | 06:18 | | 06:01 17:51 (32) | | 05:06 | 04:55 |
| | 17:00 22 | 09:58 (29) | 18:05 | | 19:01 25 | | 21:03 18:16 (32) | | 21:57 | 22:19 |
| 29 | 08:33 | 09:38 (29) | | | 07:15 | | 05:59 18:52 (32) | | 05:05 | 04:55 |
| | 17:02 20 | 09:58 (29) | | | 20:03 24 | | 21:05 19:16 (32) | | 21:58 | 22:18 |
| 30 | 08:31 | 09:39 (29) | | | 07:13 | | 05:57 18:53 (32) | | 05:04 | 04:56 |
| | 17:04 19 | 09:58 (29) | | | 20:05 21 | | 21:06 19:14 (32) | | 21:59 | 22:18 |
| 31 | 08:29 | 09:40 (29) | | | 07:10 | | 18:54 (32) | | 05:03 | |
| | 17:06 17 | 09:57 (29) | | | 20:07 19 | | 19:13 (32) | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 526 | | 20 | | 333 | | 24 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,67 | | 0,67 | | 0,99 | | 0,99 | | | |
| Total reduction | 0,11 | | 0,15 | | 0,31 | | 0,36 | | | |
| Total, real | 59 | | 3 | | 105 | | 9 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | November | | December | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:38 | | 07:34 | 07:36 | | 08:35 | 09:16 (29) |
| | 22:18 | 21:40 | 20:29 | | 19:12 | 16:58 | | 16:10 | 17 09:33 (29) |
| 2 | 04:57 | 05:41 | 06:39 | | 07:36 | 07:38 | | 08:36 | 09:17 (29) |
| | 22:17 | 21:38 | 20:27 | | 19:09 | 16:55 | | 16:09 | 16 09:33 (29) |
| 3 | 04:58 | 05:43 | 06:41 | | 07:38 | 07:41 | | 08:38 | 09:19 (29) |
| | 22:17 | 21:36 | 20:24 | | 19:07 | 16:53 | | 16:08 | 14 09:33 (29) |
| 4 | 04:59 | 05:45 | 06:43 | | 07:40 | 07:43 | | 08:40 | 09:19 (29) |
| | 22:16 | 21:34 | 20:22 | | 19:04 | 16:51 | | 16:07 | 12 09:31 (29) |
| 5 | 05:00 | 05:47 | 06:45 | | 07:42 | 07:45 | | 08:41 | 09:21 (29) |
| | 22:16 | 21:32 | 20:19 | | 19:02 | 16:49 | | 16:07 | 10 09:31 (29) |
| 6 | 05:01 | 05:49 | 06:47 | | 07:44 | 07:47 | | 08:43 | 09:22 (29) |
| | 22:15 | 21:30 | 20:16 | | 18:59 | 16:47 | | 16:06 | 7 09:29 (29) |
| 7 | 05:02 | 05:50 | 06:49 | | 07:46 | 07:49 | | 08:44 | |
| | 22:14 | 21:28 | 20:14 | | 18:57 | 16:45 | | 16:05 | |
| 8 | 05:03 | 05:52 | 06:51 | | 07:48 | 07:51 | | 08:45 | |
| | 22:14 | 21:25 | 20:11 | | 18:54 | 16:43 | | 16:05 | |
| 9 | 05:04 | 05:54 | 06:53 | | 07:50 | 07:53 | 09:15 (29) | 08:47 | |
| | 22:13 | 21:23 | 20:09 | | 18:52 | 16:41 | 8 09:23 (29) | 16:05 | |
| 10 | 05:05 | 05:56 | 06:55 | 18:51 (32) | 07:52 | 07:55 | 09:13 (29) | 08:48 | |
| | 22:12 | 21:21 | 20:06 | 8 18:59 (32) | 18:49 | 16:40 | 13 09:26 (29) | 16:04 | |
| 11 | 05:07 | 05:58 | 06:56 | 18:48 (32) | 07:54 | 07:57 | 09:11 (29) | 08:49 | |
| | 22:11 | 21:19 | 20:04 | 14 19:02 (32) | 18:47 | 16:38 | 17 09:28 (29) | 16:04 | |
| 12 | 05:08 | 06:00 | 06:58 | 18:46 (32) | 07:56 | 07:59 | 09:10 (29) | 08:50 | |
| | 22:10 | 21:17 | 20:01 | 18 19:04 (32) | 18:44 | 16:36 | 19 09:29 (29) | 16:04 | |
| 13 | 05:09 | 06:02 | 07:00 | 18:44 (32) | 07:58 | 08:01 | 09:10 (29) | 08:51 | |
| | 22:09 | 21:15 | 19:58 | 21 19:05 (32) | 18:42 | 16:34 | 20 09:30 (29) | 16:04 | |
| 14 | 05:10 | 06:03 | 07:02 | 18:43 (32) | 08:00 | 08:03 | 09:09 (29) | 08:52 | |
| | 22:08 | 21:12 | 19:56 | 23 19:06 (32) | 18:39 | 16:32 | 22 09:31 (29) | 16:03 | |
| 15 | 05:12 | 06:05 | 07:04 | 18:42 (32) | 08:02 | 08:05 | 09:08 (29) | 08:53 | |
| | 22:06 | 21:10 | 19:53 | 24 19:06 (32) | 18:37 | 16:31 | 24 09:32 (29) | 16:03 | |
| 16 | 05:13 | 06:07 | 07:06 | 18:40 (32) | 08:04 | 08:07 | 09:08 (29) | 08:54 | |
| | 22:05 | 21:08 | 19:51 | 26 19:06 (32) | 18:34 | 16:29 | 24 09:32 (29) | 16:03 | |
| 17 | 05:15 | 06:09 | 07:08 | 18:39 (32) | 08:06 | 08:09 | 09:08 (29) | 08:55 | |
| | 22:04 | 21:05 | 19:48 | 27 19:06 (32) | 18:32 | 16:27 | 24 09:32 (29) | 16:04 | |
| 18 | 05:16 | 06:11 | 07:10 | 18:39 (32) | 08:08 | 08:11 | 09:09 (29) | 08:56 | |
| | 22:03 | 21:03 | 19:46 | 27 19:06 (32) | 18:29 | 16:26 | 24 09:33 (29) | 16:04 | |
| 19 | 05:18 | 06:13 | 07:12 | 18:39 (32) | 08:10 | 08:13 | 09:08 (29) | 08:57 | |
| | 22:01 | 21:01 | 19:43 | 26 19:05 (32) | 18:27 | 16:24 | 26 09:34 (29) | 16:04 | |
| 20 | 05:19 | 06:15 | 07:13 | 18:39 (32) | 08:12 | 08:15 | 09:09 (29) | 08:57 | |
| | 22:00 | 20:58 | 19:40 | 26 19:05 (32) | 18:25 | 16:23 | 25 09:34 (29) | 16:04 | |
| 21 | 05:21 | 06:17 | 07:15 | 18:39 (32) | 08:14 | 08:17 | 09:09 (29) | 08:58 | |
| | 21:58 | 20:56 | 19:38 | 25 19:04 (32) | 18:22 | 16:21 | 25 09:34 (29) | 16:05 | |
| 22 | 05:22 | 06:19 | 07:17 | 18:39 (32) | 08:16 | 08:19 | 09:09 (29) | 08:59 | |
| | 21:57 | 20:54 | 19:35 | 24 19:03 (32) | 18:20 | 16:20 | 25 09:34 (29) | 16:05 | |
| 23 | 05:24 | 06:21 | 07:19 | 18:40 (32) | 08:18 | 08:21 | 09:09 (29) | 08:59 | |
| | 21:55 | 20:51 | 19:33 | 22 19:02 (32) | 18:18 | 16:19 | 25 09:34 (29) | 16:06 | |
| 24 | 05:26 | 06:22 | 07:21 | 18:40 (32) | 08:20 | 08:23 | 09:10 (29) | 09:00 | |
| | 21:54 | 20:49 | 19:30 | 20 19:00 (32) | 18:15 | 16:17 | 24 09:34 (29) | 16:06 | |
| 25 | 05:27 | 06:24 | 07:23 | 18:41 (32) | 07:22 | 08:24 | 09:10 (29) | 09:00 | |
| | 21:52 | 20:46 | 19:27 | 17 18:58 (32) | 17:13 | 16:16 | 24 09:34 (29) | 16:07 | |
| 26 | 05:29 | 06:26 | 07:25 | 18:44 (32) | 07:24 | 08:26 | 09:11 (29) | 09:00 | |
| | 21:50 | 20:44 | 19:25 | 11 18:55 (32) | 17:11 | 16:15 | 23 09:34 (29) | 16:08 | |
| 27 | 05:31 | 06:28 | 07:27 | | 07:26 | 08:28 | 09:12 (29) | 09:00 | |
| | 21:49 | 20:42 | 19:22 | | 17:08 | 16:14 | 22 09:34 (29) | 16:08 | |
| 28 | 05:32 | 06:30 | 07:29 | | 07:28 | 08:30 | 09:13 (29) | 09:01 | |
| | 21:47 | 20:39 | 19:20 | | 17:06 | 16:13 | 21 09:34 (29) | 16:09 | |
| 29 | 05:34 | 06:32 | 07:31 | | 07:30 | 08:31 | 09:13 (29) | 09:01 | |
| | 21:45 | 20:37 | 19:17 | | 17:04 | 16:12 | 20 09:33 (29) | 16:10 | |
| 30 | 05:36 | 06:34 | 07:32 | | 07:32 | 08:33 | 09:15 (29) | 09:01 | |
| | 21:43 | 20:34 | 19:14 | | 17:02 | 16:11 | 18 09:33 (29) | 16:11 | |
| 31 | 05:38 | 06:36 | | | 07:34 | | | 09:01 | |
| | 21:41 | 20:32 | | | 17:00 | | | 16:12 | |
| Potential sun hours | 521 | 465 | 383 | | 326 | 253 | | 224 | |
| Total, worst case | | | | 359 | | | 473 | | 76 |
| Sun reduction | | | | 0,40 | | | 0,16 | | 0,14 |
| Oper. time red. | | | | 1,00 | | | 1,00 | | 1,00 |
| Wind dir. red. | | | | 0,99 | | | 0,67 | | 0,67 |
| Total reduction | | | | 0,36 | | | 0,10 | | 0,08 |
| Total, real | | | | 131 | | | 46 | | 6 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:49 (29) | 07:26 | | | 07:08 | | 18:58 (32) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 4 | 09:53 (29) | 18:07 | | | 20:09 | 4 | 19:02 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | | 08:26 | | | 07:24 | | | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | | | 18:09 | | | 20:11 | | | 21:10 | 22:03 |
| 3 | 09:00 | | 09:38 (29) | 08:24 | | | 07:22 | | | 07:03 | | | 05:50 | 05:00 |
| | 16:16 | 5 | 09:43 (29) | 17:12 | | | 18:11 | | | 20:13 | | | 21:12 | 22:05 |
| 4 | 09:00 | | 09:38 (29) | 08:22 | | | 07:19 | | | 07:00 | | | 05:48 | 04:59 |
| | 16:17 | 8 | 09:46 (29) | 17:14 | | | 18:13 | | | 20:15 | | | 21:14 | 22:06 |
| 5 | 08:59 | | 09:37 (29) | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | 04:58 |
| | 16:19 | 10 | 09:47 (29) | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 22:07 |
| 6 | 08:59 | | 09:37 (29) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | 12 | 09:49 (29) | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 22:08 |
| 7 | 08:58 | | 09:36 (29) | 08:16 | | | 07:12 | | | 06:52 | | | 05:42 | 04:56 |
| | 16:21 | 14 | 09:50 (29) | 17:21 | | | 18:19 | | | 20:21 | | | 21:20 | 22:09 |
| 8 | 08:58 | | 09:36 (29) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 15 | 09:51 (29) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 22:10 |
| 9 | 08:57 | | 09:35 (29) | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | 04:55 |
| | 16:24 | 17 | 09:52 (29) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 22:11 |
| 10 | 08:56 | | 09:35 (29) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | 04:54 |
| | 16:26 | 18 | 09:53 (29) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 22:12 |
| 11 | 08:56 | | 09:35 (29) | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | 04:54 |
| | 16:28 | 19 | 09:54 (29) | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 22:13 |
| 12 | 08:55 | | 09:35 (29) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | 20 | 09:55 (29) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 09:35 (29) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | 21 | 09:56 (29) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 09:35 (29) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | 22 | 09:57 (29) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 09:34 (29) | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | 23 | 09:57 (29) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:35 (29) | 07:57 | | | 06:49 | | 17:58 (32) | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 23 | 09:58 (29) | 17:40 | | | 18:38 | 12 | 18:10 (32) | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:35 (29) | 07:55 | | | 06:46 | | 17:56 (32) | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | 24 | 09:59 (29) | 17:42 | | | 18:40 | 17 | 18:13 (32) | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | 09:35 (29) | 07:52 | | | 06:44 | | 17:54 (32) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 24 | 09:59 (29) | 17:44 | | | 18:42 | 20 | 18:14 (32) | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 09:35 (29) | 07:50 | | | 06:41 | | 17:53 (32) | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | 25 | 10:00 (29) | 17:46 | | | 18:44 | 22 | 18:15 (32) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 09:35 (29) | 07:48 | | | 06:39 | | 17:51 (32) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | 25 | 10:00 (29) | 17:48 | | | 18:46 | 24 | 18:15 (32) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | 09:36 (29) | 07:46 | | | 06:36 | | 17:50 (32) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 25 | 10:01 (29) | 17:50 | | | 18:48 | 25 | 18:15 (32) | 20:49 | | | 21:45 | 22:19 |
| 22 | 08:43 | | 09:36 (29) | 07:43 | | | 06:33 | | 17:50 (32) | 06:15 | | | 05:15 | 04:52 |
| | 16:48 | 25 | 10:01 (29) | 17:53 | | | 18:50 | 26 | 18:16 (32) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | 09:36 (29) | 07:41 | | | 06:31 | | 17:49 (32) | 06:13 | | | 05:13 | 04:53 |
| | 16:49 | 25 | 10:01 (29) | 17:55 | | | 18:52 | 26 | 18:15 (32) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:37 (29) | 07:38 | | | 06:28 | | 17:49 (32) | 06:11 | | | 05:12 | 04:53 |
| | 16:51 | 24 | 10:01 (29) | 17:57 | | | 18:54 | 27 | 18:16 (32) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | 09:38 (29) | 07:36 | | | 06:26 | | 17:49 (32) | 06:08 | | | 05:10 | 04:53 |
| | 16:53 | 23 | 10:01 (29) | 17:59 | | | 18:56 | 26 | 18:15 (32) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:37 | | 09:38 (29) | 07:34 | | | 06:23 | | 17:48 (32) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 22 | 10:00 (29) | 18:01 | | | 18:57 | 26 | 18:14 (32) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | 09:39 (29) | 07:31 | | | 06:21 | | 17:49 (32) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 21 | 10:00 (29) | 18:03 | | | 18:59 | 24 | 18:13 (32) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | 09:40 (29) | 07:29 | | | 06:18 | | 17:49 (32) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | 19 | 09:59 (29) | 18:05 | | | 19:01 | 23 | 18:12 (32) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:42 (29) | | | | 07:15 | | 18:51 (32) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | 17 | 09:59 (29) | | | | 20:03 | 20 | 19:11 (32) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | 09:43 (29) | | | | 07:13 | | 18:51 (32) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 15 | 09:58 (29) | | | | 20:05 | 18 | 19:09 (32) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | 09:45 (29) | | | | 07:10 | | 18:54 (32) | | | | 05:03 | |
| | 17:06 | 11 | 09:56 (29) | | | | 20:07 | 13 | 19:07 (32) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 552 | | | 4 | | | 349 | | | 4 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,66 | | | 0,66 | | | 0,99 | | | 0,99 | | | |
| Total reduction | | 0,11 | | | 0,15 | | | 0,31 | | | 0,36 | | | |
| Total, real | | 61 | | | 1 | | | 109 | | | 1 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | | 07:36 | | | 08:35 | | 09:17 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | | 16:58 | | | 16:10 | 19 | 09:36 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | | 07:38 | | | 08:36 | | 09:18 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | | 16:55 | | | 16:09 | 18 | 09:36 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | | 07:41 | | | 08:38 | | 09:19 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | | 16:53 | | | 16:08 | 17 | 09:36 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | | 07:43 | | | 08:40 | | 09:20 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | | | 16:51 | | | 16:07 | 15 | 09:35 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | | 07:45 | | | 08:41 | | 09:21 (29) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | | 16:49 | | | 16:07 | 14 | 09:35 (29) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | | 07:47 | | | 08:43 | | 09:22 (29) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | | | 16:47 | | | 16:06 | 12 | 09:34 (29) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | | 07:49 | | | 08:44 | | 09:24 (29) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | | 16:45 | | | 16:05 | 10 | 09:34 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | | 07:51 | | | 08:45 | | 09:25 (29) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | | | 16:43 | | | 16:05 | 8 | 09:33 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:27 (29) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 6 | 09:33 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | 09:19 (29) | 08:48 | | |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | 5 | 09:24 (29) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | 09:16 (29) | 08:49 | | |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | 11 | 09:27 (29) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:46 (32) | 07:56 | | | 07:59 | | 09:14 (29) | 08:50 | | |
| | 22:10 | | 21:17 | | 20:01 | 12 | 18:58 (32) | 18:44 | | | 16:36 | 15 | 09:29 (29) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:43 (32) | 07:58 | | | 08:01 | | 09:13 (29) | 08:51 | | |
| | 22:09 | | 21:15 | | 19:58 | 17 | 19:00 (32) | 18:42 | | | 16:34 | 18 | 09:31 (29) | 16:04 | | |
| 14 | 05:10 | | 06:03 | | 07:02 | | 18:41 (32) | 08:00 | | | 08:03 | | 09:12 (29) | 08:52 | | |
| | 22:08 | | 21:12 | | 19:56 | 20 | 19:01 (32) | 18:39 | | | 16:32 | 20 | 09:32 (29) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:40 (32) | 08:02 | | | 08:05 | | 09:12 (29) | 08:53 | | |
| | 22:06 | | 21:10 | | 19:53 | 22 | 19:02 (32) | 18:37 | | | 16:31 | 21 | 09:33 (29) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:38 (32) | 08:04 | | | 08:07 | | 09:11 (29) | 08:54 | | |
| | 22:05 | | 21:08 | | 19:51 | 24 | 19:02 (32) | 18:34 | | | 16:29 | 22 | 09:33 (29) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:37 (32) | 08:06 | | | 08:09 | | 09:11 (29) | 08:55 | | |
| | 22:04 | | 21:05 | | 19:48 | 25 | 19:02 (32) | 18:32 | | | 16:27 | 23 | 09:34 (29) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:36 (32) | 08:08 | | | 08:11 | | 09:11 (29) | 08:56 | | |
| | 22:03 | | 21:03 | | 19:46 | 26 | 19:02 (32) | 18:29 | | | 16:26 | 24 | 09:35 (29) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:36 (32) | 08:10 | | | 08:13 | | 09:11 (29) | 08:57 | | |
| | 22:01 | | 21:01 | | 19:43 | 26 | 19:02 (32) | 18:27 | | | 16:24 | 25 | 09:36 (29) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:35 (32) | 08:12 | | | 08:15 | | 09:11 (29) | 08:57 | | |
| | 22:00 | | 20:58 | | 19:40 | 27 | 19:02 (32) | 18:25 | | | 16:23 | 25 | 09:36 (29) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:35 (32) | 08:14 | | | 08:17 | | 09:11 (29) | 08:58 | | |
| | 21:58 | | 20:56 | | 19:38 | 27 | 19:02 (32) | 18:22 | | | 16:21 | 25 | 09:36 (29) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:35 (32) | 08:16 | | | 08:19 | | 09:11 (29) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | 26 | 19:01 (32) | 18:20 | | | 16:20 | 25 | 09:36 (29) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:36 (32) | 08:18 | | | 08:21 | | 09:11 (29) | 08:59 | | |
| | 21:55 | | 20:51 | | 19:33 | 24 | 19:00 (32) | 18:18 | | | 16:19 | 25 | 09:36 (29) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:35 (32) | 08:20 | | | 08:23 | | 09:12 (29) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 23 | 18:58 (32) | 18:15 | | | 16:17 | 24 | 09:36 (29) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:36 (32) | 07:22 | | | 08:24 | | 09:12 (29) | 09:00 | | |
| | 21:52 | | 20:46 | | 19:27 | 21 | 18:57 (32) | 17:13 | | | 16:16 | 24 | 09:36 (29) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:37 (32) | 07:24 | | | 08:26 | | 09:13 (29) | 09:00 | | |
| | 21:50 | | 20:44 | | 19:25 | 18 | 18:55 (32) | 17:11 | | | 16:15 | 23 | 09:36 (29) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:39 (32) | 07:26 | | | 08:28 | | 09:13 (29) | 09:00 | | |
| | 21:49 | | 20:42 | | 19:22 | 14 | 18:53 (32) | 17:08 | | | 16:14 | 23 | 09:36 (29) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:43 (32) | 07:28 | | | 08:30 | | 09:14 (29) | 09:01 | | |
| | 21:47 | | 20:39 | | 19:20 | 5 | 18:48 (32) | 17:06 | | | 16:13 | 22 | 09:36 (29) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | | 08:31 | | 09:15 (29) | 09:01 | | |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | | 16:12 | 21 | 09:36 (29) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | | 08:33 | | 09:16 (29) | 09:01 | | |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | | 16:11 | 20 | 09:36 (29) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 357 | | | | | | 441 | | | 119 | |
| Sun reduction | | | | | | 0,40 | | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | | | | 0,66 | | | 0,66 | |
| Total reduction | | | | | | 0,36 | | | | | | 0,10 | | | 0,08 | |
| Total, real | | | | | | 130 | | | | | | 43 | | | 10 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (29) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 10 | 09:48 (29) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:38 (29) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 11 | 09:49 (29) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:37 (29) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 13 | 09:50 (29) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:38 (29) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 14 | 09:52 (29) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:37 (29) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 15 | 09:52 (29) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:38 (29) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 16 | 09:54 (29) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:37 (29) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 18 | 09:55 (29) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:37 (29) | 08:14 | 07:09 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 19 | 09:56 (29) | 17:23 | 18:22 | | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:37 (29) | 08:12 | 07:07 | | | 06:47 | 05:38 | 04:55 |
| | 16:24 | 19 | 09:56 (29) | 17:25 | 18:24 | | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:37 (29) | 08:10 | 07:04 | | | 06:45 | 05:36 | 04:54 |
| | 16:26 | 20 | 09:57 (29) | 17:27 | 18:26 | | | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:37 (29) | 08:08 | 07:02 | | | 06:42 | 05:34 | 04:54 |
| | 16:28 | 21 | 09:58 (29) | 17:29 | 18:28 | | | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:37 (29) | 08:06 | 06:59 | | | 06:40 | 05:32 | 04:53 |
| | 16:29 | 22 | 09:59 (29) | 17:31 | 18:30 | | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:37 (29) | 08:03 | 06:56 | | | 06:37 | 05:30 | 04:53 |
| | 16:31 | 23 | 10:00 (29) | 17:33 | 18:32 | | | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:37 (29) | 08:01 | 06:54 | | 17:58 (32) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 24 | 10:01 (29) | 17:36 | 18:34 | 8 | 18:06 (32) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:37 (29) | 07:59 | 06:51 | | 17:54 (32) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 24 | 10:01 (29) | 17:38 | 18:36 | 14 | 18:08 (32) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:37 (29) | 07:57 | 06:49 | | 17:51 (32) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 24 | 10:01 (29) | 17:40 | 18:38 | 19 | 18:10 (32) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:38 (29) | 07:55 | 06:46 | | 17:50 (32) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 24 | 10:02 (29) | 17:42 | 18:40 | 21 | 18:11 (32) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:38 (29) | 07:52 | 06:44 | | 17:48 (32) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 24 | 10:02 (29) | 17:44 | 18:42 | 24 | 18:12 (32) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:38 (29) | 07:50 | 06:41 | | 17:48 (32) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 25 | 10:03 (29) | 17:46 | 18:44 | 25 | 18:13 (32) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:38 (29) | 07:48 | 06:39 | | 17:47 (32) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 25 | 10:03 (29) | 17:48 | 18:46 | 26 | 18:13 (32) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:39 (29) | 07:46 | 06:36 | | 17:46 (32) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 24 | 10:03 (29) | 17:50 | 18:48 | 26 | 18:12 (32) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:39 (29) | 07:43 | 06:33 | | 17:46 (32) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 24 | 10:03 (29) | 17:53 | 18:50 | 27 | 18:13 (32) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (29) | 07:41 | 06:31 | | 17:45 (32) | 06:13 | 05:13 | 04:53 |
| | 16:49 | 23 | 10:03 (29) | 17:55 | 18:52 | 27 | 18:12 (32) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (29) | 07:38 | 06:28 | | 17:46 (32) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 22 | 10:03 (29) | 17:57 | 18:54 | 26 | 18:12 (32) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | 09:41 (29) | 07:36 | 06:26 | | 17:46 (32) | 06:08 | 05:10 | 04:53 |
| | 16:53 | 22 | 10:03 (29) | 17:59 | 18:56 | 24 | 18:10 (32) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | 09:42 (29) | 07:34 | 06:23 | | 17:46 (32) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 20 | 10:02 (29) | 18:01 | 18:57 | 23 | 18:09 (32) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | 09:43 (29) | 07:31 | 06:21 | | 17:47 (32) | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18 | 10:01 (29) | 18:03 | 18:59 | 21 | 18:08 (32) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | 09:44 (29) | 07:29 | 06:18 | | 17:48 (32) | 06:01 | 05:06 | 04:55 |
| | 17:00 | 16 | 10:00 (29) | 18:05 | 19:01 | 18 | 18:06 (32) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:47 (29) | | 07:15 | | 18:50 (32) | 05:59 | 05:05 | 04:55 |
| | 17:02 | 13 | 10:00 (29) | | 20:03 | 15 | 19:05 (32) | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | 09:49 (29) | | 07:13 | | 18:53 (32) | 05:57 | 05:04 | 04:56 |
| | 17:04 | 9 | 09:58 (29) | | 20:05 | 8 | 19:01 (32) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 582 | | | | 352 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,65 | | | | 0,99 | | | | |
| Total reduction | | 0,11 | | | | 0,31 | | | | |
| Total, real | | 63 | | | | 109 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | | 09:19 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | 21 | 09:40 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | | 09:20 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | 20 | 09:40 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | | 09:21 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | 20 | 09:41 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 07:43 | | | 08:40 | | 09:21 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | | 16:51 | | | 16:07 | 19 | 09:40 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 07:45 | | | 08:41 | | 09:22 (29) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | 16:49 | | | 16:07 | 18 | 09:40 (29) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | 09:23 (29) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | 16 | 09:39 (29) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | 07:49 | | | 08:44 | | 09:24 (29) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | 16:45 | | | 16:05 | 16 | 09:40 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 07:51 | | | 08:45 | | 09:25 (29) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | | 16:43 | | | 16:05 | 14 | 09:39 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 07:53 | | | 08:47 | | 09:26 (29) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | 16:41 | | | 16:05 | 13 | 09:39 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | 07:55 | | | 08:48 | | 09:27 (29) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | 16:40 | | | 16:04 | 12 | 09:39 (29) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | 07:57 | | | 08:49 | | 09:28 (29) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | 16:38 | | | 16:04 | 10 | 09:38 (29) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | 07:59 | | 09:20 (29) | 08:50 | | 09:30 (29) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | 16:36 | 9 | 09:29 (29) | 16:04 | 8 | 09:38 (29) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:45 (32) | 07:58 | | 08:01 | | 09:19 (29) | 08:51 | | 09:32 (29) |
| | 22:09 | | 21:15 | | 19:58 | 6 | 18:51 (32) | 18:42 | | 16:34 | 13 | 09:32 (29) | 16:04 | 6 | 09:38 (29) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 18:41 (32) | 08:00 | | 08:03 | | 09:17 (29) | 08:52 | | 09:33 (29) |
| | 22:08 | | 21:12 | | 19:56 | 13 | 18:54 (32) | 18:39 | | 16:32 | 16 | 09:33 (29) | 16:03 | 3 | 09:36 (29) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:38 (32) | 08:02 | | 08:05 | | 09:16 (29) | 08:53 | | |
| | 22:06 | | 21:10 | | 19:53 | 18 | 18:56 (32) | 18:37 | | 16:31 | 18 | 09:34 (29) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:36 (32) | 08:04 | | 08:07 | | 09:15 (29) | 08:54 | | |
| | 22:05 | | 21:08 | | 19:51 | 20 | 18:56 (32) | 18:34 | | 16:29 | 20 | 09:35 (29) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:34 (32) | 08:06 | | 08:09 | | 09:14 (29) | 08:55 | | |
| | 22:04 | | 21:05 | | 19:48 | 23 | 18:57 (32) | 18:32 | | 16:27 | 22 | 09:36 (29) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:33 (32) | 08:08 | | 08:11 | | 09:15 (29) | 08:56 | | |
| | 22:03 | | 21:03 | | 19:46 | 25 | 18:58 (32) | 18:29 | | 16:26 | 22 | 09:37 (29) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:33 (32) | 08:10 | | 08:13 | | 09:15 (29) | 08:57 | | |
| | 22:01 | | 21:01 | | 19:43 | 25 | 18:58 (32) | 18:27 | | 16:24 | 23 | 09:38 (29) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:32 (32) | 08:12 | | 08:15 | | 09:14 (29) | 08:57 | | |
| | 22:00 | | 20:58 | | 19:40 | 26 | 18:58 (32) | 18:25 | | 16:23 | 24 | 09:38 (29) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:32 (32) | 08:14 | | 08:17 | | 09:14 (29) | 08:58 | | |
| | 21:58 | | 20:56 | | 19:38 | 26 | 18:58 (32) | 18:22 | | 16:21 | 24 | 09:38 (29) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:31 (32) | 08:16 | | 08:19 | | 09:14 (29) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | 27 | 18:58 (32) | 18:20 | | 16:20 | 25 | 09:39 (29) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:31 (32) | 08:18 | | 08:21 | | 09:14 (29) | 08:59 | | |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:57 (32) | 18:18 | | 16:19 | 25 | 09:39 (29) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:30 (32) | 08:20 | | 08:23 | | 09:15 (29) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 26 | 18:56 (32) | 18:15 | | 16:17 | 24 | 09:39 (29) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:31 (32) | 07:22 | | 08:24 | | 09:15 (29) | 09:00 | | |
| | 21:52 | | 20:46 | | 19:27 | 24 | 18:55 (32) | 17:13 | | 16:16 | 24 | 09:39 (29) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:31 (32) | 07:24 | | 08:26 | | 09:15 (29) | 09:00 | | |
| | 21:50 | | 20:44 | | 19:25 | 23 | 18:54 (32) | 17:11 | | 16:15 | 24 | 09:39 (29) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:32 (32) | 07:26 | | 08:28 | | 09:16 (29) | 09:00 | | |
| | 21:49 | | 20:42 | | 19:22 | 20 | 18:52 (32) | 17:08 | | 16:14 | 24 | 09:40 (29) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:34 (32) | 07:28 | | 08:30 | | 09:16 (29) | 09:01 | | |
| | 21:47 | | 20:39 | | 19:20 | 16 | 18:50 (32) | 17:06 | | 16:13 | 24 | 09:40 (29) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:36 (32) | 07:30 | | 08:31 | | 09:17 (29) | 09:01 | | |
| | 21:45 | | 20:37 | | 19:17 | 11 | 18:47 (32) | 17:04 | | 16:12 | 23 | 09:40 (29) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | 09:18 (29) | 09:01 | | 09:40 (29) |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | 22 | 09:40 (29) | 16:11 | 5 | 09:45 (29) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | | 09:39 (29) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | 8 | 09:47 (29) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | | | 355 | | | | | 406 | | | 209 | |
| Sun reduction | | | | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | | | 0,65 | | | 0,65 | |
| Total reduction | | | | | | 0,36 | | | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 128 | | | | | 38 | | | 17 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (29) | 08:27 | | 07:26 | | | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 14 | 09:52 (29) | 17:08 | | 18:07 | | | 20:09 | | 21:08 | 22:02 |
| 2 | 09:00 | | 09:39 (29) | 08:26 | | 07:24 | | | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 15 | 09:54 (29) | 17:10 | | 18:09 | | | 20:11 | | 21:10 | 22:03 |
| 3 | 09:00 | | 09:38 (29) | 08:24 | | 07:22 | | | 07:03 | | 05:50 | 05:00 |
| | 16:16 | 16 | 09:54 (29) | 17:12 | | 18:11 | | | 20:13 | | 21:12 | 22:05 |
| 4 | 09:00 | | 09:39 (29) | 08:22 | | 07:19 | | | 07:00 | | 05:48 | 04:59 |
| | 16:17 | 17 | 09:56 (29) | 17:14 | | 18:13 | | | 20:15 | | 21:14 | 22:06 |
| 5 | 08:59 | | 09:38 (29) | 08:20 | | 07:17 | | | 06:57 | | 05:46 | 04:58 |
| | 16:19 | 18 | 09:56 (29) | 17:16 | | 18:15 | | | 20:17 | | 21:16 | 22:07 |
| 6 | 08:59 | | 09:39 (29) | 08:18 | | 07:14 | | | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 19 | 09:58 (29) | 17:19 | | 18:17 | | | 20:19 | | 21:18 | 22:08 |
| 7 | 08:58 | | 09:39 (29) | 08:16 | | 07:12 | | | 06:52 | | 05:42 | 04:56 |
| | 16:21 | 19 | 09:58 (29) | 17:21 | | 18:19 | | | 20:21 | | 21:20 | 22:09 |
| 8 | 08:58 | | 09:39 (29) | 08:14 | | 07:09 | | | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 20 | 09:59 (29) | 17:23 | | 18:22 | | | 20:23 | | 21:22 | 22:10 |
| 9 | 08:57 | | 09:38 (29) | 08:12 | | 07:07 | | | 06:47 | | 05:38 | 04:55 |
| | 16:24 | 22 | 10:00 (29) | 17:25 | | 18:24 | | | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | | 09:38 (29) | 08:10 | | 07:04 | | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | 22 | 10:00 (29) | 17:27 | | 18:26 | | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | 09:39 (29) | 08:08 | | 07:02 | | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | 22 | 10:01 (29) | 17:29 | | 18:28 | | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | 09:39 (29) | 08:06 | | 06:59 | | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 23 | 10:02 (29) | 17:31 | | 18:30 | | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 09:39 (29) | 08:03 | | 06:56 | | 17:52 (32) | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 23 | 10:02 (29) | 17:33 | | 18:32 | 12 | 18:04 (32) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 09:40 (29) | 08:01 | | 06:54 | | 17:50 (32) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 23 | 10:03 (29) | 17:36 | | 18:34 | 17 | 18:07 (32) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 09:39 (29) | 07:59 | | 06:51 | | 17:48 (32) | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 24 | 10:03 (29) | 17:38 | | 18:36 | 20 | 18:08 (32) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:40 (29) | 07:57 | | 06:49 | | 17:46 (32) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 24 | 10:04 (29) | 17:40 | | 18:38 | 22 | 18:08 (32) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:40 (29) | 07:55 | | 06:46 | | 17:45 (32) | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 25 | 10:05 (29) | 17:42 | | 18:40 | 25 | 18:10 (32) | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | 09:40 (29) | 07:52 | | 06:44 | | 17:44 (32) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 24 | 10:04 (29) | 17:44 | | 18:42 | 25 | 18:09 (32) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | | 09:41 (29) | 07:50 | | 06:41 | | 17:44 (32) | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 24 | 10:05 (29) | 17:46 | | 18:44 | 26 | 18:10 (32) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | | 09:41 (29) | 07:48 | | 06:39 | | 17:43 (32) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 24 | 10:05 (29) | 17:48 | | 18:46 | 27 | 18:10 (32) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | | 09:42 (29) | 07:46 | | 06:36 | | 17:42 (32) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 23 | 10:05 (29) | 17:50 | | 18:48 | 27 | 18:09 (32) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | | 09:42 (29) | 07:43 | | 06:33 | | 17:43 (32) | 06:15 | | 05:15 | 04:52 |
| | 16:48 | 23 | 10:05 (29) | 17:53 | | 18:50 | 26 | 18:09 (32) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | | 09:43 (29) | 07:41 | | 06:31 | | 17:43 (32) | 06:13 | | 05:13 | 04:53 |
| | 16:49 | 21 | 10:04 (29) | 17:55 | | 18:52 | 25 | 18:08 (32) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:44 (29) | 07:38 | | 06:28 | | 17:44 (32) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 21 | 10:05 (29) | 17:57 | | 18:54 | 24 | 18:08 (32) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | | 09:45 (29) | 07:36 | | 06:26 | | 17:44 (32) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 19 | 10:04 (29) | 17:59 | | 18:56 | 22 | 18:06 (32) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | | 09:46 (29) | 07:34 | | 06:23 | | 17:44 (32) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 17 | 10:03 (29) | 18:01 | | 18:57 | 20 | 18:04 (32) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | | 09:47 (29) | 07:31 | | 06:21 | | 17:46 (32) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 15 | 10:02 (29) | 18:03 | | 18:59 | 17 | 18:03 (32) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | | 09:49 (29) | 07:29 | | 06:18 | | 17:48 (32) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | 11 | 10:00 (29) | 18:05 | | 19:01 | 12 | 18:00 (32) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:53 (29) | | | 07:15 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 5 | 09:58 (29) | | | 20:03 | | | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | | | 20:05 | | | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 573 | | | | | 347 | | | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | | | |
| Wind dir. red. | | 0,64 | | | | | 0,99 | | | | | |
| Total reduction | | 0,11 | | | | | 0,31 | | | | | |
| Total, real | | 61 | | | | | 107 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 18:35 (32) | 07:36 | | | 08:35 | | 09:21 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 6 | 18:41 (32) | 16:58 | | | 16:10 | 22 | 09:43 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | | 07:38 | | | 08:36 | | 09:22 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | | 16:55 | | | 16:09 | 21 | 09:43 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | | 07:41 | | | 08:38 | | 09:23 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | | 16:53 | | | 16:08 | 21 | 09:44 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | | 07:43 | | | 08:40 | | 09:23 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | | | 16:51 | | | 16:07 | 20 | 09:43 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | | 07:45 | | | 08:41 | | 09:24 (29) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | | 16:49 | | | 16:07 | 19 | 09:43 (29) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | | 07:47 | | | 08:43 | | 09:24 (29) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | | | 16:47 | | | 16:06 | 19 | 09:43 (29) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | | 07:49 | | | 08:44 | | 09:25 (29) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | | 16:45 | | | 16:05 | 18 | 09:43 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | | 07:51 | | | 08:45 | | 09:26 (29) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | | | 16:43 | | | 16:05 | 17 | 09:43 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:27 (29) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 16 | 09:43 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:28 (29) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 15 | 09:43 (29) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:29 (29) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 14 | 09:43 (29) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:30 (29) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 13 | 09:43 (29) |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | | 08:01 | | 09:24 (29) | 08:51 | | 09:31 (29) |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | | | 16:34 | 7 | 09:31 (29) | 16:04 | 12 | 09:43 (29) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | 09:22 (29) | 08:52 | | 09:32 (29) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | 11 | 09:33 (29) | 16:03 | 11 | 09:43 (29) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:39 (32) | 08:02 | | | 08:05 | | 09:20 (29) | 08:53 | | 09:33 (29) |
| | 22:06 | | 21:10 | | 19:53 | 11 | 18:50 (32) | 18:37 | | | 16:31 | 15 | 09:35 (29) | 16:03 | 10 | 09:43 (29) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:35 (32) | 08:04 | | | 08:07 | | 09:19 (29) | 08:54 | | 09:34 (29) |
| | 22:05 | | 21:08 | | 19:51 | 16 | 18:51 (32) | 18:34 | | | 16:29 | 17 | 09:36 (29) | 16:03 | 9 | 09:43 (29) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:33 (32) | 08:06 | | | 08:09 | | 09:18 (29) | 08:55 | | 09:35 (29) |
| | 22:04 | | 21:05 | | 19:48 | 19 | 18:52 (32) | 18:32 | | | 16:27 | 19 | 09:37 (29) | 16:04 | 8 | 09:43 (29) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:31 (32) | 08:08 | | | 08:11 | | 09:18 (29) | 08:56 | | 09:36 (29) |
| | 22:03 | | 21:03 | | 19:46 | 22 | 18:53 (32) | 18:29 | | | 16:26 | 21 | 09:39 (29) | 16:04 | 7 | 09:43 (29) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:30 (32) | 08:10 | | | 08:13 | | 09:18 (29) | 08:57 | | 09:36 (29) |
| | 22:01 | | 21:01 | | 19:43 | 24 | 18:54 (32) | 18:27 | | | 16:24 | 21 | 09:39 (29) | 16:04 | 7 | 09:43 (29) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:29 (32) | 08:12 | | | 08:15 | | 09:17 (29) | 08:57 | | 09:37 (29) |
| | 22:00 | | 20:58 | | 19:40 | 25 | 18:54 (32) | 18:25 | | | 16:23 | 23 | 09:40 (29) | 16:04 | 6 | 09:43 (29) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:29 (32) | 08:14 | | | 08:17 | | 09:17 (29) | 08:58 | | 09:37 (29) |
| | 21:58 | | 20:56 | | 19:38 | 26 | 18:55 (32) | 18:22 | | | 16:21 | 23 | 09:40 (29) | 16:05 | 6 | 09:43 (29) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:28 (32) | 08:16 | | | 08:19 | | 09:17 (29) | 08:59 | | 09:38 (29) |
| | 21:57 | | 20:54 | | 19:35 | 27 | 18:55 (32) | 18:20 | | | 16:20 | 24 | 09:41 (29) | 16:05 | 6 | 09:44 (29) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:28 (32) | 08:18 | | | 08:21 | | 09:17 (29) | 08:59 | | 09:38 (29) |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:54 (32) | 18:18 | | | 16:19 | 24 | 09:41 (29) | 16:06 | 6 | 09:44 (29) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:27 (32) | 08:20 | | | 08:23 | | 09:17 (29) | 09:00 | | 09:39 (29) |
| | 21:54 | | 20:49 | | 19:30 | 26 | 18:53 (32) | 18:15 | | | 16:17 | 24 | 09:41 (29) | 16:06 | 6 | 09:45 (29) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:27 (32) | 07:22 | | | 08:24 | | 09:17 (29) | 09:00 | | 09:39 (29) |
| | 21:52 | | 20:46 | | 19:27 | 25 | 18:52 (32) | 17:13 | | | 16:16 | 25 | 09:42 (29) | 16:07 | 7 | 09:46 (29) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:27 (32) | 07:24 | | | 08:26 | | 09:18 (29) | 09:00 | | 09:39 (29) |
| | 21:50 | | 20:44 | | 19:25 | 25 | 18:52 (32) | 17:11 | | | 16:15 | 24 | 09:42 (29) | 16:08 | 8 | 09:47 (29) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:28 (32) | 07:26 | | | 08:28 | | 09:18 (29) | 09:00 | | 09:39 (29) |
| | 21:49 | | 20:42 | | 19:22 | 23 | 18:51 (32) | 17:08 | | | 16:14 | 24 | 09:42 (29) | 16:08 | 8 | 09:47 (29) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:28 (32) | 07:28 | | | 08:30 | | 09:19 (29) | 09:01 | | 09:39 (29) |
| | 21:47 | | 20:39 | | 19:20 | 21 | 18:49 (32) | 17:06 | | | 16:13 | 23 | 09:42 (29) | 16:09 | 9 | 09:48 (29) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:29 (32) | 07:30 | | | 08:31 | | 09:19 (29) | 09:01 | | 09:39 (29) |
| | 21:45 | | 20:37 | | 19:17 | 18 | 18:47 (32) | 17:04 | | | 16:12 | 24 | 09:43 (29) | 16:10 | 10 | 09:49 (29) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:31 (32) | 07:32 | | | 08:33 | | 09:20 (29) | 09:01 | | 09:39 (29) |
| | 21:43 | | 20:34 | | 19:14 | 14 | 18:45 (32) | 17:02 | | | 16:11 | 23 | 09:43 (29) | 16:11 | 12 | 09:51 (29) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:39 (29) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 13 | 09:52 (29) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 348 | | | 6 | | | 372 | | | 376 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | 0,99 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 125 | | | 2 | | | 35 | | | 30 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (29) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17 | 09:56 (29) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:40 (29) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 18 | 09:58 (29) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:39 (29) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 19 | 09:58 (29) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:40 (29) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 19 | 09:59 (29) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:40 (29) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (29) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:41 (29) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 20 | 10:01 (29) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:40 (29) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 21 | 10:01 (29) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:40 (29) | 08:14 | 07:09 | | | 06:50 | 05:40 | 04:55 |
| | 16:23 | 22 | 10:02 (29) | 17:23 | 18:22 | | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:40 (29) | 08:12 | 07:07 | | | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:03 (29) | 17:25 | 18:24 | | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:41 (29) | 08:10 | 07:04 | | | 06:45 | 05:36 | 04:54 |
| | 16:26 | 22 | 10:03 (29) | 17:27 | 18:26 | | | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:41 (29) | 08:08 | 07:02 | | 17:51 (32) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:04 (29) | 17:29 | 18:28 | 8 | 17:59 (32) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:41 (29) | 08:06 | 06:59 | | 17:48 (32) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 23 | 10:04 (29) | 17:31 | 18:30 | 14 | 18:02 (32) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:41 (29) | 08:03 | 06:56 | | 17:45 (32) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 24 | 10:05 (29) | 17:33 | 18:32 | 19 | 18:04 (32) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:42 (29) | 08:01 | 06:54 | | 17:44 (32) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 24 | 10:06 (29) | 17:36 | 18:34 | 22 | 18:06 (32) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:42 (29) | 07:59 | 06:51 | | 17:43 (32) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 24 | 10:06 (29) | 17:38 | 18:36 | 23 | 18:06 (32) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:42 (29) | 07:57 | 06:49 | | 17:41 (32) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 24 | 10:06 (29) | 17:40 | 18:38 | 25 | 18:06 (32) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:43 (29) | 07:55 | 06:46 | | 17:41 (32) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 24 | 10:07 (29) | 17:42 | 18:40 | 26 | 18:07 (32) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:43 (29) | 07:52 | 06:44 | | 17:40 (32) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 23 | 10:06 (29) | 17:44 | 18:42 | 26 | 18:06 (32) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:44 (29) | 07:50 | 06:41 | | 17:40 (32) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 23 | 10:07 (29) | 17:46 | 18:44 | 27 | 18:07 (32) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:44 (29) | 07:48 | 06:39 | | 17:40 (32) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 23 | 10:07 (29) | 17:48 | 18:46 | 26 | 18:06 (32) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:45 (29) | 07:46 | 06:36 | | 17:39 (32) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 22 | 10:07 (29) | 17:50 | 18:48 | 26 | 18:05 (32) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:46 (29) | 07:43 | 06:33 | | 17:40 (32) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 21 | 10:07 (29) | 17:53 | 18:50 | 25 | 18:05 (32) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:46 (29) | 07:41 | 06:31 | | 17:40 (32) | 06:13 | 05:13 | 04:53 |
| | 16:49 | 20 | 10:06 (29) | 17:55 | 18:52 | 23 | 18:03 (32) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:48 (29) | 07:38 | 06:28 | | 17:42 (32) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 18 | 10:06 (29) | 17:57 | 18:54 | 21 | 18:03 (32) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | 09:49 (29) | 07:36 | 06:26 | | 17:42 (32) | 06:08 | 05:10 | 04:53 |
| | 16:53 | 16 | 10:05 (29) | 17:59 | 18:56 | 19 | 18:01 (32) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | 09:50 (29) | 07:34 | 06:23 | | 17:44 (32) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 14 | 10:04 (29) | 18:01 | 18:57 | 14 | 17:58 (32) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | 09:52 (29) | 07:31 | 06:21 | | 17:47 (32) | 06:04 | 05:07 | 04:54 |
| | 16:58 | 10 | 10:02 (29) | 18:03 | 18:59 | 8 | 17:55 (32) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 557 | | | | 352 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,63 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,31 | | | | |
| Total, real | | 58 | | | | 108 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 18:26 (32) | 07:36 | | | 08:35 | | 09:23 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 16 | 18:42 (32) | 16:58 | | | 16:10 | 23 | 09:46 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 18:28 (32) | 07:38 | | | 08:36 | | 09:24 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 12 | 18:40 (32) | 16:55 | | | 16:09 | 22 | 09:46 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | | 07:41 | | | 08:38 | | 09:25 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | | 16:53 | | | 16:08 | 22 | 09:47 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | | 07:43 | | | 08:40 | | 09:24 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | | | 16:51 | | | 16:07 | 22 | 09:46 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | | 07:45 | | | 08:41 | | 09:25 (29) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | | 16:49 | | | 16:07 | 22 | 09:47 (29) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | | 07:47 | | | 08:43 | | 09:26 (29) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | | | 16:47 | | | 16:06 | 20 | 09:46 (29) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | | 07:49 | | | 08:44 | | 09:27 (29) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | | 16:45 | | | 16:05 | 20 | 09:47 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | | 07:51 | | | 08:45 | | 09:27 (29) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | | | 16:43 | | | 16:05 | 19 | 09:46 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:28 (29) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 19 | 09:47 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:29 (29) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 18 | 09:47 (29) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:30 (29) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 17 | 09:47 (29) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:31 (29) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 16 | 09:47 (29) |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | | 08:01 | | | 08:51 | | 09:32 (29) |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | | | 16:34 | | | 16:04 | 15 | 09:47 (29) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | | 08:52 | | 09:32 (29) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | | | 16:03 | 15 | 09:47 (29) |
| 15 | 05:12 | | 06:05 | | 07:04 | | | 08:02 | | | 08:05 | | 09:25 (29) | 08:53 | | 09:33 (29) |
| | 22:06 | | 21:10 | | 19:53 | | | 18:37 | | | 16:31 | 10 | 09:35 (29) | 16:03 | 14 | 09:47 (29) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:37 (32) | 08:04 | | | 08:07 | | 09:23 (29) | 08:54 | | 09:34 (29) |
| | 22:05 | | 21:08 | | 19:51 | 5 | 18:42 (32) | 18:34 | | | 16:29 | 14 | 09:37 (29) | 16:03 | 14 | 09:48 (29) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:33 (32) | 08:06 | | | 08:09 | | 09:22 (29) | 08:55 | | 09:35 (29) |
| | 22:04 | | 21:05 | | 19:48 | 13 | 18:46 (32) | 18:32 | | | 16:27 | 16 | 09:38 (29) | 16:04 | 13 | 09:48 (29) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:30 (32) | 08:08 | | | 08:11 | | 09:22 (29) | 08:56 | | 09:36 (29) |
| | 22:03 | | 21:03 | | 19:46 | 18 | 18:48 (32) | 18:29 | | | 16:26 | 18 | 09:40 (29) | 16:04 | 12 | 09:48 (29) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:28 (32) | 08:10 | | | 08:13 | | 09:21 (29) | 08:57 | | 09:35 (29) |
| | 22:01 | | 21:01 | | 19:43 | 21 | 18:49 (32) | 18:27 | | | 16:24 | 20 | 09:41 (29) | 16:04 | 13 | 09:48 (29) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:27 (32) | 08:12 | | | 08:15 | | 09:21 (29) | 08:57 | | 09:36 (29) |
| | 22:00 | | 20:58 | | 19:40 | 23 | 18:50 (32) | 18:25 | | | 16:23 | 21 | 09:42 (29) | 16:04 | 13 | 09:49 (29) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:26 (32) | 08:14 | | | 08:17 | | 09:20 (29) | 08:58 | | 09:36 (29) |
| | 21:58 | | 20:56 | | 19:38 | 24 | 18:50 (32) | 18:22 | | | 16:21 | 22 | 09:42 (29) | 16:05 | 12 | 09:48 (29) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:25 (32) | 08:16 | | | 08:19 | | 09:20 (29) | 08:59 | | 09:37 (29) |
| | 21:57 | | 20:54 | | 19:35 | 26 | 18:51 (32) | 18:20 | | | 16:20 | 23 | 09:43 (29) | 16:05 | 12 | 09:49 (29) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:25 (32) | 08:18 | | | 08:21 | | 09:20 (29) | 08:59 | | 09:37 (29) |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:51 (32) | 18:18 | | | 16:19 | 23 | 09:43 (29) | 16:06 | 13 | 09:50 (29) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:23 (32) | 08:20 | | | 08:23 | | 09:20 (29) | 09:00 | | 09:38 (29) |
| | 21:54 | | 20:49 | | 19:30 | 27 | 18:50 (32) | 18:15 | | | 16:17 | 24 | 09:44 (29) | 16:06 | 13 | 09:51 (29) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:23 (32) | 07:22 | | | 08:24 | | 09:20 (29) | 09:00 | | 09:39 (29) |
| | 21:52 | | 20:46 | | 19:27 | 26 | 18:49 (32) | 17:13 | | | 16:16 | 24 | 09:44 (29) | 16:07 | 12 | 09:51 (29) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:23 (32) | 07:24 | | | 08:26 | | 09:20 (29) | 09:00 | | 09:39 (29) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:49 (32) | 17:11 | | | 16:15 | 24 | 09:44 (29) | 16:08 | 13 | 09:52 (29) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:23 (32) | 07:26 | | | 08:28 | | 09:21 (29) | 09:00 | | 09:39 (29) |
| | 21:49 | | 20:42 | | 19:22 | 25 | 18:48 (32) | 17:08 | | | 16:14 | 24 | 09:45 (29) | 16:08 | 13 | 09:52 (29) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:23 (32) | 07:28 | | | 08:30 | | 09:21 (29) | 09:01 | | 09:39 (29) |
| | 21:47 | | 20:39 | | 19:20 | 24 | 18:47 (32) | 17:06 | | | 16:13 | 24 | 09:45 (29) | 16:09 | 14 | 09:53 (29) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:24 (32) | 07:30 | | | 08:31 | | 09:22 (29) | 09:01 | | 09:39 (29) |
| | 21:45 | | 20:37 | | 19:17 | 22 | 18:46 (32) | 17:04 | | | 16:12 | 23 | 09:45 (29) | 16:10 | 15 | 09:54 (29) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:25 (32) | 07:32 | | | 08:33 | | 09:22 (29) | 09:01 | | 09:39 (29) |
| | 21:43 | | 20:34 | | 19:14 | 20 | 18:45 (32) | 17:02 | | | 16:11 | 24 | 09:46 (29) | 16:11 | 16 | 09:55 (29) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:40 (29) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 16 | 09:56 (29) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 326 | | | 28 | | | 334 | | | 498 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,98 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 116 | | | 8 | | | 31 | | | 39 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:41 (29) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 19 | 10:00 (29) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:41 (29) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 20 | 10:01 (29) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:41 (29) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 20 | 10:01 (29) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:42 (29) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 20 | 10:02 (29) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:42 (29) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 21 | 10:03 (29) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:42 (29) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 22 | 10:04 (29) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:42 (29) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 22 | 10:04 (29) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:42 (29) | 08:14 | 07:09 | | | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:05 (29) | 17:23 | 18:22 | | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:43 (29) | 08:12 | 07:07 | | 17:50 (32) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 22 | 10:05 (29) | 17:25 | 18:24 | 3 | 17:53 (32) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:43 (29) | 08:10 | 07:04 | | 17:46 (32) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:06 (29) | 17:27 | 18:26 | 12 | 17:58 (32) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:43 (29) | 08:08 | 07:02 | | 17:43 (32) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:06 (29) | 17:29 | 18:28 | 17 | 18:00 (32) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:43 (29) | 08:06 | 06:59 | | 17:41 (32) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 24 | 10:07 (29) | 17:31 | 18:30 | 21 | 18:02 (32) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:44 (29) | 08:03 | 06:56 | | 17:40 (32) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 24 | 10:08 (29) | 17:33 | 18:32 | 22 | 18:02 (32) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:45 (29) | 08:01 | 06:54 | | 17:39 (32) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 23 | 10:08 (29) | 17:36 | 18:34 | 24 | 18:03 (32) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:44 (29) | 07:59 | 06:51 | | 17:38 (32) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 24 | 10:08 (29) | 17:38 | 18:36 | 25 | 18:03 (32) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:45 (29) | 07:57 | 06:49 | | 17:37 (32) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 23 | 10:08 (29) | 17:40 | 18:38 | 26 | 18:03 (32) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:46 (29) | 07:55 | 06:46 | | 17:37 (32) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 23 | 10:09 (29) | 17:42 | 18:40 | 26 | 18:03 (32) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:46 (29) | 07:52 | 06:44 | | 17:36 (32) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 22 | 10:08 (29) | 17:44 | 18:42 | 27 | 18:03 (32) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:47 (29) | 07:50 | 06:41 | | 17:37 (32) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 22 | 10:09 (29) | 17:46 | 18:44 | 26 | 18:03 (32) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:47 (29) | 07:48 | 06:39 | | 17:37 (32) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 21 | 10:08 (29) | 17:48 | 18:46 | 25 | 18:02 (32) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:49 (29) | 07:46 | 06:36 | | 17:37 (32) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 20 | 10:09 (29) | 17:50 | 18:48 | 23 | 18:00 (32) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:49 (29) | 07:43 | 06:33 | | 17:38 (32) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 19 | 10:08 (29) | 17:53 | 18:50 | 22 | 18:00 (32) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:50 (29) | 07:41 | 06:31 | | 17:39 (32) | 06:13 | 05:13 | 04:53 |
| | 16:49 | 17 | 10:07 (29) | 17:55 | 18:52 | 19 | 17:58 (32) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:52 (29) | 07:38 | 06:28 | | 17:41 (32) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 15 | 10:07 (29) | 17:57 | 18:54 | 15 | 17:56 (32) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | 09:54 (29) | 07:36 | 06:26 | | 17:43 (32) | 06:08 | 05:10 | 04:53 |
| | 16:53 | 11 | 10:05 (29) | 17:59 | 18:56 | 10 | 17:53 (32) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | 09:56 (29) | 07:34 | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 6 | 10:02 (29) | 18:01 | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 529 | | | | 343 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,63 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,30 | | | | |
| Total, real | | 54 | | | | 104 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:38 | | | 07:34 | | 18:20 (32) | 07:36 | | | 08:35 | | 09:25 (29) |
| | 22:18 | 21:40 | 20:29 | | | 19:12 | 21 | 18:41 (32) | 16:58 | | | 16:10 | 24 | 09:49 (29) |
| 2 | 04:57 | 05:41 | 06:39 | | | 07:36 | | 18:21 (32) | 07:38 | | | 08:36 | | 09:26 (29) |
| | 22:17 | 21:38 | 20:27 | | | 19:09 | 19 | 18:40 (32) | 16:55 | | | 16:09 | 23 | 09:49 (29) |
| 3 | 04:58 | 05:43 | 06:41 | | | 07:38 | | 18:22 (32) | 07:41 | | | 08:38 | | 09:27 (29) |
| | 22:17 | 21:36 | 20:24 | | | 19:07 | 15 | 18:37 (32) | 16:53 | | | 16:08 | 23 | 09:50 (29) |
| 4 | 04:59 | 05:45 | 06:43 | | | 07:40 | | 18:25 (32) | 07:43 | | | 08:40 | | 09:27 (29) |
| | 22:16 | 21:34 | 20:22 | | | 19:04 | 9 | 18:34 (32) | 16:51 | | | 16:07 | 22 | 09:49 (29) |
| 5 | 05:00 | 05:47 | 06:45 | | | 07:42 | | | 07:45 | | | 08:41 | | 09:27 (29) |
| | 22:16 | 21:32 | 20:19 | | | 19:02 | | | 16:49 | | | 16:07 | 23 | 09:50 (29) |
| 6 | 05:01 | 05:49 | 06:47 | | | 07:44 | | | 07:47 | | | 08:43 | | 09:28 (29) |
| | 22:15 | 21:30 | 20:16 | | | 18:59 | | | 16:47 | | | 16:06 | 21 | 09:49 (29) |
| 7 | 05:02 | 05:50 | 06:49 | | | 07:46 | | | 07:49 | | | 08:44 | | 09:29 (29) |
| | 22:14 | 21:28 | 20:14 | | | 18:57 | | | 16:45 | | | 16:05 | 21 | 09:50 (29) |
| 8 | 05:03 | 05:52 | 06:51 | | | 07:48 | | | 07:51 | | | 08:45 | | 09:29 (29) |
| | 22:14 | 21:25 | 20:11 | | | 18:54 | | | 16:43 | | | 16:05 | 20 | 09:49 (29) |
| 9 | 05:04 | 05:54 | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:30 (29) |
| | 22:13 | 21:23 | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 20 | 09:50 (29) |
| 10 | 05:05 | 05:56 | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:30 (29) |
| | 22:12 | 21:21 | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 20 | 09:50 (29) |
| 11 | 05:07 | 05:58 | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:32 (29) |
| | 22:11 | 21:19 | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 19 | 09:51 (29) |
| 12 | 05:08 | 06:00 | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:32 (29) |
| | 22:10 | 21:17 | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 19 | 09:51 (29) |
| 13 | 05:09 | 06:02 | 07:00 | | | 07:58 | | | 08:01 | | | 08:51 | | 09:33 (29) |
| | 22:09 | 21:15 | 19:58 | | | 18:42 | | | 16:34 | | | 16:04 | 18 | 09:51 (29) |
| 14 | 05:10 | 06:03 | 07:02 | | | 08:00 | | | 08:03 | | | 08:52 | | 09:33 (29) |
| | 22:08 | 21:12 | 19:56 | | | 18:39 | | | 16:32 | | | 16:03 | 18 | 09:51 (29) |
| 15 | 05:12 | 06:05 | 07:04 | | | 08:02 | | | 08:05 | | | 08:53 | | 09:34 (29) |
| | 22:06 | 21:10 | 19:53 | | | 18:37 | | | 16:31 | | | 16:03 | 17 | 09:51 (29) |
| 16 | 05:13 | 06:07 | 07:06 | | | 08:04 | | | 08:07 | | 09:29 (29) | 08:54 | | 09:35 (29) |
| | 22:05 | 21:08 | 19:51 | | | 18:34 | | | 16:29 | 6 | 09:35 (29) | 16:03 | 17 | 09:52 (29) |
| 17 | 05:15 | 06:09 | 07:08 | | | 08:06 | | | 08:09 | | 09:27 (29) | 08:55 | | 09:36 (29) |
| | 22:04 | 21:05 | 19:48 | | | 18:32 | | | 16:27 | 11 | 09:38 (29) | 16:04 | 16 | 09:52 (29) |
| 18 | 05:16 | 06:11 | 07:10 | | 18:31 (32) | 08:08 | | | 08:11 | | 09:26 (29) | 08:56 | | 09:36 (29) |
| | 22:03 | 21:03 | 19:46 | 8 | 18:39 (32) | 18:29 | | | 16:26 | 15 | 09:41 (29) | 16:04 | 16 | 09:52 (29) |
| 19 | 05:18 | 06:13 | 07:12 | | 18:28 (32) | 08:10 | | | 08:13 | | 09:25 (29) | 08:57 | | 09:36 (29) |
| | 22:01 | 21:01 | 19:43 | 14 | 18:42 (32) | 18:27 | | | 16:24 | 17 | 09:42 (29) | 16:04 | 16 | 09:52 (29) |
| 20 | 05:19 | 06:15 | 07:13 | | 18:26 (32) | 08:12 | | | 08:15 | | 09:24 (29) | 08:57 | | 09:37 (29) |
| | 22:00 | 20:58 | 19:40 | 18 | 18:44 (32) | 18:25 | | | 16:23 | 19 | 09:43 (29) | 16:04 | 16 | 09:53 (29) |
| 21 | 05:21 | 06:17 | 07:15 | | 18:24 (32) | 08:14 | | | 08:17 | | 09:24 (29) | 08:58 | | 09:37 (29) |
| | 21:58 | 20:56 | 19:38 | 21 | 18:45 (32) | 18:22 | | | 16:21 | 20 | 09:44 (29) | 16:05 | 16 | 09:53 (29) |
| 22 | 05:22 | 06:19 | 07:17 | | 18:23 (32) | 08:16 | | | 08:19 | | 09:23 (29) | 08:59 | | 09:38 (29) |
| | 21:57 | 20:54 | 19:35 | 23 | 18:46 (32) | 18:20 | | | 16:20 | 21 | 09:44 (29) | 16:05 | 16 | 09:54 (29) |
| 23 | 05:24 | 06:21 | 07:19 | | 18:22 (32) | 08:18 | | | 08:21 | | 09:23 (29) | 08:59 | | 09:38 (29) |
| | 21:55 | 20:51 | 19:33 | 24 | 18:46 (32) | 18:18 | | | 16:19 | 22 | 09:45 (29) | 16:06 | 16 | 09:54 (29) |
| 24 | 05:26 | 06:22 | 07:21 | | 18:20 (32) | 08:20 | | | 08:23 | | 09:23 (29) | 09:00 | | 09:39 (29) |
| | 21:54 | 20:49 | 19:30 | 25 | 18:45 (32) | 18:15 | | | 16:17 | 22 | 09:45 (29) | 16:06 | 16 | 09:55 (29) |
| 25 | 05:27 | 06:24 | 07:23 | | 18:19 (32) | 07:22 | | | 08:24 | | 09:23 (29) | 09:00 | | 09:39 (29) |
| | 21:52 | 20:46 | 19:27 | 26 | 18:45 (32) | 17:13 | | | 16:16 | 23 | 09:46 (29) | 16:07 | 16 | 09:55 (29) |
| 26 | 05:29 | 06:26 | 07:25 | | 18:19 (32) | 07:24 | | | 08:26 | | 09:23 (29) | 09:00 | | 09:40 (29) |
| | 21:50 | 20:44 | 19:25 | 26 | 18:45 (32) | 17:11 | | | 16:15 | 23 | 09:46 (29) | 16:08 | 16 | 09:56 (29) |
| 27 | 05:31 | 06:28 | 07:27 | | 18:19 (32) | 07:26 | | | 08:28 | | 09:23 (29) | 09:00 | | 09:40 (29) |
| | 21:49 | 20:42 | 19:22 | 26 | 18:45 (32) | 17:08 | | | 16:14 | 24 | 09:47 (29) | 16:08 | 16 | 09:56 (29) |
| 28 | 05:32 | 06:30 | 07:29 | | 18:19 (32) | 07:28 | | | 08:30 | | 09:24 (29) | 09:01 | | 09:40 (29) |
| | 21:47 | 20:39 | 19:20 | 25 | 18:44 (32) | 17:06 | | | 16:13 | 23 | 09:47 (29) | 16:09 | 17 | 09:57 (29) |
| 29 | 05:34 | 06:32 | 07:31 | | 18:19 (32) | 07:30 | | | 08:31 | | 09:24 (29) | 09:01 | | 09:40 (29) |
| | 21:45 | 20:37 | 19:17 | 25 | 18:44 (32) | 17:04 | | | 16:12 | 24 | 09:48 (29) | 16:10 | 18 | 09:58 (29) |
| 30 | 05:36 | 06:34 | 07:32 | | 18:19 (32) | 07:32 | | | 08:33 | | 09:25 (29) | 09:01 | | 09:41 (29) |
| | 21:43 | 20:34 | 19:14 | 24 | 18:43 (32) | 17:02 | | | 16:11 | 23 | 09:48 (29) | 16:11 | 18 | 09:59 (29) |
| 31 | 05:38 | 06:36 | | | | 07:34 | | | | | | 09:01 | | 09:41 (29) |
| | 21:41 | 20:32 | | | | 17:00 | | | | | | 16:12 | 19 | 10:00 (29) |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 285 | | | 64 | | | 293 | | | 573 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | 0,35 | | | 0,27 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 101 | | | 18 | | | 26 | | | 44 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:43 (29) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 20 | 10:03 (29) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:43 (29) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 21 | 10:04 (29) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:43 (29) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 21 | 10:04 (29) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:44 (29) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 22 | 10:06 (29) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:44 (29) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 22 | 10:06 (29) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:45 (29) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 22 | 10:07 (29) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:45 (29) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 23 | 10:08 (29) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:45 (29) | 08:14 | 07:09 | | 17:43 (32) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:08 (29) | 17:23 | 18:22 | 11 | 17:54 (32) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:45 (29) | 08:12 | 07:07 | | 17:40 (32) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:08 (29) | 17:25 | 18:24 | 15 | 17:55 (32) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:46 (29) | 08:10 | 07:04 | | 17:38 (32) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:09 (29) | 17:27 | 18:26 | 20 | 17:58 (32) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:46 (29) | 08:08 | 07:02 | | 17:37 (32) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:09 (29) | 17:29 | 18:28 | 21 | 17:58 (32) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:46 (29) | 08:06 | 06:59 | | 17:36 (32) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 24 | 10:10 (29) | 17:31 | 18:30 | 24 | 18:00 (32) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:47 (29) | 08:03 | 06:56 | | 17:35 (32) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 23 | 10:10 (29) | 17:33 | 18:32 | 25 | 18:00 (32) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:48 (29) | 08:01 | 06:54 | | 17:35 (32) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 23 | 10:11 (29) | 17:36 | 18:34 | 25 | 18:00 (32) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:47 (29) | 07:59 | 06:51 | | 17:34 (32) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 23 | 10:10 (29) | 17:38 | 18:36 | 26 | 18:00 (32) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:48 (29) | 07:57 | 06:49 | | 17:33 (32) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 23 | 10:11 (29) | 17:40 | 18:38 | 26 | 17:59 (32) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:49 (29) | 07:55 | 06:46 | | 17:33 (32) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 22 | 10:11 (29) | 17:42 | 18:40 | 26 | 17:59 (32) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:49 (29) | 07:52 | 06:44 | | 17:33 (32) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 21 | 10:10 (29) | 17:44 | 18:42 | 25 | 17:58 (32) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:51 (29) | 07:50 | 06:41 | | 17:34 (32) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 20 | 10:11 (29) | 17:46 | 18:44 | 24 | 17:58 (32) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:51 (29) | 07:48 | 06:39 | | 17:34 (32) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 19 | 10:10 (29) | 17:48 | 18:46 | 22 | 17:56 (32) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:53 (29) | 07:46 | 06:36 | | 17:35 (32) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17 | 10:10 (29) | 17:50 | 18:48 | 20 | 17:55 (32) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:54 (29) | 07:43 | 06:33 | | 17:37 (32) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 15 | 10:09 (29) | 17:53 | 18:50 | 16 | 17:53 (32) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:55 (29) | 07:41 | 06:31 | | 17:39 (32) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 12 | 10:07 (29) | 17:55 | 18:52 | 11 | 17:50 (32) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:58 (29) | 07:38 | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | 8 | 10:06 (29) | 17:57 | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 493 | | | | 337 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,61 | | | | 0,97 | | | | |
| Total reduction | | 0,10 | | | | 0,30 | | | | |
| Total, real | | 50 | | | | 102 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 18:15 (32) | 07:36 | | | 08:35 | | 09:28 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 24 | 18:39 (32) | 16:58 | | | 16:10 | 23 | 09:51 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 18:15 (32) | 07:38 | | | 08:36 | | 09:29 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 23 | 18:38 (32) | 16:55 | | | 16:09 | 23 | 09:52 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 18:16 (32) | 07:41 | | | 08:38 | | 09:29 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 20 | 18:36 (32) | 16:53 | | | 16:08 | 23 | 09:52 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 18:17 (32) | 07:43 | | | 08:40 | | 09:29 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | 18 | 18:35 (32) | 16:51 | | | 16:07 | 23 | 09:52 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 18:19 (32) | 07:45 | | | 08:41 | | 09:30 (29) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 13 | 18:32 (32) | 16:49 | | | 16:07 | 23 | 09:53 (29) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 18:22 (32) | 07:47 | | | 08:43 | | 09:30 (29) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | 6 | 18:28 (32) | 16:47 | | | 16:06 | 22 | 09:52 (29) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | | 07:49 | | | 08:44 | | 09:31 (29) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | | 16:45 | | | 16:05 | 22 | 09:53 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | | 07:51 | | | 08:45 | | 09:31 (29) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | | | 16:43 | | | 16:05 | 22 | 09:53 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:32 (29) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:54 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:32 (29) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 22 | 09:54 (29) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:34 (29) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 20 | 09:54 (29) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:34 (29) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 20 | 09:54 (29) |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | | 08:01 | | | 08:51 | | 09:35 (29) |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | | | 16:34 | | | 16:04 | 20 | 09:55 (29) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | | 08:52 | | 09:35 (29) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | | | 16:03 | 20 | 09:55 (29) |
| 15 | 05:12 | | 06:05 | | 07:04 | | | 08:02 | | | 08:05 | | | 08:53 | | 09:36 (29) |
| | 22:06 | | 21:10 | | 19:53 | | | 18:37 | | | 16:31 | | | 16:03 | 19 | 09:55 (29) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | | 08:07 | | | 08:54 | | 09:36 (29) |
| | 22:05 | | 21:08 | | 19:51 | | | 18:34 | | | 16:29 | | | 16:03 | 19 | 09:55 (29) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | | 08:09 | | | 08:55 | | 09:37 (29) |
| | 22:04 | | 21:05 | | 19:48 | | | 18:32 | | | 16:27 | | | 16:04 | 19 | 09:56 (29) |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | | 08:11 | | 09:32 (29) | 08:56 | | 09:38 (29) |
| | 22:03 | | 21:03 | | 19:46 | | | 18:29 | | | 16:26 | 8 | 09:40 (29) | 16:04 | 18 | 09:56 (29) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | | 08:13 | | 09:30 (29) | 08:57 | | 09:38 (29) |
| | 22:01 | | 21:01 | | 19:43 | | | 18:27 | | | 16:24 | 12 | 09:42 (29) | 16:04 | 18 | 09:56 (29) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:26 (32) | 08:12 | | | 08:15 | | 09:29 (29) | 08:57 | | 09:39 (29) |
| | 22:00 | | 20:58 | | 19:40 | 10 | 18:36 (32) | 18:25 | | | 16:23 | 15 | 09:44 (29) | 16:04 | 18 | 09:57 (29) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:23 (32) | 08:14 | | | 08:17 | | 09:28 (29) | 08:58 | | 09:39 (29) |
| | 21:58 | | 20:56 | | 19:38 | 15 | 18:38 (32) | 18:22 | | | 16:21 | 17 | 09:45 (29) | 16:05 | 18 | 09:57 (29) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:21 (32) | 08:16 | | | 08:19 | | 09:27 (29) | 08:59 | | 09:40 (29) |
| | 21:57 | | 20:54 | | 19:35 | 19 | 18:40 (32) | 18:20 | | | 16:20 | 19 | 09:46 (29) | 16:05 | 18 | 09:58 (29) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:19 (32) | 08:18 | | | 08:21 | | 09:27 (29) | 08:59 | | 09:40 (29) |
| | 21:55 | | 20:51 | | 19:33 | 22 | 18:41 (32) | 18:18 | | | 16:19 | 20 | 09:47 (29) | 16:06 | 18 | 09:58 (29) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:17 (32) | 08:20 | | | 08:23 | | 09:27 (29) | 09:00 | | 09:41 (29) |
| | 21:54 | | 20:49 | | 19:30 | 23 | 18:40 (32) | 18:15 | | | 16:17 | 20 | 09:47 (29) | 16:06 | 18 | 09:59 (29) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:16 (32) | 07:22 | | | 08:24 | | 09:26 (29) | 09:00 | | 09:41 (29) |
| | 21:52 | | 20:46 | | 19:27 | 25 | 18:41 (32) | 17:13 | | | 16:16 | 22 | 09:48 (29) | 16:07 | 18 | 09:59 (29) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:15 (32) | 07:24 | | | 08:26 | | 09:26 (29) | 09:00 | | 09:41 (29) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:41 (32) | 17:11 | | | 16:15 | 23 | 09:49 (29) | 16:08 | 19 | 10:00 (29) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:15 (32) | 07:26 | | | 08:28 | | 09:27 (29) | 09:00 | | 09:41 (29) |
| | 21:49 | | 20:42 | | 19:22 | 26 | 18:41 (32) | 17:08 | | | 16:14 | 22 | 09:49 (29) | 16:08 | 19 | 10:00 (29) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:14 (32) | 07:28 | | | 08:30 | | 09:27 (29) | 09:01 | | 09:42 (29) |
| | 21:47 | | 20:39 | | 19:20 | 27 | 18:41 (32) | 17:06 | | | 16:13 | 23 | 09:50 (29) | 16:09 | 19 | 10:01 (29) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:14 (32) | 07:30 | | | 08:31 | | 09:27 (29) | 09:01 | | 09:42 (29) |
| | 21:45 | | 20:37 | | 19:17 | 26 | 18:40 (32) | 17:04 | | | 16:12 | 23 | 09:50 (29) | 16:10 | 19 | 10:01 (29) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:14 (32) | 07:32 | | | 08:33 | | 09:27 (29) | 09:01 | | 09:42 (29) |
| | 21:43 | | 20:34 | | 19:14 | 26 | 18:40 (32) | 17:02 | | | 16:11 | 24 | 09:51 (29) | 16:11 | 20 | 10:02 (29) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:43 (29) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 20 | 10:03 (29) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 245 | | | 104 | | | 248 | | | 622 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,97 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | | | 0,35 | | | 0,27 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 86 | | | 28 | | | 22 | | | 47 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (29) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 21 | 10:06 (29) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:45 (29) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 22 | 10:07 (29) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:45 (29) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 22 | 10:07 (29) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:46 (29) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 22 | 10:08 (29) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:46 (29) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 23 | 10:09 (29) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:47 (29) | 08:18 | 07:14 | | 17:40 (32) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 23 | 10:10 (29) | 17:19 | 18:17 | 9 | 17:49 (32) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:47 (29) | 08:16 | 07:12 | | 17:37 (32) | 06:52 | 05:42 | 04:56 |
| | 16:21 | 23 | 10:10 (29) | 17:21 | 18:19 | 15 | 17:52 (32) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:47 (29) | 08:14 | 07:09 | | 17:35 (32) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:10 (29) | 17:23 | 18:22 | 19 | 17:54 (32) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:48 (29) | 08:12 | 07:07 | | 17:33 (32) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:11 (29) | 17:25 | 18:24 | 21 | 17:54 (32) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:48 (29) | 08:10 | 07:04 | | 17:32 (32) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:11 (29) | 17:27 | 18:26 | 24 | 17:56 (32) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:49 (29) | 08:08 | 07:02 | | 17:31 (32) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 22 | 10:11 (29) | 17:29 | 18:28 | 25 | 17:56 (32) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:49 (29) | 08:06 | 06:59 | | 17:31 (32) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 23 | 10:12 (29) | 17:31 | 18:30 | 25 | 17:56 (32) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:50 (29) | 08:03 | 06:56 | | 17:30 (32) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 22 | 10:12 (29) | 17:33 | 18:32 | 26 | 17:56 (32) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:51 (29) | 08:01 | 06:54 | | 17:30 (32) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 22 | 10:13 (29) | 17:36 | 18:34 | 26 | 17:56 (32) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:51 (29) | 07:59 | 06:51 | | 17:30 (32) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 21 | 10:12 (29) | 17:38 | 18:36 | 26 | 17:56 (32) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (29) | 07:57 | 06:49 | | 17:29 (32) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 20 | 10:12 (29) | 17:40 | 18:38 | 26 | 17:55 (32) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (29) | 07:55 | 06:46 | | 17:30 (32) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 20 | 10:13 (29) | 17:42 | 18:40 | 24 | 17:54 (32) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:53 (29) | 07:52 | 06:44 | | 17:30 (32) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 19 | 10:12 (29) | 17:44 | 18:42 | 23 | 17:53 (32) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:55 (29) | 07:50 | 06:41 | | 17:32 (32) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 17 | 10:12 (29) | 17:46 | 18:44 | 20 | 17:52 (32) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:55 (29) | 07:48 | 06:39 | | 17:33 (32) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 16 | 10:11 (29) | 17:48 | 18:46 | 17 | 17:50 (32) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:57 (29) | 07:46 | 06:36 | | 17:34 (32) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 13 | 10:10 (29) | 17:50 | 18:48 | 13 | 17:47 (32) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:59 (29) | 07:43 | 06:33 | | 17:40 (32) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 10 | 10:09 (29) | 17:53 | 18:50 | 2 | 17:42 (32) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 10:02 (29) | 07:41 | 06:31 | | | 06:13 | 05:13 | 04:52 |
| | 16:49 | 3 | 10:05 (29) | 17:55 | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 453 | | | | 341 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,61 | | | | 0,97 | | | | |
| Total reduction | | 0,10 | | | | 0,30 | | | | |
| Total, real | | 45 | | | | 103 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:38 | | | 07:34 | | 18:10 (32) | 07:36 | | | 08:35 | | 09:31 (29) |
| | 22:18 | 21:40 | 20:29 | | | 19:12 | 26 | 18:36 (32) | 16:58 | | | 16:10 | 23 | 09:54 (29) |
| 2 | 04:57 | 05:41 | 06:39 | | | 07:36 | | 18:10 (32) | 07:38 | | | 08:36 | | 09:31 (29) |
| | 22:17 | 21:38 | 20:27 | | | 19:09 | 25 | 18:35 (32) | 16:55 | | | 16:09 | 23 | 09:54 (29) |
| 3 | 04:58 | 05:43 | 06:41 | | | 07:38 | | 18:10 (32) | 07:41 | | | 08:38 | | 09:32 (29) |
| | 22:17 | 21:36 | 20:24 | | | 19:07 | 24 | 18:34 (32) | 16:53 | | | 16:08 | 23 | 09:55 (29) |
| 4 | 04:59 | 05:45 | 06:43 | | | 07:40 | | 18:10 (32) | 07:43 | | | 08:40 | | 09:32 (29) |
| | 22:16 | 21:34 | 20:22 | | | 19:04 | 23 | 18:33 (32) | 16:51 | | | 16:07 | 22 | 09:54 (29) |
| 5 | 05:00 | 05:47 | 06:45 | | | 07:42 | | 18:11 (32) | 07:45 | | | 08:41 | | 09:32 (29) |
| | 22:16 | 21:32 | 20:19 | | | 19:02 | 21 | 18:32 (32) | 16:49 | | | 16:07 | 23 | 09:55 (29) |
| 6 | 05:01 | 05:49 | 06:47 | | | 07:44 | | 18:12 (32) | 07:47 | | | 08:43 | | 09:32 (29) |
| | 22:15 | 21:30 | 20:16 | | | 18:59 | 17 | 18:29 (32) | 16:47 | | | 16:06 | 23 | 09:55 (29) |
| 7 | 05:02 | 05:50 | 06:49 | | | 07:46 | | 18:14 (32) | 07:49 | | | 08:44 | | 09:33 (29) |
| | 22:14 | 21:28 | 20:14 | | | 18:57 | 13 | 18:27 (32) | 16:45 | | | 16:05 | 23 | 09:56 (29) |
| 8 | 05:03 | 05:52 | 06:51 | | | 07:48 | | 18:18 (32) | 07:51 | | | 08:45 | | 09:33 (29) |
| | 22:14 | 21:25 | 20:11 | | | 18:54 | 4 | 18:22 (32) | 16:43 | | | 16:05 | 23 | 09:56 (29) |
| 9 | 05:04 | 05:54 | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (29) |
| | 22:13 | 21:23 | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:56 (29) |
| 10 | 05:05 | 05:56 | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:35 (29) |
| | 22:12 | 21:21 | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 21 | 09:56 (29) |
| 11 | 05:07 | 05:58 | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:36 (29) |
| | 22:11 | 21:19 | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 21 | 09:57 (29) |
| 12 | 05:08 | 06:00 | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:36 (29) |
| | 22:10 | 21:17 | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 21 | 09:57 (29) |
| 13 | 05:09 | 06:02 | 07:00 | | | 07:58 | | | 08:01 | | | 08:51 | | 09:37 (29) |
| | 22:09 | 21:15 | 19:58 | | | 18:42 | | | 16:34 | | | 16:04 | 21 | 09:58 (29) |
| 14 | 05:10 | 06:03 | 07:02 | | | 08:00 | | | 08:03 | | | 08:52 | | 09:37 (29) |
| | 22:08 | 21:12 | 19:56 | | | 18:39 | | | 16:32 | | | 16:03 | 21 | 09:58 (29) |
| 15 | 05:12 | 06:05 | 07:04 | | | 08:02 | | | 08:05 | | | 08:53 | | 09:38 (29) |
| | 22:06 | 21:10 | 19:53 | | | 18:37 | | | 16:31 | | | 16:03 | 20 | 09:58 (29) |
| 16 | 05:13 | 06:07 | 07:06 | | | 08:04 | | | 08:07 | | | 08:54 | | 09:38 (29) |
| | 22:05 | 21:08 | 19:51 | | | 18:34 | | | 16:29 | | | 16:03 | 21 | 09:59 (29) |
| 17 | 05:15 | 06:09 | 07:08 | | | 08:06 | | | 08:09 | | | 08:55 | | 09:39 (29) |
| | 22:04 | 21:05 | 19:48 | | | 18:32 | | | 16:27 | | | 16:04 | 20 | 09:59 (29) |
| 18 | 05:16 | 06:11 | 07:10 | | | 08:08 | | | 08:11 | | | 08:56 | | 09:40 (29) |
| | 22:03 | 21:03 | 19:46 | | | 18:29 | | | 16:26 | | | 16:04 | 20 | 10:00 (29) |
| 19 | 05:18 | 06:13 | 07:12 | | | 08:10 | | | 08:13 | | 09:37 (29) | 08:57 | | 09:39 (29) |
| | 22:01 | 21:01 | 19:43 | | | 18:27 | | | 16:24 | 3 | 09:40 (29) | 16:04 | 20 | 09:59 (29) |
| 20 | 05:19 | 06:15 | 07:13 | | | 08:12 | | | 08:15 | | 09:34 (29) | 08:57 | | 09:40 (29) |
| | 22:00 | 20:58 | 19:40 | | | 18:25 | | | 16:23 | 10 | 09:44 (29) | 16:04 | 20 | 10:00 (29) |
| 21 | 05:21 | 06:17 | 07:15 | | | 08:14 | | | 08:17 | | 09:32 (29) | 08:58 | | 09:41 (29) |
| | 21:58 | 20:56 | 19:38 | | | 18:22 | | | 16:21 | 13 | 09:45 (29) | 16:05 | 20 | 10:01 (29) |
| 22 | 05:22 | 06:19 | 07:17 | | 18:21 (32) | 08:16 | | | 08:19 | | 09:31 (29) | 08:59 | | 09:41 (29) |
| | 21:57 | 20:54 | 19:35 | 11 | 18:32 (32) | 18:20 | | | 16:20 | 16 | 09:47 (29) | 16:05 | 20 | 10:01 (29) |
| 23 | 05:24 | 06:20 | 07:19 | | 18:18 (32) | 08:18 | | | 08:21 | | 09:31 (29) | 08:59 | | 09:41 (29) |
| | 21:55 | 20:51 | 19:33 | 16 | 18:34 (32) | 18:18 | | | 16:19 | 17 | 09:48 (29) | 16:06 | 20 | 10:01 (29) |
| 24 | 05:26 | 06:22 | 07:21 | | 18:15 (32) | 08:20 | | | 08:23 | | 09:30 (29) | 09:00 | | 09:42 (29) |
| | 21:54 | 20:49 | 19:30 | 19 | 18:34 (32) | 18:15 | | | 16:17 | 19 | 09:49 (29) | 16:06 | 20 | 10:02 (29) |
| 25 | 05:27 | 06:24 | 07:23 | | 18:13 (32) | 07:22 | | | 08:24 | | 09:30 (29) | 09:00 | | 09:43 (29) |
| | 21:52 | 20:46 | 19:27 | 22 | 18:35 (32) | 17:13 | | | 16:16 | 20 | 09:50 (29) | 16:07 | 20 | 10:03 (29) |
| 26 | 05:29 | 06:26 | 07:25 | | 18:12 (32) | 07:24 | | | 08:26 | | 09:30 (29) | 09:00 | | 09:43 (29) |
| | 21:50 | 20:44 | 19:25 | 24 | 18:36 (32) | 17:11 | | | 16:15 | 20 | 09:50 (29) | 16:08 | 20 | 10:03 (29) |
| 27 | 05:31 | 06:28 | 07:27 | | 18:11 (32) | 07:26 | | | 08:28 | | 09:30 (29) | 09:00 | | 09:43 (29) |
| | 21:49 | 20:42 | 19:22 | 25 | 18:36 (32) | 17:08 | | | 16:14 | 21 | 09:51 (29) | 16:08 | 20 | 10:03 (29) |
| 28 | 05:32 | 06:30 | 07:29 | | 18:11 (32) | 07:28 | | | 08:30 | | 09:30 (29) | 09:01 | | 09:43 (29) |
| | 21:47 | 20:39 | 19:20 | 25 | 18:36 (32) | 17:06 | | | 16:13 | 22 | 09:52 (29) | 16:09 | 21 | 10:04 (29) |
| 29 | 05:34 | 06:32 | 07:31 | | 18:10 (32) | 07:30 | | | 08:31 | | 09:30 (29) | 09:01 | | 09:44 (29) |
| | 21:45 | 20:37 | 19:17 | 26 | 18:36 (32) | 17:04 | | | 16:12 | 22 | 09:52 (29) | 16:10 | 21 | 10:05 (29) |
| 30 | 05:36 | 06:34 | 07:32 | | 18:10 (32) | 07:32 | | | 08:33 | | 09:30 (29) | 09:01 | | 09:44 (29) |
| | 21:43 | 20:34 | 19:14 | 26 | 18:36 (32) | 17:02 | | | 16:11 | 23 | 09:53 (29) | 16:11 | 21 | 10:05 (29) |
| 31 | 05:38 | 06:36 | | | | 07:34 | | | | | | 09:01 | | 09:45 (29) |
| | 21:41 | 20:32 | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (29) |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 194 | | | 153 | | | 206 | | | 655 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,97 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | 0,35 | | | 0,27 | | | 0,09 | | | 0,07 | |
| Total, real | | | | 68 | | | 41 | | | 18 | | | 49 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninės VEShadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (29) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 23 | 10:13 (29) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:51 (29) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 23 | 10:14 (29) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:51 (29) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 23 | 10:14 (29) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:52 (29) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 23 | 10:15 (29) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:52 (29) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 23 | 10:15 (29) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:53 (29) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 24 | 10:17 (29) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:53 (29) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 24 | 10:17 (29) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:53 (29) | 08:14 | 07:09 | | 17:45 (32) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 24 | 10:17 (29) | 17:23 | 18:22 | 9 | 17:54 (32) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:54 (29) | 08:12 | 07:07 | | 17:41 (32) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:17 (29) | 17:25 | 18:24 | 14 | 17:55 (32) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:54 (29) | 08:10 | 07:04 | | 17:40 (32) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 24 | 10:18 (29) | 17:27 | 18:26 | 18 | 17:58 (32) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:55 (29) | 08:08 | 07:02 | | 17:38 (32) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:18 (29) | 17:29 | 18:28 | 21 | 17:59 (32) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:55 (29) | 08:06 | 06:59 | | 17:38 (32) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 23 | 10:18 (29) | 17:31 | 18:30 | 22 | 18:00 (32) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:56 (29) | 08:03 | 06:56 | | 17:36 (32) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 22 | 10:18 (29) | 17:33 | 18:32 | 24 | 18:00 (32) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:57 (29) | 08:01 | 06:54 | | 17:36 (32) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 22 | 10:19 (29) | 17:36 | 18:34 | 25 | 18:01 (32) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:57 (29) | 07:59 | 06:51 | | 17:35 (32) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 21 | 10:18 (29) | 17:38 | 18:36 | 26 | 18:01 (32) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:58 (29) | 07:57 | 06:49 | | 17:35 (32) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 20 | 10:18 (29) | 17:40 | 18:38 | 25 | 18:00 (32) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:59 (29) | 07:55 | 06:46 | | 17:35 (32) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 19 | 10:18 (29) | 17:42 | 18:40 | 25 | 18:00 (32) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 10:00 (29) | 07:52 | 06:44 | | 17:35 (32) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17 | 10:17 (29) | 17:44 | 18:42 | 24 | 17:59 (32) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 10:01 (29) | 07:50 | 06:41 | | 17:36 (32) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 16 | 10:17 (29) | 17:46 | 18:44 | 22 | 17:58 (32) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 10:02 (29) | 07:48 | 06:39 | | 17:36 (32) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 14 | 10:16 (29) | 17:48 | 18:46 | 21 | 17:57 (32) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 10:05 (29) | 07:46 | 06:36 | | 17:37 (32) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 10 | 10:15 (29) | 17:50 | 18:48 | 18 | 17:55 (32) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 10:08 (29) | 07:43 | 06:33 | | 17:39 (32) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 4 | 10:12 (29) | 17:53 | 18:50 | 14 | 17:53 (32) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | 06:31 | | 17:42 (32) | 06:13 | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | 18:52 | 7 | 17:49 (32) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 445 | | | | 315 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,59 | | | | 0,97 | | | | |
| Total reduction | | 0,10 | | | | 0,30 | | | | |
| Total, real | | 42 | | | | 94 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 18:16 (32) | 07:36 | | | 08:35 | | 09:37 (29) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 24 | 18:40 (32) | 16:58 | | | 16:10 | 23 | 10:00 (29) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 18:17 (32) | 07:38 | | | 08:36 | | 09:37 (29) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 22 | 18:39 (32) | 16:55 | | | 16:09 | 24 | 10:01 (29) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 18:17 (32) | 07:41 | | | 08:38 | | 09:38 (29) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 20 | 18:37 (32) | 16:53 | | | 16:08 | 23 | 10:01 (29) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 18:19 (32) | 07:43 | | | 08:40 | | 09:37 (29) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | 16 | 18:35 (32) | 16:51 | | | 16:07 | 24 | 10:01 (29) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 18:20 (32) | 07:45 | | | 08:41 | | 09:38 (29) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 12 | 18:32 (32) | 16:49 | | | 16:07 | 24 | 10:02 (29) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 18:24 (32) | 07:47 | | | 08:43 | | 09:38 (29) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | 5 | 18:29 (32) | 16:47 | | | 16:06 | 24 | 10:02 (29) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | | 07:49 | | | 08:44 | | 09:39 (29) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | | | 16:45 | | | 16:05 | 24 | 10:03 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | | 07:51 | | | 08:45 | | 09:39 (29) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | | | 16:43 | | | 16:05 | 23 | 10:02 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:40 (29) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 23 | 10:03 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:40 (29) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 23 | 10:03 (29) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:41 (29) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 24 | 10:05 (29) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:41 (29) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 24 | 10:05 (29) |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | | 08:01 | | | 08:51 | | 09:42 (29) |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | | | 16:34 | | | 16:04 | 23 | 10:05 (29) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | | 08:52 | | 09:42 (29) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | | | 16:03 | 23 | 10:05 (29) |
| 15 | 05:12 | | 06:05 | | 07:04 | | | 08:02 | | | 08:05 | | | 08:53 | | 09:43 (29) |
| | 22:06 | | 21:10 | | 19:53 | | | 18:37 | | | 16:31 | | | 16:03 | 22 | 10:05 (29) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | | 08:07 | | | 08:54 | | 09:43 (29) |
| | 22:05 | | 21:08 | | 19:51 | | | 18:34 | | | 16:29 | | | 16:03 | 23 | 10:06 (29) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | | 08:09 | | | 08:55 | | 09:44 (29) |
| | 22:04 | | 21:05 | | 19:48 | | | 18:32 | | | 16:27 | | | 16:04 | 22 | 10:06 (29) |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | | 08:11 | | | 08:56 | | 09:45 (29) |
| | 22:03 | | 21:03 | | 19:46 | | | 18:29 | | | 16:26 | | | 16:04 | 22 | 10:07 (29) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | | 08:13 | | | 08:57 | | 09:45 (29) |
| | 22:01 | | 21:01 | | 19:43 | | | 18:27 | | | 16:24 | | | 16:04 | 22 | 10:07 (29) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:31 (32) | 08:12 | | | 08:15 | | 09:43 (29) | 08:57 | | 09:45 (29) |
| | 22:00 | | 20:58 | | 19:40 | 2 | 18:33 (32) | 18:25 | | | 16:23 | 4 | 09:47 (29) | 16:04 | 23 | 10:08 (29) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:26 (32) | 08:14 | | | 08:17 | | 09:40 (29) | 08:58 | | 09:45 (29) |
| | 21:58 | | 20:56 | | 19:38 | 12 | 18:38 (32) | 18:22 | | | 16:21 | 10 | 09:50 (29) | 16:05 | 22 | 10:07 (29) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:23 (32) | 08:16 | | | 08:19 | | 09:39 (29) | 08:59 | | 09:46 (29) |
| | 21:57 | | 20:54 | | 19:35 | 17 | 18:40 (32) | 18:20 | | | 16:20 | 13 | 09:52 (29) | 16:05 | 22 | 10:08 (29) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 18:21 (32) | 08:18 | | | 08:21 | | 09:38 (29) | 08:59 | | 09:46 (29) |
| | 21:55 | | 20:51 | | 19:33 | 20 | 18:41 (32) | 18:18 | | | 16:19 | 15 | 09:53 (29) | 16:06 | 22 | 10:08 (29) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:19 (32) | 08:20 | | | 08:23 | | 09:37 (29) | 09:00 | | 09:47 (29) |
| | 21:54 | | 20:49 | | 19:30 | 22 | 18:41 (32) | 18:15 | | | 16:17 | 17 | 09:54 (29) | 16:06 | 23 | 10:10 (29) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:18 (32) | 07:22 | | | 08:24 | | 09:36 (29) | 09:00 | | 09:48 (29) |
| | 21:52 | | 20:46 | | 19:27 | 23 | 18:41 (32) | 17:13 | | | 16:16 | 19 | 09:55 (29) | 16:07 | 22 | 10:10 (29) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:17 (32) | 07:24 | | | 08:26 | | 09:36 (29) | 09:00 | | 09:48 (29) |
| | 21:50 | | 20:44 | | 19:25 | 25 | 18:42 (32) | 17:11 | | | 16:15 | 20 | 09:56 (29) | 16:08 | 22 | 10:10 (29) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:17 (32) | 07:26 | | | 08:28 | | 09:36 (29) | 09:00 | | 09:48 (29) |
| | 21:49 | | 20:42 | | 19:22 | 25 | 18:42 (32) | 17:08 | | | 16:14 | 21 | 09:57 (29) | 16:08 | 23 | 10:11 (29) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:16 (32) | 07:28 | | | 08:30 | | 09:36 (29) | 09:01 | | 09:49 (29) |
| | 21:47 | | 20:39 | | 19:20 | 25 | 18:41 (32) | 17:06 | | | 16:13 | 22 | 09:58 (29) | 16:09 | 22 | 10:11 (29) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:16 (32) | 07:30 | | | 08:31 | | 09:36 (29) | 09:01 | | 09:49 (29) |
| | 21:45 | | 20:37 | | 19:17 | 25 | 18:41 (32) | 17:04 | | | 16:12 | 23 | 09:59 (29) | 16:10 | 23 | 10:12 (29) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:16 (32) | 07:32 | | | 08:33 | | 09:36 (29) | 09:01 | | 09:50 (29) |
| | 21:43 | | 20:34 | | 19:14 | 25 | 18:41 (32) | 17:02 | | | 16:11 | 23 | 09:59 (29) | 16:11 | 23 | 10:13 (29) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:50 (29) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 23 | 10:13 (29) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 221 | | | 99 | | | 187 | | | 710 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,97 | | | 0,97 | | | 0,59 | | | 0,59 | |
| Total reduction | | | | | | 0,35 | | | 0,27 | | | 0,08 | | | 0,07 | |
| Total, real | | | | | | 77 | | | 27 | | | 16 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:24 (29) | 07:26 | | 07:08 | 19:03 (32) | 05:55 | 05:02 |
| | 16:14 | | 17:08 25 | 09:49 (29) | 18:07 | | 20:09 27 | 19:30 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:24 (29) | 07:24 | | 07:05 | 19:03 (32) | 05:53 | 05:01 |
| | 16:15 | | 17:10 25 | 09:49 (29) | 18:09 | | 20:11 27 | 19:30 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:25 (29) | 07:22 | | 07:03 | 19:03 (32) | 05:50 | 05:00 |
| | 16:16 | | 17:12 24 | 09:49 (29) | 18:11 | | 20:13 26 | 19:29 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:25 (29) | 07:19 | | 07:00 | 19:03 (32) | 05:48 | 04:59 |
| | 16:17 | | 17:14 22 | 09:47 (29) | 18:13 | | 20:15 24 | 19:27 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:26 (29) | 07:17 | | 06:57 | 19:04 (32) | 05:46 | 04:58 |
| | 16:19 | | 17:16 20 | 09:46 (29) | 18:15 | | 20:17 23 | 19:27 (32) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:28 (29) | 07:14 | | 06:55 | 19:04 (32) | 05:44 | 04:57 |
| | 16:20 | | 17:19 17 | 09:45 (29) | 18:17 | | 20:19 21 | 19:25 (32) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:30 (29) | 07:12 | | 06:52 | 19:06 (32) | 05:42 | 04:56 |
| | 16:21 | | 17:21 14 | 09:44 (29) | 18:19 | | 20:21 17 | 19:23 (32) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 09:32 (29) | 07:09 | | 06:50 | 19:08 (32) | 05:40 | 04:56 |
| | 16:23 | | 17:23 9 | 09:41 (29) | 18:22 | | 20:23 12 | 19:20 (32) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:47 | 19:13 (32) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:24 | | 20:25 3 | 19:16 (32) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:28 (29) | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 8 | 09:36 (29) | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:27 (29) | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 12 | 09:39 (29) | 17:42 | | 18:40 | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | 09:25 (29) | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 15 | 09:40 (29) | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:25 (29) | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 17 | 09:42 (29) | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:24 (29) | 07:48 | | 06:39 | | 06:20 | | 05:18 | 04:52 |
| | 16:44 19 | 09:43 (29) | 17:48 | | 18:46 | | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 09:24 (29) | 07:46 | | 06:36 | | 06:18 | | 05:16 | 04:52 |
| | 16:46 20 | 09:44 (29) | 17:50 | | 18:48 | | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 09:23 (29) | 07:43 | | 06:33 | | 06:15 | | 05:15 | 04:52 |
| | 16:48 22 | 09:45 (29) | 17:53 | | 18:50 | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:22 (29) | 07:41 | | 06:31 | 18:16 (32) | 06:13 | | 05:13 | 04:53 |
| | 16:50 23 | 09:45 (29) | 17:55 | | 18:52 7 | 18:23 (32) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:23 (29) | 07:38 | | 06:28 | 18:12 (32) | 06:11 | | 05:12 | 04:53 |
| | 16:51 24 | 09:47 (29) | 17:57 | | 18:54 15 | 18:27 (32) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:22 (29) | 07:36 | | 06:26 | 18:09 (32) | 06:08 | | 05:10 | 04:53 |
| | 16:53 25 | 09:47 (29) | 17:59 | | 18:56 19 | 18:28 (32) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:22 (29) | 07:34 | | 06:23 | 18:07 (32) | 06:06 | | 05:09 | 04:54 |
| | 16:56 26 | 09:48 (29) | 18:01 | | 18:57 22 | 18:29 (32) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 09:22 (29) | 07:31 | | 06:21 | 18:07 (32) | 06:04 | | 05:08 | 04:54 |
| | 16:58 26 | 09:48 (29) | 18:03 | | 18:59 23 | 18:30 (32) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 09:22 (29) | 07:29 | | 06:18 | 18:05 (32) | 06:02 | | 05:06 | 04:55 |
| | 17:00 26 | 09:48 (29) | 18:05 | | 19:01 25 | 18:30 (32) | 21:03 | | 21:56 | 22:19 |
| 29 | 08:33 | 09:23 (29) | | | 07:15 | 19:05 (32) | 05:59 | | 05:05 | 04:55 |
| | 17:02 26 | 09:49 (29) | | | 20:03 26 | 19:31 (32) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | 09:23 (29) | | | 07:13 | 19:04 (32) | 05:57 | | 05:04 | 04:56 |
| | 17:04 26 | 09:49 (29) | | | 20:05 26 | 19:30 (32) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | 09:23 (29) | | | 07:10 | 19:04 (32) | | | 05:03 | |
| | 17:06 26 | 09:49 (29) | | | 20:07 27 | 19:31 (32) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 341 | | 156 | | 190 | | 180 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,71 | | 0,71 | | 1,00 | | 1,00 | | | |
| Total reduction | 0,12 | | 0,16 | | 0,32 | | 0,37 | | | |
| Total, real | 41 | | 26 | | 61 | | 67 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 19:11 (32) | 07:38 | | 07:41 | | 09:02 (29) | 08:38 | |
| | 22:17 | | 21:36 | | 20:24 | 3 | 19:14 (32) | 19:07 | | 16:53 | 9 | 09:11 (29) | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 19:06 (32) | 07:40 | | 07:43 | | 08:59 (29) | 08:40 | |
| | 22:16 | | 21:34 | | 20:22 | 12 | 19:18 (32) | 19:04 | | 16:51 | 15 | 09:14 (29) | 16:07 | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 19:02 (32) | 07:42 | | 07:45 | | 08:57 (29) | 08:41 | |
| | 22:16 | | 21:32 | | 20:19 | 17 | 19:19 (32) | 19:02 | | 16:49 | 18 | 09:15 (29) | 16:07 | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 19:01 (32) | 07:44 | | 07:47 | | 08:57 (29) | 08:43 | |
| | 22:15 | | 21:30 | | 20:16 | 20 | 19:21 (32) | 18:59 | | 16:47 | 20 | 09:17 (29) | 16:06 | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 18:59 (32) | 07:46 | | 07:49 | | 08:56 (29) | 08:44 | |
| | 22:14 | | 21:28 | | 20:14 | 23 | 19:22 (32) | 18:57 | | 16:45 | 22 | 09:18 (29) | 16:06 | |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:58 (32) | 07:48 | | 07:51 | | 08:55 (29) | 08:45 | |
| | 22:14 | | 21:25 | | 20:11 | 24 | 19:22 (32) | 18:54 | | 16:43 | 23 | 09:18 (29) | 16:05 | |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:57 (32) | 07:50 | | 07:53 | | 08:54 (29) | 08:47 | |
| | 22:13 | | 21:23 | | 20:09 | 26 | 19:23 (32) | 18:52 | | 16:41 | 25 | 09:19 (29) | 16:05 | |
| 10 | 05:05 | | 05:56 | | 06:55 | | 18:56 (32) | 07:52 | | 07:55 | | 08:55 (29) | 08:48 | |
| | 22:12 | | 21:21 | | 20:06 | 26 | 19:22 (32) | 18:49 | | 16:40 | 25 | 09:20 (29) | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:56 | | 18:55 (32) | 07:54 | | 07:57 | | 08:54 (29) | 08:49 | |
| | 22:11 | | 21:19 | | 20:04 | 27 | 19:22 (32) | 18:47 | | 16:38 | 26 | 09:20 (29) | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:55 (32) | 07:56 | | 07:59 | | 08:54 (29) | 08:50 | |
| | 22:10 | | 21:17 | | 20:01 | 27 | 19:22 (32) | 18:44 | | 16:36 | 26 | 09:20 (29) | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:55 (32) | 07:58 | | 08:01 | | 08:54 (29) | 08:51 | |
| | 22:09 | | 21:15 | | 19:58 | 27 | 19:22 (32) | 18:42 | | 16:34 | 26 | 09:20 (29) | 16:04 | |
| 14 | 05:11 | | 06:03 | | 07:02 | | 18:55 (32) | 08:00 | | 08:03 | | 08:55 (29) | 08:52 | |
| | 22:08 | | 21:12 | | 19:56 | 26 | 19:21 (32) | 18:39 | | 16:32 | 26 | 09:21 (29) | 16:03 | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:55 (32) | 08:02 | | 08:05 | | 08:55 (29) | 08:53 | |
| | 22:06 | | 21:10 | | 19:53 | 25 | 19:20 (32) | 18:37 | | 16:31 | 26 | 09:21 (29) | 16:03 | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:55 (32) | 08:04 | | 08:07 | | 08:55 (29) | 08:54 | |
| | 22:05 | | 21:08 | | 19:51 | 24 | 19:19 (32) | 18:34 | | 16:29 | 26 | 09:21 (29) | 16:03 | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:56 (32) | 08:06 | | 08:09 | | 08:55 (29) | 08:55 | |
| | 22:04 | | 21:05 | | 19:48 | 21 | 19:17 (32) | 18:32 | | 16:27 | 25 | 09:20 (29) | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:57 (32) | 08:08 | | 08:11 | | 08:57 (29) | 08:56 | |
| | 22:03 | | 21:03 | | 19:46 | 19 | 19:16 (32) | 18:29 | | 16:26 | 24 | 09:21 (29) | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:58 (32) | 08:10 | | 08:13 | | 08:57 (29) | 08:57 | |
| | 22:01 | | 21:01 | | 19:43 | 16 | 19:14 (32) | 18:27 | | 16:24 | 23 | 09:20 (29) | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 19:01 (32) | 08:12 | | 08:15 | | 08:58 (29) | 08:57 | |
| | 22:00 | | 20:58 | | 19:40 | 9 | 19:10 (32) | 18:25 | | 16:23 | 22 | 09:20 (29) | 16:04 | |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | 08:17 | | 08:59 (29) | 08:58 | |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | | 16:21 | 20 | 09:19 (29) | 16:05 | |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 08:19 | | 09:00 (29) | 08:59 | |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | 16:20 | 19 | 09:19 (29) | 16:05 | |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:21 | | 09:01 (29) | 08:59 | |
| | 21:55 | | 20:51 | | 19:33 | | | 18:18 | | 16:19 | 17 | 09:18 (29) | 16:06 | |
| 24 | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | 08:23 | | 09:02 (29) | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | | | 18:15 | | 16:17 | 15 | 09:17 (29) | 16:06 | |
| 25 | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | 08:24 | | 09:04 (29) | 09:00 | |
| | 21:52 | | 20:46 | | 19:27 | | | 17:13 | | 16:16 | 12 | 09:16 (29) | 16:07 | |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 08:26 | | 09:06 (29) | 09:00 | |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | 8 | 09:14 (29) | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 | |
| | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 | |
| | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 | |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 | |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 | |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | 253 | | | 224 | |
| Total, worst case | | | | | | 372 | | | | | 498 | | | |
| Sun reduction | | | | | | 0,40 | | | | | 0,16 | | | |
| Oper. time red. | | | | | | 1,00 | | | | | 1,00 | | | |
| Wind dir. red. | | | | | | 1,00 | | | | | 0,71 | | | |
| Total reduction | | | | | | 0,37 | | | | | 0,11 | | | |
| Total, real | | | | | | 138 | | | | | 53 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:31 (29) | 07:26 | | 07:08 | 19:03 (32) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 24 09:55 (29) | 18:07 | | 20:09 | 26 19:29 (32) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:31 (29) | 07:24 | | 07:05 | 19:04 (32) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 23 09:54 (29) | 18:09 | | 20:11 | 25 19:29 (32) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:32 (29) | 07:22 | | 07:03 | 19:04 (32) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 22 09:54 (29) | 18:11 | | 20:13 | 24 19:28 (32) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:33 (29) | 07:19 | | 07:00 | 19:04 (32) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 19 09:52 (29) | 18:13 | | 20:15 | 22 19:26 (32) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:34 (29) | 07:17 | | 06:57 | 19:05 (32) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 17 09:51 (29) | 18:15 | | 20:17 | 20 19:25 (32) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:37 (29) | 07:14 | | 06:55 | 19:06 (32) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 12 09:49 (29) | 18:17 | | 20:19 | 17 19:23 (32) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:41 (29) | 07:12 | | 06:52 | 19:08 (32) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 3 09:44 (29) | 18:19 | | 20:21 | 13 19:21 (32) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | 19:12 (32) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | 4 19:16 (32) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:47 | | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:24 | | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 09:35 (29) | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 3 09:38 (29) | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 09:33 (29) | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 9 09:42 (29) | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 09:32 (29) | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 12 09:44 (29) | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 09:30 (29) | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 15 09:45 (29) | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:30 (29) | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 17 09:47 (29) | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:29 (29) | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 20 09:49 (29) | 17:42 | | 18:40 | | 20:41 | | 21:38 | 22:17 |
| 18 | 08:49 | 09:28 (29) | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 21 09:49 (29) | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:29 (29) | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 22 09:51 (29) | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:28 (29) | 07:48 | | 06:39 | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 23 09:51 (29) | 17:48 | | 18:46 | | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 09:28 (29) | 07:46 | | 06:36 | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 24 09:52 (29) | 17:50 | | 18:48 | | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 09:28 (29) | 07:43 | | 06:33 | | 06:15 | | 05:15 | 04:52 |
| | 16:48 | 25 09:53 (29) | 17:53 | | 18:50 | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:27 (29) | 07:41 | | 06:31 | 18:14 (32) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 26 09:53 (29) | 17:55 | | 18:52 | 10 18:24 (32) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:28 (29) | 07:38 | | 06:28 | 18:11 (32) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 26 09:54 (29) | 17:57 | | 18:54 | 16 18:27 (32) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:28 (29) | 07:36 | | 06:26 | 18:09 (32) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 26 09:54 (29) | 17:59 | | 18:56 | 19 18:28 (32) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:28 (29) | 07:34 | | 06:23 | 18:07 (32) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 27 09:55 (29) | 18:01 | | 18:57 | 22 18:29 (32) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 09:28 (29) | 07:31 | | 06:21 | 18:06 (32) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 27 09:55 (29) | 18:03 | | 18:59 | 24 18:30 (32) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 09:28 (29) | 07:29 | | 06:18 | 18:05 (32) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | 27 09:55 (29) | 18:05 | | 19:01 | 25 18:30 (32) | 21:03 | | 21:56 | 22:19 |
| 29 | 08:33 | 09:29 (29) | | | 07:15 | 19:05 (32) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 27 09:56 (29) | | | 20:03 | 25 19:30 (32) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | 09:29 (29) | | | 07:13 | 19:04 (32) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 26 09:55 (29) | | | 20:05 | 26 19:30 (32) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | 09:30 (29) | | | 07:10 | 19:04 (32) | | | 05:03 | |
| | 17:06 | 25 09:55 (29) | | | 20:07 | 26 19:30 (32) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 428 | | 120 | | 193 | | 151 | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,69 | | 0,69 | | 1,00 | | 1,00 | | |
| Total reduction | | 0,12 | | 0,16 | | 0,32 | | 0,37 | | |
| Total, real | | 50 | | 19 | | 61 | | 55 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 19:10 (32) | 07:40 | | 07:43 | | 09:10 (29) | 08:40 | |
| | 22:16 | | 21:34 | | 20:22 | 4 | 19:14 (32) | 19:04 | | 16:51 | 5 | 09:15 (29) | 16:07 | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 19:04 (32) | 07:42 | | 07:45 | | 09:06 (29) | 08:41 | |
| | 22:16 | | 21:32 | | 20:19 | 13 | 19:17 (32) | 19:02 | | 16:49 | 13 | 09:19 (29) | 16:07 | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 19:02 (32) | 07:44 | | 07:47 | | 09:05 (29) | 08:43 | |
| | 22:15 | | 21:30 | | 20:16 | 17 | 19:19 (32) | 18:59 | | 16:47 | 16 | 09:21 (29) | 16:06 | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 19:00 (32) | 07:46 | | 07:49 | | 09:03 (29) | 08:44 | |
| | 22:14 | | 21:28 | | 20:14 | 20 | 19:20 (32) | 18:57 | | 16:45 | 20 | 09:23 (29) | 16:06 | |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:59 (32) | 07:48 | | 07:51 | | 09:02 (29) | 08:45 | |
| | 22:14 | | 21:25 | | 20:11 | 22 | 19:21 (32) | 18:54 | | 16:43 | 22 | 09:24 (29) | 16:05 | |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:58 (32) | 07:50 | | 07:53 | | 09:01 (29) | 08:47 | |
| | 22:13 | | 21:23 | | 20:09 | 24 | 19:22 (32) | 18:52 | | 16:41 | 23 | 09:24 (29) | 16:05 | |
| 10 | 05:05 | | 05:56 | | 06:55 | | 18:56 (32) | 07:52 | | 07:55 | | 09:01 (29) | 08:48 | |
| | 22:12 | | 21:21 | | 20:06 | 25 | 19:21 (32) | 18:49 | | 16:40 | 25 | 09:26 (29) | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:56 | | 18:56 (32) | 07:54 | | 07:57 | | 09:01 (29) | 08:49 | |
| | 22:11 | | 21:19 | | 20:04 | 25 | 19:21 (32) | 18:47 | | 16:38 | 25 | 09:26 (29) | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:58 | | 18:55 (32) | 07:56 | | 07:59 | | 09:00 (29) | 08:50 | |
| | 22:10 | | 21:17 | | 20:01 | 26 | 19:21 (32) | 18:44 | | 16:36 | 26 | 09:26 (29) | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:55 (32) | 07:58 | | 08:01 | | 09:00 (29) | 08:51 | |
| | 22:09 | | 21:15 | | 19:58 | 26 | 19:21 (32) | 18:42 | | 16:34 | 27 | 09:27 (29) | 16:04 | |
| 14 | 05:11 | | 06:03 | | 07:02 | | 18:55 (32) | 08:00 | | 08:03 | | 09:01 (29) | 08:52 | |
| | 22:08 | | 21:12 | | 19:56 | 26 | 19:21 (32) | 18:39 | | 16:32 | 27 | 09:28 (29) | 16:03 | |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:55 (32) | 08:02 | | 08:05 | | 09:01 (29) | 08:53 | |
| | 22:06 | | 21:10 | | 19:53 | 25 | 19:20 (32) | 18:37 | | 16:31 | 27 | 09:28 (29) | 16:03 | |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:55 (32) | 08:04 | | 08:07 | | 09:01 (29) | 08:54 | |
| | 22:05 | | 21:08 | | 19:51 | 23 | 19:18 (32) | 18:34 | | 16:29 | 27 | 09:28 (29) | 16:03 | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:55 (32) | 08:06 | | 08:09 | | 09:01 (29) | 08:55 | |
| | 22:04 | | 21:05 | | 19:48 | 22 | 19:17 (32) | 18:32 | | 16:27 | 26 | 09:27 (29) | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:56 (32) | 08:08 | | 08:11 | | 09:02 (29) | 08:56 | |
| | 22:03 | | 21:03 | | 19:46 | 20 | 19:16 (32) | 18:29 | | 16:26 | 26 | 09:28 (29) | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:57 (32) | 08:10 | | 08:13 | | 09:02 (29) | 08:57 | |
| | 22:01 | | 21:01 | | 19:43 | 17 | 19:14 (32) | 18:27 | | 16:24 | 26 | 09:28 (29) | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:13 | | 19:00 (32) | 08:12 | | 08:15 | | 09:03 (29) | 08:57 | |
| | 22:00 | | 20:58 | | 19:40 | 11 | 19:11 (32) | 18:25 | | 16:23 | 25 | 09:28 (29) | 16:04 | |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | 08:17 | | 09:03 (29) | 08:58 | |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | | 16:21 | 24 | 09:27 (29) | 16:05 | |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 08:19 | | 09:04 (29) | 08:59 | |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | | 16:20 | 23 | 09:27 (29) | 16:05 | |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:21 | | 09:05 (29) | 08:59 | |
| | 21:55 | | 20:51 | | 19:33 | | | 18:18 | | 16:19 | 22 | 09:27 (29) | 16:06 | |
| 24 | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | 08:23 | | 09:05 (29) | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | | | 18:15 | | 16:17 | 21 | 09:26 (29) | 16:06 | |
| 25 | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | 08:24 | | 09:06 (29) | 09:00 | |
| | 21:52 | | 20:46 | | 19:27 | | | 17:13 | | 16:16 | 20 | 09:26 (29) | 16:07 | |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 08:26 | | 09:08 (29) | 09:00 | |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | | 16:15 | 17 | 09:25 (29) | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:28 | | 09:09 (29) | 09:00 | |
| | 21:49 | | 20:42 | | 19:22 | | | 17:08 | | 16:14 | 15 | 09:24 (29) | 16:08 | |
| 28 | 05:32 | | 06:30 | | 07:29 | | | 07:28 | | 08:30 | | 09:11 (29) | 09:01 | |
| | 21:47 | | 20:39 | | 19:20 | | | 17:06 | | 16:13 | 12 | 09:23 (29) | 16:09 | |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:30 | | 08:31 | | 09:13 (29) | 09:01 | |
| | 21:45 | | 20:37 | | 19:17 | | | 17:04 | | 16:12 | 9 | 09:22 (29) | 16:10 | |
| 30 | 05:36 | | 06:34 | | 07:32 | | | 07:32 | | 08:33 | | 09:16 (29) | 09:01 | |
| | 21:43 | | 20:34 | | 19:14 | | | 17:02 | | 16:11 | 4 | 09:20 (29) | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | 253 | | | 224 | |
| Total, worst case | | | | | | 346 | | | | | 553 | | | |
| Sun reduction | | | | | | 0,40 | | | | | 0,16 | | | |
| Oper. time red. | | | | | | 1,00 | | | | | 1,00 | | | |
| Wind dir. red. | | | | | | 1,00 | | | | | 0,69 | | | |
| Total reduction | | | | | | 0,37 | | | | | 0,10 | | | |
| Total, real | | | | | | 128 | | | | | 56 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June | July | August | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | | 07:34 | 18:15 (32) | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | | 19:12 | 19 18:34 (32) | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | | 07:36 | 18:14 (32) | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | | 19:09 | 20 18:34 (32) | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | | 07:38 | 18:13 (32) | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | | 19:07 | 21 18:34 (32) | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 17:44 (32) | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | | 07:40 | 18:13 (32) | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 1 17:45 (32) | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | | 19:04 | 21 18:34 (32) | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 17:41 (32) | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | | 07:42 | 18:13 (32) | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 7 17:48 (32) | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | | 19:02 | 19 18:32 (32) | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 17:39 (32) | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | | 07:44 | 18:14 (32) | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 10 17:49 (32) | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | | 18:59 | 15 18:29 (32) | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 17:38 (32) | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | | 07:46 | 18:14 (32) | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 14 17:52 (32) | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | | 18:57 | 13 18:27 (32) | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 17:36 (32) | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | | 07:48 | 18:15 (32) | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 18 17:54 (32) | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | | 18:54 | 9 18:24 (32) | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 17:35 (32) | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | | 07:50 | 18:17 (32) | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20 17:55 (32) | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | | 18:52 | 5 18:22 (32) | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 17:35 (32) | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | | 07:52 | | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 21 17:56 (32) | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | | 18:49 | | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 17:35 (32) | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | | 07:54 | | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20 17:55 (32) | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 17:35 (32) | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | | 07:56 | | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20 17:55 (32) | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 17:35 (32) | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | | 07:58 | | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 19 17:54 (32) | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | | 18:42 | | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 17:36 (32) | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | | 08:00 | | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 18 17:54 (32) | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | | 18:39 | | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 17:37 (32) | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | | 08:02 | | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 15 17:52 (32) | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | | 18:37 | | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 17:38 (32) | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | | 08:04 | | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 11 17:49 (32) | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | | 18:34 | | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | | 08:06 | | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | | 18:32 | | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | | 08:08 | | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:45 | | 18:29 | | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | | 08:10 | | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | | 18:27 | | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | | 08:12 | | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | | 18:25 | | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | | 08:14 | | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | | 18:22 | | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | | 08:16 | | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | | 18:20 | | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | | 08:18 | | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | | 18:18 | | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | | 08:20 | | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | | 18:15 | | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | | 07:22 | | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | | 17:13 | | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | | 07:24 | | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | | 17:11 | | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 18:21 (32) | 07:26 | | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 9 18:30 (32) | 17:08 | | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 18:19 (32) | 07:28 | | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 13 18:32 (32) | 17:06 | | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 18:17 (32) | 07:30 | | 08:31 | 09:01 |
| | 17:02 | | 20:03 | | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 16 18:33 (32) | 17:04 | | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 18:15 (32) | 07:32 | | 08:33 | 09:01 |
| | 17:04 | | 20:05 | | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 19 18:34 (32) | 17:02 | | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | | 05:03 | | 05:38 | 06:36 | | | 07:34 | | | 09:01 |
| | 17:06 | | 20:07 | | | 22:01 | | 21:41 | 20:32 | | | 17:00 | | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 | 521 | 465 | 383 | | 326 | | 253 | 224 |
| Total, worst case | | | | 194 | | | | | | | 57 | | 142 | | |
| Sun reduction | | | | 0,34 | | | | | | | 0,40 | | 0,31 | | |
| Oper. time red. | | | | 1,00 | | | | | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | | | 0,97 | | | | | | | 0,97 | | 0,97 | | |
| Total reduction | | | | 0,33 | | | | | | | 0,38 | | 0,30 | | |
| Total, real | | | | 64 | | | | | | | 22 | | 42 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:20 (29) | 08:27 | | | 07:26 | | 17:18 (32) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 13 | 10:33 (29) | 17:08 | | | 18:07 | 21 | 17:39 (32) | 20:09 | | 21:08 | 22:02 |
| 2 | 09:00 | | 10:22 (29) | 08:26 | | | 07:24 | | 17:17 (32) | 07:05 | | 05:53 | 05:00 |
| | 16:15 | 12 | 10:34 (29) | 17:10 | | | 18:09 | 22 | 17:39 (32) | 20:11 | | 21:10 | 22:03 |
| 3 | 09:00 | | 10:22 (29) | 08:24 | | | 07:22 | | 17:17 (32) | 07:03 | | 05:50 | 05:00 |
| | 16:16 | 11 | 10:33 (29) | 17:12 | | | 18:11 | 23 | 17:40 (32) | 20:13 | | 21:12 | 22:05 |
| 4 | 09:00 | | 10:24 (29) | 08:22 | | | 07:19 | | 17:16 (32) | 07:00 | | 05:48 | 04:59 |
| | 16:17 | 9 | 10:33 (29) | 17:14 | | | 18:13 | 23 | 17:39 (32) | 20:15 | | 21:14 | 22:06 |
| 5 | 08:59 | | 10:25 (29) | 08:20 | | | 07:17 | | 17:16 (32) | 06:57 | | 05:46 | 04:58 |
| | 16:19 | 7 | 10:32 (29) | 17:16 | | | 18:15 | 24 | 17:40 (32) | 20:17 | | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | 17:16 (32) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | 23 | 17:39 (32) | 20:19 | | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | 17:17 (32) | 06:52 | | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | 22 | 17:39 (32) | 20:21 | | 21:20 | 22:09 |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | 17:17 (32) | 06:50 | | 05:40 | 04:55 |
| | 16:23 | | | 17:23 | | | 18:21 | 21 | 17:38 (32) | 20:23 | | 21:22 | 22:10 |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | 17:17 (32) | 06:47 | | 05:38 | 04:55 |
| | 16:24 | | | 17:25 | | | 18:24 | 19 | 17:36 (32) | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | 17:19 (32) | 06:45 | | 05:36 | 04:54 |
| | 16:26 | | | 17:27 | | | 18:26 | 16 | 17:35 (32) | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | 17:20 (32) | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | | 17:29 | | | 18:28 | 12 | 17:32 (32) | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | 17:26 (32) | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | | 17:31 | | | 18:30 | 1 | 17:27 (32) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | | 08:03 | | | 06:56 | | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | | | 17:40 | | | 18:38 | | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | | | 18:40 | | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | | | 18:42 | | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | | 06:23 | | 05:19 | 04:52 |
| | 16:42 | | | 17:46 | | | 18:44 | | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | | 06:20 | | 05:18 | 04:52 |
| | 16:44 | | | 17:48 | | | 18:46 | | | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | | | 17:50 | | | 18:48 | | | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | | 06:15 | | 05:15 | 04:52 |
| | 16:48 | | | 17:53 | | | 18:50 | | | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | | 06:31 | | | 06:13 | | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | | | 18:52 | | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | | 06:28 | | | 06:11 | | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | | | 18:54 | | | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 17:27 (32) | 06:26 | | | 06:08 | | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 3 | 17:30 (32) | 18:56 | | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | | 17:22 (32) | 06:23 | | | 06:06 | | 05:09 | 04:54 |
| | 16:55 | | | 18:01 | 10 | 17:32 (32) | 18:57 | | | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 17:21 (32) | 06:21 | | | 06:04 | | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 14 | 17:35 (32) | 18:59 | | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 17:19 (32) | 06:18 | | | 06:01 | | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 17 | 17:36 (32) | 19:01 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | | | | 07:15 | | | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | | | | 20:03 | | | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:05 | | | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | | | | 07:10 | | | | | 05:03 | |
| | 17:06 | | | | | | 20:07 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 52 | | | 44 | | | 227 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,49 | | | 0,94 | | | 0,94 | | | | | |
| Total reduction | | 0,08 | | | 0,21 | | | 0,29 | | | | | |
| Total, real | | 4 | | | 9 | | | 66 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 07:34 | | | 07:36 | | 08:35 | | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | 16:10 | | |
| 2 | 04:57 | | 05:41 | | 06:39 | | 07:36 | | 18:01 (32) | 07:38 | | 08:36 | | |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 9 | 18:10 (32) | 16:55 | | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:38 | | 17:58 (32) | 07:41 | | 08:38 | | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 14 | 18:12 (32) | 16:53 | | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:40 | | 17:56 (32) | 07:43 | | 08:40 | | |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 17 | 18:13 (32) | 16:51 | | 16:07 | | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 17:54 (32) | 07:45 | | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 20 | 18:14 (32) | 16:49 | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 17:53 (32) | 07:47 | | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | | 18:59 | 22 | 18:15 (32) | 16:47 | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:46 | | 17:52 (32) | 07:49 | | 08:44 | | 10:13 (29) |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 23 | 18:15 (32) | 16:45 | | 16:05 | 6 | 10:19 (29) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:52 (32) | 07:51 | | 08:45 | | 10:11 (29) |
| | 22:14 | | 21:25 | | 20:11 | | 18:54 | 23 | 18:15 (32) | 16:43 | | 16:05 | 9 | 10:20 (29) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 17:51 (32) | 07:53 | | 08:47 | | 10:11 (29) |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 24 | 18:15 (32) | 16:41 | | 16:05 | 11 | 10:22 (29) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:52 | | 17:51 (32) | 07:55 | | 08:48 | | 10:11 (29) |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 23 | 18:14 (32) | 16:40 | | 16:04 | 12 | 10:23 (29) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:54 | | 17:51 (32) | 07:57 | | 08:49 | | 10:11 (29) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 23 | 18:14 (32) | 16:38 | | 16:04 | 13 | 10:24 (29) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:56 | | 17:51 (32) | 07:59 | | 08:50 | | 10:11 (29) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 22 | 18:13 (32) | 16:36 | | 16:04 | 14 | 10:25 (29) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:58 | | 17:52 (32) | 08:01 | | 08:51 | | 10:11 (29) |
| | 22:09 | | 21:15 | | 19:58 | | 18:42 | 19 | 18:11 (32) | 16:34 | | 16:04 | 15 | 10:26 (29) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | | 17:52 (32) | 08:03 | | 08:52 | | 10:11 (29) |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16 | 18:08 (32) | 16:32 | | 16:03 | 15 | 10:26 (29) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | | 17:54 (32) | 08:05 | | 08:53 | | 10:11 (29) |
| | 22:06 | | 21:10 | | 19:53 | | 18:37 | 12 | 18:06 (32) | 16:31 | | 16:03 | 16 | 10:27 (29) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 17:56 (32) | 08:07 | | 08:54 | | 10:12 (29) |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 7 | 18:03 (32) | 16:29 | | 16:03 | 16 | 10:28 (29) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | | 08:09 | | 08:55 | | 10:12 (29) |
| | 22:04 | | 21:05 | | 19:48 | | 18:32 | | | 16:27 | | 16:04 | 17 | 10:29 (29) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | | 08:11 | | 08:56 | | 10:13 (29) |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | | | 16:26 | | 16:04 | 16 | 10:29 (29) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | | 08:13 | | 08:57 | | 10:12 (29) |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | | | 16:24 | | 16:04 | 17 | 10:29 (29) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | | | 08:15 | | 08:57 | | 10:13 (29) |
| | 22:00 | | 20:58 | | 19:40 | | 18:25 | | | 16:23 | | 16:04 | 17 | 10:30 (29) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | | | 08:17 | | 08:58 | | 10:14 (29) |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | | | 16:21 | | 16:05 | 17 | 10:31 (29) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | | | 08:19 | | 08:59 | | 10:14 (29) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | | | 16:20 | | 16:05 | 17 | 10:31 (29) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 08:18 | | | 08:21 | | 08:59 | | 10:14 (29) |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | | | 16:19 | | 16:06 | 17 | 10:31 (29) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | | | 08:23 | | 09:00 | | 10:15 (29) |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | | | 16:17 | | 16:06 | 17 | 10:32 (29) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | | | 08:24 | | 09:00 | | 10:16 (29) |
| | 21:52 | | 20:46 | | 19:27 | | 17:13 | | | 16:16 | | 16:07 | 16 | 10:32 (29) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | | 08:26 | | 09:00 | | 10:16 (29) |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | | | 16:15 | | 16:08 | 17 | 10:33 (29) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | | 08:28 | | 09:00 | | 10:16 (29) |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | | | 16:14 | | 16:08 | 17 | 10:33 (29) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 07:28 | | | 08:30 | | 09:01 | | 10:17 (29) |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | | | 16:13 | | 16:09 | 16 | 10:33 (29) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:30 | | | 08:31 | | 09:01 | | 10:18 (29) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | | | 16:12 | | 16:10 | 15 | 10:33 (29) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 07:32 | | | 08:33 | | 09:01 | | 10:19 (29) |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | | | 16:11 | | 16:11 | 15 | 10:34 (29) |
| 31 | 05:38 | | 06:36 | | | | 07:34 | | | | | 09:01 | | 10:20 (29) |
| | 21:41 | | 20:32 | | | | 17:00 | | | | | 16:12 | 14 | 10:34 (29) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 | | |
| Total, worst case | | | | | | | | 274 | | | | | 372 | |
| Sun reduction | | | | | | | | 0,31 | | | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,94 | | | | | 0,49 | |
| Total reduction | | | | | | | | 0,26 | | | | | 0,06 | |
| Total, real | | | | | | | | 71 | | | | | 22 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 08:59 (17) | 07:26 | | 17:22 (11) | 07:07 | | | 05:55 | | | 05:01 | | 20:06 (13) |
| | 16:13 | | | 17:08 | 67 | 15:46 (36) | 18:07 | 17 | 17:39 (11) | 20:09 | | | 21:08 | | | 22:02 | 38 | 20:44 (13) |
| 2 | 09:00 | | | 08:25 | | 08:58 (17) | 07:24 | | 17:21 (11) | 07:05 | | | 05:52 | | 20:17 (13) | 05:00 | | 20:06 (13) |
| | 16:15 | | | 17:10 | 69 | 15:46 (36) | 18:09 | 20 | 17:41 (11) | 20:11 | | | 21:10 | 14 | 20:31 (13) | 22:03 | 38 | 20:44 (13) |
| 3 | 09:00 | | | 08:23 | | 08:58 (17) | 07:21 | | 17:21 (11) | 07:02 | | | 05:50 | | 20:14 (13) | 04:59 | | 20:06 (13) |
| | 16:16 | | | 17:12 | 71 | 16:39 (12) | 18:11 | 22 | 17:43 (11) | 20:13 | | | 21:12 | 19 | 20:33 (13) | 22:04 | 38 | 20:44 (13) |
| 4 | 08:59 | | | 08:22 | | 08:58 (17) | 07:19 | | 17:20 (11) | 07:00 | | 19:38 (10) | 05:48 | | 20:12 (13) | 04:58 | | 20:07 (13) |
| | 16:17 | | | 17:14 | 76 | 16:41 (12) | 18:13 | 23 | 17:43 (11) | 20:15 | 9 | 19:47 (10) | 21:14 | 23 | 20:35 (13) | 22:06 | 36 | 20:43 (13) |
| 5 | 08:59 | | | 08:20 | | 08:58 (17) | 07:16 | | 17:20 (11) | 06:57 | | 19:36 (10) | 05:46 | | 20:10 (13) | 04:58 | | 20:08 (13) |
| | 16:18 | | | 17:16 | 78 | 16:44 (12) | 18:15 | 22 | 17:42 (11) | 20:17 | 13 | 19:49 (10) | 21:16 | 27 | 20:37 (13) | 22:07 | 36 | 20:44 (13) |
| 6 | 08:59 | | | 08:18 | | 08:58 (17) | 07:14 | | 17:20 (11) | 06:55 | | 19:34 (10) | 05:44 | | 20:09 (13) | 04:57 | | 20:08 (13) |
| | 16:20 | | | 17:18 | 81 | 16:46 (12) | 18:17 | 22 | 17:42 (11) | 20:19 | 17 | 19:51 (10) | 21:18 | 29 | 20:38 (13) | 22:08 | 36 | 20:44 (13) |
| 7 | 08:58 | | | 08:16 | | 08:59 (17) | 07:11 | | 17:20 (11) | 06:52 | | 19:33 (10) | 05:42 | | 20:07 (13) | 04:56 | | 20:09 (13) |
| | 16:21 | | | 17:20 | 83 | 16:49 (12) | 18:19 | 26 | 17:46 (14) | 20:21 | 20 | 19:53 (10) | 21:20 | 32 | 20:39 (13) | 22:09 | 35 | 20:44 (13) |
| 8 | 08:57 | | | 08:14 | | 08:59 (17) | 07:09 | | 17:21 (11) | 06:50 | | 19:31 (10) | 05:40 | | 20:07 (13) | 04:55 | | 20:09 (13) |
| | 16:23 | | | 17:23 | 84 | 16:51 (12) | 18:21 | 29 | 17:50 (14) | 20:23 | 24 | 19:55 (10) | 21:22 | 34 | 20:41 (13) | 22:10 | 35 | 20:44 (13) |
| 9 | 08:57 | | | 08:12 | | 08:59 (17) | 07:06 | | 17:22 (11) | 06:47 | | 19:30 (10) | 05:38 | | 20:06 (13) | 04:55 | | 20:09 (13) |
| | 16:24 | | | 17:25 | 86 | 16:53 (12) | 18:23 | 30 | 17:52 (14) | 20:25 | 26 | 19:56 (10) | 21:24 | 35 | 20:41 (13) | 22:11 | 34 | 20:43 (13) |
| 10 | 08:56 | | | 08:10 | | 08:59 (17) | 07:04 | | 17:24 (11) | 06:45 | | 19:29 (10) | 05:36 | | 20:05 (13) | 04:54 | | 20:10 (13) |
| | 16:26 | | | 17:27 | 86 | 16:54 (12) | 18:25 | 30 | 17:54 (14) | 20:27 | 26 | 19:55 (10) | 21:25 | 37 | 20:42 (13) | 22:12 | 33 | 20:43 (13) |
| 11 | 08:55 | | | 08:07 | | 09:00 (17) | 07:01 | | 17:27 (14) | 06:42 | | 19:29 (10) | 05:34 | | 20:04 (13) | 04:54 | | 20:11 (13) |
| | 16:27 | | | 17:29 | 80 | 16:54 (12) | 18:27 | 28 | 17:55 (14) | 20:29 | 27 | 19:56 (10) | 21:27 | 38 | 20:42 (13) | 22:13 | 33 | 20:44 (13) |
| 12 | 08:55 | | | 08:05 | | 09:01 (17) | 06:59 | | 17:25 (14) | 06:40 | | 19:28 (10) | 05:32 | | 20:04 (13) | 04:53 | | 20:10 (13) |
| | 16:29 | | | 17:31 | 78 | 16:54 (12) | 18:29 | 30 | 17:55 (14) | 20:31 | 27 | 19:55 (10) | 21:29 | 38 | 20:42 (13) | 22:14 | 33 | 20:43 (13) |
| 13 | 08:54 | | 15:15 (36) | 08:03 | | 09:02 (17) | 06:56 | | 17:25 (14) | 06:37 | | 19:28 (10) | 05:30 | | 20:04 (13) | 04:53 | | 20:11 (13) |
| | 16:31 | 8 | 15:23 (36) | 17:33 | 72 | 16:53 (12) | 18:31 | 32 | 17:57 (14) | 20:33 | 27 | 19:55 (10) | 21:31 | 39 | 20:43 (13) | 22:14 | 32 | 20:43 (13) |
| 14 | 08:53 | | 15:13 (36) | 08:01 | | 09:03 (17) | 06:54 | | 17:23 (14) | 06:35 | | 19:29 (10) | 05:28 | | 20:03 (13) | 04:52 | | 20:12 (13) |
| | 16:32 | 13 | 15:26 (36) | 17:35 | 64 | 16:52 (12) | 18:33 | 34 | 17:57 (14) | 20:35 | 26 | 19:55 (10) | 21:33 | 41 | 20:44 (13) | 22:15 | 31 | 20:43 (13) |
| 15 | 08:52 | | 15:12 (36) | 07:59 | | 09:06 (17) | 06:51 | | 17:23 (14) | 06:32 | | 19:28 (10) | 05:26 | | 20:03 (13) | 04:52 | | 20:12 (13) |
| | 16:34 | 17 | 15:29 (36) | 17:38 | 54 | 16:51 (12) | 18:35 | 34 | 17:57 (14) | 20:37 | 26 | 19:54 (10) | 21:35 | 40 | 20:43 (13) | 22:16 | 32 | 20:44 (13) |
| 16 | 08:51 | | 15:11 (36) | 07:57 | | 09:08 (17) | 06:49 | | 17:22 (14) | 06:30 | | 19:29 (10) | 05:24 | | 20:03 (13) | 04:52 | | 20:13 (13) |
| | 16:36 | 20 | 15:31 (36) | 17:40 | 40 | 16:49 (12) | 18:37 | 35 | 17:57 (14) | 20:39 | 24 | 19:53 (10) | 21:36 | 41 | 20:44 (13) | 22:16 | 31 | 20:44 (13) |
| 17 | 08:49 | | 15:09 (36) | 07:54 | | 15:19 (36) | 06:46 | | 17:22 (14) | 06:27 | | 19:29 (10) | 05:23 | | 20:02 (13) | 04:52 | | 20:13 (13) |
| | 16:38 | 23 | 15:32 (36) | 17:42 | 15 | 15:34 (36) | 18:39 | 36 | 17:58 (14) | 20:41 | 23 | 19:52 (10) | 21:38 | 42 | 20:44 (13) | 22:17 | 31 | 20:44 (13) |
| 18 | 08:48 | | 15:09 (36) | 07:52 | | | 06:43 | | 17:22 (14) | 06:25 | | 19:30 (10) | 05:21 | | 20:03 (13) | 04:52 | | 20:13 (13) |
| | 16:40 | 25 | 15:34 (36) | 17:44 | | | 18:41 | 35 | 17:57 (14) | 20:43 | 21 | 19:51 (10) | 21:40 | 42 | 20:45 (13) | 22:17 | 31 | 20:44 (13) |
| 19 | 08:47 | | 15:08 (36) | 07:50 | | | 06:41 | | 17:21 (14) | 06:22 | | 19:31 (10) | 05:19 | | 20:02 (13) | 04:52 | | 20:14 (13) |
| | 16:42 | 27 | 15:35 (36) | 17:46 | | | 18:43 | 35 | 17:56 (14) | 20:45 | 19 | 19:50 (10) | 21:42 | 42 | 20:44 (13) | 22:18 | 30 | 20:44 (13) |
| 20 | 08:46 | | 15:07 (36) | 07:48 | | | 06:38 | | 17:22 (14) | 06:20 | | 19:32 (10) | 05:18 | | 20:03 (13) | 04:52 | | 20:14 (13) |
| | 16:43 | 30 | 15:37 (36) | 17:48 | | | 18:45 | 34 | 17:56 (14) | 20:47 | 15 | 19:47 (10) | 21:43 | 42 | 20:45 (13) | 22:18 | 30 | 20:44 (13) |
| 21 | 08:45 | | 15:06 (36) | 07:45 | | | 06:36 | | 17:21 (14) | 06:18 | | 19:35 (10) | 05:16 | | 20:02 (13) | 04:52 | | 20:14 (13) |
| | 16:45 | 32 | 15:38 (36) | 17:50 | | | 18:47 | 34 | 17:55 (14) | 20:49 | 9 | 19:44 (10) | 21:45 | 42 | 20:44 (13) | 22:18 | 30 | 20:44 (13) |
| 22 | 08:43 | | 15:07 (36) | 07:43 | | | 06:33 | | 17:22 (14) | 06:15 | | | 05:14 | | 20:03 (13) | 04:52 | | 20:14 (13) |
| | 16:47 | 33 | 15:40 (36) | 17:52 | | | 18:49 | 33 | 17:55 (14) | 20:50 | | | 21:47 | 42 | 20:45 (13) | 22:18 | 30 | 20:44 (13) |
| 23 | 08:42 | | 15:06 (36) | 07:41 | | | 06:31 | | 17:22 (14) | 06:13 | | | 05:13 | | 20:03 (13) | 04:52 | | 20:15 (13) |
| | 16:49 | 34 | 15:40 (36) | 17:54 | | | 18:51 | 32 | 17:54 (14) | 20:52 | | | 21:48 | 42 | 20:45 (13) | 22:19 | 30 | 20:45 (13) |
| 24 | 08:40 | | 15:05 (36) | 07:38 | | | 06:28 | | 17:22 (14) | 06:11 | | | 05:11 | | 20:03 (13) | 04:53 | | 20:14 (13) |
| | 16:51 | 36 | 15:41 (36) | 17:57 | | | 18:53 | 30 | 17:52 (14) | 20:54 | | | 21:50 | 41 | 20:44 (13) | 22:19 | 31 | 20:45 (13) |
| 25 | 08:39 | | 15:06 (36) | 07:36 | | | 06:25 | | 17:24 (14) | 06:08 | | | 05:10 | | 20:03 (13) | 04:53 | | 20:14 (13) |
| | 16:53 | 37 | 15:43 (36) | 17:59 | | | 18:55 | 27 | 17:51 (14) | 20:56 | | | 21:52 | 42 | 20:45 (13) | 22:19 | 31 | 20:45 (13) |
| 26 | 08:37 | | 09:08 (17) | 07:33 | | 17:26 (11) | 06:23 | | 17:25 (14) | 06:06 | | | 05:09 | | 20:04 (13) | 04:53 | | 20:15 (13) |
| | 16:55 | 46 | 15:43 (36) | 18:01 | 6 | 17:32 (11) | 18:57 | 24 | 17:49 (14) | 20:58 | | | 21:53 | 41 | 20:45 (13) | 22:19 | 31 | 20:46 (13) |
| 27 | 08:36 | | 09:06 (17) | 07:31 | | 17:25 (11) | 06:20 | | 17:27 (14) | 06:04 | | | 05:07 | | 20:04 (13) | 04:54 | | 20:14 (13) |
| | 16:57 | 51 | 15:44 (36) | 18:03 | 10 | 17:35 (11) | 18:59 | 20 | 17:47 (14) | 21:00 | | | 21:55 | 41 | 20:45 (13) | 22:19 | 32 | 20:46 (13) |
| 28 | 08:34 | | 09:04 (17) | 07:29 | | 17:23 (11) | 06:18 | | 17:29 (14) | 06:01 | | | 05:06 | | 20:04 (13) | 04:54 | | 20:15 (13) |
| | 16:59 | 56 | 15:44 (36) | 18:05 | 13 | 17:36 (11) | 19:01 | 15 | 17:44 (14) | 21:02 | | | 21:56 | 41 | 20:45 (13) | 22:18 | 32 | 20:47 (13) |
| 29 | 08:32 | | 09:02 (17) | | | | 07:15 | | 18:34 (14) | 05:59 | | | 05:05 | | 20:05 (13) | 04:55 | | 20:14 (13) |
| | 17:01 | 60 | 15:45 (36) | | | | 20:03 | 4 | 18:38 (14) | 21:04 | | | 21:58 | 40 | 20:45 (13) | 22:18 | 32 | 20:46 (13) |
| 30 | 08:31 | | 09:00 (17) | | | | 07:13 | | | 05:57 | | | 05:04 | | 20:05 (13) | 04:56 | | 20:15 (13) |
| | 17:04 | 63 | 15:45 (36) | | | | 20:05 | | | 21:06 | | | 21:59 | 40 | 20:45 (13) | 22:18 | 32 | 20:47 (13) |
| 31 | 08:29 | | 08:59 (17) | | | | 07:10 | | | | | | 05:02 | | 20:05 (13) | | | |
| | 17:06 | 65 | 15:45 (36) | | | | 20:07 | | | | | | 22:00 | 40 | 20:45 (13) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 676 | | | 1213 | | | 793 | | | 379 | | | 1107 | | | 984 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | 0,71 | | | 0,96 | | | 0,99 | | | 0,93 | | | 0,93 | |
| Total reduction | | 0,11 | | | 0,17 | | | 0,31 | | | 0,37 | | | 0,46 | | | 0,43 | |
| Total, real | | 75 | | | 202 | | | 249 | | | 141 | | | 506 | | | 420 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | 20:15 (13) | 05:39 | 20:14 (13) | 06:37 | 19:28 (10) | 07:34 | 18:05 (14) | 07:36 | 08:29 (17) | 08:35 |
| | 22:17 33 | 20:48 (13) | 21:39 39 | 20:53 (13) | 20:29 27 | 19:55 (10) | 19:12 31 | 18:36 (14) | 16:57 84 | 16:24 (12) | 16:10 |
| 2 | 04:57 | 20:14 (13) | 05:41 | 20:15 (13) | 06:39 | 19:28 (10) | 07:36 | 18:06 (14) | 07:38 | 08:28 (17) | 08:36 |
| | 22:17 33 | 20:47 (13) | 21:37 37 | 20:52 (13) | 20:26 26 | 19:54 (10) | 19:09 28 | 18:34 (14) | 16:55 85 | 16:22 (12) | 16:09 |
| 3 | 04:58 | 20:14 (13) | 05:43 | 20:16 (13) | 06:41 | 19:28 (10) | 07:38 | 18:04 (11) | 07:40 | 08:29 (17) | 08:38 |
| | 22:17 34 | 20:48 (13) | 21:35 36 | 20:52 (13) | 20:24 26 | 19:54 (10) | 19:07 29 | 18:33 (14) | 16:53 84 | 16:21 (12) | 16:08 |
| 4 | 04:59 | 20:14 (13) | 05:45 | 20:16 (13) | 06:43 | 19:28 (10) | 07:40 | 18:01 (11) | 07:42 | 08:28 (17) | 08:39 |
| | 22:16 35 | 20:49 (13) | 21:33 34 | 20:50 (13) | 20:21 24 | 19:52 (10) | 19:04 30 | 18:31 (14) | 16:51 82 | 16:18 (12) | 16:07 |
| 5 | 05:00 | 20:14 (13) | 05:46 | 20:17 (13) | 06:45 | 19:29 (10) | 07:42 | 17:59 (11) | 07:44 | 08:28 (17) | 08:41 |
| | 22:15 35 | 20:49 (13) | 21:31 33 | 20:50 (13) | 20:19 20 | 19:49 (10) | 19:01 30 | 18:29 (14) | 16:49 81 | 16:16 (12) | 16:06 |
| 6 | 05:01 | 20:14 (13) | 05:48 | 20:18 (13) | 06:47 | 19:30 (10) | 07:44 | 17:58 (11) | 07:46 | 08:28 (17) | 08:42 |
| | 22:15 36 | 20:50 (13) | 21:29 31 | 20:49 (13) | 20:16 17 | 19:47 (10) | 18:59 27 | 18:25 (14) | 16:47 77 | 16:13 (12) | 16:06 |
| 7 | 05:02 | 20:14 (13) | 05:50 | 20:19 (13) | 06:49 | 19:31 (10) | 07:46 | 17:57 (11) | 07:48 | 08:29 (17) | 08:44 |
| | 22:14 36 | 20:50 (13) | 21:27 29 | 20:48 (13) | 20:14 14 | 19:45 (10) | 18:56 21 | 18:18 (11) | 16:45 75 | 16:12 (12) | 16:05 |
| 8 | 05:03 | 20:14 (13) | 05:52 | 20:20 (13) | 06:51 | 19:33 (10) | 07:48 | 17:56 (11) | 07:51 | 08:29 (17) | 08:45 |
| | 22:13 37 | 20:51 (13) | 21:25 26 | 20:46 (13) | 20:11 9 | 19:42 (10) | 18:54 22 | 18:18 (11) | 16:43 70 | 16:09 (12) | 16:05 |
| 9 | 05:04 | 20:14 (13) | 05:54 | 20:22 (13) | 06:52 | | 07:50 | 17:55 (11) | 07:53 | 08:29 (17) | 08:46 |
| | 22:12 37 | 20:51 (13) | 21:23 22 | 20:44 (13) | 20:09 | | 18:51 23 | 18:18 (11) | 16:41 68 | 15:17 (36) | 16:04 |
| 10 | 05:05 | 20:14 (13) | 05:56 | 20:24 (13) | 06:54 | | 07:52 | 17:55 (11) | 07:55 | 08:30 (17) | 08:48 |
| | 22:11 37 | 20:51 (13) | 21:21 18 | 20:42 (13) | 20:06 | | 18:49 23 | 18:18 (11) | 16:39 66 | 15:16 (36) | 16:04 |
| 11 | 05:06 | 20:13 (13) | 05:58 | 20:27 (13) | 06:56 | | 07:54 | 17:55 (11) | 07:57 | 08:31 (17) | 08:49 |
| | 22:11 39 | 20:52 (13) | 21:19 11 | 20:38 (13) | 20:03 | | 18:46 21 | 18:16 (11) | 16:38 65 | 15:17 (36) | 16:04 |
| 12 | 05:08 | 20:13 (13) | 05:59 | | 06:58 | | 07:56 | 17:55 (11) | 07:59 | 08:32 (17) | 08:50 |
| | 22:09 39 | 20:52 (13) | 21:17 | | 20:01 | | 18:44 19 | 18:14 (11) | 16:36 63 | 15:17 (36) | 16:04 |
| 13 | 05:09 | 20:14 (13) | 06:01 | | 07:00 | | 07:58 | 17:56 (11) | 08:01 | 08:34 (17) | 08:51 |
| | 22:08 39 | 20:53 (13) | 21:14 | | 19:58 | | 18:41 15 | 18:11 (11) | 16:34 59 | 15:16 (36) | 16:03 |
| 14 | 05:10 | 20:13 (13) | 06:03 | | 07:02 | | 08:00 | 17:56 (11) | 08:03 | 08:36 (17) | 08:52 |
| | 22:07 40 | 20:53 (13) | 21:12 | | 19:56 | | 18:39 12 | 18:08 (11) | 16:32 56 | 15:16 (36) | 16:03 |
| 15 | 05:12 | 20:13 (13) | 06:05 | | 07:04 | 18:19 (14) | 08:02 | 17:57 (11) | 08:05 | 08:39 (17) | 08:53 |
| | 22:06 40 | 20:53 (13) | 21:10 | | 19:53 14 | 18:33 (14) | 18:36 9 | 18:06 (11) | 16:30 51 | 15:17 (36) | 16:03 |
| 16 | 05:13 | 20:13 (13) | 06:07 | | 07:06 | 18:16 (14) | 08:04 | 17:59 (11) | 08:07 | 08:41 (17) | 08:54 |
| | 22:05 40 | 20:53 (13) | 21:08 | | 19:50 19 | 18:35 (14) | 18:34 4 | 18:03 (11) | 16:29 46 | 15:16 (36) | 16:03 |
| 17 | 05:15 | 20:13 (13) | 06:09 | | 07:08 | 18:14 (14) | 08:06 | | 08:09 | 14:38 (36) | 08:55 |
| | 22:04 41 | 20:54 (13) | 21:05 | | 19:48 23 | 18:37 (14) | 18:32 | | 16:27 37 | 15:15 (36) | 16:03 |
| 18 | 05:16 | 20:13 (13) | 06:11 | | 07:09 | 18:12 (14) | 08:08 | | 08:11 | 14:39 (36) | 08:56 |
| | 22:02 41 | 20:54 (13) | 21:03 | | 19:45 26 | 18:38 (14) | 18:29 | | 16:26 36 | 15:15 (36) | 16:04 |
| 19 | 05:17 | 20:12 (13) | 06:13 | | 07:11 | 18:10 (14) | 08:10 | | 08:13 | 14:40 (36) | 08:56 |
| | 22:01 42 | 20:54 (13) | 21:01 | | 19:43 29 | 18:39 (14) | 18:27 | | 16:24 34 | 15:14 (36) | 16:04 |
| 20 | 05:19 | 20:13 (13) | 06:15 | | 07:13 | 18:09 (14) | 08:12 | | 08:15 | 14:42 (36) | 08:57 |
| | 21:59 42 | 20:55 (13) | 20:58 | | 19:40 31 | 18:40 (14) | 18:24 | | 16:23 33 | 15:15 (36) | 16:04 |
| 21 | 05:21 | 20:12 (13) | 06:16 | | 07:15 | 18:08 (14) | 08:14 | | 08:17 | 14:42 (36) | 08:58 |
| | 21:58 42 | 20:54 (13) | 20:56 | | 19:37 32 | 18:40 (14) | 18:22 | | 16:21 32 | 15:14 (36) | 16:05 |
| 22 | 05:22 | 20:13 (13) | 06:18 | 19:39 (10) | 07:17 | 18:06 (14) | 08:16 | | 08:18 | 14:43 (36) | 08:58 |
| | 21:57 42 | 20:55 (13) | 20:53 11 | 19:50 (10) | 19:35 34 | 18:40 (14) | 18:20 | | 16:20 30 | 15:13 (36) | 16:05 |
| 23 | 05:24 | 20:13 (13) | 06:20 | 19:37 (10) | 07:19 | 18:05 (14) | 08:18 | | 08:20 | 14:45 (36) | 08:59 |
| | 21:55 42 | 20:55 (13) | 20:51 15 | 19:52 (10) | 19:32 35 | 18:40 (14) | 18:17 | | 16:18 27 | 15:12 (36) | 16:06 |
| 24 | 05:25 | 20:13 (13) | 06:22 | 19:35 (10) | 07:21 | 18:05 (14) | 08:20 | 15:53 (36) | 08:22 | 14:46 (36) | 08:59 |
| | 21:53 42 | 20:55 (13) | 20:49 19 | 19:54 (10) | 19:30 35 | 18:40 (14) | 18:15 7 | 16:00 (36) | 16:17 26 | 15:12 (36) | 16:06 |
| 25 | 05:27 | 20:13 (13) | 06:24 | 19:32 (10) | 07:23 | 18:04 (14) | 07:22 | 14:48 (36) | 08:24 | 14:47 (36) | 09:00 |
| | 21:52 42 | 20:55 (13) | 20:46 22 | 19:54 (10) | 19:27 36 | 18:40 (14) | 17:13 22 | 16:16 (12) | 16:16 24 | 15:11 (36) | 16:07 |
| 26 | 05:29 | 20:13 (13) | 06:26 | 19:31 (10) | 07:25 | 18:04 (14) | 07:24 | 08:37 (17) | 08:26 | 14:49 (36) | 09:00 |
| | 21:50 42 | 20:55 (13) | 20:44 24 | 19:55 (10) | 19:25 35 | 18:39 (14) | 17:11 45 | 16:20 (12) | 16:15 21 | 15:10 (36) | 16:07 |
| 27 | 05:30 | 20:13 (13) | 06:28 | 19:31 (10) | 07:26 | 18:04 (14) | 07:26 | 08:34 (17) | 08:28 | 14:51 (36) | 09:00 |
| | 21:48 41 | 20:54 (13) | 20:41 24 | 19:55 (10) | 19:22 35 | 18:39 (14) | 17:08 58 | 16:21 (12) | 16:14 17 | 15:08 (36) | 16:08 |
| 28 | 05:32 | 20:13 (13) | 06:30 | 19:30 (10) | 07:28 | 18:04 (14) | 07:28 | 08:32 (17) | 08:29 | 14:53 (36) | 09:00 |
| | 21:47 42 | 20:55 (13) | 20:39 26 | 19:56 (10) | 19:19 34 | 18:38 (14) | 17:06 67 | 16:22 (12) | 16:12 14 | 15:07 (36) | 16:09 |
| 29 | 05:34 | 20:14 (13) | 06:32 | 19:29 (10) | 07:30 | 18:04 (14) | 07:30 | 08:31 (17) | 08:31 | 14:56 (36) | 09:00 |
| | 21:45 41 | 20:55 (13) | 20:36 27 | 19:56 (10) | 19:17 34 | 18:38 (14) | 17:04 72 | 16:22 (12) | 16:11 8 | 15:04 (36) | 16:10 |
| 30 | 05:36 | 20:14 (13) | 06:34 | 19:28 (10) | 07:32 | 18:04 (14) | 07:32 | 08:31 (17) | 08:33 | | 09:00 |
| | 21:43 40 | 20:54 (13) | 20:34 27 | 19:55 (10) | 19:14 33 | 18:37 (14) | 17:02 77 | 16:24 (12) | 16:10 | | 16:11 |
| 31 | 05:37 | 20:14 (13) | 06:35 | 19:28 (10) | | | 07:34 | 08:30 (17) | | | 09:00 |
| | 21:41 40 | 20:54 (13) | 20:31 27 | 19:55 (10) | | | 16:59 82 | 16:24 (12) | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 |
| Total, worst case | | 1212 | | 538 | | 648 | | 774 | | 1451 | |
| Sun reduction | | 0,49 | | 0,51 | | 0,40 | | 0,31 | | 0,16 | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,93 | | 0,96 | | 0,98 | | 0,82 | | 0,67 | |
| Total reduction | | 0,43 | | 0,47 | | 0,37 | | 0,24 | | 0,10 | |
| Total, real | | 521 | | 252 | | 239 | | 186 | | 147 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | | 09:18 (17) | | 07:26 | | 09:08 (17) | | 07:07 | |
| | 16:13 | | 17:08 | 27 | 09:45 (17) | | 18:07 | 47 | 09:55 (17) | | 20:09 | |
| 2 | 09:00 | | 08:25 | | 09:17 (17) | | 07:24 | | 09:09 (17) | | 07:05 | |
| | 16:15 | | 17:10 | 30 | 09:47 (17) | | 18:09 | 48 | 17:41 (12) | | 20:11 | |
| 3 | 09:00 | | 08:23 | | 09:15 (17) | | 07:21 | | 09:10 (17) | | 07:02 | |
| | 16:16 | | 17:12 | 34 | 09:49 (17) | | 18:11 | 49 | 17:43 (12) | | 20:13 | 6 |
| 4 | 08:59 | | 08:21 | | 09:14 (17) | | 07:19 | | 09:11 (17) | | 07:00 | |
| | 16:17 | | 17:14 | 37 | 09:51 (17) | | 18:13 | 48 | 17:45 (12) | | 20:15 | 10 |
| 5 | 08:59 | | 08:20 | | 09:13 (17) | | 07:16 | | 09:12 (17) | | 06:57 | |
| | 16:18 | | 17:16 | 39 | 09:52 (17) | | 18:15 | 60 | 17:47 (12) | | 20:17 | 14 |
| 6 | 08:59 | | 08:18 | | 09:12 (17) | | 07:14 | | 09:14 (17) | | 06:55 | |
| | 16:20 | | 17:18 | 42 | 09:54 (17) | | 18:17 | 60 | 17:49 (12) | | 20:19 | 17 |
| 7 | 08:58 | | 08:16 | | 09:11 (17) | | 07:11 | | 09:16 (17) | | 06:52 | |
| | 16:21 | | 17:20 | 44 | 09:55 (17) | | 18:19 | 58 | 17:50 (12) | | 20:21 | 20 |
| 8 | 08:57 | | 08:14 | | 09:10 (17) | | 07:09 | | 09:20 (17) | | 06:50 | |
| | 16:23 | | 17:23 | 46 | 09:56 (17) | | 18:21 | 52 | 17:50 (12) | | 20:23 | 23 |
| 9 | 08:57 | | 08:12 | | 09:09 (17) | | 07:06 | | 17:14 (36) | | 06:47 | |
| | 16:24 | | 17:25 | 47 | 09:56 (17) | | 18:23 | 34 | 17:48 (12) | | 20:25 | 23 |
| 10 | 08:56 | | 08:10 | | 09:08 (17) | | 07:04 | | 17:14 (36) | | 06:45 | |
| | 16:26 | | 17:27 | 49 | 09:57 (17) | | 18:25 | 32 | 17:46 (12) | | 20:27 | 23 |
| 11 | 08:55 | | 08:07 | | 09:08 (17) | | 07:01 | | 17:13 (36) | | 06:42 | |
| | 16:27 | | 17:29 | 50 | 09:58 (17) | | 18:27 | 30 | 17:43 (36) | | 20:29 | 23 |
| 12 | 08:54 | | 08:05 | | 09:08 (17) | | 06:59 | | 17:11 (36) | | 06:40 | |
| | 16:29 | | 17:31 | 51 | 09:59 (17) | | 18:29 | 32 | 17:43 (36) | | 20:31 | 23 |
| 13 | 08:54 | | 08:03 | | 09:06 (17) | | 06:56 | | 17:11 (36) | | 06:37 | |
| | 16:31 | | 17:33 | 53 | 09:59 (17) | | 18:31 | 33 | 17:44 (36) | | 20:33 | 22 |
| 14 | 08:53 | | 08:01 | | 09:06 (17) | | 06:54 | | 17:11 (36) | | 06:35 | |
| | 16:32 | | 17:35 | 54 | 10:00 (17) | | 18:33 | 32 | 17:43 (36) | | 20:35 | 20 |
| 15 | 08:52 | | 07:59 | | 09:06 (17) | | 06:51 | | 17:11 (36) | | 06:32 | |
| | 16:34 | | 17:37 | 54 | 10:00 (17) | | 18:35 | 32 | 17:43 (36) | | 20:37 | 18 |
| 16 | 08:51 | | 07:57 | | 09:05 (17) | | 06:49 | | 17:10 (36) | | 06:30 | |
| | 16:36 | | 17:40 | 55 | 10:00 (17) | | 18:37 | 33 | 17:43 (36) | | 20:39 | 15 |
| 17 | 08:49 | | 07:54 | | 09:05 (17) | | 06:46 | | 17:10 (36) | | 06:27 | |
| | 16:38 | | 17:42 | 55 | 10:00 (17) | | 18:39 | 32 | 17:42 (36) | | 20:41 | 11 |
| 18 | 08:48 | | 07:52 | | 09:06 (17) | | 06:43 | | 17:11 (36) | | 06:25 | |
| | 16:40 | | 17:44 | 55 | 10:01 (17) | | 18:41 | 30 | 17:41 (36) | | 20:43 | |
| 19 | 08:47 | | 07:50 | | 09:05 (17) | | 06:41 | | 17:11 (36) | | 06:22 | |
| | 16:42 | | 17:46 | 55 | 10:00 (17) | | 18:43 | 29 | 17:40 (36) | | 20:45 | 5 |
| 20 | 08:46 | | 07:48 | | 09:05 (17) | | 06:38 | | 17:12 (36) | | 06:20 | |
| | 16:43 | | 17:48 | 56 | 10:01 (17) | | 18:45 | 30 | 18:18 (11) | | 20:47 | 8 |
| 21 | 08:44 | | 07:45 | | 09:05 (17) | | 06:36 | | 17:13 (36) | | 06:18 | |
| | 16:45 | | 17:50 | 55 | 10:00 (17) | | 18:47 | 32 | 18:20 (11) | | 20:48 | 11 |
| 22 | 08:43 | | 07:43 | | 09:05 (17) | | 06:33 | | 17:15 (36) | | 06:15 | |
| | 16:47 | | 17:52 | 55 | 10:00 (17) | | 18:49 | 30 | 18:22 (11) | | 20:50 | 13 |
| 23 | 08:42 | | 07:41 | | 09:06 (17) | | 06:31 | | 17:16 (36) | | 06:13 | |
| | 16:49 | | 17:54 | 54 | 10:00 (17) | | 18:51 | 30 | 18:24 (11) | | 20:52 | 15 |
| 24 | 08:40 | | 07:38 | | 09:05 (17) | | 06:28 | | 17:19 (36) | | 06:10 | |
| | 16:51 | | 17:56 | 54 | 09:59 (17) | | 18:53 | 26 | 18:26 (11) | | 20:54 | 17 |
| 25 | 08:39 | | 07:36 | | 09:06 (17) | | 06:25 | | 18:12 (11) | | 06:08 | |
| | 16:53 | | 17:59 | 53 | 09:59 (17) | | 18:55 | 16 | 18:28 (11) | | 20:56 | 18 |
| 26 | 08:37 | | 07:33 | | 09:06 (17) | | 06:23 | | 18:11 (11) | | 06:06 | |
| | 16:55 | | 18:01 | 51 | 09:57 (17) | | 18:57 | 16 | 18:27 (11) | | 20:58 | 18 |
| 27 | 08:36 | | 07:31 | | 09:07 (17) | | 06:20 | | 18:12 (11) | | 06:04 | |
| | 16:57 | | 18:03 | 50 | 09:57 (17) | | 18:59 | 15 | 18:27 (11) | | 21:00 | 16 |
| 28 | 08:34 | | 07:29 | | 09:07 (17) | | 06:18 | | 18:13 (11) | | 06:01 | |
| | 16:59 | | 18:05 | 48 | 09:55 (17) | | 19:01 | 12 | 18:25 (11) | | 21:02 | 16 |
| 29 | 08:32 | | | | | | 07:15 | | 19:15 (11) | | 05:59 | |
| | 17:01 | | | | | | 20:03 | 6 | 19:21 (11) | | 21:04 | 12 |
| 30 | 08:31 | 09:24 (17) | | | | | 07:13 | | | | 05:57 | |
| | 17:04 | 15 09:39 (17) | | | | | 20:05 | | | | 21:06 | 10 |
| 31 | 08:29 | 09:21 (17) | | | | | 07:10 | | | | | |
| | 17:06 | 21 09:42 (17) | | | | | 20:07 | | | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Total, worst case | | 36 | | 1353 | | 984 | | 427 | | 441 | | 123 |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | 0,48 |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | 0,76 | | 0,76 | | 0,90 | | 0,98 | | 0,88 | | 0,88 |
| Total reduction | | 0,13 | | 0,18 | | 0,30 | | 0,38 | | 0,45 | | 0,42 |
| Total, real | | 5 | | 247 | | 297 | | 162 | | 197 | | 51 |

Table layout: For each day in each month the following matrix apply

| | | | |
|---|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | | 05:39 | | 20:55 (13) | 06:37 | | 19:30 (14) | 07:34 | | 17:51 (36) | 07:36 | | 08:38 (17) | 08:34 | |
| | 22:17 | | | 21:39 | 11 | 21:06 (13) | 20:29 | 23 | 19:53 (14) | 19:12 | 32 | 18:23 (36) | 16:57 | 49 | 09:27 (17) | 16:10 | |
| 2 | 04:57 | | | 05:41 | | 20:57 (13) | 06:39 | | 19:30 (14) | 07:36 | | 17:51 (36) | 07:38 | | 08:38 (17) | 08:36 | |
| | 22:17 | | | 21:37 | 7 | 21:04 (13) | 20:26 | 23 | 19:53 (14) | 19:09 | 31 | 18:22 (36) | 16:55 | 48 | 09:26 (17) | 16:09 | |
| 3 | 04:58 | | 20:58 (13) | 05:43 | | 20:59 (13) | 06:41 | | 19:30 (14) | 07:38 | | 17:52 (36) | 07:40 | | 08:40 (17) | 08:38 | |
| | 22:17 | 6 | 21:04 (13) | 21:35 | 4 | 21:03 (13) | 20:24 | 23 | 19:53 (14) | 19:06 | 31 | 18:23 (12) | 16:53 | 46 | 09:26 (17) | 16:08 | |
| 4 | 04:59 | | 20:57 (13) | 05:45 | | | 06:43 | | 19:29 (14) | 07:40 | | 17:52 (36) | 07:42 | | 08:41 (17) | 08:39 | |
| | 22:16 | 8 | 21:05 (13) | 21:33 | | | 20:21 | 23 | 19:52 (14) | 19:04 | 33 | 18:25 (12) | 16:51 | 43 | 09:24 (17) | 16:07 | |
| 5 | 05:00 | | 20:57 (13) | 05:46 | | | 06:45 | | 19:29 (14) | 07:42 | | 09:59 (17) | 07:44 | | 08:42 (17) | 08:41 | |
| | 22:15 | 10 | 21:07 (13) | 21:31 | | | 20:19 | 20 | 19:49 (14) | 19:01 | 46 | 18:26 (12) | 16:49 | 41 | 09:23 (17) | 16:06 | |
| 6 | 05:01 | | 20:56 (13) | 05:48 | | | 06:47 | | 19:30 (14) | 07:44 | | 09:54 (17) | 07:46 | | 08:43 (17) | 08:42 | |
| | 22:15 | 12 | 21:08 (13) | 21:29 | | | 20:16 | 17 | 19:47 (14) | 18:59 | 55 | 18:26 (12) | 16:47 | 39 | 09:22 (17) | 16:06 | |
| 7 | 05:02 | | 20:56 (13) | 05:50 | | | 06:49 | | 19:30 (14) | 07:46 | | 09:51 (17) | 07:48 | | 08:45 (17) | 08:44 | |
| | 22:14 | 13 | 21:09 (13) | 21:27 | | | 20:14 | 15 | 19:45 (14) | 18:56 | 60 | 18:26 (12) | 16:45 | 36 | 09:21 (17) | 16:05 | |
| 8 | 05:03 | | 20:55 (13) | 05:52 | | | 06:51 | | 19:32 (14) | 07:48 | | 09:49 (17) | 07:51 | | 08:46 (17) | 08:45 | |
| | 22:13 | 14 | 21:09 (13) | 21:25 | | | 20:11 | 10 | 19:42 (14) | 18:54 | 60 | 18:24 (12) | 16:43 | 34 | 09:20 (17) | 16:05 | |
| 9 | 05:04 | | 20:54 (13) | 05:54 | | | 06:52 | | 19:33 (14) | 07:50 | | 09:47 (17) | 07:53 | | 08:48 (17) | 08:46 | |
| | 22:12 | 16 | 21:10 (13) | 21:23 | | | 20:08 | 6 | 19:39 (14) | 18:51 | 58 | 18:22 (12) | 16:41 | 30 | 09:18 (17) | 16:04 | |
| 10 | 05:05 | | 20:54 (13) | 05:56 | | | 06:54 | | | 07:52 | | 09:45 (17) | 07:55 | | 08:50 (17) | 08:48 | |
| | 22:11 | 17 | 21:11 (13) | 21:21 | | | 20:06 | | | 18:49 | 49 | 18:19 (12) | 16:39 | 25 | 09:15 (17) | 16:04 | |
| 11 | 05:06 | | 20:53 (13) | 05:58 | | | 06:56 | | | 07:54 | | 09:44 (17) | 07:57 | | 08:53 (17) | 08:49 | |
| | 22:10 | 18 | 21:11 (13) | 21:19 | | | 20:03 | | | 18:46 | 47 | 18:16 (12) | 16:37 | 21 | 09:14 (17) | 16:04 | |
| 12 | 05:08 | | 20:53 (13) | 05:59 | | 20:21 (10) | 06:58 | | | 07:56 | | 09:42 (17) | 07:59 | | 08:56 (17) | 08:50 | |
| | 22:09 | 19 | 21:12 (13) | 21:16 | 5 | 20:26 (10) | 20:01 | | | 18:44 | 48 | 18:14 (12) | 16:36 | 14 | 09:10 (17) | 16:03 | |
| 13 | 05:09 | | 20:53 (13) | 06:01 | | 20:18 (10) | 07:00 | | | 07:58 | | 09:41 (17) | 08:01 | | | 08:51 | |
| | 22:08 | 20 | 21:13 (13) | 21:14 | 11 | 20:29 (10) | 19:58 | | | 18:41 | 47 | 10:28 (17) | 16:34 | | | 16:03 | |
| 14 | 05:10 | | 20:53 (13) | 06:03 | | 20:17 (10) | 07:02 | | 19:07 (11) | 07:59 | | 09:40 (17) | 08:03 | | | 08:52 | |
| | 22:07 | 21 | 21:14 (13) | 21:12 | 13 | 20:30 (10) | 19:56 | 5 | 19:12 (11) | 18:39 | 49 | 10:29 (17) | 16:32 | | | 16:03 | |
| 15 | 05:12 | | 20:52 (13) | 06:05 | | 20:16 (10) | 07:04 | | 19:03 (11) | 08:01 | | 09:39 (17) | 08:05 | | | 08:53 | |
| | 22:06 | 22 | 21:14 (13) | 21:10 | 15 | 20:31 (10) | 19:53 | 11 | 19:14 (11) | 18:36 | 50 | 10:29 (17) | 16:30 | | | 16:03 | |
| 16 | 05:13 | | 20:52 (13) | 06:07 | | 20:14 (10) | 07:06 | | 19:01 (11) | 08:03 | | 09:38 (17) | 08:07 | | | 08:54 | |
| | 22:05 | 22 | 21:14 (13) | 21:07 | 17 | 20:31 (10) | 19:50 | 14 | 19:15 (11) | 18:34 | 52 | 10:30 (17) | 16:29 | | | 16:03 | |
| 17 | 05:15 | | 20:52 (13) | 06:09 | | 20:13 (10) | 07:07 | | 19:00 (11) | 08:05 | | 09:37 (17) | 08:09 | | | 08:55 | |
| | 22:04 | 23 | 21:15 (13) | 21:05 | 19 | 20:32 (10) | 19:48 | 16 | 19:16 (11) | 18:32 | 53 | 10:30 (17) | 16:27 | | | 16:03 | |
| 18 | 05:16 | | 20:52 (13) | 06:11 | | 20:13 (10) | 07:09 | | 18:59 (11) | 08:07 | | 09:36 (17) | 08:11 | | | 08:56 | |
| | 22:02 | 23 | 21:15 (13) | 21:03 | 19 | 20:32 (10) | 19:45 | 17 | 19:16 (11) | 18:29 | 54 | 10:30 (17) | 16:26 | | | 16:04 | |
| 19 | 05:17 | | 20:51 (13) | 06:13 | | 20:13 (10) | 07:11 | | 18:07 (36) | 08:09 | | 09:36 (17) | 08:13 | | | 08:56 | |
| | 22:01 | 24 | 21:15 (13) | 21:01 | 17 | 20:30 (10) | 19:43 | 24 | 19:14 (11) | 18:27 | 54 | 10:30 (17) | 16:24 | | | 16:04 | |
| 20 | 05:19 | | 20:52 (13) | 06:15 | | 20:12 (10) | 07:13 | | 18:03 (36) | 08:12 | | 09:36 (17) | 08:15 | | | 08:57 | |
| | 21:59 | 24 | 21:16 (13) | 20:58 | 15 | 20:27 (10) | 19:40 | 30 | 19:11 (11) | 18:24 | 55 | 10:31 (17) | 16:23 | | | 16:04 | |
| 21 | 05:21 | | 20:51 (13) | 06:16 | | 20:12 (10) | 07:15 | | 18:01 (36) | 08:14 | | 09:36 (17) | 08:17 | | | 08:58 | |
| | 21:58 | 25 | 21:16 (13) | 20:56 | 13 | 20:25 (10) | 19:37 | 31 | 19:09 (11) | 18:22 | 55 | 10:31 (17) | 16:21 | | | 16:05 | |
| 22 | 05:22 | | 20:52 (13) | 06:18 | | 20:13 (10) | 07:17 | | 17:58 (36) | 08:16 | | 09:35 (17) | 08:18 | | | 08:58 | |
| | 21:56 | 24 | 21:16 (13) | 20:53 | 10 | 20:23 (10) | 19:35 | 31 | 19:05 (11) | 18:20 | 56 | 10:31 (17) | 16:20 | | | 16:05 | |
| 23 | 05:24 | | 20:51 (13) | 06:20 | | 20:14 (10) | 07:19 | | 17:56 (36) | 08:18 | | 09:35 (17) | 08:20 | | | 08:59 | |
| | 21:55 | 25 | 21:16 (13) | 20:51 | 7 | 20:21 (10) | 19:32 | 31 | 19:03 (11) | 18:17 | 56 | 10:31 (17) | 16:18 | | | 16:06 | |
| 24 | 05:25 | | 20:52 (13) | 06:22 | | 20:15 (10) | 07:21 | | 17:55 (36) | 08:20 | | 09:35 (17) | 08:22 | | | 08:59 | |
| | 21:53 | 24 | 21:16 (13) | 20:49 | 4 | 20:19 (10) | 19:30 | 28 | 18:23 (36) | 18:15 | 55 | 10:30 (17) | 16:17 | | | 16:06 | |
| 25 | 05:27 | | 20:52 (13) | 06:24 | | 19:42 (14) | 07:23 | | 17:54 (36) | 07:22 | | 08:35 (17) | 08:24 | | | 09:00 | |
| | 21:52 | 24 | 21:16 (13) | 20:46 | 3 | 19:45 (14) | 19:27 | 30 | 18:24 (36) | 17:13 | 55 | 09:30 (17) | 16:16 | | | 16:07 | |
| 26 | 05:29 | | 20:52 (13) | 06:26 | | 19:38 (14) | 07:25 | | 17:53 (36) | 07:24 | | 08:36 (17) | 08:26 | | | 09:00 | |
| | 21:50 | 24 | 21:16 (13) | 20:44 | 11 | 19:49 (14) | 19:24 | 31 | 18:24 (36) | 17:10 | 54 | 09:30 (17) | 16:15 | | | 16:07 | |
| 27 | 05:30 | | 20:52 (13) | 06:28 | | 19:35 (14) | 07:26 | | 17:52 (36) | 07:26 | | 08:36 (17) | 08:28 | | | 09:00 | |
| | 21:48 | 22 | 21:14 (13) | 20:41 | 16 | 19:51 (14) | 19:22 | 32 | 18:24 (36) | 17:08 | 54 | 09:30 (17) | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 20:53 (13) | 06:30 | | 19:34 (14) | 07:28 | | 17:52 (36) | 07:28 | | 08:36 (17) | 08:29 | | | 09:00 | |
| | 21:47 | 20 | 21:13 (13) | 20:39 | 18 | 19:52 (14) | 19:19 | 32 | 18:24 (36) | 17:06 | 53 | 09:29 (17) | 16:12 | | | 16:09 | |
| 29 | 05:34 | | 20:54 (13) | 06:32 | | 19:32 (14) | 07:30 | | 17:51 (36) | 07:30 | | 08:36 (17) | 08:31 | | | 09:00 | |
| | 21:45 | 18 | 21:12 (13) | 20:36 | 20 | 19:52 (14) | 19:17 | 33 | 18:24 (36) | 17:04 | 52 | 09:28 (17) | 16:11 | | | 16:10 | |
| 30 | 05:36 | | 20:54 (13) | 06:34 | | 19:31 (14) | 07:32 | | 17:51 (36) | 07:32 | | 08:37 (17) | 08:33 | | | 09:00 | |
| | 21:43 | 15 | 21:09 (13) | 20:34 | 22 | 19:53 (14) | 19:14 | 33 | 18:24 (36) | 17:02 | 52 | 09:29 (17) | 16:10 | | | 16:11 | |
| 31 | 05:37 | | 20:55 (13) | 06:35 | | 19:30 (14) | | | | 07:34 | | 08:38 (17) | | | | 09:00 | |
| | 21:41 | 13 | 21:08 (13) | 20:31 | 23 | 19:53 (14) | | | | 16:59 | 50 | 09:28 (17) | | | | 16:12 | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | |
| Total, worst case | | 546 | | | 300 | | | 589 | | | 1556 | | | 426 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,88 | | | 0,97 | | | 0,97 | | | 0,80 | | | 0,76 | | | |
| Total reduction | | 0,42 | | | 0,49 | | | 0,38 | | | 0,24 | | | 0,12 | | | |
| Total, real | | 229 | | | 147 | | | 222 | | | 373 | | | 50 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27<br>18:07 | 07:08<br>20:10 14 | 07:32 (2)<br>07:46 (2) | 05:55<br>21:09 | 05:02<br>22:02 20 | 05:37 (1)<br>05:57 (1) |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24<br>18:10 | 07:05<br>20:12 18 | 07:30 (2)<br>07:48 (2) | 05:53<br>21:11 | 05:01<br>22:04 22 | 05:37 (1)<br>05:59 (1) |
| 3 | 09:00<br>16:16 | 08:24<br>17:13 | 07:22<br>18:12 | 07:03<br>20:14 22 | 07:27 (2)<br>07:49 (2) | 05:51<br>21:13 | 05:00<br>22:05 24 | 05:36 (1)<br>06:00 (1) |
| 4 | 09:00<br>16:18 | 08:22<br>17:15 | 07:19<br>18:14 | 07:00<br>20:16 24 | 07:26 (2)<br>07:50 (2) | 05:49<br>21:14 | 04:59<br>22:06 24 | 05:36 (1)<br>06:00 (1) |
| 5 | 09:00<br>16:19 | 08:20<br>17:17 | 07:17<br>18:16 | 06:58<br>20:17 26 | 07:24 (2)<br>07:50 (2) | 05:46<br>21:16 | 04:58<br>22:07 26 | 05:35 (1)<br>06:01 (1) |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:18 | 06:55<br>20:19 27 | 07:24 (2)<br>07:51 (2) | 05:44<br>21:18 | 04:57<br>22:08 27 | 05:35 (1)<br>06:02 (1) |
| 7 | 08:59<br>16:22 | 08:16<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 28 | 07:23 (2)<br>07:51 (2) | 05:42<br>21:20 | 04:57<br>22:09 27 | 05:35 (1)<br>06:02 (1) |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 28 | 07:23 (2)<br>07:51 (2) | 05:40<br>21:22 | 04:56<br>22:10 28 | 05:35 (1)<br>06:03 (1) |
| 9 | 08:57<br>16:25 | 08:12<br>17:25 | 07:07<br>18:24 | 06:48<br>20:25 28 | 07:22 (2)<br>07:50 (2) | 05:38<br>21:24 | 04:55<br>22:11 29 | 05:34 (1)<br>06:03 (1) |
| 10 | 08:57<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 28 | 07:22 (2)<br>07:50 (2) | 05:36<br>21:26 | 04:55<br>22:12 29 | 05:35 (1)<br>06:04 (1) |
| 11 | 08:56<br>16:28 | 08:08<br>17:30 | 07:02<br>18:28 | 06:43<br>20:29 27 | 07:22 (2)<br>07:49 (2) | 05:34<br>21:28 | 04:54<br>22:13 30 | 05:34 (1)<br>06:04 (1) |
| 12 | 08:55<br>16:30 | 08:06<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 27 | 07:22 (2)<br>07:49 (2) | 05:32<br>21:30 | 04:54<br>22:14 31 | 05:34 (1)<br>06:05 (1) |
| 13 | 08:54<br>16:31 | 08:04<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 25 | 07:22 (2)<br>07:47 (2) | 05:30<br>21:31 | 04:53<br>22:15 30 | 05:35 (1)<br>06:05 (1) |
| 14 | 08:53<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 23 | 07:23 (2)<br>07:46 (2) | 05:29<br>21:33 | 04:53<br>22:16 31 | 05:34 (1)<br>06:05 (1) |
| 15 | 08:52<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 21 | 07:24 (2)<br>07:45 (2) | 05:27<br>21:35 | 04:53<br>22:16 31 | 05:34 (1)<br>06:05 (1) |
| 16 | 08:51<br>16:37 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 20 | 06:55 (3)<br>07:43 (2) | 05:25<br>21:37 | 04:53<br>22:17 32 | 05:34 (1)<br>06:06 (1) |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 21 | 06:53 (3)<br>07:41 (2) | 05:23<br>21:39 | 04:52<br>22:17 31 | 05:35 (1)<br>06:06 (1) |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 18 | 06:51 (3)<br>07:38 (2) | 05:22<br>21:40 | 04:52<br>22:18 31 | 05:35 (1)<br>06:06 (1) |
| 19 | 08:48<br>16:42 | 07:50<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 13 | 06:48 (3)<br>07:01 (3) | 05:20<br>21:42 | 04:52<br>22:18 32 | 05:35 (1)<br>06:07 (1) |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:21<br>20:47 16 | 06:46 (3)<br>07:02 (3) | 05:18<br>21:44 | 04:52<br>22:18 32 | 05:35 (1)<br>06:07 (1) |
| 21 | 08:45<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 19 | 06:44 (3)<br>07:03 (3) | 05:17<br>21:46 | 04:52<br>22:19 32 | 05:36 (1)<br>06:08 (1) |
| 22 | 08:44<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 21 | 06:41 (3)<br>07:02 (3) | 05:15<br>21:47 | 04:53<br>22:19 32 | 05:36 (1)<br>06:08 (1) |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 21 | 06:41 (3)<br>07:02 (3) | 05:14<br>21:49 | 04:53<br>22:19 32 | 05:36 (1)<br>06:08 (1) |
| 24 | 08:41<br>16:52 | 07:39<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 21 | 06:41 (3)<br>07:02 (3) | 05:12<br>21:51 | 04:53<br>22:19 32 | 05:36 (1)<br>06:08 (1) |
| 25 | 08:39<br>16:54 | 07:36<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 21 | 06:41 (3)<br>07:02 (3) | 05:11<br>21:52 | 04:54<br>22:19 31 | 05:37 (1)<br>06:08 (1) |
| 26 | 08:38<br>16:56 | 07:34<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 19 | 06:41 (3)<br>07:00 (3) | 05:09<br>21:54 | 04:54<br>22:19 32 | 05:36 (1)<br>06:08 (1) |
| 27 | 08:36<br>16:58 | 07:32<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 19 | 06:41 (3)<br>07:00 (3) | 05:08<br>21:55 | 04:54<br>22:19 32 | 05:37 (1)<br>06:09 (1) |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 17 | 06:42 (3)<br>06:59 (3) | 05:07<br>21:57 8 | 05:43 (1)<br>05:51 (1) | 04:55<br>22:19 31 | 05:37 (1)<br>06:08 (1) |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 06:00<br>21:05 13 | 06:44 (3)<br>06:57 (3) | 05:05<br>21:58 13 | 05:41 (1)<br>05:54 (1) | 04:56<br>22:19 31 | 05:38 (1)<br>06:09 (1) |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 10 | 06:45 (3)<br>06:55 (3) | 05:04<br>22:00 16 | 05:39 (1)<br>05:55 (1) | 04:56<br>22:18 30 | 05:39 (1)<br>06:09 (1) |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 9 | 07:35 (2)<br>07:44 (2) | | 05:03<br>22:01 18 | 05:38 (1)<br>05:56 (1) | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Total, worst case | | | 9 | 635 | | 55 | | 882 | |
| Sun reduction | | | 0,34 | 0,39 | | 0,52 | | 0,48 | |
| Oper. time red. | | | 1,00 | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | 1,00 | 0,98 | | 0,81 | | 0,81 | |
| Total reduction | | | 0,34 | 0,39 | | 0,42 | | 0,40 | |
| Total, real | | | 3 | 248 | | 23 | | 349 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:38 (1) | 05:40 | | | 06:38 | | 07:21 (2) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 30 | 06:08 (1) | 21:40 | | | 20:29 | 27 | 07:48 (2) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | | 05:39 (1) | 05:42 | | | 06:40 | | 07:20 (2) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 30 | 06:09 (1) | 21:38 | | | 20:27 | 28 | 07:48 (2) | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 | | 05:40 (1) | 05:43 | | | 06:42 | | 07:20 (2) | 07:39 | 07:41 | 08:38 |
| | 22:17 | 29 | 06:09 (1) | 21:36 | | | 20:24 | 28 | 07:48 (2) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 05:40 (1) | 05:45 | | | 06:44 | | 07:20 (2) | 07:40 | 07:43 | 08:40 |
| | 22:16 | 29 | 06:09 (1) | 21:34 | | | 20:22 | 28 | 07:48 (2) | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 | | 05:41 (1) | 05:47 | | | 06:45 | | 07:20 (2) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 28 | 06:09 (1) | 21:32 | | | 20:19 | 28 | 07:48 (2) | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | | 05:41 (1) | 05:49 | | | 06:47 | | 07:19 (2) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 27 | 06:08 (1) | 21:30 | | | 20:17 | 27 | 07:46 (2) | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | | 05:41 (1) | 05:51 | | | 06:49 | | 07:19 (2) | 07:46 | 07:49 | 08:44 |
| | 22:14 | 26 | 06:07 (1) | 21:28 | | | 20:14 | 26 | 07:45 (2) | 18:57 | 16:46 | 16:06 |
| 8 | 05:04 | | 05:42 (1) | 05:53 | | | 06:51 | | 07:20 (2) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 25 | 06:07 (1) | 21:26 | | | 20:12 | 24 | 07:44 (2) | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | | 05:44 (1) | 05:54 | | | 06:53 | | 07:21 (2) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 24 | 06:08 (1) | 21:24 | | | 20:09 | 22 | 07:43 (2) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 05:44 (1) | 05:56 | | | 06:55 | | 07:23 (2) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 23 | 06:07 (1) | 21:21 | | | 20:06 | 19 | 07:42 (2) | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 | | 05:45 (1) | 05:58 | | | 06:57 | | 07:25 (2) | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21 | 06:06 (1) | 21:19 | | | 20:04 | 15 | 07:40 (2) | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 05:46 (1) | 06:00 | | 06:56 (3) | 06:59 | | 07:26 (2) | 07:56 | 07:59 | 08:50 |
| | 22:10 | 19 | 06:05 (1) | 21:17 | 5 | 07:01 (3) | 20:01 | 10 | 07:36 (2) | 18:44 | 16:36 | 16:04 |
| 13 | 05:10 | | 05:47 (1) | 06:02 | | 06:53 (3) | 07:01 | | | 07:58 | 08:01 | 08:52 |
| | 22:09 | 17 | 06:04 (1) | 21:15 | 11 | 07:04 (3) | 19:59 | | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 05:48 (1) | 06:04 | | 06:51 (3) | 07:02 | | | 08:00 | 08:03 | 08:53 |
| | 22:08 | 15 | 06:03 (1) | 21:13 | 14 | 07:05 (3) | 19:56 | | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 05:51 (1) | 06:06 | | 06:50 (3) | 07:04 | | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 11 | 06:02 (1) | 21:10 | 16 | 07:06 (3) | 19:54 | | | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | | 05:54 (1) | 06:08 | | 06:49 (3) | 07:06 | | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 5 | 05:59 (1) | 21:08 | 18 | 07:07 (3) | 19:51 | | | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | | | 06:09 | | 06:48 (3) | 07:08 | | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | | 21:06 | 20 | 07:08 (3) | 19:48 | | | 18:32 | 16:28 | 16:04 |
| 18 | 05:17 | | | 06:11 | | 06:47 (3) | 07:10 | | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | | 21:03 | 20 | 07:07 (3) | 19:46 | | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | | 06:13 | | 06:47 (3) | 07:12 | | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | | 21:01 | 21 | 07:08 (3) | 19:43 | | | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | | | 06:15 | | 06:46 (3) | 07:14 | | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | | 20:59 | 22 | 07:08 (3) | 19:41 | | | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | | | 06:17 | | 06:47 (3) | 07:16 | | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | | 20:56 | 21 | 07:08 (3) | 19:38 | | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | | | 06:19 | | 06:49 (3) | 07:17 | | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | | 20:54 | 18 | 07:07 (3) | 19:35 | | | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | | | 06:21 | | 06:50 (3) | 07:19 | | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | | 20:52 | 16 | 07:06 (3) | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | | 06:23 | | 06:52 (3) | 07:21 | | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | | 20:49 | 13 | 07:05 (3) | 19:30 | | | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | | | 06:25 | | 06:54 (3) | 07:23 | | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | | 20:47 | 19 | 07:41 (2) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | | 06:27 | | 06:56 (3) | 07:25 | | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | | 20:44 | 21 | 07:44 (2) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | | 06:57 (3) | 07:27 | | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 21 | 07:45 (2) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | | 07:25 (2) | 07:29 | | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 21 | 07:46 (2) | 19:20 | | | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | | | 06:32 | | 07:24 (2) | 07:31 | | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 23 | 07:47 (2) | 19:17 | | | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | | | 06:34 | | 07:23 (2) | 07:33 | | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | | 20:34 | 25 | 07:48 (2) | 19:15 | | | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | | | 06:36 | | 07:22 (2) | | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 27 | 07:49 (2) | | | | 17:00 | | 16:13 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | 224 |
| Total, worst case | | 359 | | | 372 | | | 282 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,81 | | | 0,98 | | | 1,00 | | | | |
| Total reduction | | 0,40 | | | 0,51 | | | 0,40 | | | | |
| Total, real | | 143 | | | 188 | | | 112 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninës VEShadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:32 (27) | 05:02 | 04:57 | 05:40 | | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | 19 06:51 (27) | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:33 (27) | 05:01 | 04:58 | 05:42 | | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | | 21:11 | 18 06:51 (27) | 22:04 | 22:17 | 21:38 | | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:33 (27) | 05:00 | 04:59 | 05:43 | | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | | 21:12 | 17 06:50 (27) | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:49 | 06:34 (27) | 04:59 | 04:59 | 05:45 | | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | | 21:14 | 15 06:49 (27) | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 05:46 | 06:35 (27) | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | 12 06:47 (27) | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 06:37 (27) | 04:57 | 05:01 | 05:49 | 06:48 (27) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | 8 06:45 (27) | 22:08 | 22:15 | 21:30 | 4 06:52 (27) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 05:42 | | 04:57 | 05:02 | 05:51 | 06:45 (27) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:09 | 22:14 | 21:28 | 10 06:55 (27) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | | 04:56 | 05:04 | 05:53 | 06:44 (27) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:10 | 22:14 | 21:26 | 13 06:57 (27) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 05:38 | | 04:55 | 05:05 | 05:54 | 06:43 (27) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:11 | 22:13 | 21:23 | 16 06:59 (27) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 05:36 | | 04:55 | 05:06 | 05:56 | 06:41 (27) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | 22:12 | 21:21 | 17 06:58 (27) | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | | 05:34 | | 04:54 | 05:07 | 05:58 | 06:41 (27) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | | 21:28 | | 22:13 | 22:11 | 21:19 | 18 06:59 (27) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | | 04:54 | 05:08 | 06:00 | 06:41 (27) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | | 21:30 | | 22:14 | 22:10 | 21:17 | 19 07:00 (27) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 05:30 | | 04:53 | 05:10 | 06:02 | 06:40 (27) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | 21:31 | | 22:15 | 22:09 | 21:15 | 20 07:00 (27) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:29 | | 04:53 | 05:11 | 06:04 | 06:39 (27) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | | 22:15 | 22:08 | 21:13 | 20 06:59 (27) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 05:27 | | 04:53 | 05:12 | 06:06 | 06:40 (27) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | | 22:16 | 22:07 | 21:10 | 19 06:59 (27) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | | 04:53 | 05:14 | 06:08 | 06:40 (27) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | | 21:37 | | 22:17 | 22:05 | 21:08 | 19 06:59 (27) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | | 05:23 | | 04:52 | 05:15 | 06:09 | 06:40 (27) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | | 22:17 | 22:04 | 21:06 | 19 06:59 (27) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:22 | | 04:52 | 05:17 | 06:11 | 06:41 (27) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | | 22:18 | 22:03 | 21:03 | 16 06:57 (27) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | | 04:52 | 05:18 | 06:13 | 06:43 (27) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | | 21:42 | | 22:18 | 22:01 | 21:01 | 13 06:56 (27) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | | 05:18 | | 04:52 | 05:20 | 06:15 | 06:45 (27) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | | 21:44 | | 22:18 | 22:00 | 20:59 | 9 06:54 (27) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:17 | | 04:52 | 05:21 | 06:17 | 06:47 (27) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | | 22:19 | 21:58 | 20:56 | 5 06:52 (27) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:41 (27) | 05:15 | | 04:53 | 05:23 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 6 06:47 (27) | 21:47 | | 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:39 (27) | 05:14 | | 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 10 06:49 (27) | 21:49 | | 22:19 | 21:55 | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 06:37 (27) | 05:12 | | 04:53 | 05:26 | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 13 06:50 (27) | 21:50 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:35 (27) | 05:11 | | 04:54 | 05:28 | 06:25 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 16 06:51 (27) | 21:52 | | 22:19 | 21:52 | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 06:33 (27) | 05:09 | | 04:54 | 05:29 | 06:27 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 18 06:51 (27) | 21:54 | | 22:19 | 21:51 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 06:32 (27) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 19 06:51 (27) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:32 (27) | 05:07 | | 04:55 | 05:33 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 20 06:52 (27) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 06:32 (27) | 05:05 | | 04:56 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 20 06:52 (27) | 21:58 | | 22:19 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:32 (27) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 20 06:52 (27) | 22:00 | | 22:18 | 21:43 | 20:34 | | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | | 05:03 | | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | | 21:42 | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 142 | | 89 | | | | 237 | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,95 | | 0,95 | | | | 0,95 | | | | |
| Total reduction | | | | | 0,37 | | 0,49 | | | | 0,49 | | | | |
| Total, real | | | | | 53 | | 44 | | | | 116 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

Calculation: Foninës VEShadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:53 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:55 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
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Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninės VEShadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 11:50 (27) | 07:27 | 11:54 (27) | 07:08 | 18:30 (3) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 75 | 13:05 (27) | 18:07 | 93 17:35 (2) | 20:09 | 65 19:42 (1) | 21:09 | 22:02 |
| 2 | 09:00 | | 08:26 | | 11:49 (27) | 07:24 | 11:55 (27) | 07:05 | 18:30 (3) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 77 | 13:06 (27) | 18:09 | 92 17:36 (2) | 20:11 | 67 19:44 (1) | 21:10 | 22:04 |
| 3 | 09:00 | 12:13 (27) | 08:24 | | 11:49 (27) | 07:22 | 11:56 (27) | 07:03 | 18:30 (3) | 05:51 | 05:00 |
| | 16:16 | 9 12:22 (27) | 17:12 | 77 | 13:06 (27) | 18:11 | 88 17:35 (2) | 20:13 | 68 19:45 (1) | 21:12 | 22:05 |
| 4 | 09:00 | 12:11 (27) | 08:22 | | 11:49 (27) | 07:19 | 11:58 (27) | 07:00 | 18:30 (3) | 05:48 | 04:59 |
| | 16:18 | 15 12:26 (27) | 17:14 | 78 | 13:07 (27) | 18:14 | 84 17:35 (2) | 20:15 | 70 19:46 (1) | 21:14 | 22:06 |
| 5 | 08:59 | 12:08 (27) | 08:20 | | 11:48 (27) | 07:17 | 12:00 (27) | 06:58 | 18:29 (3) | 05:46 | 04:58 |
| | 16:19 | 20 12:28 (27) | 17:17 | 78 | 13:06 (27) | 18:16 | 80 17:35 (2) | 20:17 | 70 19:45 (1) | 21:16 | 22:07 |
| 6 | 08:59 | 12:08 (27) | 08:18 | | 11:48 (27) | 07:14 | 12:02 (27) | 06:55 | 18:30 (3) | 05:44 | 04:57 |
| | 16:20 | 23 12:31 (27) | 17:19 | 79 | 13:07 (27) | 18:18 | 73 17:34 (2) | 20:19 | 69 19:45 (1) | 21:18 | 22:08 |
| 7 | 08:58 | 12:06 (27) | 08:16 | | 11:47 (27) | 07:12 | 12:06 (27) | 06:53 | 18:29 (3) | 05:42 | 04:56 |
| | 16:22 | 27 12:33 (27) | 17:21 | 81 | 13:08 (27) | 18:20 | 66 17:34 (2) | 20:21 | 68 19:44 (1) | 21:20 | 22:09 |
| 8 | 08:58 | 12:05 (27) | 08:14 | | 11:47 (27) | 07:09 | 12:10 (27) | 06:50 | 18:30 (3) | 05:40 | 04:56 |
| | 16:23 | 30 12:35 (27) | 17:23 | 81 | 13:08 (27) | 18:22 | 55 17:33 (2) | 20:23 | 64 19:43 (1) | 21:22 | 22:10 |
| 9 | 08:57 | 12:04 (27) | 08:12 | | 11:47 (27) | 07:07 | 12:18 (27) | 06:48 | 18:30 (3) | 05:38 | 04:55 |
| | 16:25 | 32 12:36 (27) | 17:25 | 82 | 13:09 (27) | 18:24 | 37 17:32 (2) | 20:25 | 62 19:42 (1) | 21:24 | 22:11 |
| 10 | 08:57 | 12:03 (27) | 08:10 | | 11:48 (27) | 07:04 | 17:08 (2) | 06:45 | 18:31 (3) | 05:36 | 04:55 |
| | 16:26 | 35 12:38 (27) | 17:27 | 81 | 13:09 (27) | 18:26 | 23 17:31 (2) | 20:27 | 57 19:40 (1) | 21:26 | 22:12 |
| 11 | 08:56 | 12:02 (27) | 08:08 | | 11:47 (27) | 07:02 | 17:09 (2) | 06:43 | 18:31 (3) | 05:34 | 04:54 |
| | 16:28 | 38 12:40 (27) | 17:29 | 82 | 13:09 (27) | 18:28 | 20 17:29 (2) | 20:29 | 53 19:38 (1) | 21:28 | 22:13 |
| 12 | 08:55 | 12:01 (27) | 08:06 | | 11:47 (27) | 06:59 | 17:11 (2) | 06:40 | 18:32 (3) | 05:32 | 04:54 |
| | 16:30 | 41 12:42 (27) | 17:32 | 82 | 13:09 (27) | 18:30 | 16 17:27 (2) | 20:31 | 43 19:34 (1) | 21:30 | 22:14 |
| 13 | 08:54 | 12:00 (27) | 08:04 | | 11:47 (27) | 06:57 | 17:14 (2) | 06:38 | 18:33 (3) | 05:30 | 04:53 |
| | 16:31 | 43 12:43 (27) | 17:34 | 82 | 13:09 (27) | 18:32 | 9 17:23 (2) | 20:33 | 35 19:08 (3) | 21:31 | 22:15 |
| 14 | 08:53 | 12:00 (27) | 08:01 | | 11:46 (27) | 06:54 | | 06:35 | 18:34 (3) | 05:28 | 04:53 |
| | 16:33 | 45 12:45 (27) | 17:36 | 83 | 13:09 (27) | 18:34 | | 20:35 | 33 19:07 (3) | 21:33 | 22:15 |
| 15 | 08:52 | 11:58 (27) | 07:59 | | 11:47 (27) | 06:52 | | 06:33 | 18:36 (3) | 05:27 | 04:53 |
| | 16:35 | 48 12:46 (27) | 17:38 | 82 | 13:09 (27) | 18:36 | | 20:37 | 29 19:05 (3) | 21:35 | 22:16 |
| 16 | 08:51 | 11:58 (27) | 07:57 | | 11:47 (27) | 06:49 | | 06:30 | 18:37 (3) | 05:25 | 04:52 |
| | 16:36 | 50 12:48 (27) | 17:40 | 82 | 13:09 (27) | 18:38 | | 20:39 | 26 19:03 (3) | 21:37 | 22:17 |
| 17 | 08:50 | 11:58 (27) | 07:55 | | 11:47 (27) | 06:46 | | 06:28 | 18:40 (3) | 05:23 | 04:52 |
| | 16:38 | 51 12:49 (27) | 17:42 | 81 | 13:08 (27) | 18:40 | | 20:41 | 20 19:00 (3) | 21:39 | 22:17 |
| 18 | 08:49 | 11:56 (27) | 07:53 | | 11:47 (27) | 06:44 | | 06:25 | 18:43 (3) | 05:21 | 04:52 |
| | 16:40 | 54 12:50 (27) | 17:44 | 81 | 13:08 (27) | 18:42 | | 20:43 | 13 18:56 (3) | 21:40 | 22:18 |
| 19 | 08:48 | 11:56 (27) | 07:50 | | 11:48 (27) | 06:41 | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 56 12:52 (27) | 17:46 | 80 | 13:08 (27) | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 11:55 (27) | 07:48 | | 11:48 (27) | 06:39 | 17:49 (3) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 58 12:53 (27) | 17:49 | 79 | 13:07 (27) | 18:46 | 17 18:06 (3) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 11:55 (27) | 07:46 | | 11:48 (27) | 06:36 | 17:46 (3) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 59 12:54 (27) | 17:51 | 79 | 13:07 (27) | 18:48 | 23 18:09 (3) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 11:54 (27) | 07:43 | | 11:48 (27) | 06:34 | 17:43 (3) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 61 12:55 (27) | 17:53 | 78 | 13:06 (27) | 18:50 | 28 18:11 (3) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 11:53 (27) | 07:41 | | 11:49 (27) | 06:31 | 17:40 (3) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 63 12:56 (27) | 17:55 | 85 | 17:26 (2) | 18:52 | 32 18:12 (3) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 11:53 (27) | 07:39 | | 11:49 (27) | 06:28 | 17:39 (3) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 65 12:58 (27) | 17:57 | 90 | 17:28 (2) | 18:54 | 35 18:14 (3) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 11:52 (27) | 07:36 | | 11:50 (27) | 06:26 | 17:37 (3) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 67 12:59 (27) | 17:59 | 92 | 17:30 (2) | 18:56 | 38 18:15 (3) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | 11:52 (27) | 07:34 | | 11:51 (27) | 06:23 | 17:36 (3) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 67 12:59 (27) | 18:01 | 95 | 17:33 (2) | 18:58 | 40 18:16 (3) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 11:51 (27) | 07:31 | | 11:52 (27) | 06:21 | 17:34 (3) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 69 13:00 (27) | 18:03 | 95 | 17:34 (2) | 19:00 | 42 18:16 (3) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 11:51 (27) | 07:29 | | 11:53 (27) | 06:18 | 17:33 (3) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 71 13:02 (27) | 18:05 | 94 | 17:35 (2) | 19:02 | 43 18:16 (3) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 11:51 (27) | | | | 07:16 | 18:33 (3) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 72 13:03 (27) | | | | 20:04 | 50 19:36 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | 11:50 (27) | | | | 07:13 | 18:31 (3) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 73 13:03 (27) | | | | 20:06 | 57 19:38 (1) | 21:07 | | 21:59 | 22:18 |
| 31 | 08:29 | 11:50 (27) | | | | 07:10 | 18:31 (3) | | | 05:03 | |
| | 17:06 | 74 13:04 (27) | | | | 20:08 | 60 19:40 (1) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 | |
| Total, worst case | | 1416 | | 2311 | | 1201 | | 912 | | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,10 | | 0,14 | | 0,67 | | 0,99 | | | |
| Total reduction | | 0,01 | | 0,03 | | 0,18 | | 0,31 | | | |
| Total, real | | 19 | | 61 | | 214 | | 280 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar

## Calculation: Foninės VEShadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 18:30 (3) | 07:35 | | 17:51 (2) | 07:37 | | 11:16 (27) | 08:35 | | 11:44 (27) |
| | 22:18 | | 21:40 | | | 20:29 | 53 | 19:37 (1) | 19:12 | 14 | 18:05 (2) | 16:58 | 82 | 12:38 (27) | 16:10 | 38 | 12:22 (27) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 18:29 (3) | 07:36 | | 17:49 (2) | 07:39 | | 11:17 (27) | 08:37 | | 11:46 (27) |
| | 22:17 | | 21:38 | | | 20:27 | 57 | 19:38 (1) | 19:09 | 18 | 18:07 (2) | 16:56 | 81 | 12:38 (27) | 16:09 | 35 | 12:21 (27) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 18:28 (3) | 07:38 | | 17:47 (2) | 07:41 | | 11:17 (27) | 08:38 | | 11:48 (27) |
| | 22:17 | | 21:36 | | | 20:24 | 62 | 19:40 (1) | 19:07 | 21 | 18:08 (2) | 16:54 | 81 | 12:38 (27) | 16:08 | 33 | 12:21 (27) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:27 (3) | 07:40 | | 17:45 (2) | 07:43 | | 11:17 (27) | 08:40 | | 11:49 (27) |
| | 22:16 | | 21:34 | | | 20:22 | 64 | 19:40 (1) | 19:04 | 24 | 18:09 (2) | 16:52 | 80 | 12:37 (27) | 16:08 | 30 | 12:19 (27) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:27 (3) | 07:42 | | 12:50 (27) | 07:45 | | 11:18 (27) | 08:41 | | 11:51 (27) |
| | 22:16 | | 21:32 | | | 20:19 | 67 | 19:41 (1) | 19:02 | 48 | 18:10 (2) | 16:49 | 80 | 12:38 (27) | 16:07 | 27 | 12:18 (27) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 18:25 (3) | 07:44 | | 12:44 (27) | 07:47 | | 11:18 (27) | 08:43 | | 11:54 (27) |
| | 22:15 | | 21:30 | | | 20:17 | 69 | 19:40 (1) | 18:59 | 61 | 18:10 (2) | 16:47 | 79 | 12:37 (27) | 16:06 | 23 | 12:17 (27) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 18:24 (3) | 07:46 | | 12:40 (27) | 07:49 | | 11:19 (27) | 08:44 | | 11:55 (27) |
| | 22:14 | | 21:28 | | | 20:14 | 70 | 19:40 (1) | 18:57 | 70 | 18:10 (2) | 16:46 | 78 | 12:37 (27) | 16:06 | 20 | 12:15 (27) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:24 (3) | 07:48 | | 12:37 (27) | 07:51 | | 11:19 (27) | 08:45 | | 11:59 (27) |
| | 22:14 | | 21:26 | | | 20:11 | 70 | 19:40 (1) | 18:54 | 76 | 18:10 (2) | 16:44 | 77 | 12:36 (27) | 16:05 | 15 | 12:14 (27) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:24 (3) | 07:50 | | 12:34 (27) | 07:53 | | 11:20 (27) | 08:47 | | 12:02 (27) |
| | 22:13 | | 21:23 | | | 20:09 | 70 | 19:40 (1) | 18:52 | 82 | 18:10 (2) | 16:42 | 76 | 12:36 (27) | 16:05 | 9 | 12:11 (27) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 18:24 (3) | 07:52 | | 12:32 (27) | 07:55 | | 11:20 (27) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 67 | 19:38 (1) | 18:49 | 86 | 18:10 (2) | 16:40 | 76 | 12:36 (27) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 18:23 (3) | 07:54 | | 12:30 (27) | 07:57 | | 11:21 (27) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 64 | 19:34 (1) | 18:47 | 89 | 18:09 (2) | 16:38 | 74 | 12:35 (27) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:59 | | 18:23 (3) | 07:56 | | 12:28 (27) | 07:59 | | 11:21 (27) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 61 | 19:32 (1) | 18:44 | 92 | 18:09 (2) | 16:36 | 73 | 12:34 (27) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:23 (3) | 07:58 | | 12:26 (27) | 08:01 | | 11:23 (27) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:59 | 56 | 19:29 (1) | 18:42 | 94 | 18:08 (2) | 16:34 | 72 | 12:35 (27) | 16:04 | | |
| 14 | 05:11 | | 06:04 | | | 07:02 | | 18:23 (3) | 08:00 | | 12:25 (27) | 08:03 | | 11:23 (27) | 08:53 | | |
| | 22:08 | | 21:12 | | | 19:56 | 51 | 19:27 (1) | 18:39 | 95 | 18:07 (2) | 16:33 | 71 | 12:34 (27) | 16:04 | | |
| 15 | 05:12 | | 06:06 | | | 07:04 | | 18:23 (3) | 08:02 | | 12:23 (27) | 08:05 | | 11:24 (27) | 08:54 | | |
| | 22:07 | | 21:10 | | | 19:53 | 45 | 19:24 (1) | 18:37 | 94 | 18:05 (2) | 16:31 | 69 | 12:33 (27) | 16:04 | | |
| 16 | 05:14 | | 06:07 | | | 07:06 | | 18:24 (3) | 08:04 | | 12:22 (27) | 08:07 | | 11:25 (27) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 42 | 19:06 (3) | 18:34 | 93 | 18:03 (2) | 16:29 | 67 | 12:32 (27) | 16:04 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:23 (3) | 08:06 | | 12:22 (27) | 08:09 | | 11:26 (27) | 08:55 | | |
| | 22:04 | | 21:06 | | | 19:48 | 41 | 19:04 (3) | 18:32 | 92 | 18:02 (2) | 16:28 | 67 | 12:33 (27) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:24 (3) | 08:08 | | 12:21 (27) | 08:11 | | 11:27 (27) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 38 | 19:02 (3) | 18:30 | 88 | 17:59 (2) | 16:26 | 65 | 12:32 (27) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:25 (3) | 08:10 | | 12:20 (27) | 08:13 | | 11:28 (27) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 36 | 19:01 (3) | 18:27 | 80 | 17:55 (2) | 16:25 | 63 | 12:31 (27) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 18:26 (3) | 08:12 | | 12:19 (27) | 08:15 | | 11:29 (27) | 08:58 | | |
| | 22:00 | | 20:59 | | | 19:40 | 33 | 18:59 (3) | 18:25 | 79 | 13:38 (27) | 16:23 | 61 | 12:30 (27) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:28 (3) | 08:14 | | 12:18 (27) | 08:17 | | 11:30 (27) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 29 | 18:57 (3) | 18:22 | 80 | 13:38 (27) | 16:22 | 59 | 12:29 (27) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | | 07:17 | | 18:30 (3) | 08:16 | | 12:18 (27) | 08:19 | | 11:31 (27) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 25 | 18:55 (3) | 18:20 | 80 | 13:38 (27) | 16:20 | 58 | 12:29 (27) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:32 (3) | 08:18 | | 12:17 (27) | 08:21 | | 11:32 (27) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 20 | 18:52 (3) | 18:18 | 81 | 13:38 (27) | 16:19 | 56 | 12:28 (27) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | | 07:21 | | 18:37 (3) | 08:20 | | 12:18 (27) | 08:23 | | 11:33 (27) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 9 | 18:46 (3) | 18:15 | 81 | 13:39 (27) | 16:18 | 54 | 12:27 (27) | 16:07 | | |
| 25 | 05:28 | | 06:24 | | 18:46 (3) | 07:23 | | | 07:22 | | 11:17 (27) | 08:24 | | 11:36 (27) | 09:00 | | |
| | 21:52 | | 20:47 | 14 | 19:00 (3) | 19:28 | | | 17:13 | 82 | 12:39 (27) | 16:16 | 51 | 12:27 (27) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 18:43 (3) | 07:25 | | | 07:24 | | 11:17 (27) | 08:26 | | 11:37 (27) | 09:00 | | |
| | 21:50 | | 20:44 | 20 | 19:03 (3) | 19:25 | | | 17:11 | 82 | 12:39 (27) | 16:15 | 50 | 12:27 (27) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 18:39 (3) | 07:27 | | | 07:26 | | 11:16 (27) | 08:28 | | 11:38 (27) | 09:01 | | |
| | 21:49 | | 20:42 | 26 | 19:05 (3) | 19:22 | | | 17:09 | 82 | 12:38 (27) | 16:14 | 48 | 12:26 (27) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 18:37 (3) | 07:29 | | | 07:28 | | 11:16 (27) | 08:30 | | 11:39 (27) | 09:01 | | |
| | 21:47 | | 20:39 | 29 | 19:06 (3) | 19:20 | | | 17:06 | 82 | 12:38 (27) | 16:13 | 45 | 12:24 (27) | 16:10 | | |
| 29 | 05:34 | | 06:32 | | 18:35 (3) | 07:31 | | | 07:30 | | 11:17 (27) | 08:32 | | 11:40 (27) | 09:01 | | |
| | 21:45 | | 20:37 | 33 | 19:08 (3) | 19:17 | | | 17:04 | 82 | 12:39 (27) | 16:12 | 43 | 12:23 (27) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 18:34 (3) | 07:33 | | 17:56 (2) | 07:32 | | 11:16 (27) | 08:33 | | 11:42 (27) | 09:01 | | |
| | 21:43 | | 20:34 | 35 | 19:09 (3) | 19:15 | 4 | 18:00 (2) | 17:02 | 82 | 12:38 (27) | 16:11 | 41 | 12:23 (27) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 18:32 (3) | | | | 07:34 | | 11:16 (27) | | | | 09:01 | | |
| | 21:42 | | 20:32 | 44 | 19:35 (1) | | | | 17:00 | 82 | 12:38 (27) | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 201 | | | 1203 | | | 2292 | | | 1977 | | | 230 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,25 | | | 0,10 | | | 0,10 | |
| Total reduction | | | | 0,40 | | | 0,31 | | | 0,06 | | | 0,01 | | | 0,01 | |
| Total, real | | | | 81 | | | 371 | | | 140 | | | 24 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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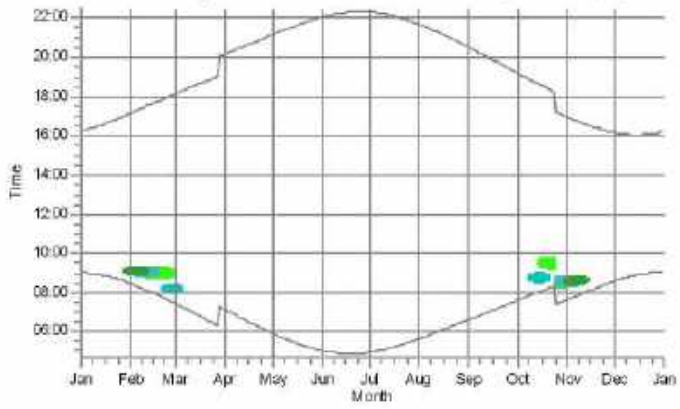
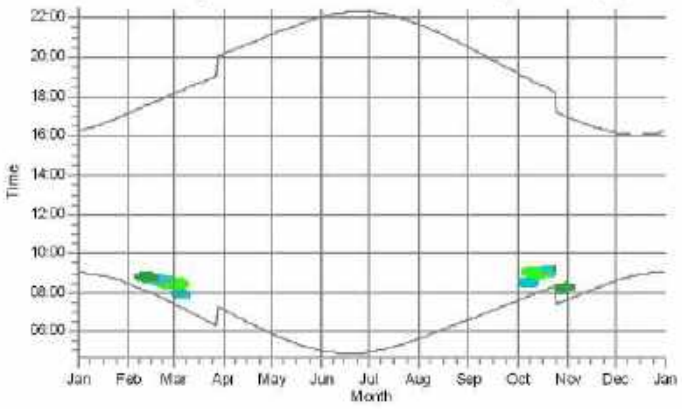
# SHADOW - Calendar, graphical

## Calculation: Foninës VE

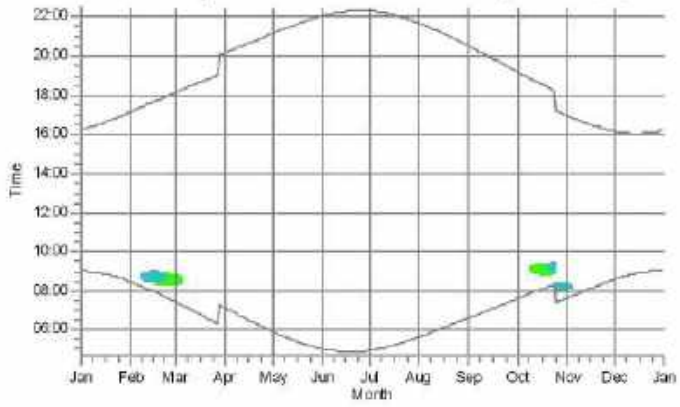
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)



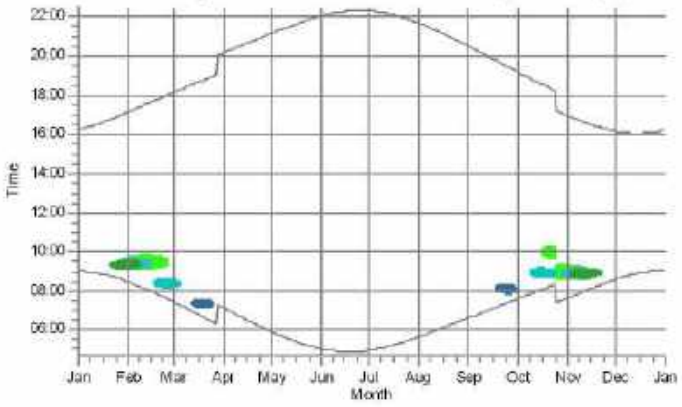

B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)



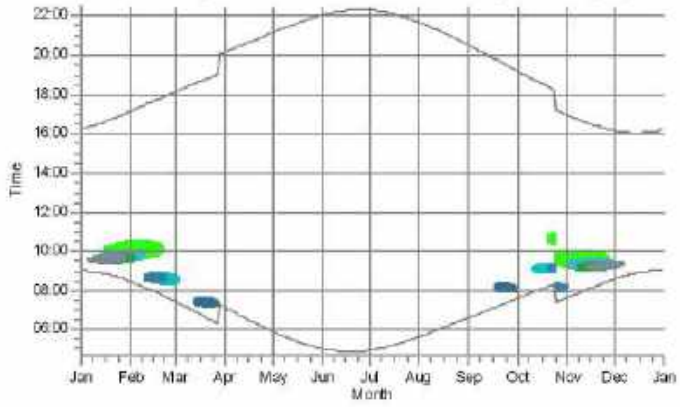

C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)



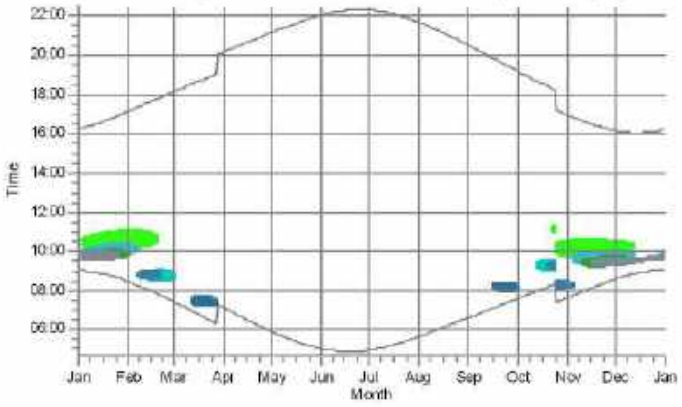

D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)




E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)




F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)




WTGs

18: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
19: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
20: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
21: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
22: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
37: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
38: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

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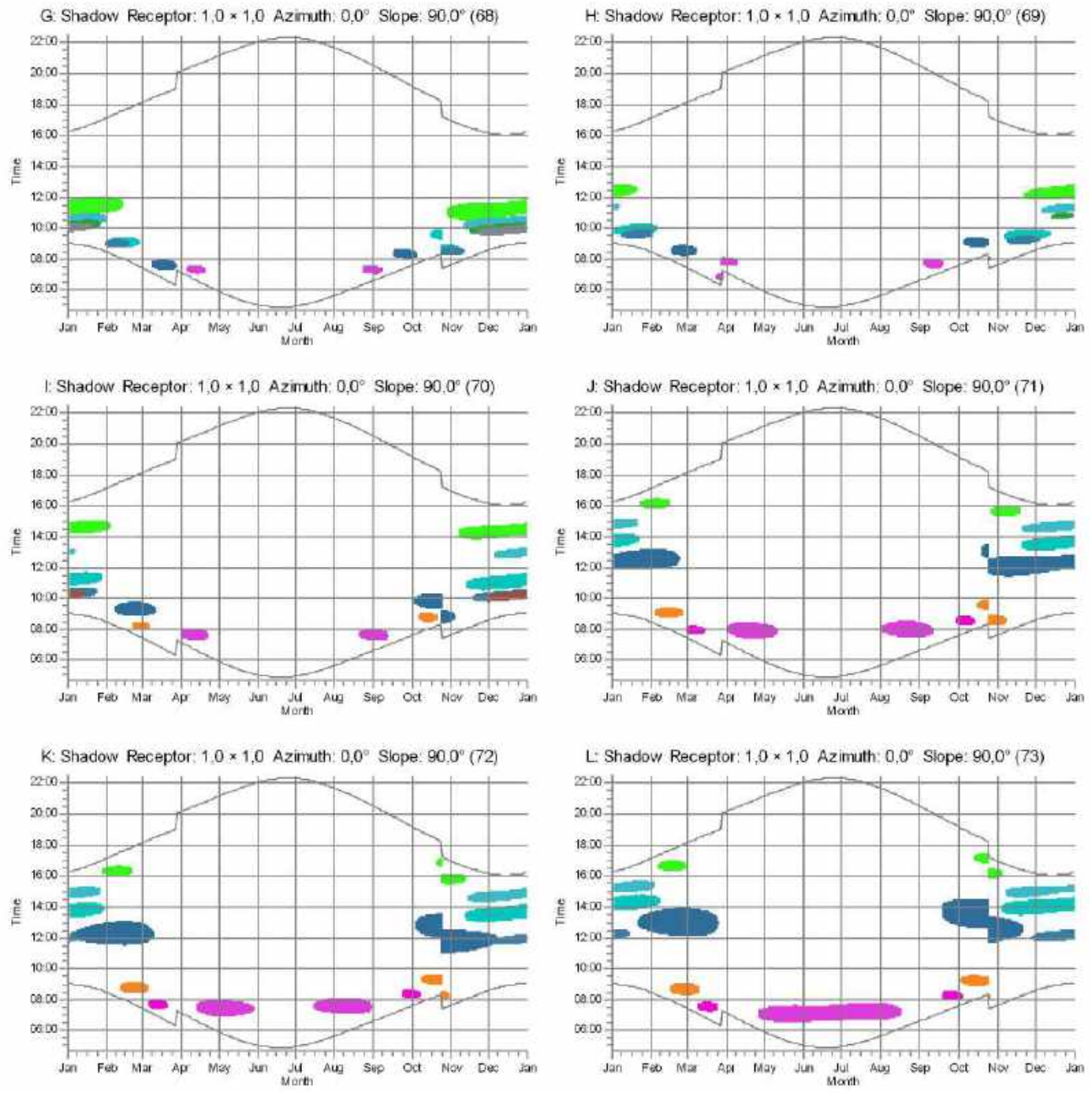
# SHADOW - Calendar, graphical

## Calculation: Foninës VE



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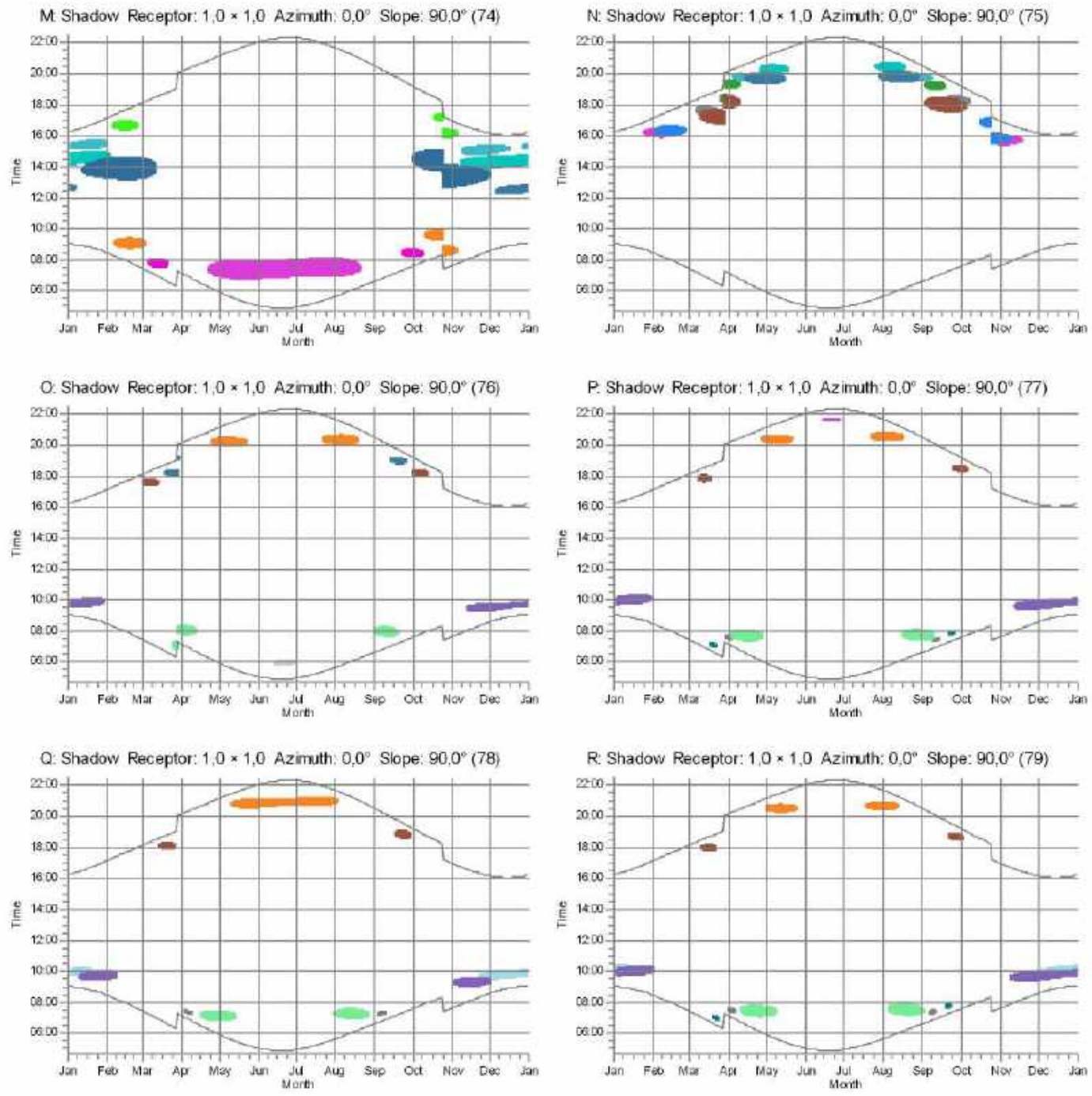
Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar, graphical

## Calculation: Foninës VE




WTGs

- 4: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
- 6: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
- 18: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
- 19: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
- 20: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
- 21: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
- 22: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
- 23: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
- 24: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
- 25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)
- 26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
- 31: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
- 33: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
- 34: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
- 35: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)
- 37: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
- 38: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)
- 39: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)
- 40: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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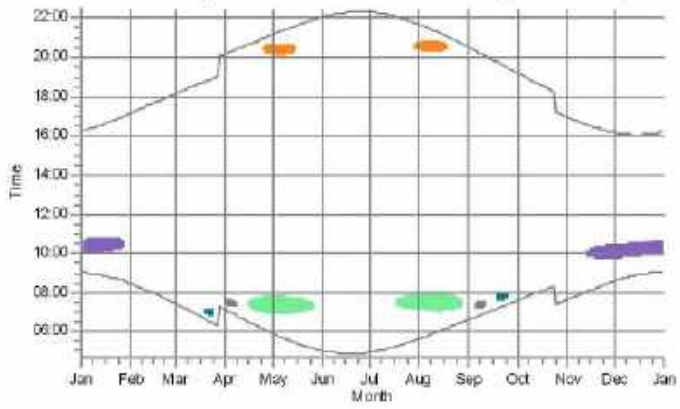
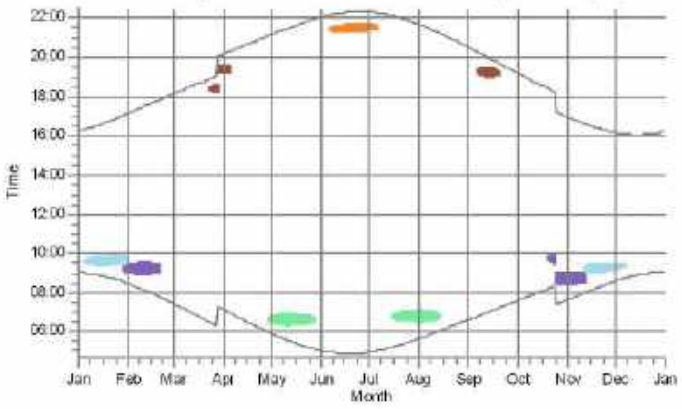
# SHADOW - Calendar, graphical

## Calculation: Foninës VE

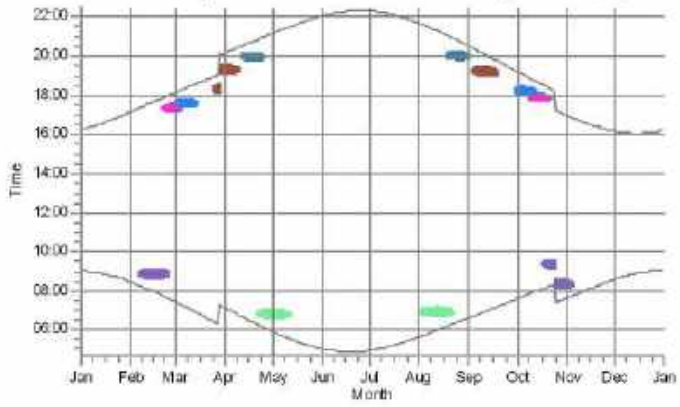
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)



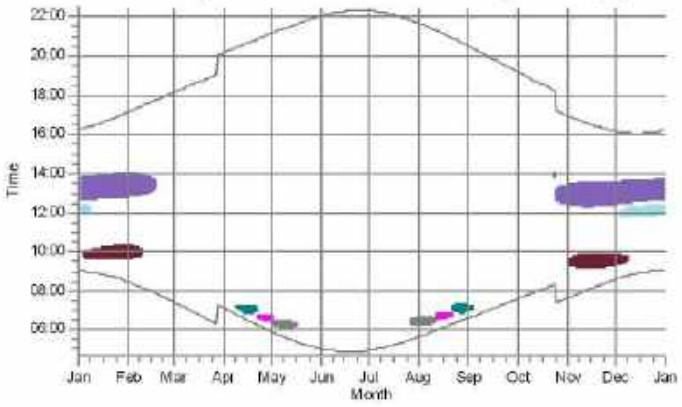

T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)



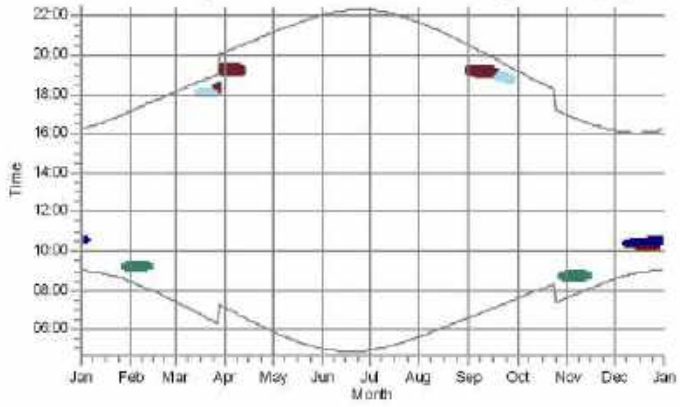

U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)



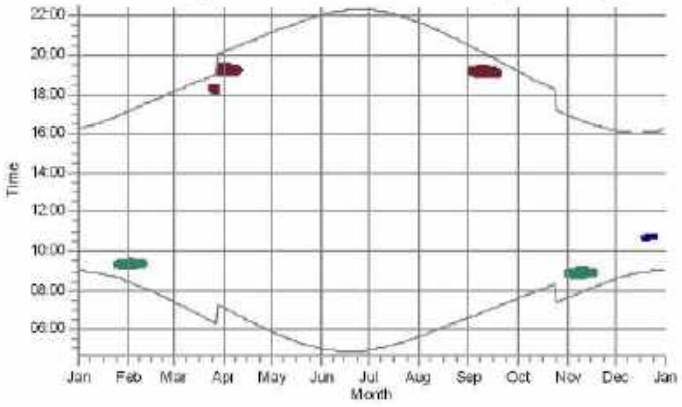

V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)




W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)




X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)




WTGs

- 4: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
- 5: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)
- 6: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
- 7: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)
- 8: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)
- 23: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
- 26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
- 29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
- 31: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
- 32: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)
- 33: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
- 34: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
- 37: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
- 39: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)
- 40: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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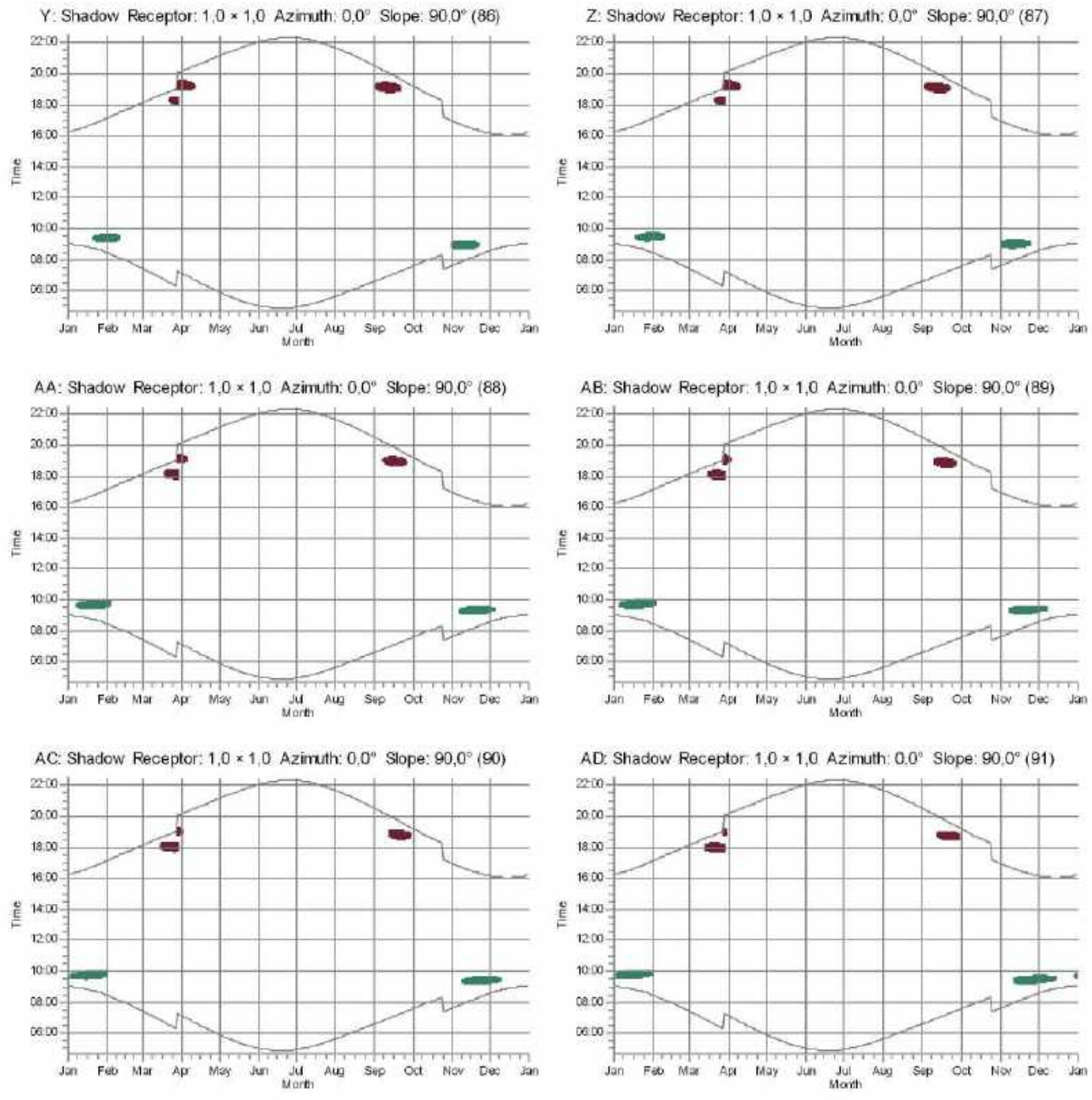
# SHADOW - Calendar, graphical

## Calculation: Foninës VE



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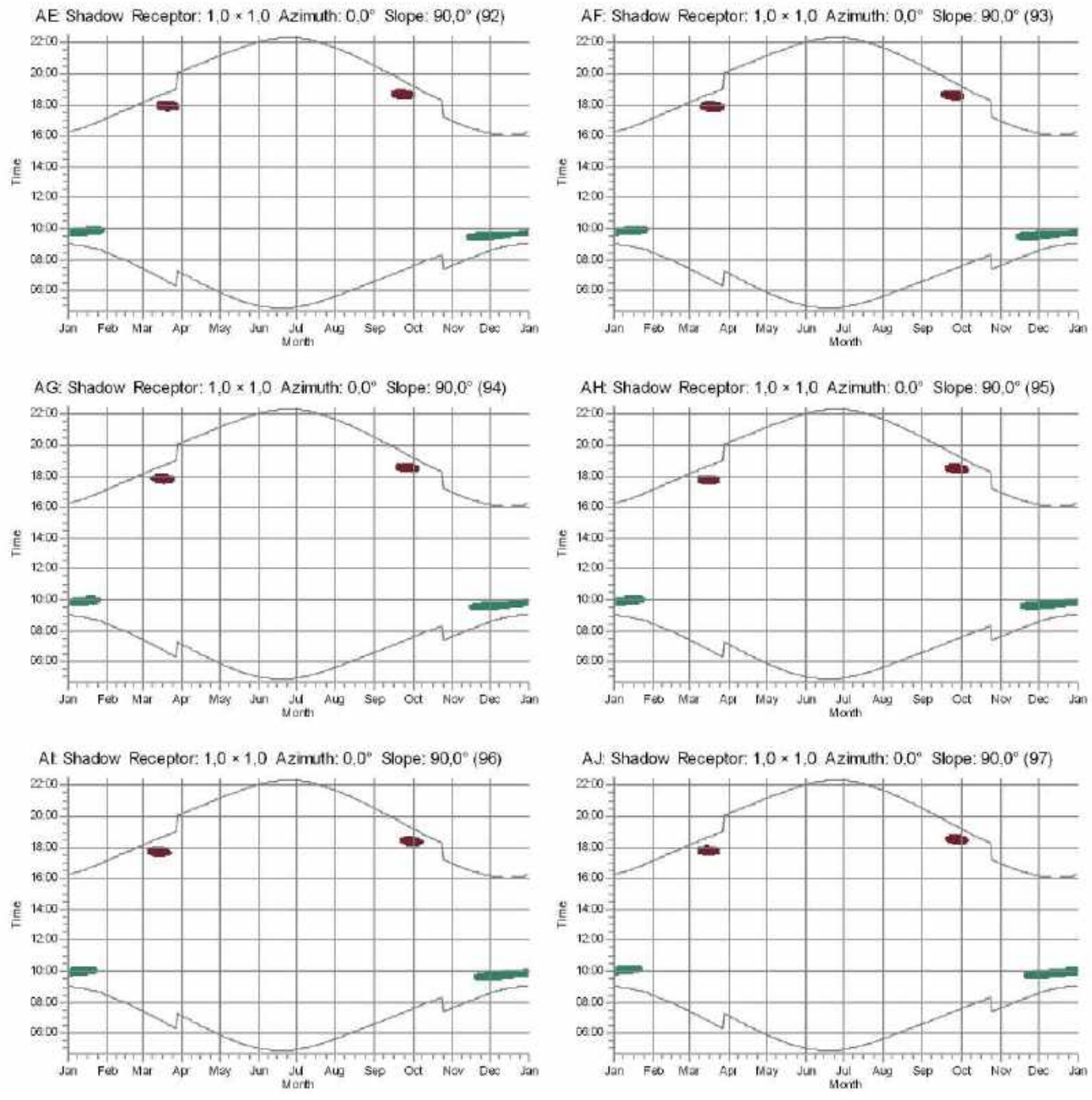
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar, graphical

## Calculation: Foninës VE



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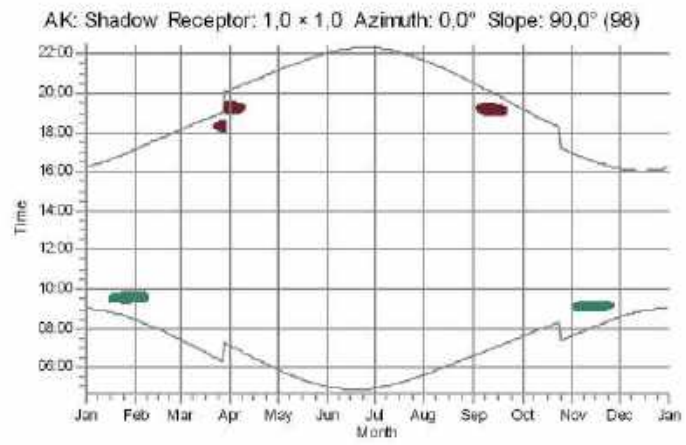
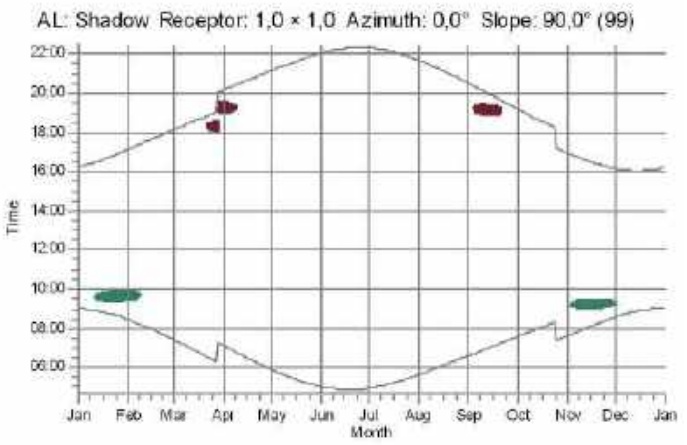
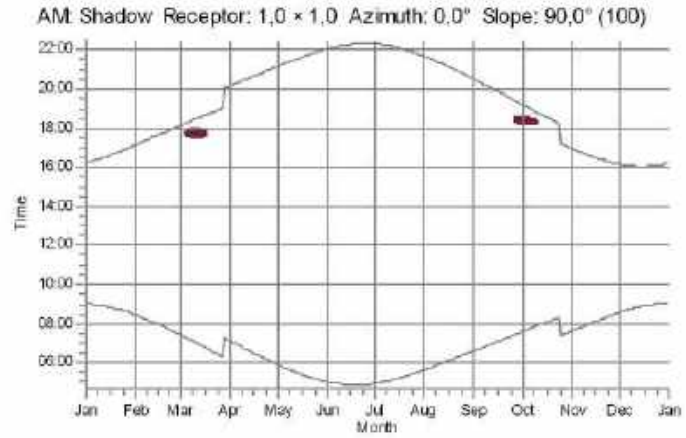
Calculated:
2021.12.03 09:50/3.5.552

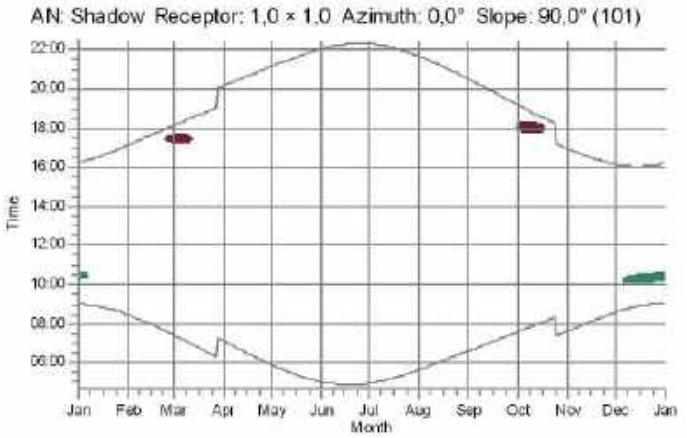
# SHADOW - Calendar, graphical

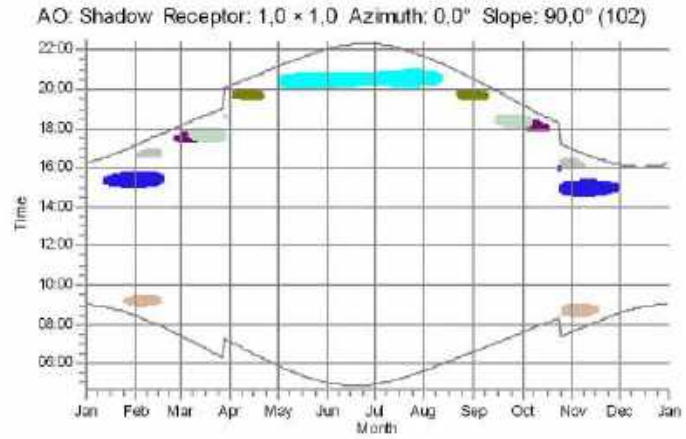
## Calculation: Foninës VE

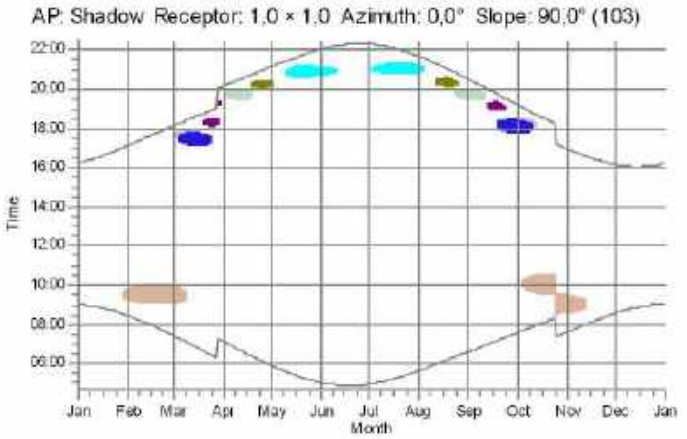



WTGs

10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)
11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)
12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)
14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)
17: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
32: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)
36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

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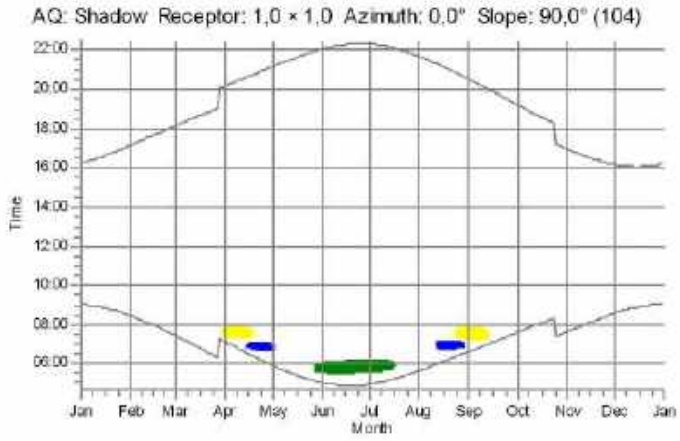
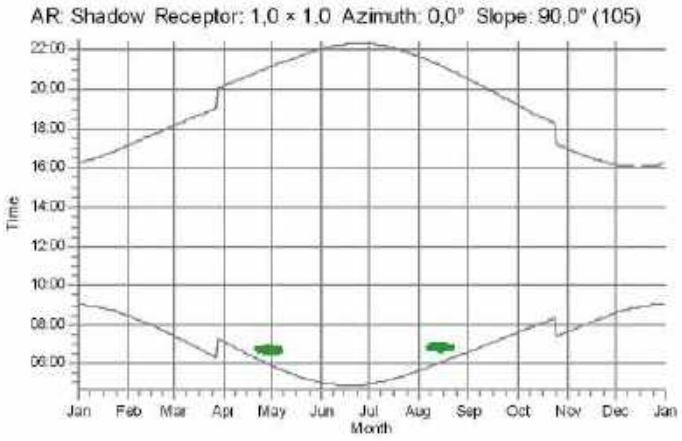
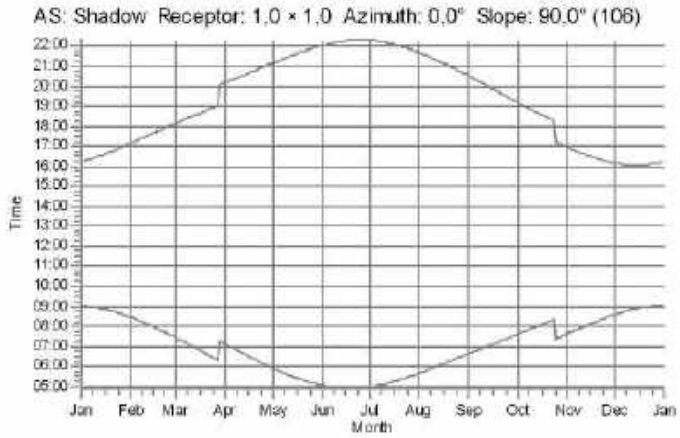
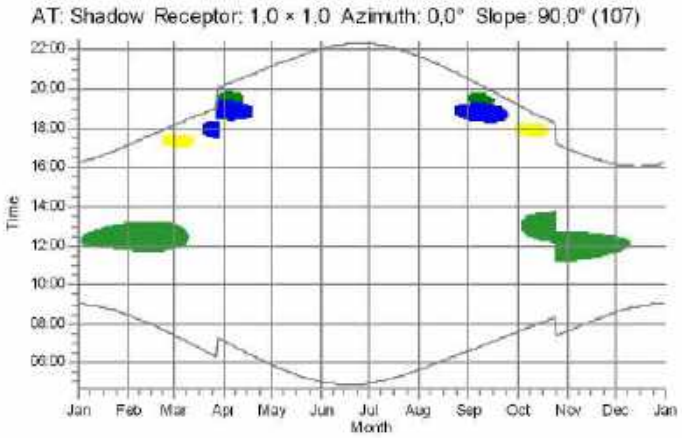
# SHADOW - Calendar, graphical

## Calculation: Foninës VE




WTGs

1: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)
2: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)
3: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 1 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 19:24-19:42/18 | 05:55 | 05:02 05:37-05:57/20 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 19:24-19:44/20 | 05:53 | 05:01 05:37-05:59/22 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 19:23-19:45/22 | 05:51 | 05:00 05:36-06:00/24 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:23-19:46/23 | 05:49 | 04:59 05:36-06:00/24 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 19:22-19:45/23 | 05:46 | 04:58 05:35-06:01/26 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:22-19:45/23 | 05:44 | 04:57 05:35-06:02/27 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 19:22-19:44/22 | 05:42 | 04:57 05:35-06:02/27 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:23-19:43/20 | 05:40 | 04:56 05:35-06:03/28 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 19:23-19:42/19 | 05:38 | 04:55 05:34-06:03/29 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 19:24-19:40/16 | 05:36 | 04:55 05:35-06:04/29 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 19:25-19:38/13 | 05:34 | 04:54 05:34-06:04/30 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 19:29-19:34/5 | 05:32 | 04:54 05:34-06:05/31 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 05:35-06:05/30 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 05:34-06:05/31 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 05:34-06:05/31 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 05:34-06:06/32 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 05:35-06:06/31 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 05:35-06:06/31 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 05:35-06:07/32 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 05:35-06:07/32 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 05:36-06:08/32 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 05:36-06:08/32 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 05:36-06:08/32 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 05:36-06:08/32 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 05:37-06:08/31 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 05:36-06:08/32 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 05:37-06:09/32 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 05:43-05:51/8 | 04:55 05:37-06:08/31 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 19:30-19:36/6 | 06:00 | 05:05 05:41-05:54/13 | 04:56 05:38-06:09/31 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 19:27-19:38/11 | 05:57 | 05:04 05:39-05:55/16 | 04:56 05:39-06:09/30 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:11 19:26-19:40/14 | | 05:03 05:38-05:56/18 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 0 | 31 | 224 | 55 | 882 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 1 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:38-06:08/30 | 05:40 | 06:38 19:24-19:37/13 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:39-06:09/30 | 05:42 | 06:40 19:22-19:38/16 | 07:37 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:40-06:09/29 | 05:43 | 06:42 19:21-19:40/19 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:40-06:09/29 | 05:45 | 06:44 19:20-19:40/20 | 07:40 | 07:43 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:41-06:09/28 | 05:47 | 06:45 19:19-19:41/22 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:41-06:08/27 | 05:49 | 06:47 19:17-19:40/23 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:41-06:07/26 | 05:51 | 06:49 19:17-19:40/23 | 07:46 | 07:49 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:42-06:07/25 | 05:53 | 06:51 19:17-19:40/23 | 07:48 | 07:51 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:44-06:08/24 | 05:54 | 06:53 19:17-19:40/23 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:44-06:07/23 | 05:56 | 06:55 19:17-19:38/21 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:06/21 | 05:58 | 06:57 19:16-19:34/18 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:46-06:05/19 | 06:00 | 06:59 19:17-19:32/15 | 07:56 | 07:59 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:47-06:04/17 | 06:02 | 07:00 19:18-19:29/11 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:48-06:03/15 | 06:04 | 07:02 19:20-19:27/7 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:51-06:02/11 | 06:06 | 07:04 19:23-19:24/1 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:54-05:59/5 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 19:29-19:35/6 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 359 | 6 | 255 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 2 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 17:07-17:35/28 | 07:08 07:32-07:46/14 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 17:07-17:36/29 | 07:05 07:30-07:48/18 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 17:06-17:35/29 | 07:03 07:27-07:49/22 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 17:06-17:35/29 | 07:00 07:26-07:50/24 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 17:06-17:35/29 | 06:58 07:24-07:50/26 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 17:06-17:34/28 | 06:55 07:24-07:51/27 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 17:06-17:34/28 | 06:53 07:23-07:51/28 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 17:06-17:33/27 | 06:50 07:23-07:51/28 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 17:07-17:32/25 | 06:48 07:22-07:50/28 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 17:08-17:31/23 | 06:45 07:22-07:50/28 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 17:09-17:29/20 | 06:43 07:22-07:49/27 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 17:11-17:27/16 | 06:40 07:22-07:49/27 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:14-17:23/9 | 06:38 07:22-07:47/25 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:23-07:46/23 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 07:24-07:45/21 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:25-07:43/18 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 07:27-07:41/14 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 07:30-07:38/8 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 17:18-17:26/8 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 17:14-17:28/14 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:54 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 17:11-17:33/22 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 17:09-17:34/25 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 17:09-17:35/26 | 06:18 | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:10 07:35-07:44/9 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 113 | 329 | 406 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 2 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | | 06:38 | 07:21-07:48/27 | 07:35 | 17:51-18:05/14 | 07:37 | 08:35 |
| | 22:18 | 21:40 | | 20:29 | | 19:12 | | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | | 06:40 | 07:20-07:48/28 | 07:37 | 17:49-18:07/18 | 07:39 | 08:37 |
| | 22:17 | 21:38 | | 20:27 | | 19:10 | | 16:56 | 16:09 |
| 3 | 04:59 | 05:43 | | 06:42 | 07:20-07:48/28 | 07:38 | 17:47-18:08/21 | 07:41 | 08:38 |
| | 22:17 | 21:36 | | 20:24 | | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | | 06:43 | 07:20-07:48/28 | 07:40 | 17:45-18:09/24 | 07:43 | 08:40 |
| | 22:16 | 21:34 | | 20:22 | | 19:04 | | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | | 06:45 | 07:20-07:48/28 | 07:42 | 17:44-18:10/26 | 07:45 | 08:41 |
| | 22:16 | 21:32 | | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | | 06:47 | 07:19-07:46/27 | 07:44 | 17:43-18:10/27 | 07:47 | 08:43 |
| | 22:15 | 21:30 | | 20:17 | | 18:59 | | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | | 06:49 | 07:19-07:45/26 | 07:46 | 17:42-18:10/28 | 07:49 | 08:44 |
| | 22:14 | 21:28 | | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | | 06:51 | 07:20-07:44/24 | 07:48 | 17:41-18:10/29 | 07:51 | 08:45 |
| | 22:14 | 21:26 | | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | | 06:53 | 07:21-07:43/22 | 07:50 | 17:41-18:10/29 | 07:53 | 08:47 |
| | 22:13 | 21:23 | | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | | 06:55 | 07:23-07:42/19 | 07:52 | 17:41-18:10/29 | 07:55 | 08:48 |
| | 22:12 | 21:21 | | 20:06 | | 18:49 | | 16:40 | 16:05 |
| 11 | 05:07 | 05:58 | | 06:57 | 07:25-07:40/15 | 07:54 | 17:40-18:09/29 | 07:57 | 08:49 |
| | 22:11 | 21:19 | | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | | 06:59 | 07:26-07:36/10 | 07:56 | 17:40-18:09/29 | 07:59 | 08:50 |
| | 22:10 | 21:17 | | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | | 07:00 | | 07:58 | 17:41-18:08/27 | 08:01 | 08:52 |
| | 22:09 | 21:15 | | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | | 07:02 | | 08:00 | 17:41-18:07/26 | 08:03 | 08:53 |
| | 22:08 | 21:12 | | 19:56 | | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | | 07:04 | | 08:02 | 17:42-18:05/23 | 08:05 | 08:54 |
| | 22:07 | 21:10 | | 19:53 | | 18:37 | | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | | 07:06 | | 08:04 | 17:43-18:03/20 | 08:07 | 08:54 |
| | 22:05 | 21:08 | | 19:51 | | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | | 07:08 | | 08:06 | 17:45-18:02/17 | 08:09 | 08:55 |
| | 22:04 | 21:06 | | 19:48 | | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | | 07:10 | | 08:08 | 17:47-17:59/12 | 08:11 | 08:56 |
| | 22:03 | 21:03 | | 19:46 | | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | | 07:12 | | 08:10 | 17:52-17:55/3 | 08:13 | 08:57 |
| | 22:01 | 21:01 | | 19:43 | | 18:27 | | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | | 07:14 | | 08:12 | | 08:15 | 08:58 |
| | 22:00 | 20:59 | | 19:41 | | 18:25 | | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 08:58 |
| | 21:58 | 20:56 | | 19:38 | | 18:23 | | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | | 07:17 | | 08:16 | | 08:19 | 08:59 |
| | 21:57 | 20:54 | | 19:35 | | 18:20 | | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | | 07:19 | | 08:18 | | 08:21 | 08:59 |
| | 21:55 | 20:51 | | 19:33 | | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | | 07:21 | | 08:20 | | 08:23 | 09:00 |
| | 21:54 | 20:49 | | 19:30 | | 18:16 | | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:32-07:41/9 | 07:23 | | 07:22 | | 08:25 | 09:00 |
| | 21:52 | 20:47 | | 19:28 | | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:29-07:44/15 | 07:25 | | 07:24 | | 08:26 | 09:00 |
| | 21:50 | 20:44 | | 19:25 | | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:26-07:45/19 | 07:27 | | 07:26 | | 08:28 | 09:01 |
| | 21:49 | 20:42 | | 19:22 | | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:25-07:46/21 | 07:29 | | 07:28 | | 08:30 | 09:01 |
| | 21:47 | 20:39 | | 19:20 | | 17:07 | | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:24-07:47/23 | 07:31 | | 07:30 | | 08:32 | 09:01 |
| | 21:45 | 20:37 | | 19:17 | | 17:04 | | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:23-07:48/25 | 07:33 | 17:56-18:00/4 | 07:32 | | 08:33 | 09:01 |
| | 21:43 | 20:34 | | 19:15 | | 17:02 | | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 | 07:22-07:49/27 | | | 07:34 | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | | | 16:13 |
| Potential sun hours | 521 | 465 | | 383 | | 326 | | 253 | 224 |
| Sum of minutes with flicker | 0 | 139 | | 286 | | 431 | | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 3 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 18:30-19:17/47 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 18:30-19:10/40 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 18:30-19:17/47 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 18:29-19:10/41 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 18:30-19:16/46 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 18:28-19:11/43 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 18:30-19:17/47 | 05:49 | 04:59 | 04:59 | 05:45 | 06:43 18:27-19:11/44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 18:29-19:16/47 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 18:27-19:12/45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 18:30-19:16/46 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 18:25-19:11/46 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 18:29-19:15/46 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 18:24-19:11/47 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 18:30-19:14/44 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 18:24-19:11/47 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 18:30-19:13/43 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 18:24-19:11/47 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 18:31-19:12/41 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 18:24-19:10/46 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 18:31-19:11/40 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 18:23-19:09/46 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 18:32-19:10/38 | 05:32 | 04:54 | 05:08 | 06:00 06:56-07:01/5 | 06:59 18:23-19:09/46 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 18:33-19:08/35 | 05:30 | 04:53 | 05:09 | 06:02 06:53-07:04/11 | 07:00 18:23-19:08/45 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 18:34-19:07/33 | 05:29 | 04:53 | 05:11 | 06:04 06:51-07:05/14 | 07:02 18:23-19:07/44 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 18:36-19:05/29 | 05:27 | 04:53 | 05:12 | 06:06 06:50-07:06/16 | 07:04 18:23-19:07/44 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 18:37-19:03/26 | 05:25 | 04:52 | 05:14 | 06:07 06:49-07:07/18 | 07:06 18:24-19:06/42 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 06:55-06:57/2 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 18:40-19:00/20 | 05:23 | 04:52 | 05:15 | 06:09 06:48-07:08/20 | 07:08 18:23-19:04/41 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 06:53-07:00/7 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 18:43-18:56/13 | 05:21 | 04:52 | 05:16 | 06:11 06:47-07:07/20 | 07:10 18:24-19:02/38 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 06:51-07:01/10 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:48-07:01/13 | 05:20 | 04:52 | 05:18 | 06:13 06:47-07:08/21 | 07:12 18:25-19:01/36 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 17:49-18:06/17 | 06:20 06:46-07:02/16 | 05:18 | 04:52 | 05:19 | 06:15 06:46-07:08/22 | 07:14 18:26-18:59/33 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 17:46-18:09/23 | 06:18 06:44-07:03/19 | 05:16 | 04:52 | 05:21 | 06:17 06:47-07:08/21 | 07:16 18:28-18:57/29 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 17:43-18:11/28 | 06:16 06:41-07:02/21 | 05:15 | 04:53 | 05:23 | 06:19 06:49-07:07/18 | 07:17 18:30-18:55/25 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:40-18:12/32 | 06:13 06:41-07:02/21 | 05:13 | 04:53 | 05:24 | 06:21 06:50-07:06/16 | 07:19 18:32-18:52/20 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 17:39-18:14/35 | 06:11 06:41-07:02/21 | 05:12 | 04:53 | 05:26 | 06:23 06:52-07:05/13 | 07:21 18:37-18:46/9 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 17:37-18:15/38 | 06:09 06:41-07:02/21 | 05:11 | 04:53 | 05:28 | 06:25 18:46-19:00/14 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 06:54-07:04/10 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 17:36-18:16/40 | 06:06 06:41-07:00/19 | 05:09 | 04:54 | 05:29 | 06:26 18:43-19:03/20 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 06:56-07:02/6 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 17:34-18:16/42 | 06:04 06:41-07:00/19 | 05:08 | 04:54 | 05:31 | 06:28 18:39-19:05/26 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 06:57-06:59/2 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 17:33-18:16/43 | 06:02 06:42-06:59/17 | 05:06 | 04:55 | 05:33 | 06:30 18:37-19:06/29 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 18:33-19:17/44 | 05:59 06:44-06:57/13 | 05:05 | 04:56 | 05:34 | 06:32 18:35-19:08/33 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 18:31-19:17/46 | 05:57 06:45-06:55/10 | 05:04 | 04:56 | 05:36 | 06:34 18:34-19:09/35 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 18:31-19:17/46 | | 05:03 | | 05:38 | 06:36 18:32-19:10/38 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 434 | 917 | 0 | 0 | 0 | 428 | 944 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 4 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | | 07:08 | 07:32-07:39/7 | 05:55 | | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 07:30-07:38/8 | 05:53 | 06:20-06:22/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:10 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:27-07:36/9 | 05:50 | 06:18-06:24/6 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:25-07:33/8 | 05:48 | 06:16-06:24/8 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:58 | 07:22-07:32/10 | 05:46 | 06:14-06:25/11 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:20-07:31/11 | 05:44 | 06:12-06:25/13 | 04:57 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 07:17-07:28/11 | 05:42 | 06:10-06:25/15 | 04:56 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:17-07:23/6 | 05:40 | 06:08-06:25/17 | 04:55 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 05:38 | 06:07-06:25/18 | 04:55 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | | 05:36 | 06:07-06:24/17 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 05:34 | 06:07-06:24/17 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 05:32 | 06:08-06:24/16 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | | 05:30 | 06:08-06:23/15 | 04:53 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | | 21:31 | | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 05:28 | 06:09-06:22/13 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:15 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 05:26 | 06:11-06:21/10 | 04:52 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 05:25 | 06:12-06:19/7 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 05:23 | | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 05:21 | | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | | 22:18 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 05:19 | | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 05:18 | | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 05:16 | | 04:52 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | | 21:46 | | 22:19 |
| 22 | 08:44 | 07:43 | 06:33 | | 06:15 | | 05:15 | | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | | 05:13 | | 04:52 |
| | 16:49 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | | 05:12 | | 04:53 |
| | 16:51 | 17:57 | 18:54 | | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | | 06:08 | | 05:10 | | 04:53 |
| | 16:53 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | | 06:06 | | 05:09 | | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | | 06:04 | | 05:07 | | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:01 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:15 | | 05:59 | | 05:05 | | 04:55 |
| | 17:02 | | 20:03 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:37-07:40/3 | 05:57 | | 05:04 | | 04:56 |
| | 17:04 | | 20:05 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:35-07:40/5 | | | 05:03 | | |
| | 17:06 | | 20:07 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 8 | | 70 | | 185 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 4 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:18-06:34/16 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:17-06:34/17 | 06:39 | | 07:36 | 07:39 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:17-06:35/18 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:17-06:35/18 | 06:43 | 07:14-07:20/6 | 07:40 | 07:43 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:18-06:34/16 | 06:45 | 07:14-07:25/11 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:20-06:34/14 | 06:47 | 07:15-07:26/11 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:22-06:34/12 | 06:49 | 07:17-07:27/10 | 07:46 | 07:49 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 05:03 | | 05:52 | 06:24-06:34/10 | 06:51 | 07:19-07:27/8 | 07:48 | 07:51 | 08:45 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:25-06:33/8 | 06:53 | 07:21-07:30/9 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:27-06:32/5 | 06:55 | 07:23-07:32/9 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:29-06:30/1 | 06:56 | 07:24-07:31/7 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 07:26-07:31/5 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 07:28-07:31/3 | 07:58 | 08:01 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 21:52 | | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:25-06:27/2 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:22-06:30/8 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:20-06:32/12 | 06:32 | | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:19-06:32/13 | 06:34 | | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:18-06:33/15 | 06:36 | | | | 07:34 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 50 | | 135 | | 79 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 5 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 06:32-06:38/6 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 06:39-06:47/8 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 06:37-06:48/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 06:36-06:49/13 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 06:36-06:49/13 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 06:38-06:50/12 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 06:39-06:49/10 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 06:41-06:49/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 06:43-06:49/6 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 06:45-06:48/3 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39-06:42/3 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 06:37-06:43/6 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:34-06:42/8 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:32-06:42/10 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:30-06:42/12 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:28-06:42/14 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:29-06:41/12 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:30-06:40/10 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 75 | 6 | 0 | 0 | 84 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 6 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 07:06-07:11/5 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 07:08-07:09/1 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 07:10-07:11/1 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:07-07:12/5 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05-07:13/8 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 07:02-07:13/11 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:00-07:14/14 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 06:57-07:13/16 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:56-07:13/17 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 06:56-07:13/17 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:08-07:10/2 | 06:25 06:56-07:11/15 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:06-07:10/4 | 06:23 06:57-07:10/13 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 07:42-07:49/7 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:03-07:09/6 | 06:20 06:59-07:09/10 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 07:41-07:50/9 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:01-07:08/7 | 06:18 07:01-07:04/3 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 07:43-07:51/8 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 06:58-07:05/7 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 07:05-07:10/5 | 07:17 07:45-07:52/7 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 06:55-07:04/9 | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 07:02-07:13/11 | 07:19 07:47-07:53/6 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 06:55-07:03/8 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 07:01-07:14/13 | 07:21 07:49-07:54/5 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 07:00-07:15/15 | 07:23 07:51-07:53/2 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 06:58-07:15/17 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 06:57-07:15/18 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 06:59-07:15/16 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 07:01-07:15/14 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 07:03-07:14/11 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 07:04-07:12/8 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 43 | 130 | 0 | 0 | 0 | 128 | 50 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 7 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:27-10:41/14 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 10:29-10:41/12 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 10:30-10:40/10 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 10:32-10:40/8 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 10:34-10:37/3 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | 10:22-10:24/2 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | 10:19-10:27/8 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | 10:19-10:29/10 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | 10:18-10:30/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | 10:18-10:31/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | 10:18-10:33/15 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | 10:18-10:33/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | 10:18-10:34/16 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:18-10:35/17 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:18-10:36/18 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:19-10:37/18 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:39-10:43/4 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | 10:19-10:37/18 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:38-10:43/5 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | 10:19-10:37/18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:20-10:44/24 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:19-10:44/25 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:20-10:45/25 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:21-10:45/24 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:41-10:46/5 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | 10:22-10:40/18 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:42-10:46/4 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | 10:22-10:40/18 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:43-10:45/2 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | 10:23-10:40/17 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:23-10:41/18 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 | 10:24-10:41/17 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | 10:25-10:41/16 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | 10:26-10:41/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | 10:27-10:42/15 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 8 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 | 08:24 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:05-10:06/1 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:04-10:08/4 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:04-10:10/6 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:04-10:11/7 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:04-10:11/7 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:04-10:12/8 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:04-10:12/8 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:05-10:13/8 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:05-10:13/8 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:06-10:14/8 |
| | 16:52 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:07-10:14/7 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:08-10:14/6 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:09-10:13/4 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 | 10:10-10:13/3 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:14 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 20:14-20:15/1 | 05:01 | 04:56 | 05:39 | 06:37 19:28-19:55/27 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:28-19:54/26 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:28-19:54/26 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:38-19:47/9 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:28-19:52/24 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:36-19:49/13 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:31-19:45/14 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:31-19:55/24 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:33-19:42/9 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 19:30-19:56/26 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 19:29-19:55/26 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 | 06:42 19:29-19:56/27 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 19:28-19:55/27 | 05:32 | 04:53 | 05:08 | 06:00 20:21-20:26/5 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 19:28-19:55/27 | 05:30 | 04:53 | 05:09 | 06:01 20:18-20:29/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 19:29-19:55/26 | 05:28 | 04:52 | 05:10 | 06:03 20:17-20:30/13 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 19:28-19:54/26 | 05:26 | 04:52 | 05:12 | 06:05 20:16-20:31/15 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 19:29-19:53/24 | 05:24 | 04:52 | 05:13 | 06:07 20:14-20:31/17 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 19:29-19:52/23 | 05:23 | 04:52 | 05:15 | 06:09 20:13-20:32/19 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 19:30-19:51/21 | 05:21 | 04:52 | 05:16 | 06:11 20:13-20:32/19 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 20:11-20:16/5 | 05:19 | 04:52 | 05:18 | 06:13 20:13-20:30/17 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 19:31-19:50/19 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 20:09-20:17/8 | 05:18 | 04:52 | 05:19 | 06:15 20:12-20:27/15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 19:32-19:47/15 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 20:08-20:19/11 | 05:16 | 04:52 | 05:21 | 06:17 20:12-20:25/13 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 19:35-19:44/9 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 20:08-20:21/13 | 05:15 | 04:52 | 05:22 | 06:18 20:13-20:23/10 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 19:39-19:50/11 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 20:08-20:23/15 | 05:13 | 04:52 | 05:24 | 06:20 20:14-20:21/7 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 19:37-19:52/15 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 20:07-20:24/17 | 05:12 | 04:53 | 05:25 | 06:22 20:15-20:19/4 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 19:35-19:54/19 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 20:07-20:25/18 | 05:10 | 04:53 | 05:27 | 06:24 19:32-19:54/22 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 20:07-20:25/18 | 05:09 | 04:53 | 05:29 | 06:26 19:31-19:55/24 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 20:08-20:24/16 | 05:07 | 04:54 | 05:31 | 06:28 19:31-19:55/24 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 20:08-20:24/16 | 05:06 | 04:54 | 05:32 | 06:30 19:30-19:56/26 | 07:28 | 07:28 | 08:30 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 20:09-20:21/12 | 05:05 | 04:55 | 05:34 | 06:32 19:29-19:56/27 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:10-20:20/10 | 05:04 | 04:56 | 05:36 | 06:34 19:28-19:55/27 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:28-19:55/27 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 538 | 1 | 0 | 0 | 387 | 163 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 17:22-17:39/17 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:21-17:41/20 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 17:21-17:43/22 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:04-18:14/10 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 17:20-17:43/23 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:01-18:16/15 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 17:20-17:42/22 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 17:59-18:17/18 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 17:20-17:42/22 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 17:58-18:17/19 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:20-17:41/21 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:18/21 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:21-17:40/19 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 17:56-18:18/22 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:22-17:38/16 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 17:55-18:18/23 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:24-17:37/13 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 17:55-18:18/23 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 17:27-17:33/6 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 17:55-18:16/21 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 17:55-18:14/19 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 17:56-18:11/15 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 19:07-19:12/5 | 08:00 17:56-18:08/12 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 19:03-19:14/11 | 08:02 17:57-18:06/9 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 19:01-19:15/14 | 08:04 17:59-18:03/4 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 19:00-19:16/16 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:59-19:16/17 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:59-19:14/15 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 18:15-18:18/3 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:58-19:11/13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 18:13-18:20/7 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:58-19:09/11 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 18:13-18:22/9 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:58-19:05/7 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:12-18:24/12 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:59-19:03/4 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 18:11-18:26/15 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:12-18:28/16 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 17:26-17:32/6 | 06:23 18:11-18:27/16 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 17:25-17:35/10 | 06:20 18:12-18:27/15 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 17:23-17:36/13 | 06:18 18:13-18:25/12 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 19:15-19:21/6 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 29 | 312 | 0 | 0 | 0 | 0 | 0 | 113 | 231 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 16:03-16:24/21 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:37-17:41/4 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 16:03-16:22/19 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 16:37-16:39/2 | 07:21 17:36-17:43/7 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:18-18:23/5 | 07:40 16:04-16:21/17 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:22 16:35-16:41/6 | 07:19 17:35-17:45/10 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:15-18:25/10 | 07:42 16:04-16:18/14 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 16:35-16:44/9 | 07:16 17:34-17:47/13 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:12-18:26/14 | 07:44 16:04-16:16/12 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 16:34-16:46/12 | 07:14 17:35-17:49/14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 18:11-18:26/15 | 07:46 16:05-16:13/8 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 16:34-16:49/15 | 07:11 17:34-17:50/16 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 18:10-18:26/16 | 07:49 16:06-16:12/6 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 16:34-16:51/17 | 07:09 17:35-17:50/15 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 18:10-18:24/14 | 07:51 16:08-16:09/1 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 16:33-16:53/20 | 07:06 17:36-17:48/12 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 18:10-18:22/12 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 16:33-16:54/21 | 07:04 17:39-17:46/7 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 18:10-18:19/9 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 16:34-16:54/20 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 18:11-18:16/5 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 16:34-16:54/20 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 18:11-18:14/3 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 16:34-16:53/19 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 16:36-16:52/16 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 16:37-16:51/14 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 16:38-16:49/11 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:55 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 16:11-16:16/5 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 16:08-16:20/12 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 16:06-16:21/15 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 16:05-16:22/17 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 16:04-16:22/18 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 16:04-16:24/20 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 16:03-16:24/21 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 202 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 98 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 20:46-21:04/18 | 04:56 20:15-20:48/33 | 05:39 20:55-21:06/11 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 20:06-20:44/38 | 22:18 | 21:39 20:14-20:53/39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 20:17-20:31/14 | 05:00 20:46-21:04/18 | 04:57 20:14-20:47/33 | 05:41 20:57-21:04/7 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 20:06-20:44/38 | 22:17 | 21:37 20:15-20:52/37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 20:14-20:33/19 | 04:59 20:47-21:03/16 | 04:58 20:58-21:04/6 | 05:43 20:59-21:03/4 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 20:06-20:44/38 | 22:17 20:14-20:48/34 | 21:35 20:16-20:52/36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 20:12-20:35/23 | 04:58 20:47-21:02/15 | 04:59 20:57-21:05/8 | 05:45 20:16-20:50/34 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 20:07-20:43/36 | 22:16 20:14-20:49/35 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 20:10-20:37/27 | 04:58 20:49-21:03/14 | 05:00 20:57-21:07/10 | 05:47 20:17-20:50/33 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 20:08-20:44/36 | 22:15 20:14-20:49/35 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 20:09-20:38/29 | 04:57 20:49-21:02/13 | 05:01 20:56-21:08/12 | 05:48 20:18-20:49/31 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 20:08-20:44/36 | 22:15 20:14-20:50/36 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 20:07-20:39/32 | 04:56 20:50-21:01/11 | 05:02 20:56-21:09/13 | 05:50 20:19-20:48/29 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 20:09-20:44/35 | 22:14 20:14-20:50/36 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 20:07-20:41/34 | 04:55 20:52-21:00/8 | 05:03 20:55-21:09/14 | 05:52 20:20-20:46/26 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 20:09-20:44/35 | 22:13 20:14-20:51/37 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 20:06-20:41/35 | 04:55 20:52-20:59/7 | 05:04 20:54-21:10/16 | 05:54 20:22-20:44/22 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 20:09-20:43/34 | 22:12 20:14-20:51/37 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 20:48-20:53/5 | 04:54 20:55-20:58/3 | 05:05 20:54-21:11/17 | 05:56 20:24-20:42/18 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 20:05-20:42/37 | 22:12 20:10-20:43/33 | 22:12 20:14-20:51/37 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 20:46-20:54/8 | 04:54 20:11-20:44/33 | 05:06 20:53-21:11/18 | 05:58 20:27-20:38/11 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 20:04-20:42/38 | 22:13 | 22:11 20:13-20:52/39 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 20:44-20:56/12 | 04:53 20:10-20:43/33 | 05:08 20:53-21:12/19 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 20:04-20:42/38 | 22:14 | 22:10 20:13-20:52/39 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 20:44-20:58/14 | 04:53 20:11-20:43/32 | 05:09 20:14-21:13/59 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 20:04-20:43/39 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 20:03-21:00/57 | 04:52 20:12-20:43/31 | 05:10 20:13-21:14/61 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 20:03-21:01/58 | 04:52 20:12-20:44/32 | 05:12 20:13-21:14/61 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 20:03-21:03/60 | 04:52 20:13-20:44/31 | 05:13 20:13-21:14/61 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 20:02-21:04/62 | 04:52 20:13-20:44/31 | 05:15 20:13-21:15/62 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 20:03-21:06/63 | 04:52 20:13-20:44/31 | 05:16 20:13-21:15/62 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:18 20:12-21:15/63 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:19 20:13-21:16/63 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:21 20:12-21:16/64 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:14 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:22 20:13-21:16/63 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 20:03-21:06/63 | 04:52 20:15-20:45/30 | 05:24 20:13-21:16/63 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:11 20:03-21:05/62 | 04:53 20:14-20:45/31 | 05:25 20:13-21:16/63 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 20:03-21:06/63 | 04:53 20:14-20:45/31 | 05:27 20:13-21:16/63 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 20:04-21:06/62 | 04:53 20:15-20:46/31 | 05:29 20:13-21:16/63 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 20:04-21:06/62 | 04:54 20:14-20:46/32 | 05:30 20:13-21:14/61 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 20:04-21:05/61 | 04:54 20:15-20:47/32 | 05:32 20:13-21:13/60 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 20:05-21:05/60 | 04:55 20:14-20:46/32 | 05:34 20:14-21:12/58 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 20:05-21:05/60 | 04:56 20:15-20:47/32 | 05:36 20:14-21:09/55 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:02 20:05-21:05/60 | | 05:37 20:55-21:08/13 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 20:14-20:54/40 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 1509 | 1107 | 1722 | 338 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 19:30-19:53/23 | 07:34 18:05-18:36/31 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:30-19:53/23 | 07:36 18:06-18:34/28 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 19:40-19:46/6 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:30-19:53/23 | 07:38 18:07-18:33/26 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:37-19:47/10 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:29-19:52/23 | 07:40 18:08-18:31/23 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:35-19:49/14 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 18:10-18:29/19 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 18:12-18:25/13 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:38-17:46/8 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:30-19:45/15 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:34-17:50/16 | 06:50 19:32-19:55/23 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:32-19:42/10 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:31-17:52/21 | 06:47 19:32-19:55/23 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 19:33-19:39/6 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:29-17:54/25 | 06:45 19:31-19:54/23 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 17:27-17:55/28 | 06:42 19:31-19:54/23 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 17:25-17:55/30 | 06:40 19:30-19:53/23 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 17:25-17:57/32 | 06:37 19:31-19:53/22 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 17:23-17:57/34 | 06:35 19:31-19:51/20 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 17:23-17:57/34 | 06:32 19:32-19:50/18 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 18:19-18:33/14 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 17:22-17:57/35 | 06:30 19:34-19:49/15 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 18:16-18:35/19 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 17:22-17:58/36 | 06:27 19:35-19:46/11 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 18:14-18:37/23 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 17:22-17:57/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:12-18:38/26 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 17:21-17:56/35 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:10-18:39/29 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 17:22-17:56/34 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:09-18:40/31 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 17:21-17:55/34 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:08-18:40/32 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 17:22-17:55/33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:06-18:40/34 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:22-17:54/32 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:05-18:40/35 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 17:22-17:52/30 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 18:05-18:40/35 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 17:24-17:51/27 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 19:42-19:45/3 | 07:23 18:04-18:40/36 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 17:25-17:49/24 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 19:38-19:49/11 | 07:25 18:04-18:39/35 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 17:27-17:47/20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 19:35-19:51/16 | 07:27 18:04-18:39/35 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 17:29-17:44/15 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 19:34-19:52/18 | 07:28 18:04-18:38/34 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 18:34-18:38/4 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 19:32-19:52/20 | 07:30 18:04-18:38/34 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 19:31-19:53/22 | 07:32 18:04-18:37/33 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:30-19:53/23 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 622 | 268 | 0 | 0 | 0 | 113 | 645 | 140 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 225 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:50 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:05 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:09 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:26 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 08:59-09:45/46 | 07:26 09:08-09:55/47 | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | 07:36 08:29-09:27/58 | 08:34 |
| | 16:13 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 08:58-09:47/49 | 07:24 09:09-09:53/44 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:28-09:26/58 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 08:58-09:49/51 | 07:21 09:10-09:52/42 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:29-09:26/57 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:06 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 08:58-09:51/53 | 07:19 09:11-09:49/38 | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:28-09:24/56 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 08:58-09:52/54 | 07:16 09:12-09:47/35 | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 09:59-10:11/12 | 07:44 08:28-09:23/55 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:06 |
| 6 | 08:59 | 08:18 08:58-09:54/56 | 07:14 09:14-09:45/31 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 09:54-10:16/22 | 07:46 08:28-09:22/54 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 08:59-09:55/56 | 07:11 09:16-09:41/25 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 09:51-10:19/28 | 07:48 08:29-09:21/52 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 08:59-09:56/57 | 07:09 09:20-09:38/18 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 09:49-10:22/33 | 07:50 08:29-09:20/51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 08:59-09:56/57 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 09:47-10:24/37 | 07:53 08:29-09:18/49 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:08 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 08:59-09:57/58 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 09:45-10:25/40 | 07:55 08:30-09:15/45 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 09:00-09:58/58 | 07:01 | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 09:44-10:26/42 | 07:57 08:31-09:14/43 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:37 | 16:04 |
| 12 | 08:54 | 08:05 09:01-09:59/58 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 09:42-10:27/45 | 07:59 08:56-09:10/14 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 08:32-08:54/22 | 16:03 |
| 13 | 08:54 | 08:03 09:02-09:59/57 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:57 09:41-10:28/47 | 08:01 08:34-08:53/19 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 09:03-10:00/57 | 06:54 | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 07:59 09:40-10:29/49 | 08:03 08:36-08:52/16 | 08:52 |
| | 16:32 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 09:06-10:00/54 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 09:39-10:29/50 | 08:05 08:39-08:51/12 | 08:53 |
| | 16:34 | 17:37 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:30 | 16:03 |
| 16 | 08:51 | 07:57 09:05-10:00/55 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 09:38-10:30/52 | 08:07 08:41-08:49/8 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 09:05-10:00/55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:07 | 08:05 09:37-10:30/53 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 09:06-10:01/55 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 09:36-10:30/54 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 09:05-10:00/55 | 06:41 | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:09 09:36-10:30/54 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:44 | 21:42 | 22:18 | 22:01 | 21:00 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:47 09:05-10:01/56 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:11 09:36-10:31/55 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 09:05-10:00/55 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:13 09:36-10:31/55 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 09:05-10:00/55 | 06:33 | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 09:35-10:31/56 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 09:06-10:00/54 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 09:35-10:31/56 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 09:05-09:59/54 | 06:28 | 06:10 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 09:35-10:30/55 | 08:22 | 08:59 |
| | 16:51 | 17:56 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 09:06-09:59/53 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 08:35-09:30/55 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 09:08-09:16/8 | 07:33 09:06-09:57/51 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 08:36-09:30/54 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:24 | 17:10 | 16:15 | 16:07 |
| 27 | 08:36 09:06-09:18/12 | 07:31 09:07-09:57/50 | 06:20 | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 07:26 08:34-09:30/56 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 09:04-09:20/16 | 07:29 09:07-09:55/48 | 06:18 | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 07:28 08:32-09:29/57 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:12 | 16:09 |
| 29 | 08:32 09:02-09:21/19 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:31-09:28/57 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 09:24-09:39/15 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:31-09:29/58 | 08:33 | 09:00 |
| | 17:04 09:00-09:22/22 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:10 | 16:11 |
| 31 | 08:29 08:59-09:42/43 | | 07:10 | | 05:02 | | 05:37 | 06:35 | | 07:34 08:30-09:28/58 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 16:59 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 135 | 1517 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 1290 | 669 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninės VEWTG: 18 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:14-14:50/36 10:59-11:45/46 | 08:28 15:55-16:27/32 11:07-11:56/49 09:16-09:39/23 | 07:27 08:14-08:44/30 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:05-12:43/38 10:25-10:32/7 | 17:08 14:32-14:53/21 09:45-11:03/78 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:14-14:50/36 10:58-11:45/47 | 08:26 15:55-16:29/34 11:07-11:56/49 09:15-09:41/26 | 07:24 08:14-08:43/29 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:06-12:43/37 10:23-10:34/11 | 17:10 14:35-14:51/16 09:45-11:03/78 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:15-14:51/36 10:59-11:46/47 | 08:24 15:55-16:30/35 11:08-11:56/48 09:14-09:42/28 | 07:22 08:14-08:41/27 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:07-12:44/37 10:22-10:36/14 | 17:12 14:39-14:47/8 09:45-11:03/78 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:14-14:51/37 10:59-11:46/47 | 08:22 15:55-16:31/36 09:45-11:04/79 | 07:19 08:15-08:41/26 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:07-12:44/37 10:21-10:37/16 | 17:15 11:09-11:55/46 09:13-09:43/30 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:15-14:53/38 11:00-11:48/48 | 08:20 15:55-16:32/37 09:45-11:03/78 | 07:17 08:15-08:39/24 | 06:58 | 05:46 | 04:58 |
| | 16:19 12:08-12:44/36 10:20-10:40/20 | 17:17 11:10-11:54/44 09:13-09:44/31 | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 14:15-14:53/38 11:00-11:48/48 | 08:18 16:37-16:42/5 11:12-11:53/41 | 07:15 08:17-08:38/21 | 06:55 | 05:44 | 04:57 |
| | 16:20 12:09-12:44/35 10:19-10:41/22 | 17:19 15:56-16:33/37 09:12-11:03/111 | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 14:15-14:53/38 10:59-11:48/49 | 08:16 15:55-16:45/50 09:12-11:03/111 | 07:12 08:18-08:36/18 | 06:53 | 05:42 | 04:56 |
| | 16:22 12:09-12:44/35 10:19-10:42/23 | 17:21 11:13-11:52/39 08:55-09:05/10 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:15-14:54/39 10:59-11:49/50 | 08:14 15:56-16:47/51 09:11-11:02/111 | 07:10 08:20-08:34/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 12:10-12:44/34 10:18-10:44/26 | 17:23 11:14-11:50/36 08:52-09:07/15 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:17-14:55/38 11:00-11:51/51 | 08:12 15:57-16:49/52 09:11-11:02/111 | 07:07 08:24-08:29/5 | 06:48 | 05:38 | 04:55 |
| | 16:25 12:12-12:45/33 10:18-10:46/28 | 17:25 11:16-11:49/33 08:50-09:09/19 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:17-14:56/39 11:01-11:51/50 | 08:10 15:58-16:50/52 08:49-11:01/132 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 12:13-12:45/32 10:18-10:47/29 | 17:27 11:18-11:47/29 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:17-14:56/39 11:01-11:52/51 | 08:08 15:59-16:51/52 08:48-11:01/133 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 12:14-12:44/30 10:17-10:48/31 | 17:30 11:21-11:44/23 | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 14:17-14:56/39 11:00-11:52/52 | 08:06 16:00-16:51/51 08:46-10:59/133 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 12:14-12:43/29 10:16-10:49/33 | 17:32 11:24-11:39/15 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:17-14:57/40 11:00-11:52/52 | 08:04 16:02-16:52/50 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 12:15-12:43/28 10:15-10:50/35 | 17:34 08:46-10:58/132 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:17-14:57/40 11:01-11:53/52 | 08:02 16:06-16:52/46 08:46-09:47/61 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 12:17-12:43/26 10:15-10:51/36 | 17:36 09:48-10:57/69 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:18-14:58/40 11:01-11:54/53 | 08:00 16:07-16:52/45 08:45-09:46/61 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 12:18-12:42/24 10:15-10:53/38 | 17:38 09:48-10:54/66 08:33-08:38/5 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:18-14:58/40 11:01-11:54/53 09:58-10:07/9 | 07:57 16:08-16:53/45 08:45-09:46/61 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 12:19-12:40/21 10:14-10:53/39 | 17:40 09:50-10:53/63 08:28-08:41/13 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:19-14:58/39 11:01-11:55/54 09:56-10:10/14 | 07:55 16:09-16:53/44 09:51-10:24/33 08:27-08:44/17 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 12:22-12:39/17 10:14-10:54/40 | 17:42 10:27-10:50/23 08:45-09:46/61 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:19-14:59/40 11:02-11:56/54 09:54-10:13/19 | 07:53 16:10-16:53/43 09:52-10:22/30 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 12:25-12:38/13 10:14-10:56/42 | 17:44 10:30-10:46/16 08:24-09:45/81 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:19-14:59/40 11:01-11:55/54 | 07:51 16:13-16:53/40 08:24-09:44/80 | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 12:29-12:34/5 09:52-10:56/64 | 17:47 09:54-10:20/26 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:20-14:59/39 09:52-10:58/66 | 07:48 16:26-16:53/27 09:57-10:18/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:02-11:56/54 | 17:49 16:17-16:23/6 08:22-09:44/82 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:20-14:59/39 09:50-10:58/68 | 07:46 16:26-16:52/26 09:15-09:42/27 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 11:02-11:56/54 | 17:51 10:00-10:13/13 08:20-09:14/54 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:21-14:59/38 09:49-10:58/69 | 07:44 16:27-16:51/24 08:18-09:14/56 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:02-11:56/54 | 17:53 09:16-09:40/24 | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:22-14:59/37 09:49-11:00/71 | 07:41 16:27-16:50/23 08:17-09:12/55 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:03-11:57/54 | 17:55 09:18-09:38/20 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 16:02-16:11/9 11:03-11:57/54 | 07:39 16:29-16:49/20 08:16-09:12/56 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 14:22-14:59/37 09:48-11:00/72 | 17:57 09:21-09:35/14 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 15:59-16:13/14 11:03-11:57/54 | 07:36 16:30-16:46/16 08:48-09:10/22 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 14:23-14:58/35 09:47-11:00/73 | 17:59 08:15-08:47/32 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:59-16:15/16 11:04-11:58/54 | 07:34 16:33-16:44/11 08:50-09:08/18 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:24-14:59/35 09:47-11:02/75 | 18:01 08:15-08:47/32 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:58-16:17/19 11:04-11:58/54 | 07:32 08:14-08:46/32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 14:25-14:58/33 09:47-11:02/75 | 18:03 08:52-09:05/13 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:57-16:18/21 11:05-11:58/53 | 07:29 08:14-08:45/31 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 14:26-14:58/32 09:46-11:02/76 | 18:05 08:57-09:00/3 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:56-16:19/23 11:05-11:57/52 09:23-09:31/8 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 14:27-14:57/30 09:46-11:03/77 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:56-16:22/26 11:06-11:57/51 09:20-09:35/15 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 14:29-14:56/27 09:45-11:03/78 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:55-16:25/30 11:06-11:57/51 09:18-09:37/19 | | 07:11 | | 05:03 | |
| | 17:06 14:30-14:54/24 09:45-11:03/78 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4956 | 4405 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 18 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 15:27-16:19/52 08:19-10:31/132 | 08:35 13:58-14:37/39 10:42-11:33/51 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 10:47-11:17/30 | 16:10 11:56-12:26/30 09:59-10:31/32 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 15:26-16:18/52 08:40-10:31/111 | 08:37 13:59-14:38/39 10:43-11:33/50 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 10:45-11:18/33 08:20-08:39/19 | 16:09 11:55-12:27/32 10:00-10:29/29 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 15:25-16:16/51 08:40-10:32/112 | 08:38 14:00-14:38/38 10:44-11:34/50 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 10:43-11:20/37 08:22-08:36/14 | 16:08 11:55-12:28/33 10:01-10:29/28 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 15:26-16:15/49 08:42-10:33/111 | 08:40 14:01-14:39/38 10:45-11:34/49 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 10:43-11:22/39 08:26-08:34/8 | 16:08 11:55-12:29/34 10:03-10:29/26 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 08:58-09:09/11 | 07:45 16:07-16:11/4 10:41-11:23/42 | 08:42 14:00-14:39/39 10:45-11:34/49 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 15:25-16:02/37 08:42-10:33/111 | 16:07 11:54-12:29/35 10:04-10:27/23 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 08:55-09:11/16 | 07:47 15:25-16:02/37 09:15-10:33/78 | 08:43 14:01-14:39/38 10:46-11:34/48 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 10:40-11:24/44 08:42-09:14/32 | 16:06 11:55-12:30/35 10:05-10:27/22 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 08:53-09:13/20 | 07:49 15:25-16:01/36 09:15-10:33/78 | 08:44 14:01-14:39/38 10:46-11:34/48 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 10:39-11:25/46 08:43-09:13/30 | 16:06 11:54-12:30/36 10:06-10:26/20 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 08:51-09:14/23 | 07:51 15:26-16:01/35 10:39-11:26/47 08:45-09:13/28 | 08:46 14:03-14:40/37 10:47-11:34/47 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 14:09-14:18/9 09:16-10:34/78 | 16:05 11:55-12:32/37 10:09-10:26/17 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 08:50-09:15/25 | 07:53 15:26-15:59/33 10:38-11:27/49 08:46-09:11/25 | 08:47 14:03-14:39/36 10:47-11:34/47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 14:05-14:22/17 09:16-10:34/78 | 16:05 11:55-12:32/37 10:10-10:24/14 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 08:49-09:15/26 | 07:55 15:26-15:58/32 10:37-11:27/50 08:47-09:10/23 | 08:48 14:04-14:40/36 10:48-11:35/47 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 14:03-14:24/21 09:16-10:34/78 | 16:05 11:56-12:33/37 10:13-10:24/11 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 08:48-09:15/27 | 07:57 15:26-15:56/30 10:37-11:28/51 08:49-09:08/19 | 08:50 14:04-14:40/36 10:49-11:35/46 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 14:01-14:25/24 09:16-10:34/78 | 16:04 11:56-12:33/37 10:15-10:22/7 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 08:47-09:16/29 | 07:59 15:27-15:53/26 10:37-11:29/52 08:52-09:07/15 | 08:51 14:05-14:40/35 10:49-11:35/46 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 14:00-14:28/28 09:17-10:35/78 | 16:04 11:56-12:34/38 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 08:48-09:18/30 | 08:01 15:28-15:51/23 10:37-11:29/52 08:55-09:03/8 | 08:52 14:05-14:40/35 10:50-11:35/45 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 13:59-14:29/30 09:18-10:35/77 | 16:04 11:56-12:34/38 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 08:47-09:19/32 | 08:03 15:29-15:50/21 10:37-11:30/53 | 08:53 14:06-14:41/35 10:50-11:35/45 |
| | 22:08 | 21:13 | 19:56 | 18:39 09:27-09:36/9 | 16:33 13:58-14:29/31 09:18-10:34/76 | 16:04 11:56-12:35/39 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 17:08-17:13/5 09:24-09:39/15 | 08:06 15:30-15:49/19 10:36-11:30/54 | 08:54 14:06-14:41/35 10:52-11:36/44 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:47-09:19/32 | 16:31 13:57-14:30/33 09:19-10:34/75 | 16:04 11:57-12:36/39 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 17:04-17:17/13 09:21-09:41/20 | 08:08 15:32-15:48/16 10:37-11:31/54 | 08:55 14:07-14:41/34 10:52-11:36/44 |
| | 22:06 | 21:08 | 19:51 | 18:35 08:47-09:19/32 | 16:29 13:57-14:32/35 09:20-10:35/75 | 16:04 11:57-12:36/39 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 17:01-17:19/18 08:47-09:42/55 | 08:09 15:33-15:47/14 10:37-11:31/54 | 08:56 14:08-14:42/34 10:52-11:36/44 |
| | 22:04 | 21:06 | 19:48 | 18:32 09:55-10:04/9 | 16:28 13:57-14:32/35 09:21-10:34/73 | 16:04 11:57-12:36/39 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 16:59-17:20/21 08:48-09:43/55 | 08:11 15:36-15:45/9 10:37-11:31/54 | 08:56 14:08-14:42/34 10:53-11:37/44 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-10:07/16 | 16:26 13:56-14:33/37 09:22-10:34/72 | 16:04 11:58-12:37/39 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 16:58-17:21/23 08:48-09:44/56 | 08:13 13:56-14:33/37 09:23-10:34/71 | 08:57 14:09-14:43/34 10:54-11:37/43 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:48-10:10/22 | 16:25 10:37-11:31/54 | 16:04 11:59-12:38/39 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 16:57-17:22/25 08:49-09:44/55 | 08:15 13:56-14:34/38 09:24-10:33/69 | 08:58 14:09-14:43/34 10:54-11:37/43 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:46-10:11/25 | 16:23 10:37-11:31/54 | 16:05 11:58-12:38/40 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 16:56-17:22/26 08:50-10:12/82 | 08:17 13:56-14:35/39 09:26-10:34/68 | 08:59 14:10-14:44/34 10:55-11:38/43 |
| | 21:59 | 20:57 | 19:38 | 18:23 10:29-10:45/16 | 16:22 10:38-11:32/54 | 16:05 11:59-12:39/40 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 16:56-17:23/27 10:27-10:49/22 | 08:19 13:56-14:35/39 09:28-10:34/66 | 08:59 14:10-14:44/34 10:56-11:39/43 |
| | 21:57 | 20:54 | 19:35 | 18:20 16:46-16:55/9 08:53-10:14/81 | 16:20 10:38-11:32/54 | 16:05 12:00-12:40/40 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 16:42-17:23/41 10:24-10:51/27 | 08:21 13:56-14:36/40 10:38-11:33/55 | 09:00 14:11-14:45/34 10:56-11:39/43 |
| | 21:56 | 20:52 | 19:33 | 18:18 11:05-11:12/7 08:54-10:15/81 | 16:19 12:06-12:10/4 09:29-10:33/64 | 16:06 12:00-12:40/40 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 16:40-17:23/43 10:22-10:53/31 | 08:23 13:56-14:36/40 10:39-11:33/54 09:31-09:50/19 | 09:00 14:11-14:45/34 10:56-11:39/43 |
| | 21:54 | 20:49 | 19:30 | 18:16 10:59-11:18/19 08:55-10:15/80 | 16:18 12:02-12:15/13 09:51-10:33/42 | 16:07 12:01-12:40/39 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 15:38-16:23/45 09:20-09:54/34 07:56-08:12/16 | 08:25 13:57-14:36/39 10:39-11:33/54 09:34-09:49/15 | 09:00 14:11-14:45/34 10:56-11:40/44 |
| | 21:52 | 20:47 | 19:28 | 17:13 09:56-10:21/25 08:14-09:16/62 | 16:16 12:00-12:17/17 09:52-10:33/41 | 16:07 12:01-12:40/39 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 15:37-16:22/45 08:14-09:16/62 | 08:27 13:57-14:37/40 10:40-11:33/53 09:37-09:46/9 | 09:01 14:12-14:47/35 10:57-11:41/44 |
| | 21:51 | 20:44 | 19:25 | 17:11 09:19-10:23/64 07:59-08:10/11 | 16:15 11:58-12:19/21 09:53-10:32/39 | 16:08 12:02-12:41/39 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 15:37-16:23/46 08:15-09:17/62 | 08:28 13:57-14:37/40 10:40-11:33/53 | 09:01 14:13-14:47/34 10:57-11:42/45 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:19-10:25/66 | 16:14 11:57-12:21/24 09:54-10:32/38 | 16:09 12:03-12:42/39 |
| 28 | 05:33 | 06:30 | 07:29 | 07:29 15:35-16:22/47 08:15-09:17/62 | 08:30 13:58-14:37/39 10:41-11:33/52 | 09:01 14:13-14:48/35 10:58-11:42/44 |
| | 21:47 | 20:40 | 19:20 | 17:07 09:18-10:27/69 | 16:13 11:57-12:23/26 09:55-10:31/36 | 16:10 12:03-12:42/39 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 15:31-16:21/50 | 08:32 13:58-14:38/40 10:41-11:33/52 | 09:01 14:13-14:48/35 10:58-11:43/45 |
| | 21:46 | 20:37 | 19:17 | 17:04 08:16-10:28/132 | 16:12 11:56-12:24/28 09:57-10:31/34 | 16:11 12:04-12:43/39 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 15:29-16:20/51 08:16-10:29/133 | 08:34 13:59-14:38/39 10:42-11:34/52 | 09:01 14:13-14:48/35 10:58-11:43/45 |
| | 21:44 | 20:35 | 19:15 | 17:02 10:53-11:10/17 | 16:11 11:56-12:25/29 09:58-10:31/33 | 16:11 12:04-12:42/38 |
| 31 | 05:38 | 06:36 | | 07:35 15:28-16:19/51 08:18-10:30/132 | | 09:01 14:13-14:49/36 10:58-11:44/46 |
| | 21:42 | 20:32 | | 17:00 10:50-11:14/24 | | 16:13 12:04-12:43/39 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 2643 | 5426 | 3912 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 19 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:33-15:27/54 11:14-11:29/15 09:53-10:02/9 | 08:28 15:16-15:36/20 08:57-09:07/10 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:53-13:10/17 10:13-10:45/32 | 17:08 09:10-10:20/70 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:33-15:28/55 11:15-11:29/14 09:51-10:03/12 | 08:26 15:19-15:30/11 08:55-09:09/14 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:53-13:09/16 10:12-10:45/33 | 17:10 09:10-10:19/69 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:34-15:29/55 11:17-11:29/12 09:51-10:04/13 | 08:24 08:54-10:18/84 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:55-13:09/14 10:13-10:47/34 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:34-15:30/56 11:18-11:27/9 09:50-10:05/15 | 08:22 08:53-10:17/84 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:56-13:08/12 10:13-10:47/34 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:35-15:32/57 11:21-11:26/5 09:50-10:07/17 | 08:20 08:53-10:15/82 | 07:17 | 06:58 19:46-19:49/3 | 05:46 | 04:58 |
| | 16:19 12:59-13:07/8 10:14-10:48/34 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:35-15:32/57 09:50-10:08/18 | 08:18 10:04-10:12/8 08:52-09:37/45 | 07:14 | 06:55 19:42-19:52/10 | 05:44 | 04:57 |
| | 16:20 10:14-10:48/34 | 17:19 09:38-10:00/22 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:36-15:33/57 09:49-10:09/20 | 08:16 09:40-09:59/19 | 07:12 | 06:53 19:40-19:53/13 | 05:42 | 04:56 |
| | 16:22 10:14-10:48/34 | 17:21 08:52-09:37/45 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:36-15:34/58 09:49-10:10/21 | 08:14 09:41-09:56/15 08:42-08:45/3 | 07:09 | 06:50 19:39-19:56/17 | 05:40 | 04:56 |
| | 16:23 10:14-10:49/35 | 17:23 08:51-09:35/44 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:37-15:35/58 09:49-10:12/23 | 08:12 09:44-09:53/9 08:40-08:49/9 | 07:07 | 06:48 19:37-19:56/19 | 05:38 | 04:55 |
| | 16:25 10:15-10:50/35 | 17:25 08:51-09:35/44 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:38-15:37/59 09:49-10:13/24 | 08:10 08:52-09:34/42 | 07:04 | 06:45 19:37-19:57/20 | 05:36 | 04:55 |
| | 16:26 10:16-10:51/35 | 17:27 08:38-08:51/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:38-15:36/58 09:49-10:14/25 | 08:08 08:36-09:33/57 | 07:02 | 06:43 19:36-19:56/20 | 05:34 | 04:54 |
| | 16:28 10:16-10:51/35 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 14:39-15:37/58 09:48-10:14/26 | 08:06 09:16-09:31/15 | 06:59 | 06:40 19:36-19:56/20 | 05:32 | 04:54 |
| | 16:30 10:15-10:51/36 | 17:32 08:33-09:14/41 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:40-15:38/58 09:48-10:15/27 | 08:04 09:19-09:29/10 | 06:57 | 06:38 19:35-19:55/20 | 05:30 | 04:53 |
| | 16:31 10:16-10:51/35 09:38-09:47/9 | 17:34 08:32-09:13/41 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:41-15:39/58 09:37-10:16/39 | 08:02 08:31-09:13/42 | 06:54 | 06:35 19:36-19:55/19 | 05:29 | 04:53 |
| | 16:33 10:17-10:52/35 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:42-15:40/58 | 07:59 08:31-08:54/23 | 06:52 | 06:33 19:37-19:54/17 | 05:27 | 04:53 |
| | 16:35 09:36-10:52/76 | 17:38 08:55-09:12/17 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:43-15:40/57 | 07:57 08:29-08:53/24 | 06:49 | 06:30 19:37-19:53/16 | 05:25 | 04:52 |
| | 16:37 09:35-10:52/77 | 17:40 08:56-09:10/14 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:44-15:41/57 | 07:55 08:29-08:54/25 | 06:47 | 06:28 19:39-19:51/12 | 05:23 | 04:52 |
| | 16:38 09:34-10:53/79 | 17:42 08:59-09:07/8 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:46-15:42/56 | 07:53 08:29-08:52/23 | 06:44 | 06:25 19:40-19:48/8 | 05:21 | 04:52 |
| | 16:40 09:34-10:53/79 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:47-15:42/55 | 07:50 08:29-08:52/23 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:33-10:53/80 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:48-15:42/54 | 07:48 08:30-08:51/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 09:33-10:53/80 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:49-15:42/53 | 07:46 08:30-08:49/19 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:33-10:53/80 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:49-15:42/53 | 07:44 08:31-08:49/18 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:32-10:52/80 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 14:51-15:43/52 | 07:41 08:31-08:47/16 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:32-10:52/80 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:53-15:43/50 09:32-10:22/50 | 07:39 08:33-08:46/13 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 10:23-10:52/29 09:17-09:25/8 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:55-15:42/47 09:32-10:21/49 | 07:36 08:36-08:42/6 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 10:23-10:51/28 09:15-09:28/13 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:09-15:43/34 10:25-10:51/26 09:14-09:30/16 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:58-15:06/8 09:33-10:22/49 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:10-15:42/32 09:32-10:22/50 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:26-10:50/24 09:13-09:31/18 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:11-15:42/31 09:12-10:22/70 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 10:28-10:49/21 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:11-15:41/30 09:11-10:22/71 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 10:30-10:47/17 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:13-15:40/27 09:11-10:21/70 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 10:32-10:44/12 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:14-15:38/24 | | 07:11 | | 05:03 | |
| | 17:06 09:10-10:21/71 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3880 | 1218 | 0 | 214 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 19 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 | 06:38 19:35-19:55/20<br>20:30 | 07:35<br>19:12 | 07:37 08:21-09:04/43<br>16:58 08:08-08:20/12 | 08:35 14:20-15:19/59 09:31-09:56/25<br>16:10 09:57-10:32/35 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40 19:35-19:55/20<br>20:27 | 07:37<br>19:10 | 07:39 09:13-09:24/11 08:10-08:18/8<br>16:56 08:21-09:05/44 | 08:37 14:20-15:19/59 09:31-09:55/24<br>16:09 09:58-10:33/35 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42 19:35-19:54/19<br>20:24 | 07:39<br>19:07 | 07:41 09:10-09:26/16 08:12-08:14/2<br>16:54 08:21-09:05/44 | 08:38 14:21-15:19/58 09:32-09:55/23<br>16:08 09:58-10:33/35 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44 19:36-19:53/17<br>20:22 | 07:41<br>19:05 | 07:43 09:09-09:29/20<br>16:52 08:22-09:06/44 | 08:40 14:21-15:19/58 09:34-09:55/21<br>16:08 09:59-10:34/35 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45 19:37-19:50/13<br>20:19 | 07:42<br>19:02 | 07:45 09:33-09:42/9 08:22-09:06/44<br>16:50 09:08-09:30/22 | 08:41 14:21-15:18/57 09:34-09:54/20<br>16:07 09:59-10:34/35 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47 19:37-19:47/10<br>20:17 | 07:44<br>18:59 | 07:47 08:23-09:45/82<br>16:48 | 08:43 14:22-15:19/57 09:36-09:54/18<br>16:06 10:00-10:34/34 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49 19:41-19:45/4<br>20:14 | 07:46<br>18:57 | 07:49 08:23-09:47/84<br>16:46 | 08:44 14:21-15:18/57 11:07-11:12/5 09:36-09:53/17<br>16:06 12:45-12:53/8 10:00-10:34/34 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:25-09:49/84<br>16:44 | 08:46 14:22-15:18/56 11:06-11:15/9 09:38-09:54/16<br>16:05 12:44-12:56/12 10:01-10:35/34 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 14:49-15:01/12 08:26-08:40/14<br>16:42 08:41-09:50/69 | 08:47 14:22-15:18/56 11:05-11:17/12 09:39-09:53/14<br>16:05 12:43-12:57/14 10:01-10:35/34 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 14:47-15:07/20 08:28-08:37/9<br>16:40 08:41-09:51/70 | 08:48 14:23-15:18/55 11:05-11:19/14 09:41-09:53/12<br>16:04 12:43-12:59/16 10:02-10:36/34 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 14:45-15:09/24<br>16:38 08:41-09:52/71 | 08:50 14:23-15:18/55 11:04-11:19/15 09:43-09:52/9<br>16:04 12:43-13:00/17 10:03-10:36/33 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 14:44-15:12/28 08:43-09:53/70<br>16:36 10:04-10:16/12 | 08:51 14:24-15:17/53 11:04-11:20/16 09:44-09:51/7<br>16:04 12:42-13:01/19 10:03-10:36/33 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 14:43-15:13/30 08:43-09:54/71<br>16:34 10:02-10:19/17 | 08:52 14:24-15:17/53 11:04-11:21/17 09:47-09:48/1<br>16:04 12:42-13:01/19 10:04-10:36/32 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00<br>18:39 | 08:03 14:42-15:14/32 08:44-09:54/70<br>16:33 10:00-10:21/21 | 08:53 14:24-15:16/52 11:04-11:22/18<br>16:04 12:42-13:02/20 10:04-10:36/32 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02<br>18:37 | 08:05 14:42-15:14/32 09:04-09:54/50<br>16:31 09:58-10:22/24 08:45-09:03/18 | 08:54 14:25-15:16/51 11:05-11:24/19<br>16:04 12:42-13:03/21 10:06-10:37/31 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04<br>18:35 | 08:07 14:42-15:16/34 09:58-10:24/26 08:47-09:03/16<br>16:29 14:31-14:39/8 09:05-09:55/50 | 08:55 14:25-15:15/50 11:04-11:23/19<br>16:04 12:42-13:04/22 10:05-10:37/32 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 09:07-09:15/8<br>18:32 | 08:09 14:28-15:16/48 09:06-09:55/49<br>16:28 09:57-10:25/28 08:49-09:01/12 | 08:56 15:00-15:12/12 12:43-13:05/22 10:06-10:37/31<br>16:04 14:26-14:59/33 11:04-11:24/20 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 09:04-09:18/14<br>18:30 | 08:11 14:27-15:17/50 09:06-09:56/50<br>16:26 09:57-10:26/29 08:51-08:59/8 | 08:56 15:01-15:12/11 12:43-13:05/22 10:07-10:38/31<br>16:04 14:26-15:00/34 11:05-11:25/20 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 09:02-09:19/17<br>18:27 | 08:13 14:25-15:17/52<br>16:25 09:06-10:26/80 | 08:57 15:02-15:13/11 12:44-13:06/22 10:07-10:39/32<br>16:04 14:27-15:01/34 11:06-11:26/20 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 09:01-09:19/18<br>18:25 | 08:15 14:24-15:17/53<br>16:23 09:07-10:27/80 | 08:58 15:02-15:12/10 12:44-13:06/22 10:07-10:38/31<br>16:05 14:27-15:00/33 11:05-11:26/21 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 09:00-09:20/20<br>18:23 | 08:17 14:25-15:18/53<br>16:22 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:08-10:39/31<br>16:05 14:28-15:01/33 11:06-11:27/21 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 09:00-09:22/22<br>18:20 | 08:19 14:24-15:19/55<br>16:20 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:09-10:40/31<br>16:05 14:28-15:01/33 11:07-11:28/21 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:59-09:23/24<br>18:18 | 08:21 14:24-15:19/55<br>16:19 09:10-10:30/80 | 09:00 15:04-15:14/10 12:45-13:08/23 10:09-10:40/31<br>16:06 14:29-15:02/33 11:07-11:28/21 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:59-09:23/24<br>18:16 | 08:23 14:23-15:19/56<br>16:18 09:11-10:30/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:40/31<br>16:07 14:29-15:02/33 11:07-11:28/21 |
| 25 | 05:28<br>21:52 | 06:25 19:43-19:52/9<br>20:47 | 07:23<br>19:28 | 07:22 07:59-08:23/24<br>17:13 08:28-08:38/10 | 08:25 14:22-15:19/57<br>16:16 09:12-10:31/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:41/32<br>16:07 14:29-15:03/34 11:08-11:28/20 |
| 26 | 05:29<br>21:51 | 06:27 19:41-19:54/13<br>20:44 | 07:25<br>19:25 | 07:24 07:59-08:23/24<br>17:11 08:25-08:40/15 | 08:27 14:22-15:19/57<br>16:15 09:14-10:31/77 | 09:01 15:05-15:17/12 12:48-13:10/22 10:11-10:42/31<br>16:08 14:31-15:04/33 11:09-11:29/20 |
| 27 | 05:31<br>21:49 | 06:28 19:39-19:54/15<br>20:42 | 07:27<br>19:23 | 07:26 08:00-08:42/42<br>17:09 | 08:28 14:21-15:19/58<br>16:14 09:15-10:31/76 | 09:01 14:31-15:20/49 11:10-11:29/19<br>16:09 12:48-13:10/22 10:11-10:43/32 |
| 28 | 05:33<br>21:47 | 06:30 19:38-19:55/17<br>20:39 | 07:29<br>19:20 | 07:29 08:01-08:43/42<br>17:07 | 08:30 14:21-15:19/58 09:17-09:56/39<br>16:13 09:57-10:32/35 | 09:01 14:31-15:22/51 11:11-11:30/19<br>16:10 12:49-13:10/21 10:11-10:43/32 |
| 29 | 05:34<br>21:45 | 06:32 19:37-19:56/19<br>20:37 | 07:31<br>19:17 | 07:31 08:47-08:59/12<br>17:04 08:01-08:43/42 | 08:32 14:21-15:19/58 09:29-09:56/27<br>16:12 09:57-10:32/35 09:19-09:28/9 | 09:01 14:32-15:24/52 11:11-11:30/19<br>16:11 12:50-13:10/20 10:12-10:44/32 |
| 30 | 05:36<br>21:44 | 06:34 19:36-19:56/20<br>20:35 | 07:33<br>19:15 | 07:33 08:45-09:01/16<br>17:02 08:03-08:43/40 | 08:34 14:21-15:19/58 09:30-09:56/26<br>16:11 09:58-10:33/35 | 09:01 14:32-15:24/52 11:11-11:29/18<br>16:11 12:50-13:09/19 10:11-10:44/33 |
| 31 | 05:38<br>21:42 | 06:36 19:36-19:56/20<br>20:32 | | 07:35 08:22-09:03/41<br>17:00 08:06-08:21/15 | | 09:01 14:32-15:25/53 11:13-11:29/16 09:53-09:59/6<br>16:13 12:51-13:10/19 10:12-10:44/32 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 113 | 103 | 470 | 3328 | 3740 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 20 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:59-14:33/34 09:41-09:49/8 | 08:28 09:33-09:49/16 | 07:27 | 07:08 19:09-19:32/23 | 05:55 | 05:02 |
| | 16:14 09:56-10:21/25 | 17:08 08:57-09:32/35 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:00-14:32/32 09:40-09:50/10 | 08:26 09:34-09:47/13 | 07:24 | 07:05 19:09-19:33/24 | 05:53 | 05:01 |
| | 16:15 09:55-10:21/26 | 17:10 08:55-09:32/37 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 14:01-14:33/32 09:40-09:51/11 | 08:24 09:37-09:45/8 | 07:22 | 07:03 19:08-19:32/24 | 05:51 | 05:00 |
| | 16:16 09:56-10:22/26 | 17:12 08:55-09:31/36 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:01-14:33/32 09:39-09:52/13 | 08:22 08:55-09:31/36 | 07:19 | 07:00 19:09-19:32/23 | 05:49 | 04:59 |
| | 16:18 09:56-10:22/26 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:03-14:33/30 09:39-09:54/15 | 08:20 08:56-09:30/34 | 07:17 | 06:58 19:09-19:30/21 | 05:46 | 04:58 |
| | 16:19 09:57-10:23/26 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:04-14:32/28 09:39-09:55/16 | 08:18 08:56-09:29/33 | 07:14 | 06:55 19:10-19:29/19 | 05:44 | 04:57 |
| | 16:20 09:57-10:24/27 | 17:19 08:47-08:50/3 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:05-14:32/27 09:38-09:56/18 | 08:16 09:18-09:27/9 08:57-09:15/18 | 07:12 | 06:53 19:10-19:27/17 | 05:42 | 04:56 |
| | 16:22 09:57-10:24/27 | 17:21 08:45-08:52/7 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:06-14:31/25 09:38-09:56/18 | 08:14 08:42-08:52/10 | 07:09 | 06:50 19:12-19:26/14 | 05:40 | 04:56 |
| | 16:23 09:57-10:24/27 | 17:23 08:56-09:13/17 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 14:22-14:30/8 09:59-10:26/27 | 08:12 08:40-08:54/14 | 07:07 | 06:48 19:14-19:22/8 | 05:38 | 04:55 |
| | 16:25 14:08-14:19/11 09:39-09:58/19 | 17:25 08:58-09:13/15 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:11-14:18/7 | 08:10 08:38-08:54/16 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 09:39-10:26/47 | 17:27 08:59-09:12/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:39-10:26/47 | 08:08 08:37-08:55/18 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 09:32-09:38/6 | 17:30 09:01-09:10/9 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:30-10:26/56 | 08:06 08:37-08:55/18 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:29-10:26/57 | 08:04 08:37-08:55/18 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:29-10:27/58 | 08:02 08:37-08:55/18 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:28-10:27/59 | 07:59 08:38-08:55/17 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:27-10:26/59 | 07:57 08:38-08:53/15 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:27-10:27/60 | 07:55 08:40-08:52/12 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-10:27/59 | 07:53 08:41-08:49/8 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:27-10:26/59 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 09:27-10:27/60 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:06-10:26/20 09:17-09:22/5 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:27-10:05/38 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:07-10:24/17 09:16-09:25/9 | 07:44 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:27-10:05/38 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:09-10:24/15 09:14-09:26/12 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:27-10:05/38 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 10:11-10:22/11 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:12-10:05/53 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 10:14-10:19/5 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:11-10:04/53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:11-10:05/54 | 07:34 | 06:23 18:17-18:29/12 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:11-10:04/53 | 07:32 | 06:21 18:14-18:30/16 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:11-10:03/52 | 07:29 | 06:18 18:13-18:32/19 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:05-09:07/2 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:10-10:02/52 | | 07:16 19:11-19:32/21 | 06:00 | 05:05 | 04:55 |
| | 17:02 09:03-09:09/6 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:01-10:01/60 | | 07:13 19:10-19:32/22 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 09:51-09:58/7 | | 07:11 19:10-19:33/23 | | 05:03 | |
| | 17:06 08:59-09:50/51 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1909 | 503 | 113 | 173 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 20 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 08:08-08:24/16 | 08:35 09:14-10:07/53 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 08:28-08:41/13 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 08:10-08:23/13 | 08:37 13:54-14:00/6 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 08:27-08:42/15 | 16:09 09:21-10:08/47 |
| 3 | 04:58 | 05:43 | 06:42 19:13-19:20/7 | 07:39 | 07:41 08:50-08:53/3 08:26-08:43/17 | 08:38 14:06-14:14/8 09:42-10:09/27 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 08:12-08:22/10 | 16:08 13:52-14:02/10 09:22-09:41/19 |
| 4 | 04:59 | 05:45 | 06:44 19:09-19:23/14 | 07:41 | 07:43 08:47-08:57/10 08:26-08:44/18 | 08:40 13:51-14:16/25 09:23-09:42/19 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 08:15-08:21/6 | 16:08 09:43-10:09/26 |
| 5 | 05:00 | 05:47 | 06:45 19:07-19:24/17 | 07:42 | 07:45 08:45-08:59/14 08:26-08:44/18 | 08:41 13:50-14:17/27 09:24-09:41/17 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 08:17-08:19/2 | 16:07 09:42-10:09/27 |
| 6 | 05:01 | 05:49 | 06:47 19:05-19:24/19 | 07:44 | 07:47 08:25-09:00/35 | 08:43 13:50-14:18/28 09:25-09:41/16 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 09:43-10:10/27 |
| 7 | 05:02 | 05:51 | 06:49 19:04-19:25/21 | 07:46 | 07:49 08:25-09:01/36 | 08:44 13:49-14:19/30 09:25-09:40/15 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 09:43-10:10/27 |
| 8 | 05:03 | 05:53 | 06:51 19:03-19:26/23 | 07:48 | 07:51 09:07-09:16/9 | 08:46 13:50-14:21/31 09:27-09:40/13 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 9 | 05:05 | 05:54 | 06:53 19:02-19:26/24 | 07:50 | 07:53 09:05-09:18/13 | 08:47 13:49-14:21/32 09:28-09:40/12 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 10 | 05:06 | 05:56 | 06:55 19:02-19:26/24 | 07:52 | 07:55 09:03-09:20/17 | 08:48 13:50-14:23/33 09:30-09:40/10 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 08:28-09:02/34 | 16:04 09:45-10:11/26 |
| 11 | 05:07 | 05:58 | 06:57 19:02-19:26/24 | 07:54 | 07:57 08:31-09:29/58 | 08:50 13:49-14:23/34 09:31-09:39/8 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:46-10:11/25 |
| 12 | 05:08 | 06:00 | 06:59 19:01-19:24/23 | 07:56 | 07:59 08:33-09:33/60 | 08:51 13:49-14:24/35 09:32-09:38/6 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:46-10:11/25 |
| 13 | 05:09 | 06:02 | 07:01 19:01-19:24/23 | 07:58 | 08:01 08:42-09:34/52 | 08:52 13:49-14:24/35 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 08:35-08:41/6 | 16:04 09:46-10:12/26 |
| 14 | 05:11 | 06:04 | 07:02 19:02-19:23/21 | 08:00 | 08:03 08:42-09:35/53 | 08:53 13:50-14:25/35 10:42-10:44/2 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 08:37-08:39/2 | 16:04 13:42-13:43/1 09:47-10:12/25 |
| 15 | 05:12 | 06:06 | 07:04 19:02-19:22/20 | 08:02 | 08:05 08:43-09:36/53 | 08:54 13:50-14:25/35 10:42-10:47/5 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 13:40-13:46/6 09:48-10:13/25 |
| 16 | 05:14 | 06:08 | 07:06 19:03-19:20/17 | 08:04 | 08:07 08:44-09:38/54 | 08:55 13:50-14:26/36 10:40-10:47/7 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 13:40-13:47/7 09:48-10:13/25 |
| 17 | 05:15 | 06:09 | 07:08 19:05-19:18/13 | 08:06 | 08:09 09:48-09:53/5 | 08:56 13:51-14:27/36 10:40-10:49/9 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 08:45-09:38/53 | 16:04 13:40-13:48/8 09:49-10:13/24 |
| 18 | 05:16 | 06:11 | 07:10 19:07-19:13/6 | 08:08 | 08:11 09:45-09:56/11 | 08:56 13:51-14:27/36 10:41-10:50/9 |
| | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 08:46-09:39/53 | 16:04 13:40-13:49/9 09:49-10:14/25 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 09:43-09:58/15 08:48-09:00/12 | 08:57 13:52-14:28/36 10:41-10:51/10 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 09:01-09:39/38 | 16:04 13:40-13:50/10 09:50-10:14/24 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 09:42-09:59/17 08:50-08:59/9 | 08:58 13:52-14:28/36 10:41-10:51/10 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 09:02-09:40/38 | 16:05 13:40-13:50/10 09:50-10:14/24 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 09:42-10:02/20 08:53-08:58/5 | 08:58 13:52-14:29/37 10:42-10:52/10 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 09:03-09:41/38 | 16:05 13:41-13:51/10 09:51-10:15/24 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 09:03-10:03/60 | 08:59 13:52-14:29/37 10:43-10:53/10 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 13:41-13:51/10 09:52-10:16/24 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 09:04-10:03/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 13:42-13:52/10 09:52-10:16/24 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 09:11-09:20/9 | 08:23 09:05-10:04/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 13:42-13:52/10 09:52-10:16/24 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 08:09-08:22/13 | 08:25 09:05-10:05/60 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 13:43-13:52/9 09:52-10:17/25 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 08:08-08:23/15 | 08:27 09:06-10:05/59 | 09:01 13:55-14:32/37 10:45-10:54/9 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 13:44-13:53/9 09:54-10:18/24 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 08:08-08:24/16 | 08:28 09:07-10:06/59 | 09:01 13:56-14:32/36 10:46-10:54/8 |
| | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 16:09 13:45-13:53/8 09:54-10:18/24 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 08:07-08:24/17 | 08:30 09:09-10:07/58 | 09:01 13:56-14:32/36 10:47-10:53/6 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 13:47-13:53/6 09:54-10:19/25 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 08:06-08:24/18 | 08:32 09:10-10:07/57 | 09:01 13:57-14:32/35 10:49-10:53/4 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 13:49-13:52/3 09:55-10:20/25 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 08:06-08:24/18 | 08:34 09:12-10:08/56 | 09:01 13:57-14:32/35 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 09:54-10:19/25 |
| 31 | 05:38 | 06:36 | | 07:35 08:07-08:25/18 | | 09:01 13:58-14:32/34 09:42-09:46/4 |
| | 21:42 | 20:32 | | 17:00 08:30-08:40/10 | | 16:13 09:55-10:20/25 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 296 | 134 | 1550 | 2202 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 21 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:22-14:49/87 09:47-09:53/6 | 08:28 14:06-14:52/46 | 07:27 08:02-08:49/47 | 07:08 | 05:55 20:07-20:31/24 | 05:02 |
| | 16:14 10:52-11:32/40 | 17:08 09:49-10:10/21 | 18:07 07:52-08:00/8 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 13:22-14:49/87 09:46-09:54/8 | 08:26 14:08-14:50/42 | 07:24 08:03-08:40/37 | 07:05 | 05:53 20:07-20:31/24 | 05:01 |
| | 16:15 10:52-11:32/40 | 17:10 09:51-10:09/18 | 18:10 07:50-08:02/12 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 13:22-14:50/88 09:45-09:56/11 | 08:24 14:09-14:47/38 | 07:22 08:03-08:28/25 | 07:03 | 05:51 20:06-20:32/26 | 05:00 |
| | 16:16 10:53-11:33/40 | 17:12 09:53-10:07/14 | 18:12 07:47-08:02/15 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 13:22-14:50/88 09:44-09:57/13 | 08:22 14:12-14:35/23 09:02-09:09/7 | 07:19 08:20-08:24/4 08:05-08:17/12 | 07:00 | 05:49 20:06-20:32/26 | 04:59 |
| | 16:18 10:53-11:33/40 | 17:15 09:56-10:04/8 | 18:14 07:46-08:03/17 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 13:24-14:51/87 09:44-09:59/15 | 08:20 14:15-14:33/18 | 07:17 07:45-08:03/18 | 06:58 | 05:46 20:06-20:32/26 | 04:58 |
| | 16:19 10:54-11:34/40 | 17:17 08:59-09:13/14 | 18:16 08:07-08:14/7 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 13:24-14:52/88 09:44-10:00/16 | 08:18 14:19-14:29/10 | 07:14 07:45-08:03/18 | 06:55 | 05:44 20:05-20:32/27 | 04:57 |
| | 16:20 10:54-11:34/40 | 17:19 08:57-09:15/18 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 13:24-14:52/88 09:43-10:01/18 | 08:16 08:55-09:17/22 | 07:12 07:45-08:02/17 | 06:53 | 05:42 20:05-20:31/26 | 04:56 |
| | 16:22 10:54-11:34/40 | 17:21 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 13:24-14:52/88 09:43-10:02/19 | 08:14 08:53-09:17/24 | 07:09 07:46-08:02/16 | 06:50 | 05:40 20:05-20:31/26 | 04:56 |
| | 16:23 10:55-11:35/40 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 13:25-14:53/88 09:43-10:04/21 | 08:12 08:53-09:18/25 | 07:07 07:46-08:00/14 | 06:48 | 05:38 20:06-20:30/24 | 04:55 |
| | 16:25 10:56-11:36/40 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 13:26-14:54/88 09:43-10:05/22 | 08:10 08:52-09:19/27 | 07:04 07:47-07:58/11 | 06:45 | 05:36 20:06-20:30/24 | 04:55 |
| | 16:26 10:57-11:36/39 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 13:26-14:54/88 09:43-10:06/23 | 08:08 08:52-09:20/28 | 07:02 07:50-07:55/5 | 06:43 | 05:34 20:07-20:30/23 | 04:54 |
| | 16:28 10:57-11:36/39 | 17:29 08:43-08:50/7 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 13:26-14:55/89 09:42-10:06/24 | 08:06 08:39-09:20/41 | 06:59 | 06:40 | 05:32 20:07-20:29/22 | 04:54 |
| | 16:30 10:57-11:36/39 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 13:27-14:55/88 09:42-10:07/25 | 08:04 08:37-09:21/44 | 06:57 | 06:38 | 05:30 20:08-20:28/20 | 04:53 |
| | 16:31 10:58-11:36/38 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 13:28-14:56/88 09:42-10:08/26 | 08:02 08:34-09:21/47 | 06:54 | 06:35 | 05:29 20:09-20:27/18 | 04:53 |
| | 16:33 10:58-11:36/38 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 13:29-14:57/88 09:42-10:09/27 | 07:59 08:30-09:21/51 | 06:52 | 06:33 | 05:27 20:10-20:26/16 | 04:53 |
| | 16:35 10:59-11:37/38 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 13:29-14:56/87 09:42-10:09/27 | 07:57 08:28-09:21/53 | 06:49 | 06:30 | 05:25 20:11-20:24/13 | 04:52 |
| | 16:36 10:59-11:36/37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 13:30-14:57/87 09:42-10:10/28 | 07:55 08:27-09:21/54 | 06:47 | 06:28 | 05:23 20:14-20:23/9 | 04:52 |
| | 16:38 11:00-11:36/36 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 13:31-14:58/87 09:43-10:11/28 | 07:53 08:20-09:20/60 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:02-11:36/34 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 13:31-14:57/86 09:42-10:11/29 | 07:50 08:17-09:20/63 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:02-11:36/34 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 13:33-14:58/85 09:43-10:12/29 | 07:48 08:16-09:19/63 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:04-11:36/32 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 13:33-14:58/85 09:43-10:12/29 | 07:46 08:12-09:18/66 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:04-11:35/31 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 13:34-14:57/83 09:42-10:12/30 | 07:44 08:10-09:17/67 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 11:05-11:34/29 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 13:36-14:58/82 09:43-10:13/30 | 07:41 08:07-09:15/68 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:07-11:34/27 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 13:37-14:58/81 09:43-10:13/30 | 07:39 08:05-09:13/68 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:08-11:32/24 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 13:38-14:57/79 09:44-10:13/29 | 07:36 09:00-09:09/9 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:10-11:31/21 | 17:59 08:03-08:57/54 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 13:41-14:58/77 09:45-10:14/29 | 07:34 08:03-08:56/53 | 06:23 | 06:06 20:14-20:25/11 | 05:09 | 04:54 |
| | 16:56 11:13-11:30/17 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 13:43-14:57/74 09:45-10:13/28 | 07:32 08:02-08:54/52 | 06:21 | 06:04 20:12-20:27/15 | 05:08 | 04:54 |
| | 16:58 11:16-11:26/10 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:02-14:56/54 09:46-10:13/27 | 07:29 08:02-08:52/50 | 06:18 | 06:02 20:10-20:28/18 | 05:06 | 04:55 |
| | 17:00 13:46-14:01/15 | 18:05 07:55-07:59/4 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:03-14:56/53 09:46-10:12/26 | | 07:16 | 06:00 20:09-20:30/21 | 05:05 | 04:55 |
| | 17:02 13:52-13:55/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:04-14:55/51 | | 07:13 | 05:57 20:08-20:30/22 | 05:04 | 04:56 |
| | 17:04 09:47-10:12/25 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:05-14:54/49 | | 07:11 | | 05:03 | |
| | 17:06 09:48-10:11/23 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4180 | 1377 | 283 | 87 | 374 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 21 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:17-20:40/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:22-08:49/27<br>16:58 | 08:35 13:08-14:36/88 09:25-09:48/23<br>16:10 10:38-11:17/39 |
| 2 | 04:58<br>22:18 | 05:41 20:17-20:41/24<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:23-08:48/25<br>16:56 | 08:37 13:08-14:37/89 09:25-09:47/22<br>16:09 10:39-11:18/39 |
| 3 | 04:58<br>22:17 | 05:43 20:16-20:40/24<br>21:36 | 06:42<br>20:24 | 07:39 08:26-08:35/9<br>19:07 | 07:41 08:23-08:47/24<br>16:54 | 08:38 13:09-14:37/88 09:26-09:47/21<br>16:08 10:39-11:19/40 |
| 4 | 04:59<br>22:17 | 05:45 20:16-20:41/25<br>21:34 | 06:44<br>20:22 | 07:41 08:24-08:37/13<br>19:05 | 07:43 08:25-08:46/21<br>16:52 | 08:40 13:09-14:38/89 09:28-09:47/19<br>16:08 10:40-11:20/40 |
| 5 | 05:00<br>22:16 | 05:47 20:16-20:41/25<br>21:32 | 06:45<br>20:19 | 07:42 08:22-08:38/16<br>19:02 | 07:45 13:48-13:59/11<br>16:50 08:27-08:44/17 | 08:41 13:09-14:37/88 09:28-09:46/18<br>16:07 10:39-11:20/41 |
| 6 | 05:01<br>22:15 | 05:49 20:15-20:41/26<br>21:30 | 06:47<br>20:17 | 07:44 08:21-08:38/17<br>18:59 | 07:47 13:44-14:03/19<br>16:48 08:29-08:42/13 | 08:43 13:10-14:38/88 09:30-09:46/16<br>16:06 10:40-11:20/40 |
| 7 | 05:02<br>22:15 | 05:51 20:15-20:41/26<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:38/18<br>18:57 | 07:49 13:41-14:05/24 08:32-08:38/6<br>16:46 09:26-09:34/8 | 08:44 13:10-14:37/87 09:30-09:45/15<br>16:06 10:40-11:20/40 |
| 8 | 05:03<br>22:14 | 05:52 20:15-20:41/26<br>21:26 | 06:51<br>20:12 | 07:48 08:20-08:38/18<br>18:54 | 07:51 13:40-14:19/39<br>16:44 09:24-09:38/14 | 08:46 13:11-14:38/87 09:32-09:45/13<br>16:05 10:41-11:21/40 |
| 9 | 05:04<br>22:13 | 05:54 20:14-20:40/26<br>21:24 | 06:53<br>20:09 | 07:50 08:20-08:38/18<br>18:52 08:40-08:51/11 | 07:53 13:38-14:21/43<br>16:42 09:22-09:40/18 | 08:47 13:11-14:38/87 09:33-09:44/11<br>16:05 10:41-11:21/40 |
| 10 | 05:06<br>22:12 | 05:56 20:15-20:40/25<br>21:22 | 06:55<br>20:07 | 07:52 08:38-09:00/22<br>18:49 08:20-08:37/17 | 07:55 13:37-14:23/46<br>16:40 09:20-09:41/21 | 08:48 13:12-14:39/87 09:35-09:44/9<br>16:04 10:42-11:22/40 |
| 11 | 05:07<br>22:11 | 05:58 20:15-20:40/25<br>21:19 | 06:57<br>20:04 | 07:54 09:05-09:11/6 08:22-08:36/14<br>18:47 08:37-09:03/26 | 07:57 13:36-14:25/49<br>16:38 09:19-09:42/23 | 08:50 13:12-14:39/87 09:37-09:43/6<br>16:04 10:42-11:23/41 |
| 12 | 05:08<br>22:10 | 06:00 20:16-20:39/23<br>21:17 | 06:59<br>20:01 | 07:56 08:24-09:14/50<br>18:44 | 07:59 13:35-14:27/52<br>16:36 09:19-09:44/25 | 08:51 13:12-14:39/87<br>16:04 10:42-11:23/41 |
| 13 | 05:09<br>22:09 | 06:02 20:16-20:38/22<br>21:15 | 07:01<br>19:59 | 07:58 08:36-09:23/47<br>18:42 08:27-08:34/7 | 08:01 13:35-14:28/53 09:18-09:44/26<br>16:34 13:23-13:28/5 | 08:52 13:12-14:39/87<br>16:04 10:43-11:23/40 |
| 14 | 05:11<br>22:08 | 06:04 20:17-20:37/20<br>21:13 | 07:02<br>19:56 | 08:00 08:35-09:26/51<br>18:39 | 08:03 13:34-14:28/54 09:18-09:45/27<br>16:33 13:18-13:33/15 | 08:53 13:13-14:39/86<br>16:04 10:43-11:23/40 |
| 15 | 05:12<br>22:07 | 06:06 20:18-20:36/18<br>21:10 | 07:04<br>19:54 | 08:02 08:35-09:28/53<br>18:37 | 08:05 13:15-14:29/74 09:17-09:45/28<br>16:31 10:48-10:58/10 | 08:54 13:13-14:40/87<br>16:04 10:44-11:24/40 |
| 16 | 05:14<br>22:06 | 06:08 20:20-20:34/14<br>21:08 | 07:06<br>19:51 | 08:04 08:35-09:29/54<br>18:35 | 08:07 13:14-14:31/77 09:18-09:47/29<br>16:29 10:46-11:03/17 | 08:55 13:14-14:40/86<br>16:04 10:44-11:24/40 |
| 17 | 05:15<br>22:04 | 06:09 20:22-20:31/9<br>21:06 | 07:08<br>19:48 | 08:06 09:31-09:43/12<br>18:32 08:35-09:29/54 | 08:09 13:12-14:31/79 09:18-09:47/29<br>16:28 10:44-11:05/21 | 08:56 13:14-14:40/86<br>16:04 10:45-11:25/40 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 08:37-09:45/68<br>18:30 | 08:11 13:11-14:32/81 09:17-09:47/30<br>16:26 10:42-11:06/24 | 08:56 13:15-14:41/86<br>16:04 10:45-11:25/40 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 08:39-09:47/68<br>18:27 | 08:13 13:10-14:32/82 09:17-09:47/30<br>16:25 10:41-11:08/27 | 08:57 13:16-14:42/86<br>16:04 10:46-11:26/40 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 08:41-09:48/67<br>18:25 | 08:15 13:09-14:32/83 09:17-09:47/30<br>16:23 10:40-11:09/29 | 08:58 13:16-14:41/85<br>16:05 10:46-11:26/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 08:45-09:48/63<br>18:23 | 08:17 13:09-14:34/85 09:19-09:48/29<br>16:22 10:40-11:11/31 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 08:47-09:50/63<br>18:20 | 08:19 13:09-14:34/85 09:19-09:48/29<br>16:20 10:40-11:12/32 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:48-09:50/62<br>18:18 | 08:21 13:09-14:34/85 09:19-09:48/29<br>16:19 10:39-11:13/34 | 09:00 13:17-14:43/86<br>16:06 10:48-11:28/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:51-09:50/59<br>18:16 | 08:23 13:08-14:35/87 09:20-09:48/28<br>16:18 10:39-11:13/34 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 07:56-08:50/54<br>17:13 | 08:25 13:08-14:35/87 09:20-09:48/28<br>16:16 10:39-11:14/35 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 26 | 05:29 20:26-20:31/5<br>21:51 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 07:58-08:50/52<br>17:11 | 08:27 13:08-14:35/87 09:21-09:48/27<br>16:15 10:38-11:15/37 | 09:01 13:19-14:45/86<br>16:08 10:50-11:30/40 |
| 27 | 05:31 20:23-20:34/11<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 08:01-08:51/50<br>17:09 | 08:28 13:08-14:36/88 09:21-09:48/27<br>16:14 10:38-11:16/38 | 09:01 13:19-14:46/87<br>16:09 10:50-11:30/40 |
| 28 | 05:33 20:21-20:35/14<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 08:06-08:51/45<br>17:07 | 08:30 13:08-14:36/88 09:22-09:48/26<br>16:13 10:39-11:16/37 | 09:01 13:20-14:46/86<br>16:10 10:50-11:31/41 |
| 29 | 05:34 20:20-20:37/17<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 08:07-08:50/43<br>17:04 | 08:32 13:08-14:36/88 09:23-09:48/25<br>16:12 10:39-11:17/38 | 09:01 13:20-14:47/87<br>16:10 10:51-11:31/40 |
| 30 | 05:36 20:19-20:38/19<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 08:09-08:50/41<br>17:02 | 08:34 13:08-14:37/89 09:24-09:48/24<br>16:11 10:39-11:18/39 | 09:01 13:20-14:47/87<br>16:11 10:50-11:31/41 |
| 31 | 05:38 20:18-20:39/21<br>21:42 | 06:36<br>20:32 | | 07:35 08:22-08:50/28<br>17:00 08:14-08:18/4 | | 09:01 13:21-14:48/87<br>16:12 10:51-11:31/40 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 87 | 381 | 0 | 1300 | 2981 | 4107 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 22 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:59-12:48/49<br>16:14 | 08:28 11:39-14:28/169<br>17:08 | 07:27 11:43-14:29/166 08:18-08:46/28<br>18:07 08:56-09:39/43 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:58-12:48/50<br>16:15 | 08:26 11:39-14:29/170<br>17:10 | 07:24 11:45-14:28/163 08:19-08:46/27<br>18:09 08:57-09:38/41 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:59-12:49/50<br>16:16 | 08:24 11:39-14:30/171<br>17:12 | 07:22 11:46-14:27/161 08:19-08:45/26<br>18:12 08:57-09:37/40 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:58-12:50/52<br>16:18 | 08:22 11:38-14:30/172<br>17:15 | 07:19 11:48-14:26/158 08:20-08:44/24<br>18:14 08:58-09:36/38 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:59-12:51/52<br>16:19 | 08:20 11:38-14:31/173<br>17:17 | 07:17 11:49-14:24/155 08:21-08:42/21<br>18:16 08:58-09:34/36 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 |
| 6 | 08:59 11:59-12:52/53<br>16:20 | 08:18 11:38-14:32/174<br>17:19 | 07:14 11:52-14:23/151 08:23-08:40/17<br>18:18 09:00-09:33/33 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 11:57-12:52/55<br>16:22 | 08:16 11:37-14:32/175<br>17:21 | 07:12 11:55-14:20/145 08:25-08:37/12<br>18:20 09:01-09:30/29 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:56-12:53/57<br>16:23 | 08:14 11:37-14:33/176<br>17:23 09:13-09:24/11 | 07:09 11:58-14:17/139<br>18:22 09:02-09:27/25 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:54-12:54/60<br>16:25 | 08:12 11:37-14:33/176<br>17:25 09:09-09:28/19 | 07:07 12:06-14:15/129<br>18:24 09:05-09:25/20 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:54-12:55/61<br>16:26 | 08:10 11:37-14:34/177<br>17:27 09:07-09:31/24 | 07:04 12:13-14:11/118 07:36-07:44/8<br>18:26 09:09-09:19/10 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 11:52-12:55/63<br>16:28 | 08:08 11:37-14:34/177<br>17:29 09:05-09:33/28 | 07:02 12:14-14:07/113<br>18:28 07:33-07:48/15 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 13:45-13:50/5<br>16:29 11:51-12:56/65 | 08:06 11:37-14:34/177<br>17:32 09:03-09:34/31 | 06:59 12:14-13:44/90<br>18:30 07:30-07:49/19 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 13:40-13:56/16<br>16:31 11:51-12:57/66 | 08:04 11:37-14:35/178<br>17:34 09:02-09:36/34 | 06:57 12:14-13:42/88<br>18:32 07:22-07:51/29 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 13:38-14:00/22<br>16:33 11:50-12:58/68 | 08:02 11:37-14:35/178<br>17:36 09:01-09:37/36 | 06:54 12:16-13:41/85<br>18:34 07:19-07:51/32 | 06:35<br>20:35 | 05:28<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 13:36-14:03/27<br>16:35 11:49-12:59/70 | 07:59 11:36-14:35/179<br>17:38 08:59-09:38/39 | 06:52 12:16-13:40/84<br>18:36 07:16-07:51/35 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 13:33-14:04/31<br>16:36 11:48-12:59/71 | 07:57 11:37-14:35/178<br>17:40 08:59-09:39/40 | 06:49 12:18-13:39/81<br>18:38 07:14-07:52/38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 13:32-14:07/35<br>16:38 11:48-13:00/72 | 07:55 11:37-14:35/178 08:30-08:39/9<br>17:42 08:58-09:40/42 | 06:47 12:19-13:36/77<br>18:40 07:13-07:52/39 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 13:31-14:09/38<br>16:40 11:47-13:01/74 | 07:53 11:37-14:35/178 08:26-08:41/15<br>17:44 08:57-09:40/43 | 06:44 12:20-13:34/74<br>18:42 07:13-07:52/39 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 13:30-14:11/41<br>16:42 11:46-13:02/76 | 07:50 11:37-14:35/178 08:24-08:43/19<br>17:46 08:57-09:41/44 | 06:41 12:23-13:32/69<br>18:44 07:12-07:51/39 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 13:29-14:13/44<br>16:44 11:46-13:03/77 | 07:48 11:38-14:35/177 08:23-08:45/22<br>17:49 08:57-09:41/44 | 06:39 12:25-13:30/65<br>18:46 07:11-07:50/39 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 13:28-14:14/46<br>16:46 11:45-13:03/78 | 07:46 11:38-14:34/176 08:21-08:46/25<br>17:51 08:56-09:41/45 | 06:36 12:28-13:27/59<br>18:48 07:12-07:50/38 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 13:26-14:16/50<br>16:48 11:44-13:07/83 | 07:44 11:39-14:34/175 08:21-08:47/26<br>17:53 08:56-09:42/46 | 06:34 12:31-13:23/52<br>18:50 07:12-07:49/37 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 13:26-14:18/52<br>16:50 11:44-13:13/89 | 07:41 11:38-14:33/175 08:19-08:47/28<br>17:55 08:55-09:41/46 | 06:31 12:35-13:19/44<br>18:52 07:13-07:48/35 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 13:25-14:19/54<br>16:52 11:43-13:16/93 | 07:39 11:39-14:33/174 08:19-08:48/29<br>17:57 08:55-09:41/46 | 06:29 12:41-13:13/32<br>18:54 07:14-07:46/32 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 13:24-14:20/56<br>16:54 11:42-13:18/96 | 07:36 11:40-14:32/172 08:18-08:47/29<br>17:59 08:55-09:41/46 | 06:26 12:55-12:59/4<br>18:56 07:14-07:44/30 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 13:24-14:22/58<br>16:56 11:43-13:22/99 | 07:34 11:41-14:32/171 08:19-08:48/29<br>18:01 08:55-09:41/46 | 06:23 07:17-07:42/25<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:42-14:23/161<br>16:58 | 07:32 11:41-14:31/170 08:18-08:47/29<br>18:03 08:55-09:40/45 | 06:21 07:33-07:36/3<br>19:00 07:20-07:31/11 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 11:41-14:24/163<br>17:00 | 07:29 11:42-14:30/168 08:18-08:47/29<br>18:05 08:56-09:40/44 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:41-14:25/164<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 11:40-14:26/166<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 11:40-14:27/167<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3175 | 5980 | 3515 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 22 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35 12:53-14:22/89<br>19:12 08:07-08:28/21 | 07:37 11:07-14:03/176<br>16:58 08:37-09:00/23 | 08:35 11:34-12:37/63<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 14:24-14:42/18 08:10-08:26/16<br>19:10 12:52-14:23/91 | 07:39 11:07-14:03/176<br>16:56 08:40-08:57/17 | 08:37 11:36-12:38/62<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 12:51-14:47/116<br>19:07 08:12-08:24/12 | 07:41 11:07-14:02/175<br>16:54 08:44-08:53/9 | 08:38 11:38-12:38/60<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 12:50-14:51/121<br>19:04 09:44-10:00/16 | 07:43 11:08-14:02/174<br>16:52 | 08:40 11:41-12:38/57<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:38-14:53/135<br>19:02 09:41-10:03/22 | 07:45 11:08-14:02/174<br>16:50 | 08:41 11:42-12:37/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 12:33-14:55/142 09:03-09:11/8<br>18:59 09:38-10:05/27 | 07:47 11:08-14:01/173<br>16:48 | 08:43 11:45-12:38/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 12:29-14:57/148 08:59-09:14/15<br>18:57 09:36-10:07/31 | 07:49 11:08-14:00/172<br>16:46 | 08:44 11:45-12:37/52<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 12:26-14:58/152 08:57-09:16/19<br>18:54 09:34-10:08/34 | 07:51 11:10-14:00/170<br>16:44 | 08:46 11:46-12:38/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 12:23-14:59/156 08:55-09:18/23<br>18:52 09:33-10:09/36 | 07:53 11:10-14:00/170<br>16:42 | 08:47 11:47-12:37/50<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 12:21-15:00/159 08:54-09:18/24<br>18:49 09:31-10:10/39 | 07:55 11:10-13:59/169<br>16:40 | 08:48 11:48-12:38/50<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 12:19-15:01/162 08:53-09:19/26<br>18:47 09:30-10:11/41 | 07:57 11:11-13:58/167<br>16:38 | 08:50 11:49-12:38/49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 12:17-15:02/165 08:52-09:19/27<br>18:44 09:29-10:11/42 | 07:59 11:12-13:58/166<br>16:36 | 08:51 11:49-12:38/49<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 12:15-15:02/167 08:51-09:19/28<br>18:42 09:28-10:12/44 | 08:01 11:13-13:57/164<br>16:34 | 08:52 11:50-12:38/48<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 12:14-15:03/169 08:51-09:20/29<br>18:39 09:29-10:13/44 | 08:03 11:13-13:56/163<br>16:33 | 08:53 11:50-12:38/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 12:14-15:04/170 08:51-09:20/29<br>18:37 09:28-10:13/45 | 08:05 11:14-13:55/161<br>16:31 | 08:54 11:51-12:38/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 08:10-08:19/9<br>19:51 | 08:04 12:12-15:04/172 08:51-09:20/29<br>18:35 09:27-10:13/46 | 08:07 12:57-13:55/58<br>16:29 11:16-12:55/99 | 08:55 11:52-12:38/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 08:06-08:30/24<br>19:48 | 08:06 12:11-15:05/174 08:51-09:19/28<br>18:32 09:27-10:13/46 | 08:09 12:58-13:54/56<br>16:28 11:16-12:52/96 | 08:56 11:53-12:39/46<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 08:03-08:32/29<br>19:46 | 08:08 12:10-15:05/175 08:51-09:19/28<br>18:30 09:27-10:13/46 | 08:11 12:59-13:53/54<br>16:26 11:17-12:50/93 | 08:56 11:53-12:39/46<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 13:29-13:58/29<br>19:43 08:01-08:32/31 | 08:10 12:10-15:05/175 08:51-09:18/27<br>18:27 09:26-10:12/46 | 08:13 13:00-13:52/52<br>16:25 11:18-12:47/89 | 08:57 11:54-12:40/46<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 13:22-14:04/42<br>19:41 07:59-08:34/35 | 08:12 12:09-15:05/176 08:51-09:17/26<br>18:25 09:26-10:12/46 | 08:15 13:01-13:51/50<br>16:23 11:19-12:42/83 | 08:58 11:54-12:40/46<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 13:17-14:08/51<br>19:38 07:58-08:34/36 | 08:14 12:08-15:05/177 08:52-09:16/24<br>18:23 09:26-10:11/45 | 08:17 13:04-13:50/46<br>16:22 11:21-12:39/78 | 08:59 11:55-12:40/45<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18 13:13-14:11/58<br>19:35 07:57-08:35/38 | 08:16 12:08-15:05/177 08:54-09:15/21<br>18:20 09:27-10:12/45 | 08:19 13:05-13:49/44<br>16:20 11:22-12:39/77 | 08:59 11:55-12:40/45<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 13:10-14:13/63<br>19:33 07:56-08:35/39 | 08:18 12:08-15:05/177 08:55-09:13/18<br>18:18 09:27-10:11/44 | 08:21 13:07-13:48/41<br>16:19 11:23-12:39/76 | 09:00 11:56-12:42/46<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21 13:07-14:16/69<br>19:30 07:55-08:35/40 | 08:20 12:07-15:05/178 08:57-09:11/14<br>18:16 09:28-10:10/42 | 08:23 13:08-13:47/39<br>16:18 11:24-12:39/75 | 09:00 11:56-12:42/46<br>16:07 |
| 25 | 05:27<br>21:52 | 06:25<br>20:47 | 07:23 13:05-14:17/72<br>19:28 07:55-08:35/40 | 07:22 11:07-14:05/178 08:00-08:07/7<br>17:13 08:28-09:09/41 | 08:25 13:10-13:45/35<br>16:16 11:26-12:38/72 | 09:00 11:56-12:42/46<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 13:03-14:19/76<br>19:25 07:55-08:34/39 | 07:24 11:06-14:04/178<br>17:11 08:28-09:08/40 | 08:27 13:12-13:44/32<br>16:15 11:27-12:38/71 | 09:01 11:58-12:44/46<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 13:00-14:19/79<br>19:22 07:56-08:34/38 | 07:26 11:07-14:05/178<br>17:09 08:30-09:08/38 | 08:28 13:15-13:42/27<br>16:14 11:28-12:38/70 | 09:01 11:58-12:44/46<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 12:58-14:20/82<br>19:20 07:57-08:32/35 | 07:28 11:07-14:05/178<br>17:07 08:31-09:06/35 | 08:30 13:18-13:40/22<br>16:13 11:30-12:38/68 | 09:01 11:58-12:45/47<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31 12:56-14:21/85<br>19:17 07:58-08:31/33 | 07:31 11:06-14:04/178<br>17:04 08:32-09:05/33 | 08:32 13:21-13:37/16<br>16:12 11:32-12:38/66 | 09:01 11:58-12:46/48<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33 12:55-14:22/87<br>19:15 08:00-08:30/30 | 07:33 11:06-14:04/178<br>17:02 08:33-09:03/30 | 08:34 13:26-13:33/7<br>16:11 11:33-12:38/65 | 09:01 11:58-12:45/47<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 11:06-14:03/177<br>17:00 08:35-09:02/27 | | 09:01 11:58-12:46/48<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1289 | 6556 | 4356 | 1535 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 23 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27 08:24-09:13/49<br>18:07 08:02-08:23/21 | 07:08<br>20:10 | 05:55 19:59-20:36/37<br>21:09 | 05:02 20:37-21:02/25<br>22:02 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24 08:57-09:10/13 08:03-08:23/20<br>18:09 08:25-08:56/31 | 07:05<br>20:12 | 05:53 19:59-20:38/39<br>21:11 | 05:01 20:38-21:02/24<br>22:04 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:24-08:55/31<br>18:12 08:03-08:22/19 | 07:03<br>20:14 | 05:51 19:58-20:40/42<br>21:13 | 05:00 20:39-21:03/24<br>22:05 |
| 4 | 09:00<br>16:18 | 08:22 09:01-09:07/6<br>17:14 | 07:19 08:25-08:55/30<br>18:14 08:04-08:21/17 | 07:00<br>20:16 | 05:48 19:58-20:41/43<br>21:15 | 04:59 20:39-21:02/23<br>22:06 |
| 5 | 09:00<br>16:19 | 08:20 08:58-09:11/13<br>17:17 | 07:17 08:26-08:53/27<br>18:16 08:04-08:19/15 | 06:58<br>20:17 | 05:46 19:57-20:42/45<br>21:16 | 04:58 20:39-21:02/23<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18 08:56-09:13/17<br>17:19 | 07:14 08:27-08:52/25<br>18:18 08:07-08:17/10 | 06:55<br>20:19 | 05:44 19:57-20:43/46<br>21:18 | 04:57 20:39-21:01/22<br>22:09 |
| 7 | 08:59<br>16:22 | 08:16 08:54-09:14/20<br>17:21 | 07:12 08:28-08:50/22<br>18:20 | 06:53<br>20:21 | 05:42 19:57-20:43/46<br>21:20 | 04:56 21:25-21:27/2<br>22:10 20:40-21:02/22 |
| 8 | 08:58<br>16:23 | 08:14 08:53-09:16/23<br>17:23 | 07:09 08:30-08:47/17<br>18:22 | 06:50<br>20:23 | 05:40 19:57-20:43/46<br>21:22 | 04:56 21:22-21:29/7<br>22:11 20:40-21:01/21 |
| 9 | 08:57<br>16:25 | 08:12 08:52-09:17/25<br>17:25 | 07:07 08:33-08:44/11<br>18:24 | 06:48<br>20:25 | 05:38 19:57-20:43/46<br>21:24 | 04:55 21:22-21:31/9<br>22:12 20:41-21:02/21 |
| 10 | 08:57<br>16:26 | 08:10 08:52-09:18/26<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36 19:57-20:43/46<br>21:26 | 04:54 21:21-21:32/11<br>22:13 20:41-21:01/20 |
| 11 | 08:56<br>16:28 | 08:08 08:51-09:19/28<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34 19:57-20:43/46<br>21:28 20:46-20:50/4 | 04:54 21:21-21:33/12<br>22:13 20:42-21:01/19 |
| 12 | 08:55<br>16:29 | 08:06 08:50-09:19/29<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32 19:58-20:54/56<br>21:30 | 04:53 21:21-21:34/13<br>22:14 20:43-21:02/19 |
| 13 | 08:54<br>16:31 | 08:04 08:41-09:20/39<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30 19:58-20:56/58<br>21:32 | 04:53 21:20-21:34/14<br>22:15 20:43-21:01/18 |
| 14 | 08:53<br>16:33 | 08:02 08:38-09:21/43<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28 19:58-20:57/59<br>21:33 | 04:53 21:20-21:35/15<br>22:16 20:43-21:01/18 |
| 15 | 08:52<br>16:35 | 07:59 08:36-09:21/45<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27 20:00-20:59/59<br>21:35 | 04:53 21:20-21:35/15<br>22:16 20:44-21:01/17 |
| 16 | 08:51<br>16:36 | 07:57 08:35-09:22/47<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25 20:00-20:59/59<br>21:37 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 17 | 08:50<br>16:38 | 07:55 08:34-09:23/49<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23 20:01-21:00/59<br>21:39 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 18 | 08:49<br>16:40 | 07:53 08:32-09:22/50<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21 20:02-21:00/58<br>21:41 | 04:52 21:20-21:37/17<br>22:18 20:45-21:01/16 |
| 19 | 08:48<br>16:42 | 07:50 08:30-09:23/53<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 20:04-21:01/57<br>21:42 | 04:52 21:20-21:37/17<br>22:18 20:46-21:01/15 |
| 20 | 08:46<br>16:44 | 07:48 08:29-09:23/54<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18 20:05-21:01/56<br>21:44 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 21 | 08:45<br>16:46 | 07:46 08:27-09:22/55<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16 20:21-21:02/41<br>21:46 20:07-20:18/11 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 22 | 08:44<br>16:48 | 07:43 08:27-09:22/55<br>17:53 08:10-08:19/9 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15 20:24-21:02/38<br>21:47 20:10-20:15/5 | 04:52 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 23 | 08:42<br>16:50 | 07:41 08:26-09:21/55<br>17:55 08:07-08:20/13 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13 20:26-21:02/36<br>21:49 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 24 | 08:41<br>16:52 | 07:39 08:25-09:21/56<br>17:57 08:05-08:22/17 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12 20:28-20:35/7<br>21:51 20:36-21:03/27 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 25 | 08:39<br>16:54 | 07:36 08:24-09:19/55<br>17:59 08:04-08:22/18 | 06:26<br>18:56 | 06:09 20:09-20:17/8<br>20:57 | 05:10 20:35-21:02/27<br>21:52 | 04:53 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 26 | 08:38<br>16:56 | 07:34 08:25-09:19/54<br>18:01 08:03-08:23/20 | 06:23<br>18:58 | 06:06 20:23-20:28/5<br>20:59 20:06-20:21/15 | 05:09 20:36-21:02/26<br>21:54 | 04:54 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 27 | 08:36<br>16:58 | 07:32 08:24-09:17/53<br>18:03 08:02-08:23/21 | 06:21<br>19:00 | 06:04 20:04-20:30/26<br>21:01 | 05:08 20:36-21:02/26<br>21:55 | 04:54 21:23-21:39/16<br>22:19 20:47-21:04/17 |
| 28 | 08:35<br>17:00 | 07:29 08:03-09:15/72<br>18:05 | 06:18<br>19:02 | 06:02 20:02-20:32/30<br>21:03 | 05:06 20:36-21:03/27<br>21:57 | 04:55 21:23-21:38/15<br>22:19 20:47-21:04/17 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59 20:01-20:34/33<br>21:05 | 05:05 20:37-21:03/26<br>21:58 | 04:55 21:24-21:38/14<br>22:19 20:47-21:05/18 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57 20:00-20:36/36<br>21:07 | 05:04 20:37-21:03/26<br>22:00 | 04:56 21:24-21:37/13<br>22:19 20:46-21:05/19 |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 | | 05:03 20:37-21:02/25<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 1120 | 358 | 153 | 1355 | 896 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 23 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:25-21:37/12 | 05:40 20:08-20:54/46 | 06:38 | 07:35 | 07:37 08:21-08:47/26 | 08:35 |
| | 22:18 20:47-21:05/18 | 21:40 20:55-21:04/9 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 21:26-21:37/11 | 05:41 20:07-20:53/46 | 06:40 | 07:37 | 07:39 08:22-08:46/24 | 08:37 |
| | 22:18 20:47-21:06/19 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:27-21:37/10 | 05:43 20:07-20:53/46 | 06:42 | 07:39 | 07:41 08:23-08:45/22 | 08:38 |
| | 22:17 20:47-21:07/20 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:27-21:35/8 | 05:45 20:07-20:53/46 | 06:43 | 07:40 09:13-09:18/5 | 07:43 08:24-08:45/21 | 08:40 |
| | 22:17 20:46-21:07/21 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 21:29-21:34/5 | 05:47 20:07-20:53/46 | 06:45 | 07:42 09:08-09:23/15 | 07:45 08:26-08:43/17 | 08:41 |
| | 22:16 20:46-21:07/21 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 20:46-21:08/22 | 05:49 20:06-20:52/46 | 06:47 | 07:44 09:05-09:25/20 | 07:47 08:28-08:41/13 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 20:46-21:08/22 | 05:51 20:07-20:52/45 | 06:49 | 07:46 09:03-09:26/23 | 07:49 08:31-08:37/6 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:43-08:51/8 | 16:45 | 16:06 |
| 8 | 05:03 20:46-21:09/23 | 05:52 20:07-20:51/44 | 06:51 | 07:48 09:01-09:27/26 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:40-08:53/13 | 16:44 | 16:05 |
| 9 | 05:04 20:45-21:09/24 | 05:54 20:06-20:49/43 | 06:53 | 07:50 09:00-09:28/28 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:39-08:55/16 | 16:42 | 16:05 |
| 10 | 05:06 20:45-21:09/24 | 05:56 20:07-20:48/41 | 06:55 | 07:52 08:59-09:29/30 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 08:37-08:55/18 | 16:40 | 16:04 |
| 11 | 05:07 20:46-21:11/25 | 05:58 20:07-20:46/39 | 06:57 | 07:54 09:33-09:41/8 08:36-08:56/20 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:58-09:29/31 | 16:38 | 16:04 |
| 12 | 05:08 20:46-21:11/25 | 06:00 20:08-20:44/36 | 06:59 | 07:56 08:57-09:44/47 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:35-08:56/21 | 16:36 | 16:04 |
| 13 | 05:09 20:46-21:11/25 | 06:02 20:08-20:43/35 | 07:00 | 07:58 08:57-09:47/50 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:35-08:56/21 | 16:34 | 16:04 |
| 14 | 05:11 20:45-21:11/26 | 06:04 20:09-20:41/32 | 07:02 | 08:00 08:36-09:48/72 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 20:45-21:11/26 | 06:06 20:10-20:39/29 | 07:04 | 08:02 08:57-09:50/53 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:36-08:56/20 | 16:31 | 16:04 |
| 16 | 05:13 20:46-21:12/26 | 06:07 20:12-20:37/25 | 07:06 | 08:04 08:57-09:51/54 | 08:07 | 08:55 |
| | 22:06 | 21:08 | 19:51 | 18:34 08:36-08:55/19 | 16:29 | 16:04 |
| 17 | 05:15 20:45-21:12/27 | 06:09 20:31-20:34/3 | 07:08 | 08:06 08:57-09:52/55 | 08:09 | 08:56 |
| | 22:04 | 21:06 20:13-20:27/14 | 19:48 | 18:32 08:36-08:54/18 | 16:28 | 16:04 |
| 18 | 05:16 20:45-21:12/27 | 06:11 20:17-20:23/6 | 07:10 | 08:08 08:57-09:52/55 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 08:37-08:53/16 | 16:26 | 16:04 |
| 19 | 05:18 20:39-20:43/4 | 06:13 | 07:12 | 08:10 08:57-09:52/55 | 08:13 | 08:57 |
| | 22:02 20:46-21:12/26 | 21:01 | 19:43 | 18:27 08:39-08:51/12 | 16:25 | 16:04 |
| 20 | 05:19 20:36-21:12/36 | 06:15 | 07:14 | 08:12 08:57-09:52/55 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 08:41-08:48/7 | 16:23 | 16:05 |
| 21 | 05:21 20:35-21:12/37 | 06:17 | 07:16 | 08:14 08:58-09:52/54 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 20:34-21:12/38 | 06:19 | 07:17 | 08:16 09:00-09:53/53 | 08:19 | 08:59 |
| | 21:57 20:18-20:27/9 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 20:16-21:12/56 | 06:21 | 07:19 | 08:18 09:01-09:53/52 | 08:21 | 09:00 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 20:14-21:11/57 | 06:23 | 07:21 | 08:20 09:03-09:52/49 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 20:14-21:12/58 | 06:25 | 07:23 | 07:22 08:04-08:52/48 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 20:12-21:11/59 | 06:26 | 07:25 | 07:24 08:05-08:51/46 | 08:27 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 20:11-21:10/59 | 06:28 | 07:27 | 07:26 08:07-08:51/44 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 20:10-21:09/59 | 06:30 | 07:29 | 07:28 08:08-08:50/42 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 20:10-21:09/59 | 06:32 | 07:31 | 07:30 08:11-08:49/38 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 20:09-21:08/59 | 06:34 | 07:33 | 07:33 08:20-08:48/28 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 20:08-21:06/58 | 06:36 | | 07:35 08:20-08:47/27 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1141 | 677 | 0 | 1372 | 129 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 24 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:53-08:03/10 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 08:04-08:42/38 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 07:51-08:05/14 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 08:06-08:43/37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 07:49-08:06/17 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 08:09-08:44/35 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 07:48-08:08/20 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 08:10-08:44/34 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 07:47-08:08/21 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 08:11-08:44/33 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:08/24 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 08:13-08:44/31 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 07:38-08:08/30 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 08:15-08:44/29 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 07:35-08:07/32 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 08:20-08:43/23 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 07:34-08:07/33 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 08:22-08:42/20 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 07:32-08:06/34 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 08:22-08:41/19 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 07:29-08:05/36 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:23-08:40/17 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 07:26-08:03/37 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 08:25-08:38/13 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 07:24-08:01/37 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 08:27-08:34/7 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 07:23-07:59/36 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 07:22-07:58/36 | 06:33 | 05:27 | 04:52 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 07:22-07:58/36 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 07:21-07:56/35 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 07:20-07:55/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 07:20-07:53/33 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:12-08:22/10 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:20-07:50/30 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:09-08:24/15 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:21-07:42/21 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 08:07-08:25/18 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 07:21-07:40/19 | 06:16 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 08:06-08:26/20 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:23-07:39/16 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:05-08:34/29 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 07:25-07:36/11 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:04-08:36/32 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 08:04-08:38/34 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 08:03-08:39/36 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:02-08:38/36 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:02-08:39/37 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:03-08:39/36 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:03-08:40/37 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 653 | 0 | 0 | 0 | 0 | 0 | 340 | 336 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 25 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | | 04:57 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | 22:05 | | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:51-05:56/5 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | | 22:08 | 21:13 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 05:50-05:58/8 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:50-05:59/9 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:49-06:00/11 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:49-06:00/11 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:49-06:01/12 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:49-06:01/12 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:19 | | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:49-06:01/12 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | | 21:59 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:50-06:02/12 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:50-06:02/12 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:50-06:01/11 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:51-06:02/11 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:51-06:01/10 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:53-06:01/8 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:54-06:00/6 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:57-05:58/1 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 151 | | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:50-08:19/29 | 05:55 | 06:31-07:45/74 | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:50-08:19/29 | 05:53 | 06:29-07:45/76 | 05:01 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:11 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:49-08:18/29 | 05:51 | 06:28-07:45/77 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:41-08:19/38 | 05:48 | 06:27-07:45/78 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:37-08:17/40 | 05:46 | 06:26-07:45/79 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:35-08:17/42 | 05:44 | 06:25-07:45/80 | 04:57 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:33-08:16/43 | 05:42 | 06:24-07:44/80 | 04:56 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:32-08:15/43 | 05:40 | 06:24-06:55/31 | 04:56 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | 06:56-07:44/48 | 22:11 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 07:30-08:13/43 | 05:38 | 06:23-06:54/31 | 04:55 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | 06:57-07:43/46 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:29-08:11/42 | 05:36 | 06:23-06:52/29 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | 06:58-07:42/44 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 07:27-08:08/41 | 05:34 | 06:22-06:52/30 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | 06:59-07:42/43 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:22-08:05/43 | 05:32 | 06:23-06:52/29 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | 07:01-07:42/41 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | 07:19-08:01/42 | 05:30 | 06:23-06:52/29 | 04:53 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:31 | 07:02-07:41/39 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 07:17-08:01/44 | 05:28 | 06:23-06:52/29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | 07:02-07:40/38 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 | | 06:32 | 07:16-08:01/45 | 05:27 | 06:24-06:52/28 | 04:52 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | 07:03-07:40/37 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:14-08:00/46 | 05:25 | 06:23-06:51/28 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | 07:04-07:39/35 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:28 | 07:08-08:00/52 | 05:23 | 06:24-06:51/27 | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | 07:05-07:38/33 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:03-07:59/56 | 05:21 | 06:24-06:51/27 | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | 07:05-07:37/32 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:01-07:58/57 | 05:20 | 06:25-06:51/26 | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | 07:06-07:35/29 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:00-07:58/58 | 05:18 | 06:25-06:49/24 | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | 07:07-07:35/28 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 06:57-07:56/59 | 05:16 | 06:27-06:49/22 | 04:52 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | 07:09-07:34/25 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 06:46-06:52/6 | 05:15 | 06:27-06:48/21 | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 06:56-07:55/59 | 21:47 | 07:09-07:32/23 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 06:43-06:55/12 | 05:13 | 06:28-06:47/19 | 04:53 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 06:56-07:54/58 | 21:49 | 07:11-07:31/20 | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | 06:41-07:53/72 | 05:12 | 06:29-06:47/18 | 04:53 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | 07:13-07:29/16 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 07:01-07:13/12 | 06:08 | 06:40-07:50/70 | 05:10 | 06:30-06:45/15 | 04:53 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | 07:15-07:26/11 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:58-07:16/18 | 06:06 | 06:38-07:47/69 | 05:09 | 06:31-06:44/13 | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | 06:56-07:17/21 | 06:04 | 06:37-07:44/67 | 05:08 | 06:33-06:42/9 | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:54-07:17/23 | 06:02 | 06:37-07:45/68 | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:16 | 07:53-08:18/25 | 05:59 | 06:36-07:45/69 | 05:05 | | 04:55 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:51-08:18/27 | 05:57 | 06:33-07:45/72 | 05:04 | | 04:56 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:51-08:19/28 | | | 05:03 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 154 | | 1543 | | 1617 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 06:34-07:03/29 | 06:38 | 07:26-08:07/41 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | 07:12-07:52/40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:33-07:02/29 | 06:40 | 07:27-08:09/42 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | 07:09-07:52/43 | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:33-07:03/30 | 06:41 | 07:28-08:11/43 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | 07:08-07:53/45 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:34-07:05/31 | 06:43 | 07:29-08:12/43 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | 07:07-07:54/47 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:34-07:54/80 | 06:45 | 07:30-08:13/43 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:34-07:54/80 | 06:47 | 07:30-08:12/42 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:35-07:54/79 | 06:49 | 07:32-08:12/40 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 05:52 | 06:35-07:54/79 | 06:51 | 07:35-08:13/38 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:35-07:54/79 | 06:53 | 07:43-08:13/30 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:37-07:54/77 | 06:55 | 07:43-08:12/29 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:38-07:54/76 | 06:57 | 07:42-08:11/29 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | 06:40-07:54/74 | 06:58 | 07:42-08:11/29 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | 06:42-07:53/71 | 07:00 | 07:42-08:10/28 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:04 | 06:44-07:52/68 | 07:02 | 07:43-08:09/26 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | | 06:05 | 06:44-07:52/68 | 07:04 | 07:44-08:08/24 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:44-06:50/6 | 06:07 | 06:45-07:52/67 | 07:06 | 07:45-08:06/21 | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:42-06:53/11 | 06:09 | 06:45-07:55/70 | 07:08 | 07:46-08:04/18 | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:40-06:54/14 | 06:11 | 06:46-07:57/71 | 07:10 | 07:47-08:01/14 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 07:27-07:34/7 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:39-06:56/17 | 06:13 | 06:47-07:58/71 | 07:12 | 07:52-07:55/3 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 07:24-07:38/14 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:38-06:57/19 | 06:15 | 06:49-08:00/71 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 07:22-07:40/18 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:38-06:58/20 | 06:17 | 06:53-06:57/4 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 07:21-07:42/21 | 20:56 | 07:02-08:01/59 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:37-06:59/22 | 06:19 | 07:02-08:01/59 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 07:19-07:43/24 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:37-07:00/23 | 06:21 | 07:03-08:01/58 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 07:19-07:45/26 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:36-07:00/24 | 06:23 | 07:05-08:02/57 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 07:17-07:46/29 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:36-07:01/25 | 06:24 | 07:07-08:02/55 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 07:17-07:47/30 | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:35-07:01/26 | 06:26 | 07:12-08:03/51 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 07:15-07:48/33 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:35-07:02/27 | 06:28 | 07:16-08:02/46 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 07:15-07:49/34 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:34-07:02/28 | 06:30 | 07:17-08:02/45 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 07:14-07:49/35 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:34-07:02/28 | 06:32 | 07:18-08:02/44 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | 07:13-07:51/38 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34-07:03/29 | 06:34 | 07:20-08:01/41 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | 07:13-07:52/39 | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:33-07:02/29 | 06:36 | 07:22-08:05/43 | | | 07:34 | | 09:01 |
| | 21:42 | 07:12-07:52/40 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | | 736 | | 2037 | | 583 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 11:50-13:05/75<br>17:08 | 07:27 11:54-12:59/65<br>18:07 | 07:08<br>20:09 | 05:55 06:32-06:51/19<br>21:09 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 11:49-13:06/77<br>17:10 | 07:24 11:55-12:58/63<br>18:09 | 07:05<br>20:11 | 05:53 06:33-06:51/18<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00 12:13-12:22/9<br>16:16 | 08:24 11:49-13:06/77<br>17:12 | 07:22 11:56-12:55/59<br>18:11 | 07:03<br>20:13 | 05:51 06:33-06:50/17<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 12:11-12:26/15<br>16:18 | 08:22 11:49-13:07/78<br>17:15 | 07:19 11:58-12:53/55<br>18:14 | 07:00<br>20:15 | 05:48 06:34-06:49/15<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 12:08-12:28/20<br>16:19 | 08:20 11:48-13:06/78<br>17:17 | 07:17 12:00-12:51/51<br>18:16 | 06:58<br>20:17 | 05:46 06:35-06:47/12<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 12:08-12:31/23<br>16:20 | 08:18 11:48-13:07/79<br>17:19 | 07:14 12:02-12:47/45<br>18:18 | 06:55<br>20:19 | 05:44 06:37-06:45/8<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 12:06-12:33/27<br>16:22 | 08:16 11:47-13:08/81<br>17:21 | 07:12 12:06-12:44/38<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 12:05-12:35/30<br>16:23 | 08:14 11:47-13:08/81<br>17:23 | 07:09 12:10-12:38/28<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 12:04-12:36/32<br>16:25 | 08:12 11:47-13:09/82<br>17:25 | 07:07 12:18-12:30/12<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 12:03-12:38/35<br>16:26 | 08:10 11:48-13:09/81<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:12 |
| 11 | 08:56 12:02-12:40/38<br>16:28 | 08:08 11:47-13:09/82<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 12:01-12:42/41<br>16:30 | 08:06 11:47-13:09/82<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 12:00-12:43/43<br>16:31 | 08:04 11:47-13:09/82<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 12:00-12:45/45<br>16:33 | 08:01 11:46-13:09/83<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 11:58-12:46/48<br>16:35 | 07:59 11:47-13:09/82<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:58-12:48/50<br>16:36 | 07:57 11:47-13:09/82<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:58-12:49/51<br>16:38 | 07:55 11:47-13:08/81<br>17:42 | 06:46<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 11:56-12:50/54<br>16:40 | 07:53 11:47-13:08/81<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 11:56-12:52/56<br>16:42 | 07:50 11:48-13:08/80<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 11:55-12:53/58<br>16:44 | 07:48 11:48-13:07/79<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 11:55-12:54/59<br>16:46 | 07:46 11:48-13:07/79<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 11:54-12:55/61<br>16:48 | 07:43 11:48-13:06/78<br>17:53 | 06:34<br>18:50 | 06:16 06:41-06:47/6<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 |
| 23 | 08:42 11:53-12:56/63<br>16:50 | 07:41 11:49-13:06/77<br>17:55 | 06:31<br>18:52 | 06:13 06:39-06:49/10<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 11:53-12:58/65<br>16:52 | 07:39 11:49-13:05/76<br>17:57 | 06:28<br>18:54 | 06:11 06:37-06:50/13<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 11:52-12:59/67<br>16:54 | 07:36 11:50-13:04/74<br>17:59 | 06:26<br>18:56 | 06:09 06:35-06:51/16<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 11:52-12:59/67<br>16:56 | 07:34 11:51-13:04/73<br>18:01 | 06:23<br>18:58 | 06:06 06:33-06:51/18<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:51-13:00/69<br>16:58 | 07:31 11:52-13:02/70<br>18:03 | 06:21<br>19:00 | 06:04 06:32-06:51/19<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 11:51-13:02/71<br>17:00 | 07:29 11:53-13:01/68<br>18:05 | 06:18<br>19:02 | 06:02 06:32-06:52/20<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:51-13:03/72<br>17:02 | | 07:16<br>20:04 | 05:59 06:32-06:52/20<br>21:05 | 05:05<br>21:58 | 04:56<br>22:18 |
| 30 | 08:31 11:50-13:03/73<br>17:04 | | 07:13<br>20:06 | 05:57 06:32-06:52/20<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 11:50-13:04/74<br>17:06 | | 07:10<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1416 | 2198 | 416 | 142 | 89 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:36 11:16-12:38/82<br>16:58 | 08:35 11:44-12:22/38<br>16:10 |
| 2 | 04:58<br>22:17 | 05:41<br>21:38 | 06:40<br>20:27 | 07:36<br>19:09 | 07:39 11:17-12:38/81<br>16:56 | 08:37 11:46-12:21/35<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:38<br>19:07 | 07:41 11:17-12:38/81<br>16:54 | 08:38 11:48-12:21/33<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 11:17-12:37/80<br>16:52 | 08:40 11:49-12:19/30<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:50-13:12/22<br>19:02 | 07:45 11:18-12:38/80<br>16:49 | 08:41 11:51-12:18/27<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 06:48-06:52/4<br>21:30 | 06:47<br>20:17 | 07:44 12:44-13:18/34<br>18:59 | 07:47 11:18-12:37/79<br>16:47 | 08:43 11:54-12:17/23<br>16:06 |
| 7 | 05:02<br>22:14 | 05:51 06:45-06:55/10<br>21:28 | 06:49<br>20:14 | 07:46 12:40-13:22/42<br>18:57 | 07:49 11:19-12:37/78<br>16:46 | 08:44 11:55-12:15/20<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 06:44-06:57/13<br>21:26 | 06:51<br>20:11 | 07:48 12:37-13:24/47<br>18:54 | 07:51 11:19-12:36/77<br>16:44 | 08:45 11:59-12:14/15<br>16:05 |
| 9 | 05:05<br>22:13 | 05:54 06:43-06:59/16<br>21:23 | 06:53<br>20:09 | 07:50 12:34-13:27/53<br>18:52 | 07:53 11:20-12:36/76<br>16:42 | 08:47 12:02-12:11/9<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 06:41-06:58/17<br>21:21 | 06:55<br>20:06 | 07:52 12:32-13:29/57<br>18:49 | 07:55 11:20-12:36/76<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:41-06:59/18<br>21:19 | 06:57<br>20:04 | 07:54 12:30-13:30/60<br>18:47 | 07:57 11:21-12:35/74<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 06:41-07:00/19<br>21:17 | 06:59<br>20:01 | 07:56 12:28-13:31/63<br>18:44 | 07:59 11:21-12:34/73<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 06:40-07:00/20<br>21:15 | 07:00<br>19:59 | 07:58 12:26-13:33/67<br>18:42 | 08:01 11:23-12:35/72<br>16:34 | 08:51<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 06:39-06:59/20<br>21:12 | 07:02<br>19:56 | 08:00 12:25-13:34/69<br>18:39 | 08:03 11:23-12:34/71<br>16:33 | 08:52<br>16:04 |
| 15 | 05:12<br>22:06 | 06:06 06:40-06:59/19<br>21:10 | 07:04<br>19:53 | 08:02 12:23-13:34/71<br>18:37 | 08:05 11:24-12:33/69<br>16:31 | 08:53<br>16:04 |
| 16 | 05:14<br>22:05 | 06:07 06:40-06:59/19<br>21:08 | 07:06<br>19:51 | 08:04 12:22-13:35/73<br>18:34 | 08:07 11:25-12:32/67<br>16:29 | 08:54<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09 06:40-06:59/19<br>21:06 | 07:08<br>19:48 | 08:06 12:22-13:37/75<br>18:32 | 08:09 11:26-12:33/67<br>16:28 | 08:55<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 06:41-06:57/16<br>21:03 | 07:10<br>19:46 | 08:08 12:21-13:37/76<br>18:30 | 08:11 11:27-12:32/65<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18<br>22:01 | 06:13 06:43-06:56/13<br>21:01 | 07:12<br>19:43 | 08:10 12:20-13:37/77<br>18:27 | 08:13 11:28-12:31/63<br>16:25 | 08:57<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15 06:45-06:54/9<br>20:59 | 07:14<br>19:40 | 08:12 12:19-13:38/79<br>18:25 | 08:15 11:29-12:30/61<br>16:23 | 08:58<br>16:05 |
| 21 | 05:21<br>21:58 | 06:17 06:47-06:52/5<br>20:56 | 07:15<br>19:38 | 08:14 12:18-13:38/80<br>18:22 | 08:17 11:30-12:29/59<br>16:22 | 08:58<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16 12:18-13:38/80<br>18:20 | 08:19 11:31-12:29/58<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24<br>21:55 | 06:21<br>20:51 | 07:19<br>19:33 | 08:18 12:17-13:38/81<br>18:18 | 08:21 11:32-12:28/56<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 12:18-13:39/81<br>18:16 | 08:23 11:33-12:27/54<br>16:18 | 09:00<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 11:17-12:39/82<br>17:13 | 08:24 11:36-12:27/51<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 11:17-12:39/82<br>17:11 | 08:26 11:37-12:27/50<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 11:16-12:38/82<br>17:09 | 08:28 11:38-12:26/48<br>16:14 | 09:01<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 11:16-12:38/82<br>17:06 | 08:30 11:39-12:24/45<br>16:13 | 09:01<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:30 11:17-12:39/82<br>17:04 | 08:32 11:40-12:23/43<br>16:12 | 09:01<br>16:11 |
| 30 | 05:36<br>21:43 | 06:34<br>20:34 | 07:33<br>19:15 | 07:32 11:16-12:38/82<br>17:02 | 08:33 11:42-12:23/41<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:34 11:16-12:38/82<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 237 | 0 | 1861 | 1977 | 230 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:20-10:33/13 | 08:27 09:03-09:55/52 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 08:33-09:01/28 | 08:35 09:15-10:00/45 |
| | 16:14 09:38-10:13/35 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 10:22-10:34/12 | 08:25 09:02-09:54/52 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:33-09:05/32 | 08:36 09:17-10:01/44 |
| | 16:15 09:38-10:14/36 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 10:22-10:33/11 | 08:24 09:02-09:54/52 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:32-09:11/39 | 08:38 09:19-10:01/42 |
| | 16:16 09:37-10:14/37 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 10:24-10:33/9 | 08:22 09:01-09:52/51 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:32-09:15/43 | 08:39 09:19-10:01/42 |
| | 16:17 09:38-10:15/37 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 10:25-10:32/7 | 08:20 09:01-09:51/50 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 08:31-09:19/48 | 08:41 09:21-10:02/41 |
| | 16:19 09:37-10:15/38 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 09:37-10:17/40 | 08:18 09:02-09:49/47 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 08:32-09:21/49 | 08:42 09:22-10:02/40 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 09:36-10:17/41 | 08:16 09:02-09:44/42 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 08:32-09:23/51 | 08:44 10:13-10:19/6 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:05 09:24-10:03/39 |
| 8 | 08:58 09:35-10:17/42 | 08:14 09:03-09:41/38 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 08:32-09:24/52 | 08:45 10:11-10:20/9 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 09:25-10:02/37 |
| 9 | 08:57 09:35-10:17/42 | 08:12 09:03-09:35/32 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 08:32-09:24/52 | 08:47 10:11-10:22/11 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 09:26-10:03/37 |
| 10 | 08:56 09:34-10:18/44 | 08:10 09:03-09:30/27 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 08:34-09:26/52 | 08:48 10:11-10:23/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 09:27-10:03/36 |
| 11 | 08:56 09:33-10:18/45 | 08:08 09:05-09:27/22 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 08:34-09:28/54 | 08:49 10:11-10:24/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-10:05/37 |
| 12 | 08:55 09:32-10:18/46 | 08:06 09:06-09:22/16 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 08:35-09:29/54 | 08:50 10:11-10:25/14 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:30-10:05/35 |
| 13 | 08:54 09:32-10:18/46 | 08:03 09:08-09:20/12 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 08:37-09:32/55 | 08:51 10:11-10:26/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 09:31-10:05/34 |
| 14 | 08:53 09:32-10:19/47 | 08:01 09:11-09:16/5 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 08:38-09:33/55 | 08:52 10:11-10:26/15 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 09:32-10:05/33 |
| 15 | 08:52 09:30-10:18/48 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 08:40-09:35/55 | 08:53 10:11-10:27/16 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 09:33-10:05/32 |
| 16 | 08:51 09:28-10:18/50 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 08:44-09:37/53 | 08:54 10:12-10:28/16 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 09:34-10:06/32 |
| 17 | 08:50 09:27-10:18/51 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 08:45-09:38/53 | 08:55 10:12-10:29/17 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 09:35-10:06/31 |
| 18 | 08:49 09:25-10:17/52 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 08:48-09:41/53 | 08:56 10:13-10:29/16 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 09:36-10:07/31 |
| 19 | 08:47 09:23-10:17/54 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 08:50-09:42/52 | 08:57 10:12-10:29/17 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:35-10:07/32 |
| 20 | 08:46 09:20-10:16/56 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 08:52-09:47/55 | 08:57 10:13-10:30/17 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 09:36-10:08/32 |
| 21 | 08:45 09:19-10:15/56 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 08:54-09:50/56 | 08:58 10:14-10:31/17 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 09:36-10:07/31 |
| 22 | 08:43 09:17-10:12/55 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 08:56-09:52/56 | 08:59 10:14-10:31/17 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:37-10:08/31 |
| 23 | 08:42 09:15-10:07/52 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 08:59-09:53/54 | 08:59 10:14-10:31/17 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 09:37-10:08/31 |
| 24 | 08:40 09:14-10:07/53 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 09:02-09:54/52 | 08:59 10:15-10:32/17 |
| | 16:51 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 09:38-10:10/32 |
| 25 | 08:39 09:12-10:05/53 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 09:04-09:55/51 | 09:00 10:16-10:32/16 |
| | 16:53 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 09:39-10:10/31 |
| 26 | 08:37 09:11-10:04/53 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 09:06-09:56/50 | 09:00 10:16-10:33/17 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 09:39-10:10/31 |
| 27 | 08:36 09:07-10:02/55 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 09:09-09:57/48 | 09:00 10:16-10:33/17 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 09:39-10:11/32 |
| 28 | 08:34 09:05-10:00/55 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 08:39-08:47/8 | 08:30 09:11-09:58/47 | 09:01 10:17-10:33/16 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 09:39-10:11/32 |
| 29 | 08:33 09:05-10:00/55 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:37-08:50/13 | 08:31 09:12-09:59/47 | 09:01 10:18-10:33/15 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 09:39-10:12/33 |
| 30 | 08:31 09:04-09:58/54 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:35-08:52/17 | 08:33 09:13-09:59/46 | 09:01 10:19-10:34/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 09:39-10:13/34 |
| 31 | 08:29 09:03-09:57/54 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 08:34-08:57/23 | | 09:01 10:20-10:34/14 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 09:39-10:13/34 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1534 | 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 1492 | 1456 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 30 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 31 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 16:00-16:26/26 | 07:27 17:11-17:30/19 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 15:29-15:57/28 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 15:59-16:26/27 | 07:24 17:12-17:30/18 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 15:29-15:57/28 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 15:59-16:27/28 | 07:22 17:12-17:29/17 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 15:28-15:57/29 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 15:59-16:28/29 | 07:19 17:14-17:28/14 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 15:28-15:57/29 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 15:59-16:28/29 | 07:17 17:15-17:25/10 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 15:29-15:58/29 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 15:59-16:28/29 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 15:29-15:58/29 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 15:58-16:28/30 | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 15:29-15:57/28 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 15:59-16:28/29 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 17:52-17:59/7 | 07:51 15:30-15:58/28 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 15:59-16:28/29 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 17:49-18:01/12 | 07:53 15:30-15:57/27 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 16:00-16:28/28 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 17:47-18:02/15 | 07:55 15:30-15:56/26 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:07 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 16:01-16:27/26 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 17:45-18:03/18 | 07:57 15:31-15:56/25 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 16:01-16:26/25 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 17:44-18:04/20 | 07:59 15:33-15:56/23 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 16:02-16:26/24 | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 17:44-18:04/20 | 08:01 15:34-15:54/20 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 16:04-16:25/21 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 17:43-18:04/21 | 08:03 15:35-15:53/18 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 16:04-16:22/18 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 17:43-18:03/20 | 08:05 15:36-15:51/15 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 16:07-16:21/14 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 17:44-18:04/20 | 08:07 15:39-15:50/11 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 16:12-16:17/5 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 17:44-18:01/17 | 08:09 15:44-15:45/1 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 17:45-17:59/14 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 17:45-17:56/11 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 17:47-17:54/7 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 17:18-17:21/3 | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 17:50-17:51/1 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 17:16-17:24/8 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 17:14-17:26/12 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 17:13-17:28/15 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 16:10-16:12/2 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 15:39-15:48/9 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 16:05-16:16/11 | 07:34 17:12-17:32/20 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 15:36-15:51/15 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 16:04-16:20/16 | 07:32 17:11-17:31/20 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 15:33-15:52/19 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 16:03-16:21/18 | 07:29 17:11-17:31/20 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 15:33-15:54/21 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 16:02-16:23/21 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:31 15:31-15:55/24 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 16:01-16:24/23 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 15:30-15:56/26 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 16:00-16:25/25 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 15:29-15:56/27 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 116 | 533 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 394 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 32 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 09:43-10:16/33<br>17:08 | 07:27 17:18-17:39/21<br>18:07 | 07:08 18:55-19:32/37<br>20:09 | 05:55<br>21:08 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 09:44-10:15/31<br>17:10 | 07:24 17:17-17:39/22<br>18:09 | 07:05 18:58-19:33/35<br>20:11 | 05:53<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24 09:45-10:15/30<br>17:12 | 07:22 17:17-17:40/23<br>18:11 | 07:03 18:59-19:32/33<br>20:13 | 05:51<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 09:48-09:53/5<br>16:17 | 08:22 09:46-10:14/28<br>17:14 | 07:19 17:16-17:39/23<br>18:13 17:44-17:45/1 | 07:00 18:59-19:31/32<br>20:15 | 05:48<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 09:46-09:55/9<br>16:19 | 08:20 09:47-10:13/26<br>17:16 | 07:17 17:16-17:40/24<br>18:15 17:41-17:48/7 | 06:58 19:00-19:31/31<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:45-09:58/13<br>16:20 | 08:18 09:48-10:11/23<br>17:19 | 07:14 17:16-17:49/33<br>18:18 | 06:55 19:00-19:30/30<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 09:44-09:59/15<br>16:22 | 08:16 09:50-10:09/19<br>17:21 | 07:12 17:17-17:52/35<br>18:20 | 06:52 19:01-19:30/29<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 09:43-10:01/18<br>16:23 | 08:14 09:52-10:07/15<br>17:23 | 07:09 17:17-17:54/37<br>18:22 | 06:50 19:01-19:28/27<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 09:43-10:02/19<br>16:25 | 08:12 09:56-10:04/8<br>17:25 | 07:07 17:17-17:55/38<br>18:24 | 06:47 19:02-19:28/26<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 09:42-10:03/21<br>16:26 | 08:10<br>17:27 | 07:04 17:19-17:58/39<br>18:26 | 06:45 19:02-19:26/24<br>20:27 | 05:36<br>21:26 | 04:54<br>22:12 |
| 11 | 08:56 09:42-10:04/22<br>16:28 | 08:08<br>17:29 | 07:02 17:20-18:00/40<br>18:28 | 06:42 19:04-19:24/20<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:42-10:06/24<br>16:29 | 08:06<br>17:31 | 06:59 17:26-17:27/1<br>18:30 17:31-18:02/31 | 06:40 19:06-19:23/17<br>20:31 | 05:32<br>21:30 | 04:53<br>22:14 |
| 13 | 08:54 09:41-10:07/26<br>16:31 | 08:04<br>17:34 | 06:57 17:30-18:04/34<br>18:32 | 06:37 19:08-19:19/11<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 09:41-10:08/27<br>16:33 | 08:01<br>17:36 | 06:54 17:30-18:07/37<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 09:40-10:08/28<br>16:35 | 07:59<br>17:38 | 06:51 17:30-18:08/38<br>18:36 | 06:32<br>20:37 | 05:27<br>21:35 | 04:52<br>22:16 |
| 16 | 08:51 09:40-10:10/30<br>16:36 | 07:57<br>17:40 | 06:49 17:29-18:10/41<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:41-10:11/30<br>16:38 | 07:55<br>17:42 | 06:46 17:30-18:13/43<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:40-10:11/31<br>16:40 | 07:52<br>17:44 | 06:44 17:30-18:14/44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 09:40-10:12/32<br>16:42 | 07:50<br>17:46 | 06:41 17:32-18:17/45<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:40-10:12/32<br>16:44 | 07:48<br>17:48 | 06:39 17:33-18:18/45<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 09:40-10:14/34<br>16:46 | 07:46<br>17:51 | 06:36 17:34-18:19/45<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 09:40-10:14/34<br>16:48 | 07:43<br>17:53 | 06:34 17:37-18:21/44<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:40-10:14/34<br>16:50 | 07:41<br>17:55 | 06:31 17:39-18:24/45<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:41-10:15/34<br>16:52 | 07:39<br>17:57 | 06:28 17:41-18:27/46<br>18:54 | 06:11<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:15/35<br>16:54 | 07:36 17:27-17:30/3<br>17:59 | 06:26 17:42-18:28/46<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:40-10:15/35<br>16:56 | 07:34 17:22-17:32/10<br>18:01 | 06:23 17:44-18:29/45<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:41-10:15/34<br>16:58 | 07:31 17:21-17:35/14<br>18:03 | 06:21 17:46-18:30/44<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 09:42-10:16/34<br>17:00 | 07:29 17:19-17:36/17<br>18:05 | 06:18 17:48-18:30/42<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 09:42-10:16/34<br>17:02 | | 07:15 18:50-19:31/41<br>20:03 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:42-10:16/34<br>17:04 | | 07:13 18:51-19:31/40<br>20:05 | 05:57<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 09:43-10:16/33<br>17:06 | | 07:10 18:54-19:32/38<br>20:07 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 757 | 257 | 1178 | 352 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 32 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 19:03-19:23/20 | 07:34 18:10-18:42/32 | 07:36 | 08:35 09:24-09:47/23 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 | 06:40 19:01-19:25/24 | 07:36 18:01-18:40/39 | 07:39 09:25-09:34/9 | 08:37 09:25-09:46/21 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 19:00-19:26/26 | 07:38 17:58-18:37/39 | 07:41 09:22-09:37/15 | 08:38 09:27-09:46/19 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 18:59-19:26/27 | 07:40 17:56-18:35/39 | 07:43 09:19-09:39/20 | 08:40 09:27-09:45/18 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 18:57-19:26/29 | 07:42 17:54-18:32/38 | 07:45 09:18-09:42/24 | 08:41 09:29-09:45/16 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 18:56-19:26/30 | 07:44 17:53-18:29/36 | 07:47 09:17-09:43/26 | 08:43 09:31-09:44/13 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 18:56-19:26/30 | 07:46 17:52-18:27/35 | 07:49 09:16-09:44/28 | 08:44 09:33-09:43/10 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 18:55-19:26/31 | 07:48 17:52-18:24/32 | 07:51 09:15-09:44/29 | 08:45 09:36-09:41/5 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 18:54-19:26/32 | 07:50 17:51-18:15/24 | 07:53 09:15-09:46/31 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 18:17-18:22/5 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 18:50-19:25/35 | 07:52 17:51-18:14/23 | 07:55 09:14-09:46/32 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 18:48-19:24/36 | 07:54 17:51-18:14/23 | 07:57 09:14-09:47/33 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 18:46-19:24/38 | 07:56 17:51-18:13/22 | 07:59 09:13-09:47/34 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:00 18:43-19:23/40 | 07:58 17:52-18:11/19 | 08:01 09:14-09:48/34 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:41-19:22/41 | 08:00 17:52-18:08/16 | 08:03 09:14-09:48/34 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | 06:05 | 07:04 18:38-19:20/42 | 08:02 17:54-18:06/12 | 08:05 09:13-09:48/35 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:07 | 07:06 18:35-19:19/44 | 08:04 17:56-18:03/7 | 08:07 09:13-09:48/35 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 18:33-19:17/44 | 08:06 | 08:09 09:14-09:49/35 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 18:30-19:16/46 | 08:08 | 08:11 09:15-09:49/34 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 18:28-19:14/46 | 08:10 | 08:13 09:15-09:49/34 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:26-19:11/45 | 08:12 | 08:15 09:15-09:49/34 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 18:23-19:07/44 | 08:14 | 08:17 09:15-09:49/34 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 18:21-19:05/44 | 08:16 | 08:19 09:16-09:49/33 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:18-19:04/46 | 08:18 | 08:21 09:16-09:48/32 | 08:59 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:22 | 07:21 18:15-19:00/45 | 08:20 | 08:23 09:18-09:49/31 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 18:13-18:58/45 | 07:22 | 08:24 09:19-09:49/30 | 09:00 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:12-18:55/43 | 07:24 | 08:26 09:20-09:49/29 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:11-18:53/42 | 07:26 | 08:28 09:20-09:49/29 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:30 | 07:29 18:11-18:50/39 | 07:28 | 08:30 09:21-09:48/27 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 18:10-18:47/37 | 07:30 | 08:32 09:21-09:47/26 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 19:09-19:20/11 | 07:33 18:10-18:45/35 | 07:32 | 08:33 09:23-09:47/24 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 19:05-19:22/17 | | 07:34 | | 09:01 |
| | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 28 | 1126 | 441 | 851 | 125 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 33 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:58-12:21/23 09:46-10:22/36 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 10:24-10:36/12 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:00 12:00-12:21/21 09:46-10:22/36 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 10:24-10:36/12 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 |
| 3 | 09:00 12:01-12:21/20 09:47-10:22/35 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 10:26-10:36/10 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:02-12:20/18 09:47-10:22/35 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 10:27-10:34/7 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 12:03-12:19/16 10:29-10:32/3 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:35-09:37/2 09:47-10:22/35 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:06-12:19/13 09:48-10:23/35 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:35-09:39/4 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 12:07-12:18/11 09:48-10:22/34 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:34-09:41/7 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:11-12:14/3 09:48-10:22/34 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:33-09:42/9 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 09:32-09:43/11 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:49-10:22/33 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 09:31-09:44/13 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:49-10:21/32 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 09:30-09:45/15 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:50-10:20/30 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-09:46/17 09:51-10:11/20 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 10:13-10:19/6 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-09:47/19 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:52-10:11/19 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 09:28-09:48/20 | 08:01 | 06:54 18:04-18:07/3 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:53-10:11/18 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 09:28-09:49/21 | 07:59 | 06:52 18:01-18:08/7 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:54-10:11/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:28-09:49/21 | 07:57 | 06:49 17:59-18:10/11 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:54-10:10/16 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:28-09:50/22 | 07:55 | 06:46 17:58-18:13/15 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:56-10:10/14 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-09:50/22 | 07:53 | 06:44 17:57-18:14/17 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:57-10:09/12 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 09:28-09:51/23 | 07:50 | 06:41 17:57-18:17/20 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:59-10:08/9 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:28-09:51/23 | 07:48 | 06:39 17:56-18:17/21 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 09:29-09:52/23 | 07:46 | 06:36 17:56-18:16/20 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:29-09:51/22 | 07:43 | 06:34 17:56-18:16/20 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:30-09:52/22 | 07:41 | 06:31 17:56-18:14/18 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:30-09:52/22 | 07:39 | 06:28 17:58-18:13/15 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 09:31-09:51/20 | 07:36 | 06:26 17:59-18:11/12 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:31-09:51/20 | 07:34 | 06:23 18:01-18:07/6 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:33-09:51/18 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 09:34-09:50/16 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:36-09:49/13 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:38-09:47/9 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 | | 05:03 | |
| | 17:06 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1109 | 0 | 185 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 33 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:36 | 08:35 09:12-09:27/15 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 09:32-10:02/30 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 09:14-09:27/13 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 09:32-10:04/32 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 09:16-09:27/11 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 09:33-10:06/33 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 11:56-11:58/2 09:32-10:06/34 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 09:17-09:26/9 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 11:53-12:03/10 09:33-10:07/34 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 09:19-09:26/7 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 11:52-12:05/13 09:34-10:09/35 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 09:21-09:26/5 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 11:50-12:06/16 10:17-10:19/2 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 09:22-09:24/2 09:34-10:09/35 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 11:50-12:08/18 09:35-10:10/35 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 10:15-10:22/7 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 11:50-12:09/19 09:35-10:10/35 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 10:14-10:24/10 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 11:49-12:10/21 09:35-10:11/36 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 10:13-10:25/12 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 11:49-12:12/23 09:36-10:12/36 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 10:14-10:26/12 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 09:09-09:18/9 | 08:50 11:49-12:12/23 09:36-10:12/36 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 10:14-10:27/13 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 09:08-09:21/13 | 08:51 11:49-12:13/24 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:37-10:28/51 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:06-09:22/16 | 08:53 11:49-12:14/25 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 09:37-10:29/52 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 09:05-09:23/18 | 08:54 11:49-12:14/25 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 09:37-10:29/52 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 09:04-09:24/20 | 08:54 11:49-12:15/26 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 09:38-10:30/52 |
| 17 | 05:15 | 06:09 | 07:08 18:51-18:55/4 | 08:06 | 08:09 09:05-09:25/20 | 08:55 11:50-12:16/26 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 09:39-10:31/52 |
| 18 | 05:16 | 06:11 | 07:10 18:47-18:58/11 | 08:08 | 08:11 09:04-09:26/22 | 08:56 11:50-12:17/27 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:39-10:32/53 |
| 19 | 05:18 | 06:13 | 07:12 18:45-19:00/15 | 08:10 | 08:13 09:04-09:26/22 | 08:57 11:50-12:17/27 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:40-10:32/52 |
| 20 | 05:19 | 06:15 | 07:14 18:43-19:01/18 | 08:12 | 08:15 09:04-09:26/22 | 08:58 11:51-12:18/27 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 09:40-10:32/52 |
| 21 | 05:21 | 06:17 | 07:15 18:42-19:01/19 | 08:14 | 08:17 09:04-09:27/23 | 08:58 11:52-12:18/26 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 09:41-10:33/52 |
| 22 | 05:23 | 06:19 | 07:17 18:41-19:01/20 | 08:16 | 08:19 09:04-09:27/23 | 08:59 11:52-12:18/26 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:41-10:33/52 |
| 23 | 05:24 | 06:21 | 07:19 18:41-19:01/20 | 08:18 | 08:21 09:05-09:28/23 | 08:59 11:53-12:19/26 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 09:36-09:45/9 | 16:06 09:42-10:34/52 |
| 24 | 05:26 | 06:23 | 07:21 18:40-19:00/20 | 08:20 | 08:23 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 09:35-09:47/12 | 16:06 09:42-10:34/52 |
| 25 | 05:27 | 06:24 | 07:23 18:40-18:58/18 | 07:22 | 08:24 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 09:34-09:48/14 | 16:07 09:42-10:34/52 |
| 26 | 05:29 | 06:26 | 07:25 18:40-18:55/15 | 07:24 | 08:26 09:07-09:28/21 | 09:00 11:54-12:20/26 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 09:33-09:49/16 | 16:08 09:42-10:35/53 |
| 27 | 05:31 | 06:28 | 07:27 18:40-18:53/13 | 07:26 | 08:28 09:07-09:28/21 | 09:01 11:54-12:20/26 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:33-09:50/17 | 16:09 09:43-10:35/52 |
| 28 | 05:33 | 06:30 | 07:29 18:41-18:50/9 | 07:28 | 08:30 09:08-09:28/20 | 09:01 11:55-12:20/25 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 09:33-09:51/18 | 16:09 09:43-10:35/52 |
| 29 | 05:34 | 06:32 | 07:31 18:43-18:47/4 | 07:30 | 08:32 09:09-09:28/19 | 09:01 11:56-12:21/25 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 09:33-09:52/19 | 16:10 09:44-10:35/51 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 09:10-09:27/17 09:32-09:52/20 | 09:01 11:57-12:21/24 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 09:54-10:00/6 | 16:11 09:44-10:36/52 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:01 11:58-12:21/23 09:45-10:21/36 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 10:22-10:36/14 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 186 | 0 | 504 | 2148 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 34 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:44-13:42/58 | 08:27 12:52-13:57/65 10:04-10:09/5 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:39-10:37/58 | 17:08 09:03-09:23/20 09:32-10:00/28 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:01 12:45-13:43/58 | 08:26 12:53-13:56/63 09:33-09:59/26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:38-10:37/59 | 17:10 09:02-09:24/22 | 18:09 | 20:11 | 21:11 | 22:04 |
| 3 | 09:00 12:46-13:45/59 | 08:24 12:53-13:56/63 09:34-09:59/25 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 09:39-10:38/59 | 17:12 09:01-09:26/25 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:45-13:45/60 | 08:22 12:54-13:56/62 09:35-09:58/23 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 09:38-10:38/60 | 17:14 09:01-09:27/26 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 12:45-13:45/60 | 08:20 12:55-13:56/61 09:36-09:57/21 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:39-10:38/59 | 17:17 09:00-09:28/28 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:46-13:46/60 | 08:18 12:55-13:54/59 09:37-09:55/18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:39-10:39/60 | 17:19 08:59-09:27/28 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 12:46-13:47/61 | 08:16 12:56-13:54/58 08:59-09:28/29 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:38-10:39/61 | 17:21 08:46-08:55/9 09:39-09:53/14 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:46-13:47/61 | 08:14 12:57-13:53/56 08:59-09:29/30 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:38-10:40/62 | 17:23 08:44-08:58/14 09:43-09:50/7 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 12:46-13:48/62 | 08:12 12:58-13:52/54 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:38-10:40/62 | 17:25 08:42-09:29/47 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 12:46-13:49/63 | 08:10 13:00-13:52/52 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:38-10:40/62 | 17:27 08:41-09:29/48 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 12:46-13:49/63 | 08:08 13:00-13:50/50 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:35-10:41/66 | 17:29 08:40-09:29/49 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:47-13:50/63 | 08:06 13:02-13:49/47 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 09:34-10:41/67 | 17:31 08:39-09:29/50 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:47-13:51/64 | 08:04 13:04-13:47/43 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:33-10:42/69 | 17:34 08:39-09:29/50 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 12:47-13:52/65 | 08:01 13:07-13:46/39 | 06:54 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:33-10:42/69 | 17:36 08:39-09:29/50 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 12:47-13:51/64 | 07:59 13:09-13:43/34 | 06:52 | 06:33 | 05:27 | 04:52 |
| | 16:35 09:32-10:42/70 | 17:38 08:38-09:27/49 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 12:47-13:52/65 | 07:57 13:12-13:40/28 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:31-10:42/71 | 17:40 08:38-09:27/49 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 12:48-13:53/65 | 07:55 13:16-13:35/19 | 06:46 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:31-10:42/71 | 17:42 08:39-09:26/47 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 12:47-13:53/66 | 07:53 08:38-09:24/46 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:30-10:42/72 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 12:48-13:54/66 | 07:50 08:39-09:04/25 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:30-10:42/72 | 17:46 09:05-09:23/18 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 12:48-13:54/66 | 07:48 08:39-09:03/24 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 09:29-10:41/72 | 17:48 09:07-09:19/12 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 12:48-13:55/67 | 07:46 08:40-09:02/22 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 09:30-10:41/71 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 12:48-13:55/67 | 07:43 08:42-09:01/19 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 09:29-10:41/72 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 12:48-13:55/67 | 07:41 08:42-08:59/17 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:30-10:41/71 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 12:49-13:56/67 | 07:39 08:45-08:57/12 | 06:28 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:30-10:39/69 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 12:49-13:56/67 09:29-10:18/49 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 10:20-10:38/18 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 12:49-13:56/67 09:29-10:18/49 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 10:21-10:36/15 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 12:49-13:56/67 09:30-10:18/48 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:25-10:34/9 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 12:51-13:57/66 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:31-10:17/46 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 12:51-13:57/66 09:31-10:16/45 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 09:11-09:14/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 12:51-13:57/66 09:31-10:15/44 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 09:07-09:19/12 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 12:52-13:57/65 09:32-10:13/41 | | 07:10 | | 05:03 | |
| | 17:06 09:05-09:21/16 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3960 | 1885 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 34 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | 12:28-13:20/52 | 08:35 | 12:28-13:31/63 |
| | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 08:11-08:59/48 | 16:10 | 09:17-10:23/66 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | | 07:39 | 12:28-13:22/54 | 08:37 | 12:29-13:32/63 |
| | 22:17 | 21:38 | 20:27 | 19:09 | | 16:56 | 08:12-08:59/47 | 16:09 | 09:21-10:23/62 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:41 | 12:27-13:23/56 09:12-09:20/8 | 08:38 | 12:30-13:32/62 |
| | 22:17 | 21:36 | 20:24 | 19:07 | | 16:53 | 08:14-08:58/44 | 16:08 | 09:22-10:24/62 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:43 | 12:25-13:23/58 08:28-08:58/30 | 08:40 | 12:30-13:32/62 |
| | 22:16 | 21:34 | 20:22 | 19:04 | | 16:51 | 08:16-08:24/8 09:08-09:23/15 | 16:07 | 09:22-10:24/62 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | 12:25-13:25/60 09:07-09:26/19 | 08:41 | 12:31-13:32/61 |
| | 22:16 | 21:32 | 20:19 | 19:02 | | 16:49 | 08:30-08:58/28 | 16:07 | 09:23-10:24/61 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | 12:25-13:25/60 09:06-09:27/21 | 08:43 | 12:32-13:33/61 |
| | 22:15 | 21:30 | 20:17 | 18:59 | | 16:47 | 08:30-08:57/27 | 16:06 | 09:25-10:25/60 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | 12:24-13:26/62 09:04-09:28/24 | 08:44 | 12:32-13:32/60 |
| | 22:14 | 21:28 | 20:14 | 18:57 | | 16:45 | 08:31-08:56/25 | 16:06 | 09:25-10:25/60 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | 12:23-13:26/63 09:03-09:29/26 | 08:45 | 12:33-13:33/60 |
| | 22:14 | 21:26 | 20:11 | 18:54 | | 16:43 | 08:31-08:55/24 | 16:05 | 09:26-10:26/60 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | 12:23-13:27/64 09:04-09:30/26 | 08:47 | 12:34-13:33/59 |
| | 22:13 | 21:23 | 20:09 | 18:52 | | 16:42 | 08:33-08:55/22 | 16:05 | 09:27-10:26/59 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | | 07:55 | 12:23-13:27/64 09:34-09:41/7 | 08:48 | 12:34-13:33/59 |
| | 22:12 | 21:21 | 20:06 | 18:49 | | 16:40 | 08:34-08:54/20 09:03-09:31/28 | 16:04 | 09:28-10:26/58 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | | 07:57 | 12:22-13:28/66 09:02-09:44/42 | 08:49 | 12:35-13:33/58 |
| | 22:11 | 21:19 | 20:04 | 18:47 | | 16:38 | 08:36-08:52/16 | 16:04 | 09:29-10:27/58 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | | 07:59 | 12:22-13:28/66 09:02-09:46/44 | 08:50 | 12:36-13:34/58 |
| | 22:10 | 21:17 | 20:01 | 18:44 | | 16:36 | 08:38-08:49/11 | 16:04 | 09:29-10:27/58 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | | 08:01 | 12:23-13:29/66 | 08:52 | 12:36-13:34/58 |
| | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 09:03-09:48/45 | 16:04 | 09:30-10:27/57 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | | 08:03 | 12:23-13:29/66 | 08:53 | 12:37-13:34/57 |
| | 22:08 | 21:12 | 19:56 | 18:39 | | 16:33 | 09:02-09:49/47 | 16:04 | 09:31-10:27/56 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | | 08:05 | 12:22-13:29/67 09:02-09:50/48 | 08:54 | 12:37-13:34/57 |
| | 22:07 | 21:10 | 19:53 | 18:37 | | 16:31 | 09:57-10:06/9 | 16:04 | 09:32-10:28/56 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | | 08:07 | 12:22-13:29/67 09:02-09:51/49 | 08:54 | 12:38-13:34/56 |
| | 22:05 | 21:08 | 19:51 | 18:34 | | 16:29 | 09:54-10:09/15 | 16:04 | 09:33-10:28/55 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 09:19-09:26/7 | 08:09 | 12:23-13:30/67 09:03-09:52/49 | 08:55 | 12:39-13:35/56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | | 16:28 | 09:54-10:12/18 | 16:04 | 09:34-10:29/55 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 09:15-09:29/14 | 08:11 | 12:23-13:30/67 | 08:56 | 12:39-13:36/57 |
| | 22:03 | 21:03 | 19:46 | 18:30 | | 16:26 | 09:04-10:13/69 | 16:04 | 09:35-10:29/54 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 09:13-09:31/18 | 08:13 | 12:23-13:30/67 | 08:57 | 12:39-13:35/56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 09:04-10:15/71 | 16:04 | 09:36-10:30/54 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 09:11-09:32/21 | 08:15 | 12:23-13:30/67 | 08:58 | 12:40-13:36/56 |
| | 22:00 | 20:59 | 19:40 | 18:25 | | 16:23 | 09:04-10:16/72 | 16:04 | 09:36-10:30/54 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 09:10-09:33/23 | 08:17 | 12:23-13:30/67 | 08:58 | 12:41-13:37/56 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 09:41-09:47/6 | 16:22 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 09:09-09:33/24 | 08:19 | 12:24-13:30/66 | 08:59 | 12:41-13:37/56 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 09:36-09:51/15 | 16:20 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 09:09-09:34/25 | 08:21 | 12:24-13:30/66 | 08:59 | 12:42-13:38/56 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 09:35-09:54/19 | 16:19 | 09:07-10:19/72 | 16:06 | 09:38-10:32/54 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 13:54-13:59/5 | 08:23 | 12:25-13:31/66 | 09:00 | 12:42-13:38/56 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 09:09-09:55/46 | 16:17 | 09:08-10:20/72 | 16:06 | 09:38-10:32/54 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 12:45-13:07/22 | 08:25 | 12:26-13:31/65 | 09:00 | 12:42-13:38/56 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 08:08-08:56/48 | 16:16 | 09:09-10:20/71 | 16:07 | 09:38-10:32/54 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 12:41-13:10/29 | 08:26 | 12:26-13:31/65 | 09:00 | 12:43-13:39/56 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 08:08-08:57/49 | 16:15 | 09:10-10:21/71 | 16:08 | 09:38-10:33/55 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 12:37-13:13/36 | 08:28 | 12:27-13:31/64 | 09:01 | 12:43-13:39/56 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 08:08-08:57/49 | 16:14 | 09:11-10:21/70 | 16:09 | 09:38-10:33/55 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 12:36-13:16/40 | 08:30 | 12:27-13:32/65 | 09:01 | 12:43-13:40/57 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 08:09-08:58/49 | 16:13 | 09:13-10:22/69 | 16:09 | 09:38-10:34/56 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 12:33-13:17/44 | 08:32 | 12:27-13:31/64 | 09:01 | 12:44-13:41/57 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 08:09-08:58/49 | 16:12 | 09:14-10:23/69 | 16:10 | 09:38-10:34/56 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 12:32-13:18/46 | 08:33 | 12:28-13:31/63 | 09:01 | 12:44-13:41/57 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 08:09-08:58/49 | 16:11 | 09:15-10:22/67 | 16:11 | 09:38-10:35/57 |
| 31 | 05:38 | 06:36 | | 07:34 | 12:30-13:20/50 | | | 09:01 | 12:45-13:42/57 |
| | 21:42 | 20:32 | | 17:00 | 08:10-08:58/48 | | | 16:12 | 09:38-10:36/58 |
| Potential sun hours | 521 | 465 | 383 | 326 | | 253 | | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 831 | | 3717 | | 3573 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 35 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:38-08:01/23 | 05:55 | 06:49-08:15/86 | 05:02 | 06:38-07:53/75 |
| | 16:14 | 17:08 | 18:07 | | 20:10 | | 21:09 | | 22:03 | |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:36-08:01/25 | 05:53 | 06:47-08:13/86 | 05:01 | 06:38-07:53/75 |
| | 16:15 | 17:10 | 18:09 | | 20:12 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:32-08:07/35 | 05:51 | 06:46-08:12/86 | 05:00 | 06:39-07:54/75 |
| | 16:16 | 17:12 | 18:12 | | 20:14 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:31-08:11/40 | 05:48 | 06:44-08:11/87 | 04:59 | 06:39-07:54/75 |
| | 16:17 | 17:14 | 18:14 | | 20:16 | | 21:15 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:29-08:13/44 | 05:46 | 06:43-08:09/86 | 04:58 | 06:39-07:53/74 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:28-08:16/48 | 05:44 | 06:42-08:08/86 | 04:57 | 06:40-07:54/74 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 07:20-07:26/6 | 21:18 | | 22:09 | |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:17-08:17/60 | 05:42 | 06:41-08:06/85 | 04:56 | 06:40-07:53/73 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:15-08:19/64 | 05:40 | 06:40-08:03/83 | 04:56 | 06:40-07:53/73 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | 07:12-08:19/67 | 05:38 | 06:39-08:01/82 | 04:55 | 06:41-07:53/72 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:10-08:20/70 | 05:36 | 06:39-07:57/78 | 04:54 | 06:41-07:53/72 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:13 | |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 07:09-08:20/71 | 05:34 | 06:39-07:53/74 | 04:54 | 06:41-07:53/72 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:09-08:21/72 | 05:32 | 06:38-07:53/75 | 04:53 | 06:42-07:54/72 |
| | 16:29 | 17:32 | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 07:09-08:21/72 | 05:30 | 06:37-07:53/76 | 04:53 | 06:43-07:54/71 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 07:08-08:22/74 | 05:28 | 06:37-07:53/76 | 04:53 | 06:42-07:53/71 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | 07:09-08:22/73 | 05:27 | 06:37-07:54/77 | 04:52 | 21:37-21:38/1 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 | 06:43-07:53/70 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:09-08:22/73 | 05:25 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 | 06:43-07:54/71 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 07:10-08:22/72 | 05:23 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 | 06:43-07:54/71 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:11-08:23/72 | 05:21 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:41 | | 22:18 | 06:44-07:54/70 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:11-08:22/71 | 05:20 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 | 06:44-07:54/70 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:10-08:22/72 | 05:18 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | | 21:44 | | 22:19 | 06:44-07:54/70 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 07:09-08:22/73 | 05:16 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | | 22:19 | 06:44-07:54/70 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 07:07-08:21/74 | 05:15 | 06:36-07:54/78 | 04:52 | 21:37-21:41/4 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 | 06:45-07:55/70 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 07:06-08:20/74 | 05:13 | 06:36-07:54/78 | 04:53 | 21:37-21:41/4 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 | 06:45-07:55/70 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 07:06-08:20/74 | 05:12 | 06:37-07:54/77 | 04:53 | 21:37-21:41/4 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | | 22:19 | 06:45-07:55/70 |
| 25 | 08:39 | 07:36 | 06:26 | 06:50-06:54/4 | 06:09 | 07:05-08:20/75 | 05:10 | 06:37-07:54/77 | 04:53 | 21:38-21:41/3 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 | 06:45-07:56/71 |
| 26 | 08:38 | 07:34 | 06:23 | 06:48-06:58/10 | 06:06 | 07:03-08:18/75 | 05:09 | 06:36-07:53/77 | 04:54 | 21:38-21:41/3 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 | 06:45-07:56/71 |
| 27 | 08:36 | 07:32 | 06:21 | 06:45-06:59/14 | 06:04 | 07:01-08:18/77 | 05:08 | 06:37-07:54/77 | 04:54 | 21:40-21:41/1 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 | 06:46-07:57/71 |
| 28 | 08:35 | 07:29 | 06:18 | 06:43-07:01/18 | 06:02 | 06:56-08:17/81 | 05:06 | 06:37-07:54/77 | 04:55 | 06:45-07:56/71 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 07:40-08:01/21 | 05:59 | 06:53-08:16/83 | 05:05 | 06:37-07:54/77 | 04:55 | 06:46-07:57/71 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 07:40-08:02/22 | 05:57 | 06:51-08:15/84 | 05:04 | 06:38-07:54/76 | 04:56 | 06:45-07:57/72 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:19 | |
| 31 | 08:29 | | 07:11 | 07:39-08:01/22 | | | 05:03 | 06:38-07:53/75 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 111 | | 1974 | | 2456 | | 2195 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Foninës VEWTG: 35 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:46-07:57/71 | 05:40 | 06:49-08:03/74 | 06:38 | 07:09-08:19/70 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 06:46-07:58/72 | 05:41 | 06:49-08:03/74 | 06:40 | 07:08-08:18/70 | 07:37 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 | 06:46-07:59/73 | 05:43 | 06:49-08:09/80 | 06:42 | 07:10-08:17/67 | 07:39 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 06:46-07:59/73 | 05:45 | 06:50-08:12/82 | 06:43 | 07:12-08:16/64 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 06:46-07:59/73 | 05:47 | 06:51-08:15/84 | 06:45 | 07:14-08:14/60 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 06:46-07:59/73 | 05:49 | 06:51-08:16/85 | 06:47 | 07:24-08:11/47 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | 07:16-07:22/6 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 06:46-07:59/73 | 05:51 | 06:52-08:18/86 | 06:49 | 07:24-08:09/45 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 06:46-08:00/74 | 05:52 | 06:53-08:19/86 | 06:51 | 07:25-08:06/41 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 06:46-08:00/74 | 05:54 | 06:53-08:20/87 | 06:53 | 07:26-08:01/35 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 06:46-08:00/74 | 05:56 | 06:54-08:21/87 | 06:55 | 07:29-07:54/25 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 06:47-08:02/75 | 05:58 | 06:56-08:22/86 | 06:57 | 07:31-07:54/23 | 07:54 | 07:57 | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:46-08:02/76 | 06:00 | 06:58-08:23/85 | 06:59 | 07:30-07:53/23 | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:46-08:02/76 | 06:02 | 06:59-08:23/84 | 07:00 | 07:30-07:52/22 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:46-08:02/76 | 06:04 | 07:01-08:24/83 | 07:02 | 07:31-07:51/20 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:46-08:02/76 | 06:06 | 07:05-08:25/80 | 07:04 | 07:32-07:50/18 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:46-08:03/77 | 06:07 | 07:11-08:25/74 | 07:06 | 07:34-07:49/15 | 08:04 | 08:07 | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:46-08:03/77 | 06:09 | 07:11-08:26/75 | 07:08 | 07:36-07:47/11 | 08:06 | 08:09 | 08:56 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:46-08:03/77 | 06:11 | 07:11-08:25/74 | 07:10 | 07:38-07:44/6 | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:46-08:04/78 | 06:13 | 07:11-08:26/75 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:46-08:04/78 | 06:15 | 07:12-08:26/74 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:47-08:04/77 | 06:17 | 07:13-08:26/73 | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:46-08:04/78 | 06:19 | 07:13-08:25/72 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:47-08:05/78 | 06:21 | 07:14-08:26/72 | 07:19 | | 08:18 | 08:21 | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:47-08:04/77 | 06:23 | 07:15-08:25/70 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 | 06:47-08:05/78 | 06:25 | 07:14-08:25/71 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:47-08:04/77 | 06:26 | 07:13-08:25/72 | 07:25 | | 07:24 | 08:27 | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:47-08:04/77 | 06:28 | 07:11-08:24/73 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:47-08:04/77 | 06:30 | 07:10-08:23/73 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:48-08:04/76 | 06:32 | 07:09-08:23/74 | 07:31 | | 07:31 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-08:04/76 | 06:34 | 07:09-08:22/73 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-08:03/75 | 06:36 | 07:09-08:21/72 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 2342 | | 2410 | | 668 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:04-15:46/42 | 07:26 | | 07:07 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:04-15:46/42 | 07:24 | | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:04-15:46/42 | 07:21 | | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:04-15:46/42 | 07:19 | | 07:00 | 05:48 | 04:58 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:05-15:46/41 | 07:16 | 17:22-17:35/13 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:05-15:46/41 | 07:14 | 17:20-17:39/19 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:06-15:46/40 | 07:11 | 17:17-17:40/23 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:20 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:57 | | 08:14 | 15:07-15:46/39 | 07:09 | 17:16-17:42/26 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:06-15:45/39 | 07:06 | 17:14-17:42/28 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:07-15:45/38 | 07:04 | 17:14-17:43/29 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:09-15:44/35 | 07:01 | 17:13-17:43/30 | 06:42 | 05:34 | 04:54 |
| | 16:27 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:10-15:44/34 | 06:59 | 17:11-17:43/32 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 15:15-15:23/8 | 08:03 | 15:10-15:42/32 | 06:56 | 17:11-17:44/33 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | 15:13-15:26/13 | 08:01 | 15:12-15:41/29 | 06:54 | 17:11-17:43/32 | 06:35 | 05:28 | 04:52 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 15:12-15:29/17 | 07:59 | 15:14-15:40/26 | 06:51 | 17:11-17:43/32 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 15:11-15:31/20 | 07:57 | 15:16-15:37/21 | 06:49 | 17:10-17:43/33 | 06:30 | 05:24 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | 15:09-15:32/23 | 07:54 | 15:19-15:34/15 | 06:46 | 17:10-17:42/32 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | 15:09-15:34/25 | 07:52 | | 06:43 | 17:11-17:41/30 | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | 15:08-15:35/27 | 07:50 | | 06:41 | 17:11-17:40/29 | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 15:07-15:37/30 | 07:48 | | 06:38 | 17:12-17:39/27 | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | 15:06-15:38/32 | 07:45 | | 06:36 | 17:13-17:38/25 | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:07-15:40/33 | 07:43 | | 06:33 | 17:15-17:36/21 | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:50 | 21:47 | 22:18 |
| 23 | 08:42 | 15:06-15:40/34 | 07:41 | | 06:31 | 17:16-17:34/18 | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:05-15:41/36 | 07:38 | | 06:28 | 17:19-17:30/11 | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:06-15:43/37 | 07:36 | | 06:25 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:05-15:43/38 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:53 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:05-15:44/39 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:04-15:44/40 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:04-15:45/41 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:04-15:45/41 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:04-15:45/41 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 575 | | 598 | | 523 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:56 | 05:39 | 06:37 | 07:34 17:51-18:23/32 | 07:36 14:37-15:14/37 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 17:51-18:22/31 | 07:38 14:36-15:15/39 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:52-18:22/30 | 07:40 14:36-15:16/40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:52-18:21/29 | 07:42 14:36-15:16/40 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:52-18:18/26 | 07:44 14:35-15:16/41 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:53-18:17/24 | 07:46 14:35-15:16/41 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:54-18:15/21 | 07:49 14:35-15:17/42 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:57-18:13/16 | 07:51 14:35-15:17/42 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:52 | 07:50 18:00-18:09/9 | 07:53 14:35-15:17/42 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 14:35-15:16/41 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 14:36-15:17/41 | 08:49 |
| | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 14:36-15:17/41 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 14:36-15:16/40 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 14:36-15:16/40 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 14:38-15:17/39 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 14:38-15:16/38 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 14:38-15:15/37 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 14:39-15:15/36 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 18:07-18:16/9 | 08:10 | 08:13 14:40-15:14/34 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 18:03-18:20/17 | 08:12 | 08:15 14:42-15:15/33 | 08:57 |
| | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 18:01-18:21/20 | 08:14 | 08:17 14:42-15:14/32 | 08:58 |
| | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 17:58-18:22/24 | 08:16 | 08:18 14:43-15:13/30 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 17:56-18:23/27 | 08:18 | 08:20 14:45-15:12/27 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 17:55-18:23/28 | 08:20 15:53-16:00/7 | 08:22 14:46-15:12/26 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 17:54-18:24/30 | 07:22 14:48-15:05/17 | 08:24 14:47-15:11/24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 17:53-18:24/31 | 07:24 14:46-15:08/22 | 08:26 14:49-15:10/21 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 17:52-18:24/32 | 07:26 14:43-15:10/27 | 08:28 14:51-15:08/17 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 17:52-18:24/32 | 07:28 14:41-15:11/30 | 08:29 14:53-15:07/14 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 17:51-18:24/33 | 07:30 14:40-15:12/32 | 08:31 14:56-15:04/8 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 17:51-18:24/33 | 07:32 14:39-15:13/34 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:37 | 06:35 | | 07:34 14:38-15:14/36 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 316 | 423 | 983 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 37 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:29-12:48/19 10:05-10:33/28 | 08:28 09:38-09:41/3 | 07:27 | 07:08 | 05:55 19:22-20:00/38 | 05:02 |
| | 16:14 11:47-12:28/41 | 17:08 08:58-09:02/4 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 12:29-12:47/18 10:05-10:33/28 | 08:26 08:55-09:06/11 | 07:24 | 07:05 | 05:53 19:22-20:00/38 | 05:01 |
| | 16:15 11:48-12:28/40 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 12:31-12:47/16 10:06-10:34/28 | 08:24 08:53-09:07/14 | 07:22 | 07:03 | 05:51 19:22-19:59/37 | 05:00 |
| | 16:16 11:49-12:28/39 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 12:32-12:46/14 10:06-10:34/28 | 08:22 08:52-09:09/17 | 07:19 | 07:00 | 05:49 19:23-19:59/36 | 04:59 |
| | 16:18 11:50-12:28/38 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 12:34-12:46/12 10:07-10:35/28 | 08:20 08:52-09:10/18 | 07:17 | 06:58 | 05:46 19:23-19:58/35 | 04:58 |
| | 16:19 11:52-12:28/36 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 12:36-12:44/8 10:07-10:35/28 | 08:18 08:51-09:11/20 | 07:14 | 06:55 | 05:44 19:24-19:58/34 | 04:57 |
| | 16:20 11:53-12:28/35 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 11:55-12:27/32 | 08:16 08:45-09:12/27 | 07:12 | 06:53 | 05:42 19:24-19:57/33 | 04:56 |
| | 16:22 10:08-10:35/27 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 12:05-12:27/22 | 08:14 08:42-09:11/29 | 07:09 | 06:50 | 05:40 19:25-19:56/31 | 04:56 |
| | 16:23 10:08-10:35/27 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 12:06-12:26/20 09:33-09:34/1 | 08:12 08:40-09:12/32 | 07:07 | 06:48 | 05:38 19:25-19:55/30 | 04:55 |
| | 16:25 10:09-10:36/27 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 12:09-12:27/18 09:32-09:38/6 | 08:10 08:38-09:12/34 | 07:04 | 06:45 | 05:36 19:26-19:53/27 | 04:55 |
| | 16:26 10:10-10:37/27 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 12:09-12:25/16 09:31-09:39/8 | 08:08 08:36-09:12/36 | 07:02 | 06:43 | 05:34 19:28-19:53/25 | 04:54 |
| | 16:28 10:10-10:37/27 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:12-12:23/11 09:29-09:40/11 | 08:06 08:33-09:11/38 | 06:59 | 06:40 19:54-20:03/9 | 05:32 19:30-19:51/21 | 04:54 |
| | 16:30 10:10-10:36/26 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:16-12:20/4 09:28-09:41/13 | 08:04 08:31-09:11/40 | 06:57 | 06:38 19:51-20:04/13 | 05:30 19:31-19:49/18 | 04:53 |
| | 16:31 10:11-10:37/26 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 10:12-10:37/25 | 08:02 08:31-09:10/39 | 06:54 | 06:35 19:50-20:06/16 | 05:29 19:33-19:47/14 | 04:53 |
| | 16:33 09:27-09:43/16 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 10:13-10:37/24 | 07:59 08:30-09:08/38 | 06:52 | 06:33 19:39-20:07/28 | 05:27 19:37-19:44/7 | 04:53 |
| | 16:35 09:27-09:44/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 10:13-10:36/23 | 07:57 08:30-09:07/37 | 06:49 | 06:30 19:35-20:07/32 | 05:25 | 04:52 |
| | 16:36 09:26-09:44/18 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 10:14-10:36/22 | 07:55 08:59-09:04/5 | 06:47 | 06:28 19:32-20:08/36 | 05:23 | 04:52 |
| | 16:38 09:26-09:45/19 | 17:42 08:31-08:56/25 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 10:15-10:37/22 | 07:53 08:30-08:55/25 | 06:44 | 06:25 19:30-20:07/37 | 05:21 | 04:52 |
| | 16:40 09:27-09:47/20 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 10:16-10:35/19 | 07:50 08:31-08:54/23 | 06:41 18:11-18:17/6 | 06:23 19:28-20:07/39 | 05:20 | 04:52 |
| | 16:42 09:26-09:47/21 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 10:18-10:35/17 | 07:48 08:33-08:52/19 | 06:39 18:08-18:18/10 | 06:20 19:27-20:07/40 | 05:18 | 04:52 |
| | 16:44 09:27-09:48/21 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:19-10:34/15 | 07:46 08:33-08:45/12 | 06:36 18:07-18:21/14 | 06:18 19:26-20:06/40 | 05:16 | 04:52 |
| | 16:46 09:26-09:48/22 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:21-10:32/11 | 07:44 08:36-08:43/7 | 06:34 18:06-18:22/16 | 06:16 19:25-20:05/40 | 05:15 | 04:52 |
| | 16:48 09:26-09:48/22 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:25-10:30/5 | 07:41 | 06:31 18:05-18:22/17 | 06:13 19:24-20:04/40 | 05:13 | 04:53 |
| | 16:50 09:27-09:49/22 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:27-09:49/22 | 07:39 | 06:29 18:05-18:23/18 | 06:11 19:24-20:02/38 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 09:28-09:48/20 | 07:36 | 06:26 18:04-18:22/18 | 06:09 19:23-20:01/38 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:29-09:49/20 | 07:34 | 06:23 18:05-18:22/17 | 06:06 19:22-20:00/38 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:29-09:49/20 | 07:32 | 06:21 18:05-18:20/15 | 06:04 19:22-20:00/38 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:30-09:48/18 | 07:29 | 06:18 18:06-18:18/12 | 06:02 19:22-20:00/38 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:31-09:47/16 | | 07:16 19:09-19:16/7 | 06:00 19:22-20:00/38 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:32-09:46/14 | | 07:13 | 05:57 19:22-20:00/38 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:29 09:34-09:45/11 | | 07:11 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1355 | 553 | 150 | 636 | 424 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 37 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 19:39-20:02/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:08-08:42/34<br>16:58 | 08:35 11:52-12:07/15 09:13-09:22/9<br>16:10 09:51-10:18/27 |
| 2 | 04:58<br>22:18 | 05:41 19:38-20:04/26<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:10-08:41/31<br>16:56 | 08:37 11:51-12:09/18 09:14-09:20/6<br>16:09 09:52-10:19/27 |
| 3 | 04:58<br>22:17 | 05:43 19:36-20:04/28<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:12-08:41/29<br>16:54 | 08:38 11:50-12:10/20 09:16-09:18/2<br>16:08 09:52-10:20/28 |
| 4 | 04:59<br>22:17 | 05:45 19:35-20:05/30<br>21:34 | 06:44<br>20:22 | 07:40<br>19:04 | 07:43 08:21-08:41/20<br>16:52 08:15-08:20/5 | 08:40 11:50-12:12/22<br>16:08 09:53-10:20/27 |
| 5 | 05:00<br>22:16 | 05:47 19:35-20:06/31<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 08:21-08:41/20<br>16:50 | 08:41 11:40-12:12/32<br>16:07 09:53-10:20/27 |
| 6 | 05:01<br>22:15 | 05:49 19:33-20:06/33<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 08:22-08:40/18<br>16:48 | 08:43 12:23-12:30/7 09:53-10:21/28<br>16:06 11:39-12:14/35 |
| 7 | 05:02<br>22:15 | 05:51 19:33-20:07/34<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 08:22-08:39/17<br>16:46 | 08:44 12:21-12:32/11 09:53-10:21/28<br>16:06 11:38-12:14/36 |
| 8 | 05:03<br>22:14 | 05:52 19:32-20:08/36<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:24-08:38/14<br>16:44 | 08:46 12:20-12:34/14 09:54-10:22/28<br>16:05 11:38-12:16/38 |
| 9 | 05:04<br>22:13 | 05:54 19:31-20:07/36<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 08:26-08:36/10<br>16:42 | 08:47 12:19-12:35/16 09:54-10:22/28<br>16:05 11:37-12:16/39 |
| 10 | 05:06<br>22:12 | 05:56 19:31-20:08/37<br>21:21 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 09:08-09:13/5<br>16:40 08:30-08:32/2 | 08:48 12:20-12:37/17 09:55-10:23/28<br>16:04 11:38-12:18/40 |
| 11 | 05:07<br>22:11 | 05:58 19:30-20:08/38<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:05-09:16/11<br>16:38 | 08:49 12:19-12:38/19 09:56-10:23/27<br>16:04 11:37-12:18/41 |
| 12 | 05:08<br>22:10 | 06:00 19:30-20:09/39<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:04-09:18/14<br>16:36 | 08:51 11:37-12:39/62<br>16:04 09:56-10:23/27 |
| 13 | 05:09<br>22:09 | 06:02 19:29-20:08/39<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 09:03-09:19/16<br>16:34 | 08:52 11:37-12:39/62<br>16:04 09:56-10:23/27 |
| 14 | 05:11<br>22:08 | 06:04 19:29-20:08/39<br>21:13 | 07:02 19:00-19:05/5<br>19:56 | 08:00<br>18:39 | 08:03 09:02-09:20/18<br>16:33 | 08:53 11:37-12:40/63<br>16:04 09:57-10:24/27 |
| 15 | 05:12<br>22:07 | 06:06 19:29-20:08/39<br>21:10 | 07:04 18:57-19:08/11<br>19:54 | 08:02<br>18:37 | 08:05 09:01-09:21/20<br>16:31 | 08:54 11:37-12:41/64<br>16:04 09:57-10:24/27 |
| 16 | 05:14<br>22:06 | 06:08 19:29-20:08/39<br>21:08 | 07:06 18:55-19:09/14<br>19:51 | 08:04<br>18:35 | 08:07 09:02-09:22/20<br>16:29 | 08:55 11:37-12:42/65<br>16:04 09:58-10:24/26 |
| 17 | 05:15<br>22:04 | 06:09 19:30-20:08/38<br>21:06 | 07:08 18:54-19:10/16<br>19:48 | 08:06<br>18:32 | 08:09 09:02-09:22/20<br>16:28 | 08:56 11:38-12:42/64<br>16:04 09:58-10:25/27 |
| 18 | 05:16<br>22:03 | 06:11 19:29-20:06/37<br>21:03 | 07:10 18:52-19:09/17<br>19:46 | 08:08<br>18:30 | 08:11 09:01-09:23/22<br>16:26 | 08:56 11:38-12:43/65<br>16:04 09:59-10:26/27 |
| 19 | 05:18<br>22:02 | 06:13 19:29-20:08/39<br>21:01 | 07:12 18:52-19:09/17<br>19:43 | 08:10<br>18:27 | 08:13 09:59-10:04/5<br>16:25 09:01-09:23/22 | 08:57 11:39-12:44/65<br>16:04 10:00-10:26/26 |
| 20 | 05:19<br>22:00 | 06:15 19:30-20:09/39<br>20:59 | 07:14 18:51-19:09/18<br>19:41 | 08:12 09:05-09:14/9<br>18:25 | 08:15 09:56-10:07/11<br>16:23 09:01-09:23/22 | 08:58 11:39-12:44/65<br>16:05 10:00-10:26/26 |
| 21 | 05:21<br>21:59 | 06:17 19:30-20:10/40<br>20:56 | 07:16 18:51-19:09/18<br>19:38 | 08:14 09:03-09:19/16<br>18:23 | 08:17 09:55-10:10/15<br>16:22 09:03-09:24/21 | 08:58 11:40-12:45/65<br>16:05 10:00-10:27/27 |
| 22 | 05:23<br>21:57 | 06:19 19:30-20:10/40<br>20:54 | 07:18 18:52-19:06/14<br>19:35 | 08:16 09:02-09:23/21<br>18:20 | 08:19 09:54-10:11/17<br>16:20 09:03-09:24/21 | 08:59 11:40-12:45/65<br>16:05 10:00-10:27/27 |
| 23 | 05:24<br>21:56 | 06:21 19:31-20:10/39<br>20:52 | 07:19 18:52-19:04/12<br>19:33 | 08:18 09:01-09:25/24<br>18:18 | 08:21 09:53-10:13/20<br>16:19 09:03-09:24/21 | 09:00 11:41-12:46/65<br>16:06 10:02-10:28/26 |
| 24 | 05:26<br>21:54 | 06:23 19:32-20:11/39<br>20:49 | 07:21 18:54-19:01/7<br>19:30 | 08:20 09:01-09:25/24<br>18:16 | 08:23 09:52-10:14/22<br>16:18 09:04-09:24/20 | 09:00 11:41-12:46/65<br>16:07 10:02-10:28/26 |
| 25 | 05:28<br>21:52 | 06:25 19:34-20:11/37<br>20:47 | 07:23 18:56-18:59/3<br>19:28 | 07:22 08:27-08:34/7<br>17:13 08:00-08:26/26 | 08:25 09:52-10:14/22<br>16:16 09:04-09:23/19 | 09:00 11:41-12:46/65<br>16:07 10:02-10:28/26 |
| 26 | 05:29<br>21:51 | 06:26 19:35-20:10/35<br>20:44 | 07:25<br>19:25 | 07:24 08:00-08:37/37<br>17:11 | 08:27 09:52-10:15/23<br>16:15 09:05-09:23/18 | 09:01 11:43-12:47/64<br>16:08 10:03-10:30/27 |
| 27 | 05:31<br>21:49 | 06:28 19:37-20:09/32<br>20:42 | 07:27<br>19:22 | 07:26 08:00-08:39/39<br>17:09 | 08:28 09:52-10:16/24<br>16:14 09:06-09:23/17 | 09:01 11:43-12:48/65<br>16:09 10:03-10:30/27 |
| 28 | 05:33<br>21:47 | 06:30 19:40-20:08/28<br>20:39 | 07:29<br>19:20 | 07:28 08:00-08:40/40<br>17:07 | 08:30 09:52-10:17/25<br>16:13 09:07-09:23/16 | 09:01 11:44-12:48/64<br>16:10 10:04-10:31/27 |
| 29 | 05:34 19:46-19:56/10<br>21:45 | 06:32 19:51-20:07/16<br>20:37 | 07:31<br>19:17 | 07:31 08:01-08:40/39<br>17:04 | 08:32 11:57-12:01/4 09:09-09:23/14<br>16:12 09:52-10:18/26 | 09:01 11:45-12:48/63<br>16:10 10:04-10:31/27 |
| 30 | 05:36 19:43-19:59/16<br>21:44 | 06:34 19:52-20:05/13<br>20:34 | 07:33<br>19:15 | 07:33 08:03-08:41/38<br>17:02 | 08:34 11:54-12:05/11 09:11-09:22/11<br>16:11 09:52-10:18/26 | 09:01 11:45-12:47/62<br>16:11 10:04-10:31/27 |
| 31 | 05:38 19:41-20:01/20<br>21:42 | 06:36 19:54-20:03/9<br>20:32 | | 07:35 08:06-08:42/36<br>17:00 | | 09:01 11:46-12:48/62<br>16:12 10:05-10:32/27 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 46 | 1028 | 152 | 356 | 819 | 2554 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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+8 621 66746
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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 38 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:50-10:11/21 | 08:28 | 07:27 | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 09:38-09:49/11 | 17:08 | 18:07 | | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 09:50-10:11/21 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 09:37-09:49/12 | 17:10 | 18:10 | | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 09:37-10:12/35 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:12 | 18:12 | | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 09:36-10:12/36 | 08:22 | 07:19 | | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 18:14 | | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 09:36-10:13/37 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 18:16 | | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 | 09:35-10:13/38 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 18:18 | | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 | 09:34-10:13/39 | 08:16 | 07:12 | 17:33-17:45/12 | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 18:20 | | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 | 09:33-10:14/41 | 08:14 | 07:09 | 17:30-17:47/17 | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 18:22 | | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 | 09:33-10:15/42 | 08:12 | 07:07 | 17:29-17:49/20 | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 18:24 | | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 | 09:32-10:15/43 | 08:10 | 07:04 | 17:27-17:49/22 | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 18:26 | | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 | 09:31-10:15/44 | 08:08 | 07:02 | 17:26-17:51/25 | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 18:28 | | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 09:29-10:14/45 | 08:06 | 06:59 | 17:25-17:51/26 | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 18:30 | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 09:28-10:14/46 | 08:04 | 06:57 | 17:24-17:51/27 | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 18:32 | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | 09:28-10:14/46 | 08:02 | 06:54 | 17:24-17:51/27 | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 18:34 | | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 | 09:59-10:14/15 | 07:59 | 06:52 | 17:23-17:51/28 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 09:28-09:58/30 | 17:38 | 18:36 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 09:59-10:13/14 | 07:57 | 06:49 | 17:23-17:51/28 | 06:30 | 05:25 | 04:52 |
| | 16:37 | 09:28-09:58/30 | 17:40 | 18:38 | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 10:01-10:13/12 | 07:55 | 06:47 | 17:23-17:50/27 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 09:28-09:58/30 | 17:42 | 18:40 | | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 10:03-10:12/9 | 07:53 | 06:44 | 17:23-17:49/26 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 09:29-09:59/30 | 17:44 | 18:42 | | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 09:28-09:58/30 | 07:50 | 06:41 | 17:24-17:48/24 | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 18:44 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 09:29-09:59/30 | 07:48 | 06:39 | 17:24-17:47/23 | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 18:46 | | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 09:29-09:58/29 | 07:46 | 06:36 | 17:26-17:46/20 | 06:18 | 05:17 | 04:52 |
| | 16:46 | | 17:51 | 18:48 | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 09:30-09:57/27 | 07:44 | 06:34 | 17:27-17:43/16 | 06:16 | 05:15 | 04:53 |
| | 16:48 | | 17:53 | 18:50 | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 09:31-09:57/26 | 07:41 | 06:31 | 17:29-17:40/11 | 06:13 | 05:13 | 04:53 |
| | 16:50 | | 17:55 | 18:52 | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 09:31-09:55/24 | 07:39 | 06:29 | | 06:11 | 05:12 | 04:53 |
| | 16:52 | | 17:57 | 18:54 | | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 09:49-09:52/3 | 07:36 | 06:26 | | 06:09 | 05:11 | 04:53 |
| | 16:54 | 09:32-09:47/15 | 17:59 | 18:56 | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 09:34-09:47/13 | 07:34 | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:56 | | 18:01 | 18:58 | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 09:36-09:46/10 | 07:32 | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | | 18:03 | 19:00 | | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | 09:38-09:43/5 | 07:29 | 06:18 | | 06:02 | 05:06 | 04:55 |
| | 17:00 | | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:16 | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:29 | | | 07:11 | | | 05:03 | |
| | 17:06 | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | | 939 | 0 | | 379 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 38 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 18:03-18:30/27 | 07:37 | 08:35 09:13-09:56/43 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 18:04-18:29/25 | 07:39 | 08:37 09:14-09:57/43 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 18:04-18:28/24 | 07:41 | 08:38 09:16-09:58/42 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 18:05-18:26/21 | 07:43 | 08:40 09:18-09:59/41 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 18:06-18:25/19 | 07:45 | 08:41 09:19-09:59/40 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 18:08-18:22/14 | 07:47 | 08:43 09:21-09:59/38 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 18:11-18:18/7 | 07:49 | 08:44 09:22-09:59/37 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 09:24-10:00/36 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 09:25-10:00/35 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 09:27-10:01/34 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 09:40-10:01/21 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-09:39/11 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 09:41-10:02/21 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:29-09:39/10 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 09:41-10:02/21 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:30-09:39/9 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:10-09:15/5 | 08:53 09:41-10:02/21 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 09:31-09:39/8 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 09:07-09:18/11 | 08:54 09:43-10:04/21 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 09:33-09:40/7 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 09:07-09:20/13 | 08:55 09:42-10:03/21 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 09:33-09:39/6 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 09:23-09:26/3 | 08:56 09:43-10:04/21 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 09:06-09:21/15 | 16:04 09:34-09:39/5 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 09:05-09:29/24 | 08:56 09:44-10:04/20 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:35-09:40/5 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 09:05-09:31/26 | 08:57 09:45-10:05/20 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 09:36-09:40/4 |
| 20 | 05:19 | 06:15 | 07:14 18:16-18:26/10 | 08:12 | 08:15 09:05-09:32/27 | 08:58 09:44-10:05/21 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 09:36-09:40/4 |
| 21 | 05:21 | 06:17 | 07:16 18:13-18:28/15 | 08:14 | 08:17 09:05-09:34/29 | 08:58 09:45-10:06/21 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 09:37-09:41/4 |
| 22 | 05:23 | 06:19 | 07:18 18:11-18:30/19 | 08:16 | 08:19 09:05-09:35/30 | 08:59 09:46-10:07/21 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:38-09:42/4 |
| 23 | 05:24 | 06:21 | 07:19 18:09-18:31/22 | 08:18 | 08:21 09:06-09:35/29 | 09:00 09:46-10:07/21 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 09:38-09:42/4 |
| 24 | 05:26 | 06:23 | 07:21 18:08-18:32/24 | 08:20 | 08:23 09:41-09:49/8 | 09:00 09:46-10:07/21 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 09:06-09:36/30 | 16:07 09:38-09:42/4 |
| 25 | 05:28 | 06:25 | 07:23 18:07-18:32/25 | 07:22 | 08:25 09:39-09:51/12 | 09:00 09:47-10:07/20 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 09:06-09:36/30 | 16:07 09:38-09:43/5 |
| 26 | 05:29 | 06:26 | 07:25 18:06-18:32/26 | 07:24 | 08:27 09:38-09:52/14 | 09:01 09:48-10:08/20 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 09:07-09:37/30 | 16:08 09:39-09:44/5 |
| 27 | 05:31 | 06:28 | 07:27 18:04-18:32/28 | 07:26 | 08:28 09:38-09:53/15 | 09:01 09:48-10:09/21 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:07-09:37/30 | 16:09 09:39-09:45/6 |
| 28 | 05:33 | 06:30 | 07:29 18:04-18:31/27 | 07:28 | 08:30 09:08-09:54/46 | 09:01 09:49-10:09/20 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 09:39-09:46/7 |
| 29 | 05:34 | 06:32 | 07:31 18:03-18:31/28 | 07:31 | 08:32 09:09-09:55/46 | 09:01 09:49-10:10/21 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 09:39-09:47/8 |
| 30 | 05:36 | 06:34 | 07:33 18:03-18:31/28 | 07:33 | 08:34 09:11-09:56/45 | 09:01 09:49-10:10/21 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 09:38-09:47/9 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 09:49-10:10/21 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 09:38-09:48/10 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 252 | 137 | 518 | 960 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 39 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 18:08-18:22/14 | 07:37 15:35-16:05/30 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 16:17-16:22/5 | 07:24 17:34-17:42/8 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 18:06-18:23/17 | 07:39 15:35-16:04/29 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 16:13-16:26/13 | 07:22 17:31-17:43/12 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 18:05-18:23/18 | 07:41 15:36-16:03/27 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 16:11-16:29/18 | 07:19 17:30-17:46/16 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 18:04-18:24/20 | 07:43 15:36-16:02/26 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 16:09-16:31/22 | 07:17 17:29-17:47/18 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:04-18:24/20 | 07:45 15:38-16:02/24 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 16:08-16:32/24 | 07:14 17:27-17:47/20 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 18:03-18:23/20 | 07:47 15:39-16:00/21 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 16:07-16:32/25 | 07:12 17:27-17:47/20 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 18:03-18:23/20 | 07:49 15:41-15:58/17 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 16:06-16:34/28 | 07:09 17:27-17:47/20 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 18:03-18:22/19 | 07:51 15:44-15:57/13 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 16:06-16:35/29 | 07:07 17:27-17:47/20 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 18:04-18:21/17 | 07:53 15:49-15:52/3 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 16:05-16:35/30 | 07:04 17:27-17:46/19 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 18:05-18:19/14 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 16:05-16:36/31 | 07:02 17:28-17:45/17 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 18:06-18:16/10 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 16:04-16:36/32 | 06:59 17:28-17:44/16 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 18:09-18:14/5 | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 16:04-16:36/32 | 06:57 17:29-17:41/12 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 16:04-16:37/33 | 06:54 17:33-17:38/5 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 16:04-16:36/32 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 16:04-16:36/32 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 16:05-16:36/31 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 16:47-16:57/10 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 16:05-16:35/30 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 16:43-17:00/17 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 16:06-16:35/29 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 16:41-17:01/20 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 16:06-16:33/27 | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 16:39-17:03/24 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 16:07-16:33/26 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 16:37-17:03/26 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 16:09-16:32/23 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 16:36-17:04/28 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 16:10-16:30/20 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 16:36-17:05/29 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 16:13-16:28/15 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 16:35-17:06/31 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 16:17-16:22/5 | 06:26 | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 15:34-16:06/32 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 15:34-16:06/32 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 15:33-16:06/33 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 15:34-16:06/32 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 15:34-16:06/32 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 18:10-18:20/10 | 07:33 15:34-16:05/31 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 15:34-16:05/31 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 592 | 203 | 0 | 0 | 0 | 0 | 0 | 10 | 602 | 190 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 40 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 10:06-10:25/19 | 08:28 | 07:27 17:35-17:39/4 | 07:08 19:07-19:31/24 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 17:50-18:33/43 | 21:09 | 22:02 |
| 2 | 09:01 10:06-10:25/19 | 08:26 | 07:24 17:32-17:42/10 | 07:05 19:07-19:31/24 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 17:52-18:32/40 | 21:11 | 22:04 |
| 3 | 09:00 10:07-10:25/18 | 08:24 | 07:22 17:30-17:43/13 | 07:03 19:06-19:30/24 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:14 17:52-18:31/39 | 21:13 | 22:05 |
| 4 | 09:00 10:07-10:25/18 | 08:22 | 07:19 17:29-17:46/17 | 07:00 19:07-19:29/22 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:16 17:54-18:30/36 | 21:15 | 22:06 |
| 5 | 09:00 10:08-10:26/18 | 08:20 | 07:17 17:28-17:46/18 | 06:58 19:07-19:28/21 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:18 17:55-18:27/32 | 21:17 | 22:07 |
| 6 | 08:59 10:09-10:25/16 | 08:18 | 07:14 17:27-17:46/19 | 06:55 19:08-19:27/19 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 17:57-18:26/29 | 21:18 | 22:09 |
| 7 | 08:59 10:10-10:25/15 | 08:16 | 07:12 17:27-17:46/19 | 06:53 19:09-19:25/16 | 05:42 | 04:56 |
| | 16:22 | 17:21 | 18:20 | 20:21 17:58-18:23/25 | 21:20 | 22:10 |
| 8 | 08:58 10:10-10:25/15 | 08:14 | 07:09 17:48-17:54/6 | 06:50 19:11-19:23/12 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 17:26-17:46/20 | 20:23 18:02-18:20/18 | 21:22 | 22:11 |
| 9 | 08:57 10:12-10:25/13 | 08:12 | 07:07 17:47-17:56/9 | 06:48 19:15-19:17/2 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 17:27-17:46/19 | 20:25 18:06-18:14/8 | 21:24 | 22:12 |
| 10 | 08:57 10:14-10:25/11 | 08:10 | 07:04 17:45-17:58/13 17:09-17:26/17 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 17:27-17:44/17 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 10:15-10:24/9 | 08:08 | 07:02 17:44-18:01/17 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 17:06-17:43/37 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 10:17-10:22/5 | 08:06 | 06:59 17:43-18:02/19 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 17:03-17:41/38 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:42-18:04/22 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 17:00-17:38/38 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 06:54 17:43-18:07/24 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 16:59-17:35/36 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 17:43-18:08/25 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 16:57-17:36/39 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 17:44-18:11/27 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 | 18:38 16:56-17:37/41 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:47 17:44-18:13/29 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 16:54-17:37/43 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 17:46-18:14/28 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 16:53-17:38/45 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 17:51-18:15/24 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 16:53-17:39/46 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 17:52-18:15/23 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 16:51-17:38/47 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 06:36 17:54-18:15/21 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 16:51-17:39/48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 17:56-18:14/18 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 16:50-17:39/49 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 17:56-18:13/17 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 16:49-17:38/49 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:29 18:22-18:27/5 16:50-17:39/49 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 17:57-18:12/15 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 18:17-18:28/11 16:49-17:38/49 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 17:58-18:10/12 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 18:14-18:31/17 16:49-17:38/49 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 18:01-18:07/6 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 06:21 18:12-18:32/20 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 16:49-17:37/48 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | 07:29 | 06:18 18:10-18:32/22 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 16:49-17:37/48 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 19:09-19:33/24 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 17:49-18:36/47 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 19:08-19:32/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 17:49-18:35/46 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:11 19:08-19:32/24 | | 05:03 | |
| | 17:06 | | 20:08 17:50-18:35/45 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 176 | 0 | 1612 | 434 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 09:50/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Foninës VEWTG: 40 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 18:22-18:42/20 | 07:37 | 08:35 09:56-10:05/9 |
| | 22:18 | 21:40 | 20:29 | 19:12 17:41-18:19/38 | 16:58 | 16:10 |
| 2 | 04:58 | 05:41 | 06:40 | 07:37 18:22-18:40/18 | 07:39 | 08:37 09:56-10:07/11 |
| | 22:18 | 21:38 | 20:27 | 19:10 17:43-18:21/38 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 19:14-19:15/1 | 07:39 17:46-18:37/51 | 07:41 | 08:38 09:55-10:08/13 |
| | 22:17 | 21:36 | 20:24 18:04-18:12/8 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 19:08-19:20/12 | 07:40 18:23-18:35/12 17:50-18:01/11 | 07:43 | 08:40 09:55-10:10/15 |
| | 22:17 | 21:34 | 20:22 17:59-18:17/18 | 19:04 18:04-18:22/18 | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 19:06-19:22/16 | 07:42 18:24-18:32/8 | 07:45 | 08:41 09:55-10:10/15 |
| | 22:16 | 21:32 | 20:19 17:56-18:20/24 | 19:02 18:03-18:23/20 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 19:04-19:22/18 | 07:44 18:27-18:29/2 | 07:47 | 08:43 09:55-10:12/17 |
| | 22:15 | 21:30 | 20:17 17:52-18:21/29 | 18:59 18:03-18:22/19 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 19:02-19:23/21 | 07:46 18:03-18:22/19 | 07:49 | 08:44 09:55-10:12/17 |
| | 22:15 | 21:28 | 20:14 17:50-18:22/32 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 19:01-19:24/23 | 07:48 18:03-18:22/19 | 07:51 | 08:46 09:55-10:13/18 |
| | 22:14 | 21:26 | 20:12 17:48-18:24/36 | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 19:01-19:24/23 | 07:50 18:03-18:21/18 | 07:53 | 08:47 09:55-10:13/18 |
| | 22:13 | 21:24 | 20:09 17:46-18:25/39 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 19:00-19:24/24 | 07:52 18:03-18:19/16 | 07:55 | 08:48 09:56-10:15/19 |
| | 22:12 | 21:21 | 20:07 17:45-18:26/41 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 19:00-19:24/24 | 07:54 18:04-18:16/12 | 07:57 | 08:49 09:56-10:15/19 |
| | 22:11 | 21:19 | 20:04 17:44-18:26/42 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 18:59-19:24/25 | 07:56 18:06-18:14/8 | 07:59 | 08:51 09:56-10:15/19 |
| | 22:10 | 21:17 | 20:01 17:42-18:26/44 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 18:59-19:23/24 | 07:58 | 08:01 | 08:52 09:56-10:16/20 |
| | 22:09 | 21:15 | 19:59 17:41-18:26/45 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:59-19:23/24 | 08:00 | 08:03 | 08:53 09:56-10:16/20 |
| | 22:08 | 21:13 | 19:56 17:40-18:26/46 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 19:00-19:22/22 | 08:02 | 08:05 | 08:54 09:57-10:17/20 |
| | 22:07 | 21:10 | 19:54 17:39-18:27/48 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 19:01-19:22/21 | 08:04 | 08:07 | 08:55 09:57-10:17/20 |
| | 22:06 | 21:08 | 19:51 17:38-18:27/49 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 19:02-19:20/18 17:38-18:27/49 | 08:06 | 08:09 | 08:56 09:58-10:18/20 |
| | 22:04 | 21:06 | 19:48 18:51-18:55/4 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 19:03-19:16/13 17:36-18:26/50 | 08:08 | 08:11 | 08:56 09:58-10:19/21 |
| | 22:03 | 21:03 | 19:46 18:46-18:57/11 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 19:07-19:14/7 17:36-18:25/49 | 08:10 | 08:13 | 08:57 09:59-10:19/20 |
| | 22:02 | 21:01 | 19:43 18:44-18:58/14 | 18:27 | 16:25 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:43-18:59/16 | 08:12 | 08:15 | 08:58 09:59-10:19/20 |
| | 22:00 | 20:59 | 19:41 17:36-18:25/49 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:42-19:00/18 | 08:14 | 08:17 | 08:58 10:00-10:20/20 |
| | 21:59 | 20:56 | 19:38 17:36-18:24/48 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 18:39-19:00/21 | 08:16 | 08:19 | 08:59 10:00-10:20/20 |
| | 21:57 | 20:54 | 19:35 17:36-18:24/48 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:37-19:00/23 | 08:18 | 08:21 | 08:59 10:01-10:21/20 |
| | 21:56 | 20:52 | 19:33 17:36-18:23/47 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 18:35-18:59/24 | 08:20 | 08:23 | 09:00 10:01-10:21/20 |
| | 21:54 | 20:49 | 19:30 17:36-18:22/46 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 18:31-18:59/28 | 07:22 | 08:25 | 09:00 10:01-10:21/20 |
| | 21:52 | 20:47 | 19:28 17:36-18:22/46 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:27-18:55/28 | 07:24 | 08:27 | 09:01 10:02-10:23/21 |
| | 21:51 | 20:44 | 19:25 17:37-18:21/44 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:25-18:53/28 | 07:26 | 08:28 | 09:01 10:03-10:23/20 |
| | 21:49 | 20:42 | 19:22 17:37-18:18/41 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 18:24-18:50/26 | 07:28 | 08:30 | 09:01 10:03-10:23/20 |
| | 21:47 | 20:39 | 19:20 17:37-18:17/40 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 18:23-18:47/24 | 07:30 | 08:32 | 09:01 10:04-10:24/20 |
| | 21:45 | 20:37 | 19:17 17:38-18:15/37 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 18:22-18:45/23 | 07:33 | 08:33 09:59-10:03/4 | 09:01 10:04-10:23/19 |
| | 21:44 | 20:34 | 19:15 17:40-18:14/34 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 10:04-10:24/20 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1733 | 347 | 4 | 571 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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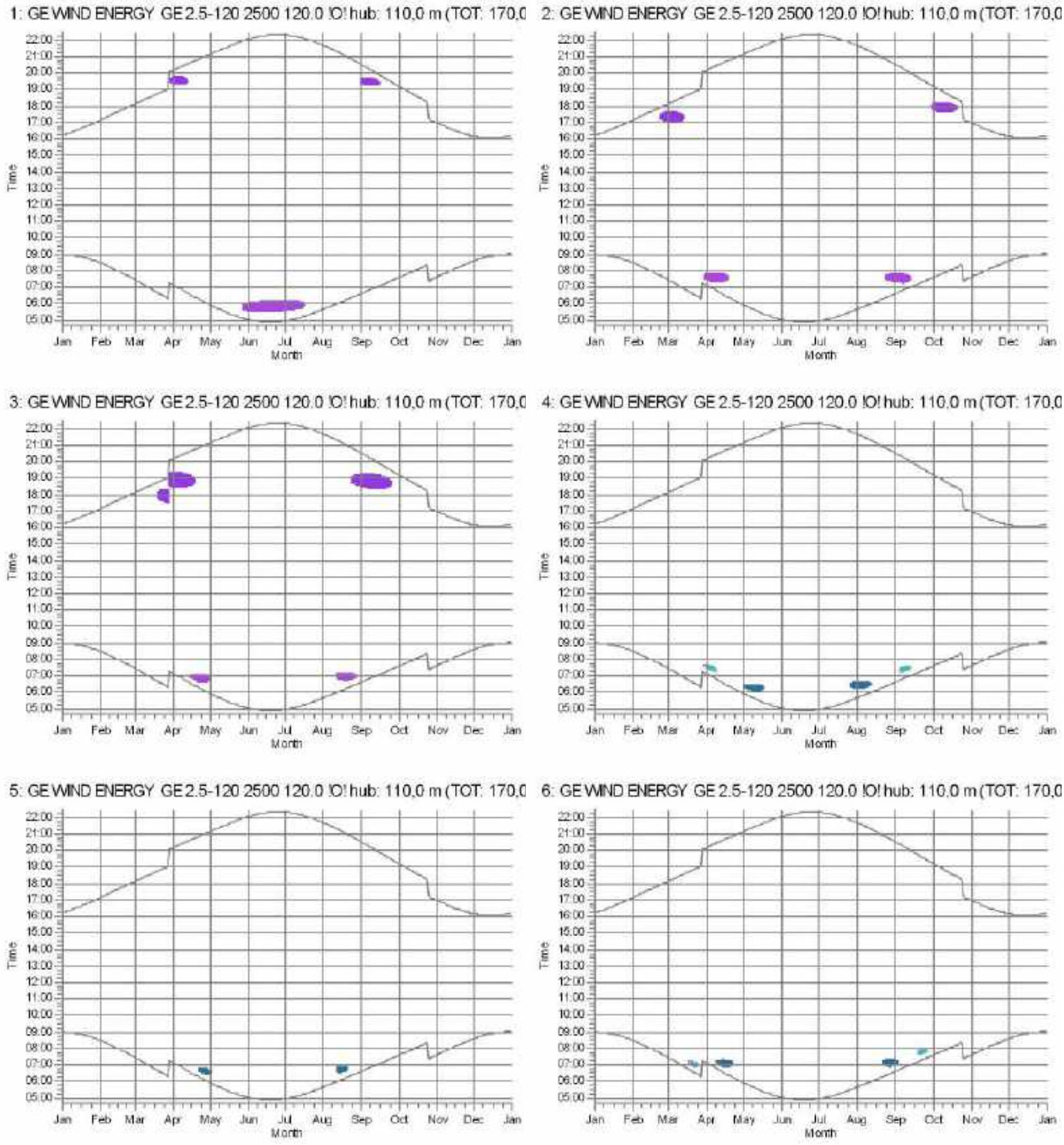
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninës VE




Shadow receptors

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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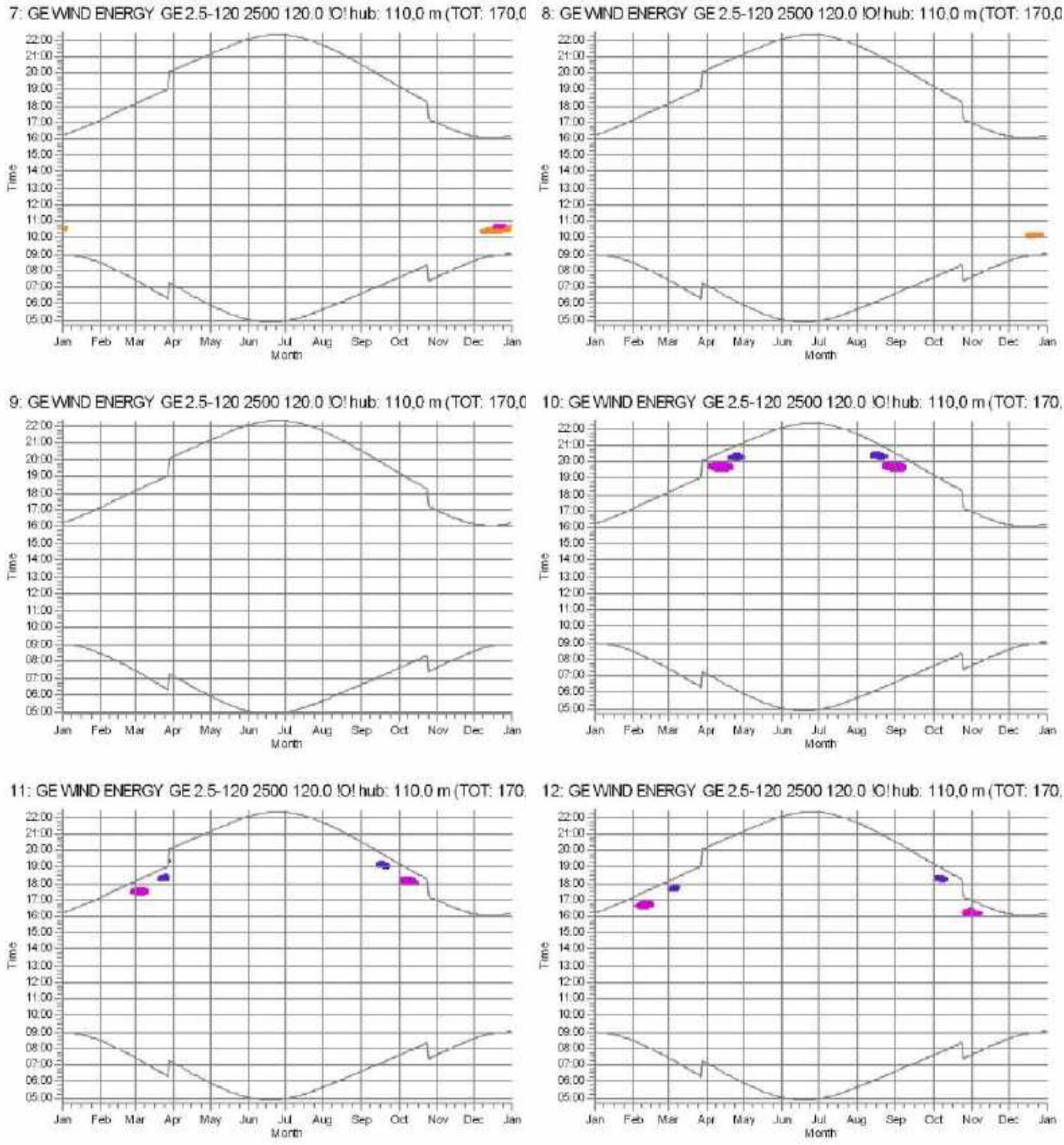
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninės VE




Shadow receptors

W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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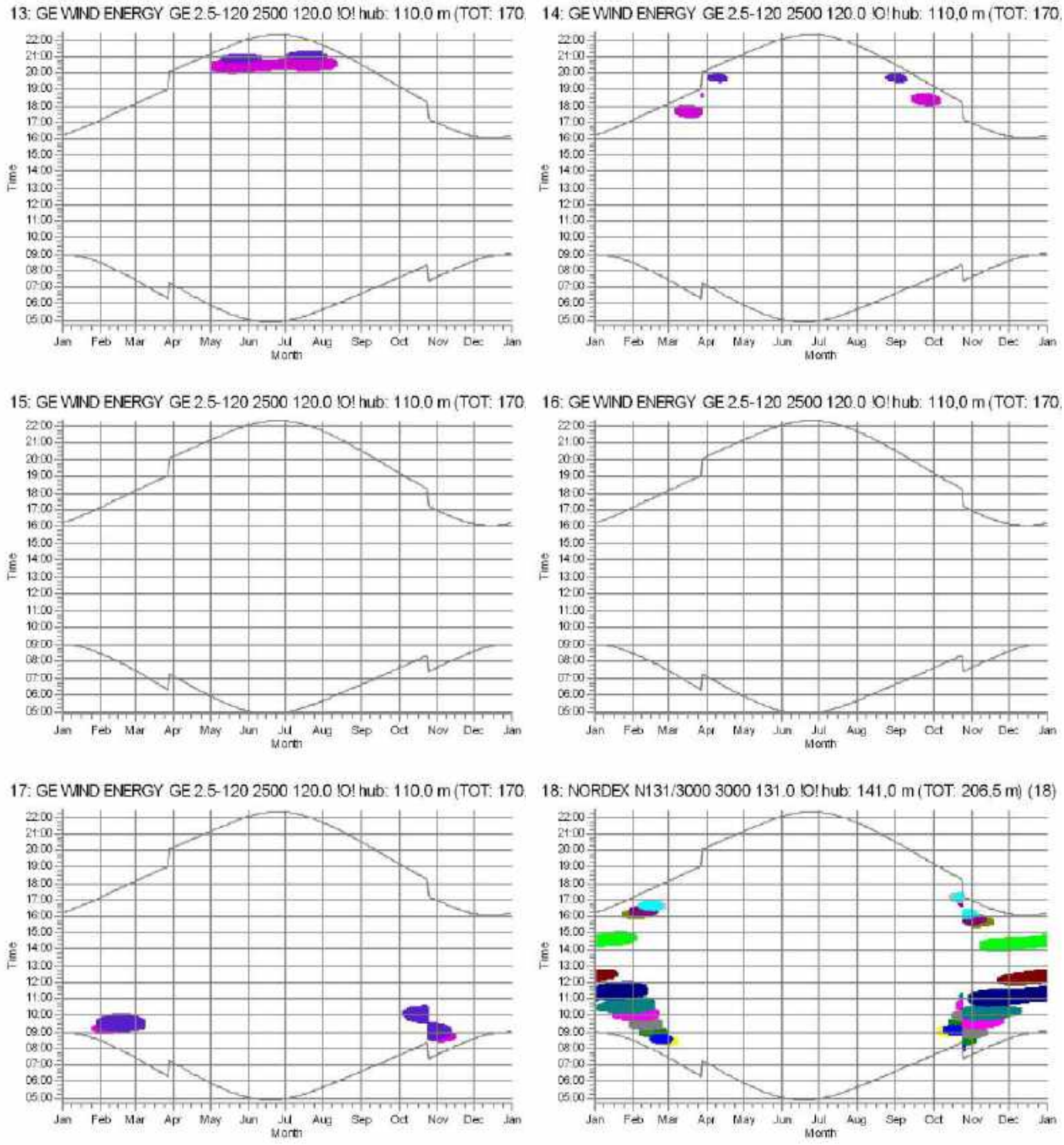
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninës VE




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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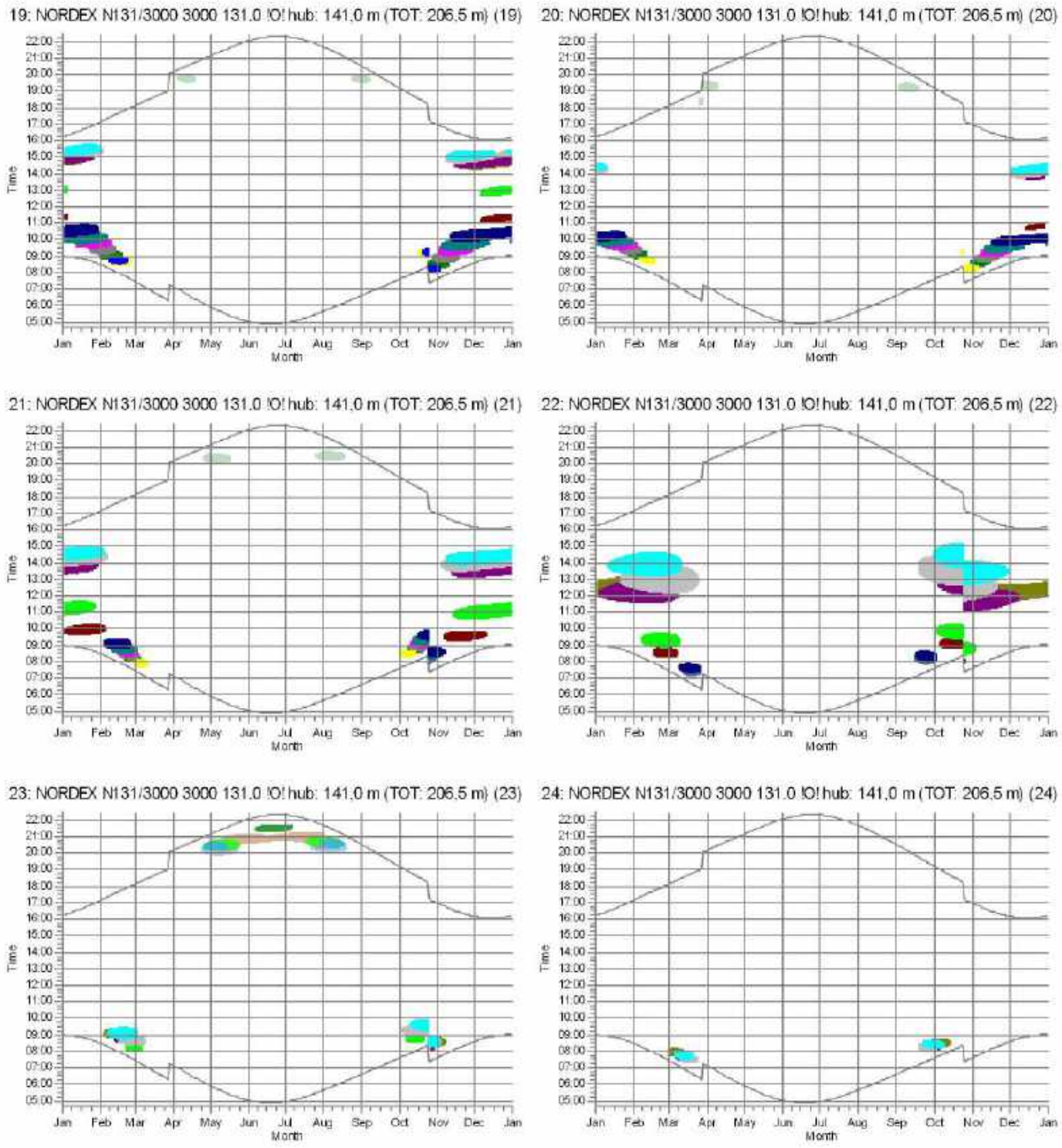
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninës VE




Shadow receptors

- A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
- B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
- C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
- D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
- E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
- F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
- G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
- H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
- I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
- J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
- O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
- T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

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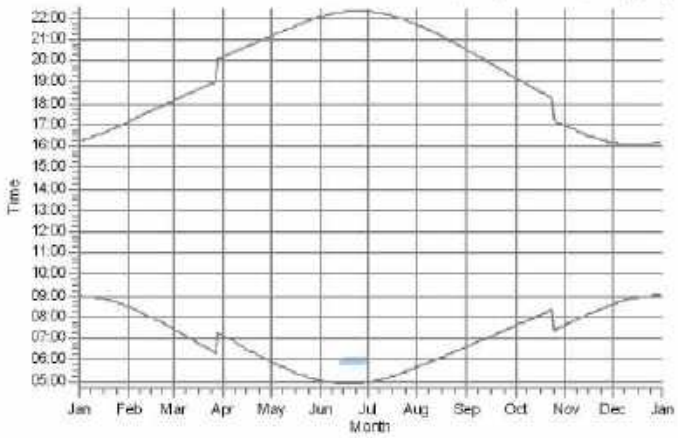
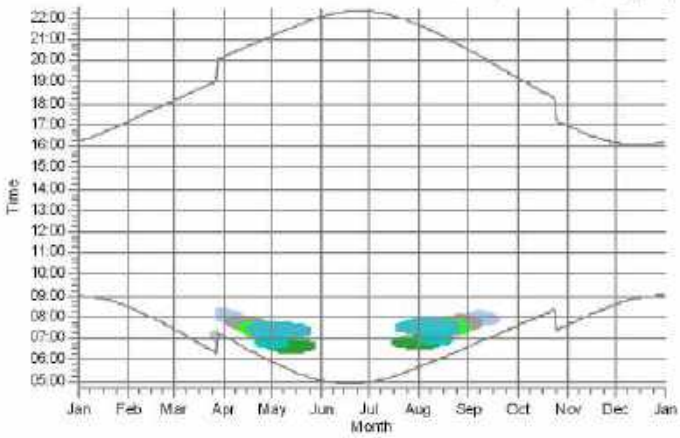
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninës VE

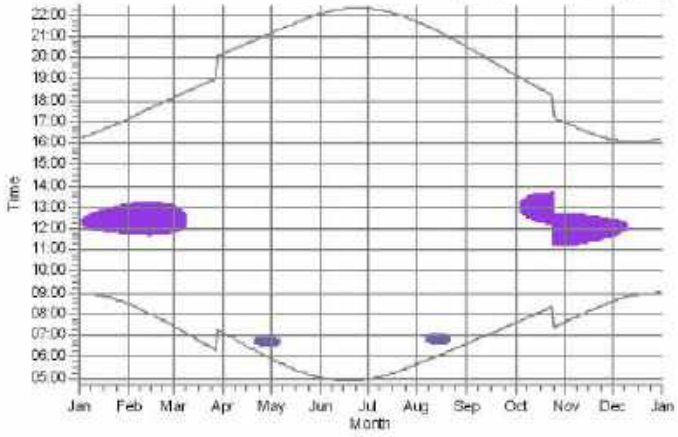
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)



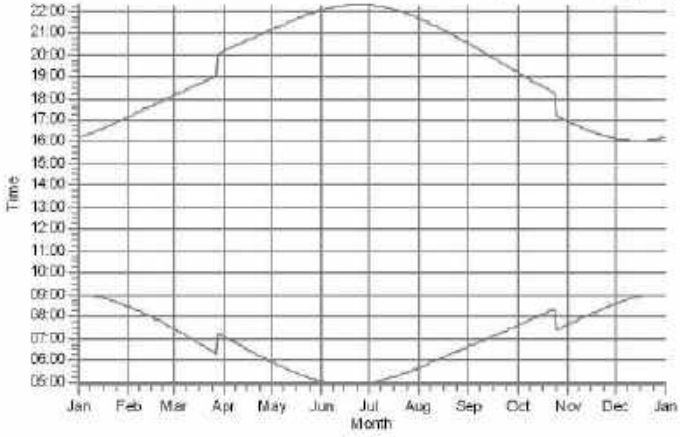

26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)



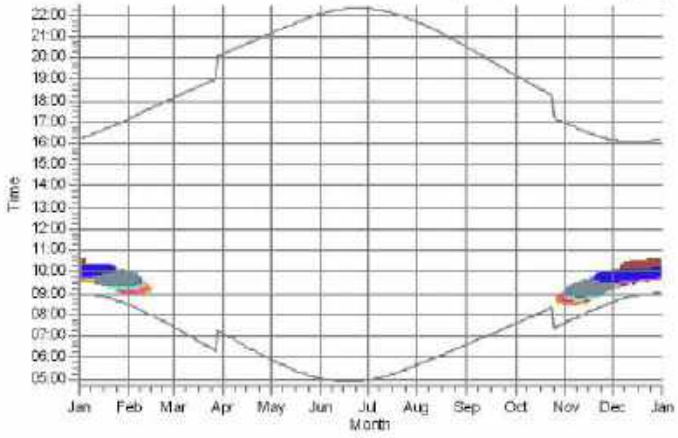

27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)



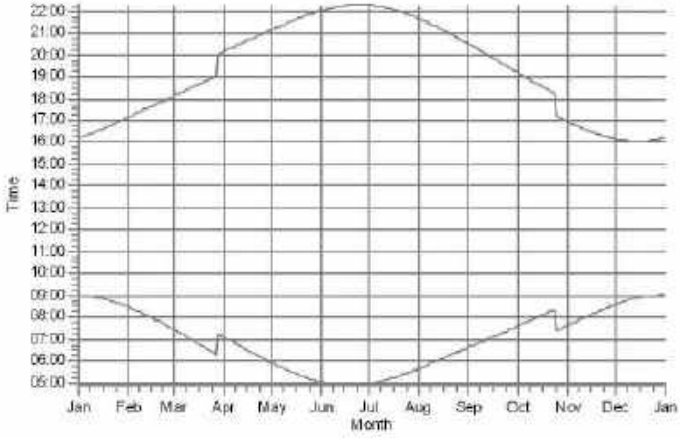

28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)




29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)




30: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




Shadow receptors

O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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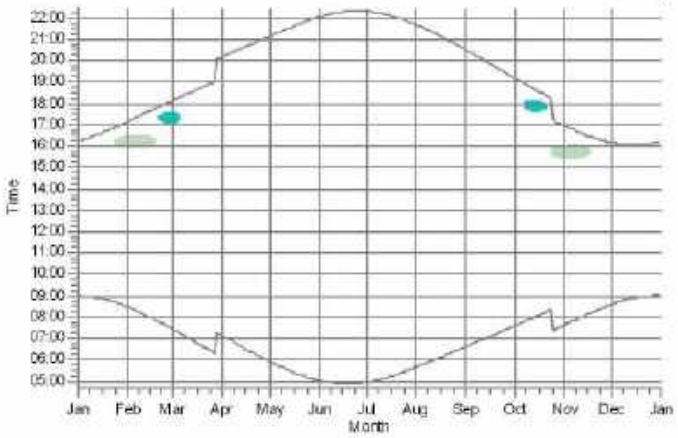
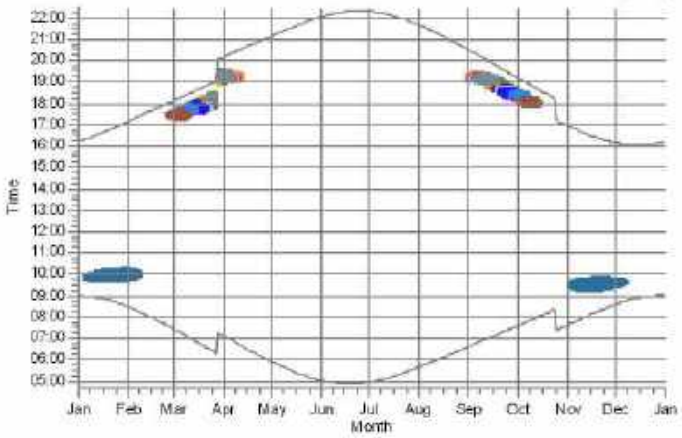
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninës VE

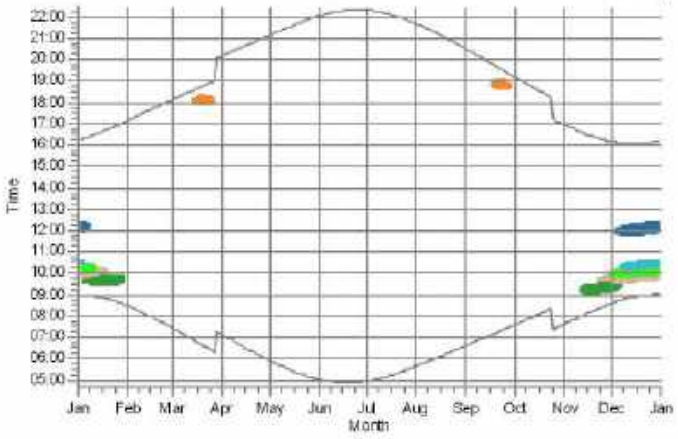
31: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



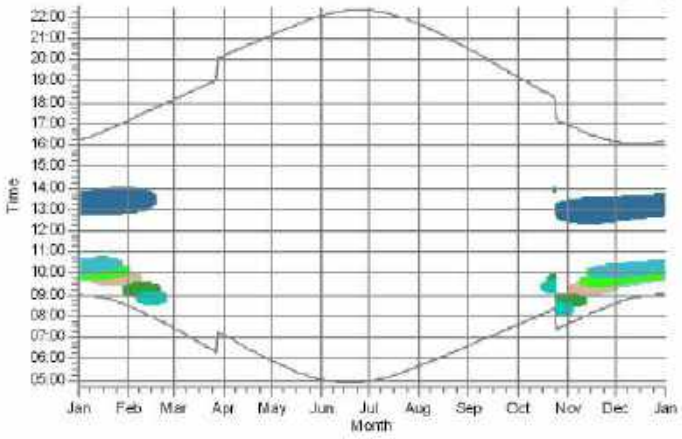

32: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



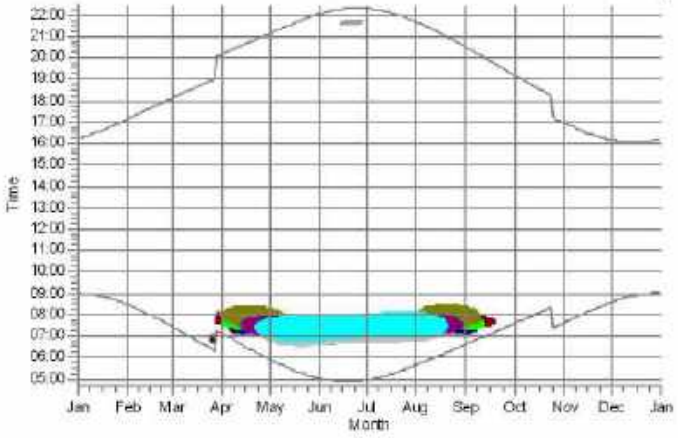

33: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



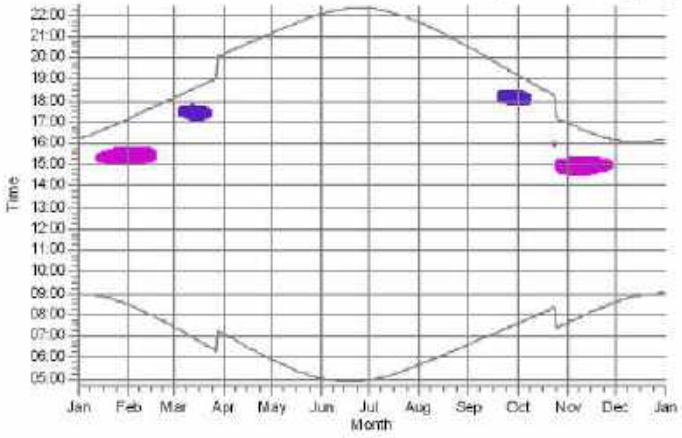

34: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




35: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)




Shadow receptors

G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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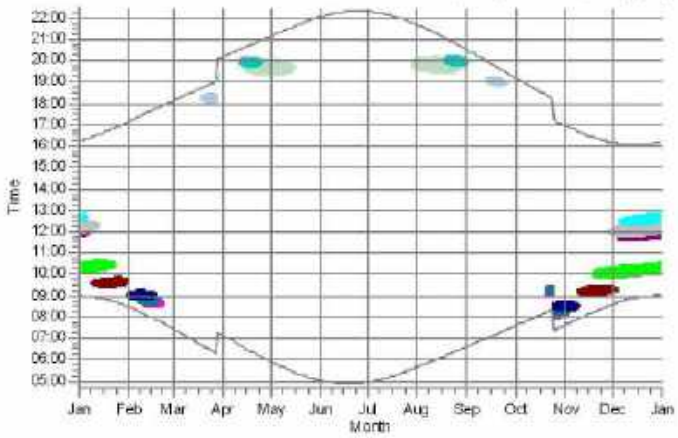
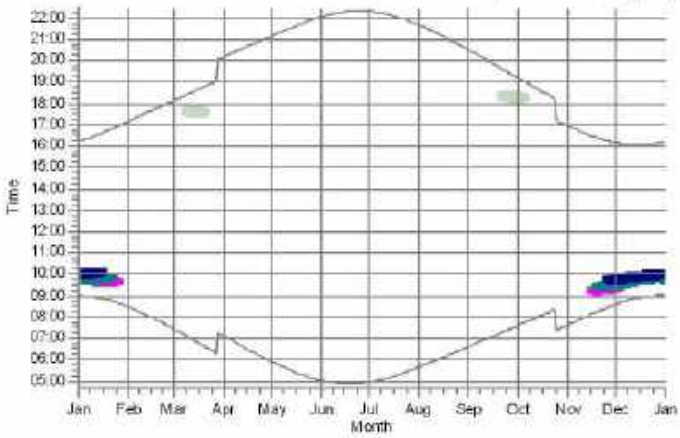
# SHADOW - Calendar per WTG, graphical

## Calculation: Foninës VE

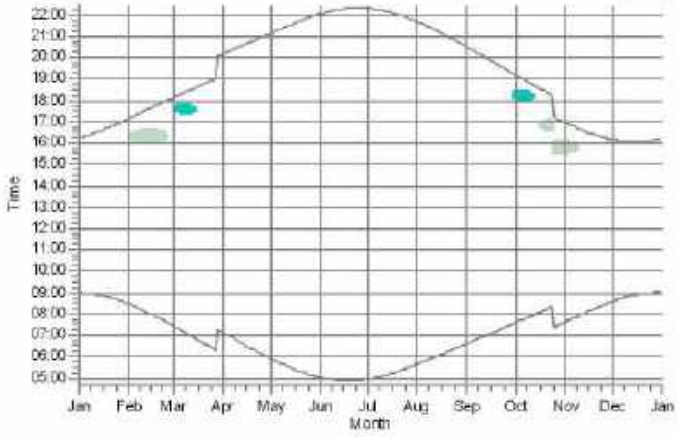
37: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)



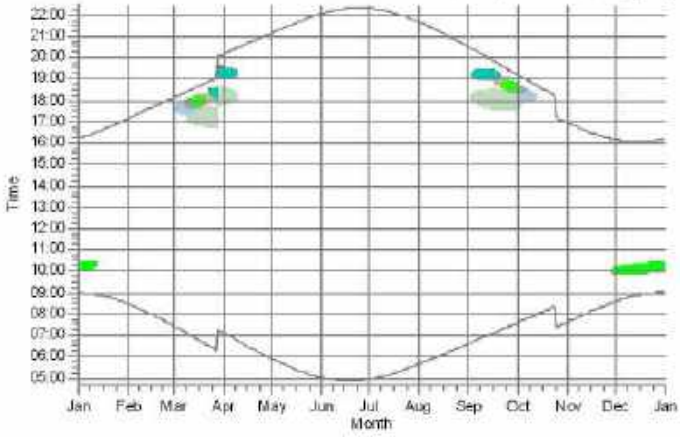

38: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)




39: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)




40: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)




Shadow receptors

E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

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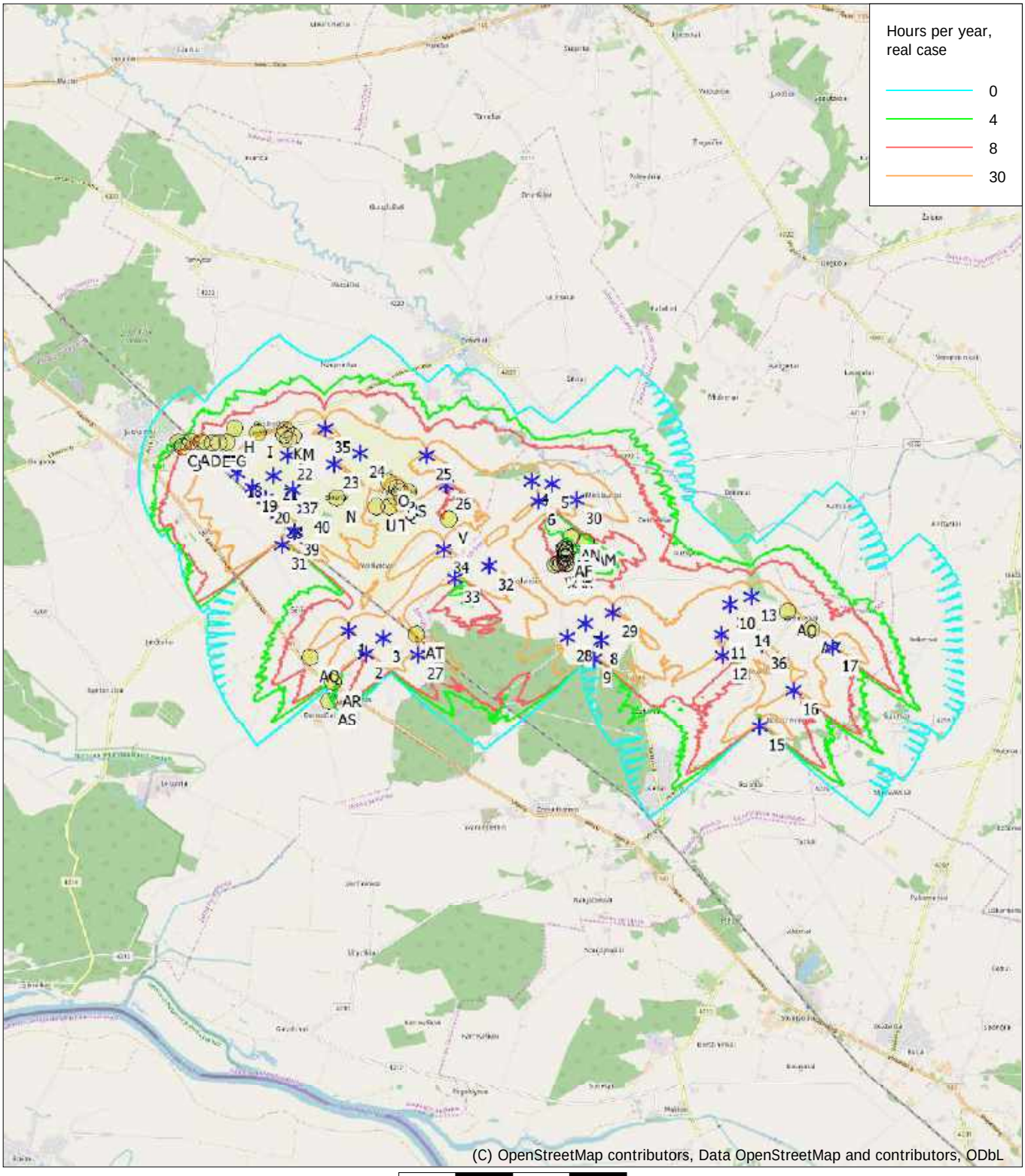
# SHADOW - Map

## Calculation: Foninës VE




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.580 North: 6.127.900

Existing WTG  Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

Time step: 3 minutes, Day step: 7 days, Map resolution: 20 m, Visibility resolution: 10 m, Eye height: 1,5 m

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

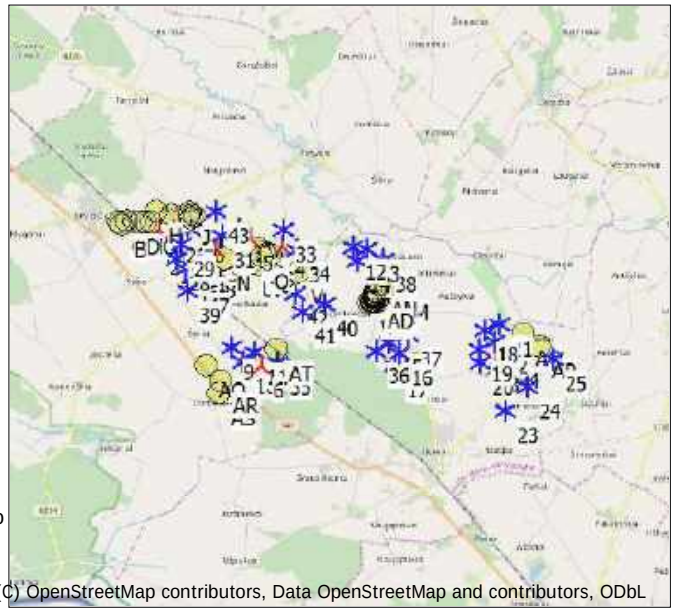
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Đilutės r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




Scale 1:200.000
New WTG
Existing WTG
Shadow receptor

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 350.546 | 6.126.757 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 8 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 9 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 10 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 11 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 12 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 13 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 14 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 15 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 16 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 17 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 18 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 19 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 20 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 21 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 22 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 23 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 24 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 25 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 26 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 27 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 28 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 29 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 30 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 31 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 32 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 33 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 34 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 35 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 36 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138

...continued from previous page

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 37 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 38 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 39 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 40 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 41 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 42 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 43 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 44 | 357.043 | 6.126.794 | 20,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 45 | 348.872 | 6.129.782 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 46 | 348.589 | 6.129.372 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 47 | 348.873 | 6.129.055 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 48 | 349.068 | 6.129.458 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |

## Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138

### Calculation Results

Shadow receptor

| No. | Shadow, expected values<br>Shadow hours per year [h/year] |
|---|---|
| A | 15:23 |
| B | 14:08 |
| C | 10:06 |
| D | 23:30 |
| E | 36:54 |
| F | 48:11 |
| G | 60:22 |
| H | 19:11 |
| I | 39:03 |
| J | 42:53 |
| K | 57:34 |
| L | 78:31 |
| M | 86:24 |
| N | 62:38 |
| O | 47:45 |
| P | 74:32 |
| Q | 49:45 |
| R | 52:44 |
| S | 30:39 |
| T | 27:01 |
| U | 54:01 |
| V | 14:27 |
| W | 30:49 |
| X | 33:06 |
| Y | 35:43 |
| Z | 39:37 |
| AA | 44:05 |
| AB | 39:10 |
| AC | 36:05 |
| AD | 33:31 |
| AE | 31:16 |
| AF | 29:04 |
| AG | 26:59 |
| AH | 25:08 |
| AI | 23:19 |
| AJ | 28:56 |
| AK | 49:25 |
| AL | 51:22 |
| AM | 38:36 |
| AN | 17:40 |
| AO | 52:17 |
| AP | 33:33 |
| AQ | 20:08 |
| AR | 11:07 |
| AS | 9:40 |
| AT | 29:37 |

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 511:50 | 96:45 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 408:04 | 71:03 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 168:45 | 45:56 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 211:27 | 93:12 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 34:51 | 12:40 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6) | 109:31 | 31:08 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 470:37 | 168:42 |
| 8 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 35:50 | 7:25 |
| 9 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1) | 30:12 | 11:54 |
| 10 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2) | 28:24 | 9:56 |
| 11 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3) | 45:23 | 18:09 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138

...continued from previous page

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 12 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4) | 8:47 | 3:52 |
| 13 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5) | 2:45 | 1:11 |
| 14 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6) | 5:51 | 2:28 |
| 15 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7) | 7:59 | 0:30 |
| 16 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8) | 1:25 | 0:06 |
| 17 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9) | 0:00 | 0:00 |
| 18 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10) | 18:09 | 7:48 |
| 19 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11) | 11:25 | 3:40 |
| 20 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12) | 10:09 | 2:23 |
| 21 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13) | 77:56 | 35:00 |
| 22 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14) | 29:48 | 10:59 |
| 23 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15) | 0:00 | 0:00 |
| 24 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16) | 0:00 | 0:00 |
| 25 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17) | 64:51 | 12:34 |
| 26 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18) | 358:56 | 38:01 |
| 27 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19) | 217:46 | 24:32 |
| 28 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20) | 114:40 | 14:14 |
| 29 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21) | 252:37 | 32:14 |
| 30 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22) | 440:06 | 40:32 |
| 31 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23) | 120:01 | 43:37 |
| 32 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24) | 22:09 | 7:26 |
| 33 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25) | 2:31 | 0:59 |
| 34 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26) | 111:10 | 50:29 |
| 35 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27) | 142:46 | 6:31 |
| 36 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28) | 0:00 | 0:00 |
| 37 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29) | 84:01 | 9:16 |
| 38 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30) | 0:00 | 0:00 |
| 39 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31) | 24:25 | 4:41 |
| 40 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32) | 85:15 | 22:20 |
| 41 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33) | 68:52 | 6:53 |
| 42 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34) | 232:46 | 17:08 |
| 43 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35) | 202:36 | 93:59 |
| 44 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37) | 56:58 | 10:42 |
| 45 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38) | 134:33 | 26:15 |
| 46 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39) | 53:05 | 8:14 |
| 47 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40) | 26:37 | 6:02 |
| 48 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41) | 81:17 | 25:21 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 08:57 (28) | 07:27 | 08:02 (29) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 16 | 09:13 (28) | 18:08 | 18 | 08:20 (29) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 08:55 (28) | 07:24 | 08:03 (29) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 18 | 09:13 (28) | 18:10 | 17 | 08:20 (29) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 08:54 (27) | 07:22 | 08:03 (29) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:13 | 20 | 09:14 (28) | 18:12 | 16 | 08:19 (29) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 08:53 (27) | 07:20 | 08:05 (29) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 21 | 09:14 (28) | 18:14 | 12 | 08:17 (29) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 08:53 (27) | 07:17 | 07:48 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 22 | 09:15 (28) | 18:16 | 18 | 08:14 (29) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 08:52 (27) | 07:15 | 07:45 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 23 | 09:15 (28) | 18:18 | 17 | 08:02 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 08:52 (27) | 07:12 | 07:42 (1) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 23 | 09:15 (28) | 18:20 | 22 | 08:04 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 08:51 (27) | 07:10 | 07:39 (1) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 23 | 09:14 (27) | 18:22 | 26 | 08:05 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 08:50 (26) | 07:07 | 07:32 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 24 | 09:14 (27) | 18:24 | 35 | 08:07 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 08:49 (26) | 07:05 | 07:29 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 26 | 09:15 (27) | 18:26 | 38 | 08:07 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 08:48 (26) | 07:02 | 07:27 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 27 | 09:15 (27) | 18:28 | 41 | 08:08 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 08:46 (26) | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 28 | 09:14 (27) | 18:30 | 44 | 08:08 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 08:46 (26) | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 28 | 09:14 (26) | 18:32 | 47 | 08:09 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 08:46 (26) | 06:54 | 07:21 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 29 | 09:15 (26) | 18:34 | 47 | 08:08 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 08:45 (26) | 06:52 | 07:20 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 31 | 09:16 (26) | 18:36 | 48 | 08:08 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 08:45 (26) | 06:49 | 07:20 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 30 | 09:15 (26) | 18:38 | 48 | 08:08 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 08:45 (26) | 06:47 | 07:19 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 31 | 09:16 (26) | 18:40 | 48 | 08:07 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:44 (26) | 06:44 | 07:20 (2) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 31 | 09:15 (26) | 18:42 | 47 | 08:07 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:44 (26) | 06:42 | 07:20 (2) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 31 | 09:15 (26) | 18:44 | 46 | 08:06 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:45 (26) | 06:39 | 07:20 (2) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 30 | 09:15 (26) | 18:46 | 45 | 08:05 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 07:46 | | 08:12 (29) | 06:36 | 07:21 (2) | 06:18 | 05:17 | 04:52 |
| | 16:46 | | 17:51 | 32 | 09:14 (26) | 18:48 | 43 | 08:04 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 07:44 | | 08:10 (29) | 06:34 | 07:22 (2) | 06:16 | 05:15 | 04:53 |
| | 16:48 | | 17:53 | 36 | 09:14 (26) | 18:50 | 40 | 08:02 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | | 07:41 | | 08:07 (29) | 06:31 | 07:24 (2) | 06:13 | 05:13 | 04:53 |
| | 16:50 | | 17:55 | 38 | 09:12 (26) | 18:52 | 37 | 08:01 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 07:39 | | 08:05 (29) | 06:29 | 07:37 (1) | 06:11 | 05:12 | 04:53 |
| | 16:52 | | 17:57 | 41 | 09:12 (26) | 18:54 | 22 | 07:59 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | | 07:37 | | 08:03 (29) | 06:26 | 07:38 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | | 17:59 | 40 | 09:10 (26) | 18:56 | 18 | 07:56 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 07:34 | | 08:03 (29) | 06:24 | 07:42 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | 18:01 | 37 | 09:08 (26) | 18:58 | 11 | 07:53 (1) | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | | 07:32 | | 08:02 (29) | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | | 18:03 | 32 | 09:05 (26) | 19:00 | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:05 (28) | 07:29 | | 08:02 (29) | 06:18 | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 2 09:07 (28) | 18:05 | 22 | 09:00 (26) | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:03 (28) | | | | 07:16 | | 06:00 | 05:05 | 04:56 |
| | 17:02 | 6 09:09 (28) | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:01 (28) | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 10 09:11 (28) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 08:59 (28) | | | | 07:11 | | | 05:03 | |
| | 17:06 | 13 09:12 (28) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 31 | | 790 | | 851 | | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,80 | | 0,84 | | 0,97 | | | |
| Total reduction | | 0,14 | | 0,20 | | 0,33 | | | |
| Total, real | | 4 | | 160 | | 277 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 45 | 08:47 (1) | | 16:58 | 25 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 42 | 08:46 (1) | | 16:56 | 24 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 39 | 08:45 (1) | | 16:54 | 23 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 36 | 08:44 (1) | | 16:52 | 22 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:10 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 31 | 08:43 (1) | | 16:50 | 22 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | 08:17 (1) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 24 | 08:41 (1) | | 16:48 | 21 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:19 (1) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 20 | 08:39 (1) | | 16:46 | 21 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:21 (1) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 15 | 08:36 (1) | | 16:44 | 20 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:26 (1) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 15 | 08:51 (29) | | 16:42 | 18 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:38 (29) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 14 | 08:52 (29) | | 16:40 | 15 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:37 (29) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16 | 08:53 (29) | | 16:38 | 13 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:35 (29) | | 08:00 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 18 | 08:53 (29) | | 16:36 | 9 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:36 (29) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 08:55 (29) | | 16:34 | 6 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 08:00 | | 08:35 (29) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 29 | 09:36 (26) | | 16:33 | 2 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:35 (29) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 34 | 09:39 (26) | | 16:31 | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:35 (29) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 39 | 09:41 (26) | | 16:29 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:31 (1) | 08:06 | | 08:35 (29) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:49 | 9 08:40 (1) | 18:32 | 41 | 09:42 (26) | | 16:28 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:27 (1) | 08:08 | | 08:37 (29) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 17 08:44 (1) | 18:30 | 40 | 09:43 (26) | | 16:26 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:24 (1) | 08:10 | | 08:39 (29) | | 08:14 | |
| | 22:02 | | 21:01 | | 19:43 | 21 08:45 (1) | 18:27 | 38 | 09:44 (26) | | 16:25 | |
| 20 | 05:20 | | 06:15 | | 07:14 | 08:11 (2) | 08:12 | | 08:41 (29) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 35 08:47 (1) | 18:25 | 35 | 09:44 (26) | | 16:23 | |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:08 (2) | 08:14 | | 09:15 (26) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 40 08:48 (1) | 18:23 | 30 | 09:45 (26) | | 16:22 | |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:06 (2) | 08:16 | | 09:15 (26) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 43 08:49 (1) | 18:20 | 31 | 09:46 (26) | | 16:20 | |
| 23 | 05:24 | | 06:21 | | 07:20 | 08:05 (2) | 08:18 | | 09:15 (26) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 44 08:49 (1) | 18:18 | 31 | 09:46 (26) | | 16:19 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 08:04 (2) | 08:20 | | 09:14 (26) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 46 08:50 (1) | 18:16 | 31 | 09:45 (26) | | 16:18 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 08:03 (2) | 07:22 | | 08:14 (26) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 47 08:50 (1) | 17:13 | 31 | 08:45 (26) | | 16:16 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:02 (2) | 07:24 | | 08:14 (26) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 48 08:50 (1) | 17:11 | 30 | 08:44 (26) | | 16:15 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:02 (2) | 07:27 | | 08:15 (26) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 48 08:50 (1) | 17:09 | 30 | 08:45 (26) | | 16:14 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:02 (2) | 07:29 | | 08:15 (26) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 48 08:50 (1) | 17:07 | 29 | 08:44 (26) | | 16:13 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (2) | 07:31 | | 08:16 (26) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 47 08:48 (1) | 17:04 | 27 | 08:43 (27) | | 16:12 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:01 (2) | 07:33 | | 08:16 (26) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 47 08:48 (1) | 17:02 | 27 | 08:43 (27) | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:18 (26) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 26 | 08:44 (27) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 540 | | 913 | | | | 241 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,97 | | 0,89 | | | | 0,81 |
| Total reduction | | | | | | 0,38 | | 0,27 | | | | 0,13 |
| Total, real | | | | | | 205 | | 246 | | | | 30 |

| | | | | |
|---|---|---|---|---|
| Table layout: For each day in each month the following matrix apply | | | | |
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 07:52 (29) | 07:08 | 08:11 (1) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:08 | 36 | 08:42 (26) | 20:10 | 17 08:28 (1) | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | 07:24 | | 07:50 (29) | 07:06 | 08:14 (1) | 05:53 | 05:01 |
| | 16:15 | 17:10 | | 18:10 | 40 | 08:42 (26) | 20:12 | 11 08:25 (1) | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | 07:22 | | 07:47 (29) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 17:13 | | 18:12 | 42 | 08:41 (26) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:20 | | 07:46 (29) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | 17:15 | | 18:14 | 43 | 08:41 (26) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | 07:17 | | 07:45 (29) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 17:17 | | 18:16 | 42 | 08:39 (26) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | 08:47 (28) | 07:15 | | 07:45 (29) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 17:19 | 3 08:50 (28) | 18:18 | 39 | 08:38 (26) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | 08:45 (28) | 07:12 | | 07:45 (29) | 06:53 | | 05:42 | 04:57 |
| | 16:22 | 17:21 | 7 08:52 (28) | 18:20 | 35 | 08:36 (26) | 20:22 | | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | 08:42 (28) | 07:10 | | 07:46 (29) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 17:23 | 10 08:52 (28) | 18:22 | 30 | 08:34 (26) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | 08:40 (28) | 07:07 | | 07:46 (29) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 17:25 | 14 08:54 (28) | 18:24 | 19 | 08:29 (26) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | 08:38 (28) | 07:05 | | 07:47 (29) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | 17:27 | 16 08:54 (28) | 18:26 | 11 | 07:58 (29) | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | 08:36 (27) | 07:02 | | 07:50 (29) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 17:30 | 19 08:55 (28) | 18:28 | 5 | 07:55 (29) | 20:30 | | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | 08:33 (27) | 06:59 | | | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 17:32 | 22 08:55 (28) | 18:30 | | | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 08:32 (27) | 06:57 | | | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 17:34 | 23 08:55 (28) | 18:32 | | | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 08:31 (27) | 06:54 | | | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 17:36 | 24 08:55 (28) | 18:34 | | | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | 08:31 (27) | 06:52 | | 07:18 (1) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 17:38 | 24 08:55 (28) | 18:36 | 14 | 07:32 (1) | 20:37 | | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | 08:29 (27) | 06:49 | | 07:14 (2) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 17:40 | 24 08:53 (28) | 18:38 | 21 | 07:35 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 08:29 (27) | 06:47 | | 07:11 (2) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 23 08:52 (28) | 18:40 | 25 | 07:36 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | 08:29 (27) | 06:44 | | 07:09 (2) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 21 08:50 (27) | 18:42 | 28 | 07:37 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | 08:25 (26) | 06:42 | | 07:06 (2) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 17:47 | 26 08:51 (27) | 18:44 | 32 | 07:38 (1) | 20:45 | | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | 08:22 (26) | 06:39 | | 07:03 (2) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 17:49 | 29 08:51 (27) | 18:46 | 35 | 07:38 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 08:20 (26) | 06:36 | | 07:03 (2) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | 17:51 | 29 08:49 (27) | 18:48 | 36 | 07:39 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | 08:18 (26) | 06:34 | | 07:02 (2) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 17:53 | 31 08:49 (27) | 18:50 | 36 | 07:38 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | 08:17 (26) | 06:31 | | 07:02 (2) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 17:55 | 30 08:47 (27) | 18:52 | 37 | 07:39 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 08:16 (26) | 06:29 | | 07:02 (2) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 17:57 | 30 08:46 (27) | 18:54 | 36 | 07:38 (1) | 20:55 | | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | 08:15 (26) | 06:26 | | 07:02 (2) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | 17:59 | 27 08:42 (27) | 18:56 | 35 | 07:37 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | 08:15 (26) | 06:24 | | 07:03 (2) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 18:01 | 28 08:43 (26) | 18:58 | 34 | 07:37 (1) | 20:59 | | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | 08:14 (26) | 06:21 | | 07:03 (2) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 18:03 | 28 08:42 (26) | 19:00 | 33 | 07:36 (1) | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | 07:55 (29) | 06:18 | | 07:05 (2) | 06:02 | | 05:07 | 04:55 |
| | 17:00 | 18:05 | 33 08:43 (26) | 19:02 | 31 | 07:36 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:16 | | 08:08 (1) | 06:00 | | 05:05 | 04:56 |
| | 17:02 | | | 20:04 | 26 | 08:34 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | | 07:13 | | 08:09 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:06 | 24 | 08:33 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | | 07:11 | | 08:09 (1) | | | 05:03 | |
| | 17:06 | | | 20:08 | 22 | 08:31 (1) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 521 | | 847 | | | 28 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,88 | | 0,97 | | | 0,99 | | |
| Total reduction | | | 0,21 | | 0,33 | | | 0,39 | | |
| Total, real | | | 112 | | 277 | | | 11 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | | 08:08 (28) | 08:35 |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | 16:58 | 16 | 08:24 (28) | 16:10 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 07:39 | | 08:10 (28) | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | 16:56 | 13 | 08:23 (28) | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:39 | | 08:26 (29) | | 07:41 | 08:12 (28) | 08:39 |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 9 | 08:35 (29) | | 16:54 | 10 | 08:22 (28) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:24 (29) | | 07:43 | 08:15 (28) | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 13 | 08:37 (29) | | 16:52 | 6 | 08:21 (28) | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:22 (29) | | 07:45 | 08:17 (28) | 08:42 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 27 | 09:09 (26) | | 16:50 | 2 | 08:19 (28) | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | 08:21 (29) | | 07:47 | | 08:43 |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 33 | 09:11 (26) | | 16:48 | | 16:06 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:20 (29) | | 07:49 | | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 38 | 09:13 (26) | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:20 (29) | | 07:51 | | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 41 | 09:14 (26) | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:20 (29) | | 07:53 | | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 43 | 09:15 (26) | | 16:42 | | 16:05 |
| 10 | 05:06 | | 05:56 | | 06:55 | 08:07 (1) | 07:52 | | 08:20 (29) | | 07:55 | | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | 11 | 08:18 (1) | 18:49 | 43 | 09:15 (26) | | 16:40 | | 16:05 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 08:04 (1) | 07:54 | | 08:22 (29) | | 07:57 | | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | 17 | 08:21 (1) | 18:47 | 41 | 09:15 (26) | | 16:38 | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 08:02 (1) | 07:56 | | 08:24 (29) | | 08:00 | | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | 21 | 08:23 (1) | 18:44 | 39 | 09:15 (26) | | 16:36 | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:59 (1) | 07:58 | | 08:27 (29) | | 08:02 | | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | 24 | 08:23 (1) | 18:42 | 35 | 09:16 (26) | | 16:34 | | 16:04 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 07:58 (1) | 08:00 | | 08:47 (26) | | 08:04 | | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | 26 | 08:24 (1) | 18:40 | 29 | 09:16 (26) | | 16:33 | | 16:04 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 07:55 (2) | 08:02 | | 08:47 (26) | | 08:06 | | 08:54 |
| | 22:07 | | 21:11 | | 19:54 | 30 | 08:25 (1) | 18:37 | 28 | 09:15 (26) | | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 07:53 (2) | 08:04 | | 08:47 (26) | | 08:08 | | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | 32 | 08:25 (1) | 18:35 | 28 | 09:15 (26) | | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 07:51 (2) | 08:06 | | 08:47 (26) | | 08:10 | | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | 35 | 08:26 (1) | 18:32 | 28 | 09:15 (27) | | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 07:50 (2) | 08:08 | | 08:48 (26) | | 08:12 | | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 36 | 08:26 (1) | 18:30 | 30 | 09:18 (27) | | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 07:48 (2) | 08:10 | | 08:48 (26) | | 08:14 | | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 37 | 08:25 (1) | 18:27 | 31 | 09:19 (27) | | 16:25 | | 16:04 |
| 20 | 05:20 | | 06:15 | | 07:14 | | 07:48 (2) | 08:12 | | 08:49 (26) | | 08:15 | | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 36 | 08:24 (1) | 18:25 | 30 | 09:19 (27) | | 16:23 | | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | | 07:47 (2) | 08:14 | | 08:50 (26) | | 08:17 | | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 37 | 08:24 (1) | 18:23 | 30 | 09:20 (27) | | 16:22 | | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | | 07:47 (2) | 08:16 | | 08:53 (26) | | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 36 | 08:23 (1) | 18:20 | 28 | 09:21 (27) | | 16:20 | | 16:06 |
| 23 | 05:24 | | 06:21 | | 07:20 | | 07:47 (2) | 08:18 | | 08:56 (26) | | 08:21 | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 36 | 08:23 (1) | 18:18 | 25 | 09:21 (27) | | 16:19 | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | | 07:49 (2) | 08:20 | | 08:59 (27) | | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 33 | 08:22 (1) | 18:16 | 22 | 09:21 (27) | | 16:18 | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:51 (2) | 07:22 | | 07:59 (27) | | 08:25 | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 29 | 08:20 (1) | 17:13 | 23 | 08:22 (28) | | 16:16 | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:53 (2) | 07:24 | | 07:59 (27) | | 08:27 | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 26 | 08:19 (1) | 17:11 | 24 | 08:23 (28) | | 16:15 | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:55 (2) | 07:27 | | 08:00 (27) | | 08:28 | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 22 | 08:17 (1) | 17:09 | 24 | 08:24 (28) | | 16:14 | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:57 (2) | 07:29 | | 08:01 (27) | | 08:30 | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 18 | 08:15 (1) | 17:07 | 23 | 08:24 (28) | | 16:13 | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | | 08:01 (1) | 07:31 | | 08:01 (27) | | 08:32 | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 9 | 08:10 (1) | 17:04 | 23 | 08:24 (28) | | 16:12 | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | | | 07:33 | | 08:03 (27) | | 08:34 | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | | | 17:02 | 21 | 08:24 (28) | | 16:11 | | 16:12 |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | 08:06 (27) | | | | 09:01 |
| | 21:42 | | 20:32 | | | | | 17:00 | 19 | 08:25 (28) | | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | | | | | 551 | | | 828 | | | 47 | | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | | 0,99 | | | 0,90 | | | 0,85 | | |
| Total reduction | | | | | | 0,39 | | | 0,28 | | | 0,13 | | |
| Total, real | | | | | | 215 | | | 228 | | | 6 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 08:22 (26) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | | 18:08 | 22 | 08:44 (26) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 08:24 (26) | 07:06 | 05:53 | 05:01 |
| | 16:15 | 17:10 | | | 18:10 | 19 | 08:43 (26) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | | 07:22 | | 08:25 (26) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:13 | | | 18:12 | 15 | 08:40 (26) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:20 | | 08:29 (26) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | | | 18:14 | 8 | 08:37 (26) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | | | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | | 07:15 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | | | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | | | 07:12 | | | 06:53 | 05:42 | 04:57 |
| | 16:22 | 17:21 | | | 18:20 | | | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | | 08:42 (27) | 07:10 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 3 | 08:45 (27) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | | 08:40 (27) | 07:07 | | 07:33 (1) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 9 | 08:49 (27) | 18:24 | 7 | 07:40 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | | 08:38 (27) | 07:05 | | 07:29 (1) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 13 | 08:51 (27) | 18:26 | 15 | 07:44 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | | 08:36 (27) | 07:02 | | 07:27 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 16 | 08:52 (27) | 18:28 | 19 | 07:46 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | | 08:34 (27) | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18 | 08:52 (27) | 18:30 | 23 | 07:47 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | | 08:34 (27) | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 19 | 08:53 (27) | 18:32 | 26 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:54 | 08:02 | | 08:34 (27) | 06:54 | | 07:19 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 20 | 08:54 (27) | 18:34 | 30 | 07:49 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | | 08:33 (26) | 06:52 | | 07:16 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 21 | 08:54 (27) | 18:36 | 33 | 07:49 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | | 08:28 (26) | 06:49 | | 07:14 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 25 | 08:53 (27) | 18:38 | 35 | 07:49 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 08:27 (26) | 06:47 | | 07:12 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 27 | 08:54 (27) | 18:40 | 37 | 07:49 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | | 08:24 (26) | 06:44 | | 07:12 (2) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 28 | 08:52 (27) | 18:42 | 37 | 07:49 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | | 08:24 (26) | 06:42 | | 07:12 (2) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 28 | 08:52 (27) | 18:44 | 36 | 07:48 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | | 08:23 (26) | 06:39 | | 07:11 (2) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 28 | 08:51 (27) | 18:46 | 36 | 07:47 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | | 08:22 (26) | 06:36 | | 07:12 (2) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 27 | 08:49 (27) | 18:48 | 35 | 07:47 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | | 08:22 (26) | 06:34 | | 07:13 (2) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 26 | 08:48 (26) | 18:50 | 33 | 07:46 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | | 08:21 (26) | 06:31 | | 07:14 (2) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 26 | 08:47 (26) | 18:52 | 31 | 07:45 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | | 08:21 (26) | 06:29 | | 07:16 (2) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 27 | 08:48 (26) | 18:54 | 27 | 07:43 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | | 08:21 (26) | 06:26 | | 07:23 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17:59 | 26 | 08:47 (26) | 18:56 | 17 | 07:40 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | | 08:21 (26) | 06:24 | | 07:25 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 26 | 08:47 (26) | 18:58 | 13 | 07:38 (1) | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | | 08:21 (26) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 25 | 08:46 (26) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | | 08:22 (26) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 23 | 08:45 (26) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | | 20:04 | | | 21:05 | 21:59 | 22:19 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 461 | | | 554 | | | | |
| Sun reduction | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | 0,88 | | | 0,97 | | | | |
| Total reduction | | | 0,21 | | | 0,33 | | | | |
| Total, real | | | 99 | | | 183 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | 07:37 | 08:08 (27) | 08:35 |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 24 | 08:26 (1) | 16:58 | 12 08:20 (27) | 16:10 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (1) | 07:39 | 08:10 (27) | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 21 | 08:25 (1) | 16:56 | 8 08:18 (27) | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (1) | 07:41 | 08:12 (27) | 08:39 |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 17 | 08:23 (1) | 16:54 | 2 08:14 (27) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (1) | 07:43 | | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 12 | 08:20 (1) | 16:52 | | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | | 07:45 | | 08:42 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | | 07:47 | | 08:43 |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | | | 16:48 | | 16:06 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | 07:51 | | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | | 16:05 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 09:01 (26) | 07:55 | | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 12 | 09:13 (26) | 16:40 | | 16:05 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:58 (26) | 07:57 | | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 17 | 09:15 (26) | 16:38 | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:56 (26) | 08:00 | | 08:51 |
| | 22:10 | | 21:17 | | 20:02 | | 18:44 | 20 | 09:16 (26) | 16:36 | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:56 (26) | 08:02 | | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 22 | 09:18 (26) | 16:34 | | 16:04 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 08:00 | | 08:55 (26) | 08:04 | | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 24 | 09:19 (26) | 16:33 | | 16:04 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:54 (26) | 08:06 | | 08:54 |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 25 | 09:19 (26) | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:53 (26) | 08:08 | | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 26 | 09:19 (26) | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:15 (1) | 08:06 | | 08:53 (26) | 08:10 | | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | 11 08:26 (1) | 18:32 | 26 | 09:19 (26) | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:12 (1) | 08:08 | | 08:52 (26) | 08:12 | | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 17 08:29 (1) | 18:30 | 27 | 09:19 (26) | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:04 (2) | 08:10 | | 08:52 (26) | 08:14 | | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 25 08:29 (1) | 18:27 | 26 | 09:18 (26) | 16:25 | | 16:04 |
| 20 | 05:20 | | 06:15 | | 07:14 | 08:01 (2) | 08:12 | | 08:52 (26) | 08:15 | | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 29 08:30 (1) | 18:25 | 26 | 09:18 (27) | 16:23 | | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (2) | 08:14 | | 08:52 (26) | 08:17 | | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 32 08:31 (1) | 18:23 | 28 | 09:20 (27) | 16:22 | | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:57 (2) | 08:16 | | 08:54 (26) | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 35 08:32 (1) | 18:20 | 28 | 09:22 (27) | 16:20 | | 16:06 |
| 23 | 05:24 | | 06:21 | | 07:20 | 07:56 (2) | 08:18 | | 08:54 (26) | 08:21 | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 36 08:32 (1) | 18:18 | 29 | 09:23 (27) | 16:19 | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:55 (2) | 08:20 | | 08:55 (26) | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 37 08:32 (1) | 18:16 | 28 | 09:23 (27) | 16:18 | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:55 (2) | 07:22 | | 07:56 (26) | 08:25 | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 37 08:32 (1) | 17:13 | 27 | 08:23 (27) | 16:16 | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:55 (2) | 07:24 | | 07:59 (26) | 08:27 | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 37 08:32 (1) | 17:11 | 24 | 08:23 (27) | 16:15 | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:55 (2) | 07:27 | | 08:03 (27) | 08:29 | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 36 08:31 (1) | 17:09 | 21 | 08:24 (27) | 16:14 | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:57 (2) | 07:29 | | 08:03 (27) | 08:30 | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 34 08:31 (1) | 17:07 | 20 | 08:23 (27) | 16:13 | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:58 (2) | 07:31 | | 08:03 (27) | 08:32 | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 31 08:29 (1) | 17:04 | 19 | 08:22 (27) | 16:12 | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:00 (2) | 07:33 | | 08:04 (27) | 08:34 | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | 28 08:28 (1) | 17:02 | 18 | 08:22 (27) | 16:11 | | 16:12 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:06 (27) | | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | 15 | 08:21 (27) | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 425 | | 582 | | | 22 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,98 | | 0,89 | | | 0,86 | | |
| Total reduction | | | | | 0,39 | | 0,27 | | | 0,13 | | |
| Total, real | | | | | 164 | | 158 | | | 3 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | 09:10 (27) | 07:27 | 08:13 (29) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 29 | 09:39 (26) | 18:08 18 | 08:31 (29) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | 09:10 (27) | 07:24 | 08:05 (1) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 31 | 09:41 (26) | 18:10 25 | 08:30 (29) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | 09:10 (27) | 07:22 | 08:00 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:12 32 | 09:42 (26) | 18:12 28 | 08:28 (29) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:10 (27) | 07:20 | 07:58 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 33 | 09:43 (26) | 18:14 26 | 08:24 (29) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | 09:11 (27) | 07:17 | 07:55 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 33 | 09:44 (26) | 18:16 29 | 08:24 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | 09:11 (27) | 07:15 | 07:54 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 34 | 09:45 (26) | 18:18 32 | 08:26 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | 09:12 (27) | 07:12 | 07:41 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 34 | 09:46 (26) | 18:20 38 | 08:27 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | 09:11 (27) | 07:10 | 07:35 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 35 | 09:46 (26) | 18:22 50 | 08:27 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | 09:11 (26) | 07:07 | 07:33 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 36 | 09:47 (26) | 18:24 55 | 08:28 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | 09:11 (26) | 07:05 | 07:30 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 36 | 09:47 (26) | 18:26 58 | 08:28 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | 09:11 (26) | 07:02 | 07:29 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 37 | 09:48 (26) | 18:28 60 | 08:29 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | 09:10 (26) | 06:59 | 07:28 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 37 | 09:47 (26) | 18:30 61 | 08:29 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | 09:10 (26) | 06:57 | 07:22 (30) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 37 | 09:47 (26) | 18:32 67 | 08:30 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | 09:11 (26) | 06:54 | 07:19 (30) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 36 | 09:47 (26) | 18:34 70 | 08:29 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | 09:10 (26) | 06:52 | 07:16 (30) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 36 | 09:46 (26) | 18:36 73 | 08:29 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | 09:11 (26) | 06:49 | 07:14 (30) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 35 | 09:46 (26) | 18:38 75 | 08:29 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | 09:12 (26) | 06:47 | 07:13 (30) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 34 | 09:46 (26) | 18:40 75 | 08:28 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | 08:20 (29) | 06:44 | 07:13 (30) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 40 | 09:45 (26) | 18:42 75 | 08:28 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | 08:17 (29) | 06:42 | 07:12 (30) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 44 | 09:44 (26) | 18:44 75 | 08:27 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | 08:16 (29) | 06:39 | 07:11 (30) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 46 | 09:44 (26) | 18:46 75 | 08:26 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 09:17 (28) | 07:46 | 08:14 (29) | 06:36 | 07:12 (30) | 06:18 | 05:17 | 04:52 |
| | 16:46 5 | 09:22 (28) | 17:51 46 | 09:42 (26) | 18:48 73 | 08:25 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 09:16 (28) | 07:44 | 08:14 (29) | 06:34 | 07:12 (30) | 06:16 | 05:15 | 04:53 |
| | 16:48 9 | 09:25 (28) | 17:53 44 | 09:40 (26) | 18:50 72 | 08:24 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 09:14 (28) | 07:41 | 08:12 (29) | 06:31 | 07:13 (30) | 06:13 | 05:13 | 04:53 |
| | 16:50 12 | 09:26 (28) | 17:55 42 | 09:38 (26) | 18:52 70 | 08:23 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 09:12 (28) | 07:39 | 08:13 (29) | 06:29 | 07:14 (30) | 06:11 | 05:12 | 04:53 |
| | 16:52 15 | 09:27 (28) | 17:57 35 | 09:35 (26) | 18:54 61 | 08:21 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 09:11 (28) | 07:37 | 08:12 (29) | 06:26 | 07:16 (30) | 06:09 | 05:11 | 04:53 |
| | 16:54 17 | 09:28 (28) | 17:59 22 | 08:34 (29) | 18:56 45 | 08:19 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 09:11 (28) | 07:34 | 08:12 (29) | 06:24 | 07:49 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 19 | 09:30 (28) | 18:01 22 | 08:34 (29) | 18:58 28 | 08:17 (1) | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 09:11 (28) | 07:32 | 08:12 (29) | 06:21 | 07:51 (1) | 06:04 | 05:08 | 04:54 |
| | 16:58 20 | 09:31 (27) | 18:03 21 | 08:33 (29) | 19:00 23 | 08:14 (1) | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:11 (28) | 07:29 | 08:13 (29) | 06:18 | 07:54 (1) | 06:02 | 05:07 | 04:55 |
| | 17:00 22 | 09:33 (27) | 18:05 20 | 08:33 (29) | 19:02 18 | 08:12 (1) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:10 (28) | | | 07:16 | 08:58 (1) | 06:00 | 05:05 | 04:56 |
| | 17:02 23 | 09:33 (27) | | | 20:04 8 | 09:06 (1) | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:10 (28) | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 25 | 09:35 (26) | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 09:10 (27) | | | 07:11 | | | 05:03 | |
| | 17:06 27 | 09:37 (26) | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Total, worst case | 194 | | 967 | | 1463 | | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | 0,75 | | 0,79 | | 0,96 | | | | |
| Total reduction | 0,13 | | 0,19 | | 0,32 | | | | |
| Total, real | 26 | | 183 | | 469 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 61 | 09:08 (1) | | 16:58 | 37 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:07 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 61 | 09:08 (1) | | 16:56 | 36 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:08 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 59 | 09:07 (1) | | 16:54 | 35 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:09 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 57 | 09:06 (1) | | 16:52 | 35 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:11 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 54 | 09:05 (1) | | 16:50 | 34 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:14 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 45 | 09:03 (1) | | 16:48 | 34 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:28 (1) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 34 | 09:02 (1) | | 16:46 | 33 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:29 (1) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 31 | 09:00 (1) | | 16:44 | 32 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:31 (1) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 27 | 08:58 (1) | | 16:42 | 30 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:33 (1) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 27 | 09:00 (29) | | 16:40 | 29 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:35 (1) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 28 | 09:03 (29) | | 16:38 | 27 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:41 (1) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 22 | 09:04 (29) | | 16:36 | 25 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:46 (29) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 09:05 (29) | | 16:34 | 23 |
| 14 | 05:11 | | 06:04 | | 07:02 | 08:49 (1) | 08:00 | | 08:46 (29) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 6 08:55 (1) | 18:40 | 20 | 09:06 (29) | | 16:33 | 22 |
| 15 | 05:12 | | 06:06 | | 07:04 | 08:44 (1) | 08:02 | | 08:45 (29) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 17 09:01 (1) | 18:37 | 21 | 09:06 (29) | | 16:31 | 20 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:41 (1) | 08:04 | | 08:44 (29) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 22 09:03 (1) | 18:35 | 22 | 09:06 (29) | | 16:29 | 19 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:38 (1) | 08:06 | | 08:44 (29) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:49 | 27 09:05 (1) | 18:32 | 31 | 10:04 (26) | | 16:28 | 17 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:06 (30) | 08:08 | | 08:44 (29) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 38 09:07 (1) | 18:30 | 37 | 10:07 (26) | | 16:26 | 15 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:01 (30) | 08:10 | | 08:44 (29) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 58 09:07 (1) | 18:27 | 43 | 10:10 (26) | | 16:25 | 12 |
| 20 | 05:20 | | 06:15 | | 07:14 | 07:59 (30) | 08:12 | | 08:44 (29) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 69 09:08 (1) | 18:25 | 45 | 10:11 (26) | | 16:23 | 9 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:58 (30) | 08:14 | | 08:45 (29) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 71 09:09 (1) | 18:23 | 46 | 10:12 (26) | | 16:22 | 5 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:57 (30) | 08:16 | | 08:47 (29) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 73 09:10 (1) | 18:20 | 45 | 10:14 (26) | | 16:20 | |
| 23 | 05:24 | | 06:21 | | 07:20 | 07:56 (30) | 08:18 | | 08:48 (29) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 74 09:10 (1) | 18:18 | 44 | 10:15 (26) | | 16:19 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:55 (30) | 08:20 | | 08:51 (29) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 76 09:11 (1) | 18:16 | 38 | 10:15 (26) | | 16:18 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:55 (30) | 07:22 | | 08:41 (26) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 76 09:11 (1) | 17:13 | 35 | 09:16 (26) | | 16:16 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:55 (30) | 07:24 | | 08:40 (26) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 76 09:11 (1) | 17:11 | 36 | 09:16 (26) | | 16:15 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:56 (30) | 07:27 | | 08:41 (26) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 75 09:11 (1) | 17:09 | 36 | 09:17 (26) | | 16:14 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:57 (30) | 07:29 | | 08:40 (26) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 74 09:11 (1) | 17:07 | 37 | 09:17 (26) | | 16:13 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:58 (30) | 07:31 | | 08:40 (26) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 71 09:09 (1) | 17:04 | 37 | 09:17 (26) | | 16:12 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:00 (30) | 07:33 | | 08:39 (26) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 69 09:09 (1) | 17:02 | 37 | 09:16 (26) | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:40 (26) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 37 | 09:17 (26) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 972 | | 1172 | | | | 529 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,96 | | 0,87 | | | | 0,75 |
| Total reduction | | | | | | 0,37 | | 0,26 | | | | 0,12 |
| Total, real | | | | | | 363 | | 307 | | | | 62 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:33 (28) | 07:27 | | 08:17 (1) | 07:08 | | 09:08 (1) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 56 | 10:29 (26) | 18:08 | 33 | 08:50 (1) | 20:10 | 30 | 09:38 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | | 08:26 | | 09:34 (28) | 07:24 | | 08:15 (1) | 07:06 | | 09:11 (1) | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 55 | 10:29 (26) | 18:10 | 38 | 08:53 (1) | 20:12 | 24 | 09:35 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | | 08:24 | | 09:35 (27) | 07:22 | | 08:13 (1) | 07:03 | | 09:15 (1) | 05:51 | 05:00 |
| | 16:16 | | | 17:12 | 55 | 10:30 (26) | 18:12 | 41 | 08:54 (1) | 20:14 | 15 | 09:30 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | | 08:22 | | 09:36 (27) | 07:20 | | 08:12 (1) | 07:00 | | | 05:49 | 04:59 |
| | 16:18 | | | 17:15 | 54 | 10:30 (26) | 18:14 | 44 | 08:56 (1) | 20:16 | | | 21:15 | 22:06 |
| 5 | 09:00 | | | 08:20 | | 09:37 (27) | 07:17 | | 08:10 (1) | 06:58 | | | 05:46 | 04:58 |
| | 16:19 | | | 17:17 | 53 | 10:30 (26) | 18:16 | 46 | 08:56 (1) | 20:18 | | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:35 (46) | 08:18 | | 09:38 (27) | 07:15 | | 07:47 (2) | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | 1 | 09:36 (46) | 17:19 | 52 | 10:30 (26) | 18:18 | 57 | 08:58 (1) | 20:20 | | | 21:19 | 22:09 |
| 7 | 08:59 | | 09:34 (46) | 08:16 | | 09:40 (27) | 07:12 | | 07:42 (2) | 06:53 | | | 05:42 | 04:56 |
| | 16:22 | 4 | 09:38 (46) | 17:21 | 51 | 10:31 (26) | 18:20 | 68 | 08:58 (1) | 20:22 | | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:33 (46) | 08:14 | | 09:41 (27) | 07:10 | | 07:39 (2) | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 6 | 09:39 (46) | 17:23 | 49 | 10:30 (26) | 18:22 | 73 | 08:58 (1) | 20:24 | | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:33 (46) | 08:12 | | 09:44 (27) | 07:07 | | 07:38 (2) | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 8 | 09:41 (46) | 17:25 | 46 | 10:30 (26) | 18:24 | 79 | 08:59 (1) | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:32 (46) | 08:10 | | 08:38 (45) | 07:05 | | 07:36 (2) | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 10 | 09:42 (46) | 17:27 | 50 | 10:30 (26) | 18:26 | 82 | 08:59 (1) | 20:28 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:31 (46) | 08:08 | | 08:36 (45) | 07:02 | | 07:35 (2) | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 12 | 09:43 (46) | 17:30 | 53 | 10:30 (26) | 18:28 | 85 | 09:00 (1) | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:29 (46) | 08:06 | | 08:33 (45) | 06:59 | | 07:33 (2) | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 14 | 09:43 (46) | 17:32 | 56 | 10:28 (26) | 18:30 | 87 | 09:00 (1) | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:28 (46) | 08:04 | | 08:31 (45) | 06:57 | | 07:24 (30) | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 19 | 09:47 (27) | 17:34 | 58 | 10:28 (26) | 18:32 | 93 | 09:00 (1) | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:28 (46) | 08:02 | | 08:31 (45) | 06:54 | | 07:20 (30) | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 22 | 09:50 (27) | 17:36 | 58 | 10:28 (26) | 18:34 | 100 | 09:00 (1) | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:28 (28) | 08:00 | | 08:30 (45) | 06:52 | | 07:17 (30) | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 24 | 09:52 (27) | 17:38 | 57 | 10:26 (26) | 18:36 | 102 | 08:59 (1) | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:27 (28) | 07:57 | | 08:28 (29) | 06:49 | | 07:16 (30) | 06:30 | | | 05:25 | 04:52 |
| | 16:37 | 35 | 10:07 (26) | 17:40 | 56 | 10:25 (26) | 18:38 | 104 | 09:00 (1) | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:27 (28) | 07:55 | | 08:27 (29) | 06:47 | | 07:15 (30) | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 41 | 10:10 (26) | 17:42 | 55 | 10:24 (26) | 18:40 | 104 | 08:59 (1) | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:28 (28) | 07:53 | | 08:25 (29) | 06:44 | | 07:15 (30) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 45 | 10:13 (26) | 17:44 | 53 | 10:22 (26) | 18:42 | 104 | 08:59 (1) | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:27 (28) | 07:51 | | 08:25 (29) | 06:42 | | 07:13 (30) | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 48 | 10:15 (26) | 17:47 | 49 | 10:20 (26) | 18:44 | 105 | 08:58 (1) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:27 (28) | 07:48 | | 08:24 (29) | 06:39 | | 07:13 (30) | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 50 | 10:17 (26) | 17:49 | 45 | 10:18 (26) | 18:46 | 104 | 08:57 (1) | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:27 (28) | 07:46 | | 08:23 (29) | 06:36 | | 07:13 (30) | 06:18 | | | 05:17 | 04:52 |
| | 16:46 | 51 | 10:18 (26) | 17:51 | 38 | 10:13 (26) | 18:48 | 104 | 08:57 (1) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:27 (28) | 07:44 | | 08:23 (29) | 06:34 | | 07:13 (30) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 52 | 10:19 (26) | 17:53 | 26 | 08:49 (29) | 18:50 | 103 | 08:56 (1) | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:27 (28) | 07:41 | | 08:23 (29) | 06:31 | | 07:14 (30) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 54 | 10:21 (26) | 17:55 | 25 | 08:48 (29) | 18:52 | 101 | 08:55 (1) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:27 (28) | 07:39 | | 08:23 (29) | 06:29 | | 07:14 (30) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 55 | 10:22 (26) | 17:57 | 25 | 08:48 (29) | 18:54 | 98 | 08:54 (1) | 20:55 | | | 21:51 | 22:20 |
| 25 | 08:40 | | 09:27 (28) | 07:37 | | 08:23 (29) | 06:26 | | 07:14 (30) | 06:09 | | | 05:11 | 04:53 |
| | 16:54 | 56 | 10:23 (26) | 17:59 | 24 | 08:47 (29) | 18:56 | 90 | 08:52 (1) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:28 (28) | 07:34 | | 08:24 (29) | 06:24 | | 07:17 (30) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 57 | 10:25 (26) | 18:01 | 23 | 08:47 (29) | 18:58 | 80 | 08:51 (1) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:29 (28) | 07:32 | | 08:23 (1) | 06:21 | | 07:20 (30) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 57 | 10:26 (26) | 18:03 | 22 | 08:45 (29) | 19:00 | 64 | 08:49 (1) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:29 (28) | 07:29 | | 08:20 (1) | 06:18 | | 08:04 (1) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 57 | 10:26 (26) | 18:05 | 28 | 08:48 (1) | 19:02 | 44 | 08:48 (1) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:30 (28) | | | | 07:16 | | 09:04 (1) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 57 | 10:27 (26) | | | | 20:04 | 42 | 09:46 (1) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:30 (28) | | | | 07:13 | | 09:06 (1) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 58 | 10:28 (26) | | | | 20:06 | 38 | 09:44 (1) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:31 (28) | | | | 07:11 | | 09:07 (1) | | | | 05:03 | |
| | 17:06 | 57 | 10:28 (26) | | | | 20:08 | 34 | 09:41 (1) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 950 | | | 1272 | | | 2347 | | | 69 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,67 | | | 0,73 | | | 0,94 | | | 0,92 | | | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,31 | | | 0,35 | | | |
| Total, real | | 111 | | | 218 | | | 723 | | | 24 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | | 08:12 (2) | 07:37 | | 08:08 (45) | 08:35 | | 09:13 (46) |
| | 22:18 | | 21:40 | | 20:30 | | | 19:12 | | 87 | 09:39 (1) | 16:58 | 49 | 09:59 (26) | 16:10 | 12 | 09:25 (46) |
| 2 | 04:58 | | 05:42 | | 06:40 | | | 07:37 | | | 08:12 (2) | 07:39 | | 09:13 (27) | 08:37 | | 09:14 (46) |
| | 22:18 | | 21:38 | | 20:27 | | | 19:10 | | 86 | 09:38 (1) | 16:56 | 46 | 09:59 (26) | 16:09 | 10 | 09:24 (46) |
| 3 | 04:58 | | 05:43 | | 06:42 | | | 07:39 | | | 08:13 (2) | 07:41 | | 09:10 (27) | 08:39 | | 09:16 (46) |
| | 22:17 | | 21:36 | | 20:25 | | | 19:07 | | 85 | 09:38 (1) | 16:54 | 49 | 09:59 (26) | 16:08 | 8 | 09:24 (46) |
| 4 | 04:59 | | 05:45 | | 06:44 | | | 07:41 | | | 08:14 (2) | 07:43 | | 09:09 (27) | 08:40 | | 09:18 (46) |
| | 22:17 | | 21:34 | | 20:22 | | | 19:05 | | 81 | 09:37 (1) | 16:52 | 51 | 10:00 (26) | 16:08 | 6 | 09:24 (46) |
| 5 | 05:00 | | 05:47 | | 06:46 | | | 07:43 | | | 08:15 (2) | 07:45 | | 09:08 (27) | 08:42 | | 09:19 (46) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | | 77 | 09:36 (1) | 16:50 | 52 | 10:00 (26) | 16:07 | 4 | 09:23 (46) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | | 08:17 (2) | 07:47 | | 09:06 (27) | 08:43 | | 09:21 (46) |
| | 22:16 | | 21:30 | | 20:17 | | | 18:59 | | 71 | 09:35 (1) | 16:48 | 54 | 10:00 (26) | 16:06 | 1 | 09:22 (46) |
| 7 | 05:02 | | 05:51 | | 06:49 | | | 07:46 | | | 08:20 (2) | 07:49 | | 09:05 (27) | 08:44 | | |
| | 22:15 | | 21:28 | | 20:14 | | | 18:57 | | 62 | 09:33 (1) | 16:46 | 55 | 10:00 (26) | 16:06 | | |
| 8 | 05:03 | | 05:53 | | 06:51 | | | 07:48 | | | 08:44 (1) | 07:51 | | 09:06 (27) | 08:46 | | |
| | 22:14 | | 21:26 | | 20:12 | | | 18:54 | | 48 | 09:32 (1) | 16:44 | 54 | 10:00 (26) | 16:05 | | |
| 9 | 05:05 | | 05:54 | | 06:53 | | 09:09 (1) | 07:50 | | | 08:45 (1) | 07:53 | | 09:05 (28) | 08:47 | | |
| | 22:13 | | 21:24 | | 20:09 | 15 | 09:24 (1) | 18:52 | | 46 | 09:31 (1) | 16:42 | 55 | 10:00 (26) | 16:05 | | |
| 10 | 05:06 | | 05:56 | | 06:55 | | 09:05 (1) | 07:52 | | | 08:46 (1) | 07:55 | | 09:03 (28) | 08:48 | | |
| | 22:12 | | 21:22 | | 20:07 | 23 | 09:28 (1) | 18:49 | | 43 | 09:29 (1) | 16:40 | 56 | 09:59 (26) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 09:02 (1) | 07:54 | | | 08:48 (1) | 07:57 | | 09:02 (28) | 08:50 | | |
| | 22:11 | | 21:19 | | 20:04 | 29 | 09:31 (1) | 18:47 | | 39 | 09:27 (1) | 16:38 | 57 | 09:59 (26) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 08:59 (1) | 07:56 | | | 08:49 (1) | 07:59 | | 09:02 (28) | 08:51 | | |
| | 22:10 | | 21:17 | | 20:01 | 34 | 09:33 (1) | 18:44 | | 36 | 09:25 (1) | 16:36 | 57 | 09:59 (26) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | 07:01 | | 08:56 (1) | 07:58 | | | 08:51 (1) | 08:02 | | 09:02 (28) | 08:52 | | |
| | 22:09 | | 21:15 | | 19:59 | 38 | 09:34 (1) | 18:42 | | 31 | 09:22 (1) | 16:34 | 57 | 09:59 (26) | 16:04 | | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:55 (1) | 08:00 | | | 08:54 (1) | 08:04 | | 09:01 (28) | 08:53 | | |
| | 22:08 | | 21:13 | | 19:56 | 41 | 09:36 (1) | 18:39 | | 26 | 09:20 (1) | 16:33 | 57 | 09:58 (26) | 16:04 | | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:53 (1) | 08:02 | | | 08:57 (29) | 08:06 | | 09:01 (28) | 08:54 | | |
| | 22:07 | | 21:11 | | 19:54 | 44 | 09:37 (1) | 18:37 | | 22 | 09:19 (29) | 16:31 | 56 | 09:57 (26) | 16:04 | | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:27 (2) | 08:04 | | | 08:56 (29) | 08:08 | | 09:01 (28) | 08:55 | | |
| | 22:06 | | 21:08 | | 19:51 | 59 | 09:38 (1) | 18:35 | | 23 | 09:19 (29) | 16:29 | 57 | 09:58 (26) | 16:04 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 (30) | 08:06 | | | 08:55 (29) | 08:10 | | 09:01 (28) | 08:56 | | |
| | 22:04 | | 21:06 | | 19:49 | 77 | 09:39 (1) | 18:32 | | 24 | 09:19 (29) | 16:28 | 56 | 09:57 (26) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:03 (30) | 08:08 | | | 08:54 (29) | 08:12 | | 09:01 (28) | 08:57 | | |
| | 22:03 | | 21:04 | | 19:46 | 89 | 09:40 (1) | 18:30 | | 25 | 09:19 (29) | 16:26 | 55 | 09:56 (26) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:01 (30) | 08:10 | | | 08:54 (29) | 08:13 | | 09:01 (28) | 08:57 | | |
| | 22:02 | | 21:01 | | 19:43 | 97 | 09:40 (1) | 18:27 | | 25 | 09:19 (29) | 16:25 | 54 | 09:55 (26) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:14 | | 07:59 (30) | 08:12 | | | 08:54 (29) | 08:15 | | 09:02 (28) | 08:58 | | |
| | 22:00 | | 20:59 | | 19:41 | 101 | 09:41 (1) | 18:25 | | 25 | 09:19 (29) | 16:23 | 52 | 09:54 (26) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 07:59 (30) | 08:14 | | | 08:54 (29) | 08:17 | | 09:03 (28) | 08:59 | | |
| | 21:59 | | 20:57 | | 19:38 | 102 | 09:41 (1) | 18:23 | | 40 | 10:45 (26) | 16:22 | 51 | 09:54 (26) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 07:58 (30) | 08:16 | | | 08:55 (29) | 08:19 | | 09:03 (28) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:36 | 103 | 09:41 (1) | 18:20 | | 46 | 10:49 (26) | 16:20 | 50 | 09:53 (26) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 07:57 (30) | 08:18 | | | 08:55 (29) | 08:21 | | 09:04 (28) | 09:00 | | |
| | 21:56 | | 20:52 | | 19:33 | 105 | 09:42 (1) | 18:18 | | 50 | 10:51 (26) | 16:19 | 48 | 09:52 (26) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 07:57 (30) | 08:20 | | | 08:56 (29) | 08:23 | | 09:05 (28) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 105 | 09:42 (1) | 18:16 | | 54 | 10:53 (26) | 16:18 | 45 | 09:50 (26) | 16:07 | | |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:57 (30) | 07:22 | | | 07:56 (29) | 08:25 | | 09:05 (28) | 09:00 | | |
| | 21:53 | | 20:47 | | 19:28 | 105 | 09:42 (1) | 17:13 | | 57 | 09:54 (26) | 16:16 | 42 | 09:49 (26) | 16:07 | | |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:57 (30) | 07:24 | | | 07:58 (29) | 08:27 | | 09:06 (28) | 09:01 | | |
| | 21:51 | | 20:44 | | 19:25 | 105 | 09:42 (1) | 17:11 | | 56 | 09:55 (26) | 16:15 | 35 | 09:46 (26) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:58 (30) | 07:27 | | | 08:00 (45) | 08:28 | | 09:07 (28) | 09:01 | | |
| | 21:49 | | 20:42 | | 19:23 | 104 | 09:42 (1) | 17:09 | | 57 | 09:57 (26) | 16:14 | 24 | 09:31 (27) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:58 (30) | 07:29 | | | 08:00 (45) | 08:30 | | 09:08 (46) | 09:01 | | |
| | 21:47 | | 20:40 | | 19:20 | 102 | 09:40 (1) | 17:07 | | 57 | 09:57 (26) | 16:13 | 22 | 09:30 (27) | 16:10 | | |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:59 (30) | 07:31 | | | 08:01 (45) | 08:32 | | 09:09 (46) | 09:01 | | |
| | 21:46 | | 20:37 | | 19:17 | 101 | 09:40 (1) | 17:04 | | 57 | 09:58 (26) | 16:12 | 19 | 09:28 (27) | 16:11 | | |
| 30 | 05:36 | | 06:34 | | 07:33 | | 08:01 (30) | 07:33 | | | 08:03 (45) | 08:34 | | 09:11 (46) | 09:01 | | |
| | 21:44 | | 20:35 | | 19:15 | 96 | 09:39 (1) | 17:02 | | 55 | 09:58 (26) | 16:11 | 14 | 09:25 (46) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | | 08:06 (45) | | | | 09:01 | | |
| | 21:42 | | 20:32 | | | | | 17:00 | | 53 | 09:59 (26) | | | | 16:13 | | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 1675 | | | 1544 | | | | 1429 | | | 41 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,94 | | | 0,85 | | | | 0,66 | | | 0,69 | |
| Total reduction | | | | | | 0,36 | | | 0,25 | | | | 0,10 | | | 0,09 | |
| Total, real | | | | | | 601 | | | 390 | | | | 144 | | | 4 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (46) | 08:28 | | 09:54 (27) | 07:27 | | 08:31 (1) | 07:08 | | 09:23 (1) | 05:55 | 05:02 |
| | 16:14 | 27 | 10:32 (26) | 17:08 | 69 | 11:03 (26) | 18:07 | 54 | 09:25 (1) | 20:10 | 48 | 10:11 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:37 (46) | 08:26 | | 09:55 (27) | 07:24 | | 08:30 (1) | 07:05 | | 09:25 (1) | 05:53 | 05:01 |
| | 16:15 | 36 | 10:34 (26) | 17:10 | 68 | 11:03 (26) | 18:10 | 56 | 09:26 (1) | 20:12 | 44 | 10:09 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:37 (46) | 08:24 | | 09:56 (27) | 07:22 | | 08:28 (1) | 07:03 | | 09:26 (1) | 05:51 | 05:00 |
| | 16:16 | 41 | 10:36 (26) | 17:12 | 67 | 11:03 (26) | 18:12 | 59 | 09:27 (1) | 20:14 | 40 | 10:06 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:36 (46) | 08:22 | | 09:58 (27) | 07:20 | | 08:28 (1) | 07:00 | | 09:28 (1) | 05:49 | 04:59 |
| | 16:18 | 45 | 10:37 (26) | 17:15 | 66 | 11:04 (26) | 18:14 | 60 | 09:28 (1) | 20:16 | 35 | 10:03 (1) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:36 (46) | 08:20 | | 10:00 (27) | 07:17 | | 07:51 (2) | 06:58 | | 09:30 (1) | 05:46 | 04:58 |
| | 16:19 | 51 | 10:40 (26) | 17:17 | 63 | 11:03 (26) | 18:16 | 77 | 09:28 (1) | 20:18 | 29 | 09:59 (1) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:36 (46) | 08:18 | | 10:04 (27) | 07:15 | | 07:49 (2) | 06:55 | | 09:34 (1) | 05:44 | 04:57 |
| | 16:20 | 54 | 10:41 (26) | 17:19 | 56 | 11:03 (26) | 18:18 | 85 | 09:30 (1) | 20:20 | 21 | 09:55 (1) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:36 (46) | 08:16 | | 08:45 (45) | 07:12 | | 07:46 (2) | 06:53 | | 09:42 (1) | 05:42 | 04:56 |
| | 16:22 | 56 | 10:42 (26) | 17:21 | 53 | 11:03 (26) | 18:20 | 91 | 09:30 (1) | 20:22 | 4 | 09:46 (1) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:36 (46) | 08:14 | | 08:42 (45) | 07:10 | | 07:44 (2) | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 60 | 10:44 (26) | 17:23 | 58 | 11:02 (26) | 18:22 | 95 | 09:30 (1) | 20:24 | | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:37 (46) | 08:12 | | 08:40 (45) | 07:07 | | 07:43 (2) | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 63 | 10:46 (26) | 17:25 | 60 | 11:02 (26) | 18:24 | 99 | 09:31 (1) | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:37 (46) | 08:10 | | 08:39 (45) | 07:04 | | 07:41 (2) | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 65 | 10:47 (26) | 17:27 | 61 | 11:01 (26) | 18:26 | 101 | 09:30 (1) | 20:28 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:37 (46) | 08:08 | | 08:38 (45) | 07:02 | | 07:40 (2) | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 68 | 10:48 (26) | 17:30 | 62 | 11:01 (26) | 18:28 | 106 | 09:31 (1) | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:37 (46) | 08:06 | | 08:37 (45) | 06:59 | | 07:39 (2) | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 70 | 10:49 (26) | 17:32 | 60 | 10:59 (26) | 18:30 | 108 | 09:31 (1) | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:37 (46) | 08:04 | | 08:37 (45) | 06:57 | | 07:25 (30) | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 73 | 10:50 (26) | 17:34 | 58 | 10:58 (26) | 18:32 | 119 | 09:31 (1) | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:38 (28) | 08:02 | | 08:36 (29) | 06:54 | | 07:22 (30) | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 73 | 10:51 (26) | 17:36 | 57 | 10:57 (26) | 18:34 | 125 | 09:31 (1) | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:38 (46) | 08:00 | | 08:34 (29) | 06:52 | | 07:20 (30) | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 75 | 10:53 (26) | 17:38 | 55 | 10:54 (26) | 18:36 | 127 | 09:30 (1) | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (28) | 07:57 | | 08:34 (29) | 06:49 | | 07:19 (30) | 06:30 | | | 05:25 | 04:52 |
| | 16:37 | 75 | 10:53 (26) | 17:40 | 53 | 10:53 (26) | 18:38 | 128 | 09:30 (1) | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (28) | 07:55 | | 08:33 (29) | 06:47 | | 07:17 (30) | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 75 | 10:54 (26) | 17:42 | 49 | 10:50 (26) | 18:40 | 130 | 09:29 (1) | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (28) | 07:53 | | 08:32 (29) | 06:44 | | 07:17 (30) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 77 | 10:56 (26) | 17:44 | 43 | 10:46 (26) | 18:42 | 130 | 09:30 (1) | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (28) | 07:51 | | 08:32 (29) | 06:42 | | 07:16 (30) | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 77 | 10:56 (26) | 17:47 | 28 | 09:00 (29) | 18:44 | 130 | 09:29 (1) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:40 (28) | 07:48 | | 08:33 (29) | 06:39 | | 07:15 (30) | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 78 | 10:58 (26) | 17:49 | 27 | 09:00 (29) | 18:46 | 128 | 09:27 (1) | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:40 (28) | 07:46 | | 08:32 (29) | 06:36 | | 07:15 (30) | 06:18 | | | 05:17 | 04:52 |
| | 16:46 | 78 | 10:58 (26) | 17:51 | 27 | 08:59 (29) | 18:48 | 127 | 09:27 (1) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:40 (28) | 07:44 | | 08:32 (29) | 06:34 | | 07:15 (30) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 78 | 10:58 (26) | 17:53 | 37 | 09:09 (1) | 18:50 | 125 | 09:26 (1) | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:41 (28) | 07:41 | | 08:32 (29) | 06:31 | | 07:16 (30) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 79 | 11:00 (26) | 17:55 | 41 | 09:13 (1) | 18:52 | 122 | 09:26 (1) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (28) | 07:39 | | 08:33 (29) | 06:29 | | 07:16 (30) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 79 | 11:00 (26) | 17:57 | 43 | 09:16 (1) | 18:54 | 118 | 09:24 (1) | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:42 (28) | 07:37 | | 08:33 (29) | 06:26 | | 07:16 (30) | 06:09 | | | 05:11 | 04:53 |
| | 16:54 | 78 | 11:00 (26) | 17:59 | 45 | 09:18 (1) | 18:56 | 113 | 09:23 (1) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:43 (28) | 07:34 | | 08:34 (29) | 06:23 | | 07:18 (30) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 79 | 11:02 (26) | 18:01 | 47 | 09:21 (1) | 18:58 | 105 | 09:22 (1) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:44 (28) | 07:32 | | 08:35 (29) | 06:21 | | 07:20 (30) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:02 (26) | 18:03 | 47 | 09:22 (1) | 19:00 | 94 | 09:20 (1) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:45 (28) | 07:29 | | 08:33 (1) | 06:18 | | 07:44 (2) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 77 | 11:02 (26) | 18:05 | 51 | 09:24 (1) | 19:02 | 76 | 09:19 (1) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:46 (28) | | | | 07:16 | | 08:48 (2) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 77 | 11:03 (26) | | | | 20:04 | 63 | 10:17 (1) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:48 (28) | | | | 07:13 | | 09:22 (1) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 75 | 11:03 (26) | | | | 20:06 | 54 | 10:16 (1) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:51 (28) | | | | 07:11 | | 09:22 (1) | | | | 05:03 | |
| | 17:06 | 72 | 11:03 (26) | | | | 20:08 | 51 | 10:13 (1) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 2089 | | | 1451 | | | 3056 | | | 221 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,59 | | | 0,69 | | | 0,91 | | | 0,88 | | | |
| Total reduction | | 0,10 | | | 0,16 | | | 0,29 | | | 0,33 | | | |
| Total, real | | 211 | | | 232 | | | 895 | | | 72 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (30) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 113 | 10:10 (1) | | 16:58 | 62 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:18 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 106 | 10:09 (1) | | 16:56 | 59 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:18 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 105 | 10:09 (1) | | 16:54 | 57 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:19 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 101 | 10:08 (1) | | 16:52 | 53 |
| 5 | 05:00 | | 05:47 | | 06:45 | 09:40 (1) | 07:43 | | 08:20 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | 1 09:41 (1) | 19:02 | 97 | 10:07 (1) | | 16:50 | 57 |
| 6 | 05:01 | | 05:49 | | 06:47 | 09:31 (1) | 07:44 | | 08:21 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | 20 09:51 (1) | 18:59 | 93 | 10:06 (1) | | 16:48 | 63 |
| 7 | 05:02 | | 05:51 | | 06:49 | 09:26 (1) | 07:46 | | 08:23 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | 28 09:54 (1) | 18:57 | 88 | 10:05 (1) | | 16:46 | 66 |
| 8 | 05:03 | | 05:53 | | 06:51 | 09:23 (1) | 07:48 | | 08:25 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | 34 09:57 (1) | 18:54 | 81 | 10:04 (1) | | 16:44 | 67 |
| 9 | 05:05 | | 05:54 | | 06:53 | 09:20 (1) | 07:50 | | 08:29 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | 40 10:00 (1) | 18:52 | 72 | 10:03 (1) | | 16:42 | 69 |
| 10 | 05:06 | | 05:56 | | 06:55 | 09:18 (1) | 07:52 | | 09:02 (1) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | 44 10:02 (1) | 18:49 | 60 | 10:02 (1) | | 16:40 | 70 |
| 11 | 05:07 | | 05:58 | | 06:57 | 09:17 (1) | 07:54 | | 09:03 (1) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | 47 10:04 (1) | 18:47 | 57 | 10:00 (1) | | 16:38 | 73 |
| 12 | 05:08 | | 06:00 | | 06:59 | 09:15 (1) | 07:56 | | 09:04 (1) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | 50 10:05 (1) | 18:44 | 55 | 09:59 (1) | | 16:36 | 75 |
| 13 | 05:09 | | 06:02 | | 07:01 | 09:12 (1) | 07:58 | | 09:05 (1) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | 54 10:06 (1) | 18:42 | 52 | 09:57 (1) | | 16:34 | 77 |
| 14 | 05:11 | | 06:04 | | 07:02 | 08:41 (2) | 08:00 | | 09:07 (1) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 58 10:07 (1) | 18:39 | 49 | 09:56 (1) | | 16:33 | 77 |
| 15 | 05:12 | | 06:06 | | 07:04 | 08:34 (2) | 08:02 | | 09:08 (29) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 73 10:08 (1) | 18:37 | 46 | 09:54 (1) | | 16:31 | 78 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:10 (30) | 08:04 | | 09:06 (29) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 90 10:09 (1) | 18:35 | 46 | 09:52 (1) | | 16:29 | 79 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:07 (30) | 08:06 | | 09:05 (29) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:48 | 102 10:10 (1) | 18:32 | 44 | 09:49 (1) | | 16:28 | 78 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:05 (30) | 08:08 | | 09:04 (29) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 111 10:11 (1) | 18:30 | 42 | 09:46 (1) | | 16:26 | 79 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:03 (30) | 08:10 | | 09:03 (29) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 118 10:11 (1) | 18:27 | 40 | 09:43 (1) | | 16:25 | 79 |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:02 (30) | 08:12 | | 09:03 (29) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 122 10:11 (1) | 18:25 | 35 | 09:38 (1) | | 16:23 | 78 |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:01 (30) | 08:14 | | 09:02 (29) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 123 10:11 (1) | 18:23 | 28 | 09:30 (29) | | 16:22 | 78 |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:00 (30) | 08:16 | | 09:03 (29) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 127 10:12 (1) | 18:20 | 27 | 09:30 (29) | | 16:20 | 78 |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:00 (30) | 08:18 | | 09:03 (29) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 128 10:12 (1) | 18:18 | 34 | 11:12 (26) | | 16:19 | 77 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:59 (30) | 08:20 | | 09:03 (29) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 129 10:12 (1) | 18:16 | 45 | 11:18 (26) | | 16:18 | 77 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:59 (30) | 07:22 | | 08:03 (29) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 130 10:12 (1) | 17:13 | 50 | 10:21 (26) | | 16:16 | 76 |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:00 (30) | 07:24 | | 08:03 (29) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 129 10:12 (1) | 17:11 | 54 | 10:23 (26) | | 16:15 | 75 |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:00 (30) | 07:27 | | 08:05 (29) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 129 10:12 (1) | 17:09 | 55 | 10:25 (26) | | 16:14 | 75 |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:00 (30) | 07:29 | | 08:06 (29) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 128 10:11 (1) | 17:07 | 58 | 10:27 (26) | | 16:13 | 73 |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (30) | 07:31 | | 08:07 (45) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 127 10:11 (1) | 17:04 | 58 | 10:28 (26) | | 16:12 | 72 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:03 (30) | 07:33 | | 08:07 (45) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 122 10:10 (1) | 17:02 | 60 | 10:29 (26) | | 16:11 | 70 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:08 (45) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 61 | 10:30 (26) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 2264 | | 1912 | | | | 2147 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,91 | | 0,85 | | | | 0,58 |
| Total reduction | | | | | | 0,34 | | 0,25 | | | | 0,09 |
| Total, real | | | | | | 771 | | 469 | | | | 186 |

| | December | |
|---|---|---|
| 1 | 08:35 | 09:19 (46) |
| | 16:10 | 69 10:31 (26) |
| 2 | 08:37 | 09:19 (46) |
| | 16:09 | 65 10:29 (26) |
| 3 | 08:39 | 09:20 (46) |
| | 16:08 | 63 10:29 (26) |
| 4 | 08:40 | 09:21 (46) |
| | 16:08 | 60 10:29 (26) |
| 5 | 08:42 | 09:21 (46) |
| | 16:07 | 56 10:27 (26) |
| 6 | 08:43 | 09:22 (46) |
| | 16:06 | 54 10:27 (26) |
| 7 | 08:44 | 09:22 (46) |
| | 16:06 | 51 10:26 (26) |
| 8 | 08:46 | 09:24 (46) |
| | 16:05 | 47 10:26 (26) |
| 9 | 08:47 | 09:25 (46) |
| | 16:05 | 42 10:24 (26) |
| 10 | 08:48 | 09:27 (46) |
| | 16:04 | 36 10:24 (26) |
| 11 | 08:50 | 09:28 (46) |
| | 16:04 | 27 10:22 (26) |
| 12 | 08:51 | 09:29 (46) |
| | 16:04 | 17 09:51 (27) |
| 13 | 08:52 | 09:30 (46) |
| | 16:04 | 10 09:48 (27) |
| 14 | 08:53 | 09:31 (46) |
| | 16:04 | 8 09:39 (46) |
| 15 | 08:54 | 09:33 (46) |
| | 16:04 | 7 09:40 (46) |
| 16 | 08:55 | 09:33 (46) |
| | 16:04 | 6 09:39 (46) |
| 17 | 08:56 | 09:34 (46) |
| | 16:04 | 5 09:39 (46) |
| 18 | 08:57 | 09:35 (46) |
| | 16:04 | 5 09:40 (46) |
| 19 | 08:57 | 09:36 (46) |
| | 16:04 | 4 09:40 (46) |
| 20 | 08:58 | 09:36 (46) |
| | 16:05 | 4 09:40 (46) |
| 21 | 08:59 | 09:37 (46) |
| | 16:05 | 4 09:41 (46) |
| 22 | 08:59 | 09:38 (46) |
| | 16:05 | 4 09:42 (46) |
| 23 | 09:00 | 09:38 (46) |
| | 16:06 | 4 09:42 (46) |
| 24 | 09:00 | 09:38 (46) |
| | 16:07 | 4 09:42 (46) |
| 25 | 09:00 | 09:38 (46) |
| | 16:07 | 5 09:43 (46) |
| 26 | 09:01 | 09:39 (46) |
| | 16:08 | 5 09:44 (46) |
| 27 | 09:01 | 09:39 (46) |
| | 16:09 | 6 09:45 (46) |
| 28 | 09:01 | 09:39 (46) |
| | 16:10 | 7 09:46 (46) |
| 29 | 09:01 | 09:39 (46) |
| | 16:11 | 8 09:47 (46) |
| 30 | 09:01 | 09:38 (46) |
| | 16:11 | 9 09:47 (46) |
| 31 | 09:01 | 09:38 (46) |
| | 16:13 | 16 09:59 (27) |
| Potential sun hours | 224 | |
| Total, worst case | | 708 |
| Sun reduction | | 0,14 |
| Oper. time red. | | 1,00 |
| Wind dir. red. | | 0,61 |
| Total reduction | | 0,08 |
| Total, real | | 55 |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (46) | 08:28 | 08:58 (45) | 07:27 | 08:07 (2) | 07:08 | 10:21 (1) | 05:55 | 05:02 |
| | 16:14 | 101 | 11:45 (26) | 17:08 53 | 11:56 (26) | 18:07 115 | 10:43 (1) | 20:10 47 | 11:08 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:50 (46) | 08:26 | 08:55 (45) | 07:24 | 08:05 (2) | 07:05 | 10:24 (1) | 05:53 | 05:01 |
| | 16:15 | 102 | 11:45 (26) | 17:10 60 | 11:56 (26) | 18:10 119 | 10:43 (1) | 20:12 41 | 11:05 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:51 (46) | 08:24 | 08:53 (45) | 07:22 | 08:03 (2) | 07:03 | 10:26 (1) | 05:51 | 05:00 |
| | 16:16 | 103 | 11:46 (26) | 17:12 62 | 11:56 (26) | 18:12 123 | 10:43 (1) | 20:14 34 | 11:00 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:51 (46) | 08:22 | 08:52 (45) | 07:19 | 08:02 (2) | 07:00 | 10:30 (1) | 05:49 | 04:59 |
| | 16:18 | 103 | 11:46 (26) | 17:15 63 | 11:55 (26) | 18:14 127 | 10:44 (1) | 20:16 26 | 10:56 (1) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:52 (46) | 08:20 | 08:52 (45) | 07:17 | 08:00 (2) | 06:58 | 10:37 (1) | 05:46 | 04:58 |
| | 16:19 | 104 | 11:48 (26) | 17:17 65 | 11:54 (26) | 18:16 129 | 10:43 (1) | 20:18 9 | 10:46 (1) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:52 (46) | 08:18 | 08:51 (45) | 07:15 | 07:59 (2) | 06:55 | 07:20 (43) | 05:44 | 04:57 |
| | 16:20 | 104 | 11:48 (26) | 17:19 65 | 11:53 (26) | 18:18 133 | 10:44 (1) | 20:20 6 | 07:26 (43) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:53 (46) | 08:16 | 08:51 (45) | 07:12 | 07:58 (2) | 06:53 | 07:17 (43) | 05:42 | 04:56 |
| | 16:22 | 104 | 11:48 (26) | 17:21 79 | 11:52 (26) | 18:20 134 | 10:43 (1) | 20:22 10 | 07:27 (43) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:53 (46) | 08:14 | 08:50 (45) | 07:10 | 07:57 (2) | 06:50 | 07:15 (43) | 05:40 | 04:56 |
| | 16:23 | 106 | 11:49 (26) | 17:23 89 | 11:50 (26) | 18:22 135 | 10:43 (1) | 20:24 14 | 07:29 (43) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:54 (46) | 08:12 | 08:50 (45) | 07:07 | 07:57 (2) | 06:48 | 07:12 (43) | 05:38 | 04:55 |
| | 16:25 | 107 | 11:51 (26) | 17:25 94 | 11:49 (26) | 18:24 136 | 10:43 (1) | 20:26 17 | 07:29 (43) | 21:24 | 22:12 |
| 10 | 08:57 | | 09:55 (46) | 08:10 | 08:50 (45) | 07:04 | 07:36 (30) | 06:45 | 07:10 (43) | 05:36 | 04:55 |
| | 16:26 | 106 | 11:51 (26) | 17:27 97 | 11:47 (26) | 18:26 145 | 10:42 (1) | 20:27 20 | 07:30 (43) | 21:26 | 22:13 |
| 11 | 08:56 | | 09:56 (46) | 08:08 | 08:51 (45) | 07:02 | 07:33 (30) | 06:43 | 07:09 (43) | 05:34 | 04:54 |
| | 16:28 | 106 | 11:52 (26) | 17:30 96 | 11:44 (26) | 18:28 152 | 10:42 (1) | 20:29 20 | 07:29 (43) | 21:28 | 22:14 |
| 12 | 08:55 | | 09:56 (46) | 08:06 | 08:51 (45) | 06:59 | 07:30 (30) | 06:40 | 07:09 (43) | 05:32 | 04:54 |
| | 16:30 | 107 | 11:52 (26) | 17:32 93 | 11:39 (26) | 18:30 155 | 10:41 (1) | 20:31 21 | 07:30 (43) | 21:30 | 22:14 |
| 13 | 08:54 | | 09:56 (46) | 08:04 | 08:51 (45) | 06:57 | 07:29 (30) | 06:38 | 07:09 (43) | 05:30 | 04:53 |
| | 16:31 | 107 | 11:52 (26) | 17:34 83 | 10:27 (1) | 18:32 159 | 10:41 (1) | 20:33 21 | 07:30 (43) | 21:32 | 22:15 |
| 14 | 08:53 | | 09:58 (46) | 08:02 | 08:51 (29) | 06:54 | 07:27 (30) | 06:35 | 07:08 (43) | 05:29 | 04:53 |
| | 16:33 | 106 | 11:53 (26) | 17:36 87 | 10:29 (1) | 18:34 160 | 10:40 (1) | 20:35 21 | 07:29 (43) | 21:34 | 22:16 |
| 15 | 08:52 | | 09:59 (46) | 08:00 | 08:50 (29) | 06:52 | 07:26 (30) | 06:33 | 07:09 (43) | 05:27 | 04:53 |
| | 16:35 | 106 | 11:54 (26) | 17:38 91 | 10:30 (1) | 18:36 160 | 10:39 (1) | 20:37 19 | 07:28 (43) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:59 (46) | 07:57 | 08:50 (29) | 06:49 | 07:25 (30) | 06:30 | 07:09 (43) | 05:25 | 04:52 |
| | 16:37 | 106 | 11:54 (26) | 17:40 94 | 10:32 (1) | 18:38 161 | 10:39 (1) | 20:39 18 | 07:27 (43) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:01 (46) | 07:55 | 08:51 (29) | 06:47 | 07:24 (30) | 06:28 | 07:10 (43) | 05:23 | 04:52 |
| | 16:38 | 106 | 11:55 (26) | 17:42 96 | 10:34 (1) | 18:40 160 | 10:38 (1) | 20:41 16 | 07:26 (43) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:03 (46) | 07:53 | 08:51 (29) | 06:44 | 07:25 (30) | 06:25 | 07:11 (43) | 05:21 | 04:52 |
| | 16:40 | 104 | 11:56 (26) | 17:44 98 | 10:35 (1) | 18:42 157 | 10:37 (1) | 20:43 14 | 07:25 (43) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (28) | 07:51 | 08:52 (29) | 06:42 | 07:24 (30) | 06:23 | 07:13 (43) | 05:20 | 04:52 |
| | 16:42 | 103 | 11:55 (26) | 17:47 99 | 10:36 (1) | 18:44 155 | 10:36 (1) | 20:45 8 | 07:21 (43) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (28) | 07:48 | 08:53 (29) | 06:39 | 07:23 (30) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 102 | 11:56 (26) | 17:49 100 | 10:38 (1) | 18:46 152 | 10:34 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:06 (28) | 07:46 | 08:53 (29) | 06:36 | 07:24 (30) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 101 | 11:56 (26) | 17:51 101 | 10:38 (1) | 18:48 146 | 10:33 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:07 (28) | 07:44 | 08:54 (29) | 06:34 | 07:24 (30) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 99 | 11:56 (26) | 17:53 100 | 10:39 (1) | 18:50 141 | 10:31 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:09 (28) | 07:41 | 08:55 (29) | 06:31 | 07:25 (30) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 97 | 11:57 (26) | 17:55 100 | 10:40 (1) | 18:52 135 | 10:30 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:11 (28) | 07:39 | 08:57 (29) | 06:29 | 07:25 (30) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 94 | 11:57 (26) | 17:57 97 | 10:41 (1) | 18:54 128 | 10:28 (1) | 20:55 | | 21:51 | 22:19 |
| 25 | 08:40 | | 10:14 (28) | 07:37 | 09:00 (29) | 06:26 | 07:26 (30) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 87 | 11:57 (26) | 17:59 92 | 10:41 (1) | 18:56 119 | 10:26 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | | 10:25 (27) | 07:34 | 09:18 (1) | 06:23 | 07:29 (30) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 80 | 11:58 (26) | 18:01 84 | 10:42 (1) | 18:58 107 | 10:25 (1) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:26 (27) | 07:32 | 08:13 (2) | 06:21 | 07:33 (30) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:58 (26) | 18:03 100 | 10:42 (1) | 19:00 87 | 10:22 (1) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:28 (27) | 07:29 | 08:10 (2) | 06:18 | 09:16 (1) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 74 | 11:58 (26) | 18:05 109 | 10:43 (1) | 19:02 64 | 10:20 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:30 (27) | | | 07:16 | 10:17 (1) | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 69 | 11:57 (26) | | | 20:04 61 | 11:18 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 10:32 (27) | | | 07:13 | 10:19 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 63 | 11:57 (26) | | | 20:06 56 | 11:15 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 11:06 (26) | | | 07:11 | 10:20 (1) | | | 05:03 | |
| | 17:06 | 51 | 11:57 (26) | | | 20:08 52 | 11:12 (1) | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 2986 | | | 2447 | | 3963 | | 382 | | |
| Sun reduction | | 0,18 | | | 0,25 | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,43 | | | 0,68 | | 0,80 | | 0,88 | | |
| Total reduction | | 0,07 | | | 0,15 | | 0,25 | | 0,32 | | |
| Total, real | | 215 | | | 377 | | 995 | | 121 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:09 (43) | 07:35 | | 08:08 (30) | 07:37 | | 08:20 (45) | 08:35 | | 09:37 (46) |
| | 22:18 | | 21:40 | | | 20:30 | 20 | 07:29 (43) | 19:12 | 157 | 11:20 (1) | 16:58 | 97 | 11:17 (26) | 16:10 | 106 | 11:33 (26) |
| 2 | 04:58 | | 05:42 | | | 06:40 | | 07:08 (43) | 07:37 | | 08:10 (30) | 07:39 | | 08:20 (45) | 08:37 | | 09:37 (46) |
| | 22:18 | | 21:38 | | | 20:27 | 20 | 07:28 (43) | 19:10 | 153 | 11:20 (1) | 16:56 | 93 | 11:18 (26) | 16:09 | 106 | 11:33 (26) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:10 (43) | 07:39 | | 08:12 (30) | 07:41 | | 08:20 (45) | 08:39 | | 09:38 (46) |
| | 22:17 | | 21:36 | | | 20:25 | 17 | 07:27 (43) | 19:07 | 150 | 11:20 (1) | 16:54 | 89 | 11:20 (26) | 16:08 | 105 | 11:34 (26) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:12 (43) | 07:41 | | 08:33 (2) | 07:43 | | 08:21 (45) | 08:40 | | 09:38 (46) |
| | 22:17 | | 21:34 | | | 20:22 | 14 | 07:26 (43) | 19:05 | 137 | 11:20 (1) | 16:52 | 75 | 11:22 (26) | 16:08 | 105 | 11:34 (26) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:14 (43) | 07:43 | | 08:34 (2) | 07:45 | | 08:21 (45) | 08:42 | | 09:38 (46) |
| | 22:16 | | 21:32 | | | 20:19 | 10 | 07:24 (43) | 19:02 | 135 | 11:20 (1) | 16:50 | 65 | 11:23 (26) | 16:07 | 105 | 11:34 (26) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:16 (43) | 07:44 | | 08:34 (2) | 07:47 | | 08:22 (45) | 08:43 | | 09:38 (46) |
| | 22:16 | | 21:30 | | | 20:17 | 6 | 07:22 (43) | 18:59 | 134 | 11:19 (1) | 16:48 | 64 | 11:24 (26) | 16:06 | 104 | 11:34 (26) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 10:34 (1) | 07:46 | | 08:34 (2) | 07:49 | | 08:22 (45) | 08:44 | | 09:38 (46) |
| | 22:15 | | 21:28 | | | 20:14 | 6 | 10:40 (1) | 18:57 | 133 | 11:19 (1) | 16:46 | 63 | 11:25 (26) | 16:06 | 104 | 11:34 (26) |
| 8 | 05:03 | | 05:53 | | | 06:51 | | 10:25 (1) | 07:48 | | 08:35 (2) | 07:51 | | 08:24 (45) | 08:46 | | 09:39 (46) |
| | 22:14 | | 21:26 | | | 20:12 | 24 | 10:49 (1) | 18:54 | 131 | 11:19 (1) | 16:44 | 61 | 11:26 (26) | 16:05 | 103 | 11:34 (26) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 10:21 (1) | 07:50 | | 08:36 (2) | 07:53 | | 08:26 (45) | 08:47 | | 09:39 (46) |
| | 22:13 | | 21:24 | | | 20:09 | 33 | 10:54 (1) | 18:52 | 128 | 11:18 (1) | 16:42 | 59 | 11:27 (26) | 16:05 | 103 | 11:34 (26) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 10:17 (1) | 07:52 | | 08:36 (2) | 07:55 | | 08:30 (45) | 08:48 | | 09:40 (46) |
| | 22:12 | | 21:22 | | | 20:07 | 41 | 10:58 (1) | 18:49 | 126 | 11:18 (1) | 16:40 | 52 | 11:27 (26) | 16:04 | 103 | 11:35 (26) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 10:15 (1) | 07:54 | | 08:38 (2) | 07:57 | | 10:37 (26) | 08:50 | | 09:40 (46) |
| | 22:11 | | 21:19 | | | 20:04 | 46 | 11:01 (1) | 18:47 | 122 | 11:17 (1) | 16:38 | 51 | 11:28 (26) | 16:04 | 102 | 11:35 (26) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | 10:11 (1) | 07:56 | | 08:39 (2) | 07:59 | | 10:04 (27) | 08:51 | | 09:41 (46) |
| | 22:10 | | 21:17 | | | 20:01 | 52 | 11:03 (1) | 18:44 | 118 | 11:16 (1) | 16:36 | 64 | 11:29 (26) | 16:04 | 101 | 11:35 (26) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | 10:09 (1) | 07:58 | | 08:41 (2) | 08:01 | | 10:02 (27) | 08:52 | | 09:41 (46) |
| | 22:09 | | 21:15 | | | 19:59 | 56 | 11:05 (1) | 18:42 | 111 | 11:15 (1) | 16:34 | 69 | 11:29 (26) | 16:04 | 100 | 11:35 (26) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | 10:08 (1) | 08:00 | | 08:44 (2) | 08:04 | | 10:00 (27) | 08:53 | | 09:41 (46) |
| | 22:08 | | 21:13 | | | 19:56 | 60 | 11:08 (1) | 18:39 | 106 | 11:16 (1) | 16:33 | 74 | 11:30 (26) | 16:04 | 100 | 11:35 (26) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | 10:06 (1) | 08:02 | | 08:48 (2) | 08:06 | | 09:58 (27) | 08:54 | | 09:43 (46) |
| | 22:07 | | 21:11 | | | 19:54 | 64 | 11:10 (1) | 18:37 | 97 | 11:15 (1) | 16:31 | 78 | 11:30 (26) | 16:04 | 98 | 11:36 (26) |
| 16 | 05:14 | | 06:08 | | | 07:06 | | 08:55 (2) | 08:04 | | 09:50 (1) | 08:08 | | 09:58 (27) | 08:55 | | 09:42 (46) |
| | 22:06 | | 21:08 | | | 19:51 | 81 | 11:11 (1) | 18:35 | 84 | 11:14 (1) | 16:29 | 80 | 11:31 (26) | 16:04 | 99 | 11:36 (26) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:18 (30) | 08:06 | | 09:31 (29) | 08:10 | | 09:48 (28) | 08:56 | | 09:43 (46) |
| | 22:04 | | 21:06 | | | 19:48 | 104 | 11:13 (1) | 18:32 | 94 | 11:13 (1) | 16:28 | 87 | 11:31 (26) | 16:04 | 98 | 11:36 (26) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:15 (30) | 08:08 | | 09:28 (29) | 08:12 | | 09:45 (28) | 08:57 | | 09:44 (46) |
| | 22:03 | | 21:04 | | | 19:46 | 116 | 11:14 (1) | 18:30 | 98 | 11:12 (1) | 16:26 | 94 | 11:31 (26) | 16:04 | 98 | 11:37 (26) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:12 (30) | 08:10 | | 09:26 (29) | 08:13 | | 09:43 (28) | 08:57 | | 09:45 (46) |
| | 22:02 | | 21:01 | | | 19:43 | 126 | 11:15 (1) | 18:27 | 100 | 11:11 (1) | 16:25 | 97 | 11:31 (26) | 16:04 | 97 | 11:37 (26) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 08:11 (30) | 08:12 | | 09:24 (29) | 08:15 | | 09:42 (28) | 08:58 | | 09:44 (46) |
| | 22:00 | | 20:59 | | | 19:41 | 134 | 11:16 (1) | 18:25 | 101 | 11:09 (1) | 16:23 | 99 | 11:31 (26) | 16:05 | 97 | 11:37 (26) |
| 21 | 05:21 | | 06:17 | | | 07:16 | | 08:10 (30) | 08:14 | | 09:23 (29) | 08:17 | | 09:42 (28) | 08:59 | | 09:45 (46) |
| | 21:59 | | 20:57 | | | 19:38 | 140 | 11:17 (1) | 18:23 | 100 | 11:08 (1) | 16:22 | 101 | 11:32 (26) | 16:05 | 97 | 11:38 (26) |
| 22 | 05:23 | | 06:19 | | | 07:18 | | 08:09 (30) | 08:16 | | 09:23 (29) | 08:19 | | 09:41 (28) | 08:59 | | 09:46 (46) |
| | 21:57 | | 20:54 | | | 19:36 | 146 | 11:18 (1) | 18:20 | 100 | 11:08 (1) | 16:20 | 102 | 11:32 (26) | 16:05 | 97 | 11:39 (26) |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 08:08 (30) | 08:18 | | 09:22 (29) | 08:21 | | 09:41 (28) | 09:00 | | 09:46 (46) |
| | 21:56 | | 20:52 | | | 19:33 | 150 | 11:18 (1) | 18:18 | 98 | 11:06 (1) | 16:19 | 104 | 11:33 (26) | 16:06 | 97 | 11:39 (26) |
| 24 | 05:26 | | 06:23 | | 07:16 (43) | 07:21 | | 08:08 (30) | 08:20 | | 09:21 (29) | 08:23 | | 09:41 (28) | 09:00 | | 09:46 (46) |
| | 21:54 | | 20:49 | 9 | 07:25 (43) | 19:30 | 154 | 11:19 (1) | 18:16 | 98 | 11:05 (1) | 16:18 | 103 | 11:33 (26) | 16:07 | 97 | 11:39 (26) |
| 25 | 05:28 | | 06:25 | | 07:14 (43) | 07:23 | | 08:07 (30) | 07:22 | | 08:20 (29) | 08:25 | | 09:39 (46) | 09:00 | | 09:47 (46) |
| | 21:52 | | 20:47 | 13 | 07:27 (43) | 19:28 | 158 | 11:20 (1) | 17:13 | 96 | 10:03 (1) | 16:16 | 106 | 11:33 (26) | 16:07 | 98 | 11:40 (26) |
| 26 | 05:29 | | 06:27 | | 07:13 (43) | 07:25 | | 08:07 (30) | 07:24 | | 08:20 (29) | 08:27 | | 09:38 (46) | 09:01 | | 09:48 (46) |
| | 21:51 | | 20:44 | 16 | 07:29 (43) | 19:25 | 158 | 11:20 (1) | 17:11 | 92 | 10:01 (1) | 16:15 | 106 | 11:33 (26) | 16:08 | 98 | 11:41 (26) |
| 27 | 05:31 | | 06:28 | | 07:11 (43) | 07:27 | | 08:07 (30) | 07:26 | | 08:21 (29) | 08:28 | | 09:38 (46) | 09:01 | | 09:48 (46) |
| | 21:49 | | 20:42 | 18 | 07:29 (43) | 19:23 | 161 | 11:21 (1) | 17:09 | 89 | 10:00 (1) | 16:14 | 106 | 11:33 (26) | 16:09 | 100 | 11:42 (26) |
| 28 | 05:33 | | 06:30 | | 07:10 (43) | 07:29 | | 08:06 (30) | 07:29 | | 08:20 (29) | 08:30 | | 09:38 (46) | 09:01 | | 09:49 (46) |
| | 21:47 | | 20:40 | 19 | 07:29 (43) | 19:20 | 162 | 11:20 (1) | 17:07 | 87 | 09:58 (1) | 16:13 | 106 | 11:33 (26) | 16:10 | 98 | 11:42 (26) |
| 29 | 05:34 | | 06:32 | | 07:09 (43) | 07:31 | | 08:07 (30) | 07:31 | | 08:20 (29) | 08:32 | | 09:38 (46) | 09:01 | | 09:49 (46) |
| | 21:46 | | 20:37 | 21 | 07:30 (43) | 19:17 | 160 | 11:20 (1) | 17:04 | 82 | 09:56 (1) | 16:12 | 106 | 11:33 (26) | 16:11 | 100 | 11:43 (26) |
| 30 | 05:36 | | 06:34 | | 07:09 (43) | 07:33 | | 08:07 (30) | 07:33 | | 08:20 (45) | 08:34 | | 09:38 (46) | 09:01 | | 09:49 (46) |
| | 21:44 | | 20:35 | 21 | 07:30 (43) | 19:15 | 160 | 11:20 (1) | 17:02 | 95 | 11:10 (26) | 16:11 | 107 | 11:34 (26) | 16:11 | 100 | 11:43 (26) |
| 31 | 05:38 | | 06:36 | | 07:09 (43) | | | | 07:35 | | 08:20 (45) | | | | 09:01 | | 09:49 (46) |
| | 21:42 | | 20:32 | 21 | 07:30 (43) | | | | 17:00 | 97 | 11:14 (26) | | | | 16:13 | 101 | 11:44 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 138 | | | 2579 | | | 3449 | | | 2558 | | | 3117 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,81 | | | 0,77 | | | 0,45 | | | 0,46 | |
| Total reduction | | | | 0,47 | | | 0,29 | | | 0,22 | | | 0,07 | | | 0,06 | |
| Total, real | | | | 65 | | | 758 | | | 746 | | | 168 | | | 179 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:47 (29) | 08:28 | | 09:23 (2) | 07:27 | | 08:18 (30) | 07:08 | | 07:38 (43) | 05:55 | 05:02 |
| | 16:14 | 95 | 12:43 (26) | 17:08 | 112 | 12:33 (1) | 18:07 | 28 | 08:46 (30) | 20:10 | 23 | 08:01 (43) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:46 (29) | 08:26 | | 09:22 (2) | 07:24 | | 08:19 (30) | 07:05 | | 07:38 (43) | 05:53 | 05:01 |
| | 16:15 | 96 | 12:43 (26) | 17:10 | 111 | 12:33 (1) | 18:10 | 27 | 08:46 (30) | 20:12 | 23 | 08:01 (43) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:45 (29) | 08:24 | | 09:22 (2) | 07:22 | | 08:19 (30) | 07:03 | | 07:38 (43) | 05:51 | 05:00 |
| | 16:16 | 98 | 12:44 (26) | 17:12 | 107 | 12:32 (1) | 18:12 | 26 | 08:45 (30) | 20:14 | 22 | 08:00 (43) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:44 (29) | 08:22 | | 09:22 (2) | 07:19 | | 08:20 (30) | 07:00 | | 07:38 (43) | 05:49 | 04:59 |
| | 16:18 | 99 | 12:44 (26) | 17:15 | 107 | 12:32 (1) | 18:14 | 24 | 08:44 (30) | 20:16 | 22 | 08:00 (43) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:44 (29) | 08:20 | | 09:22 (2) | 07:17 | | 08:21 (30) | 06:58 | | 07:38 (43) | 05:46 | 04:58 |
| | 16:19 | 98 | 12:44 (26) | 17:17 | 107 | 12:32 (1) | 18:16 | 21 | 08:42 (30) | 20:18 | 20 | 07:58 (43) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:44 (29) | 08:18 | | 09:21 (2) | 07:15 | | 08:23 (30) | 06:55 | | 07:40 (43) | 05:44 | 04:57 |
| | 16:20 | 99 | 12:44 (26) | 17:19 | 106 | 12:31 (1) | 18:18 | 17 | 08:40 (30) | 20:20 | 17 | 07:57 (43) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:43 (29) | 08:16 | | 09:22 (2) | 07:12 | | 08:25 (30) | 06:53 | | 07:40 (43) | 05:42 | 04:56 |
| | 16:22 | 101 | 12:44 (26) | 17:21 | 104 | 12:30 (1) | 18:20 | 12 | 08:37 (30) | 20:22 | 15 | 07:55 (43) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:43 (29) | 08:14 | | 09:21 (2) | 07:10 | | | 06:50 | | 07:43 (43) | 05:40 | 04:56 |
| | 16:23 | 102 | 12:44 (26) | 17:23 | 103 | 12:29 (1) | 18:22 | | | 20:24 | 9 | 07:52 (43) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:33 (45) | 08:12 | | 09:21 (2) | 07:07 | | | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 105 | 12:45 (26) | 17:25 | 100 | 12:28 (1) | 18:24 | | | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:32 (45) | 08:10 | | 09:21 (2) | 07:04 | | | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 111 | 12:45 (26) | 17:27 | 99 | 12:27 (1) | 18:26 | | | 20:27 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:31 (45) | 08:08 | | 09:21 (2) | 07:02 | | | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 113 | 12:44 (26) | 17:30 | 96 | 12:26 (1) | 18:28 | | | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:29 (45) | 08:06 | | 09:21 (2) | 06:59 | | | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 116 | 12:43 (26) | 17:32 | 91 | 12:23 (1) | 18:30 | | | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:28 (45) | 08:04 | | 09:21 (2) | 06:57 | | | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 119 | 12:43 (26) | 17:34 | 87 | 12:21 (1) | 18:32 | | | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:27 (45) | 08:02 | | 09:22 (2) | 06:54 | | | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 122 | 12:43 (26) | 17:36 | 81 | 12:19 (1) | 18:34 | | | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:27 (45) | 08:00 | | 09:22 (2) | 06:52 | | | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 121 | 12:42 (26) | 17:38 | 75 | 12:16 (1) | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:26 (45) | 07:57 | | 09:23 (2) | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 121 | 12:40 (26) | 17:40 | 65 | 12:12 (1) | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:26 (45) | 07:55 | | 08:30 (30) | 06:47 | | | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 120 | 12:39 (26) | 17:42 | 58 | 12:05 (1) | 18:40 | | | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:27 (45) | 07:53 | | 08:26 (30) | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 118 | 12:38 (26) | 17:44 | 56 | 10:05 (2) | 18:42 | | | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:26 (45) | 07:51 | | 08:24 (30) | 06:42 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 116 | 12:34 (26) | 17:47 | 58 | 10:04 (2) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:27 (45) | 07:48 | | 08:23 (30) | 06:39 | | | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 113 | 12:32 (1) | 17:49 | 59 | 10:03 (2) | 18:46 | | | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:26 (45) | 07:46 | | 08:21 (30) | 06:36 | | | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 114 | 12:32 (1) | 17:51 | 59 | 10:01 (2) | 18:48 | | | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:26 (45) | 07:44 | | 08:21 (30) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 114 | 12:32 (1) | 17:53 | 57 | 10:00 (2) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:27 (45) | 07:41 | | 08:19 (30) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 114 | 12:33 (1) | 17:55 | 55 | 09:57 (2) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:27 (45) | 07:39 | | 08:19 (30) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 114 | 12:33 (1) | 17:57 | 51 | 09:55 (2) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | 08:18 (30) | 06:26 | | 06:50 (43) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 114 | 12:33 (1) | 17:59 | 43 | 09:50 (2) | 18:56 | 4 | 06:54 (43) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | 08:19 (30) | 06:23 | | 06:48 (43) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 115 | 12:34 (1) | 18:01 | 29 | 08:48 (30) | 18:58 | 10 | 06:58 (43) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | 08:18 (30) | 06:21 | | 06:45 (43) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 115 | 12:34 (1) | 18:03 | 29 | 08:47 (30) | 19:00 | 14 | 06:59 (43) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | 08:18 (30) | 06:18 | | 06:43 (43) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 115 | 12:34 (1) | 18:05 | 29 | 08:47 (30) | 19:02 | 18 | 07:01 (43) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | | 07:40 (43) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 115 | 12:34 (1) | | | | 20:04 | 21 | 08:01 (43) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | | 07:40 (43) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 115 | 12:34 (1) | | | | 20:06 | 22 | 08:02 (43) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 07:39 (43) | | | | 05:03 | |
| | 17:06 | 113 | 12:33 (1) | | | | 20:08 | 22 | 08:01 (43) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 3441 | | | 2134 | | | 266 | | | 151 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,34 | | | 0,54 | | | 0,94 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,12 | | | 0,28 | | | 0,34 | | | |
| Total, real | | 188 | | | 250 | | | 75 | | | 52 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | | 07:37 | | 08:51 (2) | 08:35 | | 09:13 (45) |
| | 22:18 | | 21:40 | | 20:30 | | | 19:12 | | | 16:58 | 98 | 11:57 (1) | 16:10 | 113 | 12:26 (26) |
| 2 | 04:58 | | 05:41 | | 06:40 | | | 07:37 | | | 07:39 | | 08:50 (2) | 08:37 | | 09:14 (45) |
| | 22:18 | | 21:38 | | 20:27 | | | 19:10 | | | 16:56 | 102 | 11:58 (1) | 16:09 | 111 | 12:27 (26) |
| 3 | 04:58 | | 05:43 | | 06:42 | | | 07:39 | | | 07:41 | | 08:50 (2) | 08:39 | | 09:16 (45) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | | 16:54 | 103 | 11:58 (1) | 16:08 | 106 | 12:28 (26) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:40 (43) | 07:41 | | | 07:43 | | 08:51 (2) | 08:40 | | 09:28 (29) |
| | 22:17 | | 21:34 | | 20:22 | 9 | 07:49 (43) | 19:05 | | | 16:52 | 104 | 12:00 (1) | 16:08 | 102 | 12:29 (26) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:38 (43) | 07:43 | | | 07:45 | | 08:51 (2) | 08:42 | | 09:28 (29) |
| | 22:16 | | 21:32 | | 20:19 | 14 | 07:52 (43) | 19:02 | | | 16:50 | 106 | 12:01 (1) | 16:07 | 101 | 12:29 (26) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:36 (43) | 07:44 | | 09:03 (30) | 07:47 | | 08:51 (2) | 08:43 | | 09:30 (29) |
| | 22:16 | | 21:30 | | 20:17 | 17 | 07:53 (43) | 18:59 | 8 | 09:11 (30) | 16:48 | 106 | 12:01 (1) | 16:06 | 99 | 12:30 (26) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:34 (43) | 07:46 | | 08:59 (30) | 07:49 | | 08:51 (2) | 08:44 | | 09:30 (29) |
| | 22:15 | | 21:28 | | 20:14 | 19 | 07:53 (43) | 18:57 | 15 | 09:14 (30) | 16:46 | 108 | 12:02 (1) | 16:06 | 98 | 12:30 (26) |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:33 (43) | 07:48 | | 08:57 (30) | 07:51 | | 08:53 (2) | 08:46 | | 09:32 (29) |
| | 22:14 | | 21:26 | | 20:12 | 21 | 07:54 (43) | 18:54 | 19 | 09:16 (30) | 16:44 | 108 | 12:03 (1) | 16:05 | 99 | 12:32 (26) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:32 (43) | 07:50 | | 08:55 (30) | 07:53 | | 08:53 (2) | 08:47 | | 09:33 (29) |
| | 22:13 | | 21:24 | | 20:09 | 22 | 07:54 (43) | 18:52 | 23 | 09:18 (30) | 16:42 | 111 | 12:04 (1) | 16:05 | 98 | 12:32 (26) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:31 (43) | 07:52 | | 08:54 (30) | 07:55 | | 08:53 (2) | 08:48 | | 09:35 (29) |
| | 22:12 | | 21:22 | | 20:07 | 23 | 07:54 (43) | 18:49 | 24 | 09:18 (30) | 16:40 | 113 | 12:04 (1) | 16:04 | 97 | 12:33 (26) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:31 (43) | 07:54 | | 08:53 (30) | 07:57 | | 08:54 (2) | 08:50 | | 09:37 (29) |
| | 22:11 | | 21:19 | | 20:04 | 23 | 07:54 (43) | 18:47 | 26 | 09:19 (30) | 16:38 | 113 | 12:04 (1) | 16:04 | 95 | 12:33 (26) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:30 (43) | 07:56 | | 08:52 (30) | 07:59 | | 08:56 (2) | 08:51 | | 11:04 (27) |
| | 22:10 | | 21:17 | | 20:01 | 23 | 07:53 (43) | 18:44 | 27 | 09:19 (30) | 16:36 | 114 | 12:05 (1) | 16:04 | 90 | 12:34 (26) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:30 (43) | 07:58 | | 08:51 (30) | 08:01 | | 08:56 (2) | 08:52 | | 11:04 (27) |
| | 22:09 | | 21:15 | | 19:59 | 22 | 07:52 (43) | 18:42 | 28 | 09:19 (30) | 16:34 | 115 | 12:06 (1) | 16:04 | 90 | 12:34 (26) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 07:31 (43) | 08:00 | | 08:51 (30) | 08:04 | | 08:57 (2) | 08:53 | | 10:42 (28) |
| | 22:08 | | 21:13 | | 19:56 | 20 | 07:51 (43) | 18:39 | 29 | 09:20 (30) | 16:33 | 116 | 12:06 (1) | 16:04 | 93 | 12:35 (26) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 07:32 (43) | 08:02 | | 08:51 (30) | 08:06 | | 08:58 (2) | 08:54 | | 10:42 (28) |
| | 22:07 | | 21:10 | | 19:54 | 18 | 07:50 (43) | 18:37 | 29 | 09:20 (30) | 16:31 | 115 | 12:06 (1) | 16:04 | 96 | 12:36 (26) |
| 16 | 05:14 | | 06:08 | | 07:06 | | 07:34 (43) | 08:04 | | 08:51 (30) | 08:08 | | 09:00 (2) | 08:55 | | 10:40 (28) |
| | 22:06 | | 21:08 | | 19:51 | 15 | 07:49 (43) | 18:35 | 34 | 10:18 (2) | 16:29 | 115 | 12:07 (1) | 16:04 | 99 | 12:36 (26) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 07:36 (43) | 08:06 | | 08:51 (30) | 08:10 | | 09:01 (2) | 08:56 | | 10:40 (28) |
| | 22:04 | | 21:06 | | 19:48 | 11 | 07:47 (43) | 18:32 | 46 | 10:24 (2) | 16:28 | 114 | 12:07 (1) | 16:04 | 101 | 12:36 (26) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 07:38 (43) | 08:08 | | 08:51 (30) | 08:12 | | 09:01 (45) | 08:57 | | 10:41 (28) |
| | 22:03 | | 21:04 | | 19:46 | 6 | 07:44 (43) | 18:30 | 52 | 10:27 (2) | 16:26 | 114 | 12:07 (1) | 16:04 | 101 | 12:37 (26) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 08:51 (30) | 08:13 | | 09:01 (45) | 08:57 | | 10:41 (28) |
| | 22:02 | | 21:01 | | 19:43 | | | 18:27 | 55 | 10:29 (2) | 16:25 | 114 | 12:07 (1) | 16:04 | 102 | 12:38 (26) |
| 20 | 05:19 | | 06:15 | | 07:14 | | | 08:12 | | 08:51 (30) | 08:15 | | 09:01 (45) | 08:58 | | 10:41 (28) |
| | 22:00 | | 20:59 | | 19:41 | | | 18:25 | 57 | 10:30 (2) | 16:23 | 114 | 12:07 (1) | 16:05 | 103 | 12:38 (26) |
| 21 | 05:21 | | 06:17 | | 07:16 | | | 08:14 | | 08:52 (30) | 08:17 | | 09:03 (45) | 08:59 | | 10:42 (28) |
| | 21:59 | | 20:57 | | 19:38 | | | 18:23 | 59 | 10:32 (2) | 16:22 | 113 | 12:08 (1) | 16:05 | 103 | 12:39 (26) |
| 22 | 05:23 | | 06:19 | | 07:18 | | | 08:16 | | 08:54 (30) | 08:19 | | 09:03 (45) | 08:59 | | 10:43 (28) |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | 59 | 10:34 (2) | 16:20 | 113 | 12:08 (1) | 16:05 | 103 | 12:40 (26) |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:55 (30) | 08:21 | | 09:03 (45) | 09:00 | | 10:43 (28) |
| | 21:56 | | 20:52 | | 19:33 | | | 18:18 | 58 | 10:35 (2) | 16:19 | 115 | 12:10 (26) | 16:06 | 103 | 12:40 (26) |
| 24 | 05:26 | | 06:23 | | 07:21 | | | 08:20 | | 08:57 (30) | 08:23 | | 09:04 (45) | 09:00 | | 10:43 (28) |
| | 21:54 | | 20:49 | | 19:30 | | | 18:16 | 55 | 10:35 (2) | 16:18 | 118 | 12:15 (26) | 16:07 | 103 | 12:40 (26) |
| 25 | 05:28 | | 06:25 | | 07:23 | | | 07:22 | | 08:00 (30) | 08:25 | | 09:04 (45) | 09:00 | | 10:43 (28) |
| | 21:53 | | 20:47 | | 19:28 | | | 17:13 | 63 | 11:37 (1) | 16:16 | 120 | 12:17 (26) | 16:07 | 102 | 12:40 (26) |
| 26 | 05:29 | | 06:27 | | 07:25 | | | 07:24 | | 08:52 (2) | 08:27 | | 09:05 (45) | 09:01 | | 10:45 (28) |
| | 21:51 | | 20:44 | | 19:25 | | | 17:11 | 69 | 11:43 (1) | 16:15 | 120 | 12:19 (26) | 16:08 | 101 | 12:41 (26) |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | 08:52 (2) | 08:28 | | 09:06 (45) | 09:01 | | 10:46 (28) |
| | 21:49 | | 20:42 | | 19:23 | | | 17:09 | 77 | 11:47 (1) | 16:14 | 121 | 12:21 (26) | 16:09 | 100 | 12:42 (26) |
| 28 | 05:33 | | 06:30 | | 07:29 | | | 07:29 | | 08:52 (2) | 08:30 | | 09:07 (45) | 09:01 | | 10:47 (28) |
| | 21:47 | | 20:40 | | 19:20 | | | 17:07 | 81 | 11:49 (1) | 16:13 | 121 | 12:23 (26) | 16:10 | 97 | 12:42 (26) |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:31 | | 08:51 (2) | 08:32 | | 09:09 (45) | 09:01 | | 10:49 (28) |
| | 21:46 | | 20:37 | | 19:17 | | | 17:04 | 88 | 11:51 (1) | 16:12 | 120 | 12:24 (26) | 16:10 | 96 | 12:43 (26) |
| 30 | 05:36 | | 06:34 | | 07:33 | | | 07:33 | | 08:50 (2) | 08:34 | | 09:11 (45) | 09:01 | | 11:11 (27) |
| | 21:44 | | 20:35 | | 19:15 | | | 17:02 | 93 | 11:53 (1) | 16:11 | 116 | 12:25 (26) | 16:11 | 91 | 12:42 (26) |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | 08:51 (2) | | | | 09:01 | | 11:13 (27) |
| | 21:42 | | 20:32 | | | | | 17:00 | 95 | 11:55 (1) | | | | 16:12 | 90 | 12:43 (26) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 263 | | | 1269 | | | 3380 | | | 3083 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 1,00 | | | 0,68 | | | 0,41 | | | 0,20 | |
| Total reduction | | | | | | 0,35 | | | 0,18 | | | 0,06 | | | 0,02 | |
| Total, real | | | | | | 91 | | | 232 | | | 193 | | | 72 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 174 | 10:05 (45) 14:50 (26) | 08:57 (3) 15:47 (1) 169 | 08:02 (31) 15:40 (1) 104 | | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 07:24 | | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 173 | 10:05 (45) 14:50 (26) | 08:55 (3) 15:47 (1) 169 | 08:03 (31) 15:38 (1) 96 | | 20:12 | 13 | 07:36 (43) 07:49 (43) 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 07:22 | | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 171 | 10:06 (45) 14:51 (26) | 08:54 (3) 17:12 (1) 163 | 08:03 (31) 15:48 (1) 88 | | 20:14 | 18 | 07:32 (43) 07:50 (43) 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:49 | 04:59 |
| | 16:18 | 170 | 10:06 (45) 14:51 (26) | 08:54 (3) 17:15 (1) 156 | 08:04 (31) 15:35 (1) 77 | | 20:16 | 21 | 07:31 (43) 07:52 (43) 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 07:17 | | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 168 | 10:07 (45) 14:53 (26) | 08:54 (3) 17:17 (1) 158 | 08:04 (31) 15:25 (1) 60 | | 20:18 | 24 | 07:29 (43) 07:53 (43) 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 160 | 10:07 (45) 14:53 (26) | 08:54 (3) 17:19 (1) 158 | 08:07 (31) 15:50 (1) 43 | | 20:20 | 26 | 07:28 (43) 07:54 (43) 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 07:12 | | 06:53 | | 05:42 | 04:56 |
| | 16:22 | 160 | 10:08 (45) 14:53 (26) | 08:54 (3) 17:21 (1) 158 | 09:01 (30) 15:51 (1) 29 | | 20:22 | 28 | 07:26 (43) 07:54 (43) 21:20 | 22:10 |
| 8 | 08:58 | | 08:14 | | 07:09 | | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 161 | 10:08 (45) 14:54 (26) | 08:54 (3) 17:23 (1) 167 | 09:02 (30) 15:51 (1) 25 | | 20:24 | 29 | 07:26 (43) 07:55 (43) 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 07:07 | | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 160 | 10:09 (45) 14:55 (26) | 08:55 (3) 17:25 (1) 169 | 09:05 (30) 15:51 (1) 20 | | 20:25 | 30 | 07:25 (43) 07:55 (43) 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:55 |
| | 16:26 | 161 | 10:10 (45) 14:56 (26) | 08:56 (3) 17:27 (1) 171 | 09:09 (30) 15:52 (1) 10 | | 20:27 | 31 | 07:24 (43) 07:55 (43) 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 162 | 10:10 (45) 14:56 (26) | 08:57 (3) 17:29 (1) 171 | 09:19 (30) 15:52 (1) 10 | | 20:29 | 30 | 07:24 (43) 07:54 (43) 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 07:02 | | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 161 | 10:10 (45) 14:56 (26) | 08:58 (3) 17:32 (1) 169 | 09:19 (30) 15:51 (1) 10 | | 20:31 | 30 | 07:24 (43) 07:54 (43) 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 07:01 | | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 162 | 10:11 (45) 14:57 (26) | 09:01 (3) 17:34 (1) 168 | 09:19 (30) 15:52 (1) 10 | | 20:33 | 30 | 07:23 (43) 07:53 (43) 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 07:01 | | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 162 | 10:12 (45) 14:57 (26) | 09:01 (30) 17:36 (1) 167 | 09:19 (30) 15:52 (1) 10 | | 20:35 | 29 | 07:24 (43) 07:53 (43) 21:34 | 22:16 |
| 15 | 08:52 | | 07:59 | | 06:59 | | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 161 | 10:13 (45) 14:58 (26) | 08:59 (30) 17:38 (1) 168 | 09:19 (30) 15:51 (1) 10 | | 20:37 | 29 | 07:24 (43) 07:53 (43) 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | 06:58 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 160 | 10:13 (45) 14:58 (26) | 08:59 (30) 17:40 (1) 166 | 09:19 (30) 15:51 (1) 10 | | 20:39 | 27 | 07:24 (43) 07:51 (43) 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 06:56 | | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 170 | 10:14 (45) 15:21 (1) | 08:58 (30) 17:42 (1) 166 | 09:19 (30) 15:52 (1) 10 | | 20:41 | 25 | 07:25 (43) 07:50 (43) 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 06:54 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 176 | 10:15 (45) 15:25 (1) | 08:57 (30) 17:44 (1) 163 | 09:19 (30) 15:51 (1) 10 | | 20:43 | 23 | 07:26 (43) 07:49 (43) 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 06:52 | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 179 | 10:16 (45) 15:28 (1) | 08:57 (30) 17:47 (1) 162 | 09:19 (30) 15:51 (1) 10 | | 20:45 | 21 | 07:26 (43) 07:47 (43) 21:42 | 22:18 |
| 20 | 08:47 | | 07:48 | | 06:50 | | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 178 | 10:18 (45) 15:30 (1) | 08:57 (30) 17:49 (1) 158 | 09:19 (30) 15:51 (1) 10 | | 20:47 | 17 | 07:28 (43) 07:45 (43) 21:44 | 22:19 |
| 21 | 08:45 | | 07:46 | | 06:48 | | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 180 | 10:19 (45) 15:32 (1) | 08:56 (30) 17:51 (1) 153 | 09:19 (30) 15:49 (1) 10 | | 20:49 | 12 | 07:31 (43) 07:43 (43) 21:46 | 22:19 |
| 22 | 08:44 | | 07:44 | | 06:47 | | 06:16 | | 05:15 | 04:52 |
| | 16:48 | 179 | 10:21 (45) 15:34 (1) | 08:10 (31) 17:53 (1) 157 | 09:19 (30) 15:49 (1) 10 | | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 07:41 | | 06:50 | | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 173 | 10:25 (45) 15:36 (1) | 08:07 (31) 17:55 (1) 155 | 09:19 (30) 15:48 (1) 10 | | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 07:39 | | 06:52 | | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 168 | 11:08 (29) 15:37 (1) | 08:05 (31) 17:57 (1) 150 | 09:19 (30) 15:47 (1) 10 | | 20:55 | | 21:51 | 22:19 |
| 25 | 08:39 | | 07:36 | | 06:54 | | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 167 | 11:10 (29) 15:39 (1) | 08:04 (31) 17:59 (1) 142 | 09:19 (30) 15:46 (1) 10 | | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | | 07:34 | | 06:56 | | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 166 | 11:13 (29) 15:41 (1) | 08:03 (31) 18:01 (1) 124 | 09:19 (30) 15:45 (1) 10 | | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 07:32 | | 06:58 | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 164 | 11:16 (29) 15:42 (1) | 08:02 (31) 18:03 (1) 112 | 09:19 (30) 15:43 (1) 10 | | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 07:29 | | 06:59 | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 157 | 09:05 (3) 15:43 (1) | 08:03 (31) 18:05 (1) 108 | 09:19 (30) 15:42 (1) 10 | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (3) | | 07:01 | | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 161 | 15:44 (1) | | 09:19 (30) 20:04 | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (3) | | 07:13 | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 164 | 15:45 (1) | | 09:19 (30) 20:06 | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (3) | | 07:11 | | | | 05:03 | |
| | 17:06 | 166 | 15:46 (1) | | 09:19 (30) 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 5174 | | 4397 | | 552 | | 493 | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,36 | | 0,51 | | 0,78 | | 1,00 | | |
| Total reduction | | 0,06 | | 0,11 | | 0,24 | | 0,35 | | |
| Total, real | | 299 | | 494 | | 132 | | 173 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:22 (43) | 07:35 | | | 07:37 | | 08:25 (3) | 08:35 | | 09:51 (45) |
| | 22:18 | | 21:40 | | | 20:30 | 31 | 07:53 (43) | 19:12 | | | 16:58 | 170 | 15:21 (1) | 16:10 | 162 | 14:37 (26) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:22 (43) | 07:37 | | | 07:39 | | 08:24 (3) | 08:37 | | 09:52 (45) |
| | 22:18 | | 21:38 | | | 20:27 | 31 | 07:53 (43) | 19:10 | | | 16:56 | 169 | 15:21 (1) | 16:09 | 161 | 14:38 (26) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:23 (43) | 07:39 | | | 07:41 | | 08:24 (3) | 08:38 | | 09:52 (45) |
| | 22:17 | | 21:36 | | | 20:24 | 30 | 07:53 (43) | 19:07 | | | 16:54 | 165 | 15:20 (1) | 16:08 | 161 | 14:38 (26) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:23 (43) | 07:41 | | 09:44 (30) | 07:43 | | 08:24 (3) | 08:40 | | 09:53 (45) |
| | 22:17 | | 21:34 | | | 20:22 | 29 | 07:52 (43) | 19:05 | 16 | 10:00 (30) | 16:52 | 159 | 15:21 (1) | 16:08 | 160 | 14:39 (26) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:23 (43) | 07:42 | | 09:41 (30) | 07:45 | | 08:24 (3) | 08:42 | | 09:53 (45) |
| | 22:16 | | 21:32 | | | 20:19 | 28 | 07:51 (43) | 19:02 | 22 | 10:03 (30) | 16:50 | 158 | 15:20 (1) | 16:07 | 161 | 14:39 (26) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:24 (43) | 07:44 | | 09:38 (30) | 07:47 | | 08:23 (3) | 08:43 | | 09:53 (45) |
| | 22:16 | | 21:30 | | | 20:17 | 26 | 07:50 (43) | 18:59 | 27 | 10:05 (30) | 16:48 | 158 | 15:19 (1) | 16:06 | 160 | 14:39 (26) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 07:24 (43) | 07:46 | | 08:43 (31) | 07:49 | | 08:23 (3) | 08:44 | | 09:53 (45) |
| | 22:15 | | 21:28 | | | 20:14 | 24 | 07:48 (43) | 18:57 | 39 | 10:07 (30) | 16:46 | 158 | 15:19 (1) | 16:06 | 168 | 14:39 (26) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:25 (43) | 07:48 | | 08:40 (31) | 07:51 | | 08:24 (3) | 08:46 | | 09:54 (45) |
| | 22:14 | | 21:26 | | | 20:12 | 22 | 07:47 (43) | 18:54 | 47 | 10:08 (30) | 16:44 | 165 | 15:19 (1) | 16:05 | 171 | 14:40 (26) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:26 (43) | 07:50 | | 08:39 (31) | 07:53 | | 08:26 (3) | 08:47 | | 09:54 (45) |
| | 22:13 | | 21:24 | | | 20:09 | 19 | 07:45 (43) | 18:52 | 68 | 16:03 (1) | 16:42 | 169 | 15:18 (1) | 16:05 | 171 | 14:39 (26) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 07:29 (43) | 07:52 | | 08:37 (31) | 07:55 | | 08:28 (3) | 08:48 | | 09:55 (45) |
| | 22:12 | | 21:22 | | | 20:07 | 13 | 07:42 (43) | 18:49 | 82 | 16:07 (1) | 16:40 | 167 | 15:17 (1) | 16:04 | 173 | 14:40 (26) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 07:34 (43) | 07:54 | | 08:36 (31) | 07:57 | | 08:30 (3) | 08:50 | | 09:56 (48) |
| | 22:11 | | 21:19 | | | 20:04 | 3 | 07:37 (43) | 18:47 | 93 | 16:10 (1) | 16:38 | 166 | 15:16 (1) | 16:04 | 173 | 14:40 (26) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:35 (31) | 07:59 | | 08:33 (3) | 08:51 | | 09:56 (48) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 100 | 16:12 (1) | 16:36 | 165 | 15:17 (1) | 16:04 | 174 | 14:40 (26) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:35 (31) | 08:01 | | 08:35 (3) | 08:52 | | 09:56 (48) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 105 | 16:13 (1) | 16:34 | 161 | 15:16 (1) | 16:04 | 173 | 14:40 (26) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:36 (31) | 08:03 | | 08:37 (3) | 08:53 | | 09:56 (48) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 110 | 16:16 (1) | 16:33 | 157 | 15:15 (1) | 16:04 | 175 | 14:41 (26) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:36 (31) | 08:06 | | 10:48 (29) | 08:54 | | 09:57 (48) |
| | 22:07 | | 21:10 | | | 19:54 | | | 18:37 | 113 | 16:17 (1) | 16:31 | 164 | 15:14 (1) | 16:04 | 174 | 14:41 (26) |
| 16 | 05:13 | | 06:08 | | | 07:06 | | | 08:04 | | 08:36 (31) | 08:08 | | 10:46 (29) | 08:55 | | 09:57 (48) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 131 | 16:17 (1) | 16:29 | 166 | 15:14 (1) | 16:04 | 174 | 14:41 (26) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | | 08:06 | | 08:36 (31) | 08:09 | | 10:44 (29) | 08:56 | | 09:58 (48) |
| | 22:04 | | 21:06 | | | 19:48 | | | 18:32 | 145 | 16:18 (1) | 16:28 | 166 | 15:12 (1) | 16:04 | 174 | 14:42 (26) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | | 08:08 | | 08:37 (31) | 08:11 | | 10:42 (29) | 08:57 | | 09:58 (48) |
| | 22:03 | | 21:04 | | | 19:46 | | | 18:30 | 152 | 16:19 (1) | 16:26 | 168 | 15:11 (1) | 16:04 | 175 | 14:42 (26) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | | 08:10 | | 08:39 (31) | 08:13 | | 09:59 (45) | 08:57 | | 09:59 (48) |
| | 22:02 | | 21:01 | | | 19:43 | | | 18:27 | 155 | 16:19 (1) | 16:25 | 173 | 15:10 (1) | 16:04 | 174 | 14:43 (26) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | | 08:12 | | 08:41 (31) | 08:15 | | 09:56 (45) | 08:58 | | 09:59 (48) |
| | 22:00 | | 20:59 | | | 19:41 | | | 18:25 | 158 | 16:20 (1) | 16:23 | 179 | 15:09 (1) | 16:05 | 174 | 14:43 (26) |
| 21 | 05:21 | | 06:17 | | 07:41 (43) | 07:16 | | | 08:14 | | 09:26 (30) | 08:17 | | 09:55 (45) | 08:59 | | 10:00 (48) |
| | 21:59 | | 20:56 | 1 | 07:42 (43) | 19:38 | | | 18:23 | 155 | 16:20 (1) | 16:22 | 180 | 15:08 (1) | 16:05 | 175 | 14:44 (26) |
| 22 | 05:23 | | 06:19 | | 07:34 (43) | 07:18 | | | 08:16 | | 09:27 (30) | 08:19 | | 09:54 (45) | 08:59 | | 10:00 (48) |
| | 21:57 | | 20:54 | 13 | 07:47 (43) | 19:35 | | | 18:20 | 160 | 16:21 (1) | 16:20 | 179 | 15:07 (1) | 16:05 | 174 | 14:44 (26) |
| 23 | 05:24 | | 06:21 | | 07:32 (43) | 07:19 | | | 08:18 | | 09:27 (30) | 08:21 | | 09:53 (45) | 09:00 | | 10:01 (48) |
| | 21:56 | | 20:52 | 17 | 07:49 (43) | 19:33 | | | 18:18 | 162 | 16:21 (1) | 16:19 | 180 | 15:05 (1) | 16:06 | 175 | 14:45 (26) |
| 24 | 05:26 | | 06:23 | | 07:30 (43) | 07:21 | | | 08:20 | | 09:28 (30) | 08:23 | | 09:52 (45) | 09:00 | | 10:01 (48) |
| | 21:54 | | 20:49 | 21 | 07:51 (43) | 19:30 | | | 18:16 | 163 | 16:21 (1) | 16:18 | 176 | 15:02 (1) | 16:07 | 174 | 14:45 (26) |
| 25 | 05:28 | | 06:25 | | 07:29 (43) | 07:23 | | | 07:22 | | 08:28 (30) | 08:25 | | 09:52 (45) | 09:00 | | 10:01 (48) |
| | 21:52 | | 20:47 | 23 | 07:52 (43) | 19:28 | | | 17:13 | 166 | 15:21 (1) | 16:16 | 169 | 14:59 (1) | 16:07 | 174 | 14:45 (26) |
| 26 | 05:29 | | 06:26 | | 07:28 (43) | 07:25 | | | 07:24 | | 08:28 (30) | 08:27 | | 09:52 (45) | 09:01 | | 10:02 (48) |
| | 21:51 | | 20:44 | 25 | 07:53 (43) | 19:25 | | | 17:11 | 167 | 15:21 (1) | 16:15 | 160 | 14:37 (26) | 16:08 | 176 | 14:47 (26) |
| 27 | 05:31 | | 06:28 | | 07:26 (43) | 07:27 | | | 07:26 | | 08:30 (30) | 08:28 | | 09:52 (45) | 09:01 | | 10:03 (48) |
| | 21:49 | | 20:42 | 27 | 07:53 (43) | 19:23 | | | 17:09 | 167 | 15:22 (1) | 16:14 | 161 | 14:37 (26) | 16:09 | 174 | 14:47 (26) |
| 28 | 05:33 | | 06:30 | | 07:25 (43) | 07:29 | | | 07:29 | | 08:31 (30) | 08:30 | | 09:52 (45) | 09:01 | | 10:03 (48) |
| | 21:47 | | 20:39 | 29 | 07:54 (43) | 19:20 | | | 17:07 | 166 | 15:22 (1) | 16:13 | 160 | 14:37 (26) | 16:10 | 176 | 14:48 (26) |
| 29 | 05:34 | | 06:32 | | 07:24 (43) | 07:31 | | | 07:31 | | 08:29 (3) | 08:32 | | 09:52 (45) | 09:01 | | 10:04 (48) |
| | 21:46 | | 20:37 | 30 | 07:54 (43) | 19:17 | | | 17:04 | 168 | 15:21 (1) | 16:12 | 162 | 14:38 (26) | 16:10 | 173 | 14:48 (26) |
| 30 | 05:36 | | 06:34 | | 07:24 (43) | 07:33 | | | 07:33 | | 08:27 (3) | 08:34 | | 09:52 (45) | 09:01 | | 10:04 (48) |
| | 21:44 | | 20:35 | 30 | 07:54 (43) | 19:15 | | | 17:02 | 170 | 15:21 (1) | 16:11 | 161 | 14:38 (26) | 16:11 | 173 | 14:48 (26) |
| 31 | 05:38 | | 06:36 | | 07:24 (43) | | | | 07:35 | | 08:27 (3) | | | | 09:01 | | 10:04 (48) |
| | 21:42 | | 20:32 | 30 | 07:54 (43) | | | | 17:00 | 170 | 15:22 (1) | | | | 16:12 | 175 | 14:49 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 246 | | | 256 | | | 3377 | | | 4991 | | | 5307 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,59 | | | 0,39 | | | 0,34 | |
| Total reduction | | | | 0,46 | | | 0,35 | | | 0,16 | | | 0,05 | | | 0,04 | |
| Total, real | | | | 113 | | | 91 | | | 548 | | | 274 | | | 219 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 12:00 (30) | 07:27 | | 07:53 (32) | 07:08 | | | 05:55 | | 07:32 (43) | 05:02 | |
| | 16:14 | 141 | 15:01 (27) | 17:08 | 135 | 16:21 (26) | 18:07 | 41 | 17:06 (1) | 20:10 | | | 21:09 | 43 | 08:15 (43) | 22:03 | |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 12:00 (30) | 07:24 | | 07:51 (32) | 07:05 | | | 05:53 | | 07:33 (43) | 05:01 | |
| | 16:15 | 142 | 15:01 (27) | 17:10 | 136 | 16:21 (26) | 18:09 | 43 | 17:05 (1) | 20:12 | | | 21:11 | 40 | 08:13 (43) | 22:04 | |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | 12:00 (30) | 07:22 | | 07:49 (32) | 07:03 | | 07:54 (43) | 05:51 | | 07:34 (43) | 05:00 | |
| | 16:16 | 142 | 15:02 (27) | 17:12 | 137 | 16:22 (26) | 18:12 | 45 | 17:04 (1) | 20:14 | 13 | 08:07 (43) | 21:13 | 38 | 08:12 (43) | 22:05 | |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | 09:01 (31) | 07:19 | | 07:48 (32) | 07:00 | | 07:50 (43) | 05:48 | | 07:35 (43) | 04:59 | |
| | 16:18 | 145 | 15:02 (27) | 17:15 | 142 | 16:22 (26) | 18:14 | 45 | 17:03 (1) | 20:16 | 21 | 08:11 (43) | 21:15 | 36 | 08:11 (43) | 22:06 | |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | 08:58 (31) | 07:17 | | 07:47 (32) | 06:58 | | 07:46 (43) | 05:46 | | 07:36 (43) | 04:58 | |
| | 16:19 | 145 | 15:03 (27) | 17:17 | 149 | 16:22 (26) | 18:16 | 43 | 17:01 (1) | 20:18 | 27 | 08:13 (43) | 21:17 | 33 | 08:09 (43) | 22:08 | |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | 08:56 (31) | 07:14 | | 07:47 (32) | 06:55 | | 07:44 (43) | 05:44 | | 07:37 (43) | 04:57 | |
| | 16:20 | 145 | 15:03 (27) | 17:19 | 152 | 16:22 (26) | 18:18 | 38 | 16:59 (1) | 20:20 | 32 | 08:16 (43) | 21:19 | 31 | 08:08 (43) | 22:09 | |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | 08:54 (31) | 07:12 | | 07:46 (32) | 06:53 | | 07:42 (43) | 05:42 | | 07:38 (43) | 04:56 | |
| | 16:22 | 144 | 15:03 (27) | 17:21 | 155 | 16:21 (26) | 18:20 | 31 | 16:54 (1) | 20:22 | 35 | 08:17 (43) | 21:20 | 28 | 08:06 (43) | 22:10 | |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | 08:53 (31) | 07:09 | | 07:45 (32) | 06:50 | | 07:40 (43) | 05:40 | | 07:40 (43) | 04:56 | |
| | 16:23 | 146 | 15:03 (27) | 17:23 | 156 | 16:21 (26) | 18:22 | 22 | 08:07 (32) | 20:23 | 39 | 08:19 (43) | 21:22 | 23 | 08:03 (43) | 22:11 | |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | 08:52 (31) | 07:07 | | 07:46 (32) | 06:48 | | 07:38 (43) | 05:38 | | 07:42 (43) | 04:55 | |
| | 16:25 | 146 | 15:03 (27) | 17:25 | 157 | 16:21 (26) | 18:24 | 21 | 08:07 (32) | 20:25 | 41 | 08:19 (43) | 21:24 | 19 | 08:01 (43) | 22:12 | |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | 08:52 (31) | 07:04 | | 07:46 (32) | 06:45 | | 07:37 (43) | 05:36 | | 07:45 (43) | 04:54 | |
| | 16:26 | 144 | 15:04 (27) | 17:27 | 155 | 16:20 (26) | 18:26 | 20 | 08:06 (32) | 20:27 | 43 | 08:20 (43) | 21:26 | 12 | 07:57 (43) | 22:13 | |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | 08:51 (31) | 07:02 | | 07:47 (32) | 06:43 | | 07:35 (43) | 05:34 | | | 04:54 | |
| | 16:28 | 144 | 15:03 (27) | 17:29 | 155 | 16:20 (26) | 18:28 | 18 | 08:05 (32) | 20:29 | 45 | 08:20 (43) | 21:28 | | | 22:14 | |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | 08:50 (31) | 06:59 | | 07:47 (32) | 06:40 | | 07:35 (43) | 05:32 | | | 04:54 | |
| | 16:29 | 143 | 15:03 (27) | 17:32 | 152 | 16:17 (26) | 18:30 | 16 | 08:03 (32) | 20:31 | 46 | 08:21 (43) | 21:30 | | | 22:14 | |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 08:50 (31) | 06:57 | | 07:48 (32) | 06:38 | | 07:33 (43) | 05:30 | | | 04:53 | |
| | 16:31 | 143 | 15:04 (27) | 17:34 | 161 | 16:58 (1) | 18:32 | 13 | 08:01 (32) | 20:33 | 48 | 08:21 (43) | 21:32 | | | 22:15 | |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 08:50 (31) | 06:54 | | 07:52 (32) | 06:35 | | 07:33 (43) | 05:28 | | | 04:53 | |
| | 16:33 | 140 | 15:04 (27) | 17:36 | 158 | 17:01 (1) | 18:34 | 6 | 07:58 (32) | 20:35 | 49 | 08:22 (43) | 21:34 | | | 22:16 | |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 08:50 (31) | 06:52 | | | 06:33 | | 07:32 (43) | 05:27 | | | 04:53 | |
| | 16:35 | 139 | 15:04 (27) | 17:38 | 151 | 17:02 (1) | 18:36 | | | 20:37 | 50 | 08:22 (43) | 21:35 | | | 22:16 | |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 08:50 (31) | 06:49 | | | 06:30 | | 07:31 (43) | 05:25 | | | 04:52 | |
| | 16:36 | 136 | 15:03 (27) | 17:40 | 150 | 17:04 (1) | 18:38 | | | 20:39 | 51 | 08:22 (43) | 21:37 | | | 22:17 | |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 08:51 (31) | 06:47 | | | 06:28 | | 07:31 (43) | 05:23 | | | 04:52 | |
| | 16:38 | 134 | 15:03 (27) | 17:42 | 147 | 17:06 (1) | 18:40 | | | 20:41 | 51 | 08:22 (43) | 21:39 | | | 22:18 | |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 08:50 (31) | 06:44 | | | 06:25 | | 07:31 (43) | 05:21 | | | 04:52 | |
| | 16:40 | 137 | 15:38 (2) | 17:44 | 143 | 17:06 (1) | 18:42 | | | 20:43 | 52 | 08:23 (43) | 21:41 | | | 22:18 | |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 08:51 (31) | 06:41 | | | 06:23 | | 07:30 (43) | 05:20 | | | 04:52 | |
| | 16:42 | 142 | 15:41 (2) | 17:46 | 137 | 17:07 (1) | 18:44 | | | 20:45 | 52 | 08:22 (43) | 21:42 | | | 22:18 | |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 08:52 (31) | 06:39 | | | 06:20 | | 07:30 (43) | 05:18 | | | 04:52 | |
| | 16:44 | 136 | 15:44 (2) | 17:49 | 129 | 17:08 (1) | 18:46 | | | 20:47 | 52 | 08:22 (43) | 21:44 | | | 22:19 | |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 08:53 (31) | 06:36 | | | 06:18 | | 07:30 (43) | 05:16 | | | 04:52 | |
| | 16:46 | 125 | 15:46 (2) | 17:51 | 117 | 17:08 (1) | 18:48 | | | 20:49 | 52 | 08:22 (43) | 21:46 | | | 22:19 | |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | 08:54 (31) | 06:34 | | | 06:16 | | 07:29 (43) | 05:15 | | | 04:52 | |
| | 16:48 | 117 | 15:48 (2) | 17:53 | 93 | 17:09 (1) | 18:50 | | | 20:51 | 52 | 08:21 (43) | 21:48 | | | 22:19 | |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | 08:55 (31) | 06:31 | | | 06:13 | | 07:29 (43) | 05:13 | | | 04:53 | |
| | 16:50 | 117 | 15:50 (2) | 17:55 | 84 | 17:08 (1) | 18:52 | | | 20:53 | 51 | 08:20 (43) | 21:49 | | | 22:19 | |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | 08:58 (31) | 06:29 | | | 06:11 | | 07:29 (43) | 05:12 | | | 04:53 | |
| | 16:52 | 127 | 16:11 (26) | 17:57 | 75 | 17:09 (1) | 18:54 | | | 20:55 | 51 | 08:20 (43) | 21:51 | | | 22:19 | |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | 15:26 (2) | 06:26 | | | 06:09 | | 07:30 (43) | 05:10 | | | 04:53 | |
| | 16:54 | 132 | 16:13 (26) | 17:59 | 57 | 17:08 (1) | 18:56 | | | 20:57 | 50 | 08:20 (43) | 21:52 | | | 22:19 | |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | 15:30 (2) | 06:23 | | | 06:06 | | 07:29 (43) | 05:09 | | | 04:54 | |
| | 16:56 | 133 | 16:15 (26) | 18:01 | 50 | 17:08 (1) | 18:58 | | | 20:59 | 49 | 08:18 (43) | 21:54 | | | 22:19 | |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | 16:34 (1) | 06:21 | | | 06:04 | | 07:30 (43) | 05:08 | | | 04:54 | |
| | 16:58 | 132 | 16:17 (26) | 18:03 | 33 | 17:07 (1) | 19:00 | | | 21:01 | 48 | 08:18 (43) | 21:55 | | | 22:19 | |
| 28 | 08:35 | | 11:59 (30) | 07:29 | | 16:35 (1) | 06:18 | | | 06:02 | | 07:30 (43) | 05:06 | | | 04:55 | |
| | 17:00 | 129 | 16:18 (26) | 18:05 | 32 | 17:07 (1) | 19:02 | | | 21:03 | 47 | 08:17 (43) | 21:57 | | | 22:19 | |
| 29 | 08:33 | | 11:59 (30) | | | | 07:16 | | | 05:59 | | 07:31 (43) | 05:05 | | | 04:55 | |
| | 17:02 | 132 | 16:19 (26) | | | | 20:04 | | | 21:05 | 45 | 08:16 (43) | 21:58 | | | 22:19 | |
| 30 | 08:31 | | 11:59 (30) | | | | 07:13 | | | 05:57 | | 07:31 (43) | 05:04 | | | 04:56 | |
| | 17:04 | 134 | 16:20 (26) | | | | 20:06 | | | 21:07 | 44 | 08:15 (43) | 22:00 | | | 22:19 | |
| 31 | 08:30 | | 11:59 (30) | | | | 07:11 | | | | | | 05:03 | | | | |
| | 17:06 | 135 | 16:20 (26) | | | | 20:08 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 4247 | | | 3498 | | | 402 | | | 1236 | | | 303 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,31 | | | 0,53 | | | 0,92 | | | 1,00 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,11 | | | 0,26 | | | 0,32 | | | 0,42 | | | |
| Total, real | | 197 | | | 371 | | | 104 | | | 399 | | | 128 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:34 (43) | 07:35 | | 08:27 (32) | 07:37 | | 08:21 (31) | 08:35 | | 09:32 (3) |
| | 22:18 | | 21:40 | | | 20:29 | 45 | 08:19 (43) | 19:12 | 15 | 08:42 (32) | 16:58 | 157 | 15:50 (26) | 16:10 | 144 | 14:45 (27) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:35 (43) | 07:37 | | 08:25 (32) | 07:39 | | 08:22 (31) | 08:37 | | 09:33 (3) |
| | 22:18 | | 21:38 | | | 20:27 | 43 | 08:18 (43) | 19:10 | 18 | 08:43 (32) | 16:56 | 156 | 15:50 (26) | 16:09 | 146 | 14:46 (27) |
| 3 | 04:58 | | 05:43 | | 07:54 (43) | 06:42 | | 07:36 (43) | 07:39 | | 08:24 (32) | 07:41 | | 08:23 (31) | 08:38 | | 09:33 (3) |
| | 22:17 | | 21:36 | 15 | 08:09 (43) | 20:24 | 41 | 08:17 (43) | 19:07 | 20 | 08:44 (32) | 16:54 | 155 | 15:51 (26) | 16:08 | 145 | 14:47 (27) |
| 4 | 04:59 | | 05:45 | | 07:52 (43) | 06:44 | | 07:37 (43) | 07:41 | | 08:23 (32) | 07:43 | | 08:24 (31) | 08:40 | | 09:34 (3) |
| | 22:17 | | 21:34 | 20 | 08:12 (43) | 20:22 | 39 | 08:16 (43) | 19:04 | 21 | 08:44 (32) | 16:52 | 155 | 15:52 (26) | 16:08 | 146 | 14:48 (27) |
| 5 | 05:00 | | 05:47 | | 07:50 (43) | 06:45 | | 07:39 (43) | 07:42 | | 08:22 (32) | 07:45 | | 08:26 (31) | 08:42 | | 09:34 (3) |
| | 22:16 | | 21:32 | 25 | 08:15 (43) | 20:19 | 35 | 08:14 (43) | 19:02 | 22 | 08:44 (32) | 16:50 | 153 | 15:52 (26) | 16:07 | 144 | 14:48 (27) |
| 6 | 05:01 | | 05:49 | | 07:47 (43) | 06:47 | | 07:39 (43) | 07:44 | | 08:22 (32) | 07:47 | | 08:28 (31) | 08:43 | | 09:35 (3) |
| | 22:15 | | 21:30 | 29 | 08:16 (43) | 20:17 | 32 | 08:11 (43) | 18:59 | 22 | 08:44 (32) | 16:48 | 149 | 15:52 (26) | 16:06 | 144 | 14:49 (27) |
| 7 | 05:02 | | 05:51 | | 07:46 (43) | 06:49 | | 07:41 (43) | 07:46 | | 08:22 (32) | 07:49 | | 08:31 (31) | 08:44 | | 09:35 (3) |
| | 22:15 | | 21:28 | 32 | 08:18 (43) | 20:14 | 28 | 08:09 (43) | 18:57 | 35 | 17:32 (1) | 16:46 | 143 | 15:52 (26) | 16:06 | 144 | 14:49 (27) |
| 8 | 05:03 | | 05:52 | | 07:45 (43) | 06:51 | | 07:44 (43) | 07:48 | | 08:22 (32) | 07:51 | | 11:31 (30) | 08:46 | | 09:36 (3) |
| | 22:14 | | 21:26 | 34 | 08:19 (43) | 20:12 | 22 | 08:06 (43) | 18:54 | 41 | 17:35 (1) | 16:44 | 136 | 15:52 (26) | 16:05 | 145 | 14:50 (27) |
| 9 | 05:04 | | 05:54 | | 07:43 (43) | 06:53 | | 07:48 (43) | 07:50 | | 08:22 (32) | 07:53 | | 11:31 (30) | 08:47 | | 09:36 (3) |
| | 22:13 | | 21:24 | 37 | 08:20 (43) | 20:09 | 13 | 08:01 (43) | 18:52 | 43 | 17:36 (1) | 16:42 | 136 | 15:52 (26) | 16:05 | 143 | 14:50 (27) |
| 10 | 05:06 | | 05:56 | | 07:42 (43) | 06:55 | | | 07:52 | | 08:22 (32) | 07:55 | | 11:30 (30) | 08:48 | | 09:37 (3) |
| | 22:12 | | 21:22 | 39 | 08:21 (43) | 20:07 | | | 18:49 | 45 | 17:37 (1) | 16:40 | 136 | 15:52 (26) | 16:04 | 142 | 14:51 (27) |
| 11 | 05:07 | | 05:58 | | 07:41 (43) | 06:57 | | | 07:54 | | 08:23 (32) | 07:57 | | 11:30 (30) | 08:50 | | 09:38 (3) |
| | 22:11 | | 21:19 | 41 | 08:22 (43) | 20:04 | | | 18:47 | 45 | 17:38 (1) | 16:38 | 135 | 15:51 (26) | 16:04 | 141 | 14:51 (27) |
| 12 | 05:08 | | 06:00 | | 07:40 (43) | 06:59 | | | 07:56 | | 08:25 (32) | 07:59 | | 11:31 (30) | 08:51 | | 09:38 (3) |
| | 22:10 | | 21:17 | 43 | 08:23 (43) | 20:01 | | | 18:44 | 44 | 17:39 (1) | 16:36 | 132 | 15:51 (26) | 16:04 | 141 | 14:51 (27) |
| 13 | 05:09 | | 06:02 | | 07:39 (43) | 07:01 | | | 07:58 | | 08:27 (32) | 08:01 | | 11:31 (30) | 08:52 | | 09:38 (3) |
| | 22:09 | | 21:15 | 44 | 08:23 (43) | 19:59 | | | 18:42 | 39 | 17:39 (1) | 16:34 | 132 | 15:51 (26) | 16:04 | 140 | 14:52 (27) |
| 14 | 05:11 | | 06:04 | | 07:38 (43) | 07:02 | | | 08:00 | | 17:06 (1) | 08:03 | | 11:31 (30) | 08:53 | | 09:39 (3) |
| | 22:08 | | 21:13 | 46 | 08:24 (43) | 19:56 | | | 18:39 | 33 | 17:39 (1) | 16:33 | 129 | 15:50 (26) | 16:04 | 140 | 14:52 (27) |
| 15 | 05:12 | | 06:06 | | 07:37 (43) | 07:04 | | | 08:02 | | 16:06 (2) | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 22:07 | | 21:10 | 48 | 08:25 (43) | 19:54 | | | 18:37 | 43 | 17:41 (1) | 16:31 | 133 | 15:49 (26) | 16:04 | 138 | 14:52 (27) |
| 16 | 05:13 | | 06:07 | | 07:37 (43) | 07:06 | | | 08:04 | | 16:00 (2) | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 22:06 | | 21:08 | 48 | 08:25 (43) | 19:51 | | | 18:35 | 54 | 17:40 (1) | 16:29 | 132 | 15:48 (26) | 16:04 | 138 | 14:53 (27) |
| 17 | 05:15 | | 06:09 | | 07:37 (43) | 07:08 | | | 08:06 | | 09:33 (31) | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 22:04 | | 21:06 | 49 | 08:26 (43) | 19:48 | | | 18:32 | 64 | 17:40 (1) | 16:28 | 132 | 15:47 (26) | 16:04 | 137 | 14:54 (27) |
| 18 | 05:16 | | 06:11 | | 07:35 (43) | 07:10 | | | 08:08 | | 09:28 (31) | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 22:03 | | 21:04 | 50 | 08:25 (43) | 19:46 | | | 18:30 | 79 | 17:40 (1) | 16:26 | 127 | 15:45 (26) | 16:04 | 138 | 14:54 (27) |
| 19 | 05:18 | | 06:13 | | 07:35 (43) | 07:12 | | | 08:10 | | 09:26 (31) | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 22:02 | | 21:01 | 51 | 08:26 (43) | 19:43 | | | 18:27 | 86 | 17:39 (1) | 16:25 | 117 | 15:24 (2) | 16:04 | 137 | 14:55 (27) |
| 20 | 05:19 | | 06:15 | | 07:35 (43) | 07:14 | | | 08:12 | | 09:24 (31) | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 22:00 | | 20:59 | 51 | 08:26 (43) | 19:41 | | | 18:25 | 105 | 17:39 (1) | 16:23 | 117 | 15:23 (2) | 16:05 | 138 | 14:55 (27) |
| 21 | 05:21 | | 06:17 | | 07:35 (43) | 07:16 | | | 08:14 | | 09:23 (31) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:59 | | 20:56 | 51 | 08:26 (43) | 19:38 | | | 18:23 | 121 | 17:38 (1) | 16:22 | 125 | 15:22 (2) | 16:05 | 137 | 14:56 (27) |
| 22 | 05:23 | | 06:19 | | 07:33 (43) | 07:18 | | | 08:16 | | 09:22 (31) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:57 | | 20:54 | 52 | 08:25 (43) | 19:35 | | | 18:20 | 132 | 17:38 (1) | 16:20 | 137 | 15:21 (2) | 16:05 | 137 | 14:56 (27) |
| 23 | 05:24 | | 06:21 | | 07:33 (43) | 07:19 | | | 08:18 | | 09:21 (31) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 21:56 | | 20:52 | 53 | 08:26 (43) | 19:33 | | | 18:18 | 138 | 17:37 (1) | 16:19 | 142 | 15:19 (2) | 16:06 | 138 | 14:57 (27) |
| 24 | 05:26 | | 06:23 | | 07:33 (43) | 07:21 | | | 08:20 | | 09:21 (31) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:54 | | 20:49 | 52 | 08:25 (43) | 19:30 | | | 18:16 | 145 | 17:36 (1) | 16:18 | 139 | 15:16 (2) | 16:06 | 137 | 14:57 (27) |
| 25 | 05:27 | | 06:25 | | 07:33 (43) | 07:23 | | | 07:22 | | 08:20 (31) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:52 | | 20:47 | 52 | 08:25 (43) | 19:28 | | | 17:13 | 149 | 16:35 (1) | 16:16 | 134 | 14:41 (27) | 16:07 | 138 | 14:57 (27) |
| 26 | 05:29 | | 06:26 | | 07:34 (43) | 07:25 | | | 07:24 | | 08:19 (31) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 21:51 | | 20:44 | 51 | 08:25 (43) | 19:25 | | | 17:11 | 151 | 16:33 (1) | 16:15 | 136 | 14:42 (27) | 16:08 | 136 | 14:58 (27) |
| 27 | 05:31 | | 06:28 | | 07:33 (43) | 07:27 | | | 07:26 | | 08:20 (31) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:49 | | 20:42 | 51 | 08:24 (43) | 19:22 | | | 17:09 | 151 | 16:32 (1) | 16:14 | 138 | 14:43 (27) | 16:09 | 137 | 14:59 (27) |
| 28 | 05:33 | | 06:30 | | 07:33 (43) | 07:29 | | | 07:28 | | 08:20 (31) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:47 | | 20:39 | 50 | 08:23 (43) | 19:20 | | | 17:07 | 158 | 16:30 (1) | 16:13 | 141 | 14:44 (27) | 16:10 | 139 | 14:59 (27) |
| 29 | 05:34 | | 06:32 | | 07:34 (43) | 07:31 | | | 07:31 | | 08:20 (31) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 21:46 | | 20:37 | 49 | 08:23 (43) | 19:17 | | | 17:04 | 159 | 16:26 (1) | 16:12 | 143 | 14:45 (27) | 16:10 | 140 | 15:00 (27) |
| 30 | 05:36 | | 06:34 | | 07:34 (43) | 07:33 | | 08:29 (32) | 07:33 | | 08:20 (31) | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 21:44 | | 20:34 | 48 | 08:22 (43) | 19:15 | 11 | 08:40 (32) | 17:02 | 153 | 15:47 (26) | 16:11 | 144 | 14:46 (27) | 16:11 | 138 | 14:59 (27) |
| 31 | 05:38 | | 06:36 | | 07:35 (43) | | | | 07:35 | | 08:20 (31) | | | | 09:01 | | 09:47 (3) |
| | 21:42 | | 20:32 | 46 | 08:21 (43) | | | | 17:00 | 154 | 15:48 (26) | | | | 16:12 | 140 | 15:00 (27) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1257 | | | 309 | | | 2485 | | | 4141 | | | 4348 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,64 | | | 0,36 | | | 0,30 | |
| Total reduction | | | | 0,42 | | | 0,32 | | | 0,16 | | | 0,05 | | | 0,03 | |
| Total, real | | | | 531 | | | 100 | | | 403 | | | 195 | | | 145 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | | 08:33 (31) | 07:08 | | | 05:55 | | 07:02 (43) | 05:02 | |
| | 16:14 | 108 | 15:07 (27) | 17:08 | 137 | 16:27 (26) | 18:07 | 175 | 17:24 (1) | 20:10 | | | 21:09 | 51 | 07:53 (43) | 22:03 | |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | | 08:35 (31) | 07:05 | | | 05:53 | | 07:02 (43) | 05:01 | |
| | 16:15 | 107 | 15:07 (27) | 17:10 | 140 | 16:29 (26) | 18:09 | 169 | 17:25 (1) | 20:12 | | | 21:11 | 50 | 07:52 (43) | 22:04 | |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | | 08:36 (31) | 07:03 | | | 05:51 | | 07:02 (43) | 05:00 | |
| | 16:16 | 109 | 15:08 (27) | 17:12 | 139 | 16:30 (26) | 18:12 | 160 | 17:24 (1) | 20:14 | | | 21:13 | 50 | 07:52 (43) | 22:05 | |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 11:38 (30) | 07:19 | | 08:40 (31) | 07:00 | | | 05:49 | | 07:02 (43) | 04:59 | |
| | 16:18 | 112 | 15:08 (27) | 17:15 | 135 | 16:31 (26) | 18:14 | 146 | 17:25 (1) | 20:16 | | | 21:15 | 50 | 07:52 (43) | 22:06 | |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 11:38 (30) | 07:17 | | 11:49 (30) | 06:58 | | | 05:46 | | 07:01 (43) | 04:58 | |
| | 16:19 | 117 | 15:10 (27) | 17:17 | 137 | 16:32 (26) | 18:16 | 130 | 17:24 (1) | 20:18 | | | 21:17 | 51 | 07:52 (43) | 22:08 | |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 11:38 (30) | 07:14 | | 11:52 (30) | 06:55 | | | 05:44 | | 07:01 (43) | 04:57 | |
| | 16:20 | 119 | 15:10 (27) | 17:19 | 140 | 16:33 (26) | 18:18 | 120 | 17:24 (1) | 20:20 | | | 21:18 | 50 | 07:51 (43) | 22:09 | |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 11:37 (30) | 07:12 | | 07:38 (32) | 06:53 | | | 05:42 | | 07:02 (43) | 04:56 | |
| | 16:22 | 120 | 15:10 (27) | 17:21 | 143 | 16:33 (26) | 18:20 | 119 | 17:23 (1) | 20:22 | | | 21:20 | 49 | 07:51 (43) | 22:10 | |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 11:37 (30) | 07:09 | | 07:35 (32) | 06:50 | | | 05:40 | | 07:02 (43) | 04:56 | |
| | 16:23 | 122 | 15:10 (27) | 17:23 | 144 | 16:33 (26) | 18:22 | 110 | 17:22 (1) | 20:23 | | | 21:22 | 48 | 07:50 (43) | 22:11 | |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 11:37 (30) | 07:07 | | 07:34 (32) | 06:48 | | | 05:38 | | 07:02 (43) | 04:55 | |
| | 16:25 | 128 | 15:11 (27) | 17:25 | 146 | 16:34 (26) | 18:24 | 91 | 17:22 (1) | 20:25 | | | 21:24 | 48 | 07:50 (43) | 22:12 | |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 11:37 (30) | 07:04 | | 07:32 (32) | 06:45 | | | 05:36 | | 07:02 (43) | 04:54 | |
| | 16:26 | 131 | 15:12 (27) | 17:27 | 147 | 16:34 (26) | 18:26 | 67 | 17:20 (1) | 20:27 | | | 21:26 | 47 | 07:49 (43) | 22:13 | |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 11:37 (30) | 07:02 | | 07:32 (32) | 06:43 | | | 05:34 | | 07:03 (43) | 04:54 | |
| | 16:28 | 133 | 15:11 (27) | 17:29 | 148 | 16:34 (26) | 18:28 | 50 | 17:20 (1) | 20:29 | | | 21:28 | 46 | 07:49 (43) | 22:14 | |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 11:37 (30) | 06:59 | | 07:30 (32) | 06:40 | | | 05:32 | | 07:03 (43) | 04:54 | |
| | 16:29 | 138 | 15:12 (27) | 17:32 | 148 | 16:33 (26) | 18:30 | 50 | 17:18 (1) | 20:31 | | | 21:30 | 46 | 07:49 (43) | 22:14 | |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 08:41 (31) | 06:57 | | 07:30 (32) | 06:38 | | | 05:30 | | 07:03 (43) | 04:53 | |
| | 16:31 | 139 | 15:12 (27) | 17:34 | 159 | 16:33 (26) | 18:32 | 47 | 17:16 (1) | 20:33 | | | 21:32 | 45 | 07:48 (43) | 22:15 | |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | 08:38 (31) | 06:54 | | 07:30 (32) | 06:35 | | 07:28 (43) | 05:28 | | 07:04 (43) | 04:53 | |
| | 16:33 | 142 | 15:13 (27) | 17:36 | 166 | 16:33 (26) | 18:34 | 42 | 17:14 (1) | 20:35 | 6 | 07:34 (43) | 21:34 | 43 | 07:47 (43) | 22:16 | |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | 08:36 (31) | 06:52 | | 07:30 (32) | 06:33 | | 07:22 (43) | 05:27 | | 07:05 (43) | 04:53 | |
| | 16:35 | 144 | 15:13 (27) | 17:38 | 169 | 16:32 (26) | 18:36 | 35 | 17:10 (1) | 20:37 | 18 | 07:40 (43) | 21:35 | 42 | 07:47 (43) | 22:16 | |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | 08:35 (31) | 06:49 | | 07:30 (32) | 06:30 | | 07:18 (43) | 05:25 | | 07:05 (43) | 04:52 | |
| | 16:36 | 145 | 15:12 (27) | 17:40 | 170 | 16:31 (26) | 18:38 | 21 | 07:51 (32) | 20:39 | 24 | 07:42 (43) | 21:37 | 40 | 07:45 (43) | 22:17 | |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | 08:34 (31) | 06:47 | | 07:31 (32) | 06:28 | | 07:16 (43) | 05:23 | | 07:06 (43) | 04:52 | |
| | 16:38 | 147 | 15:13 (27) | 17:42 | 172 | 16:31 (26) | 18:40 | 18 | 07:49 (32) | 20:41 | 28 | 07:44 (43) | 21:39 | 39 | 07:45 (43) | 22:18 | |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | 08:33 (31) | 06:44 | | 07:31 (32) | 06:25 | | 07:14 (43) | 05:21 | | 07:07 (43) | 04:52 | |
| | 16:40 | 149 | 15:13 (27) | 17:44 | 172 | 16:28 (26) | 18:42 | 16 | 07:47 (32) | 20:43 | 32 | 07:46 (43) | 21:41 | 37 | 07:44 (43) | 22:18 | |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | 08:32 (31) | 06:41 | | 07:33 (32) | 06:23 | | 07:11 (43) | 05:20 | | 07:08 (43) | 04:52 | |
| | 16:42 | 148 | 15:13 (27) | 17:46 | 172 | 16:27 (26) | 18:44 | 13 | 07:46 (32) | 20:45 | 36 | 07:47 (43) | 21:42 | 35 | 07:43 (43) | 22:18 | |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:32 (31) | 06:39 | | 07:36 (32) | 06:20 | | 07:10 (43) | 05:18 | | 07:08 (43) | 04:52 | |
| | 16:44 | 147 | 15:13 (27) | 17:49 | 167 | 16:23 (26) | 18:46 | 5 | 07:41 (32) | 20:47 | 38 | 07:48 (43) | 21:44 | 34 | 07:42 (43) | 22:19 | |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 08:31 (31) | 06:36 | | | 06:18 | | 07:09 (43) | 05:16 | | 07:10 (43) | 04:52 | |
| | 16:46 | 147 | 15:12 (27) | 17:51 | 180 | 17:14 (1) | 18:48 | | | 20:49 | 41 | 07:50 (43) | 21:46 | 31 | 07:41 (43) | 22:19 | |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 08:31 (31) | 06:34 | | | 06:16 | | 07:07 (43) | 05:15 | | 07:10 (43) | 04:52 | |
| | 16:48 | 146 | 15:11 (27) | 17:53 | 185 | 17:17 (1) | 18:50 | | | 20:51 | 43 | 07:50 (43) | 21:48 | 29 | 07:39 (43) | 22:19 | |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 08:31 (31) | 06:31 | | | 06:13 | | 07:06 (43) | 05:13 | | 07:12 (43) | 04:53 | |
| | 16:50 | 144 | 15:11 (27) | 17:55 | 189 | 17:19 (1) | 18:52 | | | 20:53 | 45 | 07:51 (43) | 21:49 | 27 | 07:39 (43) | 22:19 | |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:31 (31) | 06:29 | | | 06:11 | | 07:06 (43) | 05:12 | | 07:14 (43) | 04:53 | |
| | 16:52 | 140 | 15:10 (27) | 17:57 | 190 | 17:21 (1) | 18:54 | | | 20:55 | 45 | 07:51 (43) | 21:51 | 23 | 07:37 (43) | 22:19 | |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:31 (31) | 06:26 | | | 06:09 | | 07:05 (43) | 05:10 | | 07:15 (43) | 04:53 | |
| | 16:54 | 134 | 15:08 (27) | 17:59 | 188 | 17:21 (1) | 18:56 | | | 20:57 | 47 | 07:52 (43) | 21:52 | 21 | 07:36 (43) | 22:19 | |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:32 (31) | 06:23 | | | 06:06 | | 07:03 (43) | 05:09 | | 07:16 (43) | 04:54 | |
| | 16:56 | 127 | 15:06 (27) | 18:01 | 188 | 17:23 (1) | 18:58 | | | 20:59 | 48 | 07:51 (43) | 21:54 | 18 | 07:34 (43) | 22:19 | |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 08:32 (31) | 06:21 | | | 06:04 | | 07:03 (43) | 05:08 | | 07:19 (43) | 04:54 | |
| | 16:58 | 115 | 14:03 (29) | 18:03 | 185 | 17:23 (1) | 19:00 | | | 21:01 | 49 | 07:52 (43) | 21:55 | 12 | 07:31 (43) | 22:19 | |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 08:33 (31) | 06:18 | | | 06:02 | | 07:03 (43) | 05:06 | | 07:23 (43) | 04:55 | |
| | 17:00 | 112 | 14:01 (29) | 18:05 | 181 | 17:24 (1) | 19:02 | | | 21:03 | 49 | 07:52 (43) | 21:57 | 5 | 07:28 (43) | 22:19 | |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 07:02 (43) | 05:05 | | | 04:55 | |
| | 17:02 | 99 | 13:55 (29) | | | | 20:04 | | | 21:05 | 50 | 07:52 (43) | 21:58 | | | 22:19 | |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | | | 05:57 | | 07:02 (43) | 05:04 | | | 04:56 | |
| | 17:04 | 118 | 16:22 (26) | | | | 20:06 | | | 21:07 | 50 | 07:52 (43) | 22:00 | | | 22:19 | |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | | | | | 05:03 | | | | |
| | 17:06 | 130 | 16:25 (26) | | | | 20:08 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 4017 | | | 4537 | | | 1584 | | | 649 | | | 1067 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,34 | | | 0,48 | | | 0,67 | | | 0,98 | | | 0,98 | | | |
| Total reduction | | 0,05 | | | 0,10 | | | 0,19 | | | 0,33 | | | 0,43 | | | |
| Total, real | | 213 | | | 459 | | | 309 | | | 214 | | | 463 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 07:13 (43) | 06:38 | | | 07:35 | | 08:09 (32) | 07:37 | | 11:07 (30) | 08:35 | | 09:19 (3) |
| | 22:18 | | 21:40 | 46 | 07:59 (43) | 20:29 | | | 19:12 | 48 | 17:56 (1) | 16:58 | 147 | 16:04 (26) | 16:10 | 134 | 14:53 (27) |
| 2 | 04:58 | | 05:41 | | 07:13 (43) | 06:40 | | | 07:37 | | 08:09 (32) | 07:39 | | 11:07 (30) | 08:37 | | 09:20 (3) |
| | 22:18 | | 21:38 | 47 | 08:00 (43) | 20:27 | | | 19:10 | 51 | 17:57 (1) | 16:56 | 145 | 16:03 (26) | 16:09 | 131 | 14:54 (27) |
| 3 | 04:58 | | 05:43 | | 07:12 (43) | 06:42 | | | 07:39 | | 08:10 (32) | 07:41 | | 11:07 (30) | 08:38 | | 09:21 (3) |
| | 22:17 | | 21:36 | 48 | 08:00 (43) | 20:24 | | | 19:07 | 61 | 17:58 (1) | 16:54 | 144 | 16:03 (26) | 16:08 | 127 | 14:55 (27) |
| 4 | 04:59 | | 05:45 | | 07:12 (43) | 06:44 | | | 07:41 | | 08:10 (32) | 07:43 | | 11:08 (30) | 08:40 | | 09:22 (3) |
| | 22:17 | | 21:34 | 48 | 08:00 (43) | 20:22 | | | 19:04 | 73 | 17:59 (1) | 16:52 | 141 | 16:03 (26) | 16:08 | 123 | 14:55 (27) |
| 5 | 05:00 | | 05:47 | | 07:12 (43) | 06:45 | | | 07:42 | | 08:11 (32) | 07:45 | | 11:08 (30) | 08:42 | | 09:22 (3) |
| | 22:16 | | 21:32 | 49 | 08:01 (43) | 20:19 | | | 19:02 | 102 | 17:59 (1) | 16:50 | 139 | 16:02 (26) | 16:07 | 121 | 14:55 (27) |
| 6 | 05:01 | | 05:49 | | 07:11 (43) | 06:47 | | | 07:44 | | 08:13 (32) | 07:47 | | 11:08 (30) | 08:43 | | 09:24 (3) |
| | 22:15 | | 21:30 | 49 | 08:00 (43) | 20:17 | | | 18:59 | 114 | 17:59 (1) | 16:48 | 137 | 16:02 (26) | 16:06 | 119 | 14:56 (27) |
| 7 | 05:02 | | 05:51 | | 07:11 (43) | 06:49 | | | 07:46 | | 08:15 (32) | 07:49 | | 11:08 (30) | 08:44 | | 09:24 (3) |
| | 22:15 | | 21:28 | 50 | 08:01 (43) | 20:14 | | | 18:57 | 123 | 17:59 (1) | 16:46 | 135 | 16:01 (26) | 16:06 | 117 | 14:56 (27) |
| 8 | 05:03 | | 05:52 | | 07:11 (43) | 06:51 | | | 07:48 | | 12:26 (30) | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 22:14 | | 21:26 | 50 | 08:01 (43) | 20:12 | | | 18:54 | 126 | 17:59 (1) | 16:44 | 139 | 16:01 (26) | 16:05 | 111 | 14:56 (27) |
| 9 | 05:04 | | 05:54 | | 07:10 (43) | 06:53 | | | 07:50 | | 12:23 (30) | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 22:13 | | 21:24 | 51 | 08:01 (43) | 20:09 | | | 18:52 | 134 | 17:59 (1) | 16:42 | 140 | 15:59 (26) | 16:05 | 108 | 14:56 (27) |
| 10 | 05:06 | | 05:56 | | 07:10 (43) | 06:55 | | | 07:52 | | 09:12 (31) | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 22:12 | | 21:22 | 51 | 08:01 (43) | 20:07 | | | 18:49 | 154 | 17:59 (1) | 16:40 | 136 | 15:58 (26) | 16:04 | 107 | 14:57 (27) |
| 11 | 05:07 | | 05:58 | | 07:10 (43) | 06:57 | | | 07:54 | | 09:09 (31) | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 22:11 | | 21:19 | 51 | 08:01 (43) | 20:04 | | | 18:47 | 163 | 17:58 (1) | 16:38 | 130 | 15:56 (26) | 16:04 | 108 | 14:57 (27) |
| 12 | 05:08 | | 06:00 | | 07:10 (43) | 06:59 | | | 07:56 | | 09:07 (31) | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 22:10 | | 21:17 | 51 | 08:01 (43) | 20:01 | | | 18:44 | 173 | 17:57 (1) | 16:36 | 116 | 15:53 (26) | 16:04 | 107 | 14:58 (27) |
| 13 | 05:09 | | 06:02 | | 07:10 (43) | 07:01 | | | 07:58 | | 09:06 (31) | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 22:09 | | 21:15 | 50 | 08:00 (43) | 19:59 | | | 18:42 | 179 | 17:57 (1) | 16:34 | 100 | 13:28 (29) | 16:04 | 108 | 14:58 (27) |
| 14 | 05:11 | | 06:04 | | 07:10 (43) | 07:02 | | | 08:00 | | 09:05 (31) | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 22:08 | | 21:13 | 50 | 08:00 (43) | 19:56 | | | 18:39 | 182 | 17:56 (1) | 16:33 | 112 | 13:33 (29) | 16:04 | 106 | 14:58 (27) |
| 15 | 05:12 | | 06:06 | | 07:10 (43) | 07:04 | | | 08:02 | | 09:04 (31) | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 22:07 | | 21:10 | 50 | 08:00 (43) | 19:54 | | | 18:37 | 186 | 17:56 (1) | 16:31 | 115 | 13:35 (29) | 16:04 | 106 | 14:58 (27) |
| 16 | 05:13 | 07:30 (43) | 06:07 | | 07:11 (43) | 07:06 | | | 08:04 | | 09:04 (31) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 22:06 | 9 07:39 (43) | 21:08 | 48 | 07:59 (43) | 19:51 | | | 18:35 | 188 | 17:55 (1) | 16:29 | 126 | 14:39 (27) | 16:04 | 104 | 14:59 (27) |
| 17 | 05:15 | 07:27 (43) | 06:09 | | 07:11 (43) | 07:08 | | | 08:06 | | 09:03 (31) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 22:04 | 15 07:42 (43) | 21:06 | 48 | 07:59 (43) | 19:48 | | | 18:32 | 189 | 17:53 (1) | 16:28 | 135 | 14:42 (27) | 16:04 | 104 | 14:59 (27) |
| 18 | 05:16 | 07:25 (43) | 06:11 | | 07:11 (43) | 07:10 | | | 08:08 | | 09:02 (31) | 08:11 | | 09:14 (3) | 08:56 | | 09:36 (3) |
| | 22:03 | 19 07:44 (43) | 21:04 | 46 | 07:57 (43) | 19:46 | | | 18:30 | 188 | 17:51 (1) | 16:26 | 140 | 14:44 (27) | 16:04 | 103 | 15:00 (27) |
| 19 | 05:18 | 07:24 (43) | 06:13 | | 07:11 (43) | 07:12 | | | 08:10 | | 09:02 (31) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 22:02 | 22 07:46 (43) | 21:01 | 46 | 07:57 (43) | 19:43 | | | 18:27 | 186 | 17:49 (1) | 16:25 | 144 | 14:45 (27) | 16:04 | 102 | 15:01 (27) |
| 20 | 05:19 | 07:22 (43) | 06:15 | | 07:12 (43) | 07:14 | | | 08:12 | | 09:02 (31) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 22:00 | 26 07:48 (43) | 20:59 | 44 | 07:56 (43) | 19:41 | | | 18:25 | 184 | 17:47 (1) | 16:23 | 147 | 14:46 (27) | 16:05 | 100 | 15:00 (27) |
| 21 | 05:21 | 07:22 (43) | 06:17 | | 07:13 (43) | 07:16 | | | 08:14 | | 09:02 (31) | 08:17 | | 09:14 (3) | 08:59 | | 09:39 (3) |
| | 21:59 | 27 07:49 (43) | 20:56 | 42 | 07:55 (43) | 19:38 | | | 18:23 | 178 | 17:43 (1) | 16:22 | 147 | 14:48 (27) | 16:05 | 100 | 15:01 (27) |
| 22 | 05:23 | 07:20 (43) | 06:19 | | 07:13 (43) | 07:18 | | | 08:16 | | 09:03 (31) | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 21:57 | 30 07:50 (43) | 20:54 | 40 | 07:53 (43) | 19:35 | | | 18:20 | 168 | 16:55 (26) | 16:20 | 147 | 14:49 (27) | 16:05 | 100 | 15:01 (27) |
| 23 | 05:24 | 07:20 (43) | 06:21 | | 07:14 (43) | 07:19 | | | 08:18 | | 09:03 (31) | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 21:56 | 32 07:52 (43) | 20:52 | 38 | 07:52 (43) | 19:33 | | | 18:18 | 171 | 16:58 (26) | 16:19 | 148 | 14:50 (27) | 16:06 | 100 | 15:02 (27) |
| 24 | 05:26 | 07:18 (43) | 06:23 | | 07:15 (43) | 07:21 | | 08:18 (32) | 08:20 | | 09:03 (31) | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 21:54 | 35 07:53 (43) | 20:49 | 36 | 07:51 (43) | 19:30 | 10 | 08:28 (32) | 18:16 | 173 | 16:59 (26) | 16:18 | 149 | 14:50 (27) | 16:06 | 101 | 15:02 (27) |
| 25 | 05:27 | 07:18 (43) | 06:25 | | 07:17 (43) | 07:23 | | 08:15 (32) | 07:22 | | 08:04 (31) | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 21:52 | 36 07:54 (43) | 20:47 | 32 | 07:49 (43) | 19:28 | 15 | 08:30 (32) | 17:13 | 171 | 16:00 (26) | 16:16 | 146 | 14:51 (27) | 16:07 | 102 | 15:03 (27) |
| 26 | 05:29 | 07:17 (43) | 06:26 | | 07:19 (43) | 07:25 | | 08:14 (32) | 07:24 | | 08:05 (31) | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 21:51 | 38 07:55 (43) | 20:44 | 28 | 07:47 (43) | 19:25 | 18 | 08:32 (32) | 17:11 | 171 | 16:01 (26) | 16:15 | 145 | 14:51 (27) | 16:08 | 102 | 15:04 (27) |
| 27 | 05:31 | 07:16 (43) | 06:28 | | 07:20 (43) | 07:27 | | 08:12 (32) | 07:26 | | 08:07 (31) | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 21:49 | 40 07:56 (43) | 20:42 | 24 | 07:44 (43) | 19:22 | 19 | 08:31 (32) | 17:09 | 167 | 16:02 (26) | 16:14 | 144 | 14:52 (27) | 16:09 | 104 | 15:05 (27) |
| 28 | 05:33 | 07:15 (43) | 06:30 | | 07:23 (43) | 07:29 | | 08:11 (32) | 07:28 | | 08:08 (31) | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 21:47 | 41 07:56 (43) | 20:39 | 17 | 07:40 (43) | 19:20 | 32 | 17:50 (1) | 17:07 | 165 | 16:03 (26) | 16:13 | 143 | 14:53 (27) | 16:10 | 104 | 15:05 (27) |
| 29 | 05:34 | 07:15 (43) | 06:32 | | 07:29 (43) | 07:31 | | 08:10 (32) | 07:31 | | 08:11 (31) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 21:46 | 42 07:57 (43) | 20:37 | 5 | 07:34 (43) | 19:17 | 40 | 17:53 (1) | 17:04 | 159 | 16:03 (26) | 16:12 | 139 | 14:53 (27) | 16:10 | 107 | 15:06 (27) |
| 30 | 05:36 | 07:15 (43) | 06:34 | | | 07:33 | | 08:10 (32) | 07:33 | | 11:06 (30) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 21:44 | 43 07:58 (43) | 20:34 | | | 19:15 | 45 | 17:55 (1) | 17:02 | 149 | 16:03 (26) | 16:11 | 138 | 14:54 (27) | 16:11 | 106 | 15:05 (27) |
| 31 | 05:38 | 07:13 (43) | 06:36 | | | | | | 07:35 | | 11:06 (30) | | | | 09:01 | | 09:38 (3) |
| | 21:42 | 45 07:58 (43) | 20:32 | | | | | | 17:00 | 148 | 16:03 (26) | | | | 16:12 | 107 | 15:06 (27) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 500 | | 1235 | | | 179 | | | 4624 | | | 4114 | | | 3379 | |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | 0,98 | | | 0,95 | | | 0,55 | | | 0,36 | | | 0,35 | |
| Total reduction | | 0,41 | | 0,43 | | | 0,32 | | | 0,14 | | | 0,05 | | | 0,04 | |
| Total, real | | 204 | | 534 | | | 58 | | | 664 | | | 202 | | | 136 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | | 07:52 (5) | 07:08 | | | 05:55 | | 06:49 (43) | 05:02 | | 06:38 (43) |
| | 16:14 | 100 | 15:22 (27) | 17:08 | 138 | 15:32 (27) | 18:07 | 204 | 17:32 (1) | 20:10 | | | 21:09 | 33 | 07:22 (43) | 22:03 | 54 | 07:32 (43) |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | | 07:50 (5) | 07:05 | | | 05:53 | | 06:47 (43) | 05:01 | | 06:38 (43) |
| | 16:15 | 105 | 15:23 (27) | 17:10 | 130 | 15:30 (27) | 18:09 | 216 | 17:36 (1) | 20:12 | | | 21:11 | 37 | 07:24 (43) | 22:04 | 53 | 07:31 (43) |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | | 07:47 (5) | 07:03 | | | 05:51 | | 06:46 (43) | 05:00 | | 06:39 (43) |
| | 16:16 | 105 | 15:24 (27) | 17:12 | 118 | 14:37 (29) | 18:12 | 224 | 17:38 (1) | 20:14 | | | 21:13 | 39 | 07:25 (43) | 22:05 | 53 | 07:32 (43) |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | | 07:45 (5) | 07:00 | | | 05:48 | | 06:44 (43) | 04:59 | | 06:39 (43) |
| | 16:18 | 108 | 15:25 (27) | 17:15 | 113 | 14:35 (29) | 18:14 | 229 | 17:40 (1) | 20:16 | | | 21:15 | 42 | 07:26 (43) | 22:06 | 53 | 07:32 (43) |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | | 07:44 (5) | 06:58 | | | 05:46 | | 06:43 (43) | 04:58 | | 06:39 (43) |
| | 16:19 | 109 | 15:26 (27) | 17:17 | 105 | 14:33 (29) | 18:16 | 227 | 17:41 (1) | 20:18 | | | 21:17 | 44 | 07:27 (43) | 22:08 | 53 | 07:32 (43) |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | | 07:44 (5) | 06:55 | | | 05:44 | | 06:42 (43) | 04:57 | | 06:40 (43) |
| | 16:20 | 111 | 15:27 (27) | 17:19 | 91 | 14:29 (29) | 18:18 | 228 | 17:42 (1) | 20:20 | | | 21:18 | 45 | 07:27 (43) | 22:09 | 52 | 07:32 (43) |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | 12:23 (30) | 07:12 | | 07:44 (5) | 06:53 | | | 05:42 | | 06:41 (43) | 04:56 | | 06:40 (43) |
| | 16:22 | 112 | 15:28 (27) | 17:21 | 79 | 16:39 (26) | 18:20 | 224 | 17:43 (1) | 20:22 | | | 21:20 | 47 | 07:28 (43) | 22:10 | 52 | 07:32 (43) |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | 12:22 (30) | 07:09 | | 07:44 (5) | 06:50 | | | 05:40 | | 06:40 (43) | 04:56 | | 06:40 (43) |
| | 16:23 | 113 | 15:28 (27) | 17:23 | 92 | 16:44 (26) | 18:22 | 219 | 17:43 (1) | 20:23 | | | 21:22 | 49 | 07:29 (43) | 22:11 | 51 | 07:31 (43) |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | 12:22 (30) | 07:07 | | 07:46 (5) | 06:48 | | | 05:38 | | 06:39 (43) | 04:55 | | 06:41 (43) |
| | 16:25 | 113 | 15:29 (27) | 17:25 | 98 | 16:47 (26) | 18:24 | 208 | 17:43 (1) | 20:25 | | | 21:24 | 50 | 07:29 (43) | 22:12 | 51 | 07:32 (43) |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | 12:21 (30) | 07:04 | | 07:47 (5) | 06:45 | | | 05:36 | | 06:39 (43) | 04:54 | | 06:41 (43) |
| | 16:26 | 114 | 15:31 (27) | 17:27 | 103 | 16:49 (26) | 18:26 | 192 | 17:43 (1) | 20:27 | | | 21:26 | 50 | 07:29 (43) | 22:13 | 50 | 07:31 (43) |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | 12:20 (30) | 07:02 | | 07:29 (32) | 06:43 | | | 05:34 | | 06:39 (43) | 04:54 | | 06:41 (43) |
| | 16:28 | 114 | 15:31 (27) | 17:29 | 107 | 16:50 (26) | 18:28 | 191 | 17:44 (1) | 20:29 | | | 21:28 | 52 | 07:31 (43) | 22:14 | 51 | 07:32 (43) |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | 12:19 (30) | 06:59 | | 07:26 (32) | 06:40 | | | 05:32 | | 06:38 (43) | 04:54 | | 06:42 (43) |
| | 16:29 | 110 | 15:31 (27) | 17:32 | 110 | 16:50 (26) | 18:30 | 192 | 17:43 (1) | 20:31 | | | 21:30 | 53 | 07:31 (43) | 22:14 | 50 | 07:32 (43) |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | 12:18 (30) | 06:57 | | 07:24 (32) | 06:38 | | | 05:30 | | 06:37 (43) | 04:53 | | 06:43 (43) |
| | 16:31 | 105 | 15:32 (27) | 17:34 | 114 | 16:52 (26) | 18:32 | 191 | 17:42 (1) | 20:33 | | | 21:32 | 54 | 07:31 (43) | 22:15 | 49 | 07:32 (43) |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | 12:18 (30) | 06:54 | | 07:23 (32) | 06:35 | | | 05:28 | | 06:37 (43) | 04:53 | | 06:42 (43) |
| | 16:33 | 102 | 15:33 (27) | 17:36 | 117 | 16:52 (26) | 18:34 | 187 | 17:42 (1) | 20:35 | | | 21:34 | 54 | 07:31 (43) | 22:16 | 50 | 07:32 (43) |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | 12:17 (30) | 06:52 | | 07:22 (32) | 06:33 | | | 05:27 | | 06:37 (43) | 04:53 | | 06:43 (43) |
| | 16:35 | 105 | 15:34 (27) | 17:38 | 123 | 16:52 (26) | 18:36 | 186 | 17:41 (1) | 20:37 | | | 21:35 | 55 | 07:32 (43) | 22:16 | 49 | 07:32 (43) |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | 08:39 (31) | 06:49 | | 07:22 (32) | 06:30 | | | 05:25 | | 06:37 (43) | 04:52 | | 06:43 (43) |
| | 16:36 | 107 | 15:34 (27) | 17:40 | 133 | 16:53 (26) | 18:38 | 180 | 17:41 (1) | 20:39 | | | 21:37 | 54 | 07:31 (43) | 22:17 | 49 | 07:32 (43) |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | 08:35 (31) | 06:47 | | 07:21 (32) | 06:28 | | | 05:23 | | 06:37 (43) | 04:52 | | 06:43 (43) |
| | 16:38 | 106 | 15:35 (27) | 17:42 | 145 | 16:53 (26) | 18:40 | 172 | 17:40 (1) | 20:41 | | | 21:39 | 55 | 07:32 (43) | 22:18 | 49 | 07:32 (43) |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | 08:32 (31) | 06:44 | | 07:20 (32) | 06:25 | | | 05:21 | | 06:36 (43) | 04:52 | | 06:44 (43) |
| | 16:40 | 108 | 15:36 (27) | 17:44 | 154 | 16:53 (26) | 18:42 | 162 | 17:38 (1) | 20:43 | | | 21:41 | 56 | 07:32 (43) | 22:18 | 48 | 07:32 (43) |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | 08:30 (31) | 06:41 | | 07:20 (32) | 06:23 | | | 05:20 | | 06:37 (43) | 04:52 | | 06:44 (43) |
| | 16:42 | 109 | 15:36 (27) | 17:46 | 160 | 16:53 (26) | 18:44 | 152 | 17:37 (1) | 20:45 | | | 21:42 | 55 | 07:32 (43) | 22:18 | 48 | 07:32 (43) |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:29 (31) | 06:39 | | 07:20 (32) | 06:20 | | | 05:18 | | 06:36 (43) | 04:52 | | 06:44 (43) |
| | 16:44 | 109 | 15:36 (27) | 17:49 | 165 | 16:53 (26) | 18:46 | 137 | 17:35 (1) | 20:47 | | | 21:44 | 56 | 07:32 (43) | 22:19 | 48 | 07:32 (43) |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | 08:27 (31) | 06:36 | | 07:21 (32) | 06:18 | | | 05:16 | | 06:37 (43) | 04:52 | | 06:44 (43) |
| | 16:46 | 108 | 15:36 (27) | 17:51 | 169 | 16:53 (2) | 18:48 | 118 | 17:33 (1) | 20:49 | | | 21:46 | 55 | 07:32 (43) | 22:19 | 48 | 07:32 (43) |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 08:27 (31) | 06:34 | | 07:21 (32) | 06:16 | | | 05:15 | | 06:36 (43) | 04:52 | | 06:45 (43) |
| | 16:48 | 125 | 15:36 (27) | 17:53 | 174 | 16:55 (2) | 18:50 | 87 | 17:30 (1) | 20:51 | | | 21:47 | 56 | 07:32 (43) | 22:19 | 48 | 07:33 (43) |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 08:26 (31) | 06:31 | | 07:23 (32) | 06:13 | | | 05:13 | | 06:36 (43) | 04:53 | | 06:45 (43) |
| | 16:50 | 134 | 15:37 (27) | 17:55 | 177 | 16:55 (2) | 18:52 | 60 | 13:19 (30) | 20:53 | | | 21:49 | 56 | 07:32 (43) | 22:19 | 48 | 07:33 (43) |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:25 (31) | 06:29 | | 07:25 (32) | 06:11 | | | 05:12 | | 06:37 (43) | 04:53 | | 06:45 (43) |
| | 16:52 | 139 | 15:37 (27) | 17:57 | 181 | 16:56 (2) | 18:54 | 43 | 13:13 (30) | 20:55 | | | 21:51 | 55 | 07:32 (43) | 22:19 | 48 | 07:33 (43) |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:24 (31) | 06:26 | | 12:55 (30) | 06:09 | | | 05:10 | | 06:37 (43) | 04:53 | | 06:45 (43) |
| | 16:54 | 141 | 15:36 (27) | 17:59 | 184 | 16:56 (2) | 18:56 | 4 | 12:59 (30) | 20:57 | | | 21:52 | 56 | 07:33 (43) | 22:19 | 49 | 07:34 (43) |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:25 (31) | 06:23 | | | 06:06 | | | 05:09 | | 06:36 (43) | 04:54 | | 06:45 (43) |
| | 16:56 | 146 | 15:37 (27) | 18:01 | 183 | 16:57 (2) | 18:58 | | | 20:59 | | | 21:54 | 56 | 07:32 (43) | 22:19 | 49 | 07:34 (43) |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 07:01 (43) | 05:08 | | 06:37 (43) | 04:54 | | 06:46 (43) |
| | 16:58 | 147 | 15:37 (27) | 18:03 | 188 | 16:57 (2) | 19:00 | | | 21:01 | 9 | 07:10 (43) | 21:55 | 55 | 07:32 (43) | 22:19 | 49 | 07:35 (43) |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 07:55 (5) | 06:18 | | | 06:02 | | 06:56 (43) | 05:06 | | 06:37 (43) | 04:55 | | 06:45 (43) |
| | 17:00 | 146 | 15:36 (27) | 18:05 | 193 | 16:58 (2) | 19:02 | | | 21:03 | 19 | 07:15 (43) | 21:57 | 55 | 07:32 (43) | 22:19 | 50 | 07:35 (43) |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 06:53 (43) | 05:05 | | 06:37 (43) | 04:55 | | 06:46 (43) |
| | 17:02 | 146 | 15:35 (27) | | | | 20:04 | | | 21:05 | 25 | 07:18 (43) | 21:58 | 55 | 07:32 (43) | 22:19 | 49 | 07:35 (43) |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | | 05:57 | | 06:51 (43) | 05:04 | | 06:38 (43) | 04:56 | | 06:45 (43) |
| | 17:04 | 145 | 15:34 (27) | | | | 20:06 | | | 21:07 | 29 | 07:20 (43) | 22:00 | 54 | 07:32 (43) | 22:19 | 50 | 07:35 (43) |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | | | | 05:03 | | 06:38 (43) | | | |
| | 17:06 | 142 | 15:33 (27) | | | | 20:08 | | | | | | 22:01 | 54 | 07:32 (43) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3684 | | | 3844 | | | 4233 | | | 82 | | | 1587 | | | 1501 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,43 | | | 0,36 | | | 0,51 | | | 0,95 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,07 | | | 0,08 | | | 0,15 | | | 0,33 | | | 0,43 | | | 0,40 | |
| Total, real | | 248 | | | 295 | | | 647 | | | 27 | | | 683 | | | 604 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:46 (43) | 05:40 | | 06:49 (43) | 06:38 | | | 07:35 | | 08:04 (32) | 07:37 | | 11:51 (30) | 08:35 | | 09:21 (3) |
| | 22:18 | 50 | 07:36 (43) | 21:40 | 52 | 07:41 (43) | 20:29 | | | 19:12 | 191 | 18:22 (1) | 16:58 | 101 | 16:18 (26) | 16:10 | 112 | 15:13 (27) |
| 2 | 04:58 | | 06:46 (43) | 05:41 | | 06:49 (43) | 06:40 | | | 07:37 | | 08:06 (32) | 07:39 | | 11:51 (30) | 08:37 | | 09:22 (3) |
| | 22:18 | 50 | 07:36 (43) | 21:38 | 52 | 07:41 (43) | 20:27 | | | 19:10 | 192 | 18:22 (1) | 16:56 | 97 | 16:16 (26) | 16:09 | 114 | 15:13 (27) |
| 3 | 04:58 | | 06:46 (43) | 05:43 | | 06:49 (43) | 06:42 | | | 07:39 | | 08:09 (32) | 07:41 | | 11:52 (30) | 08:38 | | 09:23 (3) |
| | 22:17 | 51 | 07:37 (43) | 21:36 | 50 | 07:39 (43) | 20:24 | | | 19:07 | 196 | 18:21 (1) | 16:54 | 90 | 16:13 (26) | 16:08 | 113 | 15:13 (27) |
| 4 | 04:59 | | 06:46 (43) | 05:45 | | 06:50 (43) | 06:44 | | | 07:41 | | 08:24 (5) | 07:43 | | 11:54 (30) | 08:40 | | 09:24 (3) |
| | 22:17 | 51 | 07:37 (43) | 21:34 | 49 | 07:39 (43) | 20:22 | | | 19:04 | 201 | 18:21 (1) | 16:52 | 77 | 13:11 (30) | 16:08 | 113 | 15:13 (27) |
| 5 | 05:00 | | 06:46 (43) | 05:47 | | 06:51 (43) | 06:45 | | | 07:42 | | 08:22 (5) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | 51 | 07:37 (43) | 21:32 | 48 | 07:39 (43) | 20:19 | | | 19:02 | 214 | 18:20 (1) | 16:50 | 93 | 13:59 (29) | 16:07 | 112 | 15:13 (27) |
| 6 | 05:01 | | 06:46 (43) | 05:49 | | 06:51 (43) | 06:47 | | | 07:44 | | 08:21 (5) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | 51 | 07:37 (43) | 21:30 | 46 | 07:37 (43) | 20:17 | | | 18:59 | 221 | 18:19 (1) | 16:48 | 107 | 14:03 (29) | 16:06 | 111 | 15:13 (27) |
| 7 | 05:02 | | 06:46 (43) | 05:51 | | 06:52 (43) | 06:49 | | | 07:46 | | 08:20 (5) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | 52 | 07:38 (43) | 21:28 | 45 | 07:37 (43) | 20:14 | | | 18:57 | 225 | 18:18 (1) | 16:46 | 114 | 14:05 (29) | 16:06 | 109 | 15:12 (27) |
| 8 | 05:03 | | 06:46 (43) | 05:52 | | 06:53 (43) | 06:51 | | | 07:48 | | 08:19 (5) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | 52 | 07:38 (43) | 21:26 | 43 | 07:36 (43) | 20:12 | | | 18:54 | 228 | 18:17 (1) | 16:44 | 119 | 14:08 (29) | 16:05 | 108 | 15:13 (27) |
| 9 | 05:04 | | 06:46 (43) | 05:54 | | 06:53 (43) | 06:53 | | | 07:50 | | 08:19 (5) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | 52 | 07:38 (43) | 21:24 | 41 | 07:34 (43) | 20:09 | | | 18:52 | 229 | 18:15 (1) | 16:42 | 133 | 15:01 (27) | 16:05 | 104 | 15:12 (27) |
| 10 | 05:06 | | 06:46 (43) | 05:56 | | 06:54 (43) | 06:55 | | | 07:52 | | 08:20 (5) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | 53 | 07:39 (43) | 21:22 | 39 | 07:33 (43) | 20:07 | | | 18:49 | 226 | 18:13 (1) | 16:40 | 138 | 15:03 (27) | 16:04 | 105 | 15:13 (27) |
| 11 | 05:07 | | 06:47 (43) | 05:58 | | 06:56 (43) | 06:57 | | | 07:54 | | 08:22 (5) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | 53 | 07:40 (43) | 21:19 | 36 | 07:32 (43) | 20:04 | | | 18:47 | 221 | 18:11 (1) | 16:38 | 142 | 15:04 (27) | 16:04 | 101 | 15:13 (27) |
| 12 | 05:08 | | 06:46 (43) | 06:00 | | 06:58 (43) | 06:59 | | | 07:56 | | 08:24 (5) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | 54 | 07:40 (43) | 21:17 | 32 | 07:30 (43) | 20:01 | | | 18:44 | 213 | 18:08 (1) | 16:36 | 146 | 15:06 (27) | 16:04 | 99 | 15:12 (27) |
| 13 | 05:09 | | 06:46 (43) | 06:02 | | 06:59 (43) | 07:01 | | | 07:58 | | 08:26 (5) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | 54 | 07:40 (43) | 21:15 | 28 | 07:27 (43) | 19:59 | | | 18:42 | 195 | 18:01 (1) | 16:34 | 147 | 15:07 (27) | 16:04 | 95 | 15:12 (27) |
| 14 | 05:11 | | 06:46 (43) | 06:04 | | 07:01 (43) | 07:02 | | | 08:00 | | 08:28 (5) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | 54 | 07:40 (43) | 21:13 | 24 | 07:25 (43) | 19:56 | | | 18:39 | 192 | 17:30 (2) | 16:33 | 147 | 15:08 (27) | 16:04 | 94 | 15:12 (27) |
| 15 | 05:12 | | 06:46 (43) | 06:06 | | 07:05 (43) | 07:04 | | | 08:02 | | 08:57 (31) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | 54 | 07:40 (43) | 21:10 | 17 | 07:22 (43) | 19:54 | | | 18:37 | 186 | 17:30 (2) | 16:31 | 145 | 15:08 (27) | 16:04 | 90 | 15:12 (27) |
| 16 | 05:13 | | 06:46 (43) | 06:07 | | 07:12 (43) | 07:06 | | | 08:04 | | 08:57 (31) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | 55 | 07:41 (43) | 21:08 | 2 | 07:14 (43) | 19:51 | | | 18:35 | 184 | 17:29 (2) | 16:29 | 146 | 15:10 (27) | 16:04 | 87 | 15:12 (27) |
| 17 | 05:15 | | 06:46 (43) | 06:09 | | | 07:08 | | | 08:06 | | 08:57 (31) | 08:09 | | 09:14 (3) | 08:56 | | 11:50 (45) |
| | 22:04 | 55 | 07:41 (43) | 21:06 | | | 19:48 | | | 18:32 | 182 | 17:28 (2) | 16:28 | 141 | 15:10 (27) | 16:04 | 84 | 15:12 (27) |
| 18 | 05:16 | | 06:46 (43) | 06:11 | | | 07:10 | | | 08:08 | | 08:57 (31) | 08:11 | | 09:14 (3) | 08:56 | | 11:51 (45) |
| | 22:03 | 55 | 07:41 (43) | 21:04 | | | 19:46 | | | 18:30 | 179 | 17:27 (2) | 16:26 | 139 | 15:11 (27) | 16:04 | 81 | 15:12 (27) |
| 19 | 05:18 | | 06:46 (43) | 06:13 | | | 07:12 | | 08:12 (32) | 08:10 | | 08:57 (31) | 08:13 | | 09:14 (3) | 08:57 | | 11:52 (45) |
| | 22:02 | 56 | 07:42 (43) | 21:01 | | | 19:43 | 39 | 13:58 (30) | 18:27 | 177 | 17:26 (2) | 16:25 | 134 | 15:11 (27) | 16:04 | 82 | 15:13 (27) |
| 20 | 05:19 | | 06:46 (43) | 06:15 | | | 07:14 | | 08:09 (32) | 08:12 | | 08:57 (31) | 08:15 | | 09:14 (3) | 08:58 | | 11:51 (45) |
| | 22:00 | 56 | 07:42 (43) | 20:59 | | | 19:41 | 57 | 14:04 (30) | 18:25 | 173 | 17:25 (2) | 16:23 | 125 | 15:11 (27) | 16:05 | 82 | 15:12 (27) |
| 21 | 05:21 | | 06:47 (43) | 06:17 | | | 07:16 | | 08:07 (32) | 08:14 | | 08:58 (31) | 08:17 | | 09:15 (3) | 08:59 | | 11:52 (45) |
| | 21:59 | 55 | 07:42 (43) | 20:56 | | | 19:38 | 81 | 18:14 (1) | 18:23 | 167 | 17:23 (2) | 16:22 | 108 | 15:12 (27) | 16:05 | 82 | 15:13 (27) |
| 22 | 05:23 | | 06:46 (43) | 06:19 | | | 07:18 | | 08:06 (32) | 08:16 | | 09:00 (31) | 08:19 | | 09:15 (3) | 08:59 | | 11:52 (45) |
| | 21:57 | 56 | 07:42 (43) | 20:54 | | | 19:35 | 112 | 18:17 (1) | 18:20 | 163 | 17:23 (26) | 16:20 | 110 | 15:13 (27) | 16:05 | 82 | 15:13 (27) |
| 23 | 05:24 | | 06:47 (43) | 06:21 | | | 07:19 | | 08:05 (32) | 08:18 | | 09:01 (31) | 08:21 | | 09:16 (3) | 09:00 | | 11:53 (45) |
| | 21:56 | 56 | 07:43 (43) | 20:52 | | | 19:33 | 132 | 18:19 (1) | 18:18 | 158 | 17:23 (26) | 16:19 | 109 | 15:13 (27) | 16:06 | 82 | 15:14 (27) |
| 24 | 05:26 | | 06:47 (43) | 06:23 | | | 07:21 | | 08:04 (32) | 08:20 | | 09:03 (31) | 08:23 | | 09:16 (3) | 09:00 | | 11:54 (45) |
| | 21:54 | 55 | 07:42 (43) | 20:49 | | | 19:30 | 148 | 18:20 (1) | 18:16 | 151 | 17:23 (26) | 16:18 | 108 | 15:13 (27) | 16:06 | 82 | 15:15 (27) |
| 25 | 05:27 | | 06:47 (43) | 06:25 | | | 07:23 | | 08:04 (32) | 07:22 | | 08:05 (31) | 08:25 | | 09:17 (3) | 09:00 | | 11:54 (45) |
| | 21:52 | 56 | 07:43 (43) | 20:47 | | | 19:28 | 157 | 18:21 (1) | 17:13 | 143 | 16:23 (26) | 16:16 | 106 | 15:13 (27) | 16:07 | 81 | 15:15 (27) |
| 26 | 05:29 | | 06:47 (43) | 06:26 | | | 07:25 | | 08:03 (32) | 07:24 | | 11:46 (30) | 08:27 | | 09:17 (3) | 09:01 | | 11:55 (45) |
| | 21:51 | 55 | 07:42 (43) | 20:44 | | | 19:25 | 168 | 18:22 (1) | 17:11 | 126 | 16:22 (26) | 16:15 | 106 | 15:13 (27) | 16:08 | 83 | 15:17 (27) |
| 27 | 05:31 | | 06:47 (43) | 06:28 | | | 07:27 | | 08:02 (32) | 07:26 | | 11:47 (30) | 08:28 | | 09:18 (3) | 09:01 | | 11:56 (45) |
| | 21:49 | 55 | 07:42 (43) | 20:42 | | | 19:22 | 177 | 18:22 (1) | 17:09 | 123 | 16:23 (26) | 16:14 | 105 | 15:13 (27) | 16:09 | 84 | 15:18 (27) |
| 28 | 05:33 | | 06:47 (43) | 06:30 | | | 07:29 | | 08:02 (32) | 07:28 | | 11:48 (30) | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | 55 | 07:42 (43) | 20:39 | | | 19:20 | 183 | 18:22 (1) | 17:07 | 116 | 16:22 (26) | 16:13 | 102 | 15:13 (27) | 16:10 | 89 | 15:18 (27) |
| 29 | 05:34 | | 06:48 (43) | 06:32 | | | 07:31 | | 08:03 (32) | 07:31 | | 11:48 (30) | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | 54 | 07:42 (43) | 20:37 | | | 19:17 | 187 | 18:22 (1) | 17:04 | 113 | 16:21 (26) | 16:12 | 106 | 15:13 (27) | 16:10 | 93 | 15:19 (27) |
| 30 | 05:36 | | 06:48 (43) | 06:34 | | | 07:33 | | 08:03 (32) | 07:33 | | 11:49 (30) | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | 54 | 07:42 (43) | 20:34 | | | 19:15 | 190 | 18:22 (1) | 17:02 | 110 | 16:20 (26) | 16:11 | 111 | 15:14 (27) | 16:11 | 95 | 15:20 (27) |
| 31 | 05:38 | | 06:48 (43) | 06:36 | | | | | | 07:35 | | 11:49 (30) | | | | 09:01 | | 09:42 (3) |
| | 21:42 | 53 | 07:41 (43) | 20:32 | | | | | | 17:00 | 107 | 16:19 (26) | | | | 16:12 | 97 | 15:21 (27) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1663 | | | 604 | | | 1631 | | | 5502 | | | 3552 | | | 2946 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 0,50 | | | 0,46 | | | 0,37 | | | 0,36 | |
| Total reduction | | 0,40 | | | 0,43 | | | 0,17 | | | 0,12 | | | 0,05 | | | 0,04 | |
| Total, real | | 673 | | | 259 | | | 283 | | | 684 | | | 182 | | | 126 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | 13:19 (30) | 07:27 | | 07:55 (5) | 07:08 | | | 05:55 | | 06:59 (43) | 05:02 | | 06:51 (43) |
| | 16:14 | 100 | 15:27 (27) | 17:08 | 100 | 15:36 (27) | 18:07 | 181 | 17:35 (1) | 20:10 | | | 21:09 | 48 | 07:47 (43) | 22:03 | 62 | 07:53 (43) |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | 13:19 (30) | 07:24 | | 07:56 (5) | 07:05 | | | 05:53 | | 06:58 (43) | 05:01 | | 06:51 (43) |
| | 16:15 | 100 | 15:28 (27) | 17:10 | 88 | 14:50 (29) | 18:09 | 174 | 17:37 (1) | 20:12 | | | 21:11 | 50 | 07:48 (43) | 22:04 | 62 | 07:53 (43) |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | 13:18 (30) | 07:22 | | 07:55 (5) | 07:03 | | | 05:51 | | 06:57 (43) | 05:00 | | 06:52 (43) |
| | 16:16 | 101 | 15:29 (27) | 17:12 | 84 | 14:47 (29) | 18:12 | 161 | 17:37 (1) | 20:14 | | | 21:13 | 52 | 07:49 (43) | 22:05 | 62 | 07:54 (43) |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | 13:18 (30) | 07:19 | | 07:57 (5) | 07:00 | | | 05:48 | | 06:56 (43) | 04:59 | | 06:52 (43) |
| | 16:18 | 100 | 15:30 (27) | 17:15 | 72 | 14:30 (30) | 18:14 | 155 | 17:38 (1) | 20:16 | | | 21:15 | 54 | 07:50 (43) | 22:06 | 62 | 07:54 (43) |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | 13:17 (30) | 07:17 | | 07:57 (5) | 06:58 | | | 05:46 | | 06:55 (43) | 04:58 | | 06:52 (43) |
| | 16:19 | 101 | 15:32 (27) | 17:17 | 74 | 14:31 (30) | 18:16 | 150 | 17:38 (1) | 20:18 | | | 21:17 | 55 | 07:50 (43) | 22:08 | 61 | 07:53 (43) |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | 13:17 (30) | 07:14 | | 07:44 (32) | 06:55 | | | 05:44 | | 06:54 (43) | 04:57 | | 06:53 (43) |
| | 16:20 | 98 | 15:32 (27) | 17:19 | 80 | 16:42 (26) | 18:18 | 153 | 17:38 (1) | 20:20 | | | 21:18 | 57 | 07:51 (43) | 22:09 | 61 | 07:54 (43) |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | 09:01 (31) | 07:12 | | 07:41 (32) | 06:53 | | | 05:42 | | 06:53 (43) | 04:56 | | 06:53 (43) |
| | 16:22 | 92 | 15:33 (27) | 17:21 | 96 | 16:45 (26) | 18:20 | 144 | 17:38 (1) | 20:21 | | | 21:20 | 58 | 07:51 (43) | 22:10 | 60 | 07:53 (43) |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | 08:57 (31) | 07:09 | | 07:38 (32) | 06:50 | | | 05:40 | | 06:52 (43) | 04:56 | | 06:53 (43) |
| | 16:23 | 93 | 15:34 (27) | 17:23 | 108 | 16:47 (26) | 18:22 | 136 | 17:37 (1) | 20:23 | | | 21:22 | 60 | 07:52 (43) | 22:11 | 60 | 07:53 (43) |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | 08:55 (31) | 07:07 | | 07:38 (32) | 06:48 | | | 05:38 | | 06:52 (43) | 04:55 | | 06:54 (43) |
| | 16:25 | 94 | 15:35 (27) | 17:25 | 116 | 16:49 (26) | 18:24 | 130 | 17:37 (1) | 20:25 | | | 21:24 | 60 | 07:52 (43) | 22:12 | 59 | 07:53 (43) |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | 08:54 (31) | 07:04 | | 07:36 (32) | 06:45 | | | 05:36 | | 06:51 (43) | 04:54 | | 06:53 (43) |
| | 16:26 | 96 | 15:37 (27) | 17:27 | 123 | 16:50 (26) | 18:26 | 120 | 17:36 (1) | 20:27 | | | 21:26 | 61 | 07:52 (43) | 22:13 | 60 | 07:53 (43) |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 08:53 (31) | 07:02 | | 07:36 (32) | 06:43 | | | 05:34 | | 06:51 (43) | 04:54 | | 06:54 (43) |
| | 16:28 | 97 | 15:36 (27) | 17:29 | 129 | 16:51 (26) | 18:28 | 106 | 17:36 (1) | 20:29 | | | 21:28 | 62 | 07:53 (43) | 22:14 | 59 | 07:53 (43) |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 08:51 (31) | 06:59 | | 07:35 (32) | 06:40 | | | 05:32 | | 06:51 (43) | 04:54 | | 06:55 (43) |
| | 16:29 | 103 | 15:37 (27) | 17:32 | 136 | 16:51 (26) | 18:30 | 77 | 17:35 (1) | 20:31 | | | 21:30 | 62 | 07:53 (43) | 22:14 | 59 | 07:54 (43) |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 08:50 (31) | 06:57 | | 07:34 (32) | 06:38 | | | 05:30 | | 06:50 (43) | 04:53 | | 06:55 (43) |
| | 16:31 | 115 | 15:38 (27) | 17:34 | 142 | 16:52 (26) | 18:32 | 68 | 17:33 (1) | 20:33 | | | 21:32 | 63 | 07:53 (43) | 22:15 | 59 | 07:54 (43) |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 08:50 (31) | 06:54 | | 07:34 (32) | 06:35 | | | 05:28 | | 06:49 (43) | 04:53 | | 06:55 (43) |
| | 16:33 | 122 | 15:39 (27) | 17:36 | 144 | 16:52 (26) | 18:34 | 49 | 17:33 (1) | 20:35 | | | 21:34 | 64 | 07:53 (43) | 22:16 | 58 | 07:53 (43) |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 08:48 (31) | 06:52 | | 07:34 (32) | 06:33 | | | 05:27 | | 06:50 (43) | 04:53 | | 06:55 (43) |
| | 16:35 | 127 | 15:40 (27) | 17:38 | 150 | 16:52 (26) | 18:36 | 44 | 17:30 (1) | 20:37 | | | 21:35 | 64 | 07:54 (43) | 22:16 | 58 | 07:53 (43) |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 08:48 (31) | 06:49 | | 07:35 (32) | 06:30 | | | 05:25 | | 06:49 (43) | 04:52 | | 06:56 (43) |
| | 16:36 | 131 | 15:40 (27) | 17:40 | 152 | 16:52 (26) | 18:38 | 40 | 17:29 (1) | 20:39 | | | 21:37 | 65 | 07:54 (43) | 22:17 | 58 | 07:54 (43) |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 08:48 (31) | 06:47 | | 07:35 (32) | 06:28 | | | 05:23 | | 06:50 (43) | 04:52 | | 06:56 (43) |
| | 16:38 | 134 | 15:41 (27) | 17:42 | 154 | 16:53 (2) | 18:40 | 30 | 17:24 (1) | 20:41 | | | 21:39 | 64 | 07:54 (43) | 22:18 | 58 | 07:54 (43) |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 08:47 (31) | 06:44 | | 07:35 (32) | 06:25 | | | 05:21 | | 06:49 (43) | 04:52 | | 06:56 (43) |
| | 16:40 | 139 | 15:42 (27) | 17:44 | 156 | 16:53 (2) | 18:42 | 20 | 07:55 (32) | 20:43 | | | 21:41 | 65 | 07:54 (43) | 22:18 | 58 | 07:54 (43) |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 08:48 (31) | 06:41 | | 07:37 (32) | 06:23 | | | 05:20 | | 06:50 (43) | 04:52 | | 06:56 (43) |
| | 16:42 | 140 | 15:42 (27) | 17:46 | 157 | 16:54 (2) | 18:44 | 16 | 07:53 (32) | 20:45 | | | 21:42 | 64 | 07:54 (43) | 22:18 | 58 | 07:54 (43) |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 08:48 (31) | 06:39 | | 07:39 (32) | 06:20 | | | 05:18 | | 06:49 (43) | 04:52 | | 06:57 (43) |
| | 16:44 | 142 | 15:42 (27) | 17:49 | 158 | 16:55 (2) | 18:46 | 11 | 07:50 (32) | 20:47 | | | 21:44 | 65 | 07:54 (43) | 22:19 | 57 | 07:54 (43) |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 08:47 (31) | 06:36 | | | 06:18 | | | 05:16 | | 06:49 (43) | 04:52 | | 06:57 (43) |
| | 16:46 | 143 | 15:42 (27) | 17:51 | 159 | 16:55 (2) | 18:48 | | | 20:49 | | | 21:46 | 65 | 07:54 (43) | 22:19 | 57 | 07:54 (43) |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 08:48 (31) | 06:34 | | | 06:16 | | | 05:15 | | 06:49 (43) | 04:52 | | 06:58 (43) |
| | 16:48 | 143 | 15:42 (27) | 17:53 | 159 | 16:56 (2) | 18:50 | | | 20:51 | | | 21:47 | 65 | 07:54 (43) | 22:19 | 57 | 07:55 (43) |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 08:07 (5) | 06:31 | | | 06:13 | | 07:20 (43) | 05:13 | | 06:49 (43) | 04:53 | | 06:58 (43) |
| | 16:50 | 145 | 15:43 (27) | 17:55 | 163 | 16:56 (2) | 18:52 | | | 20:53 | 8 | 07:28 (43) | 21:49 | 65 | 07:54 (43) | 22:19 | 57 | 07:55 (43) |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 08:05 (5) | 06:29 | | | 06:11 | | 07:14 (43) | 05:12 | | 06:50 (43) | 04:53 | | 06:57 (43) |
| | 16:52 | 145 | 15:43 (27) | 17:57 | 166 | 16:57 (2) | 18:54 | | | 20:55 | 20 | 07:34 (43) | 21:51 | 64 | 07:54 (43) | 22:19 | 58 | 07:55 (43) |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 08:02 (5) | 06:26 | | | 06:09 | | 07:11 (43) | 05:10 | | 06:50 (43) | 04:53 | | 06:58 (43) |
| | 16:54 | 141 | 15:42 (27) | 17:59 | 166 | 16:56 (2) | 18:56 | | | 20:57 | 27 | 07:38 (43) | 21:52 | 64 | 07:54 (43) | 22:19 | 58 | 07:56 (43) |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 08:00 (5) | 06:23 | | | 06:06 | | 07:07 (43) | 05:09 | | 06:49 (43) | 04:54 | | 06:58 (43) |
| | 16:56 | 141 | 15:43 (27) | 18:01 | 180 | 17:30 (1) | 18:58 | | | 20:59 | 32 | 07:39 (43) | 21:54 | 64 | 07:53 (43) | 22:19 | 58 | 07:56 (43) |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 07:05 (43) | 05:08 | | 06:50 (43) | 04:54 | | 06:59 (43) |
| | 16:58 | 136 | 15:42 (27) | 18:03 | 184 | 17:32 (1) | 19:00 | | | 21:01 | 37 | 07:42 (43) | 21:55 | 64 | 07:54 (43) | 22:19 | 58 | 07:57 (43) |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 07:56 (5) | 06:18 | | | 06:02 | | 07:03 (43) | 05:06 | | 06:50 (43) | 04:55 | | 06:58 (43) |
| | 17:00 | 131 | 15:42 (27) | 18:05 | 184 | 17:34 (1) | 19:02 | | | 21:03 | 40 | 07:43 (43) | 21:57 | 64 | 07:54 (43) | 22:19 | 58 | 07:56 (43) |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | 07:01 (43) | 05:05 | | 06:50 (43) | 04:55 | | 06:59 (43) |
| | 17:02 | 125 | 15:41 (27) | | | | 20:04 | | | 21:05 | 44 | 07:45 (43) | 21:58 | 64 | 07:54 (43) | 22:19 | 58 | 07:57 (43) |
| 30 | 08:31 | | 13:20 (30) | | | | 07:13 | | | 05:57 | | 07:00 (43) | 05:04 | | 06:51 (43) | 04:56 | | 06:58 (43) |
| | 17:04 | 113 | 15:40 (27) | | | | 20:06 | | | 21:07 | 46 | 07:46 (43) | 22:00 | 63 | 07:54 (43) | 22:19 | 59 | 07:57 (43) |
| 31 | 08:30 | | 13:20 (30) | | | | 07:11 | | | | | | 05:03 | | 06:51 (43) | | | |
| | 17:06 | 107 | 15:38 (27) | | | | 20:08 | | | | | | 22:01 | 62 | 07:53 (43) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3695 | | | 3780 | | | 1965 | | | 254 | | | 1897 | | | 1769 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,46 | | | 0,54 | | | 0,72 | | | 0,97 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,07 | | | 0,12 | | | 0,22 | | | 0,33 | | | 0,44 | | | 0,41 | |
| Total, real | | 265 | | | 437 | | | 423 | | | 85 | | | 829 | | | 722 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:58 (43) | 05:40 | | 07:01 (43) | 06:38 | | | 07:35 | | 08:14 (32) | 07:37 | | 08:24 (31) | 08:35 | | 09:41 (3) |
| | 22:18 | 59 | 07:57 (43) | 21:40 | 62 | 08:03 (43) | 20:29 | | | 19:12 | 74 | 18:14 (1) | 16:58 | 120 | 16:19 (26) | 16:10 | 98 | 15:19 (27) |
| 2 | 04:58 | | 06:59 (43) | 05:41 | | 07:02 (43) | 06:40 | | | 07:37 | | 08:14 (32) | 07:39 | | 08:25 (31) | 08:37 | | 09:42 (3) |
| | 22:18 | 59 | 07:58 (43) | 21:38 | 61 | 08:03 (43) | 20:27 | | | 19:10 | 97 | 18:14 (1) | 16:56 | 116 | 16:18 (26) | 16:09 | 97 | 15:19 (27) |
| 3 | 04:58 | | 06:59 (43) | 05:43 | | 07:01 (43) | 06:42 | | | 07:39 | | 08:14 (32) | 07:41 | | 08:27 (31) | 08:38 | | 09:43 (3) |
| | 22:17 | 60 | 07:59 (43) | 21:36 | 61 | 08:02 (43) | 20:24 | | | 19:07 | 114 | 18:14 (1) | 16:54 | 106 | 16:16 (26) | 16:08 | 94 | 15:19 (27) |
| 4 | 04:59 | | 06:59 (43) | 05:45 | | 07:02 (43) | 06:44 | | | 07:41 | | 08:14 (32) | 07:43 | | 08:33 (31) | 08:40 | | 09:44 (3) |
| | 22:17 | 60 | 07:59 (43) | 21:34 | 60 | 08:02 (43) | 20:22 | | | 19:04 | 126 | 18:14 (1) | 16:52 | 91 | 16:15 (26) | 16:08 | 93 | 15:19 (27) |
| 5 | 05:00 | | 06:58 (43) | 05:47 | | 07:03 (43) | 06:45 | | | 07:42 | | 08:15 (32) | 07:45 | | 12:47 (30) | 08:41 | | 09:43 (3) |
| | 22:16 | 61 | 07:59 (43) | 21:32 | 59 | 08:02 (43) | 20:19 | | | 19:02 | 133 | 18:14 (1) | 16:50 | 79 | 16:11 (26) | 16:07 | 92 | 15:18 (27) |
| 6 | 05:01 | | 06:59 (43) | 05:49 | | 07:03 (43) | 06:47 | | | 07:44 | | 08:16 (32) | 07:47 | | 12:47 (30) | 08:43 | | 09:44 (3) |
| | 22:15 | 60 | 07:59 (43) | 21:30 | 58 | 08:01 (43) | 20:17 | | | 18:59 | 138 | 18:14 (1) | 16:48 | 74 | 14:01 (30) | 16:06 | 98 | 15:19 (27) |
| 7 | 05:02 | | 06:59 (43) | 05:51 | | 07:03 (43) | 06:49 | | | 07:46 | | 08:17 (32) | 07:49 | | 12:47 (30) | 08:44 | | 09:44 (3) |
| | 22:15 | 60 | 07:59 (43) | 21:28 | 57 | 08:00 (43) | 20:14 | | | 18:57 | 150 | 18:14 (1) | 16:46 | 73 | 14:00 (30) | 16:06 | 99 | 15:18 (27) |
| 8 | 05:03 | | 06:59 (43) | 05:52 | | 07:04 (43) | 06:51 | | | 07:48 | | 08:20 (32) | 07:51 | | 12:49 (30) | 08:46 | | 09:45 (3) |
| | 22:14 | 61 | 08:00 (43) | 21:26 | 56 | 08:00 (43) | 20:12 | | | 18:54 | 153 | 18:13 (1) | 16:44 | 84 | 14:19 (29) | 16:05 | 100 | 15:18 (27) |
| 9 | 05:04 | | 06:59 (43) | 05:54 | | 07:04 (43) | 06:53 | | | 07:50 | | 08:31 (5) | 07:53 | | 12:49 (30) | 08:47 | | 09:45 (3) |
| | 22:13 | 61 | 08:00 (43) | 21:24 | 54 | 07:58 (43) | 20:09 | | | 18:52 | 152 | 18:12 (1) | 16:42 | 89 | 14:21 (29) | 16:05 | 102 | 15:18 (27) |
| 10 | 05:06 | | 06:59 (43) | 05:56 | | 07:05 (43) | 06:55 | | | 07:52 | | 08:30 (5) | 07:55 | | 12:50 (30) | 08:48 | | 09:47 (3) |
| | 22:12 | 61 | 08:00 (43) | 21:22 | 52 | 07:57 (43) | 20:07 | | | 18:49 | 158 | 18:12 (1) | 16:40 | 102 | 15:07 (27) | 16:04 | 100 | 15:18 (27) |
| 11 | 05:07 | | 06:59 (43) | 05:58 | | 07:06 (43) | 06:57 | | | 07:54 | | 08:29 (5) | 07:57 | | 12:51 (30) | 08:50 | | 09:47 (3) |
| | 22:11 | 63 | 08:02 (43) | 21:19 | 50 | 07:56 (43) | 20:04 | | | 18:47 | 170 | 18:11 (1) | 16:38 | 108 | 15:09 (27) | 16:04 | 101 | 15:18 (27) |
| 12 | 05:08 | | 06:59 (43) | 06:00 | | 07:08 (43) | 06:59 | | | 07:56 | | 08:29 (5) | 07:59 | | 12:52 (30) | 08:51 | | 09:47 (3) |
| | 22:10 | 63 | 08:02 (43) | 21:17 | 47 | 07:55 (43) | 20:01 | | | 18:44 | 178 | 18:09 (1) | 16:36 | 113 | 15:12 (27) | 16:04 | 99 | 15:17 (27) |
| 13 | 05:09 | | 06:59 (43) | 06:02 | | 07:08 (43) | 07:01 | | | 07:58 | | 08:28 (5) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | 63 | 08:02 (43) | 21:15 | 45 | 07:53 (43) | 19:59 | | | 18:42 | 184 | 18:08 (1) | 16:34 | 126 | 15:13 (27) | 16:04 | 97 | 15:17 (27) |
| 14 | 05:11 | | 06:59 (43) | 06:04 | | 07:09 (43) | 07:02 | | | 08:00 | | 08:28 (5) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | 63 | 08:02 (43) | 21:13 | 43 | 07:52 (43) | 19:56 | | | 18:39 | 185 | 18:06 (1) | 16:33 | 132 | 15:14 (27) | 16:04 | 96 | 15:16 (27) |
| 15 | 05:12 | | 06:59 (43) | 06:06 | | 07:11 (43) | 07:04 | | | 08:02 | | 08:31 (5) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | 63 | 08:02 (43) | 21:10 | 39 | 07:50 (43) | 19:54 | | | 18:37 | 182 | 18:04 (1) | 16:31 | 136 | 15:14 (27) | 16:04 | 96 | 15:16 (27) |
| 16 | 05:13 | | 06:59 (43) | 06:07 | | 07:13 (43) | 07:06 | | | 08:04 | | 08:33 (5) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | 64 | 08:03 (43) | 21:08 | 36 | 07:49 (43) | 19:51 | | | 18:35 | 176 | 18:01 (1) | 16:29 | 141 | 15:16 (27) | 16:04 | 95 | 15:15 (27) |
| 17 | 05:15 | | 06:59 (43) | 06:09 | | 07:15 (43) | 07:08 | | | 08:06 | | 08:35 (5) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | 64 | 08:03 (43) | 21:06 | 32 | 07:47 (43) | 19:48 | | | 18:32 | 166 | 17:28 (2) | 16:28 | 141 | 15:16 (27) | 16:04 | 89 | 14:40 (29) |
| 18 | 05:16 | | 06:59 (43) | 06:11 | | 07:17 (43) | 07:10 | | | 08:08 | | 08:37 (5) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | 64 | 08:03 (43) | 21:04 | 26 | 07:43 (43) | 19:46 | | | 18:30 | 165 | 17:28 (2) | 16:26 | 145 | 15:17 (27) | 16:04 | 90 | 14:41 (29) |
| 19 | 05:18 | | 06:59 (43) | 06:13 | | 07:20 (43) | 07:12 | | | 08:10 | | 08:39 (5) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | 65 | 08:04 (43) | 21:01 | 19 | 07:39 (43) | 19:43 | | | 18:27 | 161 | 17:27 (2) | 16:25 | 145 | 15:17 (27) | 16:04 | 91 | 14:42 (29) |
| 20 | 05:19 | | 06:59 (43) | 06:15 | | 07:28 (43) | 07:14 | | | 08:12 | | 09:18 (31) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | 65 | 08:04 (43) | 20:59 | 3 | 07:31 (43) | 19:41 | | | 18:25 | 158 | 17:26 (2) | 16:23 | 143 | 15:17 (27) | 16:05 | 90 | 14:41 (29) |
| 21 | 05:21 | | 07:00 (43) | 06:17 | | | 07:16 | | | 08:14 | | 09:18 (31) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | 64 | 08:04 (43) | 20:56 | | | 19:38 | | | 18:23 | 158 | 17:25 (2) | 16:22 | 143 | 15:18 (27) | 16:05 | 90 | 14:42 (29) |
| 22 | 05:23 | | 06:59 (43) | 06:19 | | | 07:18 | | | 08:16 | | 09:18 (31) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | 65 | 08:04 (43) | 20:54 | | | 19:35 | | | 18:20 | 158 | 17:25 (2) | 16:20 | 143 | 15:19 (27) | 16:05 | 90 | 14:42 (29) |
| 23 | 05:24 | | 07:00 (43) | 06:21 | | | 07:19 | | 08:24 (32) | 08:18 | | 09:18 (31) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | 65 | 08:05 (43) | 20:52 | | | 19:33 | 10 | 08:34 (32) | 18:18 | 156 | 17:24 (2) | 16:19 | 140 | 15:19 (27) | 16:06 | 90 | 14:43 (29) |
| 24 | 05:26 | | 06:59 (43) | 06:23 | | | 07:21 | | 08:21 (32) | 08:20 | | 09:18 (31) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | 65 | 08:04 (43) | 20:49 | | | 19:30 | 15 | 08:36 (32) | 18:16 | 155 | 17:23 (2) | 16:18 | 140 | 15:19 (27) | 16:06 | 92 | 14:44 (29) |
| 25 | 05:27 | | 07:00 (43) | 06:25 | | | 07:23 | | 08:20 (32) | 07:22 | | 08:18 (31) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | 65 | 08:05 (43) | 20:47 | | | 19:28 | 18 | 08:38 (32) | 17:13 | 153 | 16:22 (26) | 16:16 | 134 | 15:19 (27) | 16:07 | 90 | 14:44 (29) |
| 26 | 05:29 | | 07:00 (43) | 06:26 | | | 07:25 | | 08:18 (32) | 07:24 | | 08:18 (31) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | 64 | 08:04 (43) | 20:44 | | | 19:25 | 26 | 18:05 (1) | 17:11 | 150 | 16:22 (26) | 16:15 | 132 | 15:19 (27) | 16:08 | 89 | 14:45 (29) |
| 27 | 05:31 | | 07:00 (43) | 06:28 | | | 07:27 | | 08:16 (32) | 07:26 | | 08:19 (31) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | 64 | 08:04 (43) | 20:42 | | | 19:22 | 36 | 18:08 (1) | 17:09 | 147 | 16:22 (26) | 16:14 | 127 | 15:19 (27) | 16:09 | 94 | 15:20 (27) |
| 28 | 05:33 | | 07:00 (43) | 06:30 | | | 07:29 | | 08:15 (32) | 07:28 | | 08:19 (31) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | 64 | 08:04 (43) | 20:39 | | | 19:20 | 44 | 18:11 (1) | 17:07 | 146 | 16:22 (26) | 16:13 | 122 | 15:19 (27) | 16:10 | 95 | 15:22 (27) |
| 29 | 05:34 | | 07:00 (43) | 06:32 | | | 07:31 | | 08:14 (32) | 07:31 | | 08:20 (31) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | 64 | 08:04 (43) | 20:37 | | | 19:17 | 48 | 18:12 (1) | 17:04 | 140 | 16:21 (26) | 16:12 | 114 | 15:19 (27) | 16:10 | 97 | 15:24 (27) |
| 30 | 05:36 | | 07:01 (43) | 06:34 | | | 07:33 | | 08:14 (32) | 07:33 | | 08:21 (31) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | 63 | 08:04 (43) | 20:34 | | | 19:15 | 64 | 18:13 (1) | 17:02 | 135 | 16:20 (26) | 16:11 | 105 | 15:19 (27) | 16:11 | 99 | 15:24 (27) |
| 31 | 05:38 | | 07:00 (43) | 06:36 | | | | | | 07:35 | | 08:21 (31) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | 63 | 08:03 (43) | 20:32 | | | | | | 17:00 | 128 | 16:19 (26) | | | | 16:12 | 99 | 15:25 (27) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1945 | | | 920 | | | 261 | | | 4646 | | | 3564 | | | 2942 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,97 | | | 0,97 | | | 0,95 | | | 0,63 | | | 0,43 | | | 0,42 | |
| Total reduction | | 0,41 | | | 0,44 | | | 0,33 | | | 0,17 | | | 0,06 | | | 0,05 | |
| Total, real | | 799 | | | 401 | | | 86 | | | 783 | | | 211 | | | 145 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 16:00 (39) | 07:27 | | | 07:08 | | 17:50 (48) | 05:55 | | 19:22 (45) | 05:02 | | 20:50 (2) |
| | 16:14 | | | 17:08 | 26 | 16:26 (39) | 18:07 | | | 20:10 | 66 | 19:32 (28) | 21:09 | 62 | 20:31 (29) | 22:02 | 17 | 21:07 (2) |
| 2 | 09:01 | | | 08:26 | | 15:59 (39) | 07:24 | | | 07:05 | | 17:52 (48) | 05:53 | | 19:22 (45) | 05:01 | | 20:51 (2) |
| | 16:15 | | | 17:10 | 27 | 16:26 (39) | 18:09 | | | 20:12 | 64 | 19:33 (28) | 21:11 | 62 | 20:31 (29) | 22:04 | 15 | 21:06 (2) |
| 3 | 09:00 | | | 08:24 | | 15:59 (39) | 07:22 | | | 07:03 | | 17:52 (48) | 05:51 | | 19:22 (45) | 05:00 | | 20:52 (2) |
| | 16:16 | | | 17:12 | 28 | 16:27 (39) | 18:12 | | | 20:14 | 63 | 19:32 (28) | 21:13 | 63 | 20:32 (29) | 22:05 | 15 | 21:07 (2) |
| 4 | 09:00 | | | 08:22 | | 15:59 (39) | 07:19 | | | 07:00 | | 17:54 (48) | 05:48 | | 19:23 (45) | 04:59 | | 20:53 (2) |
| | 16:18 | | | 17:15 | 30 | 16:29 (47) | 18:14 | | | 20:16 | 59 | 19:32 (28) | 21:15 | 62 | 20:32 (29) | 22:06 | 13 | 21:06 (2) |
| 5 | 09:00 | | | 08:20 | | 15:59 (39) | 07:17 | | | 06:58 | | 17:55 (48) | 05:46 | | 19:23 (45) | 04:58 | | 20:53 (2) |
| | 16:19 | | | 17:17 | 32 | 16:31 (47) | 18:16 | | | 20:17 | 56 | 19:49 (27) | 21:16 | 61 | 20:32 (29) | 22:07 | 12 | 21:05 (2) |
| 6 | 08:59 | | | 08:18 | | 15:59 (39) | 07:14 | | | 06:55 | | 17:57 (48) | 05:44 | | 19:24 (45) | 04:57 | | 20:55 (2) |
| | 16:20 | | | 17:19 | 33 | 16:32 (47) | 18:18 | | | 20:19 | 58 | 19:52 (27) | 21:18 | 61 | 20:32 (29) | 22:09 | 10 | 21:05 (2) |
| 7 | 08:59 | | | 08:16 | | 15:58 (39) | 07:12 | | 17:33 (46) | 06:53 | | 17:58 (48) | 05:42 | | 19:24 (45) | 04:56 | | 05:40 (5) |
| | 16:22 | | | 17:21 | 34 | 16:32 (47) | 18:20 | 12 | 17:45 (46) | 20:21 | 55 | 19:53 (27) | 21:20 | 59 | 20:31 (29) | 22:10 | 14 | 21:04 (2) |
| 8 | 08:58 | | | 08:14 | | 15:59 (39) | 07:09 | | 17:30 (46) | 06:50 | | 18:02 (48) | 05:40 | | 19:25 (45) | 04:56 | | 05:37 (5) |
| | 16:23 | | | 17:23 | 35 | 16:34 (47) | 18:22 | 17 | 17:47 (46) | 20:23 | 49 | 19:56 (27) | 21:22 | 57 | 20:31 (29) | 22:11 | 15 | 21:02 (2) |
| 9 | 08:57 | | | 08:12 | | 15:59 (39) | 07:07 | | 17:29 (46) | 06:48 | | 18:06 (48) | 05:38 | | 19:25 (45) | 04:55 | | 05:37 (5) |
| | 16:25 | | | 17:25 | 36 | 16:35 (47) | 18:24 | 20 | 17:49 (46) | 20:25 | 35 | 19:56 (27) | 21:24 | 54 | 20:30 (29) | 22:12 | 12 | 05:49 (5) |
| 10 | 08:57 | | | 08:10 | | 16:00 (39) | 07:04 | | 17:09 (48) | 06:45 | | 19:37 (27) | 05:36 | | 19:26 (45) | 04:54 | | 05:35 (5) |
| | 16:26 | | | 17:27 | 35 | 16:35 (47) | 18:26 | 39 | 17:49 (46) | 20:27 | 20 | 19:57 (27) | 21:26 | 51 | 20:30 (29) | 22:13 | 15 | 05:50 (5) |
| 11 | 08:56 | | | 08:08 | | 16:01 (39) | 07:02 | | 17:06 (48) | 06:43 | | 19:36 (27) | 05:34 | | 19:28 (45) | 04:54 | | 05:35 (5) |
| | 16:28 | | | 17:29 | 35 | 16:36 (47) | 18:28 | 45 | 17:51 (46) | 20:29 | 20 | 19:56 (27) | 21:28 | 50 | 20:56 (2) | 22:13 | 16 | 05:51 (5) |
| 12 | 08:55 | | | 08:06 | | 16:01 (39) | 06:59 | | 17:03 (48) | 06:40 | | 07:05 (4) | 05:32 | | 19:30 (45) | 04:54 | | 05:35 (5) |
| | 16:29 | | | 17:32 | 35 | 16:36 (47) | 18:30 | 48 | 17:51 (46) | 20:31 | 26 | 19:56 (27) | 21:30 | 49 | 20:57 (2) | 22:14 | 17 | 05:52 (5) |
| 13 | 08:54 | | | 08:04 | | 16:02 (39) | 06:57 | | 17:00 (48) | 06:38 | | 07:02 (4) | 05:30 | | 19:31 (45) | 04:53 | | 05:35 (5) |
| | 16:31 | | | 17:34 | 34 | 16:36 (47) | 18:32 | 51 | 17:51 (46) | 20:33 | 30 | 19:55 (27) | 21:32 | 46 | 20:58 (2) | 22:15 | 18 | 05:53 (5) |
| 14 | 08:53 | | | 08:02 | | 16:04 (39) | 06:54 | | 16:59 (48) | 06:35 | | 07:00 (4) | 05:28 | | 19:33 (45) | 04:53 | | 05:34 (5) |
| | 16:33 | | | 17:36 | 33 | 16:37 (47) | 18:34 | 52 | 17:51 (46) | 20:35 | 32 | 19:55 (27) | 21:33 | 44 | 21:00 (2) | 22:16 | 19 | 05:53 (5) |
| 15 | 08:52 | | | 07:59 | | 16:04 (39) | 06:52 | | 16:57 (48) | 06:33 | | 06:58 (4) | 05:27 | | 19:37 (45) | 04:53 | | 05:34 (5) |
| | 16:35 | | | 17:38 | 32 | 16:36 (47) | 18:36 | 54 | 17:51 (46) | 20:37 | 33 | 19:54 (27) | 21:35 | 37 | 21:02 (2) | 22:16 | 20 | 05:54 (5) |
| 16 | 08:51 | | | 07:57 | | 16:04 (47) | 06:49 | | 16:56 (48) | 06:30 | | 06:55 (4) | 05:25 | | 20:11 (29) | 04:52 | | 05:34 (5) |
| | 16:36 | | | 17:40 | 32 | 16:36 (47) | 18:38 | 55 | 17:51 (46) | 20:39 | 37 | 19:53 (27) | 21:37 | 29 | 21:03 (2) | 22:17 | 21 | 05:55 (5) |
| 17 | 08:50 | | | 07:55 | | 16:05 (47) | 06:47 | | 16:54 (48) | 06:28 | | 06:54 (4) | 05:23 | | 20:14 (29) | 04:52 | | 05:34 (5) |
| | 16:38 | | | 17:42 | 31 | 16:36 (47) | 18:40 | 56 | 17:50 (46) | 20:41 | 43 | 19:55 (45) | 21:39 | 27 | 21:05 (2) | 22:17 | 21 | 05:55 (5) |
| 18 | 08:49 | | | 07:53 | | 16:05 (47) | 06:44 | | 16:53 (48) | 06:25 | | 06:53 (4) | 05:21 | | 20:47 (2) | 04:52 | | 05:34 (5) |
| | 16:40 | | | 17:44 | 30 | 16:35 (47) | 18:42 | 56 | 17:49 (46) | 20:43 | 46 | 19:55 (45) | 21:41 | 20 | 21:07 (2) | 22:18 | 21 | 05:55 (5) |
| 19 | 08:48 | | | 07:50 | | 16:06 (47) | 06:41 | | 16:53 (48) | 06:23 | | 06:53 (4) | 05:20 | | 20:47 (2) | 04:52 | | 05:34 (5) |
| | 16:42 | | | 17:46 | 29 | 16:35 (47) | 18:44 | 55 | 17:48 (46) | 20:45 | 50 | 19:57 (45) | 21:42 | 22 | 21:09 (2) | 22:18 | 22 | 05:56 (5) |
| 20 | 08:46 | | | 07:48 | | 16:06 (47) | 06:39 | | 16:51 (48) | 06:20 | | 06:54 (4) | 05:18 | | 20:46 (2) | 04:52 | | 05:34 (5) |
| | 16:44 | | | 17:49 | 27 | 16:33 (47) | 18:46 | 56 | 17:47 (46) | 20:47 | 50 | 19:58 (45) | 21:44 | 22 | 21:08 (2) | 22:19 | 22 | 05:56 (5) |
| 21 | 08:45 | | | 07:46 | | 16:07 (47) | 06:36 | | 16:51 (48) | 06:18 | | 06:54 (4) | 05:16 | | 20:47 (2) | 04:52 | | 05:34 (5) |
| | 16:46 | | | 17:51 | 26 | 16:33 (47) | 18:48 | 55 | 17:46 (46) | 20:49 | 52 | 19:59 (45) | 21:46 | 22 | 21:09 (2) | 22:19 | 22 | 05:56 (5) |
| 22 | 08:44 | | | 07:43 | | 16:09 (47) | 06:34 | | 16:50 (48) | 06:16 | | 06:54 (4) | 05:15 | | 20:46 (2) | 04:52 | | 05:35 (5) |
| | 16:48 | | | 17:53 | 23 | 16:32 (47) | 18:50 | 53 | 17:43 (46) | 20:51 | 51 | 19:59 (45) | 21:47 | 22 | 21:08 (2) | 22:19 | 22 | 05:57 (5) |
| 23 | 08:42 | | | 07:41 | | 16:10 (47) | 06:31 | | 16:49 (48) | 06:13 | | 06:55 (4) | 05:13 | | 20:46 (2) | 04:53 | | 05:35 (5) |
| | 16:50 | | | 17:55 | 20 | 16:30 (47) | 18:52 | 51 | 17:40 (46) | 20:53 | 51 | 20:00 (45) | 21:49 | 23 | 21:09 (2) | 22:19 | 22 | 05:57 (5) |
| 24 | 08:41 | | | 07:39 | | 16:13 (47) | 06:29 | | 16:50 (48) | 06:11 | | 06:57 (4) | 05:12 | | 20:47 (2) | 04:53 | | 05:35 (5) |
| | 16:52 | | | 17:57 | 15 | 16:28 (47) | 18:54 | 49 | 17:39 (48) | 20:55 | 48 | 20:00 (45) | 21:51 | 22 | 21:09 (2) | 22:19 | 22 | 05:57 (5) |
| 25 | 08:39 | | 16:10 (39) | 07:36 | | 16:17 (47) | 06:26 | | 16:49 (48) | 06:09 | | 06:59 (4) | 05:10 | | 20:47 (2) | 04:53 | | 05:36 (5) |
| | 16:54 | 2 | 16:12 (39) | 17:59 | 5 | 16:22 (47) | 18:56 | 49 | 17:38 (48) | 20:57 | 45 | 20:01 (45) | 21:52 | 22 | 21:09 (2) | 22:19 | 21 | 05:57 (5) |
| 26 | 08:38 | | 16:05 (39) | 07:34 | | | 06:23 | | 16:49 (48) | 06:06 | | 19:22 (45) | 05:09 | | 20:47 (2) | 04:54 | | 05:36 (5) |
| | 16:56 | 11 | 16:16 (39) | 18:01 | | | 18:58 | 61 | 18:29 (28) | 20:59 | 49 | 20:25 (29) | 21:54 | 21 | 21:08 (2) | 22:19 | 21 | 05:57 (5) |
| 27 | 08:36 | | 16:04 (39) | 07:32 | | | 06:21 | | 16:49 (48) | 06:04 | | 19:22 (45) | 05:08 | | 20:47 (2) | 04:54 | | 05:37 (5) |
| | 16:58 | 16 | 16:20 (39) | 18:03 | | | 19:00 | 64 | 18:30 (28) | 21:01 | 53 | 20:27 (29) | 21:55 | 21 | 21:08 (2) | 22:19 | 20 | 05:57 (5) |
| 28 | 08:35 | | 16:03 (39) | 07:29 | | | 06:18 | | 16:49 (48) | 06:02 | | 19:22 (45) | 05:06 | | 20:48 (2) | 04:55 | | 05:37 (5) |
| | 17:00 | 18 | 16:21 (39) | 18:05 | | | 19:02 | 67 | 18:32 (28) | 21:03 | 56 | 20:28 (29) | 21:57 | 20 | 21:08 (2) | 22:19 | 20 | 05:57 (5) |
| 29 | 08:33 | | 16:02 (39) | | | | 07:16 | | 17:49 (48) | 05:59 | | 19:22 (45) | 05:05 | | 20:48 (2) | 04:55 | | 05:38 (5) |
| | 17:02 | 21 | 16:23 (39) | | | | 20:04 | 68 | 19:32 (28) | 21:05 | 59 | 20:30 (29) | 21:58 | 20 | 21:08 (2) | 22:19 | 19 | 05:57 (5) |
| 30 | 08:31 | | 16:01 (39) | | | | 07:13 | | 17:49 (48) | 05:57 | | 19:22 (45) | 05:04 | | 20:49 (2) | 04:56 | | 05:38 (5) |
| | 17:04 | 23 | 16:24 (39) | | | | 20:06 | 68 | 19:32 (28) | 21:07 | 60 | 20:30 (29) | 22:00 | 19 | 21:08 (2) | 22:18 | 18 | 05:56 (5) |
| 31 | 08:29 | | 16:00 (39) | | | | 07:11 | | 17:50 (48) | | | | 05:03 | | 20:49 (2) | | | |
| | 17:06 | 25 | 16:25 (39) | | | | 20:08 | 68 | 19:33 (28) | | | | 22:01 | 18 | 21:07 (2) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 116 | | | 723 | | | 1269 | | | 1416 | | | 1168 | | | 542 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,76 | | | 0,77 | | | 0,96 | | | 0,98 | | | 0,94 | | | 0,81 | |
| Total reduction | | 0,13 | | | 0,19 | | | 0,32 | | | 0,38 | | | 0,48 | | | 0,39 | |
| Total, real | | 16 | | | 136 | | | 411 | | | 539 | | | 560 | | | 209 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 (5) | 05:40 | | 19:39 (45) | 06:38 | | 19:35 (27) | 07:35 | | 17:41 (48) | 07:37 | | 15:29 (39) | 08:35 |
| | 22:18 | 17 | 05:56 (5) | 21:40 | 51 | 21:07 (2) | 20:29 | 20 | 19:55 (27) | 19:12 | 49 | 18:30 (46) | 16:58 | 36 | 16:05 (47) | 16:10 |
| 2 | 04:58 | | 05:40 (5) | 05:41 | | 19:38 (45) | 06:40 | | 19:35 (27) | 07:37 | | 17:43 (48) | 07:39 | | 15:29 (39) | 08:37 |
| | 22:18 | 16 | 05:56 (5) | 21:38 | 50 | 20:41 (29) | 20:27 | 20 | 19:55 (27) | 19:10 | 46 | 18:29 (46) | 16:56 | 35 | 16:04 (47) | 16:09 |
| 3 | 04:58 | | 05:42 (5) | 05:43 | | 19:36 (45) | 06:42 | | 18:04 (48) | 07:39 | | 17:46 (48) | 07:41 | | 15:28 (39) | 08:38 |
| | 22:17 | 13 | 05:55 (5) | 21:36 | 52 | 20:40 (29) | 20:24 | 34 | 19:54 (27) | 19:07 | 42 | 18:28 (46) | 16:54 | 35 | 16:03 (47) | 16:08 |
| 4 | 04:59 | | 05:43 (5) | 05:45 | | 19:35 (45) | 06:43 | | 17:59 (48) | 07:40 | | 17:50 (48) | 07:43 | | 15:28 (39) | 08:40 |
| | 22:17 | 15 | 21:08 (2) | 21:34 | 55 | 20:41 (29) | 20:22 | 49 | 19:53 (27) | 19:04 | 32 | 18:26 (46) | 16:52 | 34 | 16:02 (47) | 16:08 |
| 5 | 05:00 | | 05:44 (5) | 05:47 | | 19:35 (45) | 06:45 | | 17:56 (48) | 07:42 | | 18:06 (46) | 07:45 | | 15:29 (39) | 08:41 |
| | 22:16 | 15 | 21:09 (2) | 21:32 | 56 | 20:41 (29) | 20:19 | 54 | 19:50 (27) | 19:02 | 19 | 18:25 (46) | 16:49 | 33 | 16:02 (47) | 16:07 |
| 6 | 05:01 | | 05:48 (5) | 05:49 | | 19:33 (45) | 06:47 | | 17:52 (48) | 07:44 | | 18:08 (46) | 07:47 | | 15:29 (39) | 08:43 |
| | 22:15 | 10 | 21:10 (2) | 21:30 | 59 | 20:41 (29) | 20:17 | 58 | 19:47 (27) | 18:59 | 14 | 18:22 (46) | 16:47 | 31 | 16:00 (47) | 16:06 |
| 7 | 05:02 | | 21:00 (2) | 05:51 | | 19:33 (45) | 06:49 | | 17:50 (48) | 07:46 | | 18:11 (46) | 07:49 | | 15:29 (39) | 08:44 |
| | 22:15 | 11 | 21:11 (2) | 21:28 | 60 | 20:41 (29) | 20:14 | 57 | 19:45 (27) | 18:57 | 7 | 18:18 (46) | 16:46 | 29 | 15:58 (47) | 16:06 |
| 8 | 05:03 | | 20:59 (2) | 05:52 | | 19:32 (45) | 06:51 | | 17:48 (48) | 07:48 | | | 07:51 | | 15:30 (39) | 08:46 |
| | 22:14 | 13 | 21:12 (2) | 21:26 | 62 | 20:41 (29) | 20:12 | 59 | 19:26 (28) | 18:54 | | | 16:44 | 28 | 15:58 (39) | 16:05 |
| 9 | 05:04 | | 20:59 (2) | 05:54 | | 19:31 (45) | 06:53 | | 17:46 (48) | 07:50 | | | 07:53 | | 15:30 (39) | 08:47 |
| | 22:13 | 14 | 21:13 (2) | 21:24 | 62 | 20:40 (29) | 20:09 | 63 | 19:26 (28) | 18:52 | | | 16:42 | 27 | 15:57 (39) | 16:05 |
| 10 | 05:06 | | 20:58 (2) | 05:56 | | 19:31 (45) | 06:55 | | 17:45 (48) | 07:52 | | | 07:55 | | 15:30 (39) | 08:48 |
| | 22:12 | 15 | 21:13 (2) | 21:21 | 62 | 20:40 (29) | 20:06 | 65 | 19:26 (28) | 18:49 | | | 16:40 | 26 | 15:56 (39) | 16:04 |
| 11 | 05:07 | | 20:59 (2) | 05:58 | | 19:30 (45) | 06:57 | | 17:44 (48) | 07:54 | | | 07:57 | | 15:31 (39) | 08:49 |
| | 22:11 | 16 | 21:15 (2) | 21:19 | 63 | 20:40 (29) | 20:04 | 66 | 19:26 (28) | 18:47 | | | 16:38 | 25 | 15:56 (39) | 16:04 |
| 12 | 05:08 | | 20:58 (2) | 06:00 | | 19:30 (45) | 06:59 | | 17:42 (48) | 07:56 | | | 07:59 | | 15:33 (39) | 08:51 |
| | 22:10 | 18 | 21:16 (2) | 21:17 | 62 | 20:39 (29) | 20:01 | 67 | 19:24 (28) | 18:44 | | | 16:36 | 23 | 15:56 (39) | 16:04 |
| 13 | 05:09 | | 20:58 (2) | 06:02 | | 19:29 (45) | 07:00 | | 17:41 (48) | 07:58 | | | 08:01 | | 15:34 (39) | 08:52 |
| | 22:09 | 18 | 21:16 (2) | 21:15 | 61 | 20:38 (29) | 19:59 | 68 | 19:24 (28) | 18:42 | | | 16:34 | 20 | 15:54 (39) | 16:04 |
| 14 | 05:11 | | 20:57 (2) | 06:04 | | 19:29 (45) | 07:02 | | 17:40 (48) | 08:00 | | | 08:03 | | 15:35 (39) | 08:53 |
| | 22:08 | 19 | 21:16 (2) | 21:13 | 59 | 20:37 (29) | 19:56 | 67 | 19:23 (28) | 18:39 | | | 16:33 | 18 | 15:53 (39) | 16:04 |
| 15 | 05:12 | | 20:57 (2) | 06:06 | | 19:29 (45) | 07:04 | | 17:39 (48) | 08:02 | | | 08:05 | | 15:36 (39) | 08:54 |
| | 22:07 | 19 | 21:16 (2) | 21:10 | 57 | 20:36 (29) | 19:54 | 68 | 19:22 (28) | 18:37 | | | 16:31 | 15 | 15:51 (39) | 16:04 |
| 16 | 05:13 | | 20:57 (2) | 06:07 | | 19:29 (45) | 07:06 | | 17:38 (48) | 08:04 | | | 08:07 | | 15:39 (39) | 08:55 |
| | 22:05 | 21 | 21:18 (2) | 21:08 | 53 | 20:34 (29) | 19:51 | 66 | 19:20 (28) | 18:34 | | | 16:29 | 11 | 15:50 (39) | 16:04 |
| 17 | 05:15 | | 20:57 (2) | 06:09 | | 19:30 (45) | 07:08 | | 17:38 (48) | 08:06 | | 16:47 (47) | 08:09 | | 15:44 (39) | 08:56 |
| | 22:04 | 21 | 21:18 (2) | 21:06 | 47 | 20:31 (29) | 19:48 | 62 | 19:18 (28) | 18:32 | 10 | 16:57 (47) | 16:28 | 1 | 15:45 (39) | 16:04 |
| 18 | 05:16 | | 20:56 (2) | 06:11 | | 07:04 (4) | 07:10 | | 17:36 (48) | 08:08 | | 16:43 (47) | 08:11 | | | 08:56 |
| | 22:03 | 22 | 21:18 (2) | 21:03 | 45 | 20:06 (45) | 19:46 | 56 | 19:13 (28) | 18:30 | 17 | 17:00 (47) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 20:57 (2) | 06:13 | | 07:02 (4) | 07:12 | | 17:36 (48) | 08:10 | | 16:41 (47) | 08:13 | | | 08:57 |
| | 22:02 | 22 | 21:19 (2) | 21:01 | 50 | 20:06 (45) | 19:43 | 49 | 18:25 (48) | 18:27 | 20 | 17:01 (47) | 16:25 | | | 16:04 |
| 20 | 05:19 | | 20:56 (2) | 06:15 | | 07:01 (4) | 07:14 | | 17:36 (48) | 08:12 | | 16:39 (47) | 08:15 | | | 08:58 |
| | 22:00 | 22 | 21:18 (2) | 20:59 | 50 | 20:05 (45) | 19:41 | 50 | 18:26 (46) | 18:25 | 24 | 17:03 (47) | 16:23 | | | 16:05 |
| 21 | 05:21 | | 20:57 (2) | 06:17 | | 07:00 (4) | 07:16 | | 17:36 (48) | 08:14 | | 16:37 (47) | 08:17 | | | 08:58 |
| | 21:59 | 22 | 21:19 (2) | 20:56 | 52 | 20:05 (45) | 19:38 | 52 | 18:28 (46) | 18:23 | 26 | 17:03 (47) | 16:22 | | | 16:05 |
| 22 | 05:23 | | 20:56 (2) | 06:19 | | 06:58 (4) | 07:17 | | 17:36 (48) | 08:16 | | 16:36 (47) | 08:19 | | | 08:59 |
| | 21:57 | 23 | 21:19 (2) | 20:54 | 52 | 20:03 (45) | 19:35 | 54 | 18:30 (46) | 18:20 | 28 | 17:04 (47) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 20:57 (2) | 06:21 | | 06:57 (4) | 07:19 | | 17:36 (48) | 08:18 | | 16:36 (47) | 08:21 | | | 08:59 |
| | 21:56 | 22 | 21:19 (2) | 20:52 | 51 | 20:02 (45) | 19:33 | 55 | 18:31 (46) | 18:18 | 29 | 17:05 (47) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 20:57 (2) | 06:23 | | 06:57 (4) | 07:21 | | 17:36 (48) | 08:20 | | 16:35 (47) | 08:23 | | | 09:00 |
| | 21:54 | 22 | 21:19 (2) | 20:49 | 49 | 20:01 (45) | 19:30 | 56 | 18:32 (46) | 18:16 | 31 | 17:06 (47) | 16:18 | | | 16:06 |
| 25 | 05:27 | | 20:57 (2) | 06:25 | | 06:57 (4) | 07:23 | | 17:36 (48) | 07:22 | | 15:34 (47) | 08:25 | | | 09:00 |
| | 21:52 | 21 | 21:18 (2) | 20:47 | 45 | 19:59 (45) | 19:28 | 56 | 18:32 (46) | 17:13 | 32 | 16:06 (47) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:26 (29) | 06:26 | | 06:57 (4) | 07:25 | | 17:37 (48) | 07:24 | | 15:34 (47) | 08:26 | | | 09:01 |
| | 21:51 | 24 | 21:16 (2) | 20:44 | 42 | 19:57 (45) | 19:25 | 55 | 18:32 (46) | 17:11 | 32 | 16:06 (47) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 20:23 (29) | 06:28 | | 06:57 (4) | 07:27 | | 17:37 (48) | 07:26 | | 15:33 (39) | 08:28 | | | 09:01 |
| | 21:49 | 28 | 21:15 (2) | 20:42 | 36 | 19:54 (45) | 19:22 | 55 | 18:32 (46) | 17:09 | 33 | 16:06 (47) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 20:21 (29) | 06:30 | | 06:59 (4) | 07:29 | | 17:37 (48) | 07:28 | | 15:33 (39) | 08:30 | | | 09:01 |
| | 21:47 | 29 | 21:13 (2) | 20:39 | 33 | 19:55 (27) | 19:20 | 54 | 18:31 (46) | 17:06 | 33 | 16:06 (47) | 16:13 | | | 16:10 |
| 29 | 05:34 | | 19:46 (45) | 06:32 | | 07:01 (4) | 07:31 | | 17:38 (48) | 07:30 | | 15:31 (39) | 08:32 | | | 09:01 |
| | 21:45 | 40 | 21:12 (2) | 20:37 | 32 | 19:56 (27) | 19:17 | 53 | 18:31 (46) | 17:04 | 35 | 16:06 (47) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 19:43 (45) | 06:34 | | 07:03 (4) | 07:33 | | 17:40 (48) | 07:33 | | 15:30 (39) | 08:33 | | | 09:01 |
| | 21:44 | 45 | 21:10 (2) | 20:34 | 30 | 19:56 (27) | 19:15 | 51 | 18:31 (46) | 17:02 | 35 | 16:05 (47) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 19:41 (45) | 06:36 | | 07:05 (4) | | | | 07:35 | | 15:29 (39) | | | | 09:01 |
| | 21:42 | 49 | 21:08 (2) | 20:32 | 26 | 19:56 (27) | | | | 17:00 | 36 | 16:05 (47) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 662 | | | 1564 | | | 1639 | | | 630 | | | 427 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,89 | | | 0,97 | | | 0,97 | | | 0,84 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,50 | | | 0,38 | | | 0,25 | | | 0,12 | | |
| Total, real | | 281 | | | 776 | | | 619 | | | 160 | | | 51 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (42) | 08:28 | 07:27 | | 17:35 (48) | 07:08 | | 07:50 (34) | 05:55 | | 07:21 (4) | 05:02 | | |
| | 16:14 | 16 | 09:55 (42) | 17:08 | 18:07 | 4 | 17:39 (48) | 20:10 | 57 | 19:31 (3) | 21:09 | 72 | 20:27 (31) | 22:02 | | |
| 2 | 09:01 | | 09:38 (42) | 08:26 | 07:24 | | 17:32 (48) | 07:05 | | 07:50 (34) | 05:53 | | 07:22 (4) | 05:01 | | |
| | 16:15 | 17 | 09:55 (42) | 17:10 | 18:09 | 10 | 17:42 (48) | 20:12 | 58 | 19:32 (3) | 21:11 | 70 | 20:27 (31) | 22:04 | | |
| 3 | 09:00 | | 09:39 (42) | 08:24 | 07:22 | | 17:30 (48) | 07:03 | | 07:49 (34) | 05:51 | | 07:22 (4) | 05:00 | | |
| | 16:16 | 18 | 09:57 (42) | 17:12 | 18:11 | 13 | 17:43 (48) | 20:13 | 57 | 19:31 (3) | 21:13 | 71 | 20:28 (31) | 22:05 | | |
| 4 | 09:00 | | 09:38 (42) | 08:22 | 07:19 | | 17:29 (48) | 07:00 | | 07:49 (34) | 05:48 | | 07:23 (4) | 04:59 | | |
| | 16:17 | 19 | 09:57 (42) | 17:14 | 18:14 | 17 | 17:46 (48) | 20:15 | 56 | 19:30 (3) | 21:14 | 69 | 20:28 (31) | 22:06 | | |
| 5 | 09:00 | | 09:39 (42) | 08:20 | 07:17 | | 17:28 (48) | 06:58 | | 07:45 (4) | 05:46 | | 07:24 (4) | 04:58 | | |
| | 16:19 | 19 | 09:58 (42) | 17:17 | 18:16 | 18 | 17:46 (48) | 20:17 | 58 | 19:29 (3) | 21:16 | 68 | 20:28 (31) | 22:07 | | |
| 6 | 08:59 | | 09:39 (42) | 08:18 | 07:14 | | 17:27 (48) | 06:55 | | 07:40 (4) | 05:44 | | 07:25 (4) | 04:57 | | |
| | 16:20 | 20 | 09:59 (42) | 17:19 | 18:18 | 19 | 17:46 (48) | 20:19 | 60 | 19:28 (3) | 21:18 | 65 | 20:28 (31) | 22:08 | | |
| 7 | 08:59 | | 09:38 (42) | 08:16 | 07:12 | | 17:27 (48) | 06:53 | | 07:36 (4) | 05:42 | | 07:26 (4) | 04:56 | | |
| | 16:22 | 22 | 10:00 (42) | 17:21 | 18:20 | 19 | 17:46 (48) | 20:21 | 61 | 19:26 (3) | 21:20 | 63 | 20:28 (31) | 22:10 | | |
| 8 | 08:58 | | 09:38 (42) | 08:14 | 07:09 | | 17:26 (48) | 06:50 | | 07:34 (4) | 05:40 | | 07:27 (4) | 04:56 | | |
| | 16:23 | 22 | 10:00 (42) | 17:23 | 18:22 | 20 | 17:46 (48) | 20:23 | 59 | 19:25 (3) | 21:22 | 60 | 20:28 (31) | 22:11 | | |
| 9 | 08:57 | | 09:38 (42) | 08:12 | 07:07 | | 17:27 (48) | 06:48 | | 07:31 (4) | 05:38 | | 07:28 (4) | 04:55 | | |
| | 16:25 | 23 | 10:01 (42) | 17:25 | 18:24 | 19 | 17:46 (48) | 20:25 | 56 | 19:22 (3) | 21:24 | 56 | 20:27 (31) | 22:12 | | |
| 10 | 08:57 | | 09:38 (42) | 08:10 | 07:04 | | 17:27 (48) | 06:45 | | 07:30 (4) | 05:36 | | 07:30 (4) | 04:54 | | |
| | 16:26 | 23 | 10:01 (42) | 17:27 | 18:26 | 17 | 17:44 (48) | 20:27 | 46 | 19:18 (3) | 21:26 | 52 | 20:27 (31) | 22:12 | | |
| 11 | 08:56 | | 09:39 (42) | 08:08 | 07:02 | | 17:28 (48) | 06:43 | | 07:28 (4) | 05:34 | | 07:32 (4) | 04:54 | | |
| | 16:28 | 23 | 10:02 (42) | 17:29 | 18:28 | 15 | 17:43 (48) | 20:29 | 40 | 08:08 (34) | 21:28 | 46 | 20:26 (31) | 22:13 | | |
| 12 | 08:55 | | 09:39 (42) | 08:06 | 06:59 | | 17:29 (48) | 06:40 | | 07:27 (4) | 05:32 | | 07:37 (4) | 04:53 | | |
| | 16:29 | 24 | 10:03 (42) | 17:32 | 18:30 | 12 | 17:41 (48) | 20:31 | 41 | 08:08 (4) | 21:30 | 37 | 20:27 (31) | 22:14 | | |
| 13 | 08:54 | | 09:39 (42) | 08:04 | 06:57 | | 17:32 (48) | 06:38 | | 07:25 (4) | 05:30 | | 19:58 (31) | 04:53 | | |
| | 16:31 | 25 | 10:04 (42) | 17:34 | 18:32 | 6 | 17:38 (48) | 20:33 | 43 | 08:08 (4) | 21:32 | 28 | 20:26 (31) | 22:15 | | |
| 14 | 08:53 | | 09:40 (42) | 08:02 | 06:54 | | | 06:35 | | 07:24 (4) | 05:28 | | 19:58 (31) | 04:53 | | 05:51 (33) |
| | 16:33 | 24 | 10:04 (42) | 17:36 | 18:34 | | | 20:35 | 45 | 08:09 (4) | 21:33 | 27 | 20:25 (31) | 22:16 | 5 | 05:56 (33) |
| 15 | 08:52 | | 09:40 (42) | 07:59 | 06:52 | | | 06:33 | | 07:24 (4) | 05:27 | | 20:00 (31) | 04:52 | | 05:50 (33) |
| | 16:35 | 25 | 10:05 (42) | 17:38 | 18:36 | | | 20:37 | 46 | 08:10 (4) | 21:35 | 25 | 20:25 (31) | 22:16 | 8 | 05:58 (33) |
| 16 | 08:51 | | 09:40 (42) | 07:57 | 06:49 | | | 06:30 | | 07:22 (4) | 05:25 | | 20:00 (31) | 04:52 | | 05:50 (33) |
| | 16:36 | 25 | 10:05 (42) | 17:40 | 18:38 | | | 20:39 | 48 | 08:10 (4) | 21:37 | 24 | 20:24 (31) | 22:17 | 9 | 05:59 (33) |
| 17 | 08:50 | | 09:40 (42) | 07:55 | 06:46 | | | 06:28 | | 07:22 (4) | 05:23 | | 20:01 (31) | 04:52 | | 05:49 (33) |
| | 16:38 | 26 | 10:06 (42) | 17:42 | 18:40 | | | 20:41 | 48 | 08:10 (4) | 21:39 | 23 | 20:24 (31) | 22:17 | 11 | 06:00 (33) |
| 18 | 08:49 | | 09:40 (42) | 07:53 | 06:44 | | | 06:25 | | 07:21 (4) | 05:21 | | 20:02 (31) | 04:52 | | 05:49 (33) |
| | 16:40 | 25 | 10:05 (42) | 17:44 | 18:42 | | | 20:43 | 49 | 08:10 (4) | 21:41 | 20 | 20:22 (31) | 22:18 | 11 | 06:00 (33) |
| 19 | 08:48 | | 09:41 (42) | 07:50 | 06:41 | | 18:11 (45) | 06:23 | | 07:20 (4) | 05:20 | | 20:04 (31) | 04:52 | | 05:49 (33) |
| | 16:42 | 25 | 10:06 (42) | 17:46 | 18:44 | 6 | 18:17 (45) | 20:45 | 50 | 08:10 (4) | 21:42 | 18 | 20:22 (31) | 22:18 | 12 | 06:01 (33) |
| 20 | 08:46 | | 09:41 (42) | 07:48 | 06:39 | | 18:08 (45) | 06:20 | | 07:20 (4) | 05:18 | | 20:05 (31) | 04:52 | | 05:49 (33) |
| | 16:44 | 25 | 10:06 (42) | 17:49 | 18:46 | 10 | 18:18 (45) | 20:47 | 51 | 08:11 (4) | 21:44 | 15 | 20:20 (31) | 22:19 | 12 | 06:01 (33) |
| 21 | 08:45 | | 09:42 (42) | 07:46 | 06:36 | | 18:07 (45) | 06:18 | | 07:19 (4) | 05:16 | | 20:07 (31) | 04:52 | | 05:49 (33) |
| | 16:46 | 24 | 10:06 (42) | 17:51 | 18:48 | 14 | 18:21 (45) | 20:49 | 51 | 08:10 (4) | 21:46 | 11 | 20:18 (31) | 22:19 | 12 | 06:01 (33) |
| 22 | 08:44 | | 09:42 (42) | 07:43 | 06:34 | | 18:06 (45) | 06:16 | | 07:19 (4) | 05:15 | | 20:10 (31) | 04:52 | | 05:50 (33) |
| | 16:48 | 24 | 10:06 (42) | 17:53 | 18:50 | 16 | 18:22 (45) | 20:51 | 51 | 08:10 (4) | 21:47 | 5 | 20:15 (31) | 22:19 | 12 | 06:02 (33) |
| 23 | 08:42 | | 09:44 (42) | 07:41 | 06:31 | | 18:05 (45) | 06:13 | | 07:19 (4) | 05:13 | | | 04:53 | | 05:50 (33) |
| | 16:50 | 22 | 10:06 (42) | 17:55 | 18:52 | 18 | 18:23 (3) | 20:53 | 51 | 08:10 (4) | 21:49 | | | 22:19 | 12 | 06:02 (33) |
| 24 | 08:41 | | 09:44 (42) | 07:39 | 06:28 | | 18:05 (45) | 06:11 | | 07:19 (4) | 05:12 | | | 04:53 | | 05:50 (33) |
| | 16:52 | 22 | 10:06 (42) | 17:57 | 18:54 | 22 | 18:27 (3) | 20:55 | 51 | 08:10 (4) | 21:51 | | | 22:19 | 11 | 06:01 (33) |
| 25 | 08:39 | | 09:45 (42) | 07:36 | 06:26 | | 07:01 (34) | 06:09 | | 07:19 (4) | 05:10 | | | 04:53 | | 05:51 (33) |
| | 16:54 | 20 | 10:05 (42) | 17:59 | 18:56 | 36 | 18:28 (3) | 20:57 | 57 | 20:17 (31) | 21:52 | | | 22:19 | 11 | 06:02 (33) |
| 26 | 08:38 | | 09:46 (42) | 07:34 | 06:23 | | 06:58 (34) | 06:06 | | 07:19 (4) | 05:09 | | | 04:54 | | 05:51 (33) |
| | 16:56 | 18 | 10:04 (42) | 18:01 | 18:58 | 44 | 18:31 (3) | 20:59 | 64 | 20:21 (31) | 21:54 | | | 22:19 | 10 | 06:01 (33) |
| 27 | 08:36 | | 09:48 (42) | 07:32 | 06:21 | | 06:56 (34) | 06:04 | | 07:19 (4) | 05:08 | | | 04:54 | | 05:53 (33) |
| | 16:58 | 16 | 10:04 (42) | 18:03 | 19:00 | 47 | 18:31 (3) | 21:01 | 68 | 20:23 (31) | 21:55 | | | 22:19 | 8 | 06:01 (33) |
| 28 | 08:35 | | 09:50 (42) | 07:29 | 06:18 | | 06:54 (34) | 06:02 | | 07:20 (4) | 05:06 | | | 04:55 | | 05:54 (33) |
| | 17:00 | 12 | 10:02 (42) | 18:05 | 19:02 | 49 | 18:31 (3) | 21:03 | 69 | 20:24 (31) | 21:57 | | | 22:19 | 6 | 06:00 (33) |
| 29 | 08:33 | | 09:53 (42) | | 07:16 | | 07:53 (34) | 05:59 | | 07:20 (4) | 05:05 | | | 04:55 | | 05:57 (33) |
| | 17:02 | 7 | 10:00 (42) | | 20:04 | 52 | 19:32 (3) | 21:05 | 71 | 20:25 (31) | 21:58 | | | 22:19 | 1 | 05:58 (33) |
| 30 | 08:31 | | | | 07:13 | | 07:51 (34) | 05:57 | | 07:20 (4) | 05:04 | | | 04:56 | | |
| | 17:04 | | | | 20:06 | 55 | 19:32 (3) | 21:07 | 72 | 20:26 (31) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | | | 07:10 | | 07:51 (34) | | | | 05:03 | | | | | |
| | 17:06 | | | | 20:08 | 56 | 19:32 (3) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 611 | | | | 614 | | | 1634 | | | 925 | | | 151 | |
| Sun reduction | | 0,18 | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | | 0,98 | | | 0,99 | | | 0,97 | | | 0,81 | |
| Total reduction | | 0,11 | | | | 0,32 | | | 0,38 | | | 0,48 | | | 0,38 | |
| Total, real | | 68 | | | | 198 | | | 615 | | | 446 | | | 57 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:46 (4) | 06:38 | | 07:27 (4) | 07:35 | | 18:09 (48) | 07:37 | | | 08:35 | | 09:21 (42) |
| | 22:18 | | | 21:40 | 41 | 20:37 (31) | 20:29 | 40 | 08:07 (34) | 19:12 | 10 | 18:19 (48) | 16:58 | | | 16:10 | 23 | 09:44 (42) |
| 2 | 04:57 | | | 05:41 | | 07:42 (4) | 06:40 | | 07:28 (4) | 07:37 | | 18:07 (48) | 07:39 | | | 08:37 | | 09:21 (42) |
| | 22:18 | | | 21:38 | 48 | 20:37 (31) | 20:27 | 47 | 19:16 (3) | 19:09 | 14 | 18:21 (48) | 16:56 | | | 16:09 | 24 | 09:45 (42) |
| 3 | 04:58 | | | 05:43 | | 07:40 (4) | 06:42 | | 07:29 (4) | 07:38 | | 18:05 (48) | 07:41 | | | 08:38 | | 09:22 (42) |
| | 22:17 | | | 21:36 | 53 | 20:37 (31) | 20:24 | 56 | 19:20 (3) | 19:07 | 17 | 18:22 (48) | 16:54 | | | 16:08 | 23 | 09:45 (42) |
| 4 | 04:59 | | | 05:45 | | 07:38 (4) | 06:43 | | 07:31 (4) | 07:40 | | 18:04 (48) | 07:43 | | | 08:40 | | 09:22 (42) |
| | 22:17 | | | 21:34 | 58 | 20:38 (31) | 20:22 | 59 | 19:22 (3) | 19:04 | 18 | 18:22 (48) | 16:51 | | | 16:07 | 22 | 09:44 (42) |
| 5 | 05:00 | | | 05:47 | | 07:37 (4) | 06:45 | | 07:33 (4) | 07:42 | | 18:03 (48) | 07:45 | | | 08:41 | | 09:23 (42) |
| | 22:16 | | | 21:32 | 61 | 20:38 (31) | 20:19 | 61 | 19:23 (3) | 19:02 | 20 | 18:23 (48) | 16:49 | | | 16:07 | 22 | 09:45 (42) |
| 6 | 05:01 | | | 05:49 | | 07:35 (4) | 06:47 | | 07:35 (4) | 07:44 | | 18:03 (48) | 07:47 | | | 08:43 | | 09:25 (42) |
| | 22:15 | | | 21:30 | 64 | 20:37 (31) | 20:17 | 60 | 19:23 (3) | 18:59 | 19 | 18:22 (48) | 16:47 | | | 16:06 | 20 | 09:45 (42) |
| 7 | 05:02 | | | 05:51 | | 07:34 (4) | 06:49 | | 07:40 (4) | 07:46 | | 18:03 (48) | 07:49 | | | 08:44 | | 09:25 (42) |
| | 22:15 | | | 21:28 | 65 | 20:37 (31) | 20:14 | 57 | 19:24 (3) | 18:57 | 19 | 18:22 (48) | 16:45 | | | 16:06 | 20 | 09:45 (42) |
| 8 | 05:03 | | | 05:52 | | 07:33 (4) | 06:51 | | 07:44 (34) | 07:48 | | 18:03 (48) | 07:51 | | | 08:46 | | 09:26 (42) |
| | 22:14 | | | 21:26 | 68 | 20:37 (31) | 20:12 | 55 | 19:24 (3) | 18:54 | 19 | 18:22 (48) | 16:44 | | | 16:05 | 19 | 09:45 (42) |
| 9 | 05:04 | | | 05:54 | | 07:31 (4) | 06:53 | | 07:43 (34) | 07:50 | | 18:03 (48) | 07:53 | | | 08:47 | | 09:27 (42) |
| | 22:13 | | | 21:24 | 70 | 20:36 (31) | 20:09 | 58 | 19:25 (3) | 18:52 | 18 | 18:21 (48) | 16:42 | | | 16:05 | 18 | 09:45 (42) |
| 10 | 05:06 | | | 05:56 | | 07:30 (4) | 06:55 | | 07:43 (34) | 07:52 | | 18:03 (48) | 07:55 | | | 08:48 | | 09:28 (42) |
| | 22:12 | | | 21:21 | 71 | 20:36 (31) | 20:06 | 57 | 19:25 (3) | 18:49 | 16 | 18:19 (48) | 16:40 | | | 16:04 | 17 | 09:45 (42) |
| 11 | 05:07 | | | 05:58 | | 07:30 (4) | 06:57 | | 07:42 (34) | 07:54 | | 18:04 (48) | 07:57 | | | 08:49 | | 09:29 (42) |
| | 22:11 | | | 21:19 | 72 | 20:36 (31) | 20:04 | 58 | 19:24 (3) | 18:47 | 12 | 18:16 (48) | 16:38 | | | 16:04 | 16 | 09:45 (42) |
| 12 | 05:08 | | | 06:00 | | 07:29 (4) | 06:59 | | 07:42 (34) | 07:56 | | 18:06 (48) | 07:59 | | | 08:51 | | 09:29 (42) |
| | 22:10 | | | 21:17 | 72 | 20:35 (31) | 20:01 | 57 | 19:23 (3) | 18:44 | 8 | 18:14 (48) | 16:36 | | | 16:04 | 16 | 09:45 (42) |
| 13 | 05:09 | | | 06:02 | | 07:28 (4) | 07:00 | | 07:42 (34) | 07:58 | | | 08:01 | | 09:24 (42) | 08:52 | | 09:30 (42) |
| | 22:09 | | | 21:15 | 70 | 20:33 (31) | 19:59 | 56 | 19:23 (3) | 18:42 | | | 16:34 | 8 | 09:32 (42) | 16:04 | 15 | 09:45 (42) |
| 14 | 05:11 | | | 06:04 | | 07:27 (4) | 07:02 | | 07:43 (34) | 08:00 | | | 08:03 | | 09:22 (42) | 08:53 | | 09:31 (42) |
| | 22:08 | | | 21:13 | 70 | 20:32 (31) | 19:56 | 53 | 19:22 (3) | 18:39 | | | 16:33 | 12 | 09:34 (42) | 16:04 | 14 | 09:45 (42) |
| 15 | 05:12 | | | 06:06 | | 07:27 (4) | 07:04 | | 07:44 (34) | 08:02 | | | 08:05 | | 09:20 (42) | 08:54 | | 09:32 (42) |
| | 22:07 | | | 21:10 | 69 | 20:31 (31) | 19:53 | 50 | 19:22 (3) | 18:37 | | | 16:31 | 16 | 09:36 (42) | 16:04 | 13 | 09:45 (42) |
| 16 | 05:13 | | | 06:07 | | 07:27 (4) | 07:06 | | 07:45 (34) | 08:04 | | | 08:07 | | 09:19 (42) | 08:55 | | 09:33 (42) |
| | 22:05 | | | 21:08 | 66 | 20:30 (31) | 19:51 | 47 | 19:21 (3) | 18:34 | | | 16:29 | 18 | 09:37 (42) | 16:04 | 12 | 09:45 (42) |
| 17 | 05:15 | | | 06:09 | | 07:25 (4) | 07:08 | | 07:46 (34) | 08:06 | | | 08:09 | | 09:19 (42) | 08:56 | | 09:34 (42) |
| | 22:04 | | | 21:06 | 64 | 20:27 (31) | 19:48 | 43 | 19:19 (3) | 18:32 | | | 16:28 | 20 | 09:39 (42) | 16:04 | 11 | 09:45 (42) |
| 18 | 05:16 | | | 06:11 | | 07:25 (4) | 07:10 | | 07:47 (34) | 08:08 | | | 08:11 | | 09:18 (42) | 08:56 | | 09:35 (42) |
| | 22:03 | | | 21:03 | 56 | 20:23 (31) | 19:46 | 38 | 19:16 (3) | 18:30 | | | 16:26 | 22 | 09:40 (42) | 16:04 | 11 | 09:46 (42) |
| 19 | 05:18 | | | 06:13 | | 07:25 (4) | 07:12 | | 07:52 (34) | 08:10 | | | 08:13 | | 09:18 (42) | 08:57 | | 09:36 (42) |
| | 22:01 | | | 21:01 | 50 | 08:15 (4) | 19:43 | 25 | 19:14 (3) | 18:27 | | | 16:24 | 22 | 09:40 (42) | 16:04 | 10 | 09:46 (42) |
| 20 | 05:19 | | | 06:15 | | 07:25 (4) | 07:14 | | 18:51 (45) | 08:12 | | | 08:15 | | 09:17 (42) | 08:58 | | 09:36 (42) |
| | 22:00 | | | 20:59 | 50 | 08:15 (4) | 19:41 | 20 | 19:11 (3) | 18:25 | | | 16:23 | 24 | 09:41 (42) | 16:04 | 10 | 09:46 (42) |
| 21 | 05:21 | | | 06:17 | | 07:25 (4) | 07:16 | | 18:51 (45) | 08:14 | | | 08:17 | | 09:17 (42) | 08:58 | | 09:37 (42) |
| | 21:59 | | | 20:56 | 50 | 08:15 (4) | 19:38 | 18 | 19:09 (45) | 18:22 | | | 16:22 | 24 | 09:41 (42) | 16:05 | 10 | 09:47 (42) |
| 22 | 05:22 | | 20:18 (31) | 06:19 | | 07:24 (4) | 07:17 | | 18:52 (45) | 08:16 | | | 08:19 | | 09:17 (42) | 08:59 | | 09:37 (42) |
| | 21:57 | 9 | 20:27 (31) | 20:54 | 50 | 08:14 (4) | 19:35 | 14 | 19:06 (45) | 18:20 | | | 16:20 | 25 | 09:42 (42) | 16:05 | 10 | 09:47 (42) |
| 23 | 05:24 | | 20:16 (31) | 06:21 | | 07:24 (4) | 07:19 | | 18:52 (45) | 08:18 | | | 08:21 | | 09:18 (42) | 08:59 | | 09:38 (42) |
| | 21:56 | 14 | 20:30 (31) | 20:52 | 50 | 08:14 (4) | 19:33 | 12 | 19:04 (45) | 18:18 | | | 16:19 | 25 | 09:43 (42) | 16:06 | 10 | 09:48 (42) |
| 24 | 05:26 | | 20:14 (31) | 06:23 | | 07:24 (4) | 07:21 | | 18:54 (45) | 08:20 | | | 08:23 | | 09:18 (42) | 09:00 | | 09:38 (42) |
| | 21:54 | 17 | 20:31 (31) | 20:49 | 50 | 08:14 (4) | 19:30 | 7 | 19:01 (45) | 18:15 | | | 16:17 | 25 | 09:43 (42) | 16:06 | 10 | 09:48 (42) |
| 25 | 05:27 | | 20:14 (31) | 06:24 | | 07:24 (4) | 07:23 | | 18:56 (45) | 07:22 | | | 08:25 | | 09:18 (42) | 09:00 | | 09:38 (42) |
| | 21:52 | 18 | 20:32 (31) | 20:47 | 50 | 08:14 (4) | 19:28 | 3 | 18:59 (45) | 17:13 | | | 16:16 | 26 | 09:44 (42) | 16:07 | 10 | 09:48 (42) |
| 26 | 05:29 | | 20:12 (31) | 06:26 | | 07:25 (4) | 07:25 | | | 07:24 | | | 08:26 | | 09:19 (42) | 09:00 | | 09:38 (42) |
| | 21:51 | 21 | 20:33 (31) | 20:44 | 48 | 08:13 (4) | 19:25 | | | 17:11 | | | 16:15 | 25 | 09:44 (42) | 16:08 | 11 | 09:49 (42) |
| 27 | 05:31 | | 20:11 (31) | 06:28 | | 07:24 (4) | 07:27 | | | 07:26 | | | 08:28 | | 09:19 (42) | 09:01 | | 09:38 (42) |
| | 21:49 | 23 | 20:34 (31) | 20:42 | 48 | 08:12 (4) | 19:22 | | | 17:09 | | | 16:14 | 25 | 09:44 (42) | 16:09 | 12 | 09:50 (42) |
| 28 | 05:33 | | 20:10 (31) | 06:30 | | 07:25 (4) | 07:29 | | | 07:28 | | | 08:30 | | 09:20 (42) | 09:01 | | 09:38 (42) |
| | 21:47 | 24 | 20:34 (31) | 20:39 | 46 | 08:11 (4) | 19:20 | | | 17:06 | | | 16:13 | 24 | 09:44 (42) | 16:09 | 12 | 09:50 (42) |
| 29 | 05:34 | | 20:10 (31) | 06:32 | | 07:25 (4) | 07:31 | | | 07:30 | | | 08:32 | | 09:20 (42) | 09:01 | | 09:38 (42) |
| | 21:45 | 26 | 20:36 (31) | 20:37 | 45 | 08:10 (4) | 19:17 | | | 17:04 | | | 16:12 | 25 | 09:45 (42) | 16:10 | 13 | 09:51 (42) |
| 30 | 05:36 | | 20:09 (31) | 06:34 | | 07:26 (4) | 07:33 | | | 07:32 | | | 08:33 | | 09:20 (42) | 09:01 | | 09:38 (42) |
| | 21:44 | 28 | 20:37 (31) | 20:34 | 43 | 08:09 (4) | 19:15 | | | 17:02 | | | 16:11 | 24 | 09:44 (42) | 16:11 | 14 | 09:52 (42) |
| 31 | 05:38 | | 20:08 (31) | 06:36 | | 07:27 (4) | | | | 07:35 | | | | | | 09:01 | | 09:38 (42) |
| | 21:42 | 28 | 20:36 (31) | 20:32 | 41 | 08:08 (4) | | | | 17:00 | | | | | | 16:12 | 16 | 09:54 (42) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 208 | | | 1759 | | | 1051 | | | 190 | | | 390 | | | 464 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,98 | | | 1,00 | | | 0,95 | | | 0,64 | | | 0,64 | |
| Total reduction | | 0,44 | | | 0,49 | | | 0,38 | | | 0,28 | | | 0,10 | | | 0,08 | |
| Total, real | | 93 | | | 858 | | | 400 | | | 54 | | | 38 | | | 39 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (42) | 08:28 | | 07:27 | | | 07:08 | | 07:32 (12) | 05:55 | | 06:52 (4) | 05:02 | | 06:35 (4) |
| | 16:14 | 22 | 10:07 (42) | 17:08 | | 18:07 | | | 20:10 | 24 | 19:42 (3) | 21:09 | 52 | 20:34 (31) | 22:02 | 65 | 07:40 (4) |
| 2 | 09:01 | | 09:45 (42) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (12) | 05:53 | | 06:50 (4) | 05:01 | | 06:35 (4) |
| | 16:15 | 23 | 10:08 (42) | 17:10 | | 18:09 | | | 20:12 | 28 | 19:44 (3) | 21:11 | 58 | 20:35 (31) | 22:04 | 65 | 07:40 (4) |
| 3 | 09:00 | | 09:45 (42) | 08:24 | | 07:22 | | | 07:03 | | 07:30 (12) | 05:51 | | 06:48 (4) | 05:00 | | 06:36 (4) |
| | 16:16 | 24 | 10:09 (42) | 17:12 | | 18:11 | | | 20:13 | 30 | 19:46 (3) | 21:13 | 64 | 20:36 (31) | 22:05 | 65 | 07:41 (4) |
| 4 | 09:00 | | 09:45 (42) | 08:22 | | 07:19 | | | 07:00 | | 07:41 (34) | 05:48 | | 06:46 (4) | 04:59 | | 06:36 (4) |
| | 16:17 | 24 | 10:09 (42) | 17:14 | | 18:14 | | | 20:15 | 36 | 19:46 (3) | 21:14 | 68 | 20:36 (31) | 22:06 | 65 | 07:41 (4) |
| 5 | 09:00 | | 09:46 (42) | 08:20 | | 07:17 | | | 06:58 | | 07:37 (34) | 05:46 | | 06:45 (4) | 04:58 | | 06:36 (4) |
| | 16:19 | 24 | 10:10 (42) | 17:17 | | 18:16 | | | 20:17 | 43 | 19:46 (3) | 21:16 | 70 | 20:36 (31) | 22:07 | 65 | 07:41 (4) |
| 6 | 08:59 | | 09:46 (42) | 08:18 | | 07:14 | | | 06:55 | | 07:35 (34) | 05:44 | | 06:43 (4) | 04:57 | | 06:35 (4) |
| | 16:20 | 25 | 10:11 (42) | 17:19 | | 18:18 | | | 20:19 | 47 | 19:46 (3) | 21:18 | 75 | 20:37 (31) | 22:08 | 65 | 07:40 (4) |
| 7 | 08:59 | | 09:46 (42) | 08:16 | | 07:12 | | | 06:53 | | 07:33 (34) | 05:42 | | 06:42 (4) | 04:56 | | 06:36 (4) |
| | 16:22 | 25 | 10:11 (42) | 17:21 | | 18:20 | | | 20:21 | 50 | 19:45 (3) | 21:20 | 77 | 20:37 (31) | 22:10 | 65 | 07:41 (4) |
| 8 | 08:58 | | 09:46 (42) | 08:14 | | 07:09 | | 17:48 (48) | 06:50 | | 07:32 (34) | 05:40 | | 06:41 (4) | 04:56 | | 06:36 (4) |
| | 16:23 | 26 | 10:12 (42) | 17:23 | | 18:22 | 6 | 17:54 (48) | 20:23 | 52 | 19:45 (3) | 21:22 | 78 | 20:36 (31) | 22:11 | 65 | 07:41 (4) |
| 9 | 08:57 | | 09:46 (42) | 08:12 | | 07:07 | | 17:47 (48) | 06:48 | | 07:30 (34) | 05:38 | | 06:40 (4) | 04:55 | | 06:37 (4) |
| | 16:25 | 26 | 10:12 (42) | 17:25 | | 18:24 | 9 | 17:56 (48) | 20:25 | 54 | 19:44 (3) | 21:24 | 80 | 20:36 (31) | 22:12 | 64 | 07:41 (4) |
| 10 | 08:57 | | 09:46 (42) | 08:10 | | 07:04 | | 17:45 (48) | 06:45 | | 07:29 (34) | 05:36 | | 06:39 (4) | 04:54 | | 06:36 (4) |
| | 16:26 | 27 | 10:13 (42) | 17:27 | | 18:26 | 13 | 17:58 (48) | 20:27 | 55 | 19:44 (3) | 21:26 | 81 | 20:36 (31) | 22:12 | 65 | 07:41 (4) |
| 11 | 08:56 | | 09:46 (42) | 08:08 | | 07:02 | | 17:44 (48) | 06:42 | | 07:28 (34) | 05:34 | | 06:38 (4) | 04:54 | | 06:37 (4) |
| | 16:28 | 28 | 10:14 (42) | 17:29 | | 18:28 | 17 | 18:01 (48) | 20:29 | 54 | 19:42 (3) | 21:28 | 82 | 20:35 (31) | 22:13 | 64 | 07:41 (4) |
| 12 | 08:55 | | 09:46 (42) | 08:06 | | 06:59 | | 17:43 (48) | 06:40 | | 07:28 (34) | 05:32 | | 06:38 (4) | 04:53 | | 06:38 (4) |
| | 16:29 | 28 | 10:14 (42) | 17:31 | | 18:30 | 18 | 18:01 (48) | 20:31 | 51 | 19:41 (3) | 21:30 | 83 | 20:36 (31) | 22:14 | 64 | 07:42 (4) |
| 13 | 08:54 | | 09:47 (42) | 08:04 | | 06:57 | | 17:42 (48) | 06:38 | | 07:26 (34) | 05:30 | | 06:37 (4) | 04:53 | | 06:37 (4) |
| | 16:31 | 28 | 10:15 (42) | 17:34 | | 18:32 | 19 | 18:01 (48) | 20:33 | 49 | 19:38 (3) | 21:32 | 83 | 20:35 (31) | 22:15 | 64 | 07:41 (4) |
| 14 | 08:53 | | 09:47 (42) | 08:02 | | 06:54 | | 17:43 (48) | 06:35 | | 07:26 (34) | 05:28 | | 06:36 (4) | 04:53 | | 06:38 (4) |
| | 16:33 | 29 | 10:16 (42) | 17:36 | | 18:34 | 18 | 18:01 (48) | 20:35 | 45 | 19:36 (3) | 21:33 | 83 | 20:34 (31) | 22:16 | 64 | 07:42 (4) |
| 15 | 08:52 | | 09:48 (42) | 07:59 | | 06:52 | | 17:43 (48) | 06:33 | | 07:26 (34) | 05:27 | | 06:37 (4) | 04:52 | | 06:38 (4) |
| | 16:35 | 28 | 10:16 (42) | 17:38 | | 18:36 | 17 | 18:00 (48) | 20:37 | 35 | 08:01 (34) | 21:35 | 82 | 20:34 (31) | 22:16 | 65 | 21:38 (43) |
| 16 | 08:51 | | 09:48 (42) | 07:57 | | 06:49 | | 17:44 (48) | 06:30 | | 07:26 (34) | 05:25 | | 06:36 (4) | 04:52 | | 06:38 (4) |
| | 16:36 | 28 | 10:16 (42) | 17:40 | | 18:38 | 15 | 17:59 (48) | 20:39 | 34 | 08:00 (34) | 21:37 | 81 | 20:33 (31) | 22:17 | 67 | 21:39 (43) |
| 17 | 08:50 | | 09:48 (42) | 07:55 | | 06:46 | | 17:44 (48) | 06:28 | | 07:26 (34) | 05:23 | | 06:36 (4) | 04:52 | | 06:39 (4) |
| | 16:38 | 29 | 10:17 (42) | 17:42 | | 18:40 | 13 | 17:57 (48) | 20:41 | 34 | 08:00 (34) | 21:39 | 81 | 20:33 (31) | 22:17 | 66 | 21:39 (43) |
| 18 | 08:49 | | 09:48 (42) | 07:53 | | 06:44 | | 07:08 (14) | 06:25 | | 07:25 (34) | 05:21 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:40 | 28 | 10:16 (42) | 17:44 | | 18:42 | 11 | 17:55 (48) | 20:43 | 34 | 07:59 (34) | 21:41 | 79 | 20:31 (31) | 22:18 | 68 | 21:40 (43) |
| 19 | 08:48 | | 09:49 (42) | 07:50 | | 06:41 | | 07:06 (14) | 06:23 | | 07:26 (34) | 05:20 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:42 | 28 | 10:17 (42) | 17:46 | | 18:44 | 4 | 07:10 (14) | 20:45 | 32 | 07:58 (34) | 21:42 | 79 | 20:31 (31) | 22:18 | 68 | 21:40 (43) |
| 20 | 08:46 | | 09:49 (42) | 07:48 | | 06:39 | | 07:03 (14) | 06:20 | | 07:26 (34) | 05:18 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:44 | 28 | 10:17 (42) | 17:48 | | 18:46 | 6 | 07:09 (14) | 20:47 | 32 | 07:58 (34) | 21:44 | 75 | 20:29 (31) | 22:19 | 68 | 21:40 (43) |
| 21 | 08:45 | | 09:50 (42) | 07:46 | | 06:36 | | 07:01 (14) | 06:18 | | 07:26 (34) | 05:16 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:46 | 27 | 10:17 (42) | 17:51 | | 18:48 | 7 | 07:08 (14) | 20:49 | 30 | 07:56 (34) | 21:46 | 70 | 20:27 (31) | 22:19 | 68 | 21:40 (43) |
| 22 | 08:44 | | 09:51 (42) | 07:43 | | 06:34 | | 07:01 (14) | 06:16 | | 07:27 (34) | 05:15 | | 06:34 (4) | 04:52 | | 06:40 (4) |
| | 16:48 | 26 | 10:17 (42) | 17:53 | | 18:50 | 4 | 07:05 (14) | 20:51 | 28 | 07:55 (34) | 21:47 | 65 | 07:39 (4) | 22:19 | 68 | 21:41 (43) |
| 23 | 08:42 | | 09:52 (42) | 07:41 | | 06:31 | | | 06:13 | | 07:28 (34) | 05:13 | | 06:34 (4) | 04:53 | | 06:40 (4) |
| | 16:50 | 25 | 10:17 (42) | 17:55 | | 18:52 | | | 20:53 | 26 | 07:54 (34) | 21:49 | 65 | 07:39 (4) | 22:19 | 68 | 21:41 (43) |
| 24 | 08:41 | | 09:52 (42) | 07:39 | | 06:28 | | | 06:11 | | 07:30 (34) | 05:12 | | 06:35 (4) | 04:53 | | 06:40 (4) |
| | 16:52 | 25 | 10:17 (42) | 17:57 | | 18:54 | | | 20:55 | 23 | 07:53 (34) | 21:51 | 65 | 07:40 (4) | 22:19 | 68 | 21:41 (43) |
| 25 | 08:39 | | 09:53 (42) | 07:36 | | 06:26 | | | 06:09 | | 07:30 (34) | 05:10 | | 06:34 (4) | 04:53 | | 06:41 (4) |
| | 16:54 | 23 | 10:16 (42) | 17:59 | | 18:56 | | | 20:57 | 20 | 07:50 (34) | 21:52 | 65 | 07:39 (4) | 22:19 | 66 | 21:41 (43) |
| 26 | 08:38 | | 09:54 (42) | 07:34 | | 06:23 | | | 06:06 | | 07:33 (34) | 05:09 | | 06:34 (4) | 04:54 | | 06:40 (4) |
| | 16:56 | 21 | 10:15 (42) | 18:01 | | 18:58 | | | 20:59 | 14 | 07:47 (34) | 21:54 | 65 | 07:39 (4) | 22:19 | 67 | 21:41 (43) |
| 27 | 08:36 | | 09:56 (42) | 07:32 | | 06:21 | | | 06:04 | | 07:36 (34) | 05:08 | | 06:34 (4) | 04:54 | | 06:41 (4) |
| | 16:58 | 19 | 10:15 (42) | 18:03 | | 19:00 | | | 21:01 | 8 | 07:44 (34) | 21:55 | 66 | 07:40 (4) | 22:19 | 65 | 21:41 (43) |
| 28 | 08:35 | | 09:58 (42) | 07:29 | | 06:18 | | | 06:02 | | 07:03 (4) | 05:06 | | 06:34 (4) | 04:55 | | 06:41 (4) |
| | 17:00 | 16 | 10:14 (42) | 18:05 | | 19:02 | | | 21:03 | 19 | 20:29 (31) | 21:57 | 66 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 29 | 08:33 | | 10:00 (42) | | | 07:16 | | | 05:59 | | 06:58 (4) | 05:05 | | 06:35 (4) | 04:55 | | 06:41 (4) |
| | 17:02 | 12 | 10:12 (42) | | | 20:04 | | | 21:05 | 35 | 20:31 (31) | 21:58 | 65 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 30 | 08:31 | | 10:04 (42) | | | 07:13 | | 07:37 (12) | 05:57 | | 06:54 (4) | 05:04 | | 06:35 (4) | 04:56 | | 06:41 (4) |
| | 17:04 | 4 | 10:08 (42) | | | 20:06 | 12 | 19:38 (3) | 21:07 | 46 | 20:33 (31) | 22:00 | 65 | 07:40 (4) | 22:18 | 64 | 07:45 (4) |
| 31 | 08:29 | | | | | 07:10 | | 07:35 (12) | | | | 05:03 | | 06:35 (4) | | | |
| | 17:06 | | | | | 20:08 | 18 | 19:40 (3) | | | | 22:01 | 65 | 07:40 (4) | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 726 | | | | | 207 | | | 1068 | | | 2233 | | | 1969 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,61 | | | | | 0,98 | | | 0,99 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,38 | | | 0,47 | | | 0,44 | |
| Total, real | | 77 | | | | | 67 | | | 402 | | | 1056 | | | 869 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:41 (4) | 05:40 | | 06:49 (4) | 06:38 | | 07:27 (34) | 07:35 | | 18:22 (48) | 07:37 | | | 08:35 | | 09:28 (42) |
| | 22:18 | 65 | 07:46 (4) | 21:40 | 82 | 20:46 (31) | 20:29 | 53 | 19:41 (3) | 19:12 | 18 | 18:40 (48) | 16:58 | | | 16:10 | 28 | 09:56 (42) |
| 2 | 04:57 | | 06:42 (4) | 05:41 | | 06:49 (4) | 06:40 | | 07:27 (34) | 07:37 | | 18:22 (48) | 07:39 | | | 08:37 | | 09:29 (42) |
| | 22:18 | 64 | 07:46 (4) | 21:38 | 82 | 20:46 (31) | 20:27 | 55 | 19:42 (3) | 19:09 | 18 | 18:40 (48) | 16:56 | | | 16:09 | 27 | 09:56 (42) |
| 3 | 04:58 | | 06:42 (4) | 05:43 | | 06:50 (4) | 06:42 | | 07:28 (34) | 07:38 | | 18:22 (48) | 07:41 | | | 08:38 | | 09:30 (42) |
| | 22:17 | 65 | 07:47 (4) | 21:36 | 80 | 20:46 (31) | 20:24 | 54 | 19:42 (3) | 19:07 | 15 | 18:37 (48) | 16:54 | | | 16:08 | 26 | 09:56 (42) |
| 4 | 04:59 | | 06:41 (4) | 05:45 | | 06:51 (4) | 06:43 | | 07:29 (34) | 07:40 | | 18:23 (48) | 07:43 | | | 08:40 | | 09:30 (42) |
| | 22:17 | 65 | 07:46 (4) | 21:34 | 80 | 20:47 (31) | 20:22 | 52 | 19:42 (3) | 19:04 | 12 | 18:35 (48) | 16:51 | | | 16:07 | 26 | 09:56 (42) |
| 5 | 05:00 | | 06:42 (4) | 05:47 | | 06:52 (4) | 06:45 | | 07:30 (34) | 07:42 | | 18:24 (48) | 07:45 | | | 08:41 | | 09:31 (42) |
| | 22:16 | 64 | 07:46 (4) | 21:32 | 78 | 20:47 (31) | 20:19 | 50 | 19:42 (3) | 19:02 | 8 | 18:32 (48) | 16:49 | | | 16:07 | 25 | 09:56 (42) |
| 6 | 05:01 | | 06:42 (4) | 05:49 | | 06:52 (4) | 06:47 | | 07:30 (34) | 07:44 | | 18:27 (48) | 07:47 | | | 08:43 | | 09:32 (42) |
| | 22:15 | 65 | 07:47 (4) | 21:30 | 75 | 20:46 (31) | 20:17 | 48 | 19:41 (3) | 18:59 | 2 | 18:29 (48) | 16:47 | | | 16:06 | 25 | 09:57 (42) |
| 7 | 05:02 | | 06:42 (4) | 05:51 | | 06:53 (4) | 06:49 | | 07:32 (34) | 07:46 | | | 07:49 | | | 08:44 | | 09:32 (42) |
| | 22:15 | 65 | 07:47 (4) | 21:28 | 73 | 20:46 (31) | 20:14 | 43 | 19:41 (3) | 18:57 | | | 16:45 | | | 16:06 | 25 | 09:57 (42) |
| 8 | 05:03 | | 06:42 (4) | 05:52 | | 06:55 (4) | 06:51 | | 07:35 (34) | 07:48 | | | 07:51 | | | 08:46 | | 09:33 (42) |
| | 22:14 | 65 | 07:47 (4) | 21:26 | 70 | 20:46 (31) | 20:12 | 37 | 19:41 (3) | 18:54 | | | 16:43 | | | 16:05 | 24 | 09:57 (42) |
| 9 | 05:04 | | 06:42 (4) | 05:54 | | 06:55 (4) | 06:53 | | 07:24 (12) | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (42) |
| | 22:13 | 65 | 07:47 (4) | 21:24 | 66 | 20:44 (31) | 20:09 | 29 | 19:40 (3) | 18:52 | | | 16:42 | | | 16:05 | 23 | 09:57 (42) |
| 10 | 05:06 | | 06:42 (4) | 05:56 | | 06:57 (4) | 06:55 | | 07:23 (12) | 07:52 | | | 07:55 | | | 08:48 | | 09:34 (42) |
| | 22:12 | 66 | 07:48 (4) | 21:21 | 62 | 20:44 (31) | 20:06 | 30 | 19:38 (3) | 18:49 | | | 16:40 | | | 16:04 | 23 | 09:57 (42) |
| 11 | 05:07 | | 06:43 (4) | 05:58 | | 06:59 (4) | 06:57 | | 07:24 (12) | 07:54 | | | 07:57 | | | 08:49 | | 09:35 (42) |
| | 22:11 | 66 | 07:49 (4) | 21:19 | 56 | 20:43 (31) | 20:04 | 24 | 19:34 (3) | 18:47 | | | 16:38 | | | 16:04 | 23 | 09:58 (42) |
| 12 | 05:08 | | 06:43 (4) | 06:00 | | 07:01 (4) | 06:59 | | 07:26 (12) | 07:56 | | | 07:59 | | 09:35 (42) | 08:51 | | 09:36 (42) |
| | 22:10 | 66 | 07:49 (4) | 21:17 | 50 | 20:42 (31) | 20:01 | 19 | 19:32 (3) | 18:44 | | | 16:36 | 5 | 09:40 (42) | 16:04 | 22 | 09:58 (42) |
| 13 | 05:09 | | 06:43 (4) | 06:02 | | 07:03 (4) | 07:00 | | 07:28 (12) | 07:58 | | | 08:01 | | 09:31 (42) | 08:52 | | 09:36 (42) |
| | 22:09 | 66 | 07:49 (4) | 21:15 | 43 | 20:40 (31) | 19:59 | 12 | 19:29 (3) | 18:42 | | | 16:34 | 13 | 09:44 (42) | 16:04 | 22 | 09:58 (42) |
| 14 | 05:11 | | 06:43 (4) | 06:04 | | 07:06 (4) | 07:02 | | 19:24 (3) | 08:00 | | | 08:03 | | 09:29 (42) | 08:53 | | 09:37 (42) |
| | 22:08 | 66 | 07:49 (4) | 21:13 | 32 | 20:38 (31) | 19:56 | 3 | 19:27 (3) | 18:39 | | | 16:33 | 17 | 09:46 (42) | 16:04 | 21 | 09:58 (42) |
| 15 | 05:12 | | 06:43 (4) | 06:06 | | 07:13 (4) | 07:04 | | | 08:02 | | | 08:05 | | 09:28 (42) | 08:54 | | 09:38 (42) |
| | 22:07 | 66 | 07:49 (4) | 21:10 | 12 | 20:35 (31) | 19:53 | | | 18:37 | | | 16:31 | 19 | 09:47 (42) | 16:04 | 20 | 09:58 (42) |
| 16 | 05:13 | | 06:44 (4) | 06:07 | | 07:43 (34) | 07:06 | | | 08:04 | | | 08:07 | | 09:27 (42) | 08:55 | | 09:38 (42) |
| | 22:05 | 65 | 07:49 (4) | 21:08 | 9 | 07:52 (34) | 19:51 | | | 18:34 | | | 16:29 | 21 | 09:48 (42) | 16:04 | 20 | 09:58 (42) |
| 17 | 05:15 | | 06:44 (4) | 06:09 | | 07:39 (34) | 07:08 | | | 08:06 | | | 08:09 | | 09:27 (42) | 08:55 | | 09:39 (42) |
| | 22:04 | 65 | 07:49 (4) | 21:06 | 16 | 07:55 (34) | 19:48 | | | 18:32 | | | 16:28 | 23 | 09:50 (42) | 16:04 | 20 | 09:59 (42) |
| 18 | 05:16 | | 06:43 (4) | 06:11 | | 07:37 (34) | 07:10 | | | 08:08 | | | 08:11 | | 09:26 (42) | 08:56 | | 09:40 (42) |
| | 22:03 | 66 | 07:49 (4) | 21:03 | 20 | 07:57 (34) | 19:46 | | | 18:30 | | | 16:26 | 25 | 09:51 (42) | 16:04 | 19 | 09:59 (42) |
| 19 | 05:18 | | 06:44 (4) | 06:13 | | 07:35 (34) | 07:12 | | | 08:10 | | | 08:13 | | 09:26 (42) | 08:57 | | 09:41 (42) |
| | 22:01 | 65 | 07:49 (4) | 21:01 | 23 | 07:58 (34) | 19:43 | | | 18:27 | | | 16:24 | 25 | 09:51 (42) | 16:04 | 19 | 10:00 (42) |
| 20 | 05:19 | | 06:44 (4) | 06:15 | | 07:34 (34) | 07:14 | | | 08:12 | | | 08:15 | | 09:26 (42) | 08:58 | | 09:41 (42) |
| | 22:00 | 65 | 07:49 (4) | 20:59 | 26 | 08:00 (34) | 19:41 | | | 18:25 | | | 16:23 | 26 | 09:52 (42) | 16:04 | 18 | 09:59 (42) |
| 21 | 05:21 | | 06:45 (4) | 06:17 | | 07:33 (34) | 07:15 | | | 08:14 | | | 08:17 | | 09:25 (42) | 08:58 | | 09:42 (42) |
| | 21:59 | 65 | 07:50 (4) | 20:56 | 28 | 08:01 (34) | 19:38 | | | 18:22 | | | 16:22 | 27 | 09:52 (42) | 16:05 | 18 | 10:00 (42) |
| 22 | 05:22 | | 06:45 (4) | 06:19 | | 07:31 (34) | 07:17 | | 07:45 (14) | 08:16 | | | 08:19 | | 09:25 (42) | 08:59 | | 09:42 (42) |
| | 21:57 | 64 | 07:49 (4) | 20:54 | 30 | 08:01 (34) | 19:35 | 7 | 07:52 (14) | 18:20 | | | 16:20 | 28 | 09:53 (42) | 16:05 | 18 | 10:00 (42) |
| 23 | 05:24 | | 06:45 (4) | 06:21 | | 07:30 (34) | 07:19 | | 07:47 (14) | 08:18 | | | 08:21 | | 09:26 (42) | 08:59 | | 09:43 (42) |
| | 21:56 | 72 | 20:38 (31) | 20:52 | 31 | 08:01 (34) | 19:33 | 6 | 07:53 (14) | 18:18 | | | 16:19 | 28 | 09:54 (42) | 16:06 | 18 | 10:01 (42) |
| 24 | 05:26 | | 06:45 (4) | 06:23 | | 07:29 (34) | 07:21 | | 07:49 (14) | 08:20 | | | 08:23 | | 09:26 (42) | 09:00 | | 09:43 (42) |
| | 21:54 | 77 | 20:40 (31) | 20:49 | 33 | 08:02 (34) | 19:30 | 5 | 07:54 (14) | 18:15 | | | 16:17 | 28 | 09:54 (42) | 16:06 | 19 | 10:02 (42) |
| 25 | 05:27 | | 06:46 (4) | 06:24 | | 07:29 (34) | 07:23 | | 07:51 (14) | 07:22 | | | 08:25 | | 09:26 (42) | 09:00 | | 09:43 (42) |
| | 21:52 | 79 | 20:42 (31) | 20:47 | 33 | 08:02 (34) | 19:28 | 8 | 18:37 (48) | 17:13 | | | 16:16 | 29 | 09:55 (42) | 16:07 | 19 | 10:02 (42) |
| 26 | 05:29 | | 06:46 (4) | 06:26 | | 07:29 (34) | 07:25 | | 18:27 (48) | 07:24 | | | 08:26 | | 09:27 (42) | 09:00 | | 09:43 (42) |
| | 21:51 | 80 | 20:42 (31) | 20:44 | 34 | 08:03 (34) | 19:25 | 11 | 18:38 (48) | 17:11 | | | 16:15 | 28 | 09:55 (42) | 16:08 | 19 | 10:02 (42) |
| 27 | 05:31 | | 06:47 (4) | 06:28 | | 07:27 (34) | 07:27 | | 18:25 (48) | 07:26 | | | 08:28 | | 09:27 (42) | 09:01 | | 09:43 (42) |
| | 21:49 | 81 | 20:44 (31) | 20:42 | 35 | 08:02 (34) | 19:22 | 15 | 18:40 (48) | 17:09 | | | 16:14 | 28 | 09:55 (42) | 16:09 | 20 | 10:03 (42) |
| 28 | 05:33 | | 06:46 (4) | 06:30 | | 07:27 (34) | 07:29 | | 18:24 (48) | 07:28 | | | 08:30 | | 09:27 (42) | 09:01 | | 09:44 (42) |
| | 21:47 | 83 | 20:44 (31) | 20:39 | 35 | 08:02 (34) | 19:20 | 16 | 18:40 (48) | 17:06 | | | 16:13 | 29 | 09:56 (42) | 16:09 | 20 | 10:04 (42) |
| 29 | 05:34 | | 06:47 (4) | 06:32 | | 07:27 (34) | 07:31 | | 18:23 (48) | 07:30 | | | 08:32 | | 09:28 (42) | 09:01 | | 09:44 (42) |
| | 21:45 | 84 | 20:45 (31) | 20:37 | 45 | 19:37 (3) | 19:17 | 18 | 18:41 (48) | 17:04 | | | 16:12 | 28 | 09:56 (42) | 16:10 | 20 | 10:04 (42) |
| 30 | 05:36 | | 06:48 (4) | 06:34 | | 07:27 (34) | 07:33 | | 18:22 (48) | 07:32 | | | 08:33 | | 09:28 (42) | 09:01 | | 09:44 (42) |
| | 21:44 | 83 | 20:46 (31) | 20:34 | 49 | 19:39 (3) | 19:15 | 18 | 18:40 (48) | 17:02 | | | 16:11 | 27 | 09:55 (42) | 16:11 | 21 | 10:05 (42) |
| 31 | 05:38 | | 06:48 (4) | 06:36 | | 07:27 (34) | | | | 07:35 | | | | | | 09:01 | | 09:45 (42) |
| | 21:42 | 83 | 20:46 (31) | 20:32 | 52 | 19:41 (3) | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (42) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 2156 | | | 1440 | | | 613 | | | 73 | | | 454 | | | 669 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,97 | | | 1,00 | | | 0,98 | | | 0,61 | | | 0,61 | |
| Total reduction | | 0,45 | | | 0,48 | | | 0,38 | | | 0,29 | | | 0,09 | | | 0,08 | |
| Total, real | | 960 | | | 690 | | | 233 | | | 21 | | | 42 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (41) | 08:28 | | 09:32 (42) | 07:27 | | | 07:08 | | | 05:55 | | 06:53 (34) | 05:02 | | 05:59 (4) |
| | 16:14 | 22 | 10:08 (41) | 17:08 | 28 | 10:00 (42) | 18:07 | | | 20:10 | | | 21:09 | 32 | 07:25 (34) | 22:02 | 63 | 21:02 (31) |
| 2 | 09:01 | | 09:46 (41) | 08:26 | | 09:33 (42) | 07:24 | | | 07:05 | | | 05:53 | | 06:53 (34) | 05:01 | | 05:58 (4) |
| | 16:15 | 22 | 10:08 (41) | 17:10 | 26 | 09:59 (42) | 18:09 | | | 20:12 | | | 21:11 | 32 | 07:25 (34) | 22:04 | 63 | 21:02 (31) |
| 3 | 09:00 | | 09:47 (41) | 08:24 | | 09:34 (42) | 07:22 | | | 07:03 | | | 05:51 | | 06:53 (34) | 05:00 | | 05:58 (4) |
| | 16:16 | 22 | 10:09 (41) | 17:12 | 25 | 09:59 (42) | 18:11 | | | 20:13 | | | 21:13 | 31 | 07:24 (34) | 22:05 | 65 | 21:03 (31) |
| 4 | 09:00 | | 09:47 (41) | 08:22 | | 09:35 (42) | 07:19 | | | 07:00 | | 07:25 (12) | 05:48 | | 06:53 (34) | 04:59 | | 05:58 (4) |
| | 16:17 | 22 | 10:09 (41) | 17:14 | 23 | 09:58 (42) | 18:14 | | | 20:15 | 2 | 07:27 (12) | 21:14 | 31 | 07:24 (34) | 22:06 | 64 | 21:02 (31) |
| 5 | 09:00 | | 09:47 (41) | 08:20 | | 09:36 (42) | 07:17 | | | 06:58 | | 07:22 (12) | 05:46 | | 06:54 (34) | 04:58 | | 05:57 (4) |
| | 16:19 | 22 | 10:09 (41) | 17:17 | 21 | 09:57 (42) | 18:16 | | | 20:17 | 4 | 07:26 (12) | 21:16 | 29 | 07:23 (34) | 22:07 | 66 | 21:02 (31) |
| 6 | 08:59 | | 09:48 (41) | 08:18 | | 09:37 (42) | 07:14 | | | 06:55 | | 07:20 (12) | 05:44 | | 06:54 (34) | 04:57 | | 05:57 (4) |
| | 16:20 | 22 | 10:10 (41) | 17:19 | 18 | 09:55 (42) | 18:18 | | | 20:19 | 6 | 07:26 (12) | 21:18 | 28 | 07:22 (34) | 22:08 | 65 | 21:01 (31) |
| 7 | 08:59 | | 09:48 (41) | 08:16 | | 09:39 (42) | 07:12 | | | 06:53 | | 07:17 (12) | 05:42 | | 06:55 (34) | 04:56 | | 05:57 (4) |
| | 16:22 | 22 | 10:10 (41) | 17:21 | 14 | 09:53 (42) | 18:20 | | | 20:21 | 8 | 07:25 (12) | 21:20 | 26 | 07:21 (34) | 22:10 | 66 | 21:02 (31) |
| 8 | 08:58 | | 09:48 (41) | 08:14 | | 09:43 (42) | 07:09 | | | 06:50 | | 07:17 (12) | 05:40 | | 06:56 (34) | 04:56 | | 05:56 (4) |
| | 16:23 | 22 | 10:10 (41) | 17:23 | 7 | 09:50 (42) | 18:22 | | | 20:23 | 6 | 07:23 (12) | 21:22 | 24 | 07:20 (34) | 22:11 | 66 | 21:01 (31) |
| 9 | 08:57 | | 09:49 (41) | 08:12 | | | 07:07 | | | 06:48 | | 19:50 (3) | 05:38 | | 06:57 (34) | 04:55 | | 05:57 (4) |
| | 16:25 | 21 | 10:10 (41) | 17:25 | | | 18:24 | | | 20:25 | 7 | 19:57 (3) | 21:24 | 21 | 07:18 (34) | 22:12 | 66 | 21:02 (31) |
| 10 | 08:57 | | 09:49 (41) | 08:10 | | | 07:04 | | | 06:45 | | 19:48 (3) | 05:36 | | 06:58 (34) | 04:54 | | 05:56 (4) |
| | 16:26 | 21 | 10:10 (41) | 17:27 | | | 18:26 | | | 20:27 | 11 | 19:59 (3) | 21:26 | 19 | 07:17 (34) | 22:12 | 66 | 21:01 (31) |
| 11 | 08:56 | | 09:35 (42) | 08:08 | | | 07:02 | | | 06:42 | | 19:45 (3) | 05:34 | | 06:59 (34) | 04:54 | | 05:56 (4) |
| | 16:28 | 30 | 10:11 (41) | 17:29 | | | 18:28 | | | 20:29 | 16 | 20:01 (3) | 21:28 | 20 | 20:50 (31) | 22:13 | 66 | 21:01 (31) |
| 12 | 08:55 | | 09:34 (42) | 08:06 | | | 06:59 | | | 06:40 | | 19:44 (3) | 05:32 | | 07:02 (34) | 04:53 | | 05:57 (4) |
| | 16:29 | 32 | 10:11 (41) | 17:32 | | | 18:30 | | | 20:31 | 19 | 20:03 (3) | 21:30 | 22 | 20:54 (31) | 22:14 | 66 | 21:02 (31) |
| 13 | 08:54 | | 09:33 (42) | 08:04 | | | 06:57 | | | 06:38 | | 19:42 (3) | 05:30 | | 20:41 (31) | 04:53 | | 05:56 (4) |
| | 16:31 | 34 | 10:11 (41) | 17:34 | | | 18:32 | | | 20:33 | 22 | 20:04 (3) | 21:32 | 15 | 20:56 (31) | 22:15 | 65 | 21:01 (31) |
| 14 | 08:53 | | 09:33 (42) | 08:02 | | | 06:54 | | | 06:35 | | 19:42 (3) | 05:28 | | 20:40 (31) | 04:53 | | 05:56 (4) |
| | 16:33 | 35 | 10:11 (41) | 17:36 | | | 18:34 | | | 20:35 | 24 | 20:06 (3) | 21:33 | 17 | 20:57 (31) | 22:16 | 66 | 21:01 (31) |
| 15 | 08:52 | | 09:32 (42) | 07:59 | | | 06:52 | | 18:03 (48) | 06:33 | | 19:41 (3) | 05:27 | | 20:39 (31) | 04:52 | | 05:56 (4) |
| | 16:35 | 36 | 10:11 (41) | 17:38 | | | 18:36 | 5 | 18:08 (48) | 20:37 | 25 | 20:06 (3) | 21:35 | 20 | 20:59 (31) | 22:16 | 65 | 21:01 (31) |
| 16 | 08:51 | | 09:31 (42) | 07:57 | | | 06:49 | | 18:01 (48) | 06:30 | | 19:40 (3) | 05:25 | | 20:38 (31) | 04:52 | | 05:57 (4) |
| | 16:36 | 37 | 10:10 (41) | 17:40 | | | 18:38 | 10 | 18:11 (48) | 20:39 | 26 | 20:06 (3) | 21:37 | 21 | 20:59 (31) | 22:17 | 64 | 21:01 (31) |
| 17 | 08:50 | | 09:31 (42) | 07:55 | | | 06:46 | | 17:59 (48) | 06:28 | | 07:08 (34) | 05:23 | | 20:38 (31) | 04:52 | | 05:57 (4) |
| | 16:38 | 36 | 10:10 (41) | 17:42 | | | 18:40 | 14 | 18:13 (48) | 20:41 | 33 | 20:06 (3) | 21:39 | 22 | 21:00 (31) | 22:17 | 64 | 21:01 (31) |
| 18 | 08:49 | | 09:30 (42) | 07:53 | | | 06:44 | | 17:57 (48) | 06:25 | | 07:03 (34) | 05:21 | | 20:37 (31) | 04:52 | | 05:57 (4) |
| | 16:40 | 36 | 10:09 (41) | 17:44 | | | 18:42 | 17 | 18:14 (48) | 20:43 | 41 | 20:05 (3) | 21:41 | 23 | 21:00 (31) | 22:18 | 64 | 21:01 (31) |
| 19 | 08:48 | | 09:30 (42) | 07:50 | | | 06:41 | | 17:57 (48) | 06:23 | | 07:01 (34) | 05:20 | | 20:37 (31) | 04:52 | | 05:57 (4) |
| | 16:42 | 34 | 10:08 (41) | 17:46 | | | 18:44 | 18 | 18:15 (48) | 20:45 | 45 | 20:05 (3) | 21:42 | 24 | 21:01 (31) | 22:18 | 64 | 21:01 (31) |
| 20 | 08:46 | | 09:29 (42) | 07:48 | | | 06:39 | | 17:56 (48) | 06:20 | | 07:00 (34) | 05:18 | | 20:36 (31) | 04:52 | | 05:57 (4) |
| | 16:44 | 27 | 09:56 (42) | 17:49 | | | 18:46 | 19 | 18:15 (48) | 20:47 | 48 | 20:05 (3) | 21:44 | 25 | 21:01 (31) | 22:19 | 64 | 21:01 (31) |
| 21 | 08:45 | | 09:30 (42) | 07:46 | | | 06:36 | | 17:56 (48) | 06:18 | | 06:57 (34) | 05:16 | | 20:36 (31) | 04:52 | | 05:57 (4) |
| | 16:46 | 27 | 09:57 (42) | 17:51 | | | 18:48 | 19 | 18:15 (48) | 20:49 | 49 | 20:03 (3) | 21:46 | 26 | 21:02 (31) | 22:19 | 64 | 21:01 (31) |
| 22 | 08:44 | | 09:29 (42) | 07:43 | | | 06:34 | | 17:56 (48) | 06:16 | | 06:56 (34) | 05:15 | | 20:36 (31) | 04:52 | | 05:58 (4) |
| | 16:48 | 28 | 09:57 (42) | 17:53 | | | 18:50 | 18 | 18:14 (48) | 20:51 | 50 | 20:03 (3) | 21:47 | 26 | 21:02 (31) | 22:19 | 64 | 21:02 (31) |
| 23 | 08:42 | | 09:30 (42) | 07:41 | | | 06:31 | | 17:56 (48) | 06:13 | | 06:56 (34) | 05:13 | | 06:11 (4) | 04:53 | | 05:58 (4) |
| | 16:50 | 29 | 09:59 (42) | 17:55 | | | 18:52 | 17 | 18:13 (48) | 20:53 | 49 | 20:02 (3) | 21:49 | 38 | 21:02 (31) | 22:19 | 64 | 21:02 (31) |
| 24 | 08:41 | | 09:30 (42) | 07:39 | | | 06:28 | | 17:57 (48) | 06:11 | | 06:55 (34) | 05:12 | | 06:08 (4) | 04:53 | | 05:58 (4) |
| | 16:52 | 29 | 09:59 (42) | 17:57 | | | 18:54 | 15 | 18:12 (48) | 20:55 | 48 | 20:01 (3) | 21:51 | 45 | 21:03 (31) | 22:19 | 63 | 21:02 (31) |
| 25 | 08:39 | | 09:29 (42) | 07:36 | | | 06:26 | | 17:58 (48) | 06:09 | | 06:53 (34) | 05:10 | | 06:05 (4) | 04:53 | | 05:59 (4) |
| | 16:54 | 30 | 09:59 (42) | 17:59 | | | 18:56 | 12 | 18:10 (48) | 20:57 | 46 | 19:58 (3) | 21:52 | 50 | 21:02 (31) | 22:19 | 64 | 21:03 (31) |
| 26 | 08:38 | | 09:29 (42) | 07:34 | | | 06:23 | | 18:01 (48) | 06:06 | | 06:53 (34) | 05:09 | | 06:04 (4) | 04:54 | | 05:59 (4) |
| | 16:56 | 30 | 09:59 (42) | 18:01 | | | 18:58 | 6 | 18:07 (48) | 20:59 | 41 | 19:55 (3) | 21:54 | 52 | 21:02 (31) | 22:19 | 64 | 21:03 (31) |
| 27 | 08:36 | | 09:30 (42) | 07:32 | | | 06:21 | | | 06:04 | | 06:53 (34) | 05:08 | | 06:03 (4) | 04:54 | | 05:59 (4) |
| | 16:58 | 30 | 10:00 (42) | 18:03 | | | 19:00 | | | 21:01 | 33 | 07:26 (34) | 21:55 | 54 | 21:02 (31) | 22:19 | 66 | 21:04 (31) |
| 28 | 08:34 | | 09:31 (42) | 07:29 | | | 06:18 | | | 06:02 | | 06:53 (34) | 05:06 | | 06:02 (4) | 04:55 | | 05:59 (4) |
| | 17:00 | 29 | 10:00 (42) | 18:05 | | | 19:02 | | | 21:03 | 33 | 07:26 (34) | 21:57 | 58 | 21:03 (31) | 22:19 | 65 | 21:04 (31) |
| 29 | 08:33 | | 09:31 (42) | | | | 07:16 | | | 05:59 | | 06:53 (34) | 05:05 | | 06:01 (4) | 04:55 | | 06:00 (4) |
| | 17:02 | 29 | 10:00 (42) | | | | 20:04 | | | 21:05 | 33 | 07:26 (34) | 21:58 | 59 | 21:03 (31) | 22:19 | 66 | 21:05 (31) |
| 30 | 08:31 | | 09:31 (42) | | | | 07:13 | | | 05:57 | | 06:53 (34) | 05:04 | | 06:00 (4) | 04:56 | | 06:00 (4) |
| | 17:04 | 29 | 10:00 (42) | | | | 20:06 | | | 21:07 | 33 | 07:26 (34) | 22:00 | 61 | 21:03 (31) | 22:18 | 66 | 21:05 (31) |
| 31 | 08:29 | | 09:32 (42) | | | | 07:10 | | | | | | 05:03 | | 05:59 (4) | | | |
| | 17:06 | 28 | 10:00 (42) | | | | 20:08 | | | | | | 22:01 | 62 | 21:02 (31) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 873 | | | 162 | | | 170 | | | 758 | | | 1013 | | | 1944 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,65 | | | 0,68 | | | 0,99 | | | 0,98 | | | 0,91 | | | 0,87 | |
| Total reduction | | 0,11 | | | 0,16 | | | 0,32 | | | 0,37 | | | 0,45 | | | 0,40 | |
| Total, real | | 98 | | | 26 | | | 55 | | | 279 | | | 453 | | | 778 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:01 (4) | 05:40 | | 07:12 (34) | 06:38 | | 19:44 (3) | 07:35 | 07:37 | | | 08:35 | | 09:17 (42) |
| | 22:18 | 64 | 21:05 (31) | 21:40 | 21 | 21:04 (31) | 20:29 | 16 | 20:00 (3) | 19:12 | 16:58 | | | 16:10 | 30 | 09:53 (41) |
| 2 | 04:58 | | 06:01 (4) | 05:41 | | 07:09 (34) | 06:40 | | 19:46 (3) | 07:37 | 07:39 | | | 08:37 | | 09:32 (41) |
| | 22:18 | 65 | 21:06 (31) | 21:38 | 17 | 07:26 (34) | 20:27 | 11 | 19:57 (3) | 19:09 | 16:56 | | | 16:09 | 22 | 09:54 (41) |
| 3 | 04:58 | | 06:02 (4) | 05:43 | | 07:08 (34) | 06:42 | | 19:48 (3) | 07:38 | 07:41 | | 09:12 (42) | 08:38 | | 09:33 (41) |
| | 22:17 | 66 | 21:07 (31) | 21:36 | 20 | 07:28 (34) | 20:24 | 7 | 19:55 (3) | 19:07 | 16:54 | 8 | 09:20 (42) | 16:08 | 21 | 09:54 (41) |
| 4 | 04:59 | | 06:02 (4) | 05:45 | | 07:07 (34) | 06:43 | | 07:14 (12) | 07:40 | 07:43 | | 09:08 (42) | 08:40 | | 09:32 (41) |
| | 22:17 | 66 | 21:07 (31) | 21:34 | 22 | 07:29 (34) | 20:22 | 6 | 07:20 (12) | 19:04 | 16:51 | 15 | 09:23 (42) | 16:07 | 22 | 09:54 (41) |
| 5 | 05:00 | | 06:02 (4) | 05:47 | | 07:06 (34) | 06:45 | | 07:14 (12) | 07:42 | 07:45 | | 09:07 (42) | 08:41 | | 09:33 (41) |
| | 22:16 | 66 | 21:07 (31) | 21:32 | 25 | 07:31 (34) | 20:19 | 8 | 07:22 (12) | 19:02 | 16:49 | 19 | 09:26 (42) | 16:07 | 22 | 09:55 (41) |
| 6 | 05:01 | | 06:03 (4) | 05:49 | | 07:04 (34) | 06:47 | | 07:15 (12) | 07:44 | 07:47 | | 09:06 (42) | 08:43 | | 09:34 (41) |
| | 22:15 | 65 | 21:08 (31) | 21:30 | 27 | 07:31 (34) | 20:17 | 6 | 07:21 (12) | 18:59 | 16:47 | 21 | 09:27 (42) | 16:06 | 22 | 09:56 (41) |
| 7 | 05:02 | | 06:03 (4) | 05:51 | | 07:04 (34) | 06:49 | | 07:17 (12) | 07:46 | 07:49 | | 09:04 (42) | 08:44 | | 09:34 (41) |
| | 22:15 | 65 | 21:08 (31) | 21:28 | 28 | 07:32 (34) | 20:14 | 5 | 07:22 (12) | 18:57 | 16:45 | 24 | 09:28 (42) | 16:06 | 22 | 09:56 (41) |
| 8 | 05:03 | | 06:04 (4) | 05:52 | | 07:03 (34) | 06:51 | | 07:19 (12) | 07:48 | 07:51 | | 09:03 (42) | 08:46 | | 09:35 (41) |
| | 22:14 | 65 | 21:09 (31) | 21:26 | 30 | 07:33 (34) | 20:12 | 2 | 07:21 (12) | 18:54 | 16:44 | 26 | 09:29 (42) | 16:05 | 22 | 09:57 (41) |
| 9 | 05:04 | | 06:05 (4) | 05:54 | | 07:02 (34) | 06:53 | | | 07:50 | 07:53 | | 09:04 (42) | 08:47 | | 09:35 (41) |
| | 22:13 | 65 | 21:09 (31) | 21:24 | 30 | 07:32 (34) | 20:09 | | | 18:52 | 16:42 | 26 | 09:30 (42) | 16:05 | 22 | 09:57 (41) |
| 10 | 05:06 | | 06:05 (4) | 05:56 | | 07:01 (34) | 06:55 | | | 07:52 | 07:55 | | 09:03 (42) | 08:48 | | 09:35 (41) |
| | 22:12 | 64 | 21:09 (31) | 21:21 | 32 | 07:33 (34) | 20:06 | | | 18:49 | 16:40 | 28 | 09:31 (42) | 16:04 | 22 | 09:57 (41) |
| 11 | 05:07 | | 06:07 (4) | 05:58 | | 07:01 (34) | 06:57 | | | 07:54 | 07:57 | | 09:02 (42) | 08:49 | | 09:36 (41) |
| | 22:11 | 64 | 21:11 (31) | 21:19 | 32 | 07:33 (34) | 20:04 | | | 18:47 | 16:38 | 29 | 09:31 (42) | 16:04 | 22 | 09:58 (41) |
| 12 | 05:08 | | 06:08 (4) | 06:00 | | 07:01 (34) | 06:59 | | | 07:56 | 07:59 | | 09:02 (42) | 08:51 | | 09:36 (41) |
| | 22:10 | 62 | 21:11 (31) | 21:17 | 33 | 07:34 (34) | 20:01 | | | 18:44 | 16:36 | 29 | 09:31 (42) | 16:04 | 22 | 09:58 (41) |
| 13 | 05:09 | | 06:08 (4) | 06:02 | | 07:00 (34) | 07:00 | | | 07:58 | 08:01 | | 09:03 (42) | 08:52 | | 09:37 (41) |
| | 22:09 | 61 | 21:11 (31) | 21:15 | 33 | 07:33 (34) | 19:59 | | | 18:42 | 16:34 | 29 | 09:32 (42) | 16:04 | 21 | 09:58 (41) |
| 14 | 05:11 | | 06:09 (4) | 06:04 | | 07:00 (34) | 07:02 | | | 08:00 | 08:03 | | 09:02 (42) | 08:53 | | 09:37 (41) |
| | 22:08 | 60 | 21:11 (31) | 21:13 | 33 | 07:33 (34) | 19:56 | | | 18:39 | 16:33 | 30 | 09:32 (42) | 16:04 | 22 | 09:59 (41) |
| 15 | 05:12 | | 06:10 (4) | 06:06 | | 07:00 (34) | 07:04 | | | 08:02 | 08:05 | | 09:02 (42) | 08:54 | | 09:37 (41) |
| | 22:07 | 58 | 21:11 (31) | 21:10 | 33 | 07:33 (34) | 19:53 | | | 18:37 | 16:31 | 30 | 09:32 (42) | 16:04 | 22 | 09:59 (41) |
| 16 | 05:13 | | 06:12 (4) | 06:07 | | 07:00 (34) | 07:06 | | | 08:04 | 08:07 | | 09:02 (42) | 08:55 | | 09:38 (41) |
| | 22:05 | 56 | 21:12 (31) | 21:08 | 33 | 07:33 (34) | 19:51 | | | 18:34 | 16:29 | 30 | 09:32 (42) | 16:04 | 21 | 09:59 (41) |
| 17 | 05:15 | | 06:13 (4) | 06:09 | | 07:00 (34) | 07:08 | | 18:51 (48) | 08:06 | 08:09 | | 09:03 (42) | 08:55 | | 09:39 (41) |
| | 22:04 | 54 | 21:12 (31) | 21:06 | 43 | 20:03 (3) | 19:48 | 4 | 18:55 (48) | 18:32 | 16:28 | 30 | 09:33 (42) | 16:04 | 21 | 10:00 (41) |
| 18 | 05:16 | | 06:14 (4) | 06:11 | | 07:00 (34) | 07:10 | | 18:46 (48) | 08:08 | 08:11 | | 09:04 (42) | 08:56 | | 09:39 (41) |
| | 22:03 | 51 | 21:12 (31) | 21:03 | 46 | 20:05 (3) | 19:46 | 11 | 18:57 (48) | 18:30 | 16:26 | 29 | 09:33 (42) | 16:04 | 22 | 10:01 (41) |
| 19 | 05:18 | | 06:17 (4) | 06:13 | | 07:01 (34) | 07:12 | | 18:44 (48) | 08:10 | 08:13 | | 09:04 (42) | 08:57 | | 09:40 (41) |
| | 22:01 | 46 | 21:12 (31) | 21:01 | 48 | 20:06 (3) | 19:43 | 14 | 18:58 (48) | 18:27 | 16:24 | 29 | 09:33 (42) | 16:04 | 21 | 10:01 (41) |
| 20 | 05:19 | | 06:19 (4) | 06:15 | | 07:01 (34) | 07:14 | | 18:43 (48) | 08:12 | 08:15 | | 09:04 (42) | 08:58 | | 09:40 (41) |
| | 22:00 | 43 | 21:12 (31) | 20:59 | 50 | 20:08 (3) | 19:41 | 16 | 18:59 (48) | 18:25 | 16:23 | 28 | 09:32 (42) | 16:04 | 21 | 10:01 (41) |
| 21 | 05:21 | | 06:23 (4) | 06:17 | | 07:02 (34) | 07:16 | | 18:42 (48) | 08:14 | 08:17 | | 09:05 (42) | 08:58 | | 09:41 (41) |
| | 21:59 | 34 | 21:12 (31) | 20:56 | 49 | 20:08 (3) | 19:38 | 18 | 19:00 (48) | 18:22 | 16:22 | 27 | 09:32 (42) | 16:05 | 21 | 10:02 (41) |
| 22 | 05:22 | | 20:46 (31) | 06:19 | | 07:02 (34) | 07:17 | | 18:41 (48) | 08:16 | 08:19 | | 09:05 (42) | 08:59 | | 09:41 (41) |
| | 21:57 | 26 | 21:12 (31) | 20:54 | 49 | 20:08 (3) | 19:35 | 19 | 19:00 (48) | 18:20 | 16:20 | 27 | 09:32 (42) | 16:05 | 21 | 10:02 (41) |
| 23 | 05:24 | | 20:47 (31) | 06:21 | | 07:03 (34) | 07:19 | | 18:41 (48) | 08:18 | 08:21 | | 09:07 (42) | 08:59 | | 09:42 (41) |
| | 21:55 | 25 | 21:12 (31) | 20:52 | 48 | 20:09 (3) | 19:33 | 19 | 19:00 (48) | 18:18 | 16:19 | 34 | 09:45 (41) | 16:06 | 21 | 10:03 (41) |
| 24 | 05:26 | | 20:47 (31) | 06:23 | | 07:05 (34) | 07:21 | | 18:41 (48) | 08:20 | 08:23 | | 09:08 (42) | 09:00 | | 09:42 (41) |
| | 21:54 | 24 | 21:11 (31) | 20:49 | 45 | 20:09 (3) | 19:30 | 18 | 18:59 (48) | 18:15 | 16:18 | 36 | 09:47 (41) | 16:06 | 21 | 10:03 (41) |
| 25 | 05:27 | | 20:47 (31) | 06:24 | | 07:07 (34) | 07:23 | | 18:41 (48) | 07:22 | 08:25 | | 09:09 (42) | 09:00 | | 09:42 (41) |
| | 21:52 | 25 | 21:12 (31) | 20:47 | 41 | 20:09 (3) | 19:28 | 18 | 18:59 (48) | 17:13 | 16:16 | 37 | 09:48 (41) | 16:07 | 21 | 10:03 (41) |
| 26 | 05:29 | | 20:47 (31) | 06:26 | | 07:12 (34) | 07:25 | | 18:40 (48) | 07:24 | 08:26 | | 09:10 (42) | 09:00 | | 09:42 (41) |
| | 21:51 | 24 | 21:11 (31) | 20:44 | 32 | 20:09 (3) | 19:25 | 15 | 18:55 (48) | 17:11 | 16:15 | 37 | 09:49 (41) | 16:08 | 22 | 10:04 (41) |
| 27 | 05:31 | | 20:48 (31) | 06:28 | | 19:42 (3) | 07:27 | | 18:41 (48) | 07:26 | 08:28 | | 09:11 (42) | 09:01 | | 09:43 (41) |
| | 21:49 | 22 | 21:10 (31) | 20:42 | 26 | 20:08 (3) | 19:22 | 12 | 18:53 (48) | 17:09 | 16:14 | 37 | 09:50 (41) | 16:09 | 21 | 10:04 (41) |
| 28 | 05:33 | | 20:49 (31) | 06:30 | | 19:42 (3) | 07:29 | | 18:43 (48) | 07:28 | 08:30 | | 09:13 (42) | 09:01 | | 09:43 (41) |
| | 21:47 | 20 | 21:09 (31) | 20:39 | 25 | 20:07 (3) | 19:20 | 7 | 18:50 (48) | 17:06 | 16:13 | 35 | 09:51 (41) | 16:09 | 22 | 10:05 (41) |
| 29 | 05:34 | | 20:50 (31) | 06:32 | | 19:43 (3) | 07:31 | | | 07:30 | 08:32 | | 09:14 (42) | 09:01 | | 09:44 (41) |
| | 21:45 | 19 | 21:09 (31) | 20:37 | 24 | 20:07 (3) | 19:17 | | | 17:04 | 16:12 | 34 | 09:52 (41) | 16:10 | 21 | 10:05 (41) |
| 30 | 05:36 | | 20:51 (31) | 06:34 | | 19:43 (3) | 07:33 | | | 07:32 | 08:33 | | 09:15 (42) | 09:01 | | 09:44 (41) |
| | 21:44 | 17 | 21:08 (31) | 20:34 | 22 | 20:05 (3) | 19:15 | | | 17:02 | 16:11 | 32 | 09:52 (41) | 16:11 | 22 | 10:06 (41) |
| 31 | 05:38 | | 07:15 (34) | 06:36 | | 19:44 (3) | | | | 07:35 | | | | 09:01 | | 09:45 (41) |
| | 21:42 | 19 | 21:06 (31) | 20:32 | 19 | 20:03 (3) | | | | 17:00 | | | | 16:12 | 22 | 10:07 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 1461 | | | 1016 | | | 232 | | | | 796 | | | 677 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,88 | | | 0,98 | | | 0,99 | | | | 0,67 | | | 0,60 | |
| Total reduction | | 0,41 | | | 0,48 | | | 0,37 | | | | 0,10 | | | 0,08 | |
| Total, real | | 592 | | | 487 | | | 87 | | | | 80 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (42) | 08:28 | | 10:04 (42) | 07:27 | | | 07:08 | | 07:32 (12) | 05:55 | | 07:10 (34) | 05:02 | | 06:11 (4) |
| | 16:14 | 36 | 10:22 (41) | 17:08 | 5 | 10:09 (42) | 18:07 | | | 20:10 | 2 | 07:34 (12) | 21:09 | 39 | 20:36 (31) | 22:02 | 53 | 07:04 (4) |
| 2 | 09:01 | | 09:46 (42) | 08:26 | | | 07:24 | | | 07:05 | | 07:30 (12) | 05:53 | | 07:11 (34) | 05:01 | | 06:11 (4) |
| | 16:15 | 36 | 10:22 (41) | 17:10 | | | 18:09 | | | 20:11 | 6 | 19:44 (3) | 21:11 | 42 | 20:38 (31) | 22:04 | 54 | 07:05 (4) |
| 3 | 09:00 | | 09:46 (42) | 08:24 | | | 07:22 | | | 07:03 | | 07:27 (12) | 05:51 | | 07:12 (34) | 05:00 | | 06:11 (4) |
| | 16:16 | 36 | 10:22 (41) | 17:12 | | | 18:11 | | | 20:13 | 15 | 19:46 (3) | 21:13 | 44 | 20:40 (31) | 22:05 | 55 | 07:06 (4) |
| 4 | 09:00 | | 09:46 (42) | 08:22 | | | 07:19 | | | 07:00 | | 07:25 (12) | 05:48 | | 07:13 (34) | 04:59 | | 06:11 (4) |
| | 16:17 | 36 | 10:22 (41) | 17:14 | | | 18:13 | | | 20:15 | 21 | 19:48 (3) | 21:14 | 44 | 20:41 (31) | 22:06 | 56 | 07:07 (4) |
| 5 | 09:00 | | 09:45 (42) | 08:20 | | | 07:17 | | | 06:58 | | 07:23 (12) | 05:46 | | 07:14 (34) | 04:58 | | 06:10 (4) |
| | 16:19 | 37 | 10:22 (41) | 17:17 | | | 18:16 | | | 20:17 | 24 | 19:49 (3) | 21:16 | 43 | 20:42 (31) | 22:07 | 57 | 07:07 (4) |
| 6 | 08:59 | | 09:46 (42) | 08:18 | | | 07:14 | | | 06:55 | | 07:25 (12) | 05:44 | | 07:16 (34) | 04:57 | | 06:10 (4) |
| | 16:20 | 37 | 10:23 (41) | 17:19 | | | 18:18 | | | 20:19 | 24 | 19:52 (3) | 21:18 | 41 | 20:43 (31) | 22:08 | 57 | 07:07 (4) |
| 7 | 08:59 | | 09:46 (42) | 08:16 | | | 07:12 | | | 06:53 | | 19:31 (3) | 05:42 | | 07:18 (34) | 04:56 | | 06:10 (4) |
| | 16:22 | 36 | 10:22 (41) | 17:21 | | | 18:20 | | | 20:21 | 22 | 19:53 (3) | 21:20 | 37 | 20:43 (31) | 22:10 | 58 | 07:08 (4) |
| 8 | 08:58 | | 09:46 (42) | 08:14 | | | 07:09 | | | 06:50 | | 19:31 (3) | 05:40 | | 07:21 (34) | 04:56 | | 06:09 (4) |
| | 16:23 | 36 | 10:22 (41) | 17:23 | | | 18:22 | | | 20:23 | 23 | 19:54 (3) | 21:22 | 30 | 20:43 (31) | 22:11 | 59 | 07:08 (4) |
| 9 | 08:57 | | 09:46 (42) | 08:12 | | | 07:07 | | | 06:48 | | 19:30 (3) | 05:38 | | 20:18 (31) | 04:55 | | 06:10 (4) |
| | 16:25 | 36 | 10:22 (41) | 17:25 | | | 18:24 | | | 20:25 | 24 | 19:54 (3) | 21:24 | 25 | 20:43 (31) | 22:12 | 59 | 07:09 (4) |
| 10 | 08:57 | | 09:46 (42) | 08:10 | | | 07:04 | | | 06:45 | | 19:30 (3) | 05:36 | | 20:18 (31) | 04:54 | | 06:09 (4) |
| | 16:26 | 35 | 10:21 (41) | 17:27 | | | 18:26 | | | 20:27 | 24 | 19:54 (3) | 21:26 | 25 | 20:43 (31) | 22:12 | 60 | 07:09 (4) |
| 11 | 08:56 | | 09:46 (42) | 08:08 | | | 07:02 | | 17:58 (48) | 06:42 | | 07:27 (34) | 05:34 | | 20:18 (31) | 04:54 | | 06:10 (4) |
| | 16:28 | 34 | 10:20 (41) | 17:29 | | | 18:28 | 3 | 18:01 (48) | 20:29 | 30 | 19:53 (3) | 21:28 | 25 | 20:43 (31) | 22:13 | 60 | 07:10 (4) |
| 12 | 08:55 | | 09:46 (42) | 08:06 | | | 06:59 | | 17:55 (48) | 06:40 | | 07:22 (34) | 05:32 | | 20:18 (31) | 04:53 | | 06:10 (4) |
| | 16:29 | 33 | 10:19 (41) | 17:31 | | | 18:30 | 7 | 18:02 (48) | 20:31 | 39 | 19:53 (3) | 21:30 | 26 | 20:44 (31) | 22:14 | 60 | 07:10 (4) |
| 13 | 08:54 | | 09:47 (42) | 08:04 | | | 06:57 | | 17:53 (48) | 06:38 | | 07:19 (34) | 05:30 | | 20:18 (31) | 04:53 | | 06:09 (4) |
| | 16:31 | 29 | 10:16 (42) | 17:34 | | | 18:32 | 11 | 18:04 (48) | 20:33 | 43 | 19:52 (3) | 21:32 | 25 | 20:43 (31) | 22:15 | 61 | 07:10 (4) |
| 14 | 08:53 | | 09:47 (42) | 08:02 | | | 06:54 | | 17:52 (48) | 06:35 | | 07:17 (34) | 05:28 | | 20:18 (31) | 04:53 | | 06:09 (4) |
| | 16:33 | 30 | 10:17 (42) | 17:36 | | | 18:34 | 15 | 18:07 (48) | 20:35 | 45 | 19:51 (3) | 21:33 | 25 | 20:43 (31) | 22:16 | 62 | 07:11 (4) |
| 15 | 08:52 | | 09:48 (42) | 07:59 | | | 06:52 | | 17:51 (48) | 06:33 | | 07:16 (34) | 05:27 | | 20:19 (31) | 04:52 | | 06:10 (4) |
| | 16:35 | 29 | 10:17 (42) | 17:38 | | | 18:36 | 17 | 18:08 (48) | 20:37 | 46 | 19:50 (3) | 21:35 | 24 | 20:43 (31) | 22:16 | 61 | 07:11 (4) |
| 16 | 08:51 | | 09:47 (42) | 07:57 | | | 06:49 | | 17:51 (48) | 06:30 | | 07:14 (34) | 05:25 | | 20:19 (31) | 04:52 | | 06:10 (4) |
| | 16:36 | 30 | 10:17 (42) | 17:40 | | | 18:38 | 18 | 18:09 (48) | 20:39 | 45 | 19:48 (3) | 21:37 | 23 | 20:42 (31) | 22:17 | 61 | 07:11 (4) |
| 17 | 08:50 | | 09:48 (42) | 07:55 | | | 06:46 | | 17:50 (48) | 06:28 | | 07:13 (34) | 05:23 | | 20:20 (31) | 04:52 | | 06:10 (4) |
| | 16:38 | 30 | 10:18 (42) | 17:42 | | | 18:40 | 18 | 18:08 (48) | 20:41 | 43 | 19:46 (3) | 21:39 | 22 | 20:42 (31) | 22:17 | 62 | 07:12 (4) |
| 18 | 08:49 | | 09:48 (42) | 07:53 | | | 06:44 | | 17:50 (48) | 06:25 | | 07:11 (34) | 05:21 | | 06:29 (4) | 04:52 | | 06:10 (4) |
| | 16:40 | 30 | 10:18 (42) | 17:44 | | | 18:42 | 17 | 18:07 (48) | 20:43 | 37 | 19:41 (3) | 21:41 | 37 | 20:41 (31) | 22:18 | 62 | 07:12 (4) |
| 19 | 08:48 | | 09:48 (42) | 07:50 | | | 06:41 | | 17:51 (48) | 06:23 | | 07:11 (34) | 05:20 | | 06:26 (4) | 04:52 | | 06:10 (4) |
| | 16:42 | 31 | 10:19 (42) | 17:46 | | | 18:44 | 16 | 18:07 (48) | 20:45 | 34 | 07:45 (34) | 21:42 | 43 | 20:41 (31) | 22:18 | 62 | 07:12 (4) |
| 20 | 08:46 | | 09:48 (42) | 07:48 | | | 06:39 | | 07:03 (14) | 06:20 | | 07:10 (34) | 05:18 | | 06:23 (4) | 04:52 | | 06:10 (4) |
| | 16:44 | 30 | 10:18 (42) | 17:48 | | | 18:46 | 15 | 18:05 (48) | 20:47 | 35 | 07:45 (34) | 21:44 | 45 | 20:40 (31) | 22:19 | 62 | 07:12 (4) |
| 21 | 08:45 | | 09:49 (42) | 07:46 | | | 06:36 | | 07:01 (14) | 06:18 | | 07:09 (34) | 05:16 | | 06:21 (4) | 04:52 | | 06:10 (4) |
| | 16:46 | 30 | 10:19 (42) | 17:51 | | | 18:48 | 13 | 18:03 (48) | 20:49 | 36 | 07:45 (34) | 21:46 | 48 | 20:39 (31) | 22:19 | 62 | 07:12 (4) |
| 22 | 08:44 | | 09:50 (42) | 07:43 | | | 06:34 | | 06:58 (14) | 06:16 | | 07:09 (34) | 05:15 | | 06:19 (4) | 04:52 | | 06:11 (4) |
| | 16:48 | 29 | 10:19 (42) | 17:53 | | | 18:50 | 6 | 07:04 (14) | 20:51 | 36 | 07:45 (34) | 21:47 | 49 | 20:38 (31) | 22:19 | 62 | 07:13 (4) |
| 23 | 08:42 | | 09:51 (42) | 07:41 | | | 06:31 | | 06:55 (14) | 06:13 | | 07:09 (34) | 05:13 | | 06:18 (4) | 04:53 | | 06:11 (4) |
| | 16:50 | 28 | 10:19 (42) | 17:55 | | | 18:52 | 7 | 07:02 (14) | 20:53 | 36 | 07:45 (34) | 21:49 | 49 | 20:37 (31) | 22:19 | 62 | 07:13 (4) |
| 24 | 08:41 | | 09:51 (42) | 07:39 | | | 06:28 | | 06:56 (14) | 06:11 | | 07:09 (34) | 05:12 | | 06:17 (4) | 04:53 | | 06:11 (4) |
| | 16:52 | 28 | 10:19 (42) | 17:57 | | | 18:54 | 5 | 07:01 (14) | 20:55 | 36 | 07:45 (34) | 21:51 | 47 | 20:35 (31) | 22:19 | 62 | 07:13 (4) |
| 25 | 08:39 | | 09:52 (42) | 07:36 | | | 06:26 | | | 06:09 | | 07:08 (34) | 05:10 | | 06:15 (4) | 04:53 | | 06:12 (4) |
| | 16:54 | 26 | 10:18 (42) | 17:59 | | | 18:56 | | | 20:57 | 36 | 07:44 (34) | 21:52 | 43 | 06:58 (4) | 22:19 | 62 | 07:14 (4) |
| 26 | 08:38 | | 09:52 (42) | 07:34 | | | 06:23 | | | 06:06 | | 07:08 (34) | 05:09 | | 06:15 (4) | 04:54 | | 06:12 (4) |
| | 16:56 | 26 | 10:18 (42) | 18:01 | | | 18:58 | | | 20:59 | 36 | 07:44 (34) | 21:54 | 44 | 06:59 (4) | 22:19 | 62 | 07:14 (4) |
| 27 | 08:36 | | 09:54 (42) | 07:32 | | | 06:21 | | | 06:04 | | 07:08 (34) | 05:08 | | 06:14 (4) | 04:54 | | 06:13 (4) |
| | 16:58 | 24 | 10:18 (42) | 18:03 | | | 19:00 | | | 21:01 | 36 | 07:44 (34) | 21:55 | 46 | 07:00 (4) | 22:19 | 61 | 07:14 (4) |
| 28 | 08:34 | | 09:55 (42) | 07:29 | | | 06:18 | | | 06:02 | | 07:09 (34) | 05:06 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:00 | 22 | 10:17 (42) | 18:05 | | | 19:02 | | | 21:03 | 34 | 07:43 (34) | 21:57 | 48 | 07:01 (4) | 22:19 | 61 | 07:14 (4) |
| 29 | 08:33 | | 09:56 (42) | | | | 07:16 | | | 05:59 | | 07:09 (34) | 05:05 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:02 | 20 | 10:16 (42) | | | | 20:04 | | | 21:05 | 34 | 07:43 (34) | 21:58 | 49 | 07:02 (4) | 22:19 | 61 | 07:14 (4) |
| 30 | 08:31 | | 09:58 (42) | | | | 07:13 | | | 05:57 | | 07:10 (34) | 05:04 | | 06:12 (4) | 04:56 | | 06:13 (4) |
| | 17:04 | 17 | 10:15 (42) | | | | 20:06 | | | 21:07 | 32 | 07:42 (34) | 22:00 | 51 | 07:03 (4) | 22:18 | 61 | 07:14 (4) |
| 31 | 08:29 | | 10:00 (42) | | | | 07:10 | | | | | | 05:03 | | 06:12 (4) | | | |
| | 17:06 | 13 | 10:13 (42) | | | | 20:08 | | | | | | 22:01 | 52 | 07:04 (4) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 930 | | | 5 | | | 168 | | | 934 | | | 1191 | | | 1797 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,60 | | | 0,61 | | | 0,99 | | | 0,99 | | | 0,92 | | | 0,89 | |
| Total reduction | | 0,10 | | | 0,14 | | | 0,32 | | | 0,37 | | | 0,45 | | | 0,41 | |
| Total, real | | 95 | | | 1 | | | 53 | | | 343 | | | 533 | | | 729 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:14 (4) | 05:40 | 20:29 (31) | 06:38 | 07:26 (34) | 07:35 | 18:33 (48) | 07:37 | | 08:35 | 09:28 (42) |
| | 22:18 60 | 07:14 (4) | 21:40 25 | 20:54 (31) | 20:29 29 | 19:52 (3) | 19:12 9 | 18:42 (48) | 16:58 | | 16:10 34 | 10:02 (41) |
| 2 | 04:57 | 06:14 (4) | 05:41 | 20:28 (31) | 06:40 | 19:28 (3) | 07:37 | 18:35 (48) | 07:39 | | 08:37 | 09:29 (42) |
| | 22:18 60 | 07:14 (4) | 21:38 25 | 20:53 (31) | 20:27 24 | 19:52 (3) | 19:09 5 | 18:40 (48) | 16:56 | | 16:09 35 | 10:04 (41) |
| 3 | 04:58 | 06:15 (4) | 05:43 | 20:28 (31) | 06:42 | 19:28 (3) | 07:38 | | 07:41 | | 08:38 | 09:30 (42) |
| | 22:17 59 | 07:14 (4) | 21:36 25 | 20:53 (31) | 20:24 24 | 19:52 (3) | 19:07 | | 16:54 | | 16:08 36 | 10:06 (41) |
| 4 | 04:59 | 06:15 (4) | 05:45 | 20:29 (31) | 06:43 | 19:28 (3) | 07:40 | | 07:43 | | 08:40 | 09:30 (42) |
| | 22:17 58 | 07:13 (4) | 21:34 24 | 20:53 (31) | 20:22 23 | 19:51 (3) | 19:04 | | 16:51 | | 16:07 36 | 10:06 (41) |
| 5 | 05:00 | 06:15 (4) | 05:47 | 07:30 (34) | 06:45 | 19:28 (3) | 07:42 | | 07:45 | | 08:41 | 09:31 (42) |
| | 22:16 58 | 07:13 (4) | 21:32 34 | 20:53 (31) | 20:19 22 | 19:50 (3) | 19:02 | | 16:49 | | 16:07 36 | 10:07 (41) |
| 6 | 05:01 | 06:16 (4) | 05:49 | 07:26 (34) | 06:47 | 07:20 (12) | 07:44 | | 07:47 | | 08:43 | 09:32 (42) |
| | 22:15 57 | 07:13 (4) | 21:30 39 | 20:52 (31) | 20:17 23 | 19:47 (3) | 18:59 | | 16:47 | | 16:06 37 | 10:09 (41) |
| 7 | 05:02 | 06:16 (4) | 05:51 | 07:24 (34) | 06:49 | 07:18 (12) | 07:46 | | 07:49 | | 08:44 | 09:32 (42) |
| | 22:15 57 | 07:13 (4) | 21:28 42 | 20:52 (31) | 20:14 25 | 19:45 (3) | 18:57 | | 16:45 | | 16:06 37 | 10:09 (41) |
| 8 | 05:03 | 06:17 (4) | 05:52 | 07:23 (34) | 06:51 | 07:19 (12) | 07:48 | | 07:51 | | 08:46 | 09:34 (42) |
| | 22:14 56 | 07:13 (4) | 21:26 43 | 20:51 (31) | 20:12 21 | 19:42 (3) | 18:54 | | 16:43 | | 16:05 36 | 10:10 (41) |
| 9 | 05:04 | 06:17 (4) | 05:54 | 07:21 (34) | 06:53 | 07:21 (12) | 07:50 | | 07:53 | | 08:47 | 09:34 (42) |
| | 22:13 56 | 07:13 (4) | 21:24 43 | 20:49 (31) | 20:09 16 | 19:40 (3) | 18:52 | | 16:42 | | 16:05 36 | 10:10 (41) |
| 10 | 05:06 | 06:18 (4) | 05:56 | 07:20 (34) | 06:55 | 07:23 (12) | 07:52 | | 07:55 | 09:34 (42) | 08:48 | 09:35 (42) |
| | 22:12 54 | 07:12 (4) | 21:21 44 | 20:48 (31) | 20:06 9 | 19:38 (3) | 18:49 | | 16:40 7 | 09:41 (42) | 16:04 36 | 10:11 (41) |
| 11 | 05:07 | 06:19 (4) | 05:58 | 07:19 (34) | 06:57 | 07:24 (12) | 07:54 | | 07:57 | 09:31 (42) | 08:49 | 09:36 (42) |
| | 22:11 54 | 07:13 (4) | 21:19 42 | 20:46 (31) | 20:04 2 | 07:26 (12) | 18:47 | | 16:38 13 | 09:44 (42) | 16:04 36 | 10:12 (41) |
| 12 | 05:08 | 06:20 (4) | 06:00 | 07:18 (34) | 06:59 | | 07:56 | | 07:59 | 09:29 (42) | 08:51 | 09:37 (42) |
| | 22:10 52 | 07:12 (4) | 21:17 37 | 20:43 (31) | 20:01 | | 18:44 | | 16:36 17 | 09:46 (42) | 16:04 35 | 10:12 (41) |
| 13 | 05:09 | 06:21 (4) | 06:02 | 07:17 (34) | 07:00 | | 07:58 | | 08:01 | 09:28 (42) | 08:52 | 09:37 (42) |
| | 22:09 51 | 07:12 (4) | 21:15 33 | 07:50 (34) | 19:59 | | 18:42 | | 16:34 20 | 09:48 (42) | 16:04 36 | 10:13 (41) |
| 14 | 05:11 | 06:21 (4) | 06:04 | 07:16 (34) | 07:02 | | 08:00 | | 08:03 | 09:27 (42) | 08:53 | 09:38 (42) |
| | 22:08 50 | 07:11 (4) | 21:13 34 | 07:50 (34) | 19:56 | | 18:39 | | 16:33 22 | 09:49 (42) | 16:04 35 | 10:13 (41) |
| 15 | 05:12 | 06:22 (4) | 06:05 | 07:16 (34) | 07:04 | | 08:02 | | 08:05 | 09:26 (42) | 08:54 | 09:39 (42) |
| | 22:07 48 | 07:10 (4) | 21:10 35 | 07:51 (34) | 19:53 | | 18:37 | | 16:31 24 | 09:50 (42) | 16:04 35 | 10:14 (41) |
| 16 | 05:13 | 06:23 (4) | 06:07 | 07:16 (34) | 07:06 | | 08:04 | | 08:07 | 09:25 (42) | 08:55 | 09:39 (42) |
| | 22:05 47 | 07:10 (4) | 21:08 35 | 07:51 (34) | 19:51 | | 18:34 | | 16:29 26 | 09:51 (42) | 16:04 35 | 10:14 (41) |
| 17 | 05:15 | 06:24 (4) | 06:09 | 07:14 (34) | 07:08 | | 08:06 | | 08:09 | 09:26 (42) | 08:55 | 09:40 (42) |
| | 22:04 45 | 07:09 (4) | 21:06 37 | 07:51 (34) | 19:48 | | 18:32 | | 16:28 26 | 09:52 (42) | 16:04 35 | 10:15 (41) |
| 18 | 05:16 | 06:25 (4) | 06:11 | 07:14 (34) | 07:10 | | 08:08 | | 08:11 | 09:25 (42) | 08:56 | 09:41 (42) |
| | 22:03 43 | 07:08 (4) | 21:03 37 | 07:51 (34) | 19:46 | | 18:30 | | 16:26 28 | 09:53 (42) | 16:04 35 | 10:16 (41) |
| 19 | 05:18 | 06:26 (4) | 06:13 | 07:14 (34) | 07:12 | 07:43 (14) | 08:10 | | 08:13 | 09:25 (42) | 08:57 | 09:42 (42) |
| | 22:01 46 | 20:43 (31) | 21:01 37 | 07:51 (34) | 19:43 4 | 07:47 (14) | 18:27 | | 16:24 28 | 09:53 (42) | 16:04 35 | 10:17 (41) |
| 20 | 05:19 | 06:27 (4) | 06:15 | 07:14 (34) | 07:14 | 07:41 (14) | 08:12 | | 08:15 | 09:25 (42) | 08:58 | 09:42 (42) |
| | 22:00 49 | 20:46 (31) | 20:59 37 | 07:51 (34) | 19:41 8 | 07:49 (14) | 18:25 | | 16:23 29 | 09:54 (42) | 16:04 34 | 10:16 (41) |
| 21 | 05:21 | 06:29 (4) | 06:17 | 07:14 (34) | 07:15 | 07:43 (14) | 08:14 | | 08:17 | 09:24 (42) | 08:58 | 09:43 (42) |
| | 21:59 49 | 20:48 (31) | 20:56 37 | 07:51 (34) | 19:38 7 | 07:50 (14) | 18:22 | | 16:22 30 | 09:54 (42) | 16:05 34 | 10:17 (41) |
| 22 | 05:22 | 06:30 (4) | 06:19 | 07:14 (34) | 07:17 | 07:45 (14) | 08:16 | | 08:19 | 09:24 (42) | 08:59 | 09:43 (42) |
| | 21:57 49 | 20:49 (31) | 20:54 36 | 07:50 (34) | 19:35 13 | 18:47 (48) | 18:20 | | 16:20 30 | 09:54 (42) | 16:05 34 | 10:17 (41) |
| 23 | 05:24 | 06:33 (4) | 06:21 | 07:14 (34) | 07:19 | 07:47 (14) | 08:18 | | 08:21 | 09:26 (42) | 08:59 | 09:44 (42) |
| | 21:55 46 | 20:50 (31) | 20:52 35 | 07:49 (34) | 19:33 14 | 18:49 (48) | 18:18 | | 16:19 30 | 09:56 (42) | 16:06 34 | 10:18 (41) |
| 24 | 05:26 | 06:34 (4) | 06:23 | 07:14 (34) | 07:21 | 18:35 (48) | 08:20 | | 08:23 | 09:26 (42) | 09:00 | 09:44 (42) |
| | 21:54 45 | 20:51 (31) | 20:49 35 | 07:49 (34) | 19:30 15 | 18:50 (48) | 18:15 | | 16:17 30 | 09:56 (42) | 16:06 34 | 10:18 (41) |
| 25 | 05:27 | 06:37 (4) | 06:24 | 07:15 (34) | 07:23 | 18:34 (48) | 07:22 | | 08:25 | 09:26 (42) | 09:00 | 09:44 (42) |
| | 21:52 42 | 20:52 (31) | 20:47 38 | 19:45 (3) | 19:28 17 | 18:51 (48) | 17:13 | | 16:16 30 | 09:56 (42) | 16:07 35 | 10:19 (41) |
| 26 | 05:29 | 06:41 (4) | 06:26 | 07:16 (34) | 07:25 | 18:32 (48) | 07:24 | | 08:26 | 09:26 (42) | 09:00 | 09:44 (42) |
| | 21:51 34 | 20:52 (31) | 20:44 43 | 19:49 (3) | 19:25 18 | 18:50 (48) | 17:11 | | 16:15 30 | 09:56 (42) | 16:08 35 | 10:19 (41) |
| 27 | 05:31 | 20:30 (31) | 06:28 | 07:16 (34) | 07:27 | 18:32 (48) | 07:26 | | 08:28 | 09:27 (42) | 09:01 | 09:44 (42) |
| | 21:49 23 | 20:53 (31) | 20:42 45 | 19:50 (3) | 19:22 18 | 18:50 (48) | 17:09 | | 16:14 29 | 09:56 (42) | 16:09 35 | 10:19 (41) |
| 28 | 05:33 | 20:29 (31) | 06:30 | 07:17 (34) | 07:29 | 18:32 (48) | 07:28 | | 08:30 | 09:27 (42) | 09:01 | 09:45 (42) |
| | 21:47 24 | 20:53 (31) | 20:39 46 | 19:51 (3) | 19:20 17 | 18:49 (48) | 17:06 | | 16:13 30 | 09:57 (42) | 16:09 35 | 10:20 (41) |
| 29 | 05:34 | 20:29 (31) | 06:32 | 07:18 (34) | 07:31 | 18:32 (48) | 07:30 | | 08:32 | 09:28 (42) | 09:01 | 09:45 (42) |
| | 21:45 24 | 20:53 (31) | 20:37 45 | 19:52 (3) | 19:17 15 | 18:47 (48) | 17:04 | | 16:12 29 | 09:57 (42) | 16:10 35 | 10:20 (41) |
| 30 | 05:36 | 20:29 (31) | 06:34 | 07:20 (34) | 07:33 | 18:32 (48) | 07:32 | | 08:33 | 09:28 (42) | 09:01 | 09:45 (42) |
| | 21:44 25 | 20:54 (31) | 20:34 42 | 19:52 (3) | 19:15 13 | 18:45 (48) | 17:02 | | 16:11 32 | 10:00 (41) | 16:11 36 | 10:21 (41) |
| 31 | 05:38 | 20:29 (31) | 06:36 | 07:22 (34) | | | 07:35 | | | | 09:01 | 09:45 (42) |
| | 21:42 25 | 20:54 (31) | 20:32 39 | 19:53 (3) | | | 17:00 | | | | 16:12 36 | 10:21 (41) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | 1446 | | 1149 | | 377 | | 14 | | 540 | | 1093 | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | 0,31 | | 0,16 | | 0,14 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,90 | | 0,98 | | 0,99 | | 0,98 | | 0,61 | | 0,58 | |
| Total reduction | 0,41 | | 0,47 | | 0,37 | | 0,28 | | 0,09 | | 0,07 | |
| Total, real | 594 | | 544 | | 139 | | 4 | | 49 | | 81 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:05 (42) | 08:28 | | 07:27 | | | 07:08 | | 19:41 (3) | 05:55 | | 07:01 (34) | 05:02 |
| | 16:14 | 32 | 10:37 (42) | 17:08 | | 18:07 | | | 20:10 | 1 | 19:42 (3) | 21:09 | 64 | 20:36 (31) | 22:02 |
| 2 | 09:01 | | 10:05 (42) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (12) | 05:53 | | 07:00 (34) | 05:01 |
| | 16:15 | 32 | 10:37 (42) | 17:10 | | 18:09 | | | 20:11 | 9 | 19:44 (3) | 21:11 | 66 | 20:36 (31) | 22:04 |
| 3 | 09:00 | | 10:06 (42) | 08:24 | | 07:22 | | | 07:03 | | 07:27 (12) | 05:51 | | 07:00 (34) | 05:00 |
| | 16:16 | 32 | 10:38 (42) | 17:12 | | 18:11 | | | 20:13 | 16 | 19:46 (3) | 21:13 | 67 | 20:37 (31) | 22:05 |
| 4 | 09:00 | | 10:05 (42) | 08:22 | | 07:19 | | | 07:00 | | 07:25 (12) | 05:48 | | 07:00 (34) | 04:59 |
| | 16:17 | 33 | 10:38 (42) | 17:14 | | 18:13 | | | 20:15 | 21 | 19:48 (3) | 21:14 | 68 | 20:37 (31) | 22:06 |
| 5 | 09:00 | | 10:05 (42) | 08:20 | | 07:17 | | | 06:58 | | 07:22 (12) | 05:46 | | 07:00 (34) | 04:58 |
| | 16:19 | 33 | 10:38 (42) | 17:17 | | 18:16 | | | 20:17 | 26 | 19:49 (3) | 21:16 | 68 | 20:37 (31) | 22:07 |
| 6 | 08:59 | | 10:06 (42) | 08:18 | | 07:14 | | | 06:55 | | 07:21 (12) | 05:44 | | 07:00 (34) | 04:57 |
| | 16:20 | 33 | 10:39 (42) | 17:19 | | 18:18 | | | 20:19 | 29 | 19:52 (3) | 21:18 | 67 | 20:36 (31) | 22:08 |
| 7 | 08:59 | | 10:07 (42) | 08:16 | | 07:12 | | | 06:53 | | 07:22 (12) | 05:42 | | 07:00 (34) | 04:56 |
| | 16:22 | 32 | 10:39 (42) | 17:21 | | 18:20 | | | 20:21 | 27 | 19:53 (3) | 21:20 | 66 | 20:36 (31) | 22:10 |
| 8 | 08:58 | | 10:07 (42) | 08:14 | | 07:09 | | | 06:50 | | 19:32 (3) | 05:40 | | 07:00 (34) | 04:56 |
| | 16:23 | 33 | 10:40 (42) | 17:23 | | 18:22 | | | 20:23 | 22 | 19:54 (3) | 21:22 | 65 | 20:35 (31) | 22:11 |
| 9 | 08:57 | | 10:07 (42) | 08:12 | | 07:07 | | | 06:48 | | 19:31 (3) | 05:38 | | 07:00 (34) | 04:55 |
| | 16:25 | 33 | 10:40 (42) | 17:25 | | 18:24 | | | 20:25 | 22 | 19:53 (3) | 21:24 | 63 | 20:35 (31) | 22:12 |
| 10 | 08:57 | | 10:08 (42) | 08:10 | | 07:04 | | | 06:45 | | 19:32 (3) | 05:36 | | 07:00 (34) | 04:54 |
| | 16:26 | 32 | 10:40 (42) | 17:27 | | 18:26 | | | 20:27 | 20 | 19:52 (3) | 21:26 | 61 | 20:34 (31) | 22:12 |
| 11 | 08:56 | | 10:08 (42) | 08:08 | | 07:02 | | | 06:42 | | 19:31 (3) | 05:34 | | 07:00 (34) | 04:54 |
| | 16:28 | 33 | 10:41 (42) | 17:29 | | 18:28 | | | 20:29 | 20 | 19:51 (3) | 21:28 | 59 | 20:33 (31) | 22:13 |
| 12 | 08:55 | | 10:09 (42) | 08:06 | | 06:59 | | | 06:40 | | 19:33 (3) | 05:32 | | 07:01 (34) | 04:53 |
| | 16:29 | 32 | 10:41 (42) | 17:31 | | 18:30 | | | 20:31 | 17 | 19:50 (3) | 21:30 | 55 | 20:32 (31) | 22:14 |
| 13 | 08:54 | | 10:09 (42) | 08:04 | | 06:57 | | | 06:37 | | 19:33 (3) | 05:30 | | 07:02 (34) | 04:53 |
| | 16:31 | 33 | 10:42 (42) | 17:34 | | 18:32 | | | 20:33 | 15 | 19:48 (3) | 21:32 | 51 | 20:31 (31) | 22:15 |
| 14 | 08:53 | | 10:10 (42) | 08:01 | | 06:54 | | | 06:35 | | 19:35 (3) | 05:28 | | 07:02 (34) | 04:53 |
| | 16:33 | 32 | 10:42 (42) | 17:36 | | 18:34 | | | 20:35 | 12 | 19:47 (3) | 21:33 | 45 | 20:28 (31) | 22:16 |
| 15 | 08:52 | | 10:11 (42) | 07:59 | | 06:52 | | | 06:33 | | 19:39 (3) | 05:27 | | 07:03 (34) | 04:52 |
| | 16:35 | 31 | 10:42 (42) | 17:38 | | 18:36 | | | 20:37 | 4 | 19:43 (3) | 21:35 | 37 | 07:40 (34) | 22:16 |
| 16 | 08:51 | | 10:11 (42) | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 07:04 (34) | 04:52 |
| | 16:36 | 31 | 10:42 (42) | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | 35 | 07:39 (34) | 22:17 |
| 17 | 08:50 | | 10:12 (42) | 07:55 | | 06:46 | | | 06:28 | | 07:21 (34) | 05:23 | | 07:05 (34) | 04:52 |
| | 16:38 | 30 | 10:42 (42) | 17:42 | | 18:40 | | | 20:41 | 10 | 07:31 (34) | 21:39 | 33 | 07:38 (34) | 22:17 |
| 18 | 08:49 | | 10:12 (42) | 07:53 | | 06:44 | | | 06:25 | | 07:16 (34) | 05:21 | | 07:05 (34) | 04:52 |
| | 16:40 | 30 | 10:42 (42) | 17:44 | | 18:42 | | | 20:43 | 18 | 07:34 (34) | 21:40 | 32 | 07:37 (34) | 22:18 |
| 19 | 08:48 | | 10:13 (42) | 07:50 | | 06:41 | | | 06:23 | | 07:13 (34) | 05:20 | | 07:06 (34) | 04:52 |
| | 16:42 | 29 | 10:42 (42) | 17:46 | | 18:44 | | | 20:45 | 24 | 07:37 (34) | 21:42 | 29 | 07:35 (34) | 22:18 |
| 20 | 08:46 | | 10:13 (42) | 07:48 | | 06:39 | | 07:03 (14) | 06:20 | | 07:11 (34) | 05:18 | | 07:07 (34) | 04:52 |
| | 16:44 | 28 | 10:41 (42) | 17:48 | | 18:46 | 3 | 07:06 (14) | 20:47 | 28 | 07:39 (34) | 21:44 | 28 | 07:35 (34) | 22:19 |
| 21 | 08:45 | | 10:15 (42) | 07:46 | | 06:36 | | 07:01 (14) | 06:18 | | 07:09 (34) | 05:16 | | 07:09 (34) | 04:52 |
| | 16:46 | 26 | 10:41 (42) | 17:51 | | 18:48 | 5 | 07:06 (14) | 20:49 | 31 | 07:40 (34) | 21:46 | 25 | 07:34 (34) | 22:19 |
| 22 | 08:44 | | 10:15 (42) | 07:43 | | 06:34 | | 06:58 (14) | 06:16 | | 07:07 (34) | 05:15 | | 07:09 (34) | 04:52 |
| | 16:48 | 26 | 10:41 (42) | 17:53 | | 18:50 | 7 | 07:05 (14) | 20:51 | 34 | 07:41 (34) | 21:47 | 23 | 07:32 (34) | 22:19 |
| 23 | 08:42 | | 10:17 (42) | 07:41 | | 06:31 | | 06:55 (14) | 06:13 | | 07:06 (34) | 05:13 | | 07:11 (34) | 04:53 |
| | 16:50 | 24 | 10:41 (42) | 17:55 | | 18:52 | 9 | 07:04 (14) | 20:53 | 36 | 07:42 (34) | 21:49 | 20 | 07:31 (34) | 22:19 |
| 24 | 08:41 | | 10:18 (42) | 07:39 | | 06:28 | | 06:55 (14) | 06:11 | | 07:05 (34) | 05:12 | | 07:13 (34) | 04:53 |
| | 16:52 | 21 | 10:39 (42) | 17:57 | | 18:54 | 8 | 07:03 (14) | 20:55 | 38 | 07:43 (34) | 21:51 | 16 | 07:29 (34) | 22:19 |
| 25 | 08:39 | | 10:20 (42) | 07:36 | | 06:26 | | | 06:09 | | 07:03 (34) | 05:10 | | 07:15 (34) | 04:53 |
| | 16:54 | 18 | 10:38 (42) | 17:59 | | 18:56 | | | 20:57 | 40 | 07:43 (34) | 21:52 | 11 | 07:26 (34) | 22:19 |
| 26 | 08:38 | | 10:21 (42) | 07:34 | | 06:23 | | | 06:06 | | 07:03 (34) | 05:09 | | | 04:54 |
| | 16:56 | 15 | 10:36 (42) | 18:01 | | 18:58 | | | 20:59 | 46 | 20:28 (31) | 21:54 | | | 22:19 |
| 27 | 08:36 | | 10:25 (42) | 07:31 | | 06:21 | | | 06:04 | | 07:02 (34) | 05:08 | | | 04:54 |
| | 16:58 | 9 | 10:34 (42) | 18:03 | | 19:00 | | | 21:01 | 52 | 20:30 (31) | 21:55 | | | 22:19 |
| 28 | 08:34 | | | 07:29 | | 06:18 | | | 06:02 | | 07:02 (34) | 05:06 | | | 04:55 |
| | 17:00 | | | 18:05 | | 19:02 | | | 21:03 | 57 | 20:32 (31) | 21:57 | | | 22:19 |
| 29 | 08:33 | | | | | 07:16 | | | 05:59 | | 07:01 (34) | 05:05 | | | 04:55 |
| | 17:02 | | | | | 20:04 | | | 21:05 | 61 | 20:34 (31) | 21:58 | | | 22:19 |
| 30 | 08:31 | | | | | 07:13 | | | 05:57 | | 07:01 (34) | 05:04 | | | 04:56 |
| | 17:04 | | | | | 20:06 | | | 21:07 | 64 | 20:36 (31) | 22:00 | | | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | | | |
| | 17:06 | | | | | 20:08 | | | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 773 | | | | | 32 | | | 800 | | | 1154 | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,53 | | | | | 1,00 | | | 0,98 | | | 0,97 | | |
| Total reduction | | 0,09 | | | | | 0,31 | | | 0,35 | | | 0,45 | | |
| Total, real | | 66 | | | | | 10 | | | 278 | | | 521 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:12 (34) | 06:38 | | 19:30 (3) | 07:35 | 07:37 | | | 08:35 | | 09:50 (42) |
| | 22:18 | | | 21:40 | 55 | 20:43 (31) | 20:29 | 20 | 19:50 (3) | 19:12 | 16:58 | | | 16:10 | 33 | 10:23 (42) |
| 2 | 04:57 | | | 05:41 | | 07:10 (34) | 06:40 | | 19:30 (3) | 07:37 | 07:39 | | | 08:37 | | 09:51 (42) |
| | 22:18 | | | 21:38 | 59 | 20:43 (31) | 20:27 | 20 | 19:50 (3) | 19:09 | 16:56 | | | 16:09 | 32 | 10:23 (42) |
| 3 | 04:58 | | | 05:43 | | 07:10 (34) | 06:42 | | 19:29 (3) | 07:38 | 07:41 | | | 08:38 | | 09:51 (42) |
| | 22:17 | | | 21:36 | 62 | 20:44 (31) | 20:24 | 22 | 19:51 (3) | 19:07 | 16:54 | | | 16:08 | 33 | 10:24 (42) |
| 4 | 04:59 | | | 05:45 | | 07:10 (34) | 06:43 | | 19:29 (3) | 07:40 | 07:43 | | | 08:40 | | 09:51 (42) |
| | 22:17 | | | 21:34 | 64 | 20:45 (31) | 20:22 | 22 | 19:51 (3) | 19:04 | 16:51 | | | 16:07 | 33 | 10:24 (42) |
| 5 | 05:00 | | | 05:47 | | 07:10 (34) | 06:45 | | 07:19 (12) | 07:42 | 07:45 | | | 08:41 | | 09:52 (42) |
| | 22:16 | | | 21:32 | 65 | 20:46 (31) | 20:19 | 27 | 19:50 (3) | 19:02 | 16:49 | | | 16:07 | 32 | 10:24 (42) |
| 6 | 05:01 | | | 05:49 | | 07:09 (34) | 06:47 | | 07:16 (12) | 07:44 | 07:47 | | | 08:43 | | 09:53 (42) |
| | 22:15 | | | 21:30 | 66 | 20:45 (31) | 20:17 | 29 | 19:47 (3) | 18:59 | 16:47 | | | 16:06 | 32 | 10:25 (42) |
| 7 | 05:02 | | | 05:51 | | 07:09 (34) | 06:49 | | 07:17 (12) | 07:46 | 07:49 | | | 08:44 | | 09:53 (42) |
| | 22:15 | | | 21:28 | 67 | 20:46 (31) | 20:14 | 27 | 19:45 (3) | 18:57 | 16:45 | | | 16:06 | 32 | 10:25 (42) |
| 8 | 05:03 | | | 05:52 | | 07:09 (34) | 06:51 | | 07:19 (12) | 07:48 | 07:51 | | | 08:46 | | 09:54 (42) |
| | 22:14 | | | 21:26 | 67 | 20:46 (31) | 20:12 | 21 | 19:42 (3) | 18:54 | 16:43 | | | 16:05 | 32 | 10:26 (42) |
| 9 | 05:04 | | | 05:54 | | 07:08 (34) | 06:53 | | 07:21 (12) | 07:50 | 07:53 | | | 08:47 | | 09:54 (42) |
| | 22:13 | | | 21:24 | 68 | 20:45 (31) | 20:09 | 16 | 19:40 (3) | 18:52 | 16:42 | | | 16:05 | 32 | 10:26 (42) |
| 10 | 05:06 | | | 05:56 | | 07:09 (34) | 06:55 | | 07:23 (12) | 07:52 | 07:55 | | | 08:48 | | 09:54 (42) |
| | 22:12 | | | 21:21 | 67 | 20:45 (31) | 20:06 | 10 | 19:38 (3) | 18:49 | 16:40 | | | 16:04 | 32 | 10:26 (42) |
| 11 | 05:07 | | | 05:58 | | 07:09 (34) | 06:57 | | 19:33 (3) | 07:54 | 07:57 | | | 08:49 | | 09:55 (42) |
| | 22:11 | | | 21:19 | 66 | 20:45 (31) | 20:04 | 1 | 19:34 (3) | 18:47 | 16:38 | | | 16:04 | 32 | 10:27 (42) |
| 12 | 05:08 | | | 06:00 | | 07:09 (34) | 06:59 | | | 07:56 | 07:59 | | | 08:51 | | 09:55 (42) |
| | 22:10 | | | 21:17 | 65 | 20:44 (31) | 20:01 | | | 18:44 | 16:36 | | | 16:04 | 32 | 10:27 (41) |
| 13 | 05:09 | | | 06:02 | | 07:08 (34) | 07:00 | | | 07:58 | 08:01 | | | 08:52 | | 09:56 (42) |
| | 22:09 | | | 21:15 | 64 | 20:43 (31) | 19:59 | | | 18:42 | 16:34 | | | 16:04 | 32 | 10:28 (41) |
| 14 | 05:11 | | | 06:04 | | 07:09 (34) | 07:02 | | | 08:00 | 08:03 | | | 08:53 | | 09:56 (42) |
| | 22:08 | | | 21:13 | 59 | 20:41 (31) | 19:56 | | | 18:39 | 16:33 | | | 16:04 | 33 | 10:29 (41) |
| 15 | 05:12 | | | 06:05 | | 07:09 (34) | 07:04 | | | 08:02 | 08:05 | | 09:57 (42) | 08:54 | | 09:57 (42) |
| | 22:07 | | | 21:10 | 56 | 20:39 (31) | 19:53 | | | 18:37 | 16:31 | 9 | 10:06 (42) | 16:04 | 32 | 10:29 (41) |
| 16 | 05:13 | | | 06:07 | | 07:10 (34) | 07:06 | | | 08:04 | 08:07 | | 09:54 (42) | 08:55 | | 09:57 (42) |
| | 22:05 | | | 21:08 | 51 | 20:37 (31) | 19:51 | | | 18:34 | 16:29 | 15 | 10:09 (42) | 16:04 | 33 | 10:30 (41) |
| 17 | 05:15 | | | 06:09 | | 07:09 (34) | 07:08 | | | 08:06 | 08:09 | | 09:54 (42) | 08:55 | | 09:58 (42) |
| | 22:04 | | | 21:06 | 44 | 20:34 (31) | 19:48 | | | 18:32 | 16:28 | 18 | 10:12 (42) | 16:04 | 33 | 10:31 (41) |
| 18 | 05:16 | | 07:27 (34) | 06:11 | | 07:10 (34) | 07:10 | | | 08:08 | 08:11 | | 09:52 (42) | 08:56 | | 09:59 (42) |
| | 22:03 | 7 | 07:34 (34) | 21:03 | 39 | 07:49 (34) | 19:46 | | | 18:30 | 16:26 | 21 | 10:13 (42) | 16:04 | 33 | 10:32 (41) |
| 19 | 05:18 | | 07:24 (34) | 06:13 | | 07:11 (34) | 07:12 | | 07:42 (14) | 08:10 | 08:13 | | 09:51 (42) | 08:57 | | 09:59 (42) |
| | 22:01 | 14 | 07:38 (34) | 21:01 | 38 | 07:49 (34) | 19:43 | 7 | 07:49 (14) | 18:27 | 16:24 | 24 | 10:15 (42) | 16:04 | 33 | 10:32 (41) |
| 20 | 05:19 | | 07:22 (34) | 06:15 | | 07:12 (34) | 07:14 | | 07:41 (14) | 08:12 | 08:15 | | 09:50 (42) | 08:58 | | 09:59 (42) |
| | 22:00 | 18 | 07:40 (34) | 20:59 | 36 | 07:48 (34) | 19:40 | 9 | 07:50 (14) | 18:25 | 16:23 | 26 | 10:16 (42) | 16:04 | 33 | 10:32 (41) |
| 21 | 05:21 | | 07:21 (34) | 06:17 | | 07:13 (34) | 07:15 | | 07:43 (14) | 08:14 | 08:17 | | 09:50 (42) | 08:58 | | 10:00 (42) |
| | 21:59 | 21 | 07:42 (34) | 20:56 | 33 | 07:46 (34) | 19:38 | 8 | 07:51 (14) | 18:22 | 16:22 | 27 | 10:17 (42) | 16:05 | 33 | 10:33 (41) |
| 22 | 05:22 | | 07:19 (34) | 06:19 | | 07:14 (34) | 07:17 | | 07:45 (14) | 08:16 | 08:19 | | 09:49 (42) | 08:59 | | 10:00 (42) |
| | 21:57 | 24 | 07:43 (34) | 20:54 | 30 | 07:44 (34) | 19:35 | 6 | 07:51 (14) | 18:20 | 16:20 | 28 | 10:17 (42) | 16:05 | 33 | 10:33 (41) |
| 23 | 05:24 | | 07:19 (34) | 06:21 | | 07:15 (34) | 07:19 | | 07:47 (14) | 08:18 | 08:21 | | 09:50 (42) | 08:59 | | 10:01 (42) |
| | 21:55 | 26 | 07:45 (34) | 20:52 | 27 | 07:42 (34) | 19:33 | 3 | 07:50 (14) | 18:18 | 16:19 | 29 | 10:19 (42) | 16:06 | 33 | 10:34 (41) |
| 24 | 05:26 | | 07:17 (34) | 06:23 | | 07:17 (34) | 07:21 | | 07:49 (14) | 08:20 | 08:23 | | 09:50 (42) | 09:00 | | 10:01 (42) |
| | 21:54 | 29 | 07:46 (34) | 20:49 | 23 | 07:40 (34) | 19:30 | 1 | 07:50 (14) | 18:15 | 16:17 | 30 | 10:20 (42) | 16:06 | 33 | 10:34 (41) |
| 25 | 05:27 | | 07:17 (34) | 06:24 | | 07:20 (34) | 07:23 | | | 07:22 | 08:25 | | 09:50 (42) | 09:00 | | 10:01 (42) |
| | 21:52 | 30 | 07:47 (34) | 20:47 | 17 | 07:37 (34) | 19:28 | | | 17:13 | 16:16 | 30 | 10:20 (42) | 16:07 | 33 | 10:34 (41) |
| 26 | 05:29 | | 07:15 (34) | 06:26 | | 07:25 (34) | 07:25 | | | 07:24 | 08:26 | | 09:50 (42) | 09:00 | | 10:02 (42) |
| | 21:51 | 33 | 07:48 (34) | 20:44 | 8 | 07:33 (34) | 19:25 | | | 17:11 | 16:15 | 31 | 10:21 (42) | 16:08 | 33 | 10:35 (41) |
| 27 | 05:31 | | 07:15 (34) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | 09:50 (42) | 09:01 | | 10:02 (42) |
| | 21:49 | 34 | 07:49 (34) | 20:42 | | | 19:22 | | | 17:09 | 16:14 | 31 | 10:21 (42) | 16:09 | 33 | 10:35 (41) |
| 28 | 05:32 | | 07:14 (34) | 06:30 | | 19:39 (3) | 07:29 | | | 07:28 | 08:30 | | 09:50 (42) | 09:01 | | 10:02 (42) |
| | 21:47 | 35 | 07:49 (34) | 20:39 | 5 | 19:44 (3) | 19:20 | | | 17:06 | 16:13 | 32 | 10:22 (42) | 16:09 | 33 | 10:35 (41) |
| 29 | 05:34 | | 07:13 (34) | 06:32 | | 19:36 (3) | 07:31 | | | 07:30 | 08:32 | | 09:50 (42) | 09:01 | | 10:03 (42) |
| | 21:45 | 41 | 20:37 (31) | 20:37 | 12 | 19:48 (3) | 19:17 | | | 17:04 | 16:12 | 33 | 10:23 (42) | 16:10 | 32 | 10:35 (41) |
| 30 | 05:36 | | 07:13 (34) | 06:34 | | 19:34 (3) | 07:33 | | | 07:32 | 08:33 | | 09:50 (42) | 09:01 | | 10:03 (42) |
| | 21:43 | 48 | 20:40 (31) | 20:34 | 15 | 19:49 (3) | 19:15 | | | 17:02 | 16:11 | 32 | 10:22 (42) | 16:11 | 33 | 10:36 (41) |
| 31 | 05:38 | | 07:12 (34) | 06:36 | | 19:32 (3) | | | | 07:35 | | | | 09:01 | | 10:04 (42) |
| | 21:42 | 53 | 20:41 (31) | 20:32 | 18 | 19:50 (3) | | | | 17:00 | | | | 16:12 | 32 | 10:36 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 413 | | | 1346 | | | 249 | | | | 416 | | | 1010 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,97 | | | 1,00 | | | | 0,53 | | | 0,52 | |
| Total reduction | | 0,43 | | | 0,45 | | | 0,35 | | | | 0,07 | | | 0,06 | |
| Total, real | | 176 | | | 606 | | | 88 | | | | 31 | | | 64 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:03 (42) | 07:27 | | | 07:08 | | 19:12 (48) | 05:55 | | 06:31 (34) | 05:02 | | |
| | 16:14 | | | 17:08 | 20 | 09:23 (42) | 18:07 | | | 20:10 | 19 | 19:31 (48) | 21:09 | 42 | 20:34 (3) | 22:02 | | |
| 2 | 09:01 | | | 08:26 | | 09:02 (42) | 07:24 | | | 07:05 | | 19:13 (48) | 05:53 | | 06:29 (34) | 05:01 | | |
| | 16:15 | | | 17:10 | 22 | 09:24 (42) | 18:09 | | | 20:12 | 18 | 19:31 (48) | 21:11 | 46 | 20:34 (3) | 22:04 | | |
| 3 | 09:00 | | | 08:24 | | 09:01 (42) | 07:22 | | | 07:03 | | 19:13 (48) | 05:51 | | 06:28 (34) | 05:00 | | |
| | 16:16 | | | 17:12 | 25 | 09:26 (42) | 18:11 | | | 20:13 | 16 | 19:29 (48) | 21:13 | 48 | 20:34 (3) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:01 (42) | 07:19 | | | 07:00 | | 19:14 (48) | 05:48 | | 06:27 (34) | 04:59 | | |
| | 16:17 | | | 17:14 | 26 | 09:27 (42) | 18:14 | | | 20:15 | 14 | 19:28 (48) | 21:14 | 50 | 20:34 (3) | 22:06 | | |
| 5 | 09:00 | | 09:35 (41) | 08:20 | | 09:00 (42) | 07:17 | | | 06:58 | | 19:16 (48) | 05:46 | | 06:26 (34) | 04:58 | | |
| | 16:19 | 2 | 09:37 (41) | 17:17 | 28 | 09:28 (42) | 18:16 | | | 20:17 | 9 | 19:25 (48) | 21:16 | 52 | 20:34 (3) | 22:07 | | |
| 6 | 08:59 | | 09:35 (41) | 08:18 | | 08:59 (42) | 07:14 | | | 06:55 | | | 05:44 | | 06:25 (34) | 04:57 | | |
| | 16:20 | 4 | 09:39 (41) | 17:19 | 28 | 09:27 (42) | 18:18 | | | 20:19 | | | 21:18 | 53 | 20:34 (3) | 22:08 | | |
| 7 | 08:59 | | 09:34 (41) | 08:16 | | 08:59 (42) | 07:12 | | | 06:53 | | | 05:42 | | 06:24 (34) | 04:56 | | 21:25 (31) |
| | 16:22 | 7 | 09:41 (41) | 17:21 | 29 | 09:28 (42) | 18:20 | | | 20:21 | | | 21:20 | 54 | 20:33 (3) | 22:10 | 2 | 21:27 (31) |
| 8 | 08:58 | | 09:33 (41) | 08:14 | | 08:59 (42) | 07:09 | | | 06:50 | | | 05:40 | | 06:24 (34) | 04:56 | | 21:22 (31) |
| | 16:23 | 9 | 09:42 (41) | 17:23 | 30 | 09:29 (42) | 18:22 | | | 20:23 | | | 21:22 | 54 | 20:33 (3) | 22:11 | 7 | 21:29 (31) |
| 9 | 08:57 | | 09:32 (41) | 08:12 | | 08:59 (42) | 07:07 | | | 06:48 | | | 05:38 | | 06:23 (34) | 04:55 | | 21:22 (31) |
| | 16:25 | 11 | 09:43 (41) | 17:25 | 30 | 09:29 (42) | 18:24 | | | 20:25 | | | 21:24 | 54 | 20:32 (3) | 22:12 | 9 | 21:31 (31) |
| 10 | 08:57 | | 09:31 (41) | 08:10 | | 08:59 (42) | 07:04 | | | 06:45 | | | 05:36 | | 06:23 (34) | 04:54 | | 21:21 (31) |
| | 16:26 | 13 | 09:44 (41) | 17:27 | 30 | 09:29 (42) | 18:26 | | | 20:27 | | | 21:26 | 52 | 20:31 (3) | 22:12 | 11 | 21:32 (31) |
| 11 | 08:56 | | 09:30 (41) | 08:08 | | 08:58 (42) | 07:02 | | | 06:43 | | | 05:34 | | 06:22 (34) | 04:54 | | 21:21 (31) |
| | 16:28 | 15 | 09:45 (41) | 17:29 | 31 | 09:29 (42) | 18:28 | | | 20:29 | | | 21:28 | 52 | 20:30 (3) | 22:13 | 12 | 21:33 (31) |
| 12 | 08:55 | | 09:29 (41) | 08:06 | | 08:59 (42) | 06:59 | | | 06:40 | | | 05:32 | | 06:23 (34) | 04:53 | | 21:21 (31) |
| | 16:29 | 17 | 09:46 (41) | 17:32 | 30 | 09:29 (42) | 18:30 | | | 20:31 | | | 21:30 | 49 | 20:30 (3) | 22:14 | 13 | 21:34 (31) |
| 13 | 08:54 | | 09:28 (41) | 08:04 | | 08:59 (42) | 06:57 | | | 06:38 | | | 05:30 | | 06:23 (34) | 04:53 | | 21:20 (31) |
| | 16:31 | 19 | 09:47 (41) | 17:34 | 30 | 09:29 (42) | 18:32 | | | 20:33 | | | 21:32 | 47 | 20:29 (3) | 22:15 | 14 | 21:34 (31) |
| 14 | 08:53 | | 09:28 (41) | 08:02 | | 09:00 (42) | 06:54 | | | 06:35 | | | 05:28 | | 06:23 (34) | 04:53 | | 21:20 (31) |
| | 16:33 | 20 | 09:48 (41) | 17:36 | 29 | 09:29 (42) | 18:34 | | | 20:35 | | | 21:33 | 44 | 20:27 (3) | 22:16 | 15 | 21:35 (31) |
| 15 | 08:52 | | 09:28 (41) | 07:59 | | 09:00 (42) | 06:52 | | | 06:33 | | | 05:27 | | 06:24 (34) | 04:52 | | 21:20 (31) |
| | 16:35 | 21 | 09:49 (41) | 17:38 | 27 | 09:27 (42) | 18:36 | | | 20:37 | | | 21:35 | 40 | 20:26 (3) | 22:16 | 15 | 21:35 (31) |
| 16 | 08:51 | | 09:28 (41) | 07:57 | | 09:01 (42) | 06:49 | | | 06:30 | | | 05:25 | | 06:23 (34) | 04:52 | | 21:20 (31) |
| | 16:36 | 21 | 09:49 (41) | 17:40 | 26 | 09:27 (42) | 18:38 | | | 20:39 | | | 21:37 | 35 | 20:23 (3) | 22:17 | 16 | 21:36 (31) |
| 17 | 08:50 | | 09:28 (41) | 07:55 | | 09:02 (42) | 06:46 | | | 06:28 | | | 05:23 | | 06:24 (34) | 04:52 | | 21:20 (31) |
| | 16:38 | 22 | 09:50 (41) | 17:42 | 24 | 09:26 (42) | 18:40 | | | 20:41 | | | 21:39 | 27 | 06:51 (34) | 22:17 | 16 | 21:36 (31) |
| 18 | 08:49 | | 09:28 (41) | 07:53 | | 09:03 (42) | 06:44 | | | 06:25 | | | 05:21 | | 06:24 (34) | 04:52 | | 21:20 (31) |
| | 16:40 | 22 | 09:50 (41) | 17:44 | 21 | 09:24 (42) | 18:42 | | | 20:43 | | | 21:41 | 27 | 06:51 (34) | 22:18 | 17 | 21:37 (31) |
| 19 | 08:48 | | 09:28 (41) | 07:50 | | 09:05 (42) | 06:41 | | | 06:23 | | | 05:20 | | 06:25 (34) | 04:52 | | 21:20 (31) |
| | 16:42 | 23 | 09:51 (41) | 17:46 | 18 | 09:23 (42) | 18:44 | | | 20:45 | | | 21:42 | 26 | 06:51 (34) | 22:18 | 17 | 21:37 (31) |
| 20 | 08:46 | | 09:28 (41) | 07:48 | | 09:07 (42) | 06:39 | | | 06:20 | | | 05:18 | | 06:25 (34) | 04:52 | | 21:20 (31) |
| | 16:44 | 23 | 09:51 (41) | 17:49 | 12 | 09:19 (42) | 18:46 | | | 20:47 | | | 21:44 | 24 | 06:49 (34) | 22:19 | 17 | 21:37 (31) |
| 21 | 08:45 | | 09:29 (41) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:27 (34) | 04:52 | | 21:20 (31) |
| | 16:46 | 23 | 09:52 (41) | 17:51 | | | 18:48 | | | 20:49 | | | 21:46 | 22 | 06:49 (34) | 22:19 | 17 | 21:37 (31) |
| 22 | 08:44 | | 09:29 (41) | 07:43 | | | 06:34 | | | 06:16 | | | 05:15 | | 06:27 (34) | 04:52 | | 21:21 (31) |
| | 16:48 | 22 | 09:51 (41) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 21 | 06:48 (34) | 22:19 | 17 | 21:38 (31) |
| 23 | 08:42 | | 09:30 (41) | 07:41 | | | 06:31 | | | 06:13 | | | 05:13 | | 06:28 (34) | 04:53 | | 21:21 (31) |
| | 16:50 | 22 | 09:52 (41) | 17:55 | | | 18:52 | | | 20:53 | | | 21:49 | 19 | 06:47 (34) | 22:19 | 17 | 21:38 (31) |
| 24 | 08:41 | | 09:30 (41) | 07:39 | | | 06:28 | | 18:22 (48) | 06:11 | | 20:17 (3) | 05:12 | | 06:29 (34) | 04:53 | | 21:21 (31) |
| | 16:52 | 22 | 09:52 (41) | 17:57 | | | 18:54 | 5 | 18:27 (48) | 20:55 | 8 | 20:25 (3) | 21:51 | 18 | 06:47 (34) | 22:19 | 17 | 21:38 (31) |
| 25 | 08:39 | | 09:31 (41) | 07:36 | | | 06:26 | | 18:18 (48) | 06:09 | | 20:13 (3) | 05:10 | | 06:30 (34) | 04:53 | | 21:22 (31) |
| | 16:54 | 20 | 09:51 (41) | 17:59 | | | 18:56 | 10 | 18:28 (48) | 20:57 | 13 | 20:26 (3) | 21:52 | 15 | 06:45 (34) | 22:19 | 16 | 21:38 (31) |
| 26 | 08:38 | | 09:31 (41) | 07:34 | | | 06:23 | | 18:16 (48) | 06:06 | | 20:12 (3) | 05:09 | | 06:31 (34) | 04:54 | | 21:22 (31) |
| | 16:56 | 20 | 09:51 (41) | 18:01 | | | 18:58 | 15 | 18:31 (48) | 20:59 | 16 | 20:28 (3) | 21:54 | 13 | 06:44 (34) | 22:19 | 16 | 21:38 (31) |
| 27 | 08:36 | | 09:33 (41) | 07:32 | | | 06:21 | | 18:14 (48) | 06:04 | | 20:10 (3) | 05:08 | | 06:33 (34) | 04:54 | | 21:23 (31) |
| | 16:58 | 18 | 09:51 (41) | 18:03 | | | 19:00 | 18 | 18:32 (48) | 21:01 | 20 | 20:30 (3) | 21:55 | 9 | 06:42 (34) | 22:19 | 16 | 21:39 (31) |
| 28 | 08:34 | | 09:34 (41) | 07:29 | | | 06:18 | | 18:13 (48) | 06:02 | | 20:09 (3) | 05:06 | | | 04:55 | | 21:23 (31) |
| | 17:00 | 16 | 09:50 (41) | 18:05 | | | 19:02 | 19 | 18:32 (48) | 21:03 | 23 | 20:32 (3) | 21:57 | | | 22:19 | 15 | 21:38 (31) |
| 29 | 08:33 | | 09:11 (42) | | | | 07:16 | | 19:13 (48) | 05:59 | | 20:09 (3) | 05:05 | | | 04:55 | | 21:24 (31) |
| | 17:02 | 16 | 09:49 (41) | | | | 20:04 | 20 | 19:33 (48) | 21:05 | 24 | 20:33 (3) | 21:58 | | | 22:19 | 14 | 21:38 (31) |
| 30 | 08:31 | | 09:07 (42) | | | | 07:13 | | 19:12 (48) | 05:57 | | 06:33 (34) | 05:04 | | | 04:56 | | 21:24 (31) |
| | 17:04 | 21 | 09:47 (41) | | | | 20:06 | 20 | 19:32 (48) | 21:07 | 37 | 20:34 (3) | 22:00 | | | 22:18 | 13 | 21:37 (31) |
| 31 | 08:29 | | 09:05 (42) | | | | 07:10 | | 19:12 (48) | | | | 05:03 | | | | | |
| | 17:06 | 16 | 09:21 (42) | | | | 20:08 | 20 | 19:32 (48) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 465 | | | 516 | | | 127 | | | 217 | | | 993 | | | 339 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,79 | | | 1,00 | | | 0,96 | | | 0,94 | | | 0,80 | |
| Total reduction | | 0,12 | | | 0,19 | | | 0,33 | | | 0,37 | | | 0,47 | | | 0,37 | |
| Total, real | | 56 | | | 96 | | | 42 | | | 79 | | | 463 | | | 126 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:25 (31) | 05:40 | | 06:34 (34) | 06:38 | | | 07:35 | | | 07:37 | | 08:29 (42) | 08:35 | | 09:12 (41) |
| | 22:18 | 12 | 21:37 (31) | 21:40 | 50 | 20:41 (3) | 20:29 | | | 19:12 | | | 16:58 | 30 | 08:59 (42) | 16:10 | 15 | 09:27 (41) |
| 2 | 04:58 | | 21:26 (31) | 05:41 | | 06:33 (34) | 06:40 | | | 07:37 | | | 07:39 | | 08:28 (42) | 08:37 | | 09:14 (41) |
| | 22:18 | 11 | 21:37 (31) | 21:38 | 52 | 20:41 (3) | 20:27 | | | 19:10 | | | 16:56 | 31 | 08:59 (42) | 16:09 | 13 | 09:27 (41) |
| 3 | 04:58 | | 21:27 (31) | 05:43 | | 06:33 (34) | 06:42 | | | 07:38 | | | 07:41 | | 08:28 (42) | 08:38 | | 09:16 (41) |
| | 22:17 | 10 | 21:37 (31) | 21:36 | 53 | 20:42 (3) | 20:24 | | | 19:07 | | | 16:54 | 30 | 08:58 (42) | 16:08 | 11 | 09:27 (41) |
| 4 | 04:59 | | 21:27 (31) | 05:45 | | 06:34 (34) | 06:43 | | | 07:40 | | | 07:43 | | 08:28 (42) | 08:40 | | 09:17 (41) |
| | 22:17 | 8 | 21:35 (31) | 21:34 | 53 | 20:43 (3) | 20:22 | | | 19:04 | | | 16:51 | 30 | 08:58 (42) | 16:07 | 9 | 09:26 (41) |
| 5 | 05:00 | | 21:29 (31) | 05:47 | | 06:34 (34) | 06:45 | | | 07:42 | | | 07:45 | | 08:30 (42) | 08:41 | | 09:19 (41) |
| | 22:16 | 5 | 21:34 (31) | 21:32 | 54 | 20:43 (3) | 20:19 | | | 19:02 | | | 16:49 | 28 | 08:58 (42) | 16:07 | 7 | 09:26 (41) |
| 6 | 05:01 | | | 05:49 | | 06:34 (34) | 06:47 | | | 07:44 | | | 07:47 | | 08:30 (42) | 08:43 | | 09:21 (41) |
| | 22:15 | | | 21:30 | 54 | 20:43 (3) | 20:17 | | | 18:59 | | | 16:47 | 27 | 08:57 (42) | 16:06 | 5 | 09:26 (41) |
| 7 | 05:02 | | | 05:51 | | 06:35 (34) | 06:49 | | 19:11 (48) | 07:46 | | | 07:49 | | 08:31 (42) | 08:44 | | 09:22 (41) |
| | 22:15 | | | 21:28 | 53 | 20:43 (3) | 20:14 | 9 | 19:20 (48) | 18:57 | | | 16:45 | 25 | 08:56 (42) | 16:06 | 2 | 09:24 (41) |
| 8 | 05:03 | | | 05:52 | | 06:35 (34) | 06:51 | | 19:09 (48) | 07:48 | | | 07:51 | | 08:31 (42) | 08:46 | | |
| | 22:14 | | | 21:26 | 53 | 20:44 (3) | 20:12 | 13 | 19:22 (48) | 18:54 | | | 16:44 | 24 | 08:55 (42) | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 06:35 (34) | 06:53 | | 19:07 (48) | 07:50 | | | 07:53 | | 08:33 (42) | 08:47 | | |
| | 22:13 | | | 21:24 | 51 | 20:43 (3) | 20:09 | 16 | 19:23 (48) | 18:52 | | | 16:42 | 22 | 08:55 (42) | 16:05 | | |
| 10 | 05:06 | | | 05:56 | | 06:37 (34) | 06:55 | | 19:06 (48) | 07:52 | | | 07:55 | | 08:34 (42) | 08:48 | | |
| | 22:12 | | | 21:21 | 49 | 20:43 (3) | 20:06 | 18 | 19:24 (48) | 18:49 | | | 16:40 | 20 | 08:54 (42) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 06:38 (34) | 06:57 | | 19:04 (48) | 07:54 | | | 07:57 | | 08:36 (42) | 08:49 | | |
| | 22:11 | | | 21:19 | 45 | 20:43 (3) | 20:04 | 19 | 19:23 (48) | 18:47 | | | 16:38 | 16 | 08:52 (42) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 06:40 (34) | 06:59 | | 19:03 (48) | 07:56 | | | 07:59 | | 08:38 (42) | 08:51 | | |
| | 22:10 | | | 21:17 | 42 | 20:43 (3) | 20:01 | 21 | 19:24 (48) | 18:44 | | | 16:36 | 20 | 09:18 (41) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 06:42 (34) | 07:00 | | 19:03 (48) | 07:58 | | | 08:01 | | 09:08 (41) | 08:52 | | |
| | 22:09 | | | 21:15 | 34 | 20:41 (3) | 19:59 | 20 | 19:23 (48) | 18:42 | | | 16:34 | 13 | 09:21 (41) | 16:04 | | |
| 14 | 05:11 | | | 06:04 | | 20:16 (3) | 07:02 | | 19:03 (48) | 08:00 | | | 08:03 | | 09:06 (41) | 08:53 | | |
| | 22:08 | | | 21:13 | 25 | 20:41 (3) | 19:56 | 20 | 19:23 (48) | 18:39 | | | 16:33 | 16 | 09:22 (41) | 16:04 | | |
| 15 | 05:12 | | | 06:06 | | 20:17 (3) | 07:04 | | 19:03 (48) | 08:02 | | | 08:05 | | 09:05 (41) | 08:54 | | |
| | 22:07 | | | 21:10 | 22 | 20:39 (3) | 19:53 | 19 | 19:22 (48) | 18:37 | | | 16:31 | 18 | 09:23 (41) | 16:04 | | |
| 16 | 05:13 | | 06:44 (34) | 06:07 | | 20:18 (3) | 07:06 | | 19:04 (48) | 08:04 | | | 08:07 | | 09:04 (41) | 08:55 | | |
| | 22:05 | 6 | 06:50 (34) | 21:08 | 19 | 20:37 (3) | 19:51 | 18 | 19:22 (48) | 18:34 | | | 16:29 | 20 | 09:24 (41) | 16:04 | | |
| 17 | 05:15 | | 06:42 (34) | 06:09 | | 20:18 (3) | 07:08 | | 19:05 (48) | 08:06 | | | 08:09 | | 09:05 (41) | 08:55 | | |
| | 22:04 | 11 | 06:53 (34) | 21:06 | 16 | 20:34 (3) | 19:48 | 15 | 19:20 (48) | 18:32 | | | 16:28 | 20 | 09:25 (41) | 16:04 | | |
| 18 | 05:16 | | 06:40 (34) | 06:11 | | 20:20 (3) | 07:10 | | 19:05 (48) | 08:08 | | | 08:11 | | 09:04 (41) | 08:56 | | |
| | 22:03 | 14 | 06:54 (34) | 21:03 | 12 | 20:32 (3) | 19:46 | 11 | 19:16 (48) | 18:30 | | | 16:26 | 22 | 09:26 (41) | 16:04 | | |
| 19 | 05:18 | | 06:39 (34) | 06:13 | | 20:23 (3) | 07:12 | | 19:07 (48) | 08:10 | | | 08:13 | | 09:04 (41) | 08:57 | | |
| | 22:01 | 17 | 06:56 (34) | 21:01 | 7 | 20:30 (3) | 19:43 | 7 | 19:14 (48) | 18:27 | | | 16:24 | 22 | 09:26 (41) | 16:04 | | |
| 20 | 05:19 | | 06:38 (34) | 06:15 | | | 07:14 | | | 08:12 | | | 08:15 | | 09:04 (41) | 08:58 | | |
| | 22:00 | 19 | 06:57 (34) | 20:59 | | | 19:41 | | | 18:25 | | | 16:23 | 22 | 09:26 (41) | 16:04 | | |
| 21 | 05:21 | | 06:38 (34) | 06:17 | | | 07:16 | | | 08:14 | | 09:41 (42) | 08:17 | | 09:04 (41) | 08:58 | | |
| | 21:59 | 20 | 06:58 (34) | 20:56 | | | 19:38 | | | 18:22 | 6 | 09:47 (42) | 16:22 | 23 | 09:27 (41) | 16:05 | | |
| 22 | 05:23 | | 06:37 (34) | 06:19 | | | 07:17 | | | 08:16 | | 09:36 (42) | 08:19 | | 09:04 (41) | 08:59 | | |
| | 21:57 | 22 | 06:59 (34) | 20:54 | | | 19:35 | | | 18:20 | 15 | 09:51 (42) | 16:20 | 23 | 09:27 (41) | 16:05 | | |
| 23 | 05:24 | | 06:37 (34) | 06:21 | | | 07:19 | | | 08:18 | | 09:35 (42) | 08:21 | | 09:05 (41) | 08:59 | | |
| | 21:55 | 23 | 07:00 (34) | 20:52 | | | 19:33 | | | 18:18 | 19 | 09:54 (42) | 16:19 | 23 | 09:28 (41) | 16:06 | | |
| 24 | 05:26 | | 06:36 (34) | 06:23 | | | 07:21 | | | 08:20 | | 09:33 (42) | 08:23 | | 09:06 (41) | 09:00 | | |
| | 21:54 | 24 | 07:00 (34) | 20:49 | | | 19:30 | | | 18:15 | 22 | 09:55 (42) | 16:18 | 22 | 09:28 (41) | 16:06 | | |
| 25 | 05:27 | | 06:36 (34) | 06:24 | | | 07:23 | | | 07:22 | | 08:32 (42) | 08:25 | | 09:06 (41) | 09:00 | | |
| | 21:52 | 25 | 07:01 (34) | 20:47 | | | 19:28 | | | 17:13 | 24 | 08:56 (42) | 16:16 | 22 | 09:28 (41) | 16:07 | | |
| 26 | 05:29 | | 06:35 (34) | 06:26 | | | 07:25 | | | 07:24 | | 08:30 (42) | 08:26 | | 09:07 (41) | 09:00 | | |
| | 21:51 | 26 | 07:01 (34) | 20:44 | | | 19:25 | | | 17:11 | 27 | 08:57 (42) | 16:15 | 21 | 09:28 (41) | 16:08 | | |
| 27 | 05:31 | | 06:35 (34) | 06:28 | | | 07:27 | | | 07:26 | | 08:29 (42) | 08:28 | | 09:07 (41) | 09:01 | | |
| | 21:49 | 27 | 07:02 (34) | 20:42 | | | 19:22 | | | 17:09 | 28 | 08:57 (42) | 16:14 | 21 | 09:28 (41) | 16:09 | | |
| 28 | 05:33 | | 06:34 (34) | 06:30 | | | 07:29 | | | 07:28 | | 08:29 (42) | 08:30 | | 09:08 (41) | 09:01 | | |
| | 21:47 | 38 | 20:35 (3) | 20:39 | | | 19:20 | | | 17:06 | 29 | 08:58 (42) | 16:13 | 20 | 09:28 (41) | 16:09 | | |
| 29 | 05:34 | | 06:34 (34) | 06:32 | | | 07:31 | | | 07:30 | | 08:29 (42) | 08:32 | | 09:09 (41) | 09:01 | | |
| | 21:45 | 41 | 20:37 (3) | 20:37 | | | 19:17 | | | 17:04 | 29 | 08:58 (42) | 16:12 | 19 | 09:28 (41) | 16:10 | | |
| 30 | 05:36 | | 06:34 (34) | 06:34 | | | 07:33 | | | 07:32 | | 08:28 (42) | 08:33 | | 09:10 (41) | 09:01 | | |
| | 21:44 | 46 | 20:39 (3) | 20:34 | | | 19:15 | | | 17:02 | 30 | 08:58 (42) | 16:11 | 17 | 09:27 (41) | 16:11 | | |
| 31 | 05:38 | | 06:33 (34) | 06:36 | | | | | | 07:35 | | 08:28 (42) | | | | 09:01 | | |
| | 21:42 | 48 | 20:40 (3) | 20:32 | | | | | | 17:00 | 30 | 08:58 (42) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 453 | | | 744 | | | 206 | | | 259 | | | 667 | | | 62 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,94 | | | 1,00 | | | 0,79 | | | 0,73 | | | 0,68 | |
| Total reduction | | 0,43 | | | 0,47 | | | 0,38 | | | 0,23 | | | 0,11 | | | 0,09 | |
| Total, real | | 195 | | | 347 | | | 78 | | | 60 | | | 74 | | | 6 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | | 07:27 | | 17:11 (39) | 07:08 | | 19:07 (48) | 05:55 | | 06:36 (34) | 05:02 | | 05:51 (4) |
| | 16:14 | | 17:08 | | | 18:07 | 19 | 17:30 (39) | 20:10 | 24 | 19:31 (48) | 21:09 | 24 | 07:00 (34) | 22:02 | 61 | 20:46 (3) |
| 2 | 09:01 | | 08:26 | | | 07:24 | | 17:12 (39) | 07:05 | | 19:07 (48) | 05:53 | | 06:36 (34) | 05:01 | | 05:51 (4) |
| | 16:15 | | 17:10 | | | 18:09 | 26 | 17:42 (47) | 20:12 | 24 | 19:31 (48) | 21:11 | 24 | 07:00 (34) | 22:04 | 60 | 20:46 (3) |
| 3 | 09:00 | | 08:24 | | | 07:22 | | 17:12 (39) | 07:03 | | 19:06 (48) | 05:51 | | 06:36 (34) | 05:00 | | 05:52 (4) |
| | 16:16 | | 17:12 | | | 18:11 | 29 | 17:43 (47) | 20:13 | 24 | 19:30 (48) | 21:13 | 34 | 20:38 (3) | 22:05 | 59 | 20:46 (3) |
| 4 | 09:00 | | 08:22 | | | 07:19 | | 17:14 (39) | 07:00 | | 19:07 (48) | 05:48 | | 06:36 (34) | 04:59 | | 05:52 (4) |
| | 16:18 | | 17:14 | | | 18:14 | 30 | 17:46 (47) | 20:15 | 22 | 19:29 (48) | 21:14 | 39 | 20:41 (3) | 22:06 | 58 | 20:46 (3) |
| 5 | 09:00 | | 08:20 | | | 07:17 | | 17:15 (39) | 06:58 | | 19:07 (48) | 05:46 | | 06:37 (34) | 04:58 | | 05:51 (4) |
| | 16:19 | | 17:17 | | | 18:16 | 28 | 17:47 (47) | 20:17 | 21 | 19:28 (48) | 21:16 | 41 | 20:42 (3) | 22:07 | 58 | 20:45 (3) |
| 6 | 08:59 | | 08:18 | | | 07:14 | | 17:27 (47) | 06:55 | | 19:08 (48) | 05:44 | | 06:37 (34) | 04:57 | | 05:51 (4) |
| | 16:20 | | 17:19 | | | 18:18 | 20 | 17:47 (47) | 20:19 | 19 | 19:27 (48) | 21:18 | 44 | 20:44 (3) | 22:08 | 57 | 20:44 (3) |
| 7 | 08:59 | | 08:16 | | 08:46 (42) | 07:12 | | 17:27 (47) | 06:53 | | 19:09 (48) | 05:42 | | 06:38 (34) | 04:56 | | 05:52 (4) |
| | 16:22 | | 17:21 | 9 | 08:55 (42) | 18:20 | 20 | 17:47 (47) | 20:21 | 16 | 19:25 (48) | 21:20 | 44 | 20:45 (3) | 22:10 | 54 | 20:44 (3) |
| 8 | 08:58 | | 08:14 | | 08:44 (42) | 07:09 | | 17:27 (47) | 06:50 | | 19:11 (48) | 05:40 | | 06:39 (34) | 04:56 | | 05:52 (4) |
| | 16:23 | | 17:23 | 14 | 08:58 (42) | 18:22 | 20 | 17:47 (47) | 20:23 | 12 | 19:23 (48) | 21:22 | 43 | 20:46 (3) | 22:11 | 53 | 20:43 (3) |
| 9 | 08:57 | | 08:12 | | 08:42 (42) | 07:07 | | 17:27 (47) | 06:48 | | 19:15 (48) | 05:38 | | 06:40 (34) | 04:55 | | 05:52 (4) |
| | 16:25 | | 17:25 | 18 | 09:00 (42) | 18:24 | 20 | 17:47 (47) | 20:25 | 2 | 19:17 (48) | 21:24 | 42 | 20:46 (3) | 22:12 | 53 | 20:43 (3) |
| 10 | 08:57 | | 08:10 | | 08:41 (42) | 07:04 | | 17:27 (47) | 06:45 | | | 05:36 | | 06:41 (34) | 04:54 | | 05:52 (4) |
| | 16:26 | | 17:27 | 21 | 09:02 (42) | 18:26 | 19 | 17:46 (47) | 20:27 | | | 21:26 | 41 | 20:47 (3) | 22:12 | 50 | 20:42 (3) |
| 11 | 08:56 | | 08:08 | | 08:40 (42) | 07:02 | | 17:28 (47) | 06:43 | | | 05:34 | | 06:45 (34) | 04:54 | | 05:52 (4) |
| | 16:28 | | 17:29 | 22 | 09:02 (42) | 18:28 | 17 | 17:45 (47) | 20:29 | | | 21:28 | 34 | 20:47 (3) | 22:13 | 50 | 20:42 (3) |
| 12 | 08:55 | | 08:06 | | 08:39 (42) | 06:59 | | 17:28 (47) | 06:40 | | 19:54 (45) | 05:32 | | 20:16 (3) | 04:53 | | 05:53 (4) |
| | 16:29 | | 17:32 | 24 | 09:03 (42) | 18:30 | 16 | 17:44 (47) | 20:31 | 9 | 20:03 (45) | 21:30 | 32 | 20:48 (3) | 22:14 | 48 | 20:42 (3) |
| 13 | 08:54 | | 08:04 | | 08:39 (42) | 06:57 | | 17:29 (47) | 06:38 | | 19:51 (45) | 05:30 | | 20:15 (3) | 04:53 | | 05:52 (4) |
| | 16:31 | | 17:34 | 25 | 09:04 (42) | 18:32 | 12 | 17:41 (47) | 20:33 | 13 | 20:04 (45) | 21:32 | 33 | 20:48 (3) | 22:15 | 48 | 20:41 (3) |
| 14 | 08:53 | | 08:02 | | 08:39 (42) | 06:54 | | 17:33 (47) | 06:35 | | 19:50 (45) | 05:28 | | 20:15 (3) | 04:53 | | 05:53 (4) |
| | 16:33 | | 17:36 | 26 | 09:05 (42) | 18:34 | 5 | 17:38 (47) | 20:35 | 16 | 20:06 (45) | 21:33 | 33 | 20:48 (3) | 22:16 | 46 | 20:41 (3) |
| 15 | 08:52 | | 07:59 | | 08:38 (42) | 06:52 | | | 06:33 | | 19:49 (45) | 05:27 | | 06:04 (4) | 04:53 | | 05:53 (4) |
| | 16:35 | | 17:38 | 26 | 09:04 (42) | 18:36 | | | 20:37 | 18 | 20:07 (45) | 21:35 | 41 | 20:49 (3) | 22:16 | 46 | 20:41 (3) |
| 16 | 08:51 | | 07:57 | | 08:38 (42) | 06:49 | | | 06:30 | | 19:48 (45) | 05:25 | | 06:00 (4) | 04:52 | | 05:54 (4) |
| | 16:36 | | 17:40 | 27 | 09:05 (42) | 18:38 | | | 20:39 | 19 | 20:07 (45) | 21:37 | 48 | 20:49 (3) | 22:17 | 43 | 20:40 (3) |
| 17 | 08:50 | | 07:55 | | 08:39 (42) | 06:46 | | | 06:28 | | 19:47 (45) | 05:23 | | 05:59 (4) | 04:52 | | 05:54 (4) |
| | 16:38 | | 17:42 | 26 | 09:05 (42) | 18:40 | | | 20:41 | 21 | 20:08 (45) | 21:39 | 51 | 20:49 (3) | 22:17 | 42 | 20:40 (3) |
| 18 | 08:49 | | 07:53 | | 08:38 (42) | 06:44 | | | 06:25 | | 19:46 (45) | 05:21 | | 05:57 (4) | 04:52 | | 05:54 (4) |
| | 16:40 | | 17:44 | 26 | 09:04 (42) | 18:42 | | | 20:43 | 21 | 20:07 (45) | 21:41 | 54 | 20:49 (3) | 22:18 | 41 | 20:40 (3) |
| 19 | 08:48 | | 07:50 | | 08:39 (42) | 06:41 | | | 06:23 | | 19:47 (45) | 05:20 | | 05:56 (4) | 04:52 | | 05:54 (4) |
| | 16:42 | | 17:46 | 25 | 09:04 (42) | 18:44 | | | 20:45 | 20 | 20:07 (45) | 21:42 | 57 | 20:49 (3) | 22:18 | 40 | 20:39 (3) |
| 20 | 08:46 | | 07:48 | | 08:39 (42) | 06:39 | | | 06:20 | | 19:47 (45) | 05:18 | | 05:55 (4) | 04:52 | | 05:54 (4) |
| | 16:44 | | 17:49 | 24 | 09:03 (42) | 18:46 | | | 20:47 | 20 | 20:07 (45) | 21:44 | 59 | 20:49 (3) | 22:19 | 39 | 20:39 (3) |
| 21 | 08:45 | | 07:46 | | 08:40 (42) | 06:36 | | | 06:18 | | 19:47 (45) | 05:16 | | 05:54 (4) | 04:52 | | 05:54 (4) |
| | 16:46 | | 17:51 | 25 | 17:21 (39) | 18:48 | | | 20:49 | 19 | 20:06 (45) | 21:46 | 60 | 20:49 (3) | 22:19 | 40 | 20:39 (3) |
| 22 | 08:44 | | 07:43 | | 08:42 (42) | 06:34 | | | 06:16 | | 06:46 (34) | 05:15 | | 05:53 (4) | 04:52 | | 05:55 (4) |
| | 16:48 | | 17:53 | 27 | 17:24 (39) | 18:50 | | | 20:51 | 24 | 20:05 (45) | 21:47 | 61 | 20:48 (3) | 22:19 | 39 | 20:40 (3) |
| 23 | 08:42 | | 07:41 | | 08:42 (42) | 06:31 | | | 06:13 | | 06:43 (34) | 05:13 | | 05:53 (4) | 04:53 | | 05:55 (4) |
| | 16:50 | | 17:55 | 29 | 17:26 (39) | 18:52 | | | 20:53 | 28 | 20:04 (45) | 21:49 | 62 | 20:49 (3) | 22:19 | 39 | 20:40 (3) |
| 24 | 08:41 | | 07:39 | | 08:45 (42) | 06:28 | | | 06:11 | | 06:41 (34) | 05:12 | | 05:53 (4) | 04:53 | | 05:55 (4) |
| | 16:52 | | 17:57 | 27 | 17:28 (39) | 18:54 | | | 20:55 | 28 | 20:02 (45) | 21:51 | 63 | 20:49 (3) | 22:19 | 40 | 20:40 (3) |
| 25 | 08:39 | | 07:36 | | 17:12 (39) | 06:26 | | 18:17 (48) | 06:09 | | 06:40 (34) | 05:10 | | 05:53 (4) | 04:53 | | 05:56 (4) |
| | 16:54 | | 17:59 | 18 | 17:30 (39) | 18:56 | 8 | 18:25 (48) | 20:57 | 26 | 20:00 (45) | 21:52 | 63 | 20:49 (3) | 22:19 | 42 | 20:42 (3) |
| 26 | 08:38 | | 07:34 | | 17:12 (39) | 06:23 | | 18:14 (48) | 06:06 | | 06:38 (34) | 05:09 | | 05:52 (4) | 04:54 | | 05:56 (4) |
| | 16:56 | | 18:01 | 20 | 17:32 (39) | 18:58 | 14 | 18:28 (48) | 20:59 | 21 | 06:59 (34) | 21:54 | 62 | 20:48 (3) | 22:19 | 42 | 20:42 (3) |
| 27 | 08:36 | | 07:32 | | 17:11 (39) | 06:21 | | 18:12 (48) | 06:04 | | 06:37 (34) | 05:08 | | 05:51 (4) | 04:54 | | 05:56 (4) |
| | 16:58 | | 18:03 | 20 | 17:31 (39) | 19:00 | 17 | 18:29 (48) | 21:01 | 22 | 06:59 (34) | 21:55 | 64 | 20:48 (3) | 22:19 | 45 | 20:44 (3) |
| 28 | 08:35 | | 07:29 | | 17:11 (39) | 06:18 | | 18:10 (48) | 06:02 | | 06:37 (34) | 05:06 | | 05:51 (4) | 04:55 | | 05:56 (4) |
| | 17:00 | | 18:05 | 20 | 17:31 (39) | 19:02 | 20 | 18:30 (48) | 21:03 | 23 | 07:00 (34) | 21:57 | 62 | 20:47 (3) | 22:19 | 45 | 20:44 (3) |
| 29 | 08:33 | | | | | 07:16 | | 19:09 (48) | 05:59 | | 06:36 (34) | 05:05 | | 05:51 (4) | 04:55 | | 05:57 (4) |
| | 17:02 | | | | | 20:04 | 22 | 19:31 (48) | 21:05 | 24 | 07:00 (34) | 21:58 | 63 | 20:47 (3) | 22:19 | 46 | 20:45 (3) |
| 30 | 08:31 | | | | | 07:13 | | 19:08 (48) | 05:57 | | 06:36 (34) | 05:04 | | 05:51 (4) | 04:56 | | 05:56 (4) |
| | 17:04 | | | | | 20:06 | 23 | 19:31 (48) | 21:07 | 24 | 07:00 (34) | 22:00 | 62 | 20:47 (3) | 22:18 | 48 | 20:45 (3) |
| 31 | 08:29 | | | | | 07:10 | | 19:08 (48) | | | | 05:03 | | 05:51 (4) | | | |
| | 17:06 | | | | | 20:08 | 23 | 19:31 (48) | | | | 22:01 | 61 | 20:47 (3) | | | |
| Potential sun hours | 242 | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | 499 | | | 408 | | | 560 | | | 1501 | | | 1432 | |
| Sun reduction | | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,86 | | | 0,96 | | | 0,98 | | | 0,91 | | | 0,88 | |
| Total reduction | | | | 0,21 | | | 0,33 | | | 0,38 | | | 0,47 | | | 0,42 | |
| Total, real | | | | 106 | | | 134 | | | 216 | | | 704 | | | 608 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:57 (4) | 05:40 | | 20:27 (3) | 06:38 | | | 07:35 | | 18:08 (47) | 07:37 | | 08:11 (42) | 08:35 |
| | 22:18 | 49 | 20:46 (3) | 21:40 | 31 | 20:58 (3) | 20:29 | | | 19:12 | 14 | 18:22 (47) | 16:58 | 20 | 08:31 (42) | 16:10 |
| 2 | 04:58 | | 05:57 (4) | 05:41 | | 06:53 (34) | 06:40 | | | 07:37 | | 18:06 (47) | 07:39 | | 08:12 (42) | 08:37 |
| | 22:18 | 51 | 20:47 (3) | 21:38 | 38 | 20:57 (3) | 20:27 | | | 19:10 | 17 | 18:23 (47) | 16:56 | 18 | 08:30 (42) | 16:09 |
| 3 | 04:58 | | 05:58 (4) | 05:43 | | 06:51 (34) | 06:42 | | 19:14 (48) | 07:38 | | 18:05 (47) | 07:41 | | 08:14 (42) | 08:38 |
| | 22:17 | 51 | 20:48 (3) | 21:36 | 42 | 20:57 (3) | 20:24 | 1 | 19:15 (48) | 19:07 | 18 | 18:23 (47) | 16:54 | 14 | 08:28 (42) | 16:08 |
| 4 | 04:59 | | 05:57 (4) | 05:45 | | 06:50 (34) | 06:43 | | 19:08 (48) | 07:40 | | 18:04 (47) | 07:43 | | 08:16 (42) | 08:40 |
| | 22:17 | 52 | 20:48 (3) | 21:34 | 43 | 20:56 (3) | 20:22 | 12 | 19:20 (48) | 19:04 | 20 | 18:24 (47) | 16:51 | 8 | 08:24 (42) | 16:08 |
| 5 | 05:00 | | 05:57 (4) | 05:47 | | 06:49 (34) | 06:45 | | 19:06 (48) | 07:42 | | 18:04 (47) | 07:45 | | | 08:41 |
| | 22:16 | 55 | 20:49 (3) | 21:32 | 44 | 20:56 (3) | 20:19 | 16 | 19:22 (48) | 19:02 | 20 | 18:24 (47) | 16:49 | | | 16:07 |
| 6 | 05:01 | | 05:58 (4) | 05:49 | | 06:47 (34) | 06:47 | | 19:04 (48) | 07:44 | | 18:03 (47) | 07:47 | | | 08:43 |
| | 22:15 | 55 | 20:50 (3) | 21:30 | 44 | 20:54 (3) | 20:17 | 18 | 19:22 (48) | 18:59 | 20 | 18:23 (47) | 16:47 | | | 16:06 |
| 7 | 05:02 | | 05:58 (4) | 05:51 | | 06:46 (34) | 06:49 | | 19:02 (48) | 07:46 | | 18:03 (47) | 07:49 | | | 08:44 |
| | 22:15 | 56 | 20:51 (3) | 21:28 | 43 | 20:53 (3) | 20:14 | 21 | 19:23 (48) | 18:57 | 20 | 18:23 (47) | 16:45 | | | 16:06 |
| 8 | 05:03 | | 05:58 (4) | 05:52 | | 06:46 (34) | 06:51 | | 19:01 (48) | 07:48 | | 17:52 (39) | 07:51 | | | 08:46 |
| | 22:14 | 58 | 20:52 (3) | 21:26 | 40 | 20:51 (3) | 20:12 | 23 | 19:24 (48) | 18:54 | 26 | 18:22 (47) | 16:44 | | | 16:05 |
| 9 | 05:04 | | 05:58 (4) | 05:54 | | 06:45 (34) | 06:53 | | 19:01 (48) | 07:50 | | 17:49 (39) | 07:53 | | | 08:47 |
| | 22:13 | 58 | 20:52 (3) | 21:24 | 37 | 20:48 (3) | 20:09 | 23 | 19:24 (48) | 18:52 | 29 | 18:21 (47) | 16:42 | | | 16:05 |
| 10 | 05:06 | | 05:58 (4) | 05:56 | | 06:45 (34) | 06:55 | | 19:00 (48) | 07:52 | | 17:47 (39) | 07:55 | | | 08:48 |
| | 22:12 | 60 | 20:53 (3) | 21:21 | 30 | 20:45 (3) | 20:06 | 24 | 19:24 (48) | 18:49 | 29 | 18:19 (47) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:59 (4) | 05:58 | | 06:44 (34) | 06:57 | | 19:00 (48) | 07:54 | | 17:45 (39) | 07:57 | | | 08:49 |
| | 22:11 | 60 | 20:54 (3) | 21:19 | 24 | 07:08 (34) | 20:04 | 24 | 19:24 (48) | 18:47 | 28 | 18:16 (47) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 (4) | 06:00 | | 06:45 (34) | 06:59 | | 18:59 (48) | 07:56 | | 17:44 (39) | 07:59 | | | 08:51 |
| | 22:10 | 61 | 20:55 (3) | 21:17 | 24 | 07:09 (34) | 20:01 | 23 | 19:22 (48) | 18:44 | 25 | 18:14 (47) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:00 (4) | 06:02 | | 06:44 (34) | 07:00 | | 18:59 (48) | 07:58 | | 17:44 (39) | 08:01 | | | 08:52 |
| | 22:09 | 61 | 20:55 (3) | 21:15 | 24 | 07:08 (34) | 19:59 | 23 | 19:22 (48) | 18:42 | 20 | 18:04 (39) | 16:34 | | | 16:04 |
| 14 | 05:11 | | 06:00 (4) | 06:04 | | 06:44 (34) | 07:02 | | 18:59 (48) | 08:00 | | 17:43 (39) | 08:03 | | | 08:53 |
| | 22:08 | 63 | 20:56 (3) | 21:13 | 23 | 07:07 (34) | 19:56 | 22 | 19:21 (48) | 18:39 | 21 | 18:04 (39) | 16:33 | | | 16:04 |
| 15 | 05:12 | | 06:00 (4) | 06:06 | | 06:44 (34) | 07:04 | | 19:00 (48) | 08:02 | | 17:43 (39) | 08:05 | | | 08:54 |
| | 22:07 | 62 | 20:56 (3) | 21:10 | 23 | 07:07 (34) | 19:54 | 20 | 19:20 (48) | 18:37 | 20 | 18:03 (39) | 16:31 | | | 16:04 |
| 16 | 05:13 | | 06:01 (4) | 06:07 | | 06:45 (34) | 07:06 | | 19:01 (48) | 08:04 | | 17:44 (39) | 08:07 | | | 08:55 |
| | 22:05 | 63 | 20:57 (3) | 21:08 | 22 | 07:07 (34) | 19:51 | 18 | 19:19 (48) | 18:34 | 20 | 18:04 (39) | 16:29 | | | 16:04 |
| 17 | 05:15 | | 06:01 (4) | 06:09 | | 06:45 (34) | 07:08 | | 19:02 (48) | 08:06 | | 09:19 (42) | 08:09 | | | 08:55 |
| | 22:04 | 63 | 20:57 (3) | 21:06 | 20 | 07:05 (34) | 19:48 | 15 | 19:17 (48) | 18:32 | 24 | 18:01 (39) | 16:28 | | | 16:04 |
| 18 | 05:16 | | 06:01 (4) | 06:11 | | 06:46 (34) | 07:10 | | 19:03 (48) | 08:08 | | 09:15 (42) | 08:11 | | | 08:56 |
| | 22:03 | 63 | 20:57 (3) | 21:03 | 27 | 20:06 (45) | 19:46 | 10 | 19:13 (48) | 18:30 | 28 | 17:59 (39) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:02 (4) | 06:13 | | 06:47 (34) | 07:12 | | | 08:10 | | 09:13 (42) | 08:13 | | | 08:57 |
| | 22:01 | 63 | 20:58 (3) | 21:01 | 29 | 20:08 (45) | 19:43 | | | 18:27 | 29 | 17:56 (39) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:02 (4) | 06:15 | | 06:49 (34) | 07:14 | | | 08:12 | | 09:11 (42) | 08:15 | | | 08:58 |
| | 22:00 | 62 | 20:58 (3) | 20:59 | 27 | 20:09 (45) | 19:41 | | | 18:25 | 28 | 17:54 (39) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:04 (4) | 06:17 | | 06:53 (34) | 07:16 | | | 08:14 | | 09:10 (42) | 08:17 | | | 08:58 |
| | 21:59 | 61 | 20:59 (3) | 20:56 | 21 | 20:10 (45) | 19:38 | | | 18:22 | 24 | 17:51 (39) | 16:22 | | | 16:05 |
| 22 | 05:23 | | 06:04 (4) | 06:19 | | 19:51 (45) | 07:17 | | | 08:16 | | 09:09 (42) | 08:19 | | | 08:59 |
| | 21:57 | 61 | 20:59 (3) | 20:54 | 19 | 20:10 (45) | 19:35 | | | 18:20 | 24 | 09:33 (42) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:05 (4) | 06:21 | | 19:51 (45) | 07:19 | | | 08:18 | | 09:09 (42) | 08:21 | | | 08:59 |
| | 21:56 | 59 | 20:59 (3) | 20:52 | 19 | 20:10 (45) | 19:33 | | | 18:18 | 25 | 09:34 (42) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:06 (4) | 06:23 | | 19:50 (45) | 07:21 | | | 08:20 | | 09:09 (42) | 08:23 | | | 09:00 |
| | 21:54 | 58 | 20:59 (3) | 20:49 | 21 | 20:11 (45) | 19:30 | | | 18:15 | 25 | 09:34 (42) | 16:18 | | | 16:06 |
| 25 | 05:27 | | 06:07 (4) | 06:24 | | 19:50 (45) | 07:23 | | | 07:22 | | 08:08 (42) | 08:25 | | | 09:00 |
| | 21:52 | 56 | 21:00 (3) | 20:47 | 21 | 20:11 (45) | 19:28 | | | 17:13 | 26 | 08:34 (42) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:08 (4) | 06:26 | | 19:50 (45) | 07:25 | | | 07:24 | | 08:08 (42) | 08:26 | | | 09:00 |
| | 21:51 | 53 | 20:59 (3) | 20:44 | 20 | 20:10 (45) | 19:25 | | | 17:11 | 26 | 08:34 (42) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:10 (4) | 06:28 | | 19:49 (45) | 07:27 | | | 07:26 | | 08:08 (42) | 08:28 | | | 09:01 |
| | 21:49 | 50 | 21:00 (3) | 20:42 | 20 | 20:09 (45) | 19:22 | | | 17:09 | 26 | 08:34 (42) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 06:12 (4) | 06:30 | | 19:50 (45) | 07:29 | | | 07:28 | | 08:09 (42) | 08:30 | | | 09:01 |
| | 21:47 | 45 | 20:59 (3) | 20:39 | 18 | 20:08 (45) | 19:20 | | | 17:06 | 25 | 08:34 (42) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 20:26 (3) | 06:32 | | 19:51 (45) | 07:31 | | | 07:30 | | 08:09 (42) | 08:32 | | | 09:01 |
| | 21:45 | 33 | 20:59 (3) | 20:37 | 16 | 20:07 (45) | 19:17 | | | 17:04 | 24 | 08:33 (42) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 20:26 (3) | 06:34 | | 19:52 (45) | 07:33 | | 18:10 (47) | 07:32 | | 08:09 (42) | 08:33 | | | 09:01 |
| | 21:44 | 33 | 20:59 (3) | 20:34 | 13 | 20:05 (45) | 19:15 | 10 | 18:20 (47) | 17:02 | 23 | 08:32 (42) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 20:26 (3) | 06:36 | | 19:54 (45) | | | | 07:35 | | 08:10 (42) | | | | 09:01 |
| | 21:42 | 32 | 20:58 (3) | 20:32 | 9 | 20:03 (45) | | | | 17:00 | 21 | 08:31 (42) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 1707 | | | 832 | | | 303 | | | 725 | | | 60 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,89 | | | 0,95 | | | 1,00 | | | 0,90 | | | 0,85 | | |
| Total reduction | | 0,43 | | | 0,49 | | | 0,39 | | | 0,28 | | | 0,13 | | |
| Total, real | | 740 | | | 408 | | | 120 | | | 200 | | | 8 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:58 (41) | 08:28 | | 09:43 (40) | 07:27 | 07:08 | | | 05:55 | | 06:32 (13) | 05:02 | | 21:11 (5) |
| | 16:14 | 81 | 13:42 (42) | 17:08 | 98 | 13:57 (42) | 18:07 | 20:09 | | | 21:09 | 6 | 06:38 (13) | 22:02 | 15 | 21:26 (5) |
| 2 | 09:01 | | 12:00 (41) | 08:26 | | 09:44 (40) | 07:24 | 07:05 | | | 05:53 | | 06:20 (12) | 05:01 | | 21:11 (5) |
| | 16:15 | 79 | 13:43 (42) | 17:10 | 94 | 13:56 (42) | 18:09 | 20:11 | | | 21:11 | 2 | 06:22 (12) | 22:04 | 16 | 21:27 (5) |
| 3 | 09:00 | | 12:01 (41) | 08:24 | | 09:45 (40) | 07:22 | 07:03 | | | 05:51 | | 06:18 (12) | 05:00 | | 21:11 (5) |
| | 16:16 | 79 | 13:45 (42) | 17:12 | 93 | 13:56 (42) | 18:11 | 20:13 | | | 21:12 | 6 | 06:24 (12) | 22:05 | 17 | 21:28 (5) |
| 4 | 09:00 | | 09:48 (40) | 08:22 | | 09:46 (40) | 07:19 | 07:00 | | | 05:48 | | 06:16 (12) | 04:59 | | 21:12 (5) |
| | 16:17 | 83 | 13:45 (42) | 17:14 | 90 | 13:56 (42) | 18:13 | 20:15 | | | 21:14 | 8 | 06:24 (12) | 22:06 | 17 | 21:29 (5) |
| 5 | 09:00 | | 09:46 (40) | 08:20 | | 09:47 (40) | 07:17 | 06:58 | | | 05:46 | | 06:14 (12) | 04:58 | | 21:11 (5) |
| | 16:19 | 85 | 13:45 (42) | 17:17 | 87 | 13:56 (42) | 18:16 | 20:17 | | | 21:16 | 11 | 06:25 (12) | 22:07 | 19 | 21:30 (5) |
| 6 | 08:59 | | 09:45 (40) | 08:18 | | 09:48 (40) | 07:14 | 06:55 | | | 05:44 | | 06:12 (12) | 04:57 | | 21:11 (5) |
| | 16:20 | 86 | 13:46 (42) | 17:19 | 82 | 13:54 (42) | 18:18 | 20:19 | | | 21:18 | 13 | 06:25 (12) | 22:08 | 20 | 21:31 (5) |
| 7 | 08:59 | | 09:44 (40) | 08:16 | | 09:50 (40) | 07:12 | 06:53 | | | 05:42 | | 06:10 (12) | 04:56 | | 21:12 (5) |
| | 16:22 | 87 | 13:47 (42) | 17:21 | 77 | 13:54 (42) | 18:20 | 20:21 | | | 21:20 | 15 | 06:25 (12) | 22:09 | 20 | 21:32 (5) |
| 8 | 08:58 | | 09:43 (40) | 08:14 | | 09:52 (40) | 07:09 | 06:50 | | | 05:40 | | 06:08 (12) | 04:56 | | 21:11 (5) |
| | 16:23 | 82 | 13:47 (42) | 17:23 | 71 | 13:53 (42) | 18:22 | 20:23 | | | 21:22 | 17 | 06:25 (12) | 22:10 | 22 | 21:33 (5) |
| 9 | 08:57 | | 09:43 (40) | 08:12 | | 09:56 (40) | 07:07 | 06:47 | | | 05:38 | | 06:07 (12) | 04:55 | | 21:12 (5) |
| | 16:25 | 81 | 13:48 (42) | 17:25 | 62 | 13:52 (42) | 18:24 | 20:25 | | | 21:24 | 18 | 06:25 (12) | 22:11 | 22 | 21:34 (5) |
| 10 | 08:57 | | 09:42 (40) | 08:10 | | 13:00 (42) | 07:04 | 06:45 | | 07:10 (14) | 05:36 | | 06:07 (12) | 04:54 | | 21:12 (5) |
| | 16:26 | 84 | 13:49 (42) | 17:27 | 52 | 13:52 (42) | 18:26 | 20:27 | 1 | 07:11 (14) | 21:26 | 17 | 06:24 (12) | 22:12 | 22 | 21:34 (5) |
| 11 | 08:56 | | 09:42 (40) | 08:08 | | 13:00 (42) | 07:02 | 06:42 | | 07:07 (14) | 05:34 | | 06:07 (12) | 04:54 | | 21:12 (5) |
| | 16:28 | 85 | 13:49 (42) | 17:29 | 50 | 13:50 (42) | 18:28 | 20:29 | 5 | 07:12 (14) | 21:28 | 17 | 06:24 (12) | 22:13 | 23 | 21:35 (5) |
| 12 | 08:55 | | 09:42 (40) | 08:06 | | 13:02 (42) | 06:59 | 06:40 | | 07:05 (14) | 05:32 | | 06:08 (12) | 04:53 | | 21:13 (5) |
| | 16:29 | 87 | 13:50 (42) | 17:31 | 47 | 13:49 (42) | 18:30 | 20:31 | 8 | 07:13 (14) | 21:30 | 16 | 06:24 (12) | 22:14 | 22 | 21:35 (5) |
| 13 | 08:54 | | 09:41 (40) | 08:04 | | 13:04 (42) | 06:57 | 06:37 | | 07:02 (14) | 05:30 | | 06:08 (12) | 04:53 | | 21:12 (5) |
| | 16:31 | 90 | 13:51 (42) | 17:34 | 43 | 13:47 (42) | 18:32 | 20:33 | 11 | 07:13 (14) | 21:31 | 15 | 06:23 (12) | 22:15 | 23 | 21:35 (5) |
| 14 | 08:53 | | 09:41 (40) | 08:01 | | 13:07 (42) | 06:54 | 06:35 | | 07:00 (14) | 05:28 | | 06:09 (12) | 04:53 | | 21:13 (5) |
| | 16:33 | 92 | 13:52 (42) | 17:36 | 39 | 13:46 (42) | 18:34 | 20:35 | 14 | 07:14 (14) | 21:33 | 13 | 06:22 (12) | 22:16 | 22 | 21:35 (5) |
| 15 | 08:52 | | 09:40 (40) | 07:59 | | 13:09 (42) | 06:52 | 06:33 | | 06:57 (14) | 05:27 | | 06:11 (12) | 04:52 | | 21:13 (5) |
| | 16:35 | 92 | 13:51 (42) | 17:38 | 34 | 13:43 (42) | 18:36 | 20:37 | 16 | 07:13 (14) | 21:35 | 10 | 06:21 (12) | 22:16 | 22 | 21:35 (5) |
| 16 | 08:51 | | 09:40 (40) | 07:57 | | 13:12 (42) | 06:49 | 06:30 | | 06:56 (14) | 05:25 | | 06:12 (12) | 04:52 | | 21:13 (5) |
| | 16:36 | 95 | 13:52 (42) | 17:40 | 28 | 13:40 (42) | 18:38 | 20:39 | 17 | 07:13 (14) | 21:37 | 7 | 06:19 (12) | 22:17 | 23 | 21:36 (5) |
| 17 | 08:50 | | 09:41 (40) | 07:55 | | 13:16 (42) | 06:46 | 06:28 | | 06:56 (14) | 05:23 | | | 04:52 | | 21:14 (5) |
| | 16:38 | 95 | 13:53 (42) | 17:42 | 19 | 13:35 (42) | 18:40 | 20:41 | 17 | 07:13 (14) | 21:39 | | | 22:17 | 22 | 21:36 (5) |
| 18 | 08:49 | | 09:40 (40) | 07:53 | | | 06:44 | 06:25 | | 06:56 (14) | 05:21 | | | 04:52 | | 21:14 (5) |
| | 16:40 | 97 | 13:53 (42) | 17:44 | | | 18:42 | 20:43 | 15 | 07:11 (14) | 21:40 | | | 22:18 | 22 | 21:36 (5) |
| 19 | 08:48 | | 09:40 (40) | 07:50 | | | 06:41 | 06:23 | | 06:57 (14) | 05:20 | | | 04:52 | | 21:14 (5) |
| | 16:42 | 98 | 13:54 (42) | 17:46 | | | 18:44 | 20:45 | 13 | 07:10 (14) | 21:42 | | | 22:18 | 22 | 21:36 (5) |
| 20 | 08:46 | | 09:40 (40) | 07:48 | | | 06:39 | 06:20 | | 06:59 (14) | 05:18 | | | 04:52 | | 21:14 (5) |
| | 16:44 | 98 | 13:54 (42) | 17:48 | | | 18:46 | 20:47 | 10 | 07:09 (14) | 21:44 | | | 22:18 | 22 | 21:36 (5) |
| 21 | 08:45 | | 09:40 (40) | 07:46 | | | 06:36 | 06:18 | | 07:01 (14) | 05:16 | | | 04:52 | | 21:14 (5) |
| | 16:46 | 101 | 13:55 (42) | 17:51 | | | 18:48 | 20:49 | 3 | 07:04 (14) | 21:46 | | | 22:19 | 22 | 21:36 (5) |
| 22 | 08:44 | | 09:40 (40) | 07:43 | | | 06:34 | 06:16 | | | 05:15 | | | 04:52 | | 21:15 (5) |
| | 16:48 | 101 | 13:55 (42) | 17:53 | | | 18:50 | 20:51 | | | 21:47 | | | 22:19 | 22 | 21:37 (5) |
| 23 | 08:42 | | 09:40 (40) | 07:41 | | | 06:31 | 06:13 | | 06:39 (13) | 05:13 | | | 04:53 | | 21:15 (5) |
| | 16:50 | 101 | 13:55 (42) | 17:55 | | | 18:52 | 20:53 | 3 | 06:42 (13) | 21:49 | | | 22:19 | 22 | 21:37 (5) |
| 24 | 08:41 | | 09:41 (40) | 07:39 | | | 06:28 | 06:11 | | 06:37 (13) | 05:12 | | | 04:53 | | 21:15 (5) |
| | 16:52 | 101 | 13:56 (42) | 17:57 | | | 18:54 | 20:55 | 6 | 06:43 (13) | 21:51 | | | 22:19 | 22 | 21:37 (5) |
| 25 | 08:39 | | 09:40 (40) | 07:36 | | | 06:26 | 06:08 | | 06:34 (13) | 05:10 | | 21:15 (5) | 04:53 | | 21:16 (5) |
| | 16:54 | 102 | 13:56 (42) | 17:59 | | | 18:56 | 20:57 | 8 | 06:42 (13) | 21:52 | 1 | 21:16 (5) | 22:19 | 22 | 21:38 (5) |
| 26 | 08:38 | | 09:40 (40) | 07:34 | | | 06:23 | 06:06 | | 06:32 (13) | 05:09 | | 21:14 (5) | 04:54 | | 21:15 (5) |
| | 16:56 | 102 | 13:56 (42) | 18:01 | | | 18:58 | 20:59 | 10 | 06:42 (13) | 21:54 | 4 | 21:18 (5) | 22:19 | 23 | 21:38 (5) |
| 27 | 08:36 | | 09:41 (40) | 07:31 | | | 06:21 | 06:04 | | 06:30 (13) | 05:08 | | 21:13 (5) | 04:54 | | 21:16 (5) |
| | 16:58 | 101 | 13:56 (42) | 18:03 | | | 19:00 | 21:01 | 12 | 06:42 (13) | 21:55 | 6 | 21:19 (5) | 22:19 | 23 | 21:39 (5) |
| 28 | 08:34 | | 09:42 (40) | 07:29 | | | 06:18 | 06:02 | | 06:28 (13) | 05:06 | | 21:13 (5) | 04:55 | | 21:16 (5) |
| | 17:00 | 100 | 13:57 (42) | 18:05 | | | 19:02 | 21:03 | 14 | 06:42 (13) | 21:57 | 8 | 21:21 (5) | 22:19 | 22 | 21:38 (5) |
| 29 | 08:33 | | 09:42 (40) | | | | 07:16 | 05:59 | | 06:29 (13) | 05:05 | | 21:12 (5) | 04:55 | | 21:16 (5) |
| | 17:02 | 100 | 13:57 (42) | | | | 20:04 | 21:05 | 12 | 06:41 (13) | 21:58 | 10 | 21:22 (5) | 22:19 | 23 | 21:39 (5) |
| 30 | 08:31 | | 09:42 (40) | | | | 07:13 | 05:57 | | 06:30 (13) | 05:04 | | 21:12 (5) | 04:56 | | 21:16 (5) |
| | 17:04 | 100 | 13:57 (42) | | | | 20:06 | 21:07 | 10 | 06:40 (13) | 22:00 | 12 | 21:24 (5) | 22:18 | 22 | 21:38 (5) |
| 31 | 08:29 | | 09:43 (40) | | | | 07:10 | | | | 05:03 | | 21:12 (5) | | | |
| | 17:06 | 98 | 13:57 (42) | | | | 20:07 | | | | 22:01 | 13 | 21:25 (5) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 2863 | | | 1066 | | | | 205 | | | 245 | | | 636 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,28 | | | 0,25 | | | | 0,97 | | | 0,89 | | | 0,82 | |
| Total reduction | | 0,04 | | | 0,05 | | | | 0,28 | | | 0,34 | | | 0,30 | |
| Total, real | | 109 | | | 49 | | | | 58 | | | 84 | | | 189 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:16 (5) | 05:40 | | 06:18 (12) | 06:38 | | 07:06 (14) | 07:35 | | | 07:37 | | 12:28 (42) | 08:35 | | 09:24 (40) |
| | 22:18 | 23 | 21:39 (5) | 21:40 | 16 | 06:34 (12) | 20:29 | 5 | 07:11 (14) | 19:12 | | | 16:58 | 52 | 13:20 (42) | 16:10 | 86 | 13:31 (42) |
| 2 | 04:57 | | 21:17 (5) | 05:41 | | 06:17 (12) | 06:40 | | 07:08 (14) | 07:36 | | | 07:39 | | 09:25 (40) | 08:37 | | 09:25 (40) |
| | 22:18 | 22 | 21:39 (5) | 21:38 | 17 | 06:34 (12) | 20:27 | 1 | 07:09 (14) | 19:09 | | | 16:56 | 63 | 13:22 (42) | 16:09 | 84 | 13:32 (42) |
| 3 | 04:58 | | 21:17 (5) | 05:43 | | 06:17 (12) | 06:41 | | | 07:38 | | | 07:41 | | 09:22 (40) | 08:38 | | 09:27 (40) |
| | 22:17 | 23 | 21:40 (5) | 21:36 | 18 | 06:35 (12) | 20:24 | | | 19:07 | | | 16:53 | 71 | 13:23 (42) | 16:08 | 81 | 13:32 (42) |
| 4 | 04:59 | | 21:17 (5) | 05:45 | | 06:17 (12) | 06:43 | | | 07:40 | | | 07:43 | | 09:19 (40) | 08:40 | | 09:27 (40) |
| | 22:16 | 21 | 21:38 (5) | 21:34 | 18 | 06:35 (12) | 20:22 | | | 19:04 | | | 16:51 | 78 | 13:23 (42) | 16:07 | 82 | 13:32 (42) |
| 5 | 05:00 | | 21:17 (5) | 05:47 | | 06:18 (12) | 06:45 | | | 07:42 | | | 07:45 | | 09:18 (40) | 08:41 | | 09:29 (40) |
| | 22:16 | 21 | 21:38 (5) | 21:32 | 16 | 06:34 (12) | 20:19 | | | 19:02 | | | 16:49 | 84 | 13:25 (42) | 16:07 | 87 | 13:32 (42) |
| 6 | 05:01 | | 21:17 (5) | 05:49 | | 06:20 (12) | 06:47 | | | 07:44 | | | 07:47 | | 09:17 (40) | 08:43 | | 09:31 (40) |
| | 22:15 | 21 | 21:38 (5) | 21:30 | 14 | 06:34 (12) | 20:17 | | | 18:59 | | | 16:47 | 86 | 13:25 (42) | 16:06 | 87 | 13:33 (42) |
| 7 | 05:02 | | 21:18 (5) | 05:50 | | 06:22 (12) | 06:49 | | | 07:46 | | | 07:49 | | 09:16 (40) | 08:44 | | 09:33 (40) |
| | 22:14 | 19 | 21:37 (5) | 21:28 | 12 | 06:34 (12) | 20:14 | | | 18:57 | | | 16:45 | 90 | 13:26 (42) | 16:06 | 86 | 13:32 (42) |
| 8 | 05:03 | | 21:18 (5) | 05:52 | | 06:24 (12) | 06:51 | | | 07:48 | | | 07:51 | | 09:15 (40) | 08:45 | | 09:36 (40) |
| | 22:14 | 18 | 21:36 (5) | 21:26 | 10 | 06:34 (12) | 20:11 | | | 18:54 | | | 16:43 | 92 | 13:26 (42) | 16:05 | 83 | 13:33 (42) |
| 9 | 05:04 | | 21:18 (5) | 05:54 | | 06:25 (12) | 06:53 | | | 07:50 | | | 07:53 | | 09:15 (40) | 08:47 | | 11:50 (41) |
| | 22:13 | 17 | 21:35 (5) | 21:23 | 8 | 06:33 (12) | 20:09 | | | 18:52 | | | 16:42 | 95 | 13:27 (42) | 16:05 | 78 | 13:33 (42) |
| 10 | 05:05 | | 21:19 (5) | 05:56 | | 06:27 (12) | 06:55 | | | 07:52 | | | 07:55 | | 09:14 (40) | 08:48 | | 11:49 (41) |
| | 22:12 | 16 | 21:35 (5) | 21:21 | 5 | 06:32 (12) | 20:06 | | | 18:49 | | | 16:40 | 96 | 13:27 (42) | 16:04 | 80 | 13:33 (42) |
| 11 | 05:07 | | 21:19 (5) | 05:58 | | 06:29 (12) | 06:57 | | | 07:54 | | | 07:57 | | 09:14 (40) | 08:49 | | 11:49 (41) |
| | 22:11 | 15 | 21:34 (5) | 21:19 | 1 | 06:30 (12) | 20:04 | | | 18:47 | | | 16:38 | 99 | 13:28 (42) | 16:04 | 81 | 13:33 (42) |
| 12 | 05:08 | | 21:20 (5) | 06:00 | | 06:39 (13) | 06:58 | | | 07:56 | | | 07:59 | | 09:13 (40) | 08:50 | | 11:49 (41) |
| | 22:10 | 14 | 21:34 (5) | 21:17 | 8 | 06:47 (13) | 20:01 | | | 18:44 | | | 16:36 | 100 | 13:28 (42) | 16:04 | 81 | 13:34 (42) |
| 13 | 05:09 | | 21:20 (5) | 06:02 | | 06:37 (13) | 07:00 | | | 07:58 | | | 08:01 | | 09:14 (40) | 08:52 | | 11:49 (41) |
| | 22:09 | 13 | 21:33 (5) | 21:15 | 11 | 06:48 (13) | 19:59 | | | 18:42 | | | 16:34 | 100 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 14 | 05:11 | | 21:21 (5) | 06:04 | | 06:36 (13) | 07:02 | | | 08:00 | | | 08:03 | | 09:14 (40) | 08:53 | | 11:49 (41) |
| | 22:08 | 10 | 21:31 (5) | 21:12 | 13 | 06:49 (13) | 19:56 | | | 18:39 | | | 16:33 | 100 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 15 | 05:12 | | 21:21 (5) | 06:05 | | 06:36 (13) | 07:04 | | | 08:02 | | | 08:05 | | 09:13 (40) | 08:54 | | 11:49 (41) |
| | 22:07 | 9 | 21:30 (5) | 21:10 | 13 | 06:49 (13) | 19:53 | | | 18:37 | | | 16:31 | 102 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 16 | 05:13 | | 21:22 (5) | 06:07 | | 06:38 (13) | 07:06 | | | 08:04 | | | 08:07 | | 09:13 (40) | 08:55 | | 11:49 (41) |
| | 22:05 | 8 | 21:30 (5) | 21:08 | 12 | 06:50 (13) | 19:51 | | | 18:34 | | | 16:29 | 102 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 17 | 05:15 | | 21:23 (5) | 06:09 | | 06:39 (13) | 07:08 | | | 08:06 | | | 08:09 | | 09:14 (40) | 08:55 | | 11:50 (41) |
| | 22:04 | 5 | 21:28 (5) | 21:06 | 10 | 06:49 (13) | 19:48 | | | 18:32 | | | 16:28 | 102 | 13:30 (42) | 16:04 | 82 | 13:35 (42) |
| 18 | 05:16 | | 21:24 (5) | 06:11 | | 06:41 (13) | 07:10 | | | 08:08 | | | 08:11 | | 09:15 (40) | 08:56 | | 11:50 (41) |
| | 22:03 | 3 | 21:27 (5) | 21:03 | 8 | 06:49 (13) | 19:46 | | | 18:30 | | | 16:26 | 101 | 13:30 (42) | 16:04 | 84 | 13:36 (42) |
| 19 | 05:18 | | | 06:13 | | 06:43 (13) | 07:12 | | | 08:10 | | | 08:13 | | 09:15 (40) | 08:57 | | 11:50 (41) |
| | 22:01 | | | 21:01 | 6 | 06:49 (13) | 19:43 | | | 18:27 | | | 16:24 | 101 | 13:30 (42) | 16:04 | 83 | 13:35 (42) |
| 20 | 05:19 | | | 06:15 | | 06:45 (13) | 07:14 | | | 08:12 | | | 08:15 | | 09:15 (40) | 08:58 | | 11:51 (41) |
| | 22:00 | | | 20:59 | 3 | 06:48 (13) | 19:40 | | | 18:25 | | | 16:23 | 101 | 13:30 (42) | 16:04 | 83 | 13:36 (42) |
| 21 | 05:21 | | | 06:17 | | | 07:15 | | | 08:14 | | | 08:17 | | 09:15 (40) | 08:58 | | 11:52 (41) |
| | 21:58 | | | 20:56 | | | 19:38 | | | 18:22 | | | 16:21 | 101 | 13:30 (42) | 16:05 | 82 | 13:37 (42) |
| 22 | 05:22 | | | 06:19 | | 07:05 (14) | 07:17 | | | 08:16 | | | 08:19 | | 09:16 (40) | 08:59 | | 11:52 (41) |
| | 21:57 | | | 20:54 | 5 | 07:10 (14) | 19:35 | | | 18:20 | | | 16:20 | 99 | 13:30 (42) | 16:05 | 82 | 13:37 (42) |
| 23 | 05:24 | | | 06:21 | | 07:02 (14) | 07:19 | | | 08:18 | | | 08:21 | | 09:16 (40) | 08:59 | | 11:53 (41) |
| | 21:55 | | | 20:51 | 11 | 07:13 (14) | 19:33 | | | 18:18 | | | 16:19 | 98 | 13:30 (42) | 16:06 | 82 | 13:38 (42) |
| 24 | 05:26 | | | 06:23 | | 07:01 (14) | 07:21 | | | 08:20 | | 13:54 (42) | 08:23 | | 09:18 (40) | 09:00 | | 11:53 (41) |
| | 21:54 | | | 20:49 | 13 | 07:14 (14) | 19:30 | | | 18:15 | 5 | 13:59 (42) | 16:17 | 97 | 13:31 (42) | 16:06 | 83 | 13:38 (42) |
| 25 | 05:27 | | | 06:24 | | 07:00 (14) | 07:23 | | | 07:22 | | 12:45 (42) | 08:25 | | 09:19 (40) | 09:00 | | 11:53 (41) |
| | 21:52 | | | 20:47 | 15 | 07:15 (14) | 19:27 | | | 17:13 | 22 | 13:07 (42) | 16:16 | 95 | 13:31 (42) | 16:07 | 83 | 13:38 (42) |
| 26 | 05:29 | | | 06:26 | | 06:58 (14) | 07:25 | | | 07:24 | | 12:41 (42) | 08:26 | | 09:20 (40) | 09:00 | | 11:54 (41) |
| | 21:51 | | | 20:44 | 17 | 07:15 (14) | 19:25 | | | 17:11 | 29 | 13:10 (42) | 16:15 | 94 | 13:31 (42) | 16:08 | 82 | 13:39 (42) |
| 27 | 05:31 | | 06:25 (12) | 06:28 | | 06:57 (14) | 07:27 | | | 07:26 | | 12:37 (42) | 08:28 | | 09:20 (40) | 09:01 | | 11:54 (41) |
| | 21:49 | 2 | 06:27 (12) | 20:42 | 18 | 07:15 (14) | 19:22 | | | 17:09 | 36 | 13:13 (42) | 16:14 | 93 | 13:31 (42) | 16:09 | 82 | 13:39 (42) |
| 28 | 05:32 | | 06:22 (12) | 06:30 | | 06:59 (14) | 07:29 | | | 07:28 | | 12:36 (42) | 08:30 | | 09:21 (40) | 09:01 | | 11:55 (41) |
| | 21:47 | 8 | 06:30 (12) | 20:39 | 16 | 07:15 (14) | 19:20 | | | 17:06 | 40 | 13:16 (42) | 16:13 | 92 | 13:32 (42) | 16:09 | 82 | 13:40 (42) |
| 29 | 05:34 | | 06:20 (12) | 06:32 | | 07:01 (14) | 07:31 | | | 07:30 | | 12:33 (42) | 08:32 | | 09:21 (40) | 09:01 | | 11:56 (41) |
| | 21:45 | 12 | 06:32 (12) | 20:37 | 14 | 07:15 (14) | 19:17 | | | 17:04 | 44 | 13:17 (42) | 16:12 | 90 | 13:31 (42) | 16:10 | 82 | 13:41 (42) |
| 30 | 05:36 | | 06:19 (12) | 06:34 | | 07:03 (14) | 07:33 | | | 07:32 | | 12:32 (42) | 08:33 | | 09:23 (40) | 09:01 | | 11:57 (41) |
| | 21:43 | 13 | 06:32 (12) | 20:34 | 11 | 07:14 (14) | 19:15 | | | 17:02 | 46 | 13:18 (42) | 16:11 | 87 | 13:31 (42) | 16:11 | 81 | 13:41 (42) |
| 31 | 05:38 | | 06:18 (12) | 06:36 | | 07:04 (14) | | | | 07:34 | | 12:30 (42) | | | | 09:01 | | 11:58 (41) |
| | 21:42 | 15 | 06:33 (12) | 20:32 | 8 | 07:12 (14) | | | | 17:00 | 50 | 13:20 (42) | | | | 16:12 | 80 | 13:42 (42) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 328 | | | 347 | | | 6 | | | 272 | | | 2761 | | | 2557 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,83 | | | 0,94 | | | 0,98 | | | 0,15 | | | 0,30 | | | 0,17 | |
| Total reduction | | 0,30 | | | 0,36 | | | 0,29 | | | 0,04 | | | 0,04 | | | 0,02 | |
| Total, real | | 99 | | | 126 | | | 2 | | | 10 | | | 99 | | | 43 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:27 (15) | 08:27 | | 09:03 (37) | 07:26 | | | 07:08 | | 19:02 (40) | 05:55 | | 06:41 (7) | 05:02 | | |
| | 16:14 | 14 | 10:41 (15) | 17:08 | 21 | 09:24 (37) | 18:07 | | | 20:09 | 30 | 19:32 (40) | 21:08 | 42 | 07:23 (7) | 22:02 | | |
| 2 | 09:00 | | 10:29 (15) | 08:26 | | 09:02 (37) | 07:24 | | | 07:05 | | 19:02 (40) | 05:53 | | 06:40 (7) | 05:01 | | |
| | 16:15 | 12 | 10:41 (15) | 17:10 | 23 | 09:25 (37) | 18:09 | | | 20:11 | 31 | 19:33 (40) | 21:10 | 42 | 07:22 (7) | 22:03 | | |
| 3 | 09:00 | | 10:30 (15) | 08:24 | | 09:02 (37) | 07:22 | | | 07:03 | | 19:01 (40) | 05:50 | | 06:40 (7) | 05:00 | | |
| | 16:16 | 10 | 10:40 (15) | 17:12 | 23 | 09:25 (37) | 18:11 | | | 20:13 | 31 | 19:32 (40) | 21:12 | 42 | 07:22 (7) | 22:05 | | |
| 4 | 09:00 | | 10:32 (15) | 08:22 | | 09:01 (37) | 07:19 | | | 07:00 | | 19:00 (40) | 05:48 | | 06:39 (7) | 04:59 | | |
| | 16:17 | 8 | 10:40 (15) | 17:14 | 24 | 09:25 (37) | 18:13 | | | 20:15 | 31 | 19:31 (40) | 21:14 | 43 | 07:22 (7) | 22:06 | | |
| 5 | 08:59 | | 10:34 (15) | 08:20 | | 09:01 (37) | 07:17 | | | 06:57 | | 19:01 (40) | 05:46 | | 06:39 (7) | 04:58 | | |
| | 16:19 | 3 | 10:37 (15) | 17:16 | 24 | 09:25 (37) | 18:15 | | | 20:17 | 30 | 19:31 (40) | 21:16 | 43 | 07:22 (7) | 22:07 | | |
| 6 | 08:59 | | | 08:18 | | 09:02 (37) | 07:14 | | | 06:55 | | 19:00 (40) | 05:44 | | 06:40 (7) | 04:57 | | |
| | 16:20 | | | 17:19 | 23 | 09:25 (37) | 18:17 | | | 20:19 | 30 | 19:30 (40) | 21:18 | 43 | 07:23 (7) | 22:08 | | |
| 7 | 08:58 | | | 08:16 | | 09:02 (37) | 07:12 | | | 06:52 | | 19:01 (40) | 05:42 | | 06:40 (7) | 04:56 | | |
| | 16:21 | | | 17:21 | 24 | 09:26 (37) | 18:19 | | | 20:21 | 29 | 19:30 (40) | 21:20 | 43 | 07:23 (7) | 22:09 | | |
| 8 | 08:58 | | | 08:14 | | 09:03 (37) | 07:09 | | | 06:50 | | 19:01 (40) | 05:40 | | 06:40 (7) | 04:56 | | |
| | 16:23 | | | 17:23 | 22 | 09:25 (37) | 18:22 | | | 20:23 | 27 | 19:28 (40) | 21:22 | 43 | 07:23 (7) | 22:10 | | |
| 9 | 08:57 | | | 08:12 | | 09:03 (37) | 07:07 | | | 06:47 | | 19:02 (40) | 05:38 | | 06:39 (7) | 04:55 | | |
| | 16:24 | | | 17:25 | 22 | 09:25 (37) | 18:24 | | | 20:25 | 26 | 19:28 (40) | 21:24 | 43 | 07:22 (7) | 22:11 | | |
| 10 | 08:56 | | | 08:10 | | 09:03 (37) | 07:04 | | | 06:45 | | 19:02 (40) | 05:36 | | 06:39 (7) | 04:54 | | |
| | 16:26 | | | 17:27 | 21 | 09:24 (37) | 18:26 | | | 20:27 | 24 | 19:26 (40) | 21:26 | 43 | 07:22 (7) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | 09:05 (37) | 07:02 | | | 06:42 | | 19:04 (40) | 05:34 | | 06:39 (7) | 04:54 | | |
| | 16:28 | | | 17:29 | 18 | 09:23 (37) | 18:28 | | | 20:29 | 20 | 19:24 (40) | 21:28 | 42 | 07:21 (7) | 22:13 | | |
| 12 | 08:55 | | | 08:06 | | 09:06 (37) | 06:59 | | | 06:40 | | 19:06 (40) | 05:32 | | 06:40 (7) | 04:53 | | |
| | 16:29 | | | 17:31 | 16 | 09:22 (37) | 18:30 | | | 20:31 | 17 | 19:23 (40) | 21:29 | 42 | 07:22 (7) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | 09:08 (37) | 06:57 | | | 06:37 | | 19:08 (40) | 05:30 | | 06:40 (7) | 04:53 | | |
| | 16:31 | | | 17:33 | 12 | 09:20 (37) | 18:32 | | | 20:33 | 11 | 19:19 (40) | 21:31 | 41 | 07:21 (7) | 22:15 | | |
| 14 | 08:53 | | | 08:01 | | 09:11 (37) | 06:54 | | 18:04 (41) | 06:35 | | | 05:28 | | 06:40 (7) | 04:53 | | |
| | 16:33 | | | 17:36 | 5 | 09:16 (37) | 18:34 | 3 | 18:07 (41) | 20:35 | | | 21:33 | 40 | 07:20 (7) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | 18:01 (41) | 06:32 | | | 05:26 | | 06:42 (7) | 04:52 | | |
| | 16:34 | | | 17:38 | | | 18:36 | 7 | 18:08 (41) | 20:37 | | | 21:35 | 38 | 07:20 (7) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | 17:59 (41) | 06:30 | | | 05:25 | | 06:42 (7) | 04:52 | | |
| | 16:36 | | | 17:40 | | | 18:38 | 11 | 18:10 (41) | 20:39 | | | 21:37 | 37 | 07:19 (7) | 22:17 | | |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | 17:58 (41) | 06:27 | | | 05:23 | | 06:42 (7) | 04:52 | | |
| | 16:38 | | | 17:42 | | | 18:40 | 15 | 18:13 (41) | 20:41 | | | 21:39 | 36 | 07:18 (7) | 22:17 | | |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | 17:57 (41) | 06:25 | | | 05:21 | | 06:43 (7) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | 17 | 18:14 (41) | 20:43 | | | 21:40 | 35 | 07:18 (7) | 22:18 | | |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:57 (41) | 06:23 | | | 05:19 | | 06:43 (7) | 04:52 | | |
| | 16:42 | | | 17:46 | | | 18:44 | 20 | 18:17 (41) | 20:45 | | | 21:42 | 34 | 07:17 (7) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | 17:56 (41) | 06:20 | | 06:59 (7) | 05:18 | | 06:44 (7) | 04:52 | | |
| | 16:44 | | | 17:48 | | | 18:46 | 21 | 18:17 (41) | 20:47 | 10 | 07:09 (7) | 21:44 | 33 | 07:17 (7) | 22:18 | | |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | 17:56 (41) | 06:18 | | 06:54 (7) | 05:16 | | 06:46 (7) | 04:52 | | |
| | 16:46 | | | 17:50 | | | 18:48 | 20 | 18:16 (41) | 20:49 | 18 | 07:12 (7) | 21:45 | 30 | 07:16 (7) | 22:19 | | |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | 17:56 (41) | 06:15 | | 06:52 (7) | 05:15 | | 06:46 (7) | 04:52 | | |
| | 16:48 | | | 17:53 | | | 18:50 | 20 | 18:16 (41) | 20:51 | 23 | 07:15 (7) | 21:47 | 29 | 07:15 (7) | 22:19 | | |
| 23 | 08:42 | | | 07:41 | | | 06:31 | | 17:56 (41) | 06:13 | | 06:50 (7) | 05:13 | | 06:47 (7) | 04:53 | | |
| | 16:50 | | | 17:55 | | | 18:52 | 18 | 18:14 (41) | 20:53 | 27 | 07:17 (7) | 21:49 | 27 | 07:14 (7) | 22:19 | | |
| 24 | 08:41 | | | 07:38 | | | 06:28 | | 17:58 (41) | 06:11 | | 06:48 (7) | 05:12 | | 06:49 (7) | 04:53 | | |
| | 16:52 | | | 17:57 | | | 18:54 | 15 | 18:13 (41) | 20:55 | 30 | 07:18 (7) | 21:50 | 25 | 07:14 (7) | 22:19 | | |
| 25 | 08:39 | | | 07:36 | | | 06:26 | | 17:59 (41) | 06:08 | | 06:46 (7) | 05:10 | | 06:49 (7) | 04:53 | | |
| | 16:54 | | | 17:59 | | | 18:56 | 21 | 18:24 (40) | 20:57 | 33 | 07:19 (7) | 21:52 | 23 | 07:12 (7) | 22:19 | | |
| 26 | 08:37 | | | 07:34 | | | 06:23 | | 18:01 (41) | 06:06 | | 06:45 (7) | 05:09 | | 06:51 (7) | 04:54 | | |
| | 16:56 | | | 18:01 | | | 18:58 | 21 | 18:26 (40) | 20:59 | 35 | 07:20 (7) | 21:53 | 20 | 07:11 (7) | 22:19 | | |
| 27 | 08:36 | | 09:07 (37) | 07:31 | | | 06:21 | | 18:09 (40) | 06:04 | | 06:44 (7) | 05:08 | | 06:52 (7) | 04:54 | | |
| | 16:58 | 10 | 09:17 (37) | 18:03 | | | 18:59 | 20 | 18:29 (40) | 21:01 | 37 | 07:21 (7) | 21:55 | 17 | 07:09 (7) | 22:19 | | |
| 28 | 08:34 | | 09:05 (37) | 07:29 | | | 06:18 | | 18:06 (40) | 06:02 | | 06:43 (7) | 05:06 | | 06:54 (7) | 04:55 | | |
| | 17:00 | 14 | 09:19 (37) | 18:05 | | | 19:01 | 24 | 18:30 (40) | 21:03 | 38 | 07:21 (7) | 21:57 | 14 | 07:08 (7) | 22:19 | | |
| 29 | 08:33 | | 09:05 (37) | | | | 07:15 | | 19:06 (40) | 05:59 | | 06:43 (7) | 05:05 | | 06:57 (7) | 04:55 | | |
| | 17:02 | 16 | 09:21 (37) | | | | 20:03 | 25 | 19:31 (40) | 21:05 | 39 | 07:22 (7) | 21:58 | 8 | 07:05 (7) | 22:18 | | |
| 30 | 08:31 | | 09:04 (37) | | | | 07:13 | | 19:04 (40) | 05:57 | | 06:42 (7) | 05:04 | | | 04:56 | | |
| | 17:04 | 18 | 09:22 (37) | | | | 20:05 | 27 | 19:31 (40) | 21:06 | 41 | 07:23 (7) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:03 (37) | | | | 07:10 | | 19:03 (40) | | | | 05:03 | | | | | |
| | 17:06 | 20 | 09:23 (37) | | | | 20:07 | 29 | 19:32 (40) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 125 | | | 278 | | | 334 | | | 668 | | | 998 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,66 | | | 0,78 | | | 0,99 | | | 0,98 | | | 0,96 | | | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,32 | | | 0,37 | | | 0,47 | | | | |
| Total, real | | 14 | | | 51 | | | 108 | | | 246 | | | 474 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 06:51 (7) | 06:38 | | 19:03 (40) | 07:34 | | | 07:36 | | 08:33 (37) | 08:35 | | |
| | 22:18 | | | 21:40 | 41 | 07:32 (7) | 20:29 | 20 | 19:23 (40) | 19:12 | | | 16:58 | 21 | 08:54 (37) | 16:10 | | |
| 2 | 04:57 | | | 05:41 | | 06:50 (7) | 06:39 | | 19:01 (40) | 07:36 | | | 07:38 | | 08:33 (37) | 08:36 | | |
| | 22:17 | | | 21:38 | 42 | 07:32 (7) | 20:27 | 24 | 19:25 (40) | 19:09 | | | 16:55 | 22 | 08:55 (37) | 16:09 | | |
| 3 | 04:58 | | | 05:43 | | 06:50 (7) | 06:41 | | 19:00 (40) | 07:38 | | | 07:41 | | 08:32 (37) | 08:38 | | |
| | 22:17 | | | 21:36 | 42 | 07:32 (7) | 20:24 | 26 | 19:26 (40) | 19:07 | | | 16:53 | 23 | 08:55 (37) | 16:08 | | |
| 4 | 04:59 | | | 05:45 | | 06:50 (7) | 06:43 | | 18:59 (40) | 07:40 | | | 07:43 | | 08:32 (37) | 08:40 | | |
| | 22:16 | | | 21:34 | 43 | 07:33 (7) | 20:22 | 27 | 19:26 (40) | 19:04 | | | 16:51 | 23 | 08:55 (37) | 16:07 | | |
| 5 | 05:00 | | | 05:47 | | 06:49 (7) | 06:45 | | 18:57 (40) | 07:42 | | | 07:45 | | 08:31 (37) | 08:41 | | |
| | 22:16 | | | 21:32 | 43 | 07:32 (7) | 20:19 | 29 | 19:26 (40) | 19:02 | | | 16:49 | 24 | 08:55 (37) | 16:07 | | |
| 6 | 05:01 | | | 05:49 | | 06:49 (7) | 06:47 | | 18:56 (40) | 07:44 | | | 07:47 | | 08:32 (37) | 08:43 | | |
| | 22:15 | | | 21:30 | 43 | 07:32 (7) | 20:16 | 30 | 19:26 (40) | 18:59 | | | 16:47 | 24 | 08:56 (37) | 16:06 | | |
| 7 | 05:02 | | | 05:50 | | 06:49 (7) | 06:49 | | 18:56 (40) | 07:46 | | | 07:49 | | 08:32 (37) | 08:44 | | 10:22 (15) |
| | 22:14 | | | 21:28 | 44 | 07:33 (7) | 20:14 | 30 | 19:26 (40) | 18:57 | | | 16:45 | 24 | 08:56 (37) | 16:06 | 2 | 10:24 (15) |
| 8 | 05:03 | | | 05:52 | | 06:50 (7) | 06:51 | | 18:56 (40) | 07:48 | | | 07:51 | | 08:32 (37) | 08:45 | | 10:19 (15) |
| | 22:14 | | | 21:25 | 43 | 07:33 (7) | 20:11 | 30 | 19:26 (40) | 18:54 | | | 16:43 | 23 | 08:55 (37) | 16:05 | 8 | 10:27 (15) |
| 9 | 05:04 | | | 05:54 | | 06:49 (7) | 06:53 | | 18:55 (40) | 07:50 | | | 07:53 | | 08:32 (37) | 08:47 | | 10:19 (15) |
| | 22:13 | | | 21:23 | 43 | 07:32 (7) | 20:09 | 31 | 19:26 (40) | 18:52 | | | 16:41 | 23 | 08:55 (37) | 16:05 | 10 | 10:29 (15) |
| 10 | 05:05 | | | 05:56 | | 06:49 (7) | 06:55 | | 18:54 (40) | 07:52 | | | 07:55 | | 08:34 (37) | 08:48 | | 10:18 (15) |
| | 22:12 | | | 21:21 | 43 | 07:32 (7) | 20:06 | 31 | 19:25 (40) | 18:49 | | | 16:40 | 21 | 08:55 (37) | 16:04 | 12 | 10:30 (15) |
| 11 | 05:07 | | | 05:58 | | 06:50 (7) | 06:56 | | 18:54 (40) | 07:54 | | | 07:57 | | 08:34 (37) | 08:49 | | 10:18 (15) |
| | 22:11 | | | 21:19 | 42 | 07:32 (7) | 20:04 | 30 | 19:24 (40) | 18:47 | | | 16:38 | 20 | 08:54 (37) | 16:04 | 13 | 10:31 (15) |
| 12 | 05:08 | | | 06:00 | | 06:49 (7) | 06:58 | | 18:55 (40) | 07:56 | | | 07:59 | | 08:35 (37) | 08:50 | | 10:18 (15) |
| | 22:10 | | | 21:17 | 41 | 07:30 (7) | 20:01 | 29 | 19:24 (40) | 18:44 | | | 16:36 | 18 | 08:53 (37) | 16:04 | 15 | 10:33 (15) |
| 13 | 05:09 | | | 06:02 | | 06:50 (7) | 07:00 | | 18:55 (40) | 07:58 | | | 08:01 | | 08:37 (37) | 08:51 | | 10:18 (15) |
| | 22:09 | | | 21:15 | 40 | 07:30 (7) | 19:58 | 28 | 19:23 (40) | 18:42 | | | 16:34 | 16 | 08:53 (37) | 16:04 | 15 | 10:33 (15) |
| 14 | 05:11 | | 07:08 (7) | 06:03 | | 06:50 (7) | 07:02 | | 18:56 (40) | 08:00 | | | 08:03 | | 08:38 (37) | 08:52 | | 10:18 (15) |
| | 22:08 | 3 | 07:11 (7) | 21:12 | 39 | 07:29 (7) | 19:56 | 26 | 19:22 (40) | 18:39 | | | 16:32 | 14 | 08:52 (37) | 16:03 | 16 | 10:34 (15) |
| 15 | 05:12 | | 07:04 (7) | 06:05 | | 06:51 (7) | 07:04 | | 18:57 (40) | 08:02 | | | 08:05 | | 08:40 (37) | 08:53 | | 10:05 (16) |
| | 22:06 | 11 | 07:15 (7) | 21:10 | 38 | 07:29 (7) | 19:53 | 23 | 19:20 (40) | 18:37 | | | 16:31 | 9 | 08:49 (37) | 16:03 | 18 | 10:35 (15) |
| 16 | 05:13 | | 07:03 (7) | 06:07 | | 06:52 (7) | 07:06 | | 18:57 (40) | 08:04 | | | 08:07 | | | 08:54 | | 10:04 (16) |
| | 22:05 | 15 | 07:18 (7) | 21:08 | 36 | 07:28 (7) | 19:51 | 21 | 19:18 (40) | 18:34 | | | 16:29 | | | 16:03 | 22 | 10:36 (15) |
| 17 | 05:15 | | 07:01 (7) | 06:09 | | 06:52 (7) | 07:08 | | 18:51 (41) | 08:06 | | | 08:09 | | | 08:55 | | 10:04 (16) |
| | 22:04 | 18 | 07:19 (7) | 21:05 | 34 | 07:26 (7) | 19:48 | 20 | 19:15 (40) | 18:32 | | | 16:27 | | | 16:04 | 24 | 10:37 (15) |
| 18 | 05:16 | | 06:59 (7) | 06:11 | | 06:53 (7) | 07:10 | | 18:47 (41) | 08:08 | | | 08:11 | | | 08:56 | | 10:04 (16) |
| | 22:03 | 22 | 07:21 (7) | 21:03 | 32 | 07:25 (7) | 19:46 | 22 | 19:12 (40) | 18:29 | | | 16:26 | | | 16:04 | 25 | 10:37 (15) |
| 19 | 05:18 | | 06:59 (7) | 06:13 | | 06:54 (7) | 07:12 | | 18:45 (41) | 08:10 | | | 08:13 | | | 08:57 | | 10:04 (16) |
| | 22:01 | 24 | 07:23 (7) | 21:01 | 30 | 07:24 (7) | 19:43 | 15 | 19:00 (41) | 18:27 | | | 16:24 | | | 16:04 | 25 | 10:37 (15) |
| 20 | 05:19 | | 06:57 (7) | 06:15 | | 06:56 (7) | 07:13 | | 18:43 (41) | 08:12 | | | 08:15 | | | 08:57 | | 10:04 (16) |
| | 22:00 | 26 | 07:23 (7) | 20:58 | 26 | 07:22 (7) | 19:40 | 18 | 19:01 (41) | 18:25 | | | 16:23 | | | 16:04 | 26 | 10:38 (15) |
| 21 | 05:21 | | 06:56 (7) | 06:17 | | 06:57 (7) | 07:15 | | 18:42 (41) | 08:14 | | | 08:17 | | | 08:58 | | 10:04 (16) |
| | 21:58 | 28 | 07:24 (7) | 20:56 | 22 | 07:19 (7) | 19:38 | 19 | 19:01 (41) | 18:22 | | | 16:21 | | | 16:05 | 27 | 10:38 (15) |
| 22 | 05:22 | | 06:56 (7) | 06:19 | | 06:59 (7) | 07:17 | | 18:41 (41) | 08:16 | | | 08:19 | | | 08:59 | | 10:05 (16) |
| | 21:57 | 30 | 07:26 (7) | 20:54 | 18 | 07:17 (7) | 19:35 | 20 | 19:01 (41) | 18:20 | | | 16:20 | | | 16:05 | 27 | 10:39 (15) |
| 23 | 05:24 | | 06:55 (7) | 06:21 | | 07:04 (7) | 07:19 | | 18:41 (41) | 08:18 | | | 08:21 | | | 08:59 | | 10:05 (16) |
| | 21:55 | 31 | 07:26 (7) | 20:51 | 8 | 07:12 (7) | 19:33 | 20 | 19:01 (41) | 18:18 | | | 16:19 | | | 16:06 | 26 | 10:39 (15) |
| 24 | 05:26 | | 06:54 (7) | 06:22 | | | 07:21 | | 18:40 (41) | 08:20 | | | 08:23 | | | 09:00 | | 10:06 (16) |
| | 21:54 | 33 | 07:27 (7) | 20:49 | | | 19:30 | 20 | 19:00 (41) | 18:15 | | | 16:17 | | | 16:06 | 26 | 10:40 (15) |
| 25 | 05:27 | | 06:53 (7) | 06:24 | | | 07:23 | | 18:40 (41) | 07:22 | | | 08:24 | | | 09:00 | | 10:07 (16) |
| | 21:52 | 35 | 07:28 (7) | 20:46 | | | 19:27 | 18 | 18:58 (41) | 17:13 | | | 16:16 | | | 16:07 | 25 | 10:40 (15) |
| 26 | 05:29 | | 06:53 (7) | 06:26 | | | 07:25 | | 18:40 (41) | 07:24 | | | 08:26 | | | 09:00 | | 10:08 (16) |
| | 21:50 | 36 | 07:29 (7) | 20:44 | | | 19:25 | 15 | 18:55 (41) | 17:11 | | | 16:15 | | | 16:08 | 23 | 10:40 (15) |
| 27 | 05:31 | | 06:53 (7) | 06:28 | | | 07:27 | | 18:40 (41) | 07:26 | | | 08:28 | | | 09:00 | | 10:09 (16) |
| | 21:49 | 37 | 07:30 (7) | 20:42 | | | 19:22 | 13 | 18:53 (41) | 17:09 | | | 16:14 | | | 16:08 | 22 | 10:41 (15) |
| 28 | 05:32 | | 06:52 (7) | 06:30 | | | 07:29 | | 18:41 (41) | 07:28 | | 08:39 (37) | 08:30 | | | 09:01 | | 10:10 (16) |
| | 21:47 | 38 | 07:30 (7) | 20:39 | | | 19:20 | 9 | 18:50 (41) | 17:06 | 8 | 08:47 (37) | 16:13 | | | 16:09 | 20 | 10:41 (15) |
| 29 | 05:34 | | 06:52 (7) | 06:32 | | | 07:31 | | 18:43 (41) | 07:30 | | 08:37 (37) | 08:31 | | | 09:01 | | 10:25 (15) |
| | 21:45 | 39 | 07:31 (7) | 20:37 | | | 19:17 | 4 | 18:47 (41) | 17:04 | 13 | 08:50 (37) | 16:12 | | | 16:10 | 16 | 10:41 (15) |
| 30 | 05:36 | | 06:51 (7) | 06:34 | | 19:09 (40) | 07:32 | | | 07:32 | | 08:35 (37) | 08:33 | | | 09:01 | | 10:26 (15) |
| | 21:43 | 40 | 07:31 (7) | 20:34 | 11 | 19:20 (40) | 19:14 | | | 17:02 | 17 | 08:52 (37) | 16:11 | | | 16:11 | 15 | 10:41 (15) |
| 31 | 05:38 | | 06:51 (7) | 06:36 | | 19:05 (40) | | | | 07:34 | | 08:34 (37) | | | | 09:01 | | 10:27 (15) |
| | 21:41 | 41 | 07:32 (7) | 20:32 | 17 | 19:22 (40) | | | | 17:00 | 19 | 08:53 (37) | | | | 16:12 | 15 | 10:42 (15) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 507 | | | 861 | | | 648 | | | 57 | | | 305 | | | 473 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,96 | | | 0,96 | | | 1,00 | | | 0,78 | | | 0,78 | | | 0,48 | |
| Total reduction | | 0,45 | | | 0,47 | | | 0,38 | | | 0,23 | | | 0,12 | | | 0,06 | |
| Total, real | | 226 | | | 408 | | | 244 | | | 13 | | | 36 | | | 29 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:10 (37) | 07:26 | | | 07:08 | | 19:00 (40) | 05:55 | | 06:43 (7) | 05:02 | | 06:55 (7) |
| | 16:14 | | | 17:08 | 24 | 09:34 (37) | 18:07 | | | 20:09 | 30 | 19:30 (40) | 21:08 | 44 | 07:27 (7) | 22:02 | 19 | 07:14 (7) |
| 2 | 09:00 | | | 08:26 | | 09:10 (37) | 07:24 | | | 07:05 | | 19:01 (40) | 05:53 | | 06:42 (7) | 05:01 | | 06:56 (7) |
| | 16:15 | | | 17:10 | 25 | 09:35 (37) | 18:09 | | | 20:11 | 29 | 19:30 (40) | 21:10 | 45 | 07:27 (7) | 22:03 | 17 | 07:13 (7) |
| 3 | 09:00 | | | 08:24 | | 09:10 (37) | 07:22 | | | 07:03 | | 19:00 (40) | 05:50 | | 06:41 (7) | 05:00 | | 06:58 (7) |
| | 16:16 | | | 17:12 | 25 | 09:35 (37) | 18:11 | | | 20:13 | 29 | 19:29 (40) | 21:12 | 46 | 07:27 (7) | 22:05 | 13 | 07:11 (7) |
| 4 | 09:00 | | | 08:22 | | 09:10 (37) | 07:19 | | | 07:00 | | 19:00 (40) | 05:48 | | 06:41 (7) | 04:59 | | 07:01 (7) |
| | 16:17 | | | 17:14 | 24 | 09:34 (37) | 18:13 | | | 20:15 | 28 | 19:28 (40) | 21:14 | 46 | 07:27 (7) | 22:06 | 9 | 07:10 (7) |
| 5 | 08:59 | | | 08:20 | | 09:10 (37) | 07:17 | | | 06:57 | | 19:00 (40) | 05:46 | | 06:41 (7) | 04:58 | | |
| | 16:19 | | | 17:16 | 24 | 09:34 (37) | 18:15 | | | 20:17 | 28 | 19:28 (40) | 21:16 | 46 | 07:27 (7) | 22:07 | | |
| 6 | 08:59 | | | 08:18 | | 09:11 (37) | 07:14 | | | 06:55 | | 19:00 (40) | 05:44 | | 06:41 (7) | 04:57 | | |
| | 16:20 | | | 17:19 | 22 | 09:33 (37) | 18:17 | | | 20:19 | 26 | 19:26 (40) | 21:18 | 47 | 07:28 (7) | 22:08 | | |
| 7 | 08:58 | | | 08:16 | | 09:12 (37) | 07:12 | | | 06:52 | | 19:01 (40) | 05:42 | | 06:41 (7) | 04:56 | | |
| | 16:21 | | | 17:21 | 21 | 09:33 (37) | 18:19 | | | 20:21 | 24 | 19:25 (40) | 21:20 | 47 | 07:28 (7) | 22:09 | | |
| 8 | 08:58 | | | 08:14 | | 09:13 (37) | 07:09 | | | 06:50 | | 19:02 (40) | 05:40 | | 06:41 (7) | 04:56 | | |
| | 16:23 | | | 17:23 | 19 | 09:32 (37) | 18:22 | | | 20:23 | 21 | 19:23 (40) | 21:22 | 47 | 07:28 (7) | 22:10 | | |
| 9 | 08:57 | | | 08:12 | | 09:14 (37) | 07:07 | | | 06:47 | | 19:04 (40) | 05:38 | | 06:41 (7) | 04:55 | | |
| | 16:24 | | | 17:25 | 18 | 09:32 (37) | 18:24 | | | 20:25 | 18 | 19:22 (40) | 21:24 | 47 | 07:28 (7) | 22:11 | | |
| 10 | 08:56 | | | 08:10 | | 09:15 (37) | 07:04 | | | 06:45 | | 19:05 (40) | 05:36 | | 06:41 (7) | 04:54 | | |
| | 16:26 | | | 17:27 | 14 | 09:29 (37) | 18:26 | | | 20:27 | 14 | 19:19 (40) | 21:26 | 46 | 07:27 (7) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | 09:18 (37) | 07:02 | | | 06:42 | | 19:10 (40) | 05:34 | | 06:40 (7) | 04:54 | | |
| | 16:28 | | | 17:29 | 9 | 09:27 (37) | 18:28 | | | 20:29 | 4 | 19:14 (40) | 21:28 | 47 | 07:27 (7) | 22:13 | | |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:41 (7) | 04:53 | | |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 46 | 07:27 (7) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | | 06:57 | | | 06:37 | | | 05:30 | | 06:41 (7) | 04:53 | | |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 46 | 07:27 (7) | 22:15 | | |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:41 (7) | 04:53 | | |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 45 | 07:26 (7) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:42 (7) | 04:52 | | |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 44 | 07:26 (7) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:42 (7) | 04:52 | | |
| | 16:36 | | | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 44 | 07:26 (7) | 22:17 | | |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:42 (7) | 04:52 | | |
| | 16:38 | | | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 43 | 07:25 (7) | 22:17 | | |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:43 (7) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 42 | 07:25 (7) | 22:18 | | |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:43 (7) | 04:52 | | |
| | 16:42 | | | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 41 | 07:24 (7) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | | 06:20 | | 07:02 (7) | 05:18 | | 06:44 (7) | 04:52 | | |
| | 16:44 | | | 17:48 | | | 18:46 | | | 20:47 | 10 | 07:12 (7) | 21:44 | 40 | 07:24 (7) | 22:18 | | |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | | 06:18 | | 06:57 (7) | 05:16 | | 06:45 (7) | 04:52 | | |
| | 16:46 | | | 17:50 | | | 18:48 | | | 20:49 | 19 | 07:16 (7) | 21:45 | 38 | 07:23 (7) | 22:19 | | |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | | 06:15 | | 06:55 (7) | 05:15 | | 06:45 (7) | 04:52 | | |
| | 16:48 | | | 17:53 | | | 18:50 | | | 20:51 | 24 | 07:19 (7) | 21:47 | 37 | 07:22 (7) | 22:19 | | |
| 23 | 08:42 | | 09:15 (37) | 07:41 | | | 06:31 | | | 06:13 | | 06:53 (7) | 05:13 | | 06:46 (7) | 04:53 | | |
| | 16:50 | 9 | 09:24 (37) | 17:55 | | | 18:52 | | | 20:53 | 28 | 07:21 (7) | 21:49 | 36 | 07:22 (7) | 22:19 | | |
| 24 | 08:41 | | 09:14 (37) | 07:38 | | | 06:28 | | 18:12 (40) | 06:11 | | 06:51 (7) | 05:12 | | 06:47 (7) | 04:53 | | |
| | 16:52 | 13 | 09:27 (37) | 17:57 | | | 18:54 | 12 | 18:24 (40) | 20:55 | 31 | 07:22 (7) | 21:50 | 34 | 07:21 (7) | 22:19 | | |
| 25 | 08:39 | | 09:12 (37) | 07:36 | | | 06:26 | | 18:08 (40) | 06:08 | | 06:49 (7) | 05:10 | | 06:47 (7) | 04:53 | | |
| | 16:54 | 16 | 09:28 (37) | 17:59 | | | 18:56 | 18 | 18:26 (40) | 20:57 | 34 | 07:23 (7) | 21:52 | 33 | 07:20 (7) | 22:19 | | |
| 26 | 08:37 | | 09:11 (37) | 07:34 | | | 06:23 | | 18:06 (40) | 06:06 | | 06:47 (7) | 05:09 | | 06:48 (7) | 04:54 | | |
| | 16:56 | 18 | 09:29 (37) | 18:01 | | | 18:57 | 21 | 18:27 (40) | 20:59 | 37 | 07:24 (7) | 21:53 | 31 | 07:19 (7) | 22:19 | | |
| 27 | 08:36 | | 09:10 (37) | 07:31 | | | 06:21 | | 18:05 (40) | 06:04 | | 06:46 (7) | 05:08 | | 06:49 (7) | 04:54 | | |
| | 16:58 | 20 | 09:30 (37) | 18:03 | | | 18:59 | 24 | 18:29 (40) | 21:01 | 39 | 07:25 (7) | 21:55 | 30 | 07:19 (7) | 22:19 | | |
| 28 | 08:34 | | 09:10 (37) | 07:29 | | | 06:18 | | 18:03 (40) | 06:02 | | 06:45 (7) | 05:06 | | 06:50 (7) | 04:55 | | |
| | 17:00 | 21 | 09:31 (37) | 18:05 | | | 19:01 | 26 | 18:29 (40) | 21:03 | 41 | 07:26 (7) | 21:57 | 28 | 07:18 (7) | 22:19 | | |
| 29 | 08:33 | | 09:10 (37) | | | | 07:15 | | 19:03 (40) | 05:59 | | 06:45 (7) | 05:05 | | 06:51 (7) | 04:55 | | |
| | 17:02 | 23 | 09:33 (37) | | | | 20:03 | 27 | 19:30 (40) | 21:05 | 41 | 07:26 (7) | 21:58 | 26 | 07:17 (7) | 22:18 | | |
| 30 | 08:31 | | 09:10 (37) | | | | 07:13 | | 19:01 (40) | 05:57 | | 06:44 (7) | 05:04 | | 06:52 (7) | 04:56 | | |
| | 17:04 | 23 | 09:33 (37) | | | | 20:05 | 29 | 19:30 (40) | 21:06 | 43 | 07:27 (7) | 21:59 | 24 | 07:16 (7) | 22:18 | | |
| 31 | 08:29 | | 09:10 (37) | | | | 07:10 | | 19:01 (40) | | | | 05:03 | | 06:54 (7) | | | |
| | 17:06 | 24 | 09:34 (37) | | | | 20:07 | 29 | 19:30 (40) | | | | 22:01 | 21 | 07:15 (7) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 167 | | | 225 | | | 186 | | | 598 | | | 1237 | | | 58 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 1,00 | | | 0,98 | | | 0,96 | | | 0,96 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 22 | | | 41 | | | 62 | | | 225 | | | 603 | | | 26 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 06:52 (7) | 06:38 | | 19:09 (40) | 07:34 | | | 07:36 | | 08:44 (37) | 08:35 | | |
| | 22:18 | | | 21:40 | 46 | 07:38 (7) | 20:29 | 4 | 19:13 (40) | 19:12 | | | 16:58 | 15 | 08:59 (37) | 16:10 | | |
| 2 | 04:57 | | | 05:41 | | 06:51 (7) | 06:39 | | 19:04 (40) | 07:36 | | | 07:38 | | 08:43 (37) | 08:36 | | |
| | 22:17 | | | 21:38 | 46 | 07:37 (7) | 20:27 | 14 | 19:18 (40) | 19:09 | | | 16:55 | 18 | 09:01 (37) | 16:09 | | |
| 3 | 04:58 | | | 05:43 | | 06:51 (7) | 06:41 | | 19:02 (40) | 07:38 | | | 07:41 | | 08:42 (37) | 08:38 | | |
| | 22:17 | | | 21:36 | 47 | 07:38 (7) | 20:24 | 18 | 19:20 (40) | 19:07 | | | 16:53 | 20 | 09:02 (37) | 16:08 | | |
| 4 | 04:59 | | | 05:45 | | 06:51 (7) | 06:43 | | 19:00 (40) | 07:40 | | | 07:43 | | 08:41 (37) | 08:40 | | |
| | 22:16 | | | 21:34 | 47 | 07:38 (7) | 20:22 | 21 | 19:21 (40) | 19:04 | | | 16:51 | 22 | 09:03 (37) | 16:07 | | |
| 5 | 05:00 | | | 05:47 | | 06:50 (7) | 06:45 | | 18:58 (40) | 07:42 | | | 07:45 | | 08:40 (37) | 08:41 | | |
| | 22:16 | | | 21:32 | 47 | 07:37 (7) | 20:19 | 23 | 19:21 (40) | 19:02 | | | 16:49 | 23 | 09:03 (37) | 16:07 | | |
| 6 | 05:01 | | | 05:49 | | 06:51 (7) | 06:47 | | 18:56 (40) | 07:44 | | | 07:47 | | 08:41 (37) | 08:43 | | |
| | 22:15 | | | 21:30 | 46 | 07:37 (7) | 20:16 | 26 | 19:22 (40) | 18:59 | | | 16:47 | 23 | 09:04 (37) | 16:06 | | |
| 7 | 05:02 | | | 05:50 | | 06:51 (7) | 06:49 | | 18:56 (40) | 07:46 | | | 07:49 | | 08:40 (37) | 08:44 | | |
| | 22:14 | | | 21:28 | 47 | 07:38 (7) | 20:14 | 27 | 19:23 (40) | 18:57 | | | 16:45 | 25 | 09:05 (37) | 16:06 | | |
| 8 | 05:03 | | 07:08 (7) | 05:52 | | 06:51 (7) | 06:51 | | 18:55 (40) | 07:48 | | | 07:51 | | 08:40 (37) | 08:45 | | |
| | 22:14 | 7 | 07:15 (7) | 21:25 | 47 | 07:38 (7) | 20:11 | 28 | 19:23 (40) | 18:54 | | | 16:43 | 24 | 09:04 (37) | 16:05 | | |
| 9 | 05:04 | | 07:06 (7) | 05:54 | | 06:51 (7) | 06:53 | | 18:54 (40) | 07:50 | | | 07:53 | | 08:40 (37) | 08:47 | | |
| | 22:13 | 12 | 07:18 (7) | 21:23 | 46 | 07:37 (7) | 20:09 | 29 | 19:23 (40) | 18:52 | | | 16:41 | 24 | 09:04 (37) | 16:05 | | |
| 10 | 05:05 | | 07:04 (7) | 05:56 | | 06:51 (7) | 06:55 | | 18:53 (40) | 07:52 | | | 07:55 | | 08:41 (37) | 08:48 | | |
| | 22:12 | 15 | 07:19 (7) | 21:21 | 45 | 07:36 (7) | 20:06 | 29 | 19:22 (40) | 18:49 | | | 16:40 | 24 | 09:05 (37) | 16:04 | | |
| 11 | 05:07 | | 07:03 (7) | 05:58 | | 06:51 (7) | 06:56 | | 18:53 (40) | 07:54 | | | 07:57 | | 08:41 (37) | 08:49 | | |
| | 22:11 | 18 | 07:21 (7) | 21:19 | 45 | 07:36 (7) | 20:04 | 29 | 19:22 (40) | 18:47 | | | 16:38 | 24 | 09:05 (37) | 16:04 | | |
| 12 | 05:08 | | 07:03 (7) | 06:00 | | 06:51 (7) | 06:58 | | 18:53 (40) | 07:56 | | | 07:59 | | 08:41 (37) | 08:50 | | |
| | 22:10 | 20 | 07:23 (7) | 21:17 | 44 | 07:35 (7) | 20:01 | 29 | 19:22 (40) | 18:44 | | | 16:36 | 23 | 09:04 (37) | 16:04 | | |
| 13 | 05:09 | | 07:01 (7) | 06:02 | | 06:52 (7) | 07:00 | | 18:53 (40) | 07:58 | | | 08:01 | | 08:42 (37) | 08:51 | | |
| | 22:09 | 23 | 07:24 (7) | 21:15 | 42 | 07:34 (7) | 19:58 | 28 | 19:21 (40) | 18:42 | | | 16:34 | 23 | 09:05 (37) | 16:04 | | |
| 14 | 05:11 | | 07:00 (7) | 06:03 | | 06:52 (7) | 07:02 | | 18:53 (40) | 08:00 | | | 08:03 | | 08:43 (37) | 08:52 | | |
| | 22:08 | 25 | 07:25 (7) | 21:12 | 42 | 07:34 (7) | 19:56 | 27 | 19:20 (40) | 18:39 | | | 16:32 | 21 | 09:04 (37) | 16:03 | | |
| 15 | 05:12 | | 06:59 (7) | 06:05 | | 06:53 (7) | 07:04 | | 18:53 (40) | 08:02 | | | 08:05 | | 08:43 (37) | 08:53 | | |
| | 22:06 | 27 | 07:26 (7) | 21:10 | 40 | 07:33 (7) | 19:53 | 26 | 19:19 (40) | 18:37 | | | 16:31 | 20 | 09:03 (37) | 16:03 | | |
| 16 | 05:13 | | 06:59 (7) | 06:07 | | 06:54 (7) | 07:06 | | 18:53 (40) | 08:04 | | | 08:07 | | 08:44 (37) | 08:54 | | |
| | 22:05 | 29 | 07:28 (7) | 21:08 | 38 | 07:32 (7) | 19:51 | 24 | 19:17 (40) | 18:34 | | | 16:29 | 18 | 09:02 (37) | 16:03 | | |
| 17 | 05:15 | | 06:58 (7) | 06:09 | | 06:54 (7) | 07:08 | | 18:54 (40) | 08:06 | | | 08:09 | | 08:45 (37) | 08:55 | | |
| | 22:04 | 31 | 07:29 (7) | 21:05 | 36 | 07:30 (7) | 19:48 | 22 | 19:16 (40) | 18:32 | | | 16:27 | 16 | 09:01 (37) | 16:04 | | |
| 18 | 05:16 | | 06:57 (7) | 06:11 | | 06:55 (7) | 07:10 | | 18:55 (40) | 08:08 | | | 08:11 | | 08:48 (37) | 08:56 | | 10:39 (15) |
| | 22:03 | 32 | 07:29 (7) | 21:03 | 34 | 07:29 (7) | 19:46 | 19 | 19:14 (40) | 18:29 | | | 16:26 | 13 | 09:01 (37) | 16:04 | 4 | 10:43 (15) |
| 19 | 05:18 | | 06:57 (7) | 06:13 | | 06:57 (7) | 07:12 | | 18:57 (40) | 08:10 | | | 08:13 | | 08:50 (37) | 08:57 | | 10:38 (15) |
| | 22:01 | 34 | 07:31 (7) | 21:01 | 31 | 07:28 (7) | 19:43 | 15 | 19:12 (40) | 18:27 | | | 16:24 | 9 | 08:59 (37) | 16:04 | 5 | 10:43 (15) |
| 20 | 05:19 | | 06:56 (7) | 06:15 | | 06:59 (7) | 07:13 | | 19:01 (40) | 08:12 | | | 08:15 | | | 08:57 | | 10:38 (15) |
| | 22:00 | 35 | 07:31 (7) | 20:58 | 27 | 07:26 (7) | 19:40 | 6 | 19:07 (40) | 18:25 | | | 16:23 | | | 16:04 | 6 | 10:44 (15) |
| 21 | 05:21 | | 06:55 (7) | 06:17 | | 07:00 (7) | 07:15 | | | 08:14 | | | 08:17 | | | 08:58 | | 10:38 (15) |
| | 21:58 | 37 | 07:32 (7) | 20:56 | 23 | 07:23 (7) | 19:38 | | | 18:22 | | | 16:21 | | | 16:05 | 6 | 10:44 (15) |
| 22 | 05:22 | | 06:55 (7) | 06:19 | | 07:02 (7) | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 | | 10:39 (15) |
| | 21:57 | 38 | 07:33 (7) | 20:54 | 18 | 07:20 (7) | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 | 6 | 10:45 (15) |
| 23 | 05:24 | | 06:54 (7) | 06:21 | | 07:07 (7) | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 | | 10:39 (15) |
| | 21:55 | 39 | 07:33 (7) | 20:51 | 8 | 07:15 (7) | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 | 6 | 10:45 (15) |
| 24 | 05:26 | | 06:54 (7) | 06:22 | | | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 | | 10:41 (15) |
| | 21:54 | 40 | 07:34 (7) | 20:49 | | | 19:30 | | | 18:15 | | | 16:17 | | | 16:06 | 5 | 10:46 (15) |
| 25 | 05:27 | | 06:53 (7) | 06:24 | | | 07:23 | | | 07:22 | | | 08:24 | | | 09:00 | | 10:42 (15) |
| | 21:52 | 41 | 07:34 (7) | 20:46 | | | 19:27 | | | 17:13 | | | 16:16 | | | 16:07 | 4 | 10:46 (15) |
| 26 | 05:29 | | 06:53 (7) | 06:26 | | | 07:25 | | | 07:24 | | | 08:26 | | | 09:00 | | 10:43 (15) |
| | 21:50 | 42 | 07:35 (7) | 20:44 | | | 19:25 | | | 17:11 | | | 16:15 | | | 16:08 | 2 | 10:45 (15) |
| 27 | 05:31 | | 06:53 (7) | 06:28 | | | 07:27 | | | 07:26 | | | 08:28 | | | 09:00 | | |
| | 21:49 | 43 | 07:36 (7) | 20:42 | | | 19:22 | | | 17:08 | | | 16:14 | | | 16:08 | | |
| 28 | 05:32 | | 06:52 (7) | 06:30 | | | 07:29 | | | 07:28 | | | 08:30 | | | 09:01 | | |
| | 21:47 | 44 | 07:36 (7) | 20:39 | | | 19:20 | | | 17:06 | | | 16:13 | | | 16:09 | | |
| 29 | 05:34 | | 06:52 (7) | 06:32 | | | 07:31 | | | 07:30 | | | 08:31 | | | 09:01 | | |
| | 21:45 | 45 | 07:37 (7) | 20:37 | | | 19:17 | | | 17:04 | | | 16:12 | | | 16:10 | | |
| 30 | 05:36 | | 06:51 (7) | 06:34 | | | 07:32 | | | 07:32 | | | 08:33 | | | 09:01 | | |
| | 21:43 | 46 | 07:37 (7) | 20:34 | | | 19:14 | | | 17:02 | | | 16:11 | | | 16:11 | | |
| 31 | 05:38 | | 06:51 (7) | 06:36 | | | | | | 07:34 | | 08:47 (37) | | | | 09:01 | | |
| | 21:41 | 46 | 07:37 (7) | 20:32 | | | | | | 17:00 | 10 | 08:57 (37) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 769 | | | 892 | | | 444 | | | 10 | | | 385 | | | 44 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,96 | | | 0,96 | | | 1,00 | | | 0,76 | | | 0,76 | | | 0,42 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,39 | | | 0,23 | | | 0,12 | | | 0,06 | |
| Total, real | | 352 | | | 433 | | | 172 | | | 2 | | | 45 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:13 (37) | 07:26 | | | 07:08 | | 19:00 (40) | 05:55 | | 06:44 (7) | 05:02 | | 06:53 (7) |
| | 16:14 | | | 17:08 | 25 | 09:38 (37) | 18:07 | | | 20:09 | 29 | 19:29 (40) | 21:08 | 45 | 07:29 (7) | 22:02 | 26 | 07:19 (7) |
| 2 | 09:00 | | | 08:26 | | 09:13 (37) | 07:24 | | | 07:05 | | 19:00 (40) | 05:53 | | 06:43 (7) | 05:01 | | 06:54 (7) |
| | 16:15 | | | 17:10 | 25 | 09:38 (37) | 18:09 | | | 20:11 | 29 | 19:29 (40) | 21:10 | 46 | 07:29 (7) | 22:03 | 24 | 07:18 (7) |
| 3 | 09:00 | | | 08:24 | | 09:14 (37) | 07:22 | | | 07:03 | | 19:00 (40) | 05:50 | | 06:42 (7) | 05:00 | | 06:55 (7) |
| | 16:16 | | | 17:12 | 24 | 09:38 (37) | 18:11 | | | 20:13 | 28 | 19:28 (40) | 21:12 | 47 | 07:29 (7) | 22:05 | 22 | 07:17 (7) |
| 4 | 09:00 | | | 08:22 | | 09:13 (37) | 07:19 | | | 07:00 | | 18:59 (40) | 05:48 | | 06:42 (7) | 04:59 | | 06:57 (7) |
| | 16:17 | | | 17:14 | 24 | 09:37 (37) | 18:13 | | | 20:15 | 27 | 19:26 (40) | 21:14 | 47 | 07:29 (7) | 22:06 | 20 | 07:17 (7) |
| 5 | 08:59 | | | 08:20 | | 09:14 (37) | 07:17 | | | 06:57 | | 19:00 (40) | 05:46 | | 06:41 (7) | 04:58 | | 06:58 (7) |
| | 16:19 | | | 17:16 | 23 | 09:37 (37) | 18:15 | | | 20:17 | 26 | 19:26 (40) | 21:16 | 48 | 07:29 (7) | 22:07 | 17 | 07:15 (7) |
| 6 | 08:59 | | | 08:18 | | 09:15 (37) | 07:14 | | | 06:55 | | 19:01 (40) | 05:44 | | 06:42 (7) | 04:57 | | 06:59 (7) |
| | 16:20 | | | 17:19 | 21 | 09:36 (37) | 18:17 | | | 20:19 | 23 | 19:24 (40) | 21:18 | 48 | 07:30 (7) | 22:08 | 15 | 07:14 (7) |
| 7 | 08:58 | | | 08:16 | | 09:16 (37) | 07:12 | | | 06:52 | | 19:02 (40) | 05:42 | | 06:42 (7) | 04:56 | | 07:01 (7) |
| | 16:21 | | | 17:21 | 20 | 09:36 (37) | 18:19 | | | 20:21 | 21 | 19:23 (40) | 21:20 | 48 | 07:30 (7) | 22:09 | 12 | 07:13 (7) |
| 8 | 08:58 | | | 08:14 | | 09:17 (37) | 07:09 | | | 06:50 | | 19:03 (40) | 05:40 | | 06:41 (7) | 04:56 | | 07:02 (7) |
| | 16:23 | | | 17:23 | 18 | 09:35 (37) | 18:22 | | | 20:23 | 18 | 19:21 (40) | 21:22 | 49 | 07:30 (7) | 22:10 | 9 | 07:11 (7) |
| 9 | 08:57 | | | 08:12 | | 09:19 (37) | 07:07 | | | 06:47 | | 19:05 (40) | 05:38 | | 06:41 (7) | 04:55 | | 07:06 (7) |
| | 16:24 | | | 17:25 | 15 | 09:34 (37) | 18:24 | | | 20:25 | 14 | 19:19 (40) | 21:24 | 49 | 07:30 (7) | 22:11 | 2 | 07:08 (7) |
| 10 | 08:56 | | | 08:10 | | 09:21 (37) | 07:04 | | | 06:45 | | 19:09 (40) | 05:36 | | 06:41 (7) | 04:54 | | |
| | 16:26 | | | 17:27 | 9 | 09:30 (37) | 18:26 | | | 20:27 | 5 | 19:14 (40) | 21:26 | 49 | 07:30 (7) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:41 (7) | 04:54 | | |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 48 | 07:29 (7) | 22:13 | | |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:42 (7) | 04:53 | | |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 48 | 07:30 (7) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | | 06:57 | | | 06:37 | | | 05:30 | | 06:41 (7) | 04:53 | | |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 48 | 07:29 (7) | 22:15 | | |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:41 (7) | 04:53 | | |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 48 | 07:29 (7) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:42 (7) | 04:52 | | |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 47 | 07:29 (7) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:42 (7) | 04:52 | | |
| | 16:36 | | | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 46 | 07:28 (7) | 22:17 | | |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:42 (7) | 04:52 | | |
| | 16:38 | | | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 45 | 07:27 (7) | 22:17 | | |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:43 (7) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 44 | 07:27 (7) | 22:18 | | |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:43 (7) | 04:52 | | |
| | 16:42 | | | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 43 | 07:26 (7) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | | 06:20 | | 07:04 (7) | 05:18 | | 06:44 (7) | 04:52 | | |
| | 16:44 | | | 17:48 | | | 18:46 | | | 20:47 | 9 | 07:13 (7) | 21:44 | 42 | 07:26 (7) | 22:18 | | |
| 21 | 08:45 | | 09:19 (37) | 07:46 | | | 06:36 | | | 06:18 | | 06:59 (7) | 05:16 | | 06:45 (7) | 04:52 | | |
| | 16:46 | 8 | 09:27 (37) | 17:50 | | | 18:48 | | | 20:49 | 18 | 07:17 (7) | 21:45 | 41 | 07:26 (7) | 22:19 | | |
| 22 | 08:43 | | 09:17 (37) | 07:43 | | | 06:33 | | | 06:15 | | 06:56 (7) | 05:15 | | 06:45 (7) | 04:52 | | |
| | 16:48 | 12 | 09:29 (37) | 17:53 | | | 18:50 | | | 20:51 | 24 | 07:20 (7) | 21:47 | 40 | 07:25 (7) | 22:19 | | |
| 23 | 08:42 | | 09:15 (37) | 07:41 | | | 06:31 | | 18:12 (40) | 06:13 | | 06:54 (7) | 05:13 | | 06:46 (7) | 04:53 | | |
| | 16:50 | 16 | 09:31 (37) | 17:55 | | | 18:52 | 9 | 18:21 (40) | 20:53 | 28 | 07:22 (7) | 21:49 | 39 | 07:25 (7) | 22:19 | | |
| 24 | 08:41 | | 09:15 (37) | 07:38 | | | 06:28 | | 18:09 (40) | 06:11 | | 06:52 (7) | 05:12 | | 06:47 (7) | 04:53 | | |
| | 16:51 | 18 | 09:33 (37) | 17:57 | | | 18:54 | 16 | 18:25 (40) | 20:55 | 32 | 07:24 (7) | 21:50 | 38 | 07:25 (7) | 22:19 | | |
| 25 | 08:39 | | 09:14 (37) | 07:36 | | | 06:26 | | 18:07 (40) | 06:08 | | 06:50 (7) | 05:10 | | 06:46 (7) | 04:53 | | |
| | 16:54 | 20 | 09:34 (37) | 17:59 | | | 18:56 | 19 | 18:26 (40) | 20:57 | 34 | 07:24 (7) | 21:52 | 37 | 07:23 (7) | 22:19 | | |
| 26 | 08:37 | | 09:14 (37) | 07:34 | | | 06:23 | | 18:04 (40) | 06:06 | | 06:48 (7) | 05:09 | | 06:47 (7) | 04:54 | | |
| | 16:56 | 20 | 09:34 (37) | 18:01 | | | 18:57 | 23 | 18:27 (40) | 20:59 | 38 | 07:26 (7) | 21:53 | 36 | 07:23 (7) | 22:19 | | |
| 27 | 08:36 | | 09:13 (37) | 07:31 | | | 06:21 | | 18:04 (40) | 06:04 | | 06:47 (7) | 05:08 | | 06:48 (7) | 04:54 | | |
| | 16:58 | 22 | 09:35 (37) | 18:03 | | | 18:59 | 24 | 18:28 (40) | 21:01 | 40 | 07:27 (7) | 21:55 | 34 | 07:22 (7) | 22:19 | | |
| 28 | 08:34 | | 09:13 (37) | 07:29 | | | 06:18 | | 18:02 (40) | 06:02 | | 06:46 (7) | 05:06 | | 06:49 (7) | 04:55 | | |
| | 17:00 | 23 | 09:36 (37) | 18:05 | | | 19:01 | 26 | 18:28 (40) | 21:03 | 41 | 07:27 (7) | 21:57 | 33 | 07:22 (7) | 22:19 | | |
| 29 | 08:33 | | 09:13 (37) | | | | 07:15 | | 19:02 (40) | 05:59 | | 06:46 (7) | 05:05 | | 06:50 (7) | 04:55 | | |
| | 17:02 | 24 | 09:37 (37) | | | | 20:03 | 27 | 19:29 (40) | 21:05 | 42 | 07:28 (7) | 21:58 | 31 | 07:21 (7) | 22:18 | | |
| 30 | 08:31 | | 09:13 (37) | | | | 07:13 | | 19:01 (40) | 05:57 | | 06:45 (7) | 05:04 | | 06:51 (7) | 04:56 | | |
| | 17:04 | 25 | 09:38 (37) | | | | 20:05 | 28 | 19:29 (40) | 21:06 | 44 | 07:29 (7) | 21:59 | 29 | 07:20 (7) | 22:18 | | |
| 31 | 08:29 | | 09:13 (37) | | | | 07:10 | | 19:01 (40) | | | | 05:03 | | 06:52 (7) | | | |
| | 17:06 | 25 | 09:38 (37) | | | | 20:07 | 28 | 19:29 (40) | | | | 22:01 | 28 | 07:20 (7) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 213 | | | 204 | | | 200 | | | 570 | | | 1321 | | | 147 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,74 | | | 0,74 | | | 1,00 | | | 0,98 | | | 0,96 | | | 0,96 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 28 | | | 37 | | | 67 | | | 215 | | | 645 | | | 67 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 06:52 (7) | 06:38 | | | 07:34 | 07:36 | | | 08:50 (37) | 08:35 |
| | 22:18 | | | 21:40 | 48 | 07:40 (7) | 20:29 | | | 19:12 | 16:58 | 11 | | 09:01 (37) | 16:10 |
| 2 | 04:57 | | | 05:41 | | 06:51 (7) | 06:39 | | 19:08 (40) | 07:36 | 07:38 | | | 08:49 (37) | 08:36 |
| | 22:17 | | | 21:38 | 49 | 07:40 (7) | 20:27 | 5 | 19:13 (40) | 19:09 | 16:55 | 15 | | 09:04 (37) | 16:09 |
| 3 | 04:58 | | | 05:43 | | 06:51 (7) | 06:41 | | 19:03 (40) | 07:38 | 07:41 | | | 08:47 (37) | 08:38 |
| | 22:17 | | | 21:36 | 49 | 07:40 (7) | 20:24 | 14 | 19:17 (40) | 19:07 | 16:53 | 18 | | 09:05 (37) | 16:08 |
| 4 | 04:59 | | 07:09 (7) | 05:45 | | 06:52 (7) | 06:43 | | 19:01 (40) | 07:40 | 07:43 | | | 08:46 (37) | 08:40 |
| | 22:16 | 6 | 07:15 (7) | 21:34 | 48 | 07:40 (7) | 20:22 | 18 | 19:19 (40) | 19:04 | 16:51 | 20 | | 09:06 (37) | 16:07 |
| 5 | 05:00 | | 07:07 (7) | 05:47 | | 06:51 (7) | 06:45 | | 18:58 (40) | 07:42 | 07:45 | | | 08:45 (37) | 08:41 |
| | 22:16 | 11 | 07:18 (7) | 21:32 | 48 | 07:39 (7) | 20:19 | 21 | 19:19 (40) | 19:02 | 16:49 | 21 | | 09:06 (37) | 16:07 |
| 6 | 05:01 | | 07:05 (7) | 05:49 | | 06:51 (7) | 06:47 | | 18:57 (40) | 07:44 | 07:47 | | | 08:45 (37) | 08:43 |
| | 22:15 | 14 | 07:19 (7) | 21:30 | 49 | 07:40 (7) | 20:16 | 23 | 19:20 (40) | 18:59 | 16:47 | 23 | | 09:08 (37) | 16:06 |
| 7 | 05:02 | | 07:04 (7) | 05:50 | | 06:51 (7) | 06:49 | | 18:56 (40) | 07:46 | 07:49 | | | 08:44 (37) | 08:44 |
| | 22:14 | 17 | 07:21 (7) | 21:28 | 49 | 07:40 (7) | 20:14 | 25 | 19:21 (40) | 18:57 | 16:45 | 24 | | 09:08 (37) | 16:06 |
| 8 | 05:03 | | 07:03 (7) | 05:52 | | 06:52 (7) | 06:51 | | 18:55 (40) | 07:48 | 07:51 | | | 08:44 (37) | 08:45 |
| | 22:14 | 19 | 07:22 (7) | 21:25 | 48 | 07:40 (7) | 20:11 | 27 | 19:22 (40) | 18:54 | 16:43 | 24 | | 09:08 (37) | 16:05 |
| 9 | 05:04 | | 07:02 (7) | 05:54 | | 06:51 (7) | 06:53 | | 18:54 (40) | 07:50 | 07:53 | | | 08:43 (37) | 08:47 |
| | 22:13 | 22 | 07:24 (7) | 21:23 | 48 | 07:39 (7) | 20:09 | 28 | 19:22 (40) | 18:52 | 16:41 | 25 | | 09:08 (37) | 16:05 |
| 10 | 05:05 | | 07:02 (7) | 05:56 | | 06:52 (7) | 06:55 | | 18:52 (40) | 07:52 | 07:55 | | | 08:44 (37) | 08:48 |
| | 22:12 | 23 | 07:25 (7) | 21:21 | 46 | 07:38 (7) | 20:06 | 29 | 19:21 (40) | 18:49 | 16:40 | 25 | | 09:09 (37) | 16:04 |
| 11 | 05:07 | | 07:01 (7) | 05:58 | | 06:52 (7) | 06:56 | | 18:52 (40) | 07:54 | 07:57 | | | 08:44 (37) | 08:49 |
| | 22:11 | 25 | 07:26 (7) | 21:19 | 46 | 07:38 (7) | 20:04 | 29 | 19:21 (40) | 18:47 | 16:38 | 25 | | 09:09 (37) | 16:04 |
| 12 | 05:08 | | 07:01 (7) | 06:00 | | 06:52 (7) | 06:58 | | 18:52 (40) | 07:56 | 07:59 | | | 08:44 (37) | 08:50 |
| | 22:10 | 27 | 07:28 (7) | 21:17 | 45 | 07:37 (7) | 20:01 | 29 | 19:21 (40) | 18:44 | 16:36 | 24 | | 09:08 (37) | 16:04 |
| 13 | 05:09 | | 07:00 (7) | 06:02 | | 06:53 (7) | 07:00 | | 18:52 (40) | 07:58 | 08:01 | | | 08:45 (37) | 08:51 |
| | 22:09 | 29 | 07:29 (7) | 21:15 | 43 | 07:36 (7) | 19:58 | 28 | 19:20 (40) | 18:42 | 16:34 | 24 | | 09:09 (37) | 16:04 |
| 14 | 05:11 | | 06:59 (7) | 06:03 | | 06:53 (7) | 07:02 | | 18:52 (40) | 08:00 | 08:03 | | | 08:45 (37) | 08:52 |
| | 22:08 | 30 | 07:29 (7) | 21:12 | 43 | 07:36 (7) | 19:56 | 28 | 19:20 (40) | 18:39 | 16:32 | 24 | | 09:09 (37) | 16:03 |
| 15 | 05:12 | | 06:58 (7) | 06:05 | | 06:54 (7) | 07:04 | | 18:52 (40) | 08:02 | 08:05 | | | 08:46 (37) | 08:53 |
| | 22:06 | 32 | 07:30 (7) | 21:10 | 41 | 07:35 (7) | 19:53 | 27 | 19:19 (40) | 18:37 | 16:31 | 22 | | 09:08 (37) | 16:03 |
| 16 | 05:13 | | 06:58 (7) | 06:07 | | 06:55 (7) | 07:06 | | 18:52 (40) | 08:04 | 08:07 | | | 08:47 (37) | 08:54 |
| | 22:05 | 34 | 07:32 (7) | 21:08 | 39 | 07:34 (7) | 19:51 | 25 | 19:17 (40) | 18:34 | 16:29 | 20 | | 09:07 (37) | 16:03 |
| 17 | 05:15 | | 06:57 (7) | 06:09 | | 06:55 (7) | 07:08 | | 18:53 (40) | 08:06 | 08:09 | | | 08:47 (37) | 08:55 |
| | 22:04 | 35 | 07:32 (7) | 21:05 | 37 | 07:32 (7) | 19:48 | 23 | 19:16 (40) | 18:32 | 16:27 | 20 | | 09:07 (37) | 16:04 |
| 18 | 05:16 | | 06:56 (7) | 06:11 | | 06:56 (7) | 07:10 | | 18:54 (40) | 08:08 | 08:11 | | | 08:49 (37) | 08:56 |
| | 22:03 | 37 | 07:33 (7) | 21:03 | 35 | 07:31 (7) | 19:46 | 20 | 19:14 (40) | 18:29 | 16:26 | 18 | | 09:07 (37) | 16:04 |
| 19 | 05:18 | | 06:57 (7) | 06:13 | | 06:58 (7) | 07:12 | | 18:55 (40) | 08:10 | 08:13 | | | 08:50 (37) | 08:57 |
| | 22:01 | 37 | 07:34 (7) | 21:01 | 31 | 07:29 (7) | 19:43 | 17 | 19:12 (40) | 18:27 | 16:24 | 16 | | 09:06 (37) | 16:04 |
| 20 | 05:19 | | 06:56 (7) | 06:15 | | 07:00 (7) | 07:13 | | 18:58 (40) | 08:12 | 08:15 | | | 08:52 (37) | 08:57 |
| | 22:00 | 38 | 07:34 (7) | 20:58 | 27 | 07:27 (7) | 19:40 | 11 | 19:09 (40) | 18:25 | 16:23 | 12 | | 09:04 (37) | 16:04 |
| 21 | 05:21 | | 06:55 (7) | 06:17 | | 07:01 (7) | 07:15 | | | 08:14 | 08:17 | | | 08:54 (37) | 08:58 |
| | 21:58 | 40 | 07:35 (7) | 20:56 | 23 | 07:24 (7) | 19:38 | | | 18:22 | 16:21 | 8 | | 09:02 (37) | 16:05 |
| 22 | 05:22 | | 06:55 (7) | 06:19 | | 07:04 (7) | 07:17 | | | 08:16 | 08:19 | | | | 08:59 |
| | 21:57 | 41 | 07:36 (7) | 20:54 | 17 | 07:21 (7) | 19:35 | | | 18:20 | 16:20 | | | | 16:05 |
| 23 | 05:24 | | 06:54 (7) | 06:21 | | 07:09 (7) | 07:19 | | | 08:18 | 08:21 | | | | 08:59 |
| | 21:55 | 42 | 07:36 (7) | 20:51 | 7 | 07:16 (7) | 19:33 | | | 18:18 | 16:19 | | | | 16:06 |
| 24 | 05:26 | | 06:54 (7) | 06:22 | | | 07:21 | | | 08:20 | 08:23 | | | | 09:00 |
| | 21:54 | 43 | 07:37 (7) | 20:49 | | | 19:30 | | | 18:15 | 16:17 | | | | 16:06 |
| 25 | 05:27 | | 06:53 (7) | 06:24 | | | 07:23 | | | 07:22 | 08:24 | | | | 09:00 |
| | 21:52 | 44 | 07:37 (7) | 20:46 | | | 19:27 | | | 17:13 | 16:16 | | | | 16:07 |
| 26 | 05:29 | | 06:53 (7) | 06:26 | | | 07:25 | | | 07:24 | 08:26 | | | | 09:00 |
| | 21:50 | 45 | 07:38 (7) | 20:44 | | | 19:25 | | | 17:11 | 16:15 | | | | 16:08 |
| 27 | 05:31 | | 06:53 (7) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | | | 09:00 |
| | 21:49 | 46 | 07:39 (7) | 20:42 | | | 19:22 | | | 17:08 | 16:14 | | | | 16:08 |
| 28 | 05:32 | | 06:52 (7) | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | | | 09:01 |
| | 21:47 | 47 | 07:39 (7) | 20:39 | | | 19:20 | | | 17:06 | 16:13 | | | | 16:09 |
| 29 | 05:34 | | 06:52 (7) | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | | | 09:01 |
| | 21:45 | 47 | 07:39 (7) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | | | | 16:10 |
| 30 | 05:36 | | 06:52 (7) | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | | | 09:01 |
| | 21:43 | 47 | 07:39 (7) | 20:34 | | | 19:14 | | | 17:02 | 16:11 | | | | 16:11 |
| 31 | 05:38 | | 06:52 (7) | 06:36 | | | | | | 07:34 | | | | | 09:01 |
| | 21:41 | 48 | 07:40 (7) | 20:32 | | | | | | 17:00 | | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | | 224 |
| Total, worst case | | 926 | | | 916 | | | 427 | | | | 419 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | |
| Wind dir. red. | | 0,96 | | | 0,96 | | | 1,00 | | | | 0,74 | | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,39 | | | | 0,12 | | | |
| Total, real | | 425 | | | 446 | | | 165 | | | | 48 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:17 (37) | 07:26 | | | 07:08 | | 18:59 (40) | 05:55 | | 06:45 (7) | 05:02 | | 06:51 (7) |
| | 16:14 | | | 17:08 | 25 | 09:42 (37) | 18:07 | | | 20:09 | 29 | 19:28 (40) | 21:08 | 46 | 07:31 (7) | 22:02 | 32 | 07:23 (7) |
| 2 | 09:00 | | | 08:26 | | 09:17 (37) | 07:24 | | | 07:05 | | 19:00 (40) | 05:53 | | 06:44 (7) | 05:01 | | 06:52 (7) |
| | 16:15 | | | 17:10 | 25 | 09:42 (37) | 18:09 | | | 20:11 | 28 | 19:28 (40) | 21:10 | 47 | 07:31 (7) | 22:03 | 30 | 07:22 (7) |
| 3 | 09:00 | | | 08:24 | | 09:18 (37) | 07:22 | | | 07:03 | | 19:00 (40) | 05:50 | | 06:43 (7) | 05:00 | | 06:53 (7) |
| | 16:16 | | | 17:12 | 24 | 09:42 (37) | 18:11 | | | 20:13 | 26 | 19:26 (40) | 21:12 | 48 | 07:31 (7) | 22:05 | 29 | 07:22 (7) |
| 4 | 09:00 | | | 08:22 | | 09:18 (37) | 07:19 | | | 07:00 | | 19:00 (40) | 05:48 | | 06:42 (7) | 04:59 | | 06:54 (7) |
| | 16:17 | | | 17:14 | 22 | 09:40 (37) | 18:13 | | | 20:15 | 25 | 19:25 (40) | 21:14 | 49 | 07:31 (7) | 22:06 | 28 | 07:22 (7) |
| 5 | 08:59 | | | 08:20 | | 09:19 (37) | 07:17 | | | 06:57 | | 19:01 (40) | 05:46 | | 06:42 (7) | 04:58 | | 06:55 (7) |
| | 16:19 | | | 17:16 | 21 | 09:40 (37) | 18:15 | | | 20:17 | 23 | 19:24 (40) | 21:16 | 49 | 07:31 (7) | 22:07 | 26 | 07:21 (7) |
| 6 | 08:59 | | | 08:18 | | 09:20 (37) | 07:14 | | | 06:55 | | 19:01 (40) | 05:44 | | 06:43 (7) | 04:57 | | 06:55 (7) |
| | 16:20 | | | 17:19 | 19 | 09:39 (37) | 18:17 | | | 20:19 | 21 | 19:22 (40) | 21:18 | 50 | 07:33 (7) | 22:08 | 25 | 07:20 (7) |
| 7 | 08:58 | | | 08:16 | | 09:21 (37) | 07:12 | | | 06:52 | | 19:03 (40) | 05:42 | | 06:42 (7) | 04:56 | | 06:57 (7) |
| | 16:21 | | | 17:21 | 17 | 09:38 (37) | 18:19 | | | 20:21 | 18 | 19:21 (40) | 21:20 | 50 | 07:32 (7) | 22:09 | 23 | 07:20 (7) |
| 8 | 08:58 | | | 08:14 | | 09:23 (37) | 07:09 | | | 06:50 | | 19:04 (40) | 05:40 | | 06:42 (7) | 04:56 | | 06:57 (7) |
| | 16:23 | | | 17:23 | 14 | 09:37 (37) | 18:22 | | | 20:23 | 14 | 19:18 (40) | 21:22 | 50 | 07:32 (7) | 22:10 | 22 | 07:19 (7) |
| 9 | 08:57 | | | 08:12 | | 09:26 (37) | 07:07 | | | 06:47 | | 19:08 (40) | 05:38 | | 06:42 (7) | 04:55 | | 06:59 (7) |
| | 16:24 | | | 17:25 | 9 | 09:35 (37) | 18:24 | | | 20:25 | 6 | 19:14 (40) | 21:24 | 50 | 07:32 (7) | 22:11 | 19 | 07:18 (7) |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:41 (7) | 04:54 | | 06:59 (7) |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 51 | 07:32 (7) | 22:12 | 18 | 07:17 (7) |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:41 (7) | 04:54 | | 07:01 (7) |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 51 | 07:32 (7) | 22:13 | 16 | 07:17 (7) |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:42 (7) | 04:53 | | 07:02 (7) |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 50 | 07:32 (7) | 22:14 | 14 | 07:16 (7) |
| 13 | 08:54 | | | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:42 (7) | 04:53 | | 07:03 (7) |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 50 | 07:32 (7) | 22:15 | 12 | 07:15 (7) |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:42 (7) | 04:53 | | 07:04 (7) |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 49 | 07:31 (7) | 22:15 | 10 | 07:14 (7) |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:42 (7) | 04:52 | | 07:05 (7) |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 50 | 07:32 (7) | 22:16 | 9 | 07:14 (7) |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:42 (7) | 04:52 | | 07:07 (7) |
| | 16:36 | | | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 49 | 07:31 (7) | 22:17 | 6 | 07:13 (7) |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:42 (7) | 04:52 | | 07:08 (7) |
| | 16:38 | | | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 48 | 07:30 (7) | 22:17 | 4 | 07:12 (7) |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:43 (7) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 47 | 07:30 (7) | 22:18 | | |
| 19 | 08:47 | | 09:23 (37) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:43 (7) | 04:52 | | |
| | 16:42 | 7 | 09:30 (37) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 46 | 07:29 (7) | 22:18 | | |
| 20 | 08:46 | | 09:20 (37) | 07:48 | | | 06:39 | | | 06:20 | | 07:07 (7) | 05:18 | | 06:44 (7) | 04:52 | | |
| | 16:44 | 12 | 09:32 (37) | 17:48 | | | 18:46 | | | 20:47 | 7 | 07:14 (7) | 21:44 | 45 | 07:29 (7) | 22:18 | | |
| 21 | 08:45 | | 09:20 (37) | 07:46 | | | 06:36 | | | 06:18 | | 07:00 (7) | 05:16 | | 06:45 (7) | 04:52 | | |
| | 16:46 | 14 | 09:34 (37) | 17:50 | | | 18:48 | | | 20:49 | 18 | 07:18 (7) | 21:45 | 44 | 07:29 (7) | 22:19 | | |
| 22 | 08:43 | | 09:18 (37) | 07:43 | | | 06:33 | | 18:16 (40) | 06:15 | | 06:57 (7) | 05:15 | | 06:44 (7) | 04:52 | | |
| | 16:48 | 17 | 09:35 (37) | 17:53 | | | 18:50 | 2 | 18:18 (40) | 20:51 | 24 | 07:21 (7) | 21:47 | 44 | 07:28 (7) | 22:19 | | |
| 23 | 08:42 | | 09:17 (37) | 07:41 | | | 06:31 | | 18:10 (40) | 06:13 | | 06:55 (7) | 05:13 | | 06:45 (7) | 04:53 | | |
| | 16:50 | 19 | 09:36 (37) | 17:55 | | | 18:52 | 13 | 18:23 (40) | 20:53 | 29 | 07:24 (7) | 21:49 | 43 | 07:28 (7) | 22:19 | | |
| 24 | 08:41 | | 09:18 (37) | 07:38 | | | 06:28 | | 18:08 (40) | 06:11 | | 06:53 (7) | 05:12 | | 06:46 (7) | 04:53 | | |
| | 16:51 | 20 | 09:38 (37) | 17:57 | | | 18:54 | 17 | 18:25 (40) | 20:55 | 33 | 07:26 (7) | 21:50 | 42 | 07:28 (7) | 22:19 | | |
| 25 | 08:39 | | 09:17 (37) | 07:36 | | | 06:26 | | 18:05 (40) | 06:08 | | 06:51 (7) | 05:10 | | 06:46 (7) | 04:53 | | 07:11 (7) |
| | 16:54 | 22 | 09:39 (37) | 17:59 | | | 18:56 | 21 | 18:26 (40) | 20:57 | 35 | 07:26 (7) | 21:52 | 41 | 07:27 (7) | 22:19 | 2 | 07:13 (7) |
| 26 | 08:37 | | 09:16 (37) | 07:34 | | | 06:23 | | 18:03 (40) | 06:06 | | 06:50 (7) | 05:09 | | 06:47 (7) | 04:54 | | 07:09 (7) |
| | 16:56 | 23 | 09:39 (37) | 18:01 | | | 18:57 | 24 | 18:27 (40) | 20:59 | 37 | 07:27 (7) | 21:53 | 39 | 07:26 (7) | 22:19 | 6 | 07:15 (7) |
| 27 | 08:36 | | 09:16 (37) | 07:31 | | | 06:21 | | 18:03 (40) | 06:04 | | 06:48 (7) | 05:08 | | 06:48 (7) | 04:54 | | 07:08 (7) |
| | 16:58 | 24 | 09:40 (37) | 18:03 | | | 18:59 | 25 | 18:28 (40) | 21:01 | 40 | 07:28 (7) | 21:55 | 38 | 07:26 (7) | 22:19 | 7 | 07:15 (7) |
| 28 | 08:34 | | 09:16 (37) | 07:29 | | | 06:18 | | 18:01 (40) | 06:02 | | 06:47 (7) | 05:06 | | 06:48 (7) | 04:55 | | 07:07 (7) |
| | 17:00 | 24 | 09:40 (37) | 18:05 | | | 19:01 | 27 | 18:28 (40) | 21:03 | 42 | 07:29 (7) | 21:57 | 38 | 07:26 (7) | 22:19 | 10 | 07:17 (7) |
| 29 | 08:33 | | 09:17 (37) | | | | 07:15 | | 19:01 (40) | 05:59 | | 06:47 (7) | 05:05 | | 06:49 (7) | 04:55 | | 07:07 (7) |
| | 17:02 | 25 | 09:42 (37) | | | | 20:03 | 28 | 19:29 (40) | 21:05 | 43 | 07:30 (7) | 21:58 | 36 | 07:25 (7) | 22:18 | 12 | 07:19 (7) |
| 30 | 08:31 | | 09:17 (37) | | | | 07:13 | | 19:00 (40) | 05:57 | | 06:46 (7) | 05:04 | | 06:50 (7) | 04:56 | | 07:06 (7) |
| | 17:04 | 25 | 09:42 (37) | | | | 20:05 | 28 | 19:28 (40) | 21:06 | 45 | 07:31 (7) | 21:59 | 35 | 07:25 (7) | 22:18 | 13 | 07:19 (7) |
| 31 | 08:29 | | 09:17 (37) | | | | 07:10 | | 19:00 (40) | | | | 05:03 | | 06:51 (7) | | | |
| | 17:06 | 25 | 09:42 (37) | | | | 20:07 | 28 | 19:28 (40) | | | | 22:01 | 33 | 07:24 (7) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 257 | | | 176 | | | 213 | | | 543 | | | 1408 | | | 373 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,73 | | | 0,73 | | | 1,00 | | | 0,98 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 33 | | | 31 | | | 71 | | | 205 | | | 688 | | | 170 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 07:05 (7) | 05:39 | | 06:52 (7) | 06:38 | | | 07:34 | | 07:36 | | | 08:35 |
| | 22:18 | 16 | 07:21 (7) | 21:40 | 51 | 07:43 (7) | 20:29 | | | 19:12 | | 16:58 | | | 16:10 |
| 2 | 04:57 | | 07:05 (7) | 05:41 | | 06:52 (7) | 06:39 | | | 07:36 | | 07:38 | | 08:55 (37) | 08:36 |
| | 22:17 | 17 | 07:22 (7) | 21:38 | 50 | 07:42 (7) | 20:27 | | | 19:09 | | 16:55 | 10 | 09:05 (37) | 16:09 |
| 3 | 04:58 | | 07:04 (7) | 05:43 | | 06:52 (7) | 06:41 | | 19:06 (40) | 07:38 | | 07:41 | | 08:52 (37) | 08:38 |
| | 22:17 | 18 | 07:22 (7) | 21:36 | 50 | 07:42 (7) | 20:24 | 6 | 19:12 (40) | 19:07 | | 16:53 | 15 | 09:07 (37) | 16:08 |
| 4 | 04:59 | | 07:03 (7) | 05:45 | | 06:52 (7) | 06:43 | | 19:02 (40) | 07:40 | | 07:43 | | 08:51 (37) | 08:40 |
| | 22:16 | 21 | 07:24 (7) | 21:34 | 51 | 07:43 (7) | 20:22 | 14 | 19:16 (40) | 19:04 | | 16:51 | 17 | 09:08 (37) | 16:07 |
| 5 | 05:00 | | 07:03 (7) | 05:47 | | 06:51 (7) | 06:45 | | 18:59 (40) | 07:42 | | 07:45 | | 08:49 (37) | 08:41 |
| | 22:16 | 22 | 07:25 (7) | 21:32 | 51 | 07:42 (7) | 20:19 | 18 | 19:17 (40) | 19:02 | | 16:49 | 20 | 09:09 (37) | 16:07 |
| 6 | 05:01 | | 07:02 (7) | 05:49 | | 06:52 (7) | 06:47 | | 18:57 (40) | 07:44 | | 07:47 | | 08:49 (37) | 08:43 |
| | 22:15 | 24 | 07:26 (7) | 21:30 | 50 | 07:42 (7) | 20:16 | 21 | 19:18 (40) | 18:59 | | 16:47 | 22 | 09:11 (37) | 16:06 |
| 7 | 05:02 | | 07:02 (7) | 05:50 | | 06:52 (7) | 06:49 | | 18:56 (40) | 07:46 | | 07:49 | | 08:48 (37) | 08:44 |
| | 22:14 | 25 | 07:27 (7) | 21:28 | 50 | 07:42 (7) | 20:14 | 23 | 19:19 (40) | 18:57 | | 16:45 | 23 | 09:11 (37) | 16:06 |
| 8 | 05:03 | | 07:01 (7) | 05:52 | | 06:53 (7) | 06:51 | | 18:55 (40) | 07:48 | | 07:51 | | 08:48 (37) | 08:45 |
| | 22:14 | 27 | 07:28 (7) | 21:25 | 49 | 07:42 (7) | 20:11 | 25 | 19:20 (40) | 18:54 | | 16:43 | 24 | 09:12 (37) | 16:05 |
| 9 | 05:04 | | 07:00 (7) | 05:54 | | 06:52 (7) | 06:53 | | 18:54 (40) | 07:50 | | 07:53 | | 08:47 (37) | 08:47 |
| | 22:13 | 29 | 07:29 (7) | 21:23 | 49 | 07:41 (7) | 20:09 | 27 | 19:21 (40) | 18:52 | | 16:41 | 25 | 09:12 (37) | 16:05 |
| 10 | 05:05 | | 07:00 (7) | 05:56 | | 06:53 (7) | 06:55 | | 18:52 (40) | 07:52 | | 07:55 | | 08:48 (37) | 08:48 |
| | 22:12 | 30 | 07:30 (7) | 21:21 | 47 | 07:40 (7) | 20:06 | 28 | 19:20 (40) | 18:49 | | 16:40 | 25 | 09:13 (37) | 16:04 |
| 11 | 05:07 | | 06:59 (7) | 05:58 | | 06:53 (7) | 06:56 | | 18:52 (40) | 07:54 | | 07:57 | | 08:48 (37) | 08:49 |
| | 22:11 | 31 | 07:30 (7) | 21:19 | 47 | 07:40 (7) | 20:04 | 28 | 19:20 (40) | 18:47 | | 16:38 | 25 | 09:13 (37) | 16:04 |
| 12 | 05:08 | | 06:59 (7) | 06:00 | | 06:53 (7) | 06:58 | | 18:51 (40) | 07:56 | | 07:59 | | 08:47 (37) | 08:50 |
| | 22:10 | 33 | 07:32 (7) | 21:17 | 46 | 07:39 (7) | 20:01 | 29 | 19:20 (40) | 18:44 | | 16:36 | 26 | 09:13 (37) | 16:04 |
| 13 | 05:09 | | 06:59 (7) | 06:02 | | 06:53 (7) | 07:00 | | 18:51 (40) | 07:58 | | 08:01 | | 08:49 (37) | 08:51 |
| | 22:09 | 34 | 07:33 (7) | 21:15 | 45 | 07:38 (7) | 19:58 | 28 | 19:19 (40) | 18:42 | | 16:34 | 24 | 09:13 (37) | 16:04 |
| 14 | 05:11 | | 06:58 (7) | 06:03 | | 06:54 (7) | 07:02 | | 18:51 (40) | 08:00 | | 08:03 | | 08:49 (37) | 08:52 |
| | 22:08 | 35 | 07:33 (7) | 21:12 | 43 | 07:37 (7) | 19:56 | 28 | 19:19 (40) | 18:39 | | 16:32 | 24 | 09:13 (37) | 16:03 |
| 15 | 05:12 | | 06:57 (7) | 06:05 | | 06:55 (7) | 07:04 | | 18:52 (40) | 08:02 | | 08:05 | | 08:49 (37) | 08:53 |
| | 22:06 | 37 | 07:34 (7) | 21:10 | 42 | 07:37 (7) | 19:53 | 26 | 19:18 (40) | 18:37 | | 16:31 | 24 | 09:13 (37) | 16:03 |
| 16 | 05:13 | | 06:57 (7) | 06:07 | | 06:56 (7) | 07:06 | | 18:51 (40) | 08:04 | | 08:07 | | 08:49 (37) | 08:54 |
| | 22:05 | 38 | 07:35 (7) | 21:08 | 40 | 07:36 (7) | 19:51 | 26 | 19:17 (40) | 18:34 | | 16:29 | 23 | 09:12 (37) | 16:03 |
| 17 | 05:15 | | 06:57 (7) | 06:09 | | 06:56 (7) | 07:08 | | 18:52 (40) | 08:06 | | 08:09 | | 08:50 (37) | 08:55 |
| | 22:04 | 39 | 07:36 (7) | 21:05 | 38 | 07:34 (7) | 19:48 | 23 | 19:15 (40) | 18:32 | | 16:27 | 22 | 09:12 (37) | 16:04 |
| 18 | 05:16 | | 06:56 (7) | 06:11 | | 06:58 (7) | 07:10 | | 18:52 (40) | 08:08 | | 08:11 | | 08:52 (37) | 08:56 |
| | 22:03 | 40 | 07:36 (7) | 21:03 | 34 | 07:32 (7) | 19:46 | 22 | 19:14 (40) | 18:29 | | 16:26 | 20 | 09:12 (37) | 16:04 |
| 19 | 05:18 | | 06:56 (7) | 06:13 | | 06:59 (7) | 07:12 | | 18:54 (40) | 08:10 | | 08:13 | | 08:52 (37) | 08:57 |
| | 22:01 | 41 | 07:37 (7) | 21:01 | 32 | 07:31 (7) | 19:43 | 18 | 19:12 (40) | 18:27 | | 16:24 | 19 | 09:11 (37) | 16:04 |
| 20 | 05:19 | | 06:55 (7) | 06:15 | | 07:01 (7) | 07:13 | | 18:56 (40) | 08:12 | | 08:15 | | 08:53 (37) | 08:57 |
| | 22:00 | 43 | 07:38 (7) | 20:58 | 28 | 07:29 (7) | 19:40 | 14 | 19:10 (40) | 18:25 | | 16:23 | 17 | 09:10 (37) | 16:04 |
| 21 | 05:21 | | 06:54 (7) | 06:17 | | 07:02 (7) | 07:15 | | 18:59 (40) | 08:14 | | 08:17 | | 08:55 (37) | 08:58 |
| | 21:58 | 44 | 07:38 (7) | 20:56 | 24 | 07:26 (7) | 19:38 | 7 | 19:06 (40) | 18:22 | | 16:21 | 14 | 09:09 (37) | 16:05 |
| 22 | 05:22 | | 06:55 (7) | 06:19 | | 07:06 (7) | 07:17 | | | 08:16 | | 08:19 | | 08:56 (37) | 08:59 |
| | 21:57 | 44 | 07:39 (7) | 20:54 | 16 | 07:22 (7) | 19:35 | | | 18:20 | | 16:20 | 12 | 09:08 (37) | 16:05 |
| 23 | 05:24 | | 06:54 (7) | 06:21 | | 07:12 (7) | 07:19 | | | 08:18 | | 08:21 | | 08:59 (37) | 08:59 |
| | 21:55 | 45 | 07:39 (7) | 20:51 | 4 | 07:16 (7) | 19:33 | | | 18:18 | | 16:19 | 7 | 09:06 (37) | 16:06 |
| 24 | 05:26 | | 06:54 (7) | 06:22 | | | 07:21 | | | 08:20 | | 08:23 | | | 09:00 |
| | 21:54 | 46 | 07:40 (7) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | | | 16:06 |
| 25 | 05:27 | | 06:53 (7) | 06:24 | | | 07:23 | | | 07:22 | | 08:24 | | | 09:00 |
| | 21:52 | 47 | 07:40 (7) | 20:46 | | | 19:27 | | | 17:13 | | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:53 (7) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | | | 09:00 |
| | 21:50 | 48 | 07:41 (7) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:53 (7) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 |
| | 21:49 | 49 | 07:42 (7) | 20:42 | | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 |
| 28 | 05:32 | | 06:52 (7) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 |
| | 21:47 | 49 | 07:41 (7) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 |
| 29 | 05:34 | | 06:53 (7) | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 |
| | 21:45 | 49 | 07:42 (7) | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 |
| 30 | 05:36 | | 06:52 (7) | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 |
| | 21:43 | 50 | 07:42 (7) | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 |
| 31 | 05:38 | | 06:52 (7) | 06:36 | | | | | | 07:34 | | | | | 09:01 |
| | 21:41 | 50 | 07:42 (7) | 20:32 | | | | | | 17:00 | | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 |
| Total, worst case | | 1121 | | | 937 | | | 411 | | | | | 438 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | |
| Wind dir. red. | | 0,97 | | | 0,97 | | | 1,00 | | | | | 0,73 | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,39 | | | | | 0,11 | | |
| Total, real | | 515 | | | 456 | | | 159 | | | | | 50 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:37 (37) | 07:26 | | | 07:08 | | 18:56 (40) | 05:55 | | 06:58 (7) | 05:02 | | 07:10 (7) |
| | 16:14 | | | 17:08 | 18 | 09:55 (37) | 18:07 | | | 20:09 | 21 | 19:17 (40) | 21:08 | 57 | 07:55 (7) | 22:02 | 30 | 07:40 (7) |
| 2 | 09:00 | | | 08:26 | | 09:39 (37) | 07:24 | | | 07:05 | | 18:58 (40) | 05:53 | | 06:57 (7) | 05:01 | | 07:11 (7) |
| | 16:15 | | | 17:10 | 15 | 09:54 (37) | 18:09 | | | 20:11 | 17 | 19:15 (40) | 21:10 | 57 | 07:54 (7) | 22:03 | 28 | 07:39 (7) |
| 3 | 09:00 | | | 08:24 | | 09:41 (37) | 07:22 | | | 07:03 | | 18:59 (40) | 05:50 | | 06:57 (7) | 05:00 | | 07:12 (7) |
| | 16:16 | | | 17:12 | 11 | 09:52 (37) | 18:11 | | | 20:13 | 13 | 19:12 (40) | 21:12 | 57 | 07:54 (7) | 22:05 | 26 | 07:38 (7) |
| 4 | 09:00 | | | 08:22 | | | 07:19 | | | 07:00 | | 19:03 (40) | 05:48 | | 06:56 (7) | 04:59 | | 07:14 (7) |
| | 16:17 | | | 17:14 | | | 18:13 | | | 20:15 | 5 | 19:08 (40) | 21:14 | 58 | 07:54 (7) | 22:06 | 24 | 07:38 (7) |
| 5 | 08:59 | | | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | | 06:56 (7) | 04:58 | | 07:15 (7) |
| | 16:19 | | | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 57 | 07:53 (7) | 22:07 | 21 | 07:36 (7) |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 06:57 (7) | 04:57 | | 07:15 (7) |
| | 16:20 | | | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 57 | 07:54 (7) | 22:08 | 20 | 07:35 (7) |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | | 06:52 | | | 05:42 | | 06:57 (7) | 04:56 | | 07:17 (7) |
| | 16:21 | | | 17:21 | | | 18:19 | | | 20:21 | | | 21:20 | 57 | 07:54 (7) | 22:09 | 17 | 07:34 (7) |
| 8 | 08:58 | | 09:37 (37) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | | 06:57 (7) | 04:56 | | 07:19 (7) |
| | 16:23 | 3 | 09:40 (37) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 57 | 07:54 (7) | 22:10 | 14 | 07:33 (7) |
| 9 | 08:57 | | 09:35 (37) | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | | 06:57 (7) | 04:55 | | 07:21 (7) |
| | 16:24 | 8 | 09:43 (37) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 56 | 07:53 (7) | 22:11 | 11 | 07:32 (7) |
| 10 | 08:56 | | 09:34 (37) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:57 (7) | 04:54 | | 07:22 (7) |
| | 16:26 | 11 | 09:45 (37) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 56 | 07:53 (7) | 22:12 | 7 | 07:29 (7) |
| 11 | 08:56 | | 09:33 (37) | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:57 (7) | 04:54 | | |
| | 16:28 | 14 | 09:47 (37) | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 55 | 07:52 (7) | 22:13 | | |
| 12 | 08:55 | | 09:32 (37) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:58 (7) | 04:53 | | |
| | 16:29 | 16 | 09:48 (37) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 55 | 07:53 (7) | 22:14 | | |
| 13 | 08:54 | | 09:32 (37) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:57 (7) | 04:53 | | |
| | 16:31 | 17 | 09:49 (37) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 55 | 07:52 (7) | 22:15 | | |
| 14 | 08:53 | | 09:32 (37) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:57 (7) | 04:53 | | |
| | 16:33 | 19 | 09:51 (37) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 54 | 07:51 (7) | 22:15 | | |
| 15 | 08:52 | | 09:31 (37) | 07:59 | | | 06:51 | | | 06:32 | | 07:21 (7) | 05:26 | | 06:58 (7) | 04:52 | | |
| | 16:34 | 20 | 09:51 (37) | 17:38 | | | 18:36 | | | 20:37 | 16 | 07:37 (7) | 21:35 | 53 | 07:51 (7) | 22:16 | | |
| 16 | 08:51 | | 09:31 (37) | 07:57 | | | 06:49 | | | 06:30 | | 07:17 (7) | 05:25 | | 06:58 (7) | 04:52 | | |
| | 16:36 | 21 | 09:52 (37) | 17:40 | | | 18:38 | | | 20:39 | 24 | 07:41 (7) | 21:37 | 52 | 07:50 (7) | 22:17 | | |
| 17 | 08:50 | | 09:31 (37) | 07:55 | | | 06:46 | | | 06:27 | | 07:14 (7) | 05:23 | | 06:58 (7) | 04:52 | | |
| | 16:38 | 22 | 09:53 (37) | 17:42 | | | 18:40 | | | 20:41 | 30 | 07:44 (7) | 21:39 | 52 | 07:50 (7) | 22:17 | | |
| 18 | 08:49 | | 09:30 (37) | 07:52 | | | 06:44 | | | 06:25 | | 07:11 (7) | 05:21 | | 06:59 (7) | 04:52 | | |
| | 16:40 | 24 | 09:54 (37) | 17:44 | | | 18:42 | | | 20:43 | 34 | 07:45 (7) | 21:40 | 51 | 07:50 (7) | 22:18 | | |
| 19 | 08:47 | | 09:31 (37) | 07:50 | | | 06:41 | | 18:05 (40) | 06:23 | | 07:10 (7) | 05:19 | | 06:59 (7) | 04:52 | | |
| | 16:42 | 24 | 09:55 (37) | 17:46 | | | 18:44 | 12 | 18:17 (40) | 20:45 | 37 | 07:47 (7) | 21:42 | 49 | 07:48 (7) | 22:18 | | |
| 20 | 08:46 | | 09:30 (37) | 07:48 | | | 06:39 | | 18:02 (40) | 06:20 | | 07:08 (7) | 05:18 | | 07:00 (7) | 04:52 | | |
| | 16:44 | 25 | 09:55 (37) | 17:48 | | | 18:46 | 16 | 18:18 (40) | 20:47 | 41 | 07:49 (7) | 21:44 | 48 | 07:48 (7) | 22:18 | | |
| 21 | 08:45 | | 09:31 (37) | 07:46 | | | 06:36 | | 17:59 (40) | 06:18 | | 07:06 (7) | 05:16 | | 07:01 (7) | 04:52 | | |
| | 16:46 | 25 | 09:56 (37) | 17:50 | | | 18:48 | 20 | 18:19 (40) | 20:49 | 43 | 07:49 (7) | 21:45 | 47 | 07:48 (7) | 22:19 | | |
| 22 | 08:43 | | 09:31 (37) | 07:43 | | | 06:33 | | 17:58 (40) | 06:15 | | 07:05 (7) | 05:15 | | 07:01 (7) | 04:52 | | |
| | 16:48 | 25 | 09:56 (37) | 17:53 | | | 18:50 | 23 | 18:21 (40) | 20:51 | 45 | 07:50 (7) | 21:47 | 46 | 07:47 (7) | 22:19 | | |
| 23 | 08:42 | | 09:31 (37) | 07:41 | | | 06:31 | | 17:57 (40) | 06:13 | | 07:04 (7) | 05:13 | | 07:02 (7) | 04:53 | | |
| | 16:50 | 25 | 09:56 (37) | 17:55 | | | 18:52 | 24 | 18:21 (40) | 20:53 | 47 | 07:51 (7) | 21:49 | 45 | 07:47 (7) | 22:19 | | |
| 24 | 08:41 | | 09:32 (37) | 07:38 | | | 06:28 | | 17:56 (40) | 06:11 | | 07:03 (7) | 05:12 | | 07:03 (7) | 04:53 | | |
| | 16:51 | 25 | 09:57 (37) | 17:57 | | | 18:54 | 26 | 18:22 (40) | 20:55 | 49 | 07:52 (7) | 21:50 | 43 | 07:46 (7) | 22:19 | | |
| 25 | 08:39 | | 09:32 (37) | 07:36 | | | 06:26 | | 17:55 (40) | 06:08 | | 07:01 (7) | 05:10 | | 07:03 (7) | 04:53 | | |
| | 16:53 | 25 | 09:57 (37) | 17:59 | | | 18:56 | 27 | 18:22 (40) | 20:57 | 51 | 07:52 (7) | 21:52 | 42 | 07:45 (7) | 22:19 | | |
| 26 | 08:37 | | 09:32 (37) | 07:34 | | | 06:23 | | 17:54 (40) | 06:06 | | 07:01 (7) | 05:09 | | 07:04 (7) | 04:54 | | |
| | 16:56 | 25 | 09:57 (37) | 18:01 | | | 18:57 | 27 | 18:21 (40) | 20:59 | 52 | 07:53 (7) | 21:53 | 40 | 07:44 (7) | 22:19 | | |
| 27 | 08:36 | | 09:32 (37) | 07:31 | | | 06:21 | | 17:55 (40) | 06:04 | | 07:00 (7) | 05:08 | | 07:05 (7) | 04:54 | | |
| | 16:58 | 25 | 09:57 (37) | 18:03 | | | 18:59 | 26 | 18:21 (40) | 21:01 | 53 | 07:53 (7) | 21:55 | 39 | 07:44 (7) | 22:19 | | |
| 28 | 08:34 | | 09:33 (37) | 07:29 | | | 06:18 | | 17:54 (40) | 06:01 | | 07:00 (7) | 05:06 | | 07:06 (7) | 04:55 | | |
| | 17:00 | 23 | 09:56 (37) | 18:05 | | | 19:01 | 26 | 18:20 (40) | 21:03 | 54 | 07:54 (7) | 21:57 | 37 | 07:43 (7) | 22:19 | | |
| 29 | 08:33 | | 09:34 (37) | | | | 07:15 | | 18:55 (40) | 05:59 | | 06:59 (7) | 05:05 | | 07:07 (7) | 04:55 | | |
| | 17:02 | 23 | 09:57 (37) | | | | 20:03 | 25 | 19:20 (40) | 21:05 | 55 | 07:54 (7) | 21:58 | 35 | 07:42 (7) | 22:18 | | |
| 30 | 08:31 | | 09:35 (37) | | | | 07:13 | | 18:55 (40) | 05:57 | | 06:59 (7) | 05:04 | | 07:08 (7) | 04:56 | | |
| | 17:04 | 22 | 09:57 (37) | | | | 20:05 | 24 | 19:19 (40) | 21:06 | 55 | 07:54 (7) | 21:59 | 34 | 07:42 (7) | 22:18 | | |
| 31 | 08:29 | | 09:36 (37) | | | | 07:10 | | 18:56 (40) | | | | 05:03 | | 07:09 (7) | | | |
| | 17:06 | 20 | 09:56 (37) | | | | 20:07 | 22 | 19:18 (40) | | | | 22:01 | 32 | 07:41 (7) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 487 | | | 44 | | | 298 | | | 742 | | | 1533 | | | 198 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,68 | | | 0,68 | | | 1,00 | | | 0,98 | | | 0,98 | | | 0,98 | |
| Total reduction | | 0,12 | | | 0,16 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 58 | | | 7 | | | 98 | | | 278 | | | 754 | | | 91 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:08 (7) | 06:38 | | | 07:34 | 07:36 | | | 08:35 | | 09:15 (37) |
| | 22:18 | | | 21:40 | 55 | 08:03 (7) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 14 | 09:29 (37) |
| 2 | 04:57 | | 07:29 (7) | 05:41 | | 07:07 (7) | 06:39 | | | 07:36 | 07:38 | | | 08:36 | | 09:17 (37) |
| | 22:17 | 4 | 07:33 (7) | 21:38 | 56 | 08:03 (7) | 20:27 | | | 19:09 | 16:55 | | | 16:09 | 11 | 09:28 (37) |
| 3 | 04:58 | | 07:26 (7) | 05:43 | | 07:07 (7) | 06:41 | | | 07:38 | 07:41 | | | 08:38 | | 09:19 (37) |
| | 22:17 | 9 | 07:35 (7) | 21:36 | 56 | 08:03 (7) | 20:24 | | | 19:07 | 16:53 | | | 16:08 | 8 | 09:27 (37) |
| 4 | 04:59 | | 07:24 (7) | 05:45 | | 07:07 (7) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:21 (37) |
| | 22:16 | 13 | 07:37 (7) | 21:34 | 57 | 08:04 (7) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 4 | 09:25 (37) |
| 5 | 05:00 | | 07:23 (7) | 05:47 | | 07:06 (7) | 06:45 | | | 07:42 | 07:45 | | | 08:41 | | |
| | 22:16 | 16 | 07:39 (7) | 21:32 | 57 | 08:03 (7) | 20:19 | | | 19:02 | 16:49 | | | 16:07 | | |
| 6 | 05:01 | | 07:22 (7) | 05:49 | | 07:06 (7) | 06:47 | | | 07:44 | 07:47 | | | 08:43 | | |
| | 22:15 | 19 | 07:41 (7) | 21:30 | 57 | 08:03 (7) | 20:16 | | | 18:59 | 16:47 | | | 16:06 | | |
| 7 | 05:02 | | 07:21 (7) | 05:50 | | 07:06 (7) | 06:49 | | | 07:46 | 07:49 | | 09:16 (37) | 08:44 | | |
| | 22:14 | 21 | 07:42 (7) | 21:28 | 58 | 08:04 (7) | 20:14 | | | 18:57 | 16:45 | 1 | 09:17 (37) | 16:05 | | |
| 8 | 05:03 | | 07:20 (7) | 05:52 | | 07:07 (7) | 06:51 | | 18:59 (40) | 07:48 | 07:51 | | 09:11 (37) | 08:45 | | |
| | 22:14 | 23 | 07:43 (7) | 21:25 | 57 | 08:04 (7) | 20:11 | 3 | 19:02 (40) | 18:54 | 16:43 | 11 | 09:22 (37) | 16:05 | | |
| 9 | 05:04 | | 07:20 (7) | 05:54 | | 07:06 (7) | 06:53 | | 18:54 (40) | 07:50 | 07:53 | | 09:08 (37) | 08:47 | | |
| | 22:13 | 25 | 07:45 (7) | 21:23 | 57 | 08:03 (7) | 20:09 | 12 | 19:06 (40) | 18:52 | 16:41 | 16 | 09:24 (37) | 16:05 | | |
| 10 | 05:05 | | 07:19 (7) | 05:56 | | 07:06 (7) | 06:55 | | 18:50 (40) | 07:52 | 07:55 | | 09:08 (37) | 08:48 | | |
| | 22:12 | 27 | 07:46 (7) | 21:21 | 57 | 08:03 (7) | 20:06 | 17 | 19:07 (40) | 18:49 | 16:40 | 18 | 09:26 (37) | 16:04 | | |
| 11 | 05:07 | | 07:18 (7) | 05:58 | | 07:06 (7) | 06:56 | | 18:48 (40) | 07:54 | 07:57 | | 09:07 (37) | 08:49 | | |
| | 22:11 | 29 | 07:47 (7) | 21:19 | 57 | 08:03 (7) | 20:04 | 21 | 19:09 (40) | 18:47 | 16:38 | 20 | 09:27 (37) | 16:04 | | |
| 12 | 05:08 | | 07:18 (7) | 06:00 | | 07:06 (7) | 06:58 | | 18:47 (40) | 07:56 | 07:59 | | 09:06 (37) | 08:50 | | |
| | 22:10 | 31 | 07:49 (7) | 21:17 | 56 | 08:02 (7) | 20:01 | 23 | 19:10 (40) | 18:44 | 16:36 | 21 | 09:27 (37) | 16:04 | | |
| 13 | 05:09 | | 07:17 (7) | 06:02 | | 07:06 (7) | 07:00 | | 18:46 (40) | 07:58 | 08:01 | | 09:06 (37) | 08:51 | | |
| | 22:09 | 33 | 07:50 (7) | 21:15 | 56 | 08:02 (7) | 19:58 | 24 | 19:10 (40) | 18:42 | 16:34 | 23 | 09:29 (37) | 16:04 | | |
| 14 | 05:11 | | 07:16 (7) | 06:03 | | 07:07 (7) | 07:02 | | 18:45 (40) | 08:00 | 08:03 | | 09:06 (37) | 08:52 | | |
| | 22:08 | 34 | 07:50 (7) | 21:12 | 54 | 08:01 (7) | 19:56 | 26 | 19:11 (40) | 18:39 | 16:32 | 23 | 09:29 (37) | 16:03 | | |
| 15 | 05:12 | | 07:15 (7) | 06:05 | | 07:07 (7) | 07:04 | | 18:45 (40) | 08:02 | 08:05 | | 09:05 (37) | 08:53 | | |
| | 22:06 | 36 | 07:51 (7) | 21:10 | 54 | 08:01 (7) | 19:53 | 26 | 19:11 (40) | 18:37 | 16:31 | 25 | 09:30 (37) | 16:03 | | |
| 16 | 05:13 | | 07:15 (7) | 06:07 | | 07:08 (7) | 07:06 | | 18:43 (40) | 08:04 | 08:07 | | 09:05 (37) | 08:54 | | |
| | 22:05 | 38 | 07:53 (7) | 21:08 | 53 | 08:01 (7) | 19:51 | 27 | 19:10 (40) | 18:34 | 16:29 | 25 | 09:30 (37) | 16:03 | | |
| 17 | 05:15 | | 07:14 (7) | 06:09 | | 07:07 (7) | 07:08 | | 18:43 (40) | 08:06 | 08:09 | | 09:05 (37) | 08:55 | | |
| | 22:04 | 39 | 07:53 (7) | 21:05 | 52 | 07:59 (7) | 19:48 | 27 | 19:10 (40) | 18:32 | 16:27 | 25 | 09:30 (37) | 16:04 | | |
| 18 | 05:16 | | 07:13 (7) | 06:11 | | 07:08 (7) | 07:10 | | 18:43 (40) | 08:08 | 08:11 | | 09:06 (37) | 08:56 | | |
| | 22:03 | 41 | 07:54 (7) | 21:03 | 50 | 07:58 (7) | 19:46 | 26 | 19:09 (40) | 18:29 | 16:26 | 25 | 09:31 (37) | 16:04 | | |
| 19 | 05:18 | | 07:13 (7) | 06:13 | | 07:09 (7) | 07:12 | | 18:43 (40) | 08:10 | 08:13 | | 09:06 (37) | 08:57 | | |
| | 22:01 | 43 | 07:56 (7) | 21:01 | 49 | 07:58 (7) | 19:43 | 26 | 19:09 (40) | 18:27 | 16:24 | 25 | 09:31 (37) | 16:04 | | |
| 20 | 05:19 | | 07:12 (7) | 06:15 | | 07:10 (7) | 07:13 | | 18:43 (40) | 08:12 | 08:15 | | 09:06 (37) | 08:57 | | |
| | 22:00 | 44 | 07:56 (7) | 20:58 | 47 | 07:57 (7) | 19:40 | 25 | 19:08 (40) | 18:25 | 16:23 | 25 | 09:31 (37) | 16:04 | | |
| 21 | 05:21 | | 07:12 (7) | 06:17 | | 07:10 (7) | 07:15 | | 18:44 (40) | 08:14 | 08:17 | | 09:06 (37) | 08:58 | | |
| | 21:58 | 44 | 07:56 (7) | 20:56 | 45 | 07:55 (7) | 19:38 | 23 | 19:07 (40) | 18:22 | 16:21 | 25 | 09:31 (37) | 16:05 | | |
| 22 | 05:22 | | 07:12 (7) | 06:19 | | 07:11 (7) | 07:17 | | 18:45 (40) | 08:16 | 08:19 | | 09:06 (37) | 08:59 | | |
| | 21:57 | 46 | 07:58 (7) | 20:54 | 43 | 07:54 (7) | 19:35 | 20 | 19:05 (40) | 18:20 | 16:20 | 25 | 09:31 (37) | 16:05 | | |
| 23 | 05:24 | | 07:11 (7) | 06:21 | | 07:12 (7) | 07:19 | | 18:46 (40) | 08:18 | 08:21 | | 09:07 (37) | 08:59 | | |
| | 21:55 | 47 | 07:58 (7) | 20:51 | 40 | 07:52 (7) | 19:33 | 18 | 19:04 (40) | 18:18 | 16:19 | 24 | 09:31 (37) | 16:06 | | |
| 24 | 05:26 | | 07:11 (7) | 06:22 | | 07:14 (7) | 07:21 | | 18:47 (40) | 08:20 | 08:23 | | 09:08 (37) | 09:00 | | |
| | 21:54 | 48 | 07:59 (7) | 20:49 | 37 | 07:51 (7) | 19:30 | 13 | 19:00 (40) | 18:15 | 16:17 | 23 | 09:31 (37) | 16:06 | | |
| 25 | 05:27 | | 07:10 (7) | 06:24 | | 07:15 (7) | 07:23 | | 18:50 (40) | 07:22 | 08:24 | | 09:08 (37) | 09:00 | | |
| | 21:52 | 49 | 07:59 (7) | 20:46 | 34 | 07:49 (7) | 19:27 | 6 | 18:56 (40) | 17:13 | 16:16 | 23 | 09:31 (37) | 16:07 | | |
| 26 | 05:29 | | 07:10 (7) | 06:26 | | 07:17 (7) | 07:25 | | | 07:24 | 08:26 | | 09:09 (37) | 09:00 | | |
| | 21:50 | 50 | 08:00 (7) | 20:44 | 28 | 07:45 (7) | 19:25 | | | 17:11 | 16:15 | 21 | 09:30 (37) | 16:08 | | |
| 27 | 05:31 | | 07:10 (7) | 06:28 | | 07:19 (7) | 07:27 | | | 07:26 | 08:28 | | 09:10 (37) | 09:00 | | |
| | 21:49 | 51 | 08:01 (7) | 20:42 | 24 | 07:43 (7) | 19:22 | | | 17:08 | 16:14 | 20 | 09:30 (37) | 16:08 | | |
| 28 | 05:32 | | 07:09 (7) | 06:30 | | 07:23 (7) | 07:29 | | | 07:28 | 08:30 | | 09:11 (37) | 09:01 | | |
| | 21:47 | 52 | 08:01 (7) | 20:39 | 16 | 07:39 (7) | 19:20 | | | 17:06 | 16:13 | 19 | 09:30 (37) | 16:09 | | |
| 29 | 05:34 | | 07:09 (7) | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | 09:12 (37) | 09:01 | | |
| | 21:45 | 53 | 08:02 (7) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | 18 | 09:30 (37) | 16:10 | | |
| 30 | 05:36 | | 07:08 (7) | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | 09:13 (37) | 09:01 | | |
| | 21:43 | 54 | 08:02 (7) | 20:34 | | | 19:14 | | | 17:02 | 16:11 | 16 | 09:29 (37) | 16:11 | | |
| 31 | 05:38 | | 07:08 (7) | 06:36 | | | | | | 07:34 | | | | 09:01 | | |
| | 21:41 | 54 | 08:02 (7) | 20:32 | | | | | | 17:00 | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 1073 | | | 1362 | | | 363 | | | | 497 | | | 37 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,98 | | | 1,00 | | | | 0,68 | | | 0,68 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | 0,10 | | | 0,09 | |
| Total, real | | 496 | | | 668 | | | 139 | | | | 52 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:42 (37) | 07:26 | | | 07:08 | | 18:55 (40) | 05:55 | | 07:07 (7) | 05:02 | | |
| | 16:14 | | | 17:08 | 13 | 09:55 (37) | 18:07 | | | 20:09 | 15 | 19:10 (40) | 21:08 | 57 | 08:04 (7) | 22:02 | | |
| 2 | 09:00 | | | 08:26 | | 09:45 (37) | 07:24 | | | 07:05 | | 18:59 (40) | 05:53 | | 07:06 (7) | 05:01 | | |
| | 16:15 | | | 17:10 | 7 | 09:52 (37) | 18:09 | | | 20:11 | 9 | 19:08 (40) | 21:10 | 56 | 08:02 (7) | 22:03 | | |
| 3 | 09:00 | | | 08:24 | | | 07:22 | | | 07:03 | | | 05:50 | | 07:05 (7) | 05:00 | | |
| | 16:16 | | | 17:12 | | | 18:11 | | | 20:13 | | | 21:12 | 57 | 08:02 (7) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | | 07:19 | | | 07:00 | | | 05:48 | | 07:06 (7) | 04:59 | | |
| | 16:17 | | | 17:14 | | | 18:13 | | | 20:15 | | | 21:14 | 56 | 08:02 (7) | 22:06 | | |
| 5 | 08:59 | | | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | | 07:06 (7) | 04:58 | | |
| | 16:19 | | | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 55 | 08:01 (7) | 22:07 | | |
| 6 | 08:59 | | 09:38 (37) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 07:07 (7) | 04:57 | | |
| | 16:20 | 6 | 09:44 (37) | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 55 | 08:02 (7) | 22:08 | | |
| 7 | 08:58 | | 09:36 (37) | 08:16 | | | 07:12 | | | 06:52 | | | 05:42 | | 07:07 (7) | 04:56 | | |
| | 16:21 | 10 | 09:46 (37) | 17:21 | | | 18:19 | | | 20:21 | | | 21:20 | 54 | 08:01 (7) | 22:09 | | |
| 8 | 08:58 | | 09:35 (37) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | | 07:07 (7) | 04:56 | | |
| | 16:23 | 12 | 09:47 (37) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 54 | 08:01 (7) | 22:10 | | |
| 9 | 08:57 | | 09:35 (37) | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | | 07:07 (7) | 04:55 | | |
| | 16:24 | 14 | 09:49 (37) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 53 | 08:00 (7) | 22:11 | | |
| 10 | 08:56 | | 09:34 (37) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 07:07 (7) | 04:54 | | |
| | 16:26 | 16 | 09:50 (37) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 52 | 07:59 (7) | 22:12 | | |
| 11 | 08:56 | | 09:34 (37) | 08:08 | | | 07:02 | | | 06:42 | | 07:31 (7) | 05:34 | | 07:07 (7) | 04:54 | | |
| | 16:28 | 17 | 09:51 (37) | 17:29 | | | 18:28 | | | 20:29 | 17 | 07:48 (7) | 21:28 | 51 | 07:58 (7) | 22:13 | | |
| 12 | 08:55 | | 09:33 (37) | 08:06 | | | 06:59 | | | 06:40 | | 07:27 (7) | 05:32 | | 07:09 (7) | 04:53 | | |
| | 16:29 | 19 | 09:52 (37) | 17:31 | | | 18:30 | | | 20:31 | 25 | 07:52 (7) | 21:29 | 49 | 07:58 (7) | 22:14 | | |
| 13 | 08:54 | | 09:33 (37) | 08:03 | | | 06:56 | | | 06:37 | | 07:23 (7) | 05:30 | | 07:09 (7) | 04:53 | | |
| | 16:31 | 20 | 09:53 (37) | 17:33 | | | 18:32 | | | 20:33 | 31 | 07:54 (7) | 21:31 | 48 | 07:57 (7) | 22:15 | | |
| 14 | 08:53 | | 09:33 (37) | 08:01 | | | 06:54 | | | 06:35 | | 07:21 (7) | 05:28 | | 07:09 (7) | 04:53 | | |
| | 16:33 | 21 | 09:54 (37) | 17:36 | | | 18:34 | | | 20:35 | 35 | 07:56 (7) | 21:33 | 47 | 07:56 (7) | 22:15 | | |
| 15 | 08:52 | | 09:33 (37) | 07:59 | | | 06:51 | | | 06:32 | | 07:19 (7) | 05:26 | | 07:10 (7) | 04:52 | | |
| | 16:34 | 21 | 09:54 (37) | 17:38 | | | 18:36 | | | 20:37 | 38 | 07:57 (7) | 21:35 | 46 | 07:56 (7) | 22:16 | | |
| 16 | 08:51 | | 09:33 (37) | 07:57 | | | 06:49 | | | 06:30 | | 07:17 (7) | 05:25 | | 07:11 (7) | 04:52 | | |
| | 16:36 | 23 | 09:56 (37) | 17:40 | | | 18:38 | | | 20:39 | 41 | 07:58 (7) | 21:37 | 44 | 07:55 (7) | 22:17 | | |
| 17 | 08:50 | | 09:33 (37) | 07:55 | | | 06:46 | | 18:03 (40) | 06:27 | | 07:16 (7) | 05:23 | | 07:11 (7) | 04:52 | | |
| | 16:38 | 24 | 09:57 (37) | 17:42 | | | 18:40 | 9 | 18:12 (40) | 20:41 | 44 | 08:00 (7) | 21:39 | 43 | 07:54 (7) | 22:17 | | |
| 18 | 08:49 | | 09:33 (37) | 07:52 | | | 06:44 | | 17:59 (40) | 06:25 | | 07:14 (7) | 05:21 | | 07:12 (7) | 04:52 | | |
| | 16:40 | 24 | 09:57 (37) | 17:44 | | | 18:42 | 15 | 18:14 (40) | 20:43 | 46 | 08:00 (7) | 21:40 | 41 | 07:53 (7) | 22:18 | | |
| 19 | 08:47 | | 09:33 (37) | 07:50 | | | 06:41 | | 17:58 (40) | 06:23 | | 07:13 (7) | 05:19 | | 07:13 (7) | 04:52 | | |
| | 16:42 | 25 | 09:58 (37) | 17:46 | | | 18:44 | 19 | 18:17 (40) | 20:45 | 48 | 08:01 (7) | 21:42 | 39 | 07:52 (7) | 22:18 | | |
| 20 | 08:46 | | 09:33 (37) | 07:48 | | | 06:39 | | 17:56 (40) | 06:20 | | 07:12 (7) | 05:18 | | 07:14 (7) | 04:52 | | |
| | 16:44 | 25 | 09:58 (37) | 17:48 | | | 18:46 | 21 | 18:17 (40) | 20:47 | 50 | 08:02 (7) | 21:44 | 37 | 07:51 (7) | 22:18 | | |
| 21 | 08:45 | | 09:34 (37) | 07:46 | | | 06:36 | | 17:54 (40) | 06:18 | | 07:11 (7) | 05:16 | | 07:16 (7) | 04:52 | | |
| | 16:46 | 25 | 09:59 (37) | 17:50 | | | 18:48 | 24 | 18:18 (40) | 20:49 | 51 | 08:02 (7) | 21:45 | 35 | 07:51 (7) | 22:19 | | |
| 22 | 08:43 | | 09:34 (37) | 07:43 | | | 06:33 | | 17:54 (40) | 06:15 | | 07:10 (7) | 05:15 | | 07:16 (7) | 04:52 | | |
| | 16:48 | 25 | 09:59 (37) | 17:53 | | | 18:50 | 25 | 18:19 (40) | 20:51 | 53 | 08:03 (7) | 21:47 | 33 | 07:49 (7) | 22:19 | | |
| 23 | 08:42 | | 09:33 (37) | 07:41 | | | 06:31 | | 17:52 (40) | 06:13 | | 07:10 (7) | 05:13 | | 07:18 (7) | 04:53 | | |
| | 16:50 | 26 | 09:59 (37) | 17:55 | | | 18:52 | 26 | 18:18 (40) | 20:53 | 53 | 08:03 (7) | 21:49 | 30 | 07:48 (7) | 22:19 | | |
| 24 | 08:41 | | 09:35 (37) | 07:38 | | | 06:28 | | 17:52 (40) | 06:11 | | 07:09 (7) | 05:12 | | 07:19 (7) | 04:53 | | |
| | 16:51 | 24 | 09:59 (37) | 17:57 | | | 18:54 | 27 | 18:19 (40) | 20:55 | 55 | 08:04 (7) | 21:50 | 28 | 07:47 (7) | 22:19 | | |
| 25 | 08:39 | | 09:35 (37) | 07:36 | | | 06:26 | | 17:52 (40) | 06:08 | | 07:08 (7) | 05:10 | | 07:20 (7) | 04:53 | | |
| | 16:53 | 24 | 09:59 (37) | 17:59 | | | 18:56 | 26 | 18:18 (40) | 20:57 | 55 | 08:03 (7) | 21:52 | 25 | 07:45 (7) | 22:19 | | |
| 26 | 08:37 | | 09:35 (37) | 07:34 | | | 06:23 | | 17:51 (40) | 06:06 | | 07:07 (7) | 05:09 | | 07:22 (7) | 04:54 | | |
| | 16:56 | 24 | 09:59 (37) | 18:01 | | | 18:57 | 26 | 18:17 (40) | 20:59 | 56 | 08:03 (7) | 21:53 | 21 | 07:43 (7) | 22:19 | | |
| 27 | 08:36 | | 09:36 (37) | 07:31 | | | 06:21 | | 17:51 (40) | 06:04 | | 07:07 (7) | 05:08 | | 07:24 (7) | 04:54 | | |
| | 16:58 | 23 | 09:59 (37) | 18:03 | | | 18:59 | 26 | 18:17 (40) | 21:01 | 56 | 08:03 (7) | 21:55 | 17 | 07:41 (7) | 22:19 | | |
| 28 | 08:34 | | 09:36 (37) | 07:29 | | | 06:18 | | 17:51 (40) | 06:01 | | 07:07 (7) | 05:06 | | 07:27 (7) | 04:55 | | |
| | 17:00 | 22 | 09:58 (37) | 18:05 | | | 19:01 | 25 | 18:16 (40) | 21:03 | 57 | 08:04 (7) | 21:57 | 12 | 07:39 (7) | 22:19 | | |
| 29 | 08:33 | | 09:38 (37) | | | | 07:15 | | 18:52 (40) | 05:59 | | 07:07 (7) | 05:05 | | 07:32 (7) | 04:55 | | |
| | 17:02 | 20 | 09:58 (37) | | | | 20:03 | 24 | 19:16 (40) | 21:05 | 57 | 08:04 (7) | 21:58 | 2 | 07:34 (7) | 22:18 | | |
| 30 | 08:31 | | 09:39 (37) | | | | 07:13 | | 18:53 (40) | 05:57 | | 07:07 (7) | 05:04 | | | 04:56 | | |
| | 17:04 | 19 | 09:58 (37) | | | | 20:05 | 21 | 19:14 (40) | 21:06 | 57 | 08:04 (7) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:40 (37) | | | | 07:10 | | 18:54 (40) | | | | 05:03 | | | | | |
| | 17:06 | 17 | 09:57 (37) | | | | 20:07 | 19 | 19:13 (40) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 526 | | | 20 | | | 333 | | | 949 | | | 1197 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,67 | | | 0,67 | | | 0,99 | | | 0,99 | | | 0,99 | | | | |
| Total reduction | | 0,12 | | | 0,16 | | | 0,33 | | | 0,38 | | | 0,49 | | | | |
| Total, real | | 61 | | | 3 | | | 109 | | | 357 | | | 590 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:19 (7) | 06:38 | | 07:30 (7) | 07:34 | 07:36 | | | 08:35 | | 09:16 (37) |
| | 22:18 | | | 21:40 | 50 | 08:09 (7) | 20:29 | 17 | 07:47 (7) | 19:12 | 16:58 | | | 16:10 | 17 | 09:33 (37) |
| 2 | 04:57 | | | 05:41 | | 07:18 (7) | 06:39 | | | 07:36 | 07:38 | | | 08:36 | | 09:17 (37) |
| | 22:17 | | | 21:38 | 51 | 08:09 (7) | 20:27 | | | 19:09 | 16:55 | | | 16:09 | 16 | 09:33 (37) |
| 3 | 04:58 | | | 05:43 | | 07:17 (7) | 06:41 | | | 07:38 | 07:41 | | | 08:38 | | 09:19 (37) |
| | 22:17 | | | 21:36 | 53 | 08:10 (7) | 20:24 | | | 19:07 | 16:53 | | | 16:08 | 14 | 09:33 (37) |
| 4 | 04:59 | | | 05:45 | | 07:17 (7) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:19 (37) |
| | 22:16 | | | 21:34 | 53 | 08:10 (7) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 12 | 09:31 (37) |
| 5 | 05:00 | | | 05:47 | | 07:16 (7) | 06:45 | | | 07:42 | 07:45 | | | 08:41 | | 09:21 (37) |
| | 22:16 | | | 21:32 | 54 | 08:10 (7) | 20:19 | | | 19:02 | 16:49 | | | 16:07 | 10 | 09:31 (37) |
| 6 | 05:01 | | | 05:49 | | 07:16 (7) | 06:47 | | | 07:44 | 07:47 | | | 08:43 | | 09:22 (37) |
| | 22:15 | | | 21:30 | 55 | 08:11 (7) | 20:16 | | | 18:59 | 16:47 | | | 16:06 | 7 | 09:29 (37) |
| 7 | 05:02 | | | 05:50 | | 07:16 (7) | 06:49 | | | 07:46 | 07:49 | | | 08:44 | | |
| | 22:14 | | | 21:28 | 55 | 08:11 (7) | 20:14 | | | 18:57 | 16:45 | | | 16:05 | | |
| 8 | 05:03 | | | 05:52 | | 07:16 (7) | 06:51 | | | 07:48 | 07:51 | | | 08:45 | | |
| | 22:14 | | | 21:25 | 56 | 08:12 (7) | 20:11 | | | 18:54 | 16:43 | | | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 07:15 (7) | 06:53 | | | 07:50 | 07:53 | | 09:15 (37) | 08:47 | | |
| | 22:13 | | | 21:23 | 56 | 08:11 (7) | 20:09 | | | 18:52 | 16:41 | 8 | 09:23 (37) | 16:05 | | |
| 10 | 05:05 | | | 05:56 | | 07:15 (7) | 06:55 | | 18:51 (40) | 07:52 | 07:55 | | 09:13 (37) | 08:48 | | |
| | 22:12 | | | 21:21 | 57 | 08:12 (7) | 20:06 | 8 | 18:59 (40) | 18:49 | 16:40 | 13 | 09:26 (37) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 07:15 (7) | 06:56 | | 18:48 (40) | 07:54 | 07:57 | | 09:11 (37) | 08:49 | | |
| | 22:11 | | | 21:19 | 57 | 08:12 (7) | 20:04 | 14 | 19:02 (40) | 18:47 | 16:38 | 17 | 09:28 (37) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 07:14 (7) | 06:58 | | 18:46 (40) | 07:56 | 07:59 | | 09:10 (37) | 08:50 | | |
| | 22:10 | | | 21:17 | 57 | 08:11 (7) | 20:01 | 18 | 19:04 (40) | 18:44 | 16:36 | 19 | 09:29 (37) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 07:14 (7) | 07:00 | | 18:44 (40) | 07:58 | 08:01 | | 09:10 (37) | 08:51 | | |
| | 22:09 | | | 21:15 | 57 | 08:11 (7) | 19:58 | 21 | 19:05 (40) | 18:42 | 16:34 | 20 | 09:30 (37) | 16:04 | | |
| 14 | 05:10 | | | 06:03 | | 07:14 (7) | 07:02 | | 18:43 (40) | 08:00 | 08:03 | | 09:09 (37) | 08:52 | | |
| | 22:08 | | | 21:12 | 57 | 08:11 (7) | 19:56 | 23 | 19:06 (40) | 18:39 | 16:32 | 22 | 09:31 (37) | 16:03 | | |
| 15 | 05:12 | | 07:37 (7) | 06:05 | | 07:15 (7) | 07:04 | | 18:42 (40) | 08:02 | 08:05 | | 09:08 (37) | 08:53 | | |
| | 22:06 | 9 | 07:46 (7) | 21:10 | 56 | 08:11 (7) | 19:53 | 24 | 19:06 (40) | 18:37 | 16:31 | 24 | 09:32 (37) | 16:03 | | |
| 16 | 05:13 | | 07:35 (7) | 06:07 | | 07:15 (7) | 07:06 | | 18:40 (40) | 08:04 | 08:07 | | 09:08 (37) | 08:54 | | |
| | 22:05 | 15 | 07:50 (7) | 21:08 | 56 | 08:11 (7) | 19:51 | 26 | 19:06 (40) | 18:34 | 16:29 | 24 | 09:32 (37) | 16:03 | | |
| 17 | 05:15 | | 07:32 (7) | 06:09 | | 07:14 (7) | 07:08 | | 18:39 (40) | 08:06 | 08:09 | | 09:08 (37) | 08:55 | | |
| | 22:04 | 20 | 07:52 (7) | 21:05 | 56 | 08:10 (7) | 19:48 | 27 | 19:06 (40) | 18:32 | 16:27 | 24 | 09:32 (37) | 16:04 | | |
| 18 | 05:16 | | 07:30 (7) | 06:11 | | 07:14 (7) | 07:10 | | 18:39 (40) | 08:08 | 08:11 | | 09:09 (37) | 08:56 | | |
| | 22:03 | 23 | 07:53 (7) | 21:03 | 56 | 08:10 (7) | 19:46 | 27 | 19:06 (40) | 18:29 | 16:26 | 24 | 09:33 (37) | 16:04 | | |
| 19 | 05:18 | | 07:30 (7) | 06:13 | | 07:15 (7) | 07:12 | | 18:39 (40) | 08:10 | 08:13 | | 09:08 (37) | 08:57 | | |
| | 22:01 | 26 | 07:56 (7) | 21:01 | 54 | 08:09 (7) | 19:43 | 26 | 19:05 (40) | 18:27 | 16:24 | 26 | 09:34 (37) | 16:04 | | |
| 20 | 05:19 | | 07:28 (7) | 06:15 | | 07:15 (7) | 07:13 | | 18:39 (40) | 08:12 | 08:15 | | 09:09 (37) | 08:57 | | |
| | 22:00 | 29 | 07:57 (7) | 20:58 | 54 | 08:09 (7) | 19:40 | 26 | 19:05 (40) | 18:25 | 16:23 | 25 | 09:34 (37) | 16:04 | | |
| 21 | 05:21 | | 07:26 (7) | 06:17 | | 07:15 (7) | 07:15 | | 18:39 (40) | 08:14 | 08:17 | | 09:09 (37) | 08:58 | | |
| | 21:58 | 32 | 07:58 (7) | 20:56 | 52 | 08:07 (7) | 19:38 | 25 | 19:04 (40) | 18:22 | 16:21 | 25 | 09:34 (37) | 16:05 | | |
| 22 | 05:22 | | 07:26 (7) | 06:19 | | 07:15 (7) | 07:17 | | 18:39 (40) | 08:16 | 08:19 | | 09:09 (37) | 08:59 | | |
| | 21:57 | 34 | 08:00 (7) | 20:54 | 51 | 08:06 (7) | 19:35 | 24 | 19:03 (40) | 18:20 | 16:20 | 25 | 09:34 (37) | 16:05 | | |
| 23 | 05:24 | | 07:25 (7) | 06:21 | | 07:16 (7) | 07:19 | | 18:40 (40) | 08:18 | 08:21 | | 09:09 (37) | 08:59 | | |
| | 21:55 | 35 | 08:00 (7) | 20:51 | 50 | 08:06 (7) | 19:33 | 22 | 19:02 (40) | 18:18 | 16:19 | 25 | 09:34 (37) | 16:06 | | |
| 24 | 05:26 | | 07:24 (7) | 06:22 | | 07:17 (7) | 07:21 | | 18:40 (40) | 08:20 | 08:23 | | 09:10 (37) | 09:00 | | |
| | 21:54 | 38 | 08:02 (7) | 20:49 | 48 | 08:05 (7) | 19:30 | 20 | 19:00 (40) | 18:15 | 16:17 | 24 | 09:34 (37) | 16:06 | | |
| 25 | 05:27 | | 07:23 (7) | 06:24 | | 07:18 (7) | 07:23 | | 18:41 (40) | 07:22 | 08:24 | | 09:10 (37) | 09:00 | | |
| | 21:52 | 40 | 08:03 (7) | 20:46 | 46 | 08:04 (7) | 19:27 | 17 | 18:58 (40) | 17:13 | 16:16 | 24 | 09:34 (37) | 16:07 | | |
| 26 | 05:29 | | 07:22 (7) | 06:26 | | 07:18 (7) | 07:25 | | 18:44 (40) | 07:24 | 08:26 | | 09:11 (37) | 09:00 | | |
| | 21:50 | 42 | 08:04 (7) | 20:44 | 43 | 08:01 (7) | 19:25 | 11 | 18:55 (40) | 17:11 | 16:15 | 23 | 09:34 (37) | 16:08 | | |
| 27 | 05:31 | | 07:22 (7) | 06:28 | | 07:19 (7) | 07:27 | | | 07:26 | 08:28 | | 09:12 (37) | 09:00 | | |
| | 21:49 | 43 | 08:05 (7) | 20:42 | 41 | 08:00 (7) | 19:22 | | | 17:08 | 16:14 | 22 | 09:34 (37) | 16:08 | | |
| 28 | 05:32 | | 07:21 (7) | 06:30 | | 07:21 (7) | 07:29 | | | 07:28 | 08:30 | | 09:13 (37) | 09:01 | | |
| | 21:47 | 45 | 08:06 (7) | 20:39 | 37 | 07:58 (7) | 19:20 | | | 17:06 | 16:13 | 21 | 09:34 (37) | 16:09 | | |
| 29 | 05:34 | | 07:21 (7) | 06:32 | | 07:22 (7) | 07:31 | | | 07:30 | 08:31 | | 09:13 (37) | 09:01 | | |
| | 21:45 | 46 | 08:07 (7) | 20:37 | 35 | 07:57 (7) | 19:17 | | | 17:04 | 16:12 | 20 | 09:33 (37) | 16:10 | | |
| 30 | 05:36 | | 07:19 (7) | 06:34 | | 07:24 (7) | 07:32 | | | 07:32 | 08:33 | | 09:15 (37) | 09:01 | | |
| | 21:43 | 48 | 08:07 (7) | 20:34 | 30 | 07:54 (7) | 19:14 | | | 17:02 | 16:11 | 18 | 09:33 (37) | 16:11 | | |
| 31 | 05:38 | | 07:19 (7) | 06:36 | | 07:26 (7) | | | | 07:34 | | | | 09:01 | | |
| | 21:41 | 49 | 08:08 (7) | 20:32 | 25 | 07:51 (7) | | | | 17:00 | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 574 | | | 1558 | | | 376 | | | | 473 | | | 76 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,99 | | | 0,99 | | | 0,99 | | | | 0,67 | | | 0,67 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | 0,10 | | | 0,09 | |
| Total, real | | 266 | | | 766 | | | 143 | | | | 48 | | | 7 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:49 (37) | 07:26 | | | 07:08 | | 18:58 (40) | 05:55 | | 07:15 (7) | 05:02 | | |
| | 16:14 | | | 17:08 | 4 | 09:53 (37) | 18:07 | | | 20:09 | 4 | 19:02 (40) | 21:08 | 55 | 08:10 (7) | 22:02 | | |
| 2 | 09:00 | | | 08:26 | | | 07:24 | | | 07:05 | | | 05:53 | | 07:14 (7) | 05:01 | | |
| | 16:15 | | | 17:10 | | | 18:09 | | | 20:11 | | | 21:10 | 55 | 08:09 (7) | 22:03 | | |
| 3 | 09:00 | | 09:38 (37) | 08:24 | | | 07:22 | | | 07:03 | | | 05:50 | | 07:14 (7) | 05:00 | | |
| | 16:16 | 5 | 09:43 (37) | 17:12 | | | 18:11 | | | 20:13 | | | 21:12 | 54 | 08:08 (7) | 22:05 | | |
| 4 | 09:00 | | 09:38 (37) | 08:22 | | | 07:19 | | | 07:00 | | | 05:48 | | 07:15 (7) | 04:59 | | |
| | 16:17 | 8 | 09:46 (37) | 17:14 | | | 18:13 | | | 20:15 | | | 21:14 | 53 | 08:08 (7) | 22:06 | | |
| 5 | 08:59 | | 09:37 (37) | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | | 07:15 (7) | 04:58 | | |
| | 16:19 | 10 | 09:47 (37) | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 52 | 08:07 (7) | 22:07 | | |
| 6 | 08:59 | | 09:37 (37) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 07:16 (7) | 04:57 | | |
| | 16:20 | 12 | 09:49 (37) | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 51 | 08:07 (7) | 22:08 | | |
| 7 | 08:58 | | 09:36 (37) | 08:16 | | | 07:12 | | | 06:52 | | 07:42 (7) | 05:42 | | 07:17 (7) | 04:56 | | |
| | 16:21 | 14 | 09:50 (37) | 17:21 | | | 18:19 | | | 20:21 | 12 | 07:54 (7) | 21:20 | 49 | 08:06 (7) | 22:09 | | |
| 8 | 08:58 | | 09:36 (37) | 08:14 | | | 07:09 | | | 06:50 | | 07:36 (7) | 05:40 | | 07:17 (7) | 04:56 | | |
| | 16:23 | 15 | 09:51 (37) | 17:23 | | | 18:22 | | | 20:23 | 22 | 07:58 (7) | 21:22 | 48 | 08:05 (7) | 22:10 | | |
| 9 | 08:57 | | 09:35 (37) | 08:12 | | | 07:07 | | | 06:47 | | 07:33 (7) | 05:38 | | 07:18 (7) | 04:55 | | |
| | 16:24 | 17 | 09:52 (37) | 17:25 | | | 18:24 | | | 20:25 | 29 | 08:02 (7) | 21:24 | 46 | 08:04 (7) | 22:11 | | |
| 10 | 08:56 | | 09:35 (37) | 08:10 | | | 07:04 | | | 06:45 | | 07:30 (7) | 05:36 | | 07:18 (7) | 04:54 | | |
| | 16:26 | 18 | 09:53 (37) | 17:27 | | | 18:26 | | | 20:27 | 33 | 08:03 (7) | 21:26 | 45 | 08:03 (7) | 22:12 | | |
| 11 | 08:56 | | 09:35 (37) | 08:08 | | | 07:02 | | | 06:42 | | 07:29 (7) | 05:34 | | 07:19 (7) | 04:54 | | |
| | 16:28 | 19 | 09:54 (37) | 17:29 | | | 18:28 | | | 20:29 | 36 | 08:05 (7) | 21:28 | 43 | 08:02 (7) | 22:13 | | |
| 12 | 08:55 | | 09:35 (37) | 08:06 | | | 06:59 | | | 06:40 | | 07:27 (7) | 05:32 | | 07:20 (7) | 04:53 | | |
| | 16:29 | 20 | 09:55 (37) | 17:31 | | | 18:30 | | | 20:31 | 40 | 08:07 (7) | 21:29 | 42 | 08:02 (7) | 22:14 | | |
| 13 | 08:54 | | 09:35 (37) | 08:03 | | | 06:56 | | | 06:37 | | 07:25 (7) | 05:30 | | 07:21 (7) | 04:53 | | |
| | 16:31 | 21 | 09:56 (37) | 17:33 | | | 18:32 | | | 20:33 | 43 | 08:08 (7) | 21:31 | 39 | 08:00 (7) | 22:15 | | |
| 14 | 08:53 | | 09:35 (37) | 08:01 | | | 06:54 | | | 06:35 | | 07:24 (7) | 05:28 | | 07:21 (7) | 04:53 | | |
| | 16:33 | 22 | 09:57 (37) | 17:36 | | | 18:34 | | | 20:35 | 45 | 08:09 (7) | 21:33 | 38 | 07:59 (7) | 22:15 | | |
| 15 | 08:52 | | 09:34 (37) | 07:59 | | | 06:51 | | | 06:32 | | 07:22 (7) | 05:26 | | 07:23 (7) | 04:52 | | |
| | 16:34 | 23 | 09:57 (37) | 17:38 | | | 18:36 | | | 20:37 | 47 | 08:09 (7) | 21:35 | 35 | 07:58 (7) | 22:16 | | |
| 16 | 08:51 | | 09:35 (37) | 07:57 | | | 06:49 | | 17:58 (40) | 06:30 | | 07:21 (7) | 05:25 | | 07:24 (7) | 04:52 | | |
| | 16:36 | 23 | 09:58 (37) | 17:40 | | | 18:38 | 12 | 18:10 (40) | 20:39 | 49 | 08:10 (7) | 21:37 | 32 | 07:56 (7) | 22:17 | | |
| 17 | 08:50 | | 09:35 (37) | 07:55 | | | 06:46 | | 17:56 (40) | 06:27 | | 07:20 (7) | 05:23 | | 07:25 (7) | 04:52 | | |
| | 16:38 | 24 | 09:59 (37) | 17:42 | | | 18:40 | 17 | 18:13 (40) | 20:41 | 51 | 08:11 (7) | 21:39 | 29 | 07:54 (7) | 22:17 | | |
| 18 | 08:49 | | 09:35 (37) | 07:52 | | | 06:44 | | 17:54 (40) | 06:25 | | 07:19 (7) | 05:21 | | 07:27 (7) | 04:52 | | |
| | 16:40 | 24 | 09:59 (37) | 17:44 | | | 18:42 | 20 | 18:14 (40) | 20:43 | 52 | 08:11 (7) | 21:40 | 26 | 07:53 (7) | 22:18 | | |
| 19 | 08:47 | | 09:35 (37) | 07:50 | | | 06:41 | | 17:53 (40) | 06:23 | | 07:18 (7) | 05:19 | | 07:29 (7) | 04:52 | | |
| | 16:42 | 25 | 10:00 (37) | 17:46 | | | 18:44 | 22 | 18:15 (40) | 20:45 | 53 | 08:11 (7) | 21:42 | 22 | 07:51 (7) | 22:18 | | |
| 20 | 08:46 | | 09:35 (37) | 07:48 | | | 06:39 | | 17:51 (40) | 06:20 | | 07:18 (7) | 05:18 | | 07:31 (7) | 04:52 | | |
| | 16:44 | 25 | 10:00 (37) | 17:48 | | | 18:46 | 24 | 18:15 (40) | 20:47 | 54 | 08:12 (7) | 21:44 | 18 | 07:49 (7) | 22:18 | | |
| 21 | 08:45 | | 09:36 (37) | 07:46 | | | 06:36 | | 17:50 (40) | 06:18 | | 07:16 (7) | 05:16 | | 07:35 (7) | 04:52 | | |
| | 16:46 | 25 | 10:01 (37) | 17:50 | | | 18:48 | 25 | 18:15 (40) | 20:49 | 55 | 08:11 (7) | 21:45 | 11 | 07:46 (7) | 22:19 | | |
| 22 | 08:43 | | 09:36 (37) | 07:43 | | | 06:33 | | 17:50 (40) | 06:15 | | 07:16 (7) | 05:15 | | | 04:52 | | |
| | 16:48 | 25 | 10:01 (37) | 17:53 | | | 18:50 | 26 | 18:16 (40) | 20:51 | 56 | 08:12 (7) | 21:47 | | | 22:19 | | |
| 23 | 08:42 | | 09:36 (37) | 07:41 | | | 06:31 | | 17:49 (40) | 06:13 | | 07:16 (7) | 05:13 | | | 04:53 | | |
| | 16:49 | 25 | 10:01 (37) | 17:55 | | | 18:52 | 26 | 18:15 (40) | 20:53 | 56 | 08:12 (7) | 21:49 | | | 22:19 | | |
| 24 | 08:41 | | 09:37 (37) | 07:38 | | | 06:28 | | 17:49 (40) | 06:11 | | 07:16 (7) | 05:12 | | | 04:53 | | |
| | 16:51 | 24 | 10:01 (37) | 17:57 | | | 18:54 | 27 | 18:16 (40) | 20:55 | 56 | 08:12 (7) | 21:50 | | | 22:19 | | |
| 25 | 08:39 | | 09:38 (37) | 07:36 | | | 06:26 | | 17:49 (40) | 06:08 | | 07:15 (7) | 05:10 | | | 04:53 | | |
| | 16:53 | 23 | 10:01 (37) | 17:59 | | | 18:56 | 26 | 18:15 (40) | 20:57 | 56 | 08:11 (7) | 21:52 | | | 22:19 | | |
| 26 | 08:37 | | 09:38 (37) | 07:34 | | | 06:23 | | 17:48 (40) | 06:06 | | 07:15 (7) | 05:09 | | | 04:54 | | |
| | 16:56 | 22 | 10:00 (37) | 18:01 | | | 18:57 | 26 | 18:14 (40) | 20:59 | 56 | 08:11 (7) | 21:53 | | | 22:19 | | |
| 27 | 08:36 | | 09:39 (37) | 07:31 | | | 06:21 | | 17:49 (40) | 06:04 | | 07:15 (7) | 05:08 | | | 04:54 | | |
| | 16:58 | 21 | 10:00 (37) | 18:03 | | | 18:59 | 24 | 18:13 (40) | 21:01 | 56 | 08:11 (7) | 21:55 | | | 22:19 | | |
| 28 | 08:34 | | 09:40 (37) | 07:29 | | | 06:18 | | 17:49 (40) | 06:01 | | 07:15 (7) | 05:06 | | | 04:55 | | |
| | 17:00 | 19 | 09:59 (37) | 18:05 | | | 19:01 | 23 | 18:12 (40) | 21:03 | 56 | 08:11 (7) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 09:42 (37) | | | | 07:15 | | 18:51 (40) | 05:59 | | 07:15 (7) | 05:05 | | | 04:55 | | |
| | 17:02 | 17 | 09:59 (37) | | | | 20:03 | 20 | 19:11 (40) | 21:05 | 56 | 08:11 (7) | 21:58 | | | 22:18 | | |
| 30 | 08:31 | | 09:43 (37) | | | | 07:13 | | 18:51 (40) | 05:57 | | 07:15 (7) | 05:04 | | | 04:56 | | |
| | 17:04 | 15 | 09:58 (37) | | | | 20:05 | 18 | 19:09 (40) | 21:06 | 56 | 08:11 (7) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:45 (37) | | | | 07:10 | | 18:54 (40) | | | | 05:03 | | | | | |
| | 17:06 | 11 | 09:56 (37) | | | | 20:07 | 13 | 19:07 (40) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 552 | | | 4 | | | 349 | | | 1129 | | | 843 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,66 | | | 0,66 | | | 0,99 | | | 0,99 | | | 0,99 | | | | |
| Total reduction | | 0,11 | | | 0,16 | | | 0,32 | | | 0,38 | | | 0,49 | | | | |
| Total, real | | 63 | | | 1 | | | 113 | | | 425 | | | 416 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 07:30 (7) | 06:38 | 07:28 (7) | 07:34 | 07:36 | | 08:35 | 09:17 (37) |
| | 22:18 | | 21:40 42 | 08:12 (7) | 20:29 36 | 08:04 (7) | 19:12 | 16:58 | | 16:10 19 | 09:36 (37) |
| 2 | 04:57 | | 05:41 | 07:29 (7) | 06:39 | 07:29 (7) | 07:36 | 07:38 | | 08:36 | 09:18 (37) |
| | 22:17 | | 21:38 44 | 08:13 (7) | 20:27 33 | 08:02 (7) | 19:09 | 16:55 | | 16:09 18 | 09:36 (37) |
| 3 | 04:58 | | 05:43 | 07:28 (7) | 06:41 | 07:31 (7) | 07:38 | 07:41 | | 08:38 | 09:19 (37) |
| | 22:17 | | 21:36 46 | 08:14 (7) | 20:24 29 | 08:00 (7) | 19:07 | 16:53 | | 16:08 17 | 09:36 (37) |
| 4 | 04:59 | | 05:45 | 07:28 (7) | 06:43 | 07:34 (7) | 07:40 | 07:43 | | 08:40 | 09:20 (37) |
| | 22:16 | | 21:34 47 | 08:15 (7) | 20:22 22 | 07:56 (7) | 19:04 | 16:51 | | 16:07 15 | 09:35 (37) |
| 5 | 05:00 | | 05:47 | 07:26 (7) | 06:45 | 07:38 (7) | 07:42 | 07:45 | | 08:41 | 09:21 (37) |
| | 22:16 | | 21:32 49 | 08:15 (7) | 20:19 13 | 07:51 (7) | 19:02 | 16:49 | | 16:07 14 | 09:35 (37) |
| 6 | 05:01 | | 05:49 | 07:26 (7) | 06:47 | | 07:44 | 07:47 | | 08:43 | 09:22 (37) |
| | 22:15 | | 21:30 50 | 08:16 (7) | 20:16 | | 18:59 | 16:47 | | 16:06 12 | 09:34 (37) |
| 7 | 05:02 | | 05:50 | 07:26 (7) | 06:49 | | 07:46 | 07:49 | | 08:44 | 09:24 (37) |
| | 22:14 | | 21:28 51 | 08:17 (7) | 20:14 | | 18:57 | 16:45 | | 16:05 10 | 09:34 (37) |
| 8 | 05:03 | | 05:52 | 07:25 (7) | 06:51 | | 07:48 | 07:51 | | 08:45 | 09:25 (37) |
| | 22:14 | | 21:25 52 | 08:17 (7) | 20:11 | | 18:54 | 16:43 | | 16:05 8 | 09:33 (37) |
| 9 | 05:04 | | 05:54 | 07:24 (7) | 06:53 | | 07:50 | 07:53 | | 08:47 | 09:27 (37) |
| | 22:13 | | 21:23 53 | 08:17 (7) | 20:09 | | 18:52 | 16:41 | | 16:05 6 | 09:33 (37) |
| 10 | 05:05 | | 05:56 | 07:24 (7) | 06:55 | | 07:52 | 07:55 | 09:19 (37) | 08:48 | |
| | 22:12 | | 21:21 54 | 08:18 (7) | 20:06 | | 18:49 | 16:40 5 | 09:24 (37) | 16:04 | |
| 11 | 05:07 | | 05:58 | 07:24 (7) | 06:56 | | 07:54 | 07:57 | 09:16 (37) | 08:49 | |
| | 22:11 | | 21:19 54 | 08:18 (7) | 20:04 | | 18:47 | 16:38 11 | 09:27 (37) | 16:04 | |
| 12 | 05:08 | | 06:00 | 07:22 (7) | 06:58 | 18:46 (40) | 07:56 | 07:59 | 09:14 (37) | 08:50 | |
| | 22:10 | | 21:17 56 | 08:18 (7) | 20:01 12 | 18:58 (40) | 18:44 | 16:36 15 | 09:29 (37) | 16:04 | |
| 13 | 05:09 | | 06:02 | 07:22 (7) | 07:00 | 18:43 (40) | 07:58 | 08:01 | 09:13 (37) | 08:51 | |
| | 22:09 | | 21:15 56 | 08:18 (7) | 19:58 17 | 19:00 (40) | 18:42 | 16:34 18 | 09:31 (37) | 16:04 | |
| 14 | 05:10 | | 06:03 | 07:22 (7) | 07:02 | 18:41 (40) | 08:00 | 08:03 | 09:12 (37) | 08:52 | |
| | 22:08 | | 21:12 56 | 08:18 (7) | 19:56 20 | 19:01 (40) | 18:39 | 16:32 20 | 09:32 (37) | 16:03 | |
| 15 | 05:12 | | 06:05 | 07:22 (7) | 07:04 | 18:40 (40) | 08:02 | 08:05 | 09:12 (37) | 08:53 | |
| | 22:06 | | 21:10 57 | 08:19 (7) | 19:53 22 | 19:02 (40) | 18:37 | 16:31 21 | 09:33 (37) | 16:03 | |
| 16 | 05:13 | | 06:07 | 07:22 (7) | 07:06 | 18:38 (40) | 08:04 | 08:07 | 09:11 (37) | 08:54 | |
| | 22:05 | | 21:08 57 | 08:19 (7) | 19:51 24 | 19:02 (40) | 18:34 | 16:29 22 | 09:33 (37) | 16:03 | |
| 17 | 05:15 | | 06:09 | 07:21 (7) | 07:08 | 18:37 (40) | 08:06 | 08:09 | 09:11 (37) | 08:55 | |
| | 22:04 | | 21:05 57 | 08:18 (7) | 19:48 25 | 19:02 (40) | 18:32 | 16:27 23 | 09:34 (37) | 16:04 | |
| 18 | 05:16 | | 06:11 | 07:21 (7) | 07:10 | 18:36 (40) | 08:08 | 08:11 | 09:11 (37) | 08:56 | |
| | 22:03 | | 21:03 57 | 08:18 (7) | 19:46 26 | 19:02 (40) | 18:29 | 16:26 24 | 09:35 (37) | 16:04 | |
| 19 | 05:18 | | 06:13 | 07:21 (7) | 07:12 | 18:36 (40) | 08:10 | 08:13 | 09:11 (37) | 08:57 | |
| | 22:01 | | 21:01 57 | 08:18 (7) | 19:43 26 | 19:02 (40) | 18:27 | 16:24 25 | 09:36 (37) | 16:04 | |
| 20 | 05:19 | | 06:15 | 07:22 (7) | 07:13 | 18:35 (40) | 08:12 | 08:15 | 09:11 (37) | 08:57 | |
| | 22:00 | | 20:58 56 | 08:18 (7) | 19:40 27 | 19:02 (40) | 18:25 | 16:23 25 | 09:36 (37) | 16:04 | |
| 21 | 05:21 | | 06:17 | 07:21 (7) | 07:15 | 18:35 (40) | 08:14 | 08:17 | 09:11 (37) | 08:58 | |
| | 21:58 | | 20:56 55 | 08:16 (7) | 19:38 27 | 19:02 (40) | 18:22 | 16:21 25 | 09:36 (37) | 16:05 | |
| 22 | 05:22 | 07:48 (7) | 06:19 | 07:21 (7) | 07:17 | 18:35 (40) | 08:16 | 08:19 | 09:11 (37) | 08:59 | |
| | 21:57 4 | 07:52 (7) | 20:54 55 | 08:16 (7) | 19:35 26 | 19:01 (40) | 18:20 | 16:20 25 | 09:36 (37) | 16:05 | |
| 23 | 05:24 | 07:43 (7) | 06:21 | 07:22 (7) | 07:19 | 18:36 (40) | 08:18 | 08:21 | 09:11 (37) | 08:59 | |
| | 21:55 14 | 07:57 (7) | 20:51 54 | 08:16 (7) | 19:33 24 | 19:00 (40) | 18:18 | 16:19 25 | 09:36 (37) | 16:06 | |
| 24 | 05:26 | 07:40 (7) | 06:22 | 07:22 (7) | 07:21 | 18:35 (40) | 08:20 | 08:23 | 09:12 (37) | 09:00 | |
| | 21:54 20 | 08:00 (7) | 20:49 53 | 08:15 (7) | 19:30 23 | 18:58 (40) | 18:15 | 16:17 24 | 09:36 (37) | 16:06 | |
| 25 | 05:27 | 07:38 (7) | 06:24 | 07:23 (7) | 07:23 | 18:36 (40) | 07:22 | 08:24 | 09:12 (37) | 09:00 | |
| | 21:52 24 | 08:02 (7) | 20:46 51 | 08:14 (7) | 19:27 21 | 18:57 (40) | 17:13 | 16:16 24 | 09:36 (37) | 16:07 | |
| 26 | 05:29 | 07:37 (7) | 06:26 | 07:22 (7) | 07:25 | 18:37 (40) | 07:24 | 08:26 | 09:13 (37) | 09:00 | |
| | 21:50 27 | 08:04 (7) | 20:44 51 | 08:13 (7) | 19:25 18 | 18:55 (40) | 17:11 | 16:15 23 | 09:36 (37) | 16:08 | |
| 27 | 05:31 | 07:36 (7) | 06:28 | 07:23 (7) | 07:27 | 18:39 (40) | 07:26 | 08:28 | 09:13 (37) | 09:00 | |
| | 21:49 30 | 08:06 (7) | 20:42 49 | 08:12 (7) | 19:22 14 | 18:53 (40) | 17:08 | 16:14 23 | 09:36 (37) | 16:08 | |
| 28 | 05:32 | 07:34 (7) | 06:30 | 07:24 (7) | 07:29 | 18:43 (40) | 07:28 | 08:30 | 09:14 (37) | 09:01 | |
| | 21:47 33 | 08:07 (7) | 20:39 47 | 08:11 (7) | 19:20 5 | 18:48 (40) | 17:06 | 16:13 22 | 09:36 (37) | 16:09 | |
| 29 | 05:34 | 07:33 (7) | 06:32 | 07:25 (7) | 07:31 | | 07:30 | 08:31 | 09:15 (37) | 09:01 | |
| | 21:45 36 | 08:09 (7) | 20:37 45 | 08:10 (7) | 19:17 | | 17:04 | 16:12 21 | 09:36 (37) | 16:10 | |
| 30 | 05:36 | 07:31 (7) | 06:34 | 07:26 (7) | 07:32 | | 07:32 | 08:33 | 09:16 (37) | 09:01 | |
| | 21:43 38 | 08:09 (7) | 20:34 42 | 08:08 (7) | 19:14 | | 17:02 | 16:11 20 | 09:36 (37) | 16:11 | |
| 31 | 05:38 | 07:31 (7) | 06:36 | 07:26 (7) | | | 07:34 | | | 09:01 | |
| | 21:41 40 | 08:11 (7) | 20:32 40 | 08:06 (7) | | | 17:00 | | | 16:12 | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | | 224 | |
| Total, worst case | 266 | | 1593 | | 490 | | | 441 | | 119 | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | | 0,16 | | 0,14 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,99 | | 0,99 | | 0,99 | | | 0,66 | | 0,66 | |
| Total reduction | 0,46 | | 0,49 | | 0,38 | | | 0,10 | | 0,09 | |
| Total, real | 123 | | 784 | | 185 | | | 44 | | 10 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (37) | 08:27 | | 07:26 | | | 07:08 | | | 05:55 | | 07:26 (7) | 05:02 | |
| | 16:14 | 10 | 09:48 (37) | 17:08 | | 18:07 | | | 20:09 | | | 21:08 | 50 | 08:16 (7) | 22:02 | |
| 2 | 09:00 | | 09:38 (37) | 08:26 | | 07:24 | | | 07:05 | | | 05:53 | | 07:26 (7) | 05:01 | |
| | 16:15 | 11 | 09:49 (37) | 17:10 | | 18:09 | | | 20:11 | | | 21:10 | 49 | 08:15 (7) | 22:03 | |
| 3 | 09:00 | | 09:37 (37) | 08:24 | | 07:22 | | | 07:03 | | 07:52 (7) | 05:50 | | 07:26 (7) | 05:00 | |
| | 16:16 | 13 | 09:50 (37) | 17:12 | | 18:11 | | | 20:13 | 13 | 08:05 (7) | 21:12 | 48 | 08:14 (7) | 22:05 | |
| 4 | 09:00 | | 09:38 (37) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (7) | 05:48 | | 07:27 (7) | 04:59 | |
| | 16:17 | 14 | 09:52 (37) | 17:14 | | 18:13 | | | 20:15 | 23 | 08:09 (7) | 21:14 | 46 | 08:13 (7) | 22:06 | |
| 5 | 08:59 | | 09:37 (37) | 08:20 | | 07:17 | | | 06:57 | | 07:43 (7) | 05:46 | | 07:28 (7) | 04:58 | |
| | 16:19 | 15 | 09:52 (37) | 17:16 | | 18:15 | | | 20:17 | 29 | 08:12 (7) | 21:16 | 44 | 08:12 (7) | 22:07 | |
| 6 | 08:59 | | 09:38 (37) | 08:18 | | 07:14 | | | 06:55 | | 07:40 (7) | 05:44 | | 07:29 (7) | 04:57 | |
| | 16:20 | 16 | 09:54 (37) | 17:19 | | 18:17 | | | 20:19 | 34 | 08:14 (7) | 21:18 | 42 | 08:11 (7) | 22:08 | |
| 7 | 08:58 | | 09:37 (37) | 08:16 | | 07:12 | | | 06:52 | | 07:39 (7) | 05:42 | | 07:30 (7) | 04:56 | |
| | 16:21 | 18 | 09:55 (37) | 17:21 | | 18:19 | | | 20:21 | 37 | 08:16 (7) | 21:20 | 40 | 08:10 (7) | 22:09 | |
| 8 | 08:58 | | 09:37 (37) | 08:14 | | 07:09 | | | 06:50 | | 07:36 (7) | 05:40 | | 07:31 (7) | 04:56 | |
| | 16:23 | 19 | 09:56 (37) | 17:23 | | 18:22 | | | 20:23 | 41 | 08:17 (7) | 21:22 | 37 | 08:08 (7) | 22:10 | |
| 9 | 08:57 | | 09:37 (37) | 08:12 | | 07:07 | | | 06:47 | | 07:35 (7) | 05:38 | | 07:32 (7) | 04:55 | |
| | 16:24 | 19 | 09:56 (37) | 17:25 | | 18:24 | | | 20:25 | 43 | 08:18 (7) | 21:24 | 35 | 08:07 (7) | 22:11 | |
| 10 | 08:56 | | 09:37 (37) | 08:10 | | 07:04 | | | 06:45 | | 07:33 (7) | 05:36 | | 07:33 (7) | 04:54 | |
| | 16:26 | 20 | 09:57 (37) | 17:27 | | 18:26 | | | 20:27 | 45 | 08:18 (7) | 21:26 | 32 | 08:05 (7) | 22:12 | |
| 11 | 08:56 | | 09:37 (37) | 08:08 | | 07:02 | | | 06:42 | | 07:32 (7) | 05:34 | | 07:35 (7) | 04:54 | |
| | 16:28 | 21 | 09:58 (37) | 17:29 | | 18:28 | | | 20:29 | 48 | 08:20 (7) | 21:28 | 28 | 08:03 (7) | 22:13 | |
| 12 | 08:55 | | 09:37 (37) | 08:06 | | 06:59 | | | 06:40 | | 07:31 (7) | 05:32 | | 07:37 (7) | 04:53 | |
| | 16:29 | 22 | 09:59 (37) | 17:31 | | 18:30 | | | 20:31 | 50 | 08:21 (7) | 21:29 | 25 | 08:02 (7) | 22:14 | |
| 13 | 08:54 | | 09:37 (37) | 08:03 | | 06:56 | | | 06:37 | | 07:30 (7) | 05:30 | | 07:39 (7) | 04:53 | |
| | 16:31 | 23 | 10:00 (37) | 17:33 | | 18:32 | | | 20:33 | 51 | 08:21 (7) | 21:31 | 20 | 07:59 (7) | 22:15 | |
| 14 | 08:53 | | 09:37 (37) | 08:01 | | 06:54 | | 17:58 (40) | 06:35 | | 07:29 (7) | 05:28 | | 07:42 (7) | 04:53 | |
| | 16:33 | 24 | 10:01 (37) | 17:36 | | 18:34 | 8 | 18:06 (40) | 20:35 | 52 | 08:21 (7) | 21:33 | 13 | 07:55 (7) | 22:15 | |
| 15 | 08:52 | | 09:37 (37) | 07:59 | | 06:51 | | 17:54 (40) | 06:32 | | 07:28 (7) | 05:26 | | | 04:52 | |
| | 16:34 | 24 | 10:01 (37) | 17:38 | | 18:36 | 14 | 18:08 (40) | 20:37 | 53 | 08:21 (7) | 21:35 | | | 22:16 | |
| 16 | 08:51 | | 09:37 (37) | 07:57 | | 06:49 | | 17:51 (40) | 06:30 | | 07:27 (7) | 05:25 | | | 04:52 | |
| | 16:36 | 24 | 10:01 (37) | 17:40 | | 18:38 | 19 | 18:10 (40) | 20:39 | 55 | 08:22 (7) | 21:37 | | | 22:17 | |
| 17 | 08:50 | | 09:38 (37) | 07:55 | | 06:46 | | 17:50 (40) | 06:27 | | 07:27 (7) | 05:23 | | | 04:52 | |
| | 16:38 | 24 | 10:02 (37) | 17:42 | | 18:40 | 21 | 18:11 (40) | 20:41 | 55 | 08:22 (7) | 21:39 | | | 22:17 | |
| 18 | 08:49 | | 09:38 (37) | 07:52 | | 06:44 | | 17:48 (40) | 06:25 | | 07:26 (7) | 05:21 | | | 04:52 | |
| | 16:40 | 24 | 10:02 (37) | 17:44 | | 18:42 | 24 | 18:12 (40) | 20:43 | 56 | 08:22 (7) | 21:40 | | | 22:18 | |
| 19 | 08:47 | | 09:38 (37) | 07:50 | | 06:41 | | 17:48 (40) | 06:23 | | 07:26 (7) | 05:19 | | | 04:52 | |
| | 16:42 | 25 | 10:03 (37) | 17:46 | | 18:44 | 25 | 18:13 (40) | 20:45 | 56 | 08:22 (7) | 21:42 | | | 22:18 | |
| 20 | 08:46 | | 09:38 (37) | 07:48 | | 06:39 | | 17:47 (40) | 06:20 | | 07:26 (7) | 05:18 | | | 04:52 | |
| | 16:44 | 25 | 10:03 (37) | 17:48 | | 18:46 | 26 | 18:13 (40) | 20:47 | 56 | 08:22 (7) | 21:44 | | | 22:18 | |
| 21 | 08:45 | | 09:39 (37) | 07:46 | | 06:36 | | 17:46 (40) | 06:18 | | 07:25 (7) | 05:16 | | | 04:52 | |
| | 16:46 | 24 | 10:03 (37) | 17:50 | | 18:48 | 26 | 18:12 (40) | 20:49 | 56 | 08:21 (7) | 21:45 | | | 22:19 | |
| 22 | 08:43 | | 09:39 (37) | 07:43 | | 06:33 | | 17:46 (40) | 06:15 | | 07:25 (7) | 05:15 | | | 04:52 | |
| | 16:48 | 24 | 10:03 (37) | 17:53 | | 18:50 | 27 | 18:13 (40) | 20:51 | 56 | 08:21 (7) | 21:47 | | | 22:19 | |
| 23 | 08:42 | | 09:40 (37) | 07:41 | | 06:31 | | 17:45 (40) | 06:13 | | 07:25 (7) | 05:13 | | | 04:53 | |
| | 16:49 | 23 | 10:03 (37) | 17:55 | | 18:52 | 27 | 18:12 (40) | 20:53 | 56 | 08:21 (7) | 21:49 | | | 22:19 | |
| 24 | 08:41 | | 09:41 (37) | 07:38 | | 06:28 | | 17:46 (40) | 06:11 | | 07:25 (7) | 05:12 | | | 04:53 | |
| | 16:51 | 22 | 10:03 (37) | 17:57 | | 18:54 | 26 | 18:12 (40) | 20:55 | 56 | 08:21 (7) | 21:50 | | | 22:19 | |
| 25 | 08:39 | | 09:41 (37) | 07:36 | | 06:26 | | 17:46 (40) | 06:08 | | 07:24 (7) | 05:10 | | | 04:53 | |
| | 16:53 | 22 | 10:03 (37) | 17:59 | | 18:56 | 24 | 18:10 (40) | 20:57 | 56 | 08:20 (7) | 21:52 | | | 22:19 | |
| 26 | 08:37 | | 09:42 (37) | 07:34 | | 06:23 | | 17:46 (40) | 06:06 | | 07:24 (7) | 05:09 | | | 04:54 | |
| | 16:56 | 20 | 10:02 (37) | 18:01 | | 18:57 | 23 | 18:09 (40) | 20:59 | 55 | 08:19 (7) | 21:53 | | | 22:19 | |
| 27 | 08:36 | | 09:43 (37) | 07:31 | | 06:21 | | 17:47 (40) | 06:04 | | 07:24 (7) | 05:08 | | | 04:54 | |
| | 16:58 | 18 | 10:01 (37) | 18:03 | | 18:59 | 21 | 18:08 (40) | 21:01 | 55 | 08:19 (7) | 21:55 | | | 22:19 | |
| 28 | 08:34 | | 09:44 (37) | 07:29 | | 06:18 | | 17:48 (40) | 06:01 | | 07:25 (7) | 05:06 | | | 04:55 | |
| | 17:00 | 16 | 10:00 (37) | 18:05 | | 19:01 | 18 | 18:06 (40) | 21:03 | 53 | 08:18 (7) | 21:57 | | | 22:19 | |
| 29 | 08:33 | | 09:47 (37) | | | 07:15 | | 18:50 (40) | 05:59 | | 07:25 (7) | 05:05 | | | 04:55 | |
| | 17:02 | 13 | 10:00 (37) | | | 20:03 | 15 | 19:05 (40) | 21:05 | 53 | 08:18 (7) | 21:58 | | | 22:18 | |
| 30 | 08:31 | | 09:49 (37) | | | 07:13 | | 18:53 (40) | 05:57 | | 07:26 (7) | 05:04 | | | 04:56 | |
| | 17:04 | 9 | 09:58 (37) | | | 20:05 | 8 | 19:01 (40) | 21:06 | 51 | 08:17 (7) | 21:59 | | | 22:18 | |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | | | | |
| | 17:06 | | | | | 20:07 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 582 | | | | | 352 | | | 1344 | | | 509 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,65 | | | | | 0,99 | | | 1,00 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,38 | | | 0,49 | | | |
| Total, real | | 65 | | | | | 113 | | | 505 | | | 251 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:47 (7) | 06:38 | | 07:31 (7) | 07:34 | | 07:36 | | | 08:35 | | 09:19 (37) |
| | 22:18 | | | 21:40 | 26 | 08:13 (7) | 20:29 | 48 | 08:19 (7) | 19:12 | | 16:58 | | | 16:10 | 21 | 09:40 (37) |
| 2 | 04:57 | | | 05:41 | | 07:44 (7) | 06:39 | | 07:32 (7) | 07:36 | | 07:38 | | | 08:36 | | 09:20 (37) |
| | 22:17 | | | 21:38 | 30 | 08:14 (7) | 20:27 | 45 | 08:17 (7) | 19:09 | | 16:55 | | | 16:09 | 20 | 09:40 (37) |
| 3 | 04:58 | | | 05:43 | | 07:43 (7) | 06:41 | | 07:33 (7) | 07:38 | | 07:41 | | | 08:38 | | 09:21 (37) |
| | 22:17 | | | 21:36 | 33 | 08:16 (7) | 20:24 | 43 | 08:16 (7) | 19:07 | | 16:53 | | | 16:08 | 20 | 09:41 (37) |
| 4 | 04:59 | | | 05:45 | | 07:42 (7) | 06:43 | | 07:34 (7) | 07:40 | | 07:43 | | | 08:40 | | 09:21 (37) |
| | 22:16 | | | 21:34 | 36 | 08:18 (7) | 20:22 | 41 | 08:15 (7) | 19:04 | | 16:51 | | | 16:07 | 19 | 09:40 (37) |
| 5 | 05:00 | | | 05:47 | | 07:40 (7) | 06:45 | | 07:35 (7) | 07:42 | | 07:45 | | | 08:41 | | 09:22 (37) |
| | 22:16 | | | 21:32 | 38 | 08:18 (7) | 20:19 | 37 | 08:12 (7) | 19:02 | | 16:49 | | | 16:07 | 18 | 09:40 (37) |
| 6 | 05:01 | | | 05:49 | | 07:39 (7) | 06:47 | | 07:36 (7) | 07:44 | | 07:47 | | | 08:43 | | 09:23 (37) |
| | 22:15 | | | 21:30 | 41 | 08:20 (7) | 20:16 | 34 | 08:10 (7) | 18:59 | | 16:47 | | | 16:06 | 16 | 09:39 (37) |
| 7 | 05:02 | | | 05:50 | | 07:38 (7) | 06:49 | | 07:38 (7) | 07:46 | | 07:49 | | | 08:44 | | 09:24 (37) |
| | 22:14 | | | 21:28 | 43 | 08:21 (7) | 20:14 | 29 | 08:07 (7) | 18:57 | | 16:45 | | | 16:05 | 16 | 09:40 (37) |
| 8 | 05:03 | | | 05:52 | | 07:38 (7) | 06:51 | | 07:41 (7) | 07:48 | | 07:51 | | | 08:45 | | 09:25 (37) |
| | 22:14 | | | 21:25 | 44 | 08:22 (7) | 20:11 | 23 | 08:04 (7) | 18:54 | | 16:43 | | | 16:05 | 14 | 09:39 (37) |
| 9 | 05:04 | | | 05:54 | | 07:36 (7) | 06:53 | | 07:45 (7) | 07:50 | | 07:53 | | | 08:47 | | 09:26 (37) |
| | 22:13 | | | 21:23 | 46 | 08:22 (7) | 20:09 | 15 | 08:00 (7) | 18:52 | | 16:41 | | | 16:05 | 13 | 09:39 (37) |
| 10 | 05:05 | | | 05:56 | | 07:35 (7) | 06:55 | | | 07:52 | | 07:55 | | | 08:48 | | 09:27 (37) |
| | 22:12 | | | 21:21 | 48 | 08:23 (7) | 20:06 | | | 18:49 | | 16:40 | | | 16:04 | 12 | 09:39 (37) |
| 11 | 05:07 | | | 05:58 | | 07:35 (7) | 06:56 | | | 07:54 | | 07:57 | | | 08:49 | | 09:28 (37) |
| | 22:11 | | | 21:19 | 49 | 08:24 (7) | 20:04 | | | 18:47 | | 16:38 | | | 16:04 | 10 | 09:38 (37) |
| 12 | 05:08 | | | 06:00 | | 07:33 (7) | 06:58 | | | 07:56 | | 07:59 | | 09:20 (37) | 08:50 | | 09:30 (37) |
| | 22:10 | | | 21:17 | 51 | 08:24 (7) | 20:01 | | | 18:44 | | 16:36 | 9 | 09:29 (37) | 16:04 | 8 | 09:38 (37) |
| 13 | 05:09 | | | 06:02 | | 07:33 (7) | 07:00 | | 18:45 (40) | 07:58 | | 08:01 | | 09:19 (37) | 08:51 | | 09:32 (37) |
| | 22:09 | | | 21:15 | 52 | 08:25 (7) | 19:58 | 6 | 18:51 (40) | 18:42 | | 16:34 | 13 | 09:32 (37) | 16:04 | 6 | 09:38 (37) |
| 14 | 05:10 | | | 06:03 | | 07:33 (7) | 07:02 | | 18:41 (40) | 08:00 | | 08:03 | | 09:17 (37) | 08:52 | | 09:33 (37) |
| | 22:08 | | | 21:12 | 53 | 08:26 (7) | 19:56 | 13 | 18:54 (40) | 18:39 | | 16:32 | 16 | 09:33 (37) | 16:03 | 3 | 09:36 (37) |
| 15 | 05:12 | | | 06:05 | | 07:32 (7) | 07:04 | | 18:38 (40) | 08:02 | | 08:05 | | 09:16 (37) | 08:53 | | |
| | 22:06 | | | 21:10 | 54 | 08:26 (7) | 19:53 | 18 | 18:56 (40) | 18:37 | | 16:31 | 18 | 09:34 (37) | 16:03 | | |
| 16 | 05:13 | | | 06:07 | | 07:32 (7) | 07:06 | | 18:36 (40) | 08:04 | | 08:07 | | 09:15 (37) | 08:54 | | |
| | 22:05 | | | 21:08 | 55 | 08:27 (7) | 19:51 | 20 | 18:56 (40) | 18:34 | | 16:29 | 20 | 09:35 (37) | 16:03 | | |
| 17 | 05:15 | | | 06:09 | | 07:31 (7) | 07:08 | | 18:34 (40) | 08:06 | | 08:09 | | 09:14 (37) | 08:55 | | |
| | 22:04 | | | 21:05 | 55 | 08:26 (7) | 19:48 | 23 | 18:57 (40) | 18:32 | | 16:27 | 22 | 09:36 (37) | 16:04 | | |
| 18 | 05:16 | | | 06:11 | | 07:31 (7) | 07:10 | | 18:33 (40) | 08:08 | | 08:11 | | 09:15 (37) | 08:56 | | |
| | 22:03 | | | 21:03 | 55 | 08:26 (7) | 19:46 | 25 | 18:58 (40) | 18:29 | | 16:26 | 22 | 09:37 (37) | 16:04 | | |
| 19 | 05:18 | | | 06:13 | | 07:30 (7) | 07:12 | | 18:33 (40) | 08:10 | | 08:13 | | 09:15 (37) | 08:57 | | |
| | 22:01 | | | 21:01 | 57 | 08:27 (7) | 19:43 | 25 | 18:58 (40) | 18:27 | | 16:24 | 23 | 09:38 (37) | 16:04 | | |
| 20 | 05:19 | | | 06:15 | | 07:30 (7) | 07:13 | | 18:32 (40) | 08:12 | | 08:15 | | 09:14 (37) | 08:57 | | |
| | 22:00 | | | 20:58 | 57 | 08:27 (7) | 19:40 | 26 | 18:58 (40) | 18:25 | | 16:23 | 24 | 09:38 (37) | 16:04 | | |
| 21 | 05:21 | | | 06:17 | | 07:29 (7) | 07:15 | | 18:32 (40) | 08:14 | | 08:17 | | 09:14 (37) | 08:58 | | |
| | 21:58 | | | 20:56 | 57 | 08:26 (7) | 19:38 | 26 | 18:58 (40) | 18:22 | | 16:21 | 24 | 09:38 (37) | 16:05 | | |
| 22 | 05:22 | | | 06:19 | | 07:29 (7) | 07:17 | | 18:31 (40) | 08:16 | | 08:19 | | 09:14 (37) | 08:59 | | |
| | 21:57 | | | 20:54 | 57 | 08:26 (7) | 19:35 | 27 | 18:58 (40) | 18:20 | | 16:20 | 25 | 09:39 (37) | 16:05 | | |
| 23 | 05:24 | | | 06:21 | | 07:29 (7) | 07:19 | | 18:31 (40) | 08:18 | | 08:21 | | 09:14 (37) | 08:59 | | |
| | 21:55 | | | 20:51 | 57 | 08:26 (7) | 19:33 | 26 | 18:57 (40) | 18:18 | | 16:19 | 25 | 09:39 (37) | 16:06 | | |
| 24 | 05:26 | | | 06:22 | | 07:29 (7) | 07:21 | | 18:30 (40) | 08:20 | | 08:23 | | 09:15 (37) | 09:00 | | |
| | 21:54 | | | 20:49 | 57 | 08:26 (7) | 19:30 | 26 | 18:56 (40) | 18:15 | | 16:17 | 24 | 09:39 (37) | 16:06 | | |
| 25 | 05:27 | | | 06:24 | | 07:30 (7) | 07:23 | | 18:31 (40) | 07:22 | | 08:24 | | 09:15 (37) | 09:00 | | |
| | 21:52 | | | 20:46 | 55 | 08:25 (7) | 19:27 | 24 | 18:55 (40) | 17:13 | | 16:16 | 24 | 09:39 (37) | 16:07 | | |
| 26 | 05:29 | | | 06:26 | | 07:29 (7) | 07:25 | | 18:31 (40) | 07:24 | | 08:26 | | 09:15 (37) | 09:00 | | |
| | 21:50 | | | 20:44 | 55 | 08:24 (7) | 19:25 | 23 | 18:54 (40) | 17:11 | | 16:15 | 24 | 09:39 (37) | 16:08 | | |
| 27 | 05:31 | | | 06:28 | | 07:29 (7) | 07:27 | | 18:32 (40) | 07:26 | | 08:28 | | 09:16 (37) | 09:00 | | |
| | 21:49 | | | 20:42 | 54 | 08:23 (7) | 19:22 | 20 | 18:52 (40) | 17:08 | | 16:14 | 24 | 09:40 (37) | 16:08 | | |
| 28 | 05:32 | | | 06:30 | | 07:30 (7) | 07:29 | | 18:34 (40) | 07:28 | | 08:30 | | 09:16 (37) | 09:01 | | |
| | 21:47 | | | 20:39 | 53 | 08:23 (7) | 19:20 | 16 | 18:50 (40) | 17:06 | | 16:13 | 24 | 09:40 (37) | 16:09 | | |
| 29 | 05:34 | | 07:56 (7) | 06:32 | | 07:30 (7) | 07:31 | | 18:36 (40) | 07:30 | | 08:31 | | 09:17 (37) | 09:01 | | |
| | 21:45 | 6 | 08:02 (7) | 20:37 | 52 | 08:22 (7) | 19:17 | 11 | 18:47 (40) | 17:04 | | 16:12 | 23 | 09:40 (37) | 16:10 | | |
| 30 | 05:36 | | 07:51 (7) | 06:34 | | 07:31 (7) | 07:32 | | | 07:32 | | 08:33 | | 09:18 (37) | 09:01 | | 09:40 (37) |
| | 21:43 | 16 | 08:07 (7) | 20:34 | 51 | 08:22 (7) | 19:14 | | | 17:02 | | 16:11 | 22 | 09:40 (37) | 16:11 | 5 | 09:45 (37) |
| 31 | 05:38 | | 07:49 (7) | 06:36 | | 07:30 (7) | | | | 07:34 | | | | | 09:01 | | 09:39 (37) |
| | 21:41 | 21 | 08:10 (7) | 20:32 | 50 | 08:20 (7) | | | | 17:00 | | | | | 16:12 | 8 | 09:47 (37) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | 43 | | | 1521 | | | 670 | | | | | 406 | | | 209 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 1,00 | | | 1,00 | | | 0,99 | | | | | 0,65 | | | 0,65 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | | 0,10 | | | 0,08 | |
| Total, real | | 20 | | | 748 | | | 252 | | | | | 40 | | | 18 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (37) | 08:27 | | 07:26 | | | 07:08 | | 07:54 (7) | 05:55 | | 07:38 (7) | 05:02 |
| | 16:14 | 14 | 09:52 (37) | 17:08 | | 18:07 | | | 20:09 | 26 | 08:20 (7) | 21:08 | 42 | 08:20 (7) | 22:02 |
| 2 | 09:00 | | 09:39 (37) | 08:26 | | 07:24 | | | 07:05 | | 07:51 (7) | 05:53 | | 07:38 (7) | 05:01 |
| | 16:15 | 15 | 09:54 (37) | 17:10 | | 18:09 | | | 20:11 | 32 | 08:23 (7) | 21:10 | 40 | 08:18 (7) | 22:03 |
| 3 | 09:00 | | 09:38 (37) | 08:24 | | 07:22 | | | 07:03 | | 07:48 (7) | 05:50 | | 07:39 (7) | 05:00 |
| | 16:16 | 16 | 09:54 (37) | 17:12 | | 18:11 | | | 20:13 | 36 | 08:24 (7) | 21:12 | 37 | 08:16 (7) | 22:05 |
| 4 | 09:00 | | 09:39 (37) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (7) | 05:48 | | 07:40 (7) | 04:59 |
| | 16:17 | 17 | 09:56 (37) | 17:14 | | 18:13 | | | 20:15 | 39 | 08:25 (7) | 21:14 | 34 | 08:14 (7) | 22:06 |
| 5 | 08:59 | | 09:38 (37) | 08:20 | | 07:17 | | | 06:57 | | 07:45 (7) | 05:46 | | 07:42 (7) | 04:58 |
| | 16:19 | 18 | 09:56 (37) | 17:16 | | 18:15 | | | 20:17 | 42 | 08:27 (7) | 21:16 | 31 | 08:13 (7) | 22:07 |
| 6 | 08:59 | | 09:39 (37) | 08:18 | | 07:14 | | | 06:55 | | 07:43 (7) | 05:44 | | 07:44 (7) | 04:57 |
| | 16:20 | 19 | 09:58 (37) | 17:19 | | 18:17 | | | 20:19 | 44 | 08:27 (7) | 21:18 | 27 | 08:11 (7) | 22:08 |
| 7 | 08:58 | | 09:39 (37) | 08:16 | | 07:12 | | | 06:52 | | 07:42 (7) | 05:42 | | 07:46 (7) | 04:56 |
| | 16:21 | 19 | 09:58 (37) | 17:21 | | 18:19 | | | 20:21 | 47 | 08:29 (7) | 21:20 | 23 | 08:09 (7) | 22:09 |
| 8 | 08:58 | | 09:39 (37) | 08:14 | | 07:09 | | | 06:50 | | 07:40 (7) | 05:40 | | 07:49 (7) | 04:56 |
| | 16:23 | 20 | 09:59 (37) | 17:23 | | 18:22 | | | 20:23 | 49 | 08:29 (7) | 21:22 | 17 | 08:06 (7) | 22:10 |
| 9 | 08:57 | | 09:38 (37) | 08:12 | | 07:07 | | | 06:47 | | 07:39 (7) | 05:38 | | 07:53 (7) | 04:55 |
| | 16:24 | 22 | 10:00 (37) | 17:25 | | 18:24 | | | 20:25 | 51 | 08:30 (7) | 21:24 | 7 | 08:00 (7) | 22:11 |
| 10 | 08:56 | | 09:38 (37) | 08:10 | | 07:04 | | | 06:45 | | 07:38 (7) | 05:36 | | | 04:54 |
| | 16:26 | 22 | 10:00 (37) | 17:27 | | 18:26 | | | 20:27 | 52 | 08:30 (7) | 21:26 | | | 22:12 |
| 11 | 08:56 | | 09:39 (37) | 08:08 | | 07:02 | | | 06:42 | | 07:37 (7) | 05:34 | | | 04:54 |
| | 16:28 | 22 | 10:01 (37) | 17:29 | | 18:28 | | | 20:29 | 53 | 08:30 (7) | 21:28 | | | 22:13 |
| 12 | 08:55 | | 09:39 (37) | 08:06 | | 06:59 | | | 06:40 | | 07:37 (7) | 05:32 | | | 04:53 |
| | 16:29 | 23 | 10:02 (37) | 17:31 | | 18:30 | | | 20:31 | 54 | 08:31 (7) | 21:29 | | | 22:14 |
| 13 | 08:54 | | 09:39 (37) | 08:03 | | 06:56 | | 17:52 (40) | 06:37 | | 07:36 (7) | 05:30 | | | 04:53 |
| | 16:31 | 23 | 10:02 (37) | 17:33 | | 18:32 | 12 | 18:04 (40) | 20:33 | 54 | 08:30 (7) | 21:31 | | | 22:15 |
| 14 | 08:53 | | 09:40 (37) | 08:01 | | 06:54 | | 17:50 (40) | 06:35 | | 07:35 (7) | 05:28 | | | 04:53 |
| | 16:33 | 23 | 10:03 (37) | 17:36 | | 18:34 | 17 | 18:07 (40) | 20:35 | 56 | 08:31 (7) | 21:33 | | | 22:15 |
| 15 | 08:52 | | 09:39 (37) | 07:59 | | 06:51 | | 17:48 (40) | 06:32 | | 07:34 (7) | 05:26 | | | 04:52 |
| | 16:34 | 24 | 10:03 (37) | 17:38 | | 18:36 | 20 | 18:08 (40) | 20:37 | 56 | 08:30 (7) | 21:35 | | | 22:16 |
| 16 | 08:51 | | 09:40 (37) | 07:57 | | 06:49 | | 17:46 (40) | 06:30 | | 07:34 (7) | 05:25 | | | 04:52 |
| | 16:36 | 24 | 10:04 (37) | 17:40 | | 18:38 | 22 | 18:08 (40) | 20:39 | 56 | 08:30 (7) | 21:37 | | | 22:17 |
| 17 | 08:50 | | 09:40 (37) | 07:55 | | 06:46 | | 17:45 (40) | 06:27 | | 07:34 (7) | 05:23 | | | 04:52 |
| | 16:38 | 25 | 10:05 (37) | 17:42 | | 18:40 | 25 | 18:10 (40) | 20:41 | 57 | 08:31 (7) | 21:39 | | | 22:17 |
| 18 | 08:49 | | 09:40 (37) | 07:52 | | 06:44 | | 17:44 (40) | 06:25 | | 07:33 (7) | 05:21 | | | 04:52 |
| | 16:40 | 24 | 10:04 (37) | 17:44 | | 18:42 | 25 | 18:09 (40) | 20:43 | 57 | 08:30 (7) | 21:40 | | | 22:18 |
| 19 | 08:47 | | 09:41 (37) | 07:50 | | 06:41 | | 17:44 (40) | 06:23 | | 07:33 (7) | 05:19 | | | 04:52 |
| | 16:42 | 24 | 10:05 (37) | 17:46 | | 18:44 | 26 | 18:10 (40) | 20:45 | 57 | 08:30 (7) | 21:42 | | | 22:18 |
| 20 | 08:46 | | 09:41 (37) | 07:48 | | 06:39 | | 17:43 (40) | 06:20 | | 07:34 (7) | 05:18 | | | 04:52 |
| | 16:44 | 24 | 10:05 (37) | 17:48 | | 18:46 | 27 | 18:10 (40) | 20:47 | 55 | 08:29 (7) | 21:44 | | | 22:18 |
| 21 | 08:45 | | 09:42 (37) | 07:46 | | 06:36 | | 17:42 (40) | 06:18 | | 07:33 (7) | 05:16 | | | 04:52 |
| | 16:46 | 23 | 10:05 (37) | 17:50 | | 18:48 | 27 | 18:09 (40) | 20:49 | 55 | 08:28 (7) | 21:45 | | | 22:19 |
| 22 | 08:43 | | 09:42 (37) | 07:43 | | 06:33 | | 17:43 (40) | 06:15 | | 07:33 (7) | 05:15 | | | 04:52 |
| | 16:48 | 23 | 10:05 (37) | 17:53 | | 18:50 | 26 | 18:09 (40) | 20:51 | 55 | 08:28 (7) | 21:47 | | | 22:19 |
| 23 | 08:42 | | 09:43 (37) | 07:41 | | 06:31 | | 17:43 (40) | 06:13 | | 07:34 (7) | 05:13 | | | 04:53 |
| | 16:49 | 21 | 10:04 (37) | 17:55 | | 18:52 | 25 | 18:08 (40) | 20:53 | 54 | 08:28 (7) | 21:49 | | | 22:19 |
| 24 | 08:41 | | 09:44 (37) | 07:38 | | 06:28 | | 17:44 (40) | 06:11 | | 07:34 (7) | 05:12 | | | 04:53 |
| | 16:51 | 21 | 10:05 (37) | 17:57 | | 18:54 | 24 | 18:08 (40) | 20:55 | 53 | 08:27 (7) | 21:50 | | | 22:19 |
| 25 | 08:39 | | 09:45 (37) | 07:36 | | 06:26 | | 17:44 (40) | 06:08 | | 07:34 (7) | 05:10 | | | 04:53 |
| | 16:53 | 19 | 10:04 (37) | 17:59 | | 18:56 | 22 | 18:06 (40) | 20:57 | 51 | 08:25 (7) | 21:52 | | | 22:19 |
| 26 | 08:37 | | 09:46 (37) | 07:34 | | 06:23 | | 17:44 (40) | 06:06 | | 07:34 (7) | 05:09 | | | 04:54 |
| | 16:56 | 17 | 10:03 (37) | 18:01 | | 18:57 | 20 | 18:04 (40) | 20:59 | 51 | 08:25 (7) | 21:53 | | | 22:19 |
| 27 | 08:36 | | 09:47 (37) | 07:31 | | 06:21 | | 17:46 (40) | 06:04 | | 07:35 (7) | 05:08 | | | 04:54 |
| | 16:58 | 15 | 10:02 (37) | 18:03 | | 18:59 | 17 | 18:03 (40) | 21:01 | 49 | 08:24 (7) | 21:55 | | | 22:19 |
| 28 | 08:34 | | 09:49 (37) | 07:29 | | 06:18 | | 17:48 (40) | 06:01 | | 07:35 (7) | 05:06 | | | 04:55 |
| | 17:00 | 11 | 10:00 (37) | 18:05 | | 19:01 | 12 | 18:00 (40) | 21:03 | 48 | 08:23 (7) | 21:57 | | | 22:19 |
| 29 | 08:33 | | 09:53 (37) | | | 07:15 | | | 05:59 | | 07:36 (7) | 05:05 | | | 04:55 |
| | 17:02 | 5 | 09:58 (37) | | | 20:03 | | | 21:05 | 46 | 08:22 (7) | 21:58 | | | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:04 (7) | 05:57 | | 07:37 (7) | 05:04 | | | 04:56 |
| | 17:04 | | | | | 20:05 | 7 | 08:11 (7) | 21:06 | 44 | 08:21 (7) | 21:59 | | | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 07:58 (7) | | | | 05:03 | | | |
| | 17:06 | | | | | 20:07 | 19 | 08:17 (7) | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 573 | | | | | 373 | | | 1479 | | | 258 | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,64 | | | | | 0,99 | | | 1,00 | | | 1,00 | | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,37 | | | 0,49 | | |
| Total, real | | 63 | | | | | 119 | | | 553 | | | 127 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:36 (7) | 07:34 | | 18:35 (40) | 07:36 | | | 08:35 | | 09:21 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 53 | 08:29 (7) | 19:12 | 6 | 18:41 (40) | 16:58 | | | 16:10 | 22 | 09:43 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:37 (7) | 07:36 | | | 07:38 | | | 08:36 | | 09:22 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 52 | 08:29 (7) | 19:09 | | | 16:55 | | | 16:09 | 21 | 09:43 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:37 (7) | 07:38 | | | 07:41 | | | 08:38 | | 09:23 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 51 | 08:28 (7) | 19:07 | | | 16:53 | | | 16:08 | 21 | 09:44 (37) |
| 4 | 04:59 | | 05:45 | | 08:02 (7) | 06:43 | | 07:38 (7) | 07:40 | | | 07:43 | | | 08:40 | | 09:23 (37) |
| | 22:16 | | 21:34 | 11 | 08:13 (7) | 20:22 | 49 | 08:27 (7) | 19:04 | | | 16:51 | | | 16:07 | 20 | 09:43 (37) |
| 5 | 05:00 | | 05:47 | | 07:57 (7) | 06:45 | | 07:38 (7) | 07:42 | | | 07:45 | | | 08:41 | | 09:24 (37) |
| | 22:16 | | 21:32 | 19 | 08:16 (7) | 20:19 | 47 | 08:25 (7) | 19:02 | | | 16:49 | | | 16:07 | 19 | 09:43 (37) |
| 6 | 05:01 | | 05:49 | | 07:55 (7) | 06:47 | | 07:39 (7) | 07:44 | | | 07:47 | | | 08:43 | | 09:24 (37) |
| | 22:15 | | 21:30 | 24 | 08:19 (7) | 20:16 | 44 | 08:23 (7) | 18:59 | | | 16:47 | | | 16:06 | 19 | 09:43 (37) |
| 7 | 05:02 | | 05:50 | | 07:53 (7) | 06:49 | | 07:40 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:25 (37) |
| | 22:14 | | 21:28 | 29 | 08:22 (7) | 20:14 | 42 | 08:22 (7) | 18:57 | | | 16:45 | | | 16:05 | 18 | 09:43 (37) |
| 8 | 05:03 | | 05:52 | | 07:51 (7) | 06:51 | | 07:41 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:26 (37) |
| | 22:14 | | 21:25 | 33 | 08:24 (7) | 20:11 | 39 | 08:20 (7) | 18:54 | | | 16:43 | | | 16:05 | 17 | 09:43 (37) |
| 9 | 05:04 | | 05:54 | | 07:49 (7) | 06:53 | | 07:42 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:27 (37) |
| | 22:13 | | 21:23 | 35 | 08:24 (7) | 20:09 | 37 | 08:19 (7) | 18:52 | | | 16:41 | | | 16:05 | 16 | 09:43 (37) |
| 10 | 05:05 | | 05:56 | | 07:48 (7) | 06:55 | | 07:43 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:28 (37) |
| | 22:12 | | 21:21 | 38 | 08:26 (7) | 20:06 | 32 | 08:15 (7) | 18:49 | | | 16:40 | | | 16:04 | 15 | 09:43 (37) |
| 11 | 05:07 | | 05:58 | | 07:47 (7) | 06:56 | | 07:46 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:29 (37) |
| | 22:11 | | 21:19 | 40 | 08:27 (7) | 20:04 | 27 | 08:13 (7) | 18:47 | | | 16:38 | | | 16:04 | 14 | 09:43 (37) |
| 12 | 05:08 | | 06:00 | | 07:45 (7) | 06:58 | | 07:49 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:30 (37) |
| | 22:10 | | 21:17 | 43 | 08:28 (7) | 20:01 | 20 | 08:09 (7) | 18:44 | | | 16:36 | | | 16:04 | 13 | 09:43 (37) |
| 13 | 05:09 | | 06:02 | | 07:44 (7) | 07:00 | | 07:54 (7) | 07:58 | | | 08:01 | | 09:24 (37) | 08:51 | | 09:31 (37) |
| | 22:09 | | 21:15 | 45 | 08:29 (7) | 19:58 | 10 | 08:04 (7) | 18:42 | | | 16:34 | 7 | 09:31 (37) | 16:04 | 12 | 09:43 (37) |
| 14 | 05:10 | | 06:03 | | 07:43 (7) | 07:02 | | | 08:00 | | | 08:03 | | 09:22 (37) | 08:52 | | 09:32 (37) |
| | 22:08 | | 21:12 | 47 | 08:30 (7) | 19:56 | | | 18:39 | | | 16:32 | 11 | 09:33 (37) | 16:03 | 11 | 09:43 (37) |
| 15 | 05:12 | | 06:05 | | 07:43 (7) | 07:04 | | 18:39 (40) | 08:02 | | | 08:05 | | 09:20 (37) | 08:53 | | 09:33 (37) |
| | 22:06 | | 21:10 | 48 | 08:31 (7) | 19:53 | 11 | 18:50 (40) | 18:37 | | | 16:31 | 15 | 09:35 (37) | 16:03 | 10 | 09:43 (37) |
| 16 | 05:13 | | 06:07 | | 07:42 (7) | 07:06 | | 18:35 (40) | 08:04 | | | 08:07 | | 09:19 (37) | 08:54 | | 09:34 (37) |
| | 22:05 | | 21:08 | 50 | 08:32 (7) | 19:51 | 16 | 18:51 (40) | 18:34 | | | 16:29 | 17 | 09:36 (37) | 16:03 | 9 | 09:43 (37) |
| 17 | 05:15 | | 06:09 | | 07:41 (7) | 07:08 | | 18:33 (40) | 08:06 | | | 08:09 | | 09:18 (37) | 08:55 | | 09:35 (37) |
| | 22:04 | | 21:05 | 51 | 08:32 (7) | 19:48 | 19 | 18:52 (40) | 18:32 | | | 16:27 | 19 | 09:37 (37) | 16:04 | 8 | 09:43 (37) |
| 18 | 05:16 | | 06:11 | | 07:40 (7) | 07:10 | | 18:31 (40) | 08:08 | | | 08:11 | | 09:18 (37) | 08:56 | | 09:36 (37) |
| | 22:03 | | 21:03 | 52 | 08:32 (7) | 19:46 | 22 | 18:53 (40) | 18:29 | | | 16:26 | 21 | 09:39 (37) | 16:04 | 7 | 09:43 (37) |
| 19 | 05:18 | | 06:13 | | 07:40 (7) | 07:12 | | 18:30 (40) | 08:10 | | | 08:13 | | 09:18 (37) | 08:57 | | 09:36 (37) |
| | 22:01 | | 21:01 | 53 | 08:33 (7) | 19:43 | 24 | 18:54 (40) | 18:27 | | | 16:24 | 21 | 09:39 (37) | 16:04 | 7 | 09:43 (37) |
| 20 | 05:19 | | 06:15 | | 07:39 (7) | 07:13 | | 18:29 (40) | 08:12 | | | 08:15 | | 09:17 (37) | 08:57 | | 09:37 (37) |
| | 22:00 | | 20:58 | 54 | 08:33 (7) | 19:40 | 25 | 18:54 (40) | 18:25 | | | 16:23 | 23 | 09:40 (37) | 16:04 | 6 | 09:43 (37) |
| 21 | 05:21 | | 06:17 | | 07:38 (7) | 07:15 | | 18:29 (40) | 08:14 | | | 08:17 | | 09:17 (37) | 08:58 | | 09:37 (37) |
| | 21:58 | | 20:56 | 55 | 08:33 (7) | 19:38 | 26 | 18:55 (40) | 18:22 | | | 16:21 | 23 | 09:40 (37) | 16:05 | 6 | 09:43 (37) |
| 22 | 05:22 | | 06:19 | | 07:38 (7) | 07:17 | | 18:28 (40) | 08:16 | | | 08:19 | | 09:17 (37) | 08:59 | | 09:38 (37) |
| | 21:57 | | 20:54 | 55 | 08:33 (7) | 19:35 | 27 | 18:55 (40) | 18:20 | | | 16:20 | 24 | 09:41 (37) | 16:05 | 6 | 09:44 (37) |
| 23 | 05:24 | | 06:21 | | 07:37 (7) | 07:19 | | 18:28 (40) | 08:18 | | | 08:21 | | 09:17 (37) | 08:59 | | 09:38 (37) |
| | 21:55 | | 20:51 | 56 | 08:33 (7) | 19:33 | 26 | 18:54 (40) | 18:18 | | | 16:19 | 24 | 09:41 (37) | 16:06 | 6 | 09:44 (37) |
| 24 | 05:26 | | 06:22 | | 07:37 (7) | 07:21 | | 18:27 (40) | 08:20 | | | 08:23 | | 09:17 (37) | 09:00 | | 09:39 (37) |
| | 21:54 | | 20:49 | 56 | 08:33 (7) | 19:30 | 26 | 18:53 (40) | 18:15 | | | 16:17 | 24 | 09:41 (37) | 16:06 | 6 | 09:45 (37) |
| 25 | 05:27 | | 06:24 | | 07:37 (7) | 07:23 | | 18:27 (40) | 07:22 | | | 08:24 | | 09:17 (37) | 09:00 | | 09:39 (37) |
| | 21:52 | | 20:46 | 56 | 08:33 (7) | 19:27 | 25 | 18:52 (40) | 17:13 | | | 16:16 | 25 | 09:42 (37) | 16:07 | 7 | 09:46 (37) |
| 26 | 05:29 | | 06:26 | | 07:36 (7) | 07:25 | | 18:27 (40) | 07:24 | | | 08:26 | | 09:18 (37) | 09:00 | | 09:39 (37) |
| | 21:50 | | 20:44 | 56 | 08:32 (7) | 19:25 | 25 | 18:52 (40) | 17:11 | | | 16:15 | 24 | 09:42 (37) | 16:08 | 8 | 09:47 (37) |
| 27 | 05:31 | | 06:28 | | 07:36 (7) | 07:27 | | 18:28 (40) | 07:26 | | | 08:28 | | 09:18 (37) | 09:00 | | 09:39 (37) |
| | 21:49 | | 20:42 | 56 | 08:32 (7) | 19:22 | 23 | 18:51 (40) | 17:08 | | | 16:14 | 24 | 09:42 (37) | 16:08 | 8 | 09:47 (37) |
| 28 | 05:32 | | 06:30 | | 07:36 (7) | 07:29 | | 18:28 (40) | 07:28 | | | 08:30 | | 09:19 (37) | 09:01 | | 09:39 (37) |
| | 21:47 | | 20:39 | 56 | 08:32 (7) | 19:20 | 21 | 18:49 (40) | 17:06 | | | 16:13 | 23 | 09:42 (37) | 16:09 | 9 | 09:48 (37) |
| 29 | 05:34 | | 06:32 | | 07:36 (7) | 07:31 | | 18:29 (40) | 07:30 | | | 08:31 | | 09:19 (37) | 09:01 | | 09:39 (37) |
| | 21:45 | | 20:37 | 56 | 08:32 (7) | 19:17 | 18 | 18:47 (40) | 17:04 | | | 16:12 | 24 | 09:43 (37) | 16:10 | 10 | 09:49 (37) |
| 30 | 05:36 | | 06:34 | | 07:37 (7) | 07:32 | | 18:31 (40) | 07:32 | | | 08:33 | | 09:20 (37) | 09:01 | | 09:39 (37) |
| | 21:43 | | 20:34 | 54 | 08:31 (7) | 19:14 | 14 | 18:45 (40) | 17:02 | | | 16:11 | 23 | 09:43 (37) | 16:11 | 12 | 09:51 (37) |
| 31 | 05:38 | | 06:36 | | 07:36 (7) | | | | 07:34 | | | | | | 09:01 | | 09:39 (37) |
| | 21:41 | | 20:32 | 54 | 08:30 (7) | | | | 17:00 | | | | | | 16:12 | 13 | 09:52 (37) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1282 | | | 851 | | | 6 | | | 372 | | | 376 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,99 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | 0,49 | | | 0,37 | | | 0,29 | | | 0,10 | | | 0,08 | |
| Total, real | | | | 627 | | | 318 | | | 2 | | | 36 | | | 31 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:39 (37) | 08:27 | 07:26 | | 07:08 | 07:54 (7) | 05:55 | 07:54 (7) | 05:02 |
| | 16:14 17 | 09:56 (37) | 17:08 | 18:07 | | 20:09 42 | 08:36 (7) | 21:08 26 | 08:20 (7) | 22:02 |
| 2 | 09:00 | 09:40 (37) | 08:26 | 07:24 | | 07:05 | 07:53 (7) | 05:53 | 07:55 (7) | 05:01 |
| | 16:15 18 | 09:58 (37) | 17:10 | 18:09 | | 20:11 45 | 08:38 (7) | 21:10 21 | 08:16 (7) | 22:03 |
| 3 | 09:00 | 09:39 (37) | 08:24 | 07:22 | | 07:03 | 07:51 (7) | 05:50 | 07:59 (7) | 05:00 |
| | 16:16 19 | 09:58 (37) | 17:12 | 18:11 | | 20:13 47 | 08:38 (7) | 21:12 13 | 08:12 (7) | 22:05 |
| 4 | 09:00 | 09:40 (37) | 08:22 | 07:19 | | 07:00 | 07:50 (7) | 05:48 | | 04:59 |
| | 16:17 19 | 09:59 (37) | 17:14 | 18:13 | | 20:15 48 | 08:38 (7) | 21:14 | | 22:06 |
| 5 | 08:59 | 09:40 (37) | 08:20 | 07:17 | | 06:57 | 07:49 (7) | 05:46 | | 04:58 |
| | 16:19 20 | 10:00 (37) | 17:16 | 18:15 | | 20:17 50 | 08:39 (7) | 21:16 | | 22:07 |
| 6 | 08:59 | 09:41 (37) | 08:18 | 07:14 | | 06:55 | 07:48 (7) | 05:44 | | 04:57 |
| | 16:20 20 | 10:01 (37) | 17:19 | 18:17 | | 20:19 51 | 08:39 (7) | 21:18 | | 22:08 |
| 7 | 08:58 | 09:40 (37) | 08:16 | 07:12 | | 06:52 | 07:47 (7) | 05:42 | | 04:56 |
| | 16:21 21 | 10:01 (37) | 17:21 | 18:19 | | 20:21 53 | 08:40 (7) | 21:20 | | 22:09 |
| 8 | 08:58 | 09:40 (37) | 08:14 | 07:09 | | 06:50 | 07:46 (7) | 05:40 | | 04:55 |
| | 16:23 22 | 10:02 (37) | 17:23 | 18:22 | | 20:23 54 | 08:40 (7) | 21:22 | | 22:10 |
| 9 | 08:57 | 09:40 (37) | 08:12 | 07:07 | | 06:47 | 07:46 (7) | 05:38 | | 04:55 |
| | 16:24 23 | 10:03 (37) | 17:25 | 18:24 | | 20:25 54 | 08:40 (7) | 21:24 | | 22:11 |
| 10 | 08:56 | 09:41 (37) | 08:10 | 07:04 | | 06:45 | 07:44 (7) | 05:36 | | 04:54 |
| | 16:26 22 | 10:03 (37) | 17:27 | 18:26 | | 20:27 56 | 08:40 (7) | 21:26 | | 22:12 |
| 11 | 08:56 | 09:41 (37) | 08:08 | 07:02 | 17:51 (40) | 06:42 | 07:44 (7) | 05:34 | | 04:54 |
| | 16:28 23 | 10:04 (37) | 17:29 | 18:28 8 | 17:59 (40) | 20:29 56 | 08:40 (7) | 21:28 | | 22:13 |
| 12 | 08:55 | 09:41 (37) | 08:06 | 06:59 | 17:48 (40) | 06:40 | 07:44 (7) | 05:32 | | 04:53 |
| | 16:29 23 | 10:04 (37) | 17:31 | 18:30 14 | 18:02 (40) | 20:31 56 | 08:40 (7) | 21:29 | | 22:14 |
| 13 | 08:54 | 09:41 (37) | 08:03 | 06:56 | 17:45 (40) | 06:37 | 07:43 (7) | 05:30 | | 04:53 |
| | 16:31 24 | 10:05 (37) | 17:33 | 18:32 19 | 18:04 (40) | 20:33 56 | 08:39 (7) | 21:31 | | 22:15 |
| 14 | 08:53 | 09:42 (37) | 08:01 | 06:54 | 17:44 (40) | 06:35 | 07:44 (7) | 05:28 | | 04:53 |
| | 16:33 24 | 10:06 (37) | 17:36 | 18:34 22 | 18:06 (40) | 20:35 55 | 08:39 (7) | 21:33 | | 22:15 |
| 15 | 08:52 | 09:42 (37) | 07:59 | 06:51 | 17:43 (40) | 06:32 | 07:43 (7) | 05:26 | | 04:52 |
| | 16:34 24 | 10:06 (37) | 17:38 | 18:36 23 | 18:06 (40) | 20:37 55 | 08:38 (7) | 21:35 | | 22:16 |
| 16 | 08:51 | 09:42 (37) | 07:57 | 06:49 | 17:41 (40) | 06:30 | 07:43 (7) | 05:25 | | 04:52 |
| | 16:36 24 | 10:06 (37) | 17:40 | 18:38 25 | 18:06 (40) | 20:39 55 | 08:38 (7) | 21:37 | | 22:17 |
| 17 | 08:50 | 09:43 (37) | 07:55 | 06:46 | 17:41 (40) | 06:27 | 07:43 (7) | 05:23 | | 04:52 |
| | 16:38 24 | 10:07 (37) | 17:42 | 18:40 26 | 18:07 (40) | 20:41 55 | 08:38 (7) | 21:39 | | 22:17 |
| 18 | 08:49 | 09:43 (37) | 07:52 | 06:44 | 17:40 (40) | 06:25 | 07:43 (7) | 05:21 | | 04:52 |
| | 16:40 23 | 10:06 (37) | 17:44 | 18:42 26 | 18:06 (40) | 20:43 54 | 08:37 (7) | 21:40 | | 22:18 |
| 19 | 08:47 | 09:44 (37) | 07:50 | 06:41 | 17:40 (40) | 06:23 | 07:43 (7) | 05:19 | | 04:52 |
| | 16:42 23 | 10:07 (37) | 17:46 | 18:44 27 | 18:07 (40) | 20:45 53 | 08:36 (7) | 21:42 | | 22:18 |
| 20 | 08:46 | 09:44 (37) | 07:48 | 06:39 | 17:40 (40) | 06:20 | 07:44 (7) | 05:18 | | 04:52 |
| | 16:44 23 | 10:07 (37) | 17:48 | 18:46 26 | 18:06 (40) | 20:47 52 | 08:36 (7) | 21:44 | | 22:18 |
| 21 | 08:45 | 09:45 (37) | 07:46 | 06:36 | 17:39 (40) | 06:18 | 07:43 (7) | 05:16 | | 04:52 |
| | 16:46 22 | 10:07 (37) | 17:50 | 18:48 26 | 18:05 (40) | 20:49 51 | 08:34 (7) | 21:45 | | 22:19 |
| 22 | 08:43 | 09:46 (37) | 07:43 | 06:33 | 17:40 (40) | 06:15 | 07:44 (7) | 05:15 | | 04:52 |
| | 16:48 21 | 10:07 (37) | 17:53 | 18:50 25 | 18:05 (40) | 20:51 50 | 08:34 (7) | 21:47 | | 22:19 |
| 23 | 08:42 | 09:46 (37) | 07:41 | 06:31 | 17:40 (40) | 06:13 | 07:45 (7) | 05:13 | | 04:53 |
| | 16:49 20 | 10:06 (37) | 17:55 | 18:52 23 | 18:03 (40) | 20:53 48 | 08:33 (7) | 21:49 | | 22:19 |
| 24 | 08:41 | 09:48 (37) | 07:38 | 06:28 | 17:42 (40) | 06:11 | 07:46 (7) | 05:12 | | 04:53 |
| | 16:51 18 | 10:06 (37) | 17:57 | 18:54 21 | 18:03 (40) | 20:55 46 | 08:32 (7) | 21:50 | | 22:19 |
| 25 | 08:39 | 09:49 (37) | 07:36 | 06:26 | 17:42 (40) | 06:08 | 07:46 (7) | 05:10 | | 04:53 |
| | 16:53 16 | 10:05 (37) | 17:59 | 18:56 19 | 18:01 (40) | 20:57 44 | 08:30 (7) | 21:52 | | 22:19 |
| 26 | 08:37 | 09:50 (37) | 07:34 | 06:23 | 17:44 (40) | 06:06 | 07:47 (7) | 05:09 | | 04:54 |
| | 16:56 14 | 10:04 (37) | 18:01 | 18:57 14 | 17:58 (40) | 20:59 42 | 08:29 (7) | 21:53 | | 22:19 |
| 27 | 08:36 | 09:52 (37) | 07:31 | 06:21 | 07:08 (7) | 06:04 | 07:48 (7) | 05:07 | | 04:54 |
| | 16:58 10 | 10:02 (37) | 18:03 | 18:59 26 | 17:55 (40) | 21:01 39 | 08:27 (7) | 21:55 | | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:04 (7) | 06:01 | 07:49 (7) | 05:06 | | 04:55 |
| | 17:00 | | 18:05 | 19:01 25 | 07:29 (7) | 21:03 37 | 08:26 (7) | 21:57 | | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:01 (7) | 05:59 | 07:50 (7) | 05:05 | | 04:55 |
| | 17:02 | | | 20:03 31 | 08:32 (7) | 21:05 34 | 08:24 (7) | 21:58 | | 22:18 |
| 30 | 08:31 | | | 07:13 | 07:58 (7) | 05:57 | 07:52 (7) | 05:04 | | 04:56 |
| | 17:04 | | | 20:05 35 | 08:33 (7) | 21:06 30 | 08:22 (7) | 21:59 | | 22:18 |
| 31 | 08:29 | | | 07:10 | 07:57 (7) | | | 05:03 | | |
| | 17:06 | | | 20:07 39 | 08:36 (7) | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | | 520 |
| Total, worst case | | 557 | | | 500 | | 1468 | | 60 | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | 0,52 | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,63 | | | 0,99 | | 1,00 | | 1,00 | |
| Total reduction | | 0,11 | | | 0,32 | | 0,37 | | 0,49 | |
| Total, real | | 60 | | | 159 | | 547 | | 29 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:43 (7) | 07:34 | | 18:26 (40) | 07:36 | | | 08:35 | | 09:23 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 56 | 08:39 (7) | 19:12 | 16 | 18:42 (40) | 16:58 | | | 16:10 | 23 | 09:46 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:43 (7) | 07:36 | | 18:28 (40) | 07:38 | | | 08:36 | | 09:24 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 56 | 08:39 (7) | 19:09 | 12 | 18:40 (40) | 16:55 | | | 16:09 | 22 | 09:46 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:44 (7) | 07:38 | | | 07:41 | | | 08:38 | | 09:25 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 54 | 08:38 (7) | 19:07 | | | 16:53 | | | 16:08 | 22 | 09:47 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:44 (7) | 07:40 | | | 07:43 | | | 08:40 | | 09:24 (37) |
| | 22:16 | | 21:34 | | | 20:22 | 54 | 08:38 (7) | 19:04 | | | 16:51 | | | 16:07 | 22 | 09:46 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:43 (7) | 07:42 | | | 07:45 | | | 08:41 | | 09:25 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 53 | 08:36 (7) | 19:02 | | | 16:49 | | | 16:07 | 22 | 09:47 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:44 (7) | 07:44 | | | 07:47 | | | 08:43 | | 09:26 (37) |
| | 22:15 | | 21:30 | | | 20:16 | 51 | 08:35 (7) | 18:59 | | | 16:47 | | | 16:06 | 20 | 09:46 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 07:44 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:27 (37) |
| | 22:14 | | 21:28 | | | 20:14 | 50 | 08:34 (7) | 18:57 | | | 16:45 | | | 16:05 | 20 | 09:47 (37) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:45 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:27 (37) |
| | 22:14 | | 21:25 | | | 20:11 | 48 | 08:33 (7) | 18:54 | | | 16:43 | | | 16:05 | 19 | 09:46 (37) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:46 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:28 (37) |
| | 22:13 | | 21:23 | | | 20:09 | 46 | 08:32 (7) | 18:52 | | | 16:41 | | | 16:05 | 19 | 09:47 (37) |
| 10 | 05:05 | | 05:56 | | 08:07 (7) | 06:55 | | 07:45 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:29 (37) |
| | 22:12 | | 21:21 | 16 | 08:23 (7) | 20:06 | 45 | 08:30 (7) | 18:49 | | | 16:40 | | | 16:04 | 18 | 09:47 (37) |
| 11 | 05:07 | | 05:58 | | 08:04 (7) | 06:56 | | 07:47 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:30 (37) |
| | 22:11 | | 21:19 | 22 | 08:26 (7) | 20:04 | 42 | 08:29 (7) | 18:47 | | | 16:38 | | | 16:04 | 17 | 09:47 (37) |
| 12 | 05:08 | | 06:00 | | 08:01 (7) | 06:58 | | 07:48 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:31 (37) |
| | 22:10 | | 21:17 | 27 | 08:28 (7) | 20:01 | 39 | 08:27 (7) | 18:44 | | | 16:36 | | | 16:04 | 16 | 09:47 (37) |
| 13 | 05:09 | | 06:02 | | 07:59 (7) | 07:00 | | 07:49 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:32 (37) |
| | 22:09 | | 21:15 | 31 | 08:30 (7) | 19:58 | 36 | 08:25 (7) | 18:42 | | | 16:34 | | | 16:04 | 15 | 09:47 (37) |
| 14 | 05:10 | | 06:03 | | 07:57 (7) | 07:02 | | 07:51 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:32 (37) |
| | 22:08 | | 21:12 | 35 | 08:32 (7) | 19:56 | 32 | 08:23 (7) | 18:39 | | | 16:32 | | | 16:03 | 15 | 09:47 (37) |
| 15 | 05:12 | | 06:05 | | 07:56 (7) | 07:04 | | 07:53 (7) | 08:02 | | | 08:05 | | 09:25 (37) | 08:53 | | 09:33 (37) |
| | 22:06 | | 21:10 | 38 | 08:34 (7) | 19:53 | 27 | 08:20 (7) | 18:37 | | | 16:31 | 10 | 09:35 (37) | 16:03 | 14 | 09:47 (37) |
| 16 | 05:13 | | 06:07 | | 07:55 (7) | 07:06 | | 07:56 (7) | 08:04 | | | 08:07 | | 09:23 (37) | 08:54 | | 09:34 (37) |
| | 22:05 | | 21:08 | 40 | 08:35 (7) | 19:51 | 25 | 18:42 (40) | 18:34 | | | 16:29 | 14 | 09:37 (37) | 16:03 | 14 | 09:48 (37) |
| 17 | 05:15 | | 06:09 | | 07:53 (7) | 07:08 | | 08:01 (7) | 08:06 | | | 08:09 | | 09:22 (37) | 08:55 | | 09:35 (37) |
| | 22:04 | | 21:05 | 42 | 08:35 (7) | 19:48 | 21 | 18:46 (40) | 18:32 | | | 16:27 | 16 | 09:38 (37) | 16:04 | 13 | 09:48 (37) |
| 18 | 05:16 | | 06:11 | | 07:52 (7) | 07:10 | | 18:30 (40) | 08:08 | | | 08:11 | | 09:22 (37) | 08:56 | | 09:36 (37) |
| | 22:03 | | 21:03 | 45 | 08:37 (7) | 19:46 | 18 | 18:48 (40) | 18:29 | | | 16:26 | 18 | 09:40 (37) | 16:04 | 12 | 09:48 (37) |
| 19 | 05:18 | | 06:13 | | 07:51 (7) | 07:12 | | 18:28 (40) | 08:10 | | | 08:13 | | 09:21 (37) | 08:57 | | 09:35 (37) |
| | 22:01 | | 21:01 | 47 | 08:38 (7) | 19:43 | 21 | 18:49 (40) | 18:27 | | | 16:24 | 20 | 09:41 (37) | 16:04 | 13 | 09:48 (37) |
| 20 | 05:19 | | 06:15 | | 07:50 (7) | 07:13 | | 18:27 (40) | 08:12 | | | 08:15 | | 09:21 (37) | 08:57 | | 09:36 (37) |
| | 22:00 | | 20:58 | 49 | 08:39 (7) | 19:40 | 23 | 18:50 (40) | 18:25 | | | 16:23 | 21 | 09:42 (37) | 16:04 | 13 | 09:49 (37) |
| 21 | 05:21 | | 06:17 | | 07:49 (7) | 07:15 | | 18:26 (40) | 08:14 | | | 08:17 | | 09:20 (37) | 08:58 | | 09:36 (37) |
| | 21:58 | | 20:56 | 49 | 08:38 (7) | 19:38 | 24 | 18:50 (40) | 18:22 | | | 16:21 | 22 | 09:42 (37) | 16:05 | 12 | 09:48 (37) |
| 22 | 05:22 | | 06:19 | | 07:48 (7) | 07:17 | | 18:25 (40) | 08:16 | | | 08:19 | | 09:20 (37) | 08:59 | | 09:37 (37) |
| | 21:57 | | 20:54 | 51 | 08:39 (7) | 19:35 | 26 | 18:51 (40) | 18:20 | | | 16:20 | 23 | 09:43 (37) | 16:05 | 12 | 09:49 (37) |
| 23 | 05:24 | | 06:21 | | 07:47 (7) | 07:19 | | 18:25 (40) | 08:18 | | | 08:21 | | 09:20 (37) | 08:59 | | 09:37 (37) |
| | 21:55 | | 20:51 | 53 | 08:40 (7) | 19:33 | 26 | 18:51 (40) | 18:18 | | | 16:19 | 23 | 09:43 (37) | 16:06 | 13 | 09:50 (37) |
| 24 | 05:26 | | 06:22 | | 07:47 (7) | 07:21 | | 18:23 (40) | 08:20 | | | 08:23 | | 09:20 (37) | 09:00 | | 09:38 (37) |
| | 21:54 | | 20:49 | 53 | 08:40 (7) | 19:30 | 27 | 18:50 (40) | 18:15 | | | 16:17 | 24 | 09:44 (37) | 16:06 | 13 | 09:51 (37) |
| 25 | 05:27 | | 06:24 | | 07:46 (7) | 07:23 | | 18:23 (40) | 07:22 | | | 08:24 | | 09:20 (37) | 09:00 | | 09:39 (37) |
| | 21:52 | | 20:46 | 55 | 08:41 (7) | 19:27 | 26 | 18:49 (40) | 17:13 | | | 16:16 | 24 | 09:44 (37) | 16:07 | 12 | 09:51 (37) |
| 26 | 05:29 | | 06:26 | | 07:45 (7) | 07:25 | | 18:23 (40) | 07:24 | | | 08:26 | | 09:20 (37) | 09:00 | | 09:39 (37) |
| | 21:50 | | 20:44 | 55 | 08:40 (7) | 19:25 | 26 | 18:49 (40) | 17:11 | | | 16:15 | 24 | 09:44 (37) | 16:08 | 13 | 09:52 (37) |
| 27 | 05:31 | | 06:28 | | 07:45 (7) | 07:27 | | 18:23 (40) | 07:26 | | | 08:28 | | 09:21 (37) | 09:00 | | 09:39 (37) |
| | 21:49 | | 20:42 | 55 | 08:40 (7) | 19:22 | 25 | 18:48 (40) | 17:08 | | | 16:14 | 24 | 09:45 (37) | 16:08 | 13 | 09:52 (37) |
| 28 | 05:32 | | 06:30 | | 07:45 (7) | 07:29 | | 18:23 (40) | 07:28 | | | 08:30 | | 09:21 (37) | 09:01 | | 09:39 (37) |
| | 21:47 | | 20:39 | 55 | 08:40 (7) | 19:20 | 24 | 18:47 (40) | 17:06 | | | 16:13 | 24 | 09:45 (37) | 16:09 | 14 | 09:53 (37) |
| 29 | 05:34 | | 06:32 | | 07:44 (7) | 07:31 | | 18:24 (40) | 07:30 | | | 08:31 | | 09:22 (37) | 09:01 | | 09:39 (37) |
| | 21:45 | | 20:37 | 56 | 08:40 (7) | 19:17 | 22 | 18:46 (40) | 17:04 | | | 16:12 | 23 | 09:45 (37) | 16:10 | 15 | 09:54 (37) |
| 30 | 05:36 | | 06:34 | | 07:44 (7) | 07:32 | | 18:25 (40) | 07:32 | | | 08:33 | | 09:22 (37) | 09:01 | | 09:39 (37) |
| | 21:43 | | 20:34 | 56 | 08:40 (7) | 19:14 | 20 | 18:45 (40) | 17:02 | | | 16:11 | 24 | 09:46 (37) | 16:11 | 16 | 09:55 (37) |
| 31 | 05:38 | | 06:36 | | 07:43 (7) | | | | 07:34 | | | | | | 09:01 | | 09:40 (37) |
| | 21:41 | | 20:32 | 56 | 08:39 (7) | | | | 17:00 | | | | | | 16:12 | 16 | 09:56 (37) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 986 | | | 1043 | | | 28 | | | 334 | | | 498 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | 0,49 | | | 0,37 | | | 0,29 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 480 | | | 389 | | | 8 | | | 32 | | | 40 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:41 (37) | 08:27 | 07:26 | | 07:08 | 07:59 (7) | 05:55 | 05:02 |
| | 16:14 19 | 10:00 (37) | 17:08 | 18:07 | | 20:09 50 | 08:49 (7) | 21:08 | 22:02 |
| 2 | 09:00 | 09:41 (37) | 08:26 | 07:24 | | 07:05 | 07:59 (7) | 05:53 | 05:01 |
| | 16:15 20 | 10:01 (37) | 17:10 | 18:09 | | 20:11 51 | 08:50 (7) | 21:10 | 22:03 |
| 3 | 09:00 | 09:41 (37) | 08:24 | 07:22 | | 07:03 | 07:57 (7) | 05:50 | 05:00 |
| | 16:16 20 | 10:01 (37) | 17:12 | 18:11 | | 20:13 53 | 08:50 (7) | 21:12 | 22:05 |
| 4 | 09:00 | 09:42 (37) | 08:22 | 07:19 | | 07:00 | 07:56 (7) | 05:48 | 04:59 |
| | 16:17 20 | 10:02 (37) | 17:14 | 18:13 | | 20:15 54 | 08:50 (7) | 21:14 | 22:06 |
| 5 | 08:59 | 09:42 (37) | 08:20 | 07:17 | | 06:57 | 07:56 (7) | 05:46 | 04:58 |
| | 16:19 21 | 10:03 (37) | 17:16 | 18:15 | | 20:17 54 | 08:50 (7) | 21:16 | 22:07 |
| 6 | 08:59 | 09:42 (37) | 08:18 | 07:14 | | 06:55 | 07:55 (7) | 05:44 | 04:57 |
| | 16:20 22 | 10:04 (37) | 17:19 | 18:17 | | 20:19 55 | 08:50 (7) | 21:18 | 22:08 |
| 7 | 08:58 | 09:42 (37) | 08:16 | 07:12 | | 06:52 | 07:55 (7) | 05:42 | 04:56 |
| | 16:21 22 | 10:04 (37) | 17:21 | 18:19 | | 20:21 55 | 08:50 (7) | 21:20 | 22:09 |
| 8 | 08:58 | 09:42 (37) | 08:14 | 07:09 | | 06:50 | 07:54 (7) | 05:40 | 04:55 |
| | 16:23 23 | 10:05 (37) | 17:23 | 18:22 | | 20:23 55 | 08:49 (7) | 21:22 | 22:10 |
| 9 | 08:57 | 09:43 (37) | 08:12 | 07:07 | 17:50 (40) | 06:47 | 07:54 (7) | 05:38 | 04:55 |
| | 16:24 22 | 10:05 (37) | 17:25 | 18:24 3 | 17:53 (40) | 20:25 55 | 08:49 (7) | 21:24 | 22:11 |
| 10 | 08:56 | 09:43 (37) | 08:10 | 07:04 | 17:46 (40) | 06:45 | 07:53 (7) | 05:36 | 04:54 |
| | 16:26 23 | 10:06 (37) | 17:27 | 18:26 12 | 17:58 (40) | 20:27 55 | 08:48 (7) | 21:26 | 22:12 |
| 11 | 08:56 | 09:43 (37) | 08:08 | 07:02 | 17:43 (40) | 06:42 | 07:53 (7) | 05:34 | 04:54 |
| | 16:28 23 | 10:06 (37) | 17:29 | 18:28 17 | 18:00 (40) | 20:29 55 | 08:48 (7) | 21:28 | 22:13 |
| 12 | 08:55 | 09:43 (37) | 08:06 | 06:59 | 17:41 (40) | 06:40 | 07:54 (7) | 05:32 | 04:53 |
| | 16:29 24 | 10:07 (37) | 17:31 | 18:30 21 | 18:02 (40) | 20:31 54 | 08:48 (7) | 21:29 | 22:14 |
| 13 | 08:54 | 09:44 (37) | 08:03 | 06:56 | 17:40 (40) | 06:37 | 07:53 (7) | 05:30 | 04:53 |
| | 16:31 24 | 10:08 (37) | 17:33 | 18:32 22 | 18:02 (40) | 20:33 54 | 08:47 (7) | 21:31 | 22:15 |
| 14 | 08:53 | 09:45 (37) | 08:01 | 06:54 | 17:39 (40) | 06:35 | 07:54 (7) | 05:28 | 04:53 |
| | 16:33 23 | 10:08 (37) | 17:36 | 18:34 24 | 18:03 (40) | 20:35 53 | 08:47 (7) | 21:33 | 22:15 |
| 15 | 08:52 | 09:44 (37) | 07:59 | 06:51 | 17:38 (40) | 06:32 | 07:53 (7) | 05:26 | 04:52 |
| | 16:34 24 | 10:08 (37) | 17:38 | 18:36 25 | 18:03 (40) | 20:37 52 | 08:45 (7) | 21:35 | 22:16 |
| 16 | 08:51 | 09:45 (37) | 07:57 | 06:49 | 17:37 (40) | 06:30 | 07:54 (7) | 05:25 | 04:52 |
| | 16:36 23 | 10:08 (37) | 17:40 | 18:38 26 | 18:03 (40) | 20:39 51 | 08:45 (7) | 21:37 | 22:17 |
| 17 | 08:50 | 09:46 (37) | 07:55 | 06:46 | 17:37 (40) | 06:27 | 07:55 (7) | 05:23 | 04:52 |
| | 16:38 23 | 10:09 (37) | 17:42 | 18:40 26 | 18:03 (40) | 20:41 49 | 08:44 (7) | 21:39 | 22:17 |
| 18 | 08:49 | 09:46 (37) | 07:52 | 06:44 | 17:36 (40) | 06:25 | 07:55 (7) | 05:21 | 04:52 |
| | 16:40 22 | 10:08 (37) | 17:44 | 18:42 27 | 18:03 (40) | 20:43 47 | 08:42 (7) | 21:40 | 22:18 |
| 19 | 08:47 | 09:47 (37) | 07:50 | 06:41 | 17:37 (40) | 06:23 | 07:55 (7) | 05:19 | 04:52 |
| | 16:42 22 | 10:09 (37) | 17:46 | 18:44 26 | 18:03 (40) | 20:45 46 | 08:41 (7) | 21:42 | 22:18 |
| 20 | 08:46 | 09:47 (37) | 07:48 | 06:39 | 17:37 (40) | 06:20 | 07:56 (7) | 05:18 | 04:52 |
| | 16:44 21 | 10:08 (37) | 17:48 | 18:46 25 | 18:02 (40) | 20:47 44 | 08:40 (7) | 21:44 | 22:18 |
| 21 | 08:45 | 09:49 (37) | 07:46 | 06:36 | 17:37 (40) | 06:18 | 07:57 (7) | 05:16 | 04:52 |
| | 16:46 20 | 10:09 (37) | 17:50 | 18:48 23 | 18:00 (40) | 20:49 41 | 08:38 (7) | 21:45 | 22:19 |
| 22 | 08:43 | 09:49 (37) | 07:43 | 06:33 | 07:25 (7) | 06:15 | 07:58 (7) | 05:15 | 04:52 |
| | 16:48 19 | 10:08 (37) | 17:53 | 18:50 27 | 18:00 (40) | 20:51 39 | 08:37 (7) | 21:47 | 22:19 |
| 23 | 08:42 | 09:50 (37) | 07:41 | 06:31 | 07:17 (7) | 06:13 | 07:59 (7) | 05:13 | 04:53 |
| | 16:49 17 | 10:07 (37) | 17:55 | 18:52 38 | 17:58 (40) | 20:53 36 | 08:35 (7) | 21:49 | 22:19 |
| 24 | 08:41 | 09:52 (37) | 07:38 | 06:28 | 07:14 (7) | 06:11 | 08:01 (7) | 05:12 | 04:53 |
| | 16:51 15 | 10:07 (37) | 17:57 | 18:54 41 | 17:56 (40) | 20:55 32 | 08:33 (7) | 21:50 | 22:19 |
| 25 | 08:39 | 09:54 (37) | 07:36 | 06:26 | 07:11 (7) | 06:08 | 08:02 (7) | 05:10 | 04:53 |
| | 16:53 11 | 10:05 (37) | 17:59 | 18:56 41 | 17:53 (40) | 20:57 28 | 08:30 (7) | 21:52 | 22:19 |
| 26 | 08:37 | 09:56 (37) | 07:34 | 06:23 | 07:08 (7) | 06:06 | 08:04 (7) | 05:09 | 04:54 |
| | 16:56 6 | 10:02 (37) | 18:01 | 18:57 35 | 07:43 (7) | 20:59 24 | 08:28 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 07:31 | 06:21 | 07:07 (7) | 06:04 | 08:07 (7) | 05:07 | 04:54 |
| | 16:58 | | 18:03 | 18:59 38 | 07:45 (7) | 21:01 17 | 08:24 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:04 (7) | 06:01 | 08:13 (7) | 05:06 | 04:55 |
| | 17:00 | | 18:05 | 19:01 42 | 07:46 (7) | 21:03 5 | 08:18 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:03 (7) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 45 | 08:48 (7) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | 08:01 (7) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 47 | 08:48 (7) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | 08:01 (7) | | | 05:03 | |
| | 17:06 | | | 20:07 48 | 08:49 (7) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 529 | | | 679 | | 1264 | | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,63 | | | 0,99 | | 1,00 | | |
| Total reduction | | 0,11 | | | 0,32 | | 0,37 | | |
| Total, real | | 56 | | | 216 | | 468 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
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Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:52 (7) | 07:34 | | 18:20 (40) | 07:36 | | | 08:35 | | 09:25 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 55 | 08:47 (7) | 19:12 | 21 | 18:41 (40) | 16:58 | | | 16:10 | 24 | 09:49 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:52 (7) | 07:36 | | 18:21 (40) | 07:38 | | | 08:36 | | 09:26 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 55 | 08:47 (7) | 19:09 | 19 | 18:40 (40) | 16:55 | | | 16:09 | 23 | 09:49 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:52 (7) | 07:38 | | 18:22 (40) | 07:41 | | | 08:38 | | 09:27 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 55 | 08:47 (7) | 19:07 | 15 | 18:37 (40) | 16:53 | | | 16:08 | 23 | 09:50 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:52 (7) | 07:40 | | 18:25 (40) | 07:43 | | | 08:40 | | 09:27 (37) |
| | 22:16 | | 21:34 | | | 20:22 | 55 | 08:47 (7) | 19:04 | 9 | 18:34 (40) | 16:51 | | | 16:07 | 22 | 09:49 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:51 (7) | 07:42 | | | 07:45 | | | 08:41 | | 09:27 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 55 | 08:46 (7) | 19:02 | | | 16:49 | | | 16:07 | 23 | 09:50 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:51 (7) | 07:44 | | | 07:47 | | | 08:43 | | 09:28 (37) |
| | 22:15 | | 21:30 | | | 20:16 | 55 | 08:46 (7) | 18:59 | | | 16:47 | | | 16:06 | 21 | 09:49 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 07:51 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:29 (37) |
| | 22:14 | | 21:28 | | | 20:14 | 54 | 08:45 (7) | 18:57 | | | 16:45 | | | 16:05 | 21 | 09:50 (37) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:51 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:29 (37) |
| | 22:14 | | 21:25 | | | 20:11 | 54 | 08:45 (7) | 18:54 | | | 16:43 | | | 16:05 | 20 | 09:49 (37) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:51 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:30 (37) |
| | 22:13 | | 21:23 | | | 20:09 | 53 | 08:44 (7) | 18:52 | | | 16:41 | | | 16:05 | 20 | 09:50 (37) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 07:51 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:30 (37) |
| | 22:12 | | 21:21 | | | 20:06 | 51 | 08:42 (7) | 18:49 | | | 16:40 | | | 16:04 | 20 | 09:50 (37) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 07:51 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:32 (37) |
| | 22:11 | | 21:19 | | | 20:04 | 51 | 08:42 (7) | 18:47 | | | 16:38 | | | 16:04 | 19 | 09:51 (37) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 07:52 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:32 (37) |
| | 22:10 | | 21:17 | | | 20:01 | 49 | 08:41 (7) | 18:44 | | | 16:36 | | | 16:04 | 19 | 09:51 (37) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 07:53 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:33 (37) |
| | 22:09 | | 21:15 | | | 19:58 | 47 | 08:40 (7) | 18:42 | | | 16:34 | | | 16:04 | 18 | 09:51 (37) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 07:53 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:33 (37) |
| | 22:08 | | 21:12 | | | 19:56 | 45 | 08:38 (7) | 18:39 | | | 16:32 | | | 16:03 | 18 | 09:51 (37) |
| 15 | 05:12 | | 06:05 | | 08:18 (7) | 07:04 | | 07:54 (7) | 08:02 | | | 08:05 | | | 08:53 | | 09:34 (37) |
| | 22:06 | | 21:10 | 10 | 08:28 (7) | 19:53 | 43 | 08:37 (7) | 18:37 | | | 16:31 | | | 16:03 | 17 | 09:51 (37) |
| 16 | 05:13 | | 06:07 | | 08:14 (7) | 07:06 | | 07:55 (7) | 08:04 | | | 08:07 | | 09:29 (37) | 08:54 | | 09:35 (37) |
| | 22:05 | | 21:08 | 19 | 08:33 (7) | 19:51 | 39 | 08:34 (7) | 18:34 | | | 16:29 | 6 | 09:35 (37) | 16:03 | 17 | 09:52 (37) |
| 17 | 05:15 | | 06:09 | | 08:10 (7) | 07:08 | | 07:56 (7) | 08:06 | | | 08:09 | | 09:27 (37) | 08:55 | | 09:36 (37) |
| | 22:04 | | 21:05 | 25 | 08:35 (7) | 19:48 | 36 | 08:32 (7) | 18:32 | | | 16:27 | 11 | 09:38 (37) | 16:04 | 16 | 09:52 (37) |
| 18 | 05:16 | | 06:11 | | 08:08 (7) | 07:10 | | 07:58 (7) | 08:08 | | | 08:11 | | 09:26 (37) | 08:56 | | 09:36 (37) |
| | 22:03 | | 21:03 | 29 | 08:37 (7) | 19:46 | 40 | 18:39 (40) | 18:29 | | | 16:26 | 15 | 09:41 (37) | 16:04 | 16 | 09:52 (37) |
| 19 | 05:18 | | 06:13 | | 08:06 (7) | 07:12 | | 08:00 (7) | 08:10 | | | 08:13 | | 09:25 (37) | 08:57 | | 09:36 (37) |
| | 22:01 | | 21:01 | 33 | 08:39 (7) | 19:43 | 41 | 18:42 (40) | 18:27 | | | 16:24 | 17 | 09:42 (37) | 16:04 | 16 | 09:52 (37) |
| 20 | 05:19 | | 06:15 | | 08:05 (7) | 07:13 | | 08:03 (7) | 08:12 | | | 08:15 | | 09:24 (37) | 08:57 | | 09:37 (37) |
| | 22:00 | | 20:58 | 36 | 08:41 (7) | 19:40 | 39 | 18:44 (40) | 18:25 | | | 16:23 | 19 | 09:43 (37) | 16:04 | 16 | 09:53 (37) |
| 21 | 05:21 | | 06:17 | | 08:02 (7) | 07:15 | | 08:08 (7) | 08:14 | | | 08:17 | | 09:24 (37) | 08:58 | | 09:37 (37) |
| | 21:58 | | 20:56 | 40 | 08:42 (7) | 19:38 | 32 | 18:45 (40) | 18:22 | | | 16:21 | 20 | 09:44 (37) | 16:05 | 16 | 09:53 (37) |
| 22 | 05:22 | | 06:19 | | 08:01 (7) | 07:17 | | 18:23 (40) | 08:16 | | | 08:19 | | 09:23 (37) | 08:59 | | 09:38 (37) |
| | 21:57 | | 20:54 | 42 | 08:43 (7) | 19:35 | 23 | 18:46 (40) | 18:20 | | | 16:20 | 21 | 09:44 (37) | 16:05 | 16 | 09:54 (37) |
| 23 | 05:24 | | 06:21 | | 08:00 (7) | 07:19 | | 18:22 (40) | 08:18 | | | 08:21 | | 09:23 (37) | 08:59 | | 09:38 (37) |
| | 21:55 | | 20:51 | 44 | 08:44 (7) | 19:33 | 24 | 18:46 (40) | 18:18 | | | 16:19 | 22 | 09:45 (37) | 16:06 | 16 | 09:54 (37) |
| 24 | 05:26 | | 06:22 | | 07:59 (7) | 07:21 | | 18:20 (40) | 08:20 | | | 08:23 | | 09:23 (37) | 09:00 | | 09:39 (37) |
| | 21:54 | | 20:49 | 46 | 08:45 (7) | 19:30 | 25 | 18:45 (40) | 18:15 | | | 16:17 | 22 | 09:45 (37) | 16:06 | 16 | 09:55 (37) |
| 25 | 05:27 | | 06:24 | | 07:58 (7) | 07:23 | | 18:19 (40) | 07:22 | | | 08:24 | | 09:23 (37) | 09:00 | | 09:39 (37) |
| | 21:52 | | 20:46 | 48 | 08:46 (7) | 19:27 | 26 | 18:45 (40) | 17:13 | | | 16:16 | 23 | 09:46 (37) | 16:07 | 16 | 09:55 (37) |
| 26 | 05:29 | | 06:26 | | 07:56 (7) | 07:25 | | 18:19 (40) | 07:24 | | | 08:26 | | 09:23 (37) | 09:00 | | 09:40 (37) |
| | 21:50 | | 20:44 | 50 | 08:46 (7) | 19:25 | 26 | 18:45 (40) | 17:11 | | | 16:15 | 23 | 09:46 (37) | 16:08 | 16 | 09:56 (37) |
| 27 | 05:31 | | 06:28 | | 07:56 (7) | 07:27 | | 18:19 (40) | 07:26 | | | 08:28 | | 09:23 (37) | 09:00 | | 09:40 (37) |
| | 21:49 | | 20:42 | 50 | 08:46 (7) | 19:22 | 26 | 18:45 (40) | 17:08 | | | 16:14 | 24 | 09:47 (37) | 16:08 | 16 | 09:56 (37) |
| 28 | 05:32 | | 06:30 | | 07:55 (7) | 07:29 | | 18:19 (40) | 07:28 | | | 08:30 | | 09:24 (37) | 09:01 | | 09:40 (37) |
| | 21:47 | | 20:39 | 52 | 08:47 (7) | 19:20 | 25 | 18:44 (40) | 17:06 | | | 16:13 | 23 | 09:47 (37) | 16:09 | 17 | 09:57 (37) |
| 29 | 05:34 | | 06:32 | | 07:55 (7) | 07:31 | | 18:19 (40) | 07:30 | | | 08:31 | | 09:24 (37) | 09:01 | | 09:40 (37) |
| | 21:45 | | 20:37 | 52 | 08:47 (7) | 19:17 | 25 | 18:44 (40) | 17:04 | | | 16:12 | 24 | 09:48 (37) | 16:10 | 18 | 09:58 (37) |
| 30 | 05:36 | | 06:34 | | 07:54 (7) | 07:32 | | 18:19 (40) | 07:32 | | | 08:33 | | 09:25 (37) | 09:01 | | 09:41 (37) |
| | 21:43 | | 20:34 | 54 | 08:48 (7) | 19:14 | 24 | 18:43 (40) | 17:02 | | | 16:11 | 23 | 09:48 (37) | 16:11 | 18 | 09:59 (37) |
| 31 | 05:38 | | 06:36 | | 07:53 (7) | | | | 07:34 | | | | | | 09:01 | | 09:41 (37) |
| | 21:41 | | 20:32 | 54 | 08:47 (7) | | | | 17:00 | | | | | | 16:12 | 19 | 10:00 (37) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 684 | | | 1228 | | | 64 | | | 293 | | | 573 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 332 | | | 456 | | | 18 | | | 27 | | | 46 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:43 (37) | 08:27 | | 07:26 | | | 07:08 | | 08:06 (7) | 05:55 | 05:02 |
| | 16:14 | 20 | 10:03 (37) | 17:08 | | 18:07 | | | 20:09 | 54 | 09:00 (7) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:43 (37) | 08:26 | | 07:24 | | | 07:05 | | 08:06 (7) | 05:53 | 05:01 |
| | 16:15 | 21 | 10:04 (37) | 17:10 | | 18:09 | | | 20:11 | 55 | 09:01 (7) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:43 (37) | 08:24 | | 07:22 | | | 07:03 | | 08:05 (7) | 05:50 | 05:00 |
| | 16:16 | 21 | 10:04 (37) | 17:12 | | 18:11 | | | 20:13 | 55 | 09:00 (7) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:44 (37) | 08:22 | | 07:19 | | | 07:00 | | 08:04 (7) | 05:48 | 04:59 |
| | 16:17 | 22 | 10:06 (37) | 17:14 | | 18:13 | | | 20:15 | 55 | 08:59 (7) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:44 (37) | 08:20 | | 07:17 | | | 06:57 | | 08:05 (7) | 05:46 | 04:58 |
| | 16:19 | 22 | 10:06 (37) | 17:16 | | 18:15 | | | 20:17 | 54 | 08:59 (7) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:45 (37) | 08:18 | | 07:14 | | | 06:55 | | 08:04 (7) | 05:44 | 04:57 |
| | 16:20 | 22 | 10:07 (37) | 17:19 | | 18:17 | | | 20:19 | 54 | 08:58 (7) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:45 (37) | 08:16 | | 07:12 | | | 06:52 | | 08:04 (7) | 05:42 | 04:56 |
| | 16:21 | 23 | 10:08 (37) | 17:21 | | 18:19 | | | 20:21 | 54 | 08:58 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:45 (37) | 08:14 | | 07:09 | | 17:43 (40) | 06:50 | | 08:04 (7) | 05:40 | 04:55 |
| | 16:23 | 23 | 10:08 (37) | 17:23 | | 18:22 | 11 | 17:54 (40) | 20:23 | 53 | 08:57 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:45 (37) | 08:12 | | 07:07 | | 17:40 (40) | 06:47 | | 08:04 (7) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:08 (37) | 17:25 | | 18:24 | 15 | 17:55 (40) | 20:25 | 53 | 08:57 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:46 (37) | 08:10 | | 07:04 | | 17:38 (40) | 06:45 | | 08:04 (7) | 05:36 | 04:54 |
| | 16:26 | 23 | 10:09 (37) | 17:27 | | 18:26 | 20 | 17:58 (40) | 20:27 | 52 | 08:56 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:46 (37) | 08:08 | | 07:02 | | 17:37 (40) | 06:42 | | 08:05 (7) | 05:34 | 04:54 |
| | 16:28 | 23 | 10:09 (37) | 17:29 | | 18:28 | 21 | 17:58 (40) | 20:29 | 50 | 08:55 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:46 (37) | 08:06 | | 06:59 | | 17:36 (40) | 06:40 | | 08:05 (7) | 05:32 | 04:53 |
| | 16:29 | 24 | 10:10 (37) | 17:31 | | 18:30 | 24 | 18:00 (40) | 20:31 | 49 | 08:54 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:47 (37) | 08:03 | | 06:56 | | 17:35 (40) | 06:37 | | 08:05 (7) | 05:30 | 04:53 |
| | 16:31 | 23 | 10:10 (37) | 17:33 | | 18:32 | 25 | 18:00 (40) | 20:33 | 48 | 08:53 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:48 (37) | 08:01 | | 06:54 | | 17:35 (40) | 06:35 | | 08:06 (7) | 05:28 | 04:53 |
| | 16:33 | 23 | 10:11 (37) | 17:36 | | 18:34 | 25 | 18:00 (40) | 20:35 | 46 | 08:52 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:47 (37) | 07:59 | | 06:51 | | 17:34 (40) | 06:32 | | 08:06 (7) | 05:26 | 04:52 |
| | 16:34 | 23 | 10:10 (37) | 17:38 | | 18:36 | 26 | 18:00 (40) | 20:37 | 44 | 08:50 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:48 (37) | 07:57 | | 06:49 | | 17:33 (40) | 06:30 | | 08:07 (7) | 05:25 | 04:52 |
| | 16:36 | 23 | 10:11 (37) | 17:40 | | 18:38 | 26 | 17:59 (40) | 20:39 | 42 | 08:49 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:49 (37) | 07:55 | | 06:46 | | 17:33 (40) | 06:27 | | 08:09 (7) | 05:23 | 04:52 |
| | 16:38 | 22 | 10:11 (37) | 17:42 | | 18:40 | 26 | 17:59 (40) | 20:41 | 38 | 08:47 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:49 (37) | 07:52 | | 06:44 | | 07:34 (7) | 06:25 | | 08:09 (7) | 05:21 | 04:52 |
| | 16:40 | 21 | 10:10 (37) | 17:44 | | 18:42 | 33 | 17:58 (40) | 20:43 | 36 | 08:45 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:51 (37) | 07:50 | | 06:41 | | 07:28 (7) | 06:23 | | 08:11 (7) | 05:19 | 04:52 |
| | 16:42 | 20 | 10:11 (37) | 17:46 | | 18:44 | 44 | 17:58 (40) | 20:45 | 32 | 08:43 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:51 (37) | 07:48 | | 06:39 | | 07:24 (7) | 06:20 | | 08:13 (7) | 05:18 | 04:52 |
| | 16:44 | 19 | 10:10 (37) | 17:48 | | 18:46 | 49 | 17:56 (40) | 20:47 | 28 | 08:41 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:53 (37) | 07:46 | | 06:36 | | 07:21 (7) | 06:18 | | 08:15 (7) | 05:16 | 04:52 |
| | 16:46 | 17 | 10:10 (37) | 17:50 | | 18:48 | 52 | 17:55 (40) | 20:49 | 22 | 08:37 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:54 (37) | 07:43 | | 06:33 | | 07:19 (7) | 06:15 | | 08:18 (7) | 05:15 | 04:52 |
| | 16:48 | 15 | 10:09 (37) | 17:53 | | 18:50 | 52 | 17:53 (40) | 20:51 | 15 | 08:33 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:55 (37) | 07:41 | | 06:31 | | 07:17 (7) | 06:13 | | | 05:13 | 04:52 |
| | 16:49 | 12 | 10:07 (37) | 17:55 | | 18:52 | 50 | 17:50 (40) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:58 (37) | 07:38 | | 06:28 | | 07:15 (7) | 06:11 | | | 05:12 | 04:53 |
| | 16:51 | 8 | 10:06 (37) | 17:57 | | 18:54 | 42 | 07:57 (7) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 06:26 | | 07:13 (7) | 06:08 | | | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | | 18:56 | 45 | 07:58 (7) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | | 06:23 | | 07:12 (7) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | | 18:57 | 46 | 07:58 (7) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 06:21 | | 07:11 (7) | 06:04 | | | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | | 18:59 | 48 | 07:59 (7) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 06:18 | | 07:09 (7) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | | 19:01 | 50 | 07:59 (7) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | | | | 07:15 | | 08:09 (7) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | | | | | 20:03 | 51 | 09:00 (7) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:08 (7) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | | | | | 20:05 | 52 | 09:00 (7) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 08:07 (7) | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | 54 | 09:01 (7) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 493 | | | | | 887 | | | 989 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,61 | | | | | 0,98 | | | 0,99 | | | |
| Total reduction | | 0,10 | | | | | 0,32 | | | 0,37 | | | |
| Total, real | | 52 | | | | | 281 | | | 364 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 08:04 (7) | 07:34 | | 18:15 (40) | 07:36 | | | 08:35 | | 09:28 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 50 | 08:54 (7) | 19:12 | 24 | 18:39 (40) | 16:58 | | | 16:10 | 23 | 09:51 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 08:03 (7) | 07:36 | | 18:15 (40) | 07:38 | | | 08:36 | | 09:29 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 52 | 08:55 (7) | 19:09 | 23 | 18:38 (40) | 16:55 | | | 16:09 | 23 | 09:52 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 08:02 (7) | 07:38 | | 18:16 (40) | 07:41 | | | 08:38 | | 09:29 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 53 | 08:55 (7) | 19:07 | 20 | 18:36 (40) | 16:53 | | | 16:08 | 23 | 09:52 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 08:02 (7) | 07:40 | | 18:17 (40) | 07:43 | | | 08:40 | | 09:29 (37) |
| | 22:16 | | 21:34 | | | 20:22 | 53 | 08:55 (7) | 19:04 | 18 | 18:35 (40) | 16:51 | | | 16:07 | 23 | 09:52 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 08:00 (7) | 07:42 | | 18:19 (40) | 07:45 | | | 08:41 | | 09:30 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 54 | 08:54 (7) | 19:02 | 13 | 18:32 (40) | 16:49 | | | 16:07 | 23 | 09:53 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 08:00 (7) | 07:44 | | 18:22 (40) | 07:47 | | | 08:43 | | 09:30 (37) |
| | 22:15 | | 21:30 | | | 20:16 | 55 | 08:55 (7) | 18:59 | 6 | 18:28 (40) | 16:47 | | | 16:06 | 22 | 09:52 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 08:00 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:31 (37) |
| | 22:14 | | 21:28 | | | 20:14 | 55 | 08:55 (7) | 18:57 | | | 16:45 | | | 16:05 | 22 | 09:53 (37) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 08:00 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:31 (37) |
| | 22:14 | | 21:25 | | | 20:11 | 54 | 08:54 (7) | 18:54 | | | 16:43 | | | 16:05 | 22 | 09:53 (37) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 08:00 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:32 (37) |
| | 22:13 | | 21:23 | | | 20:09 | 54 | 08:54 (7) | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:54 (37) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 07:59 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:32 (37) |
| | 22:12 | | 21:21 | | | 20:06 | 54 | 08:53 (7) | 18:49 | | | 16:40 | | | 16:04 | 22 | 09:54 (37) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 07:59 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:34 (37) |
| | 22:11 | | 21:19 | | | 20:04 | 54 | 08:53 (7) | 18:47 | | | 16:38 | | | 16:04 | 20 | 09:54 (37) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 07:59 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:34 (37) |
| | 22:10 | | 21:17 | | | 20:01 | 53 | 08:52 (7) | 18:44 | | | 16:36 | | | 16:04 | 20 | 09:54 (37) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 07:59 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:35 (37) |
| | 22:09 | | 21:15 | | | 19:58 | 53 | 08:52 (7) | 18:42 | | | 16:34 | | | 16:04 | 20 | 09:55 (37) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 07:59 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:35 (37) |
| | 22:08 | | 21:12 | | | 19:56 | 52 | 08:51 (7) | 18:39 | | | 16:32 | | | 16:03 | 20 | 09:55 (37) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 08:00 (7) | 08:02 | | | 08:05 | | | 08:53 | | 09:36 (37) |
| | 22:06 | | 21:10 | | | 19:53 | 50 | 08:50 (7) | 18:37 | | | 16:31 | | | 16:03 | 19 | 09:55 (37) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 07:59 (7) | 08:04 | | | 08:07 | | | 08:54 | | 09:36 (37) |
| | 22:05 | | 21:08 | | | 19:51 | 49 | 08:48 (7) | 18:34 | | | 16:29 | | | 16:03 | 19 | 09:55 (37) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:00 (7) | 08:06 | | | 08:09 | | | 08:55 | | 09:37 (37) |
| | 22:04 | | 21:05 | | | 19:48 | 47 | 08:47 (7) | 18:32 | | | 16:27 | | | 16:04 | 19 | 09:56 (37) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:01 (7) | 08:08 | | | 08:11 | | 09:32 (37) | 08:56 | | 09:38 (37) |
| | 22:03 | | 21:03 | | | 19:46 | 45 | 08:46 (7) | 18:29 | | | 16:26 | 8 | 09:40 (37) | 16:04 | 18 | 09:56 (37) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:02 (7) | 08:10 | | | 08:13 | | 09:30 (37) | 08:57 | | 09:38 (37) |
| | 22:01 | | 21:01 | | | 19:43 | 42 | 08:44 (7) | 18:27 | | | 16:24 | 12 | 09:42 (37) | 16:04 | 18 | 09:56 (37) |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 08:03 (7) | 08:12 | | | 08:15 | | 09:29 (37) | 08:57 | | 09:39 (37) |
| | 22:00 | | 20:58 | | | 19:40 | 50 | 18:36 (40) | 18:25 | | | 16:23 | 15 | 09:44 (37) | 16:04 | 18 | 09:57 (37) |
| 21 | 05:21 | | 06:17 | | 08:22 (7) | 07:15 | | 08:04 (7) | 08:14 | | | 08:17 | | 09:28 (37) | 08:58 | | 09:39 (37) |
| | 21:58 | | 20:56 | 17 | 08:39 (7) | 19:38 | 52 | 18:38 (40) | 18:22 | | | 16:21 | 17 | 09:45 (37) | 16:05 | 18 | 09:57 (37) |
| 22 | 05:22 | | 06:19 | | 08:19 (7) | 07:17 | | 08:06 (7) | 08:16 | | | 08:19 | | 09:27 (37) | 08:59 | | 09:40 (37) |
| | 21:57 | | 20:54 | 23 | 08:42 (7) | 19:35 | 52 | 18:40 (40) | 18:20 | | | 16:20 | 19 | 09:46 (37) | 16:05 | 18 | 09:58 (37) |
| 23 | 05:24 | | 06:21 | | 08:17 (7) | 07:19 | | 08:08 (7) | 08:18 | | | 08:21 | | 09:27 (37) | 08:59 | | 09:40 (37) |
| | 21:55 | | 20:51 | 28 | 08:45 (7) | 19:33 | 50 | 18:41 (40) | 18:18 | | | 16:19 | 20 | 09:47 (37) | 16:06 | 18 | 09:58 (37) |
| 24 | 05:26 | | 06:22 | | 08:15 (7) | 07:21 | | 08:10 (7) | 08:20 | | | 08:23 | | 09:27 (37) | 09:00 | | 09:41 (37) |
| | 21:54 | | 20:49 | 32 | 08:47 (7) | 19:30 | 45 | 18:40 (40) | 18:15 | | | 16:17 | 20 | 09:47 (37) | 16:06 | 18 | 09:59 (37) |
| 25 | 05:27 | | 06:24 | | 08:13 (7) | 07:23 | | 08:14 (7) | 07:22 | | | 08:24 | | 09:26 (37) | 09:00 | | 09:41 (37) |
| | 21:52 | | 20:46 | 36 | 08:49 (7) | 19:27 | 38 | 18:41 (40) | 17:13 | | | 16:16 | 22 | 09:48 (37) | 16:07 | 18 | 09:59 (37) |
| 26 | 05:29 | | 06:26 | | 08:10 (7) | 07:25 | | 18:15 (40) | 07:24 | | | 08:26 | | 09:26 (37) | 09:00 | | 09:41 (37) |
| | 21:50 | | 20:44 | 39 | 08:49 (7) | 19:25 | 26 | 18:41 (40) | 17:11 | | | 16:15 | 23 | 09:49 (37) | 16:08 | 19 | 10:00 (37) |
| 27 | 05:31 | | 06:28 | | 08:09 (7) | 07:27 | | 18:15 (40) | 07:26 | | | 08:28 | | 09:27 (37) | 09:00 | | 09:41 (37) |
| | 21:49 | | 20:42 | 42 | 08:51 (7) | 19:22 | 26 | 18:41 (40) | 17:08 | | | 16:14 | 22 | 09:49 (37) | 16:08 | 19 | 10:00 (37) |
| 28 | 05:32 | | 06:30 | | 08:08 (7) | 07:29 | | 18:14 (40) | 07:28 | | | 08:30 | | 09:27 (37) | 09:01 | | 09:42 (37) |
| | 21:47 | | 20:39 | 44 | 08:52 (7) | 19:20 | 27 | 18:41 (40) | 17:06 | | | 16:13 | 23 | 09:50 (37) | 16:09 | 19 | 10:01 (37) |
| 29 | 05:34 | | 06:32 | | 08:07 (7) | 07:31 | | 18:14 (40) | 07:30 | | | 08:31 | | 09:27 (37) | 09:01 | | 09:42 (37) |
| | 21:45 | | 20:37 | 46 | 08:53 (7) | 19:17 | 26 | 18:40 (40) | 17:04 | | | 16:12 | 23 | 09:50 (37) | 16:10 | 19 | 10:01 (37) |
| 30 | 05:36 | | 06:34 | | 08:06 (7) | 07:32 | | 18:14 (40) | 07:32 | | | 08:33 | | 09:27 (37) | 09:01 | | 09:42 (37) |
| | 21:43 | | 20:34 | 48 | 08:54 (7) | 19:14 | 26 | 18:40 (40) | 17:02 | | | 16:11 | 24 | 09:51 (37) | 16:11 | 20 | 10:02 (37) |
| 31 | 05:38 | | 06:36 | | 08:04 (7) | | | | 07:34 | | | | | | 09:01 | | 09:43 (37) |
| | 21:41 | | 20:32 | 49 | 08:53 (7) | | | | 17:00 | | | | | | 16:12 | 20 | 10:03 (37) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 404 | | | 1397 | | | 104 | | | 248 | | | 622 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 195 | | | 516 | | | 29 | | | 23 | | | 49 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (37) | 08:27 | 07:26 | | | 07:08 | | 08:16 (7) | 05:55 | 05:02 |
| | 16:14 | 21 | 10:06 (37) | 17:08 | 18:07 | | | 20:09 | 53 | 09:09 (7) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:45 (37) | 08:26 | 07:24 | | | 07:05 | | 08:16 (7) | 05:53 | 05:01 |
| | 16:15 | 22 | 10:07 (37) | 17:10 | 18:09 | | | 20:11 | 53 | 09:09 (7) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:45 (37) | 08:24 | 07:22 | | | 07:03 | | 08:15 (7) | 05:50 | 05:00 |
| | 16:16 | 22 | 10:07 (37) | 17:12 | 18:11 | | | 20:13 | 53 | 09:08 (7) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:46 (37) | 08:22 | 07:19 | | | 07:00 | | 08:15 (7) | 05:48 | 04:59 |
| | 16:17 | 22 | 10:08 (37) | 17:14 | 18:13 | | | 20:15 | 52 | 09:07 (7) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:46 (37) | 08:20 | 07:17 | | | 06:57 | | 08:16 (7) | 05:46 | 04:58 |
| | 16:19 | 23 | 10:09 (37) | 17:16 | 18:15 | | | 20:17 | 51 | 09:07 (7) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:47 (37) | 08:18 | 07:14 | | 17:40 (40) | 06:55 | | 08:15 (7) | 05:44 | 04:57 |
| | 16:20 | 23 | 10:10 (37) | 17:19 | 18:17 | 9 | 17:49 (40) | 20:19 | 50 | 09:05 (7) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:47 (37) | 08:16 | 07:12 | | 17:37 (40) | 06:52 | | 08:16 (7) | 05:42 | 04:56 |
| | 16:21 | 23 | 10:10 (37) | 17:21 | 18:19 | 15 | 17:52 (40) | 20:21 | 49 | 09:05 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:47 (37) | 08:14 | 07:09 | | 17:35 (40) | 06:50 | | 08:16 (7) | 05:40 | 04:55 |
| | 16:23 | 23 | 10:10 (37) | 17:23 | 18:22 | 19 | 17:54 (40) | 20:23 | 47 | 09:03 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:48 (37) | 08:12 | 07:07 | | 17:33 (40) | 06:47 | | 08:17 (7) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:11 (37) | 17:25 | 18:24 | 21 | 17:54 (40) | 20:25 | 45 | 09:02 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:48 (37) | 08:10 | 07:04 | | 17:32 (40) | 06:45 | | 08:17 (7) | 05:36 | 04:54 |
| | 16:26 | 23 | 10:11 (37) | 17:27 | 18:26 | 24 | 17:56 (40) | 20:27 | 43 | 09:00 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:49 (37) | 08:08 | 07:02 | | 17:31 (40) | 06:42 | | 08:19 (7) | 05:34 | 04:54 |
| | 16:28 | 22 | 10:11 (37) | 17:29 | 18:28 | 25 | 17:56 (40) | 20:29 | 40 | 08:59 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:49 (37) | 08:06 | 06:59 | | 17:31 (40) | 06:40 | | 08:20 (7) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:12 (37) | 17:31 | 18:30 | 25 | 17:56 (40) | 20:31 | 38 | 08:58 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:50 (37) | 08:03 | 06:56 | | 17:30 (40) | 06:37 | | 08:21 (7) | 05:30 | 04:53 |
| | 16:31 | 22 | 10:12 (37) | 17:33 | 18:32 | 26 | 17:56 (40) | 20:33 | 34 | 08:55 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:51 (37) | 08:01 | 06:54 | | 07:42 (7) | 06:35 | | 08:23 (7) | 05:28 | 04:53 |
| | 16:33 | 22 | 10:13 (37) | 17:36 | 18:34 | 39 | 17:56 (40) | 20:35 | 30 | 08:53 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:51 (37) | 07:59 | 06:51 | | 07:37 (7) | 06:32 | | 08:24 (7) | 05:26 | 04:52 |
| | 16:34 | 21 | 10:12 (37) | 17:38 | 18:36 | 48 | 17:56 (40) | 20:37 | 26 | 08:50 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (37) | 07:57 | 06:49 | | 07:33 (7) | 06:30 | | 08:27 (7) | 05:25 | 04:52 |
| | 16:36 | 20 | 10:12 (37) | 17:40 | 18:38 | 54 | 17:55 (40) | 20:39 | 20 | 08:47 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (37) | 07:55 | 06:46 | | 07:31 (7) | 06:27 | | 08:32 (7) | 05:23 | 04:52 |
| | 16:38 | 20 | 10:13 (37) | 17:42 | 18:40 | 57 | 17:54 (40) | 20:41 | 10 | 08:42 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:53 (37) | 07:52 | 06:44 | | 07:29 (7) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 19 | 10:12 (37) | 17:44 | 18:42 | 59 | 17:53 (40) | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 09:55 (37) | 07:50 | 06:41 | | 07:27 (7) | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | 17 | 10:12 (37) | 17:46 | 18:44 | 60 | 17:52 (40) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 09:55 (37) | 07:48 | 06:39 | | 07:25 (7) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | 16 | 10:11 (37) | 17:48 | 18:46 | 60 | 17:50 (40) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | 09:57 (37) | 07:46 | 06:36 | | 07:23 (7) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 13 | 10:10 (37) | 17:50 | 18:48 | 58 | 17:47 (40) | 20:49 | | | 21:45 | 22:19 |
| 22 | 08:43 | | 09:59 (37) | 07:43 | 06:33 | | 07:23 (7) | 06:15 | | | 05:15 | 04:52 |
| | 16:48 | 10 | 10:09 (37) | 17:53 | 18:50 | 49 | 17:42 (40) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | 10:02 (37) | 07:41 | 06:31 | | 07:21 (7) | 06:13 | | | 05:13 | 04:52 |
| | 16:49 | 3 | 10:05 (37) | 17:55 | 18:52 | 49 | 08:10 (7) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | 07:21 (7) | 06:11 | | | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | 50 | 08:11 (7) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:19 (7) | 06:08 | | | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 52 | 08:11 (7) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | 06:23 | | 07:18 (7) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 52 | 08:10 (7) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:18 (7) | 06:04 | | | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 53 | 08:11 (7) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:17 (7) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 53 | 08:10 (7) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:17 (7) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 54 | 09:11 (7) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:16 (7) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 54 | 09:10 (7) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:16 (7) | | | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:10 (7) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 453 | | | | 1119 | | | 694 | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | 0,98 | | | |
| Total reduction | | 0,10 | | | | 0,32 | | | 0,37 | | | |
| Total, real | | 47 | | | | 353 | | | 253 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 08:18 (7) | 07:34 | | 18:10 (40) | 07:36 | | | 08:35 | | 09:31 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 40 | 08:58 (7) | 19:12 | 26 | 18:36 (40) | 16:58 | | | 16:10 | 23 | 09:54 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 08:16 (7) | 07:36 | | 18:10 (40) | 07:38 | | | 08:36 | | 09:31 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 43 | 08:59 (7) | 19:09 | 25 | 18:35 (40) | 16:55 | | | 16:09 | 23 | 09:54 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 08:15 (7) | 07:38 | | 18:10 (40) | 07:41 | | | 08:38 | | 09:32 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 45 | 09:00 (7) | 19:07 | 24 | 18:34 (40) | 16:53 | | | 16:08 | 23 | 09:55 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 08:14 (7) | 07:40 | | 18:10 (40) | 07:43 | | | 08:40 | | 09:32 (37) |
| | 22:16 | | 21:34 | | | 20:22 | 47 | 09:01 (7) | 19:04 | 23 | 18:33 (40) | 16:51 | | | 16:07 | 22 | 09:54 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 08:12 (7) | 07:42 | | 18:11 (40) | 07:45 | | | 08:41 | | 09:32 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 49 | 09:01 (7) | 19:02 | 21 | 18:32 (40) | 16:49 | | | 16:07 | 23 | 09:55 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 08:11 (7) | 07:44 | | 18:12 (40) | 07:47 | | | 08:43 | | 09:32 (37) |
| | 22:15 | | 21:30 | | | 20:16 | 50 | 09:01 (7) | 18:59 | 17 | 18:29 (40) | 16:47 | | | 16:06 | 23 | 09:55 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 08:11 (7) | 07:46 | | 18:14 (40) | 07:49 | | | 08:44 | | 09:33 (37) |
| | 22:14 | | 21:28 | | | 20:14 | 51 | 09:02 (7) | 18:57 | 13 | 18:27 (40) | 16:45 | | | 16:05 | 23 | 09:56 (37) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 08:10 (7) | 07:48 | | 18:18 (40) | 07:51 | | | 08:45 | | 09:33 (37) |
| | 22:14 | | 21:25 | | | 20:11 | 52 | 09:02 (7) | 18:54 | 4 | 18:22 (40) | 16:43 | | | 16:05 | 23 | 09:56 (37) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 08:10 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (37) |
| | 22:13 | | 21:23 | | | 20:09 | 52 | 09:02 (7) | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:56 (37) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 08:08 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:35 (37) |
| | 22:12 | | 21:21 | | | 20:06 | 54 | 09:02 (7) | 18:49 | | | 16:40 | | | 16:04 | 21 | 09:56 (37) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 08:08 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:36 (37) |
| | 22:11 | | 21:19 | | | 20:04 | 54 | 09:02 (7) | 18:47 | | | 16:38 | | | 16:04 | 21 | 09:57 (37) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 08:08 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:36 (37) |
| | 22:10 | | 21:17 | | | 20:01 | 54 | 09:02 (7) | 18:44 | | | 16:36 | | | 16:04 | 21 | 09:57 (37) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 08:07 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:37 (37) |
| | 22:09 | | 21:15 | | | 19:58 | 54 | 09:01 (7) | 18:42 | | | 16:34 | | | 16:04 | 21 | 09:58 (37) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 08:07 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:37 (37) |
| | 22:08 | | 21:12 | | | 19:56 | 54 | 09:01 (7) | 18:39 | | | 16:32 | | | 16:03 | 21 | 09:58 (37) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 08:07 (7) | 08:02 | | | 08:05 | | | 08:53 | | 09:38 (37) |
| | 22:06 | | 21:10 | | | 19:53 | 54 | 09:01 (7) | 18:37 | | | 16:31 | | | 16:03 | 20 | 09:58 (37) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 08:06 (7) | 08:04 | | | 08:07 | | | 08:54 | | 09:38 (37) |
| | 22:05 | | 21:08 | | | 19:51 | 53 | 08:59 (7) | 18:34 | | | 16:29 | | | 16:03 | 21 | 09:59 (37) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:06 (7) | 08:06 | | | 08:09 | | | 08:55 | | 09:39 (37) |
| | 22:04 | | 21:05 | | | 19:48 | 53 | 08:59 (7) | 18:32 | | | 16:27 | | | 16:04 | 20 | 09:59 (37) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:07 (7) | 08:08 | | | 08:11 | | | 08:56 | | 09:40 (37) |
| | 22:03 | | 21:03 | | | 19:46 | 51 | 08:58 (7) | 18:29 | | | 16:26 | | | 16:04 | 20 | 10:00 (37) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:07 (7) | 08:10 | | | 08:13 | | 09:37 (37) | 08:57 | | 09:39 (37) |
| | 22:01 | | 21:01 | | | 19:43 | 50 | 08:57 (7) | 18:27 | | | 16:24 | 3 | 09:40 (37) | 16:04 | 20 | 09:59 (37) |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 08:08 (7) | 08:12 | | | 08:15 | | 09:34 (37) | 08:57 | | 09:40 (37) |
| | 22:00 | | 20:58 | | | 19:40 | 48 | 08:56 (7) | 18:25 | | | 16:23 | 10 | 09:44 (37) | 16:04 | 20 | 10:00 (37) |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 08:08 (7) | 08:14 | | | 08:17 | | 09:32 (37) | 08:58 | | 09:41 (37) |
| | 21:58 | | 20:56 | | | 19:38 | 47 | 08:55 (7) | 18:22 | | | 16:21 | 13 | 09:45 (37) | 16:05 | 20 | 10:01 (37) |
| 22 | 05:22 | | 06:19 | | | 07:17 | | 08:09 (7) | 08:16 | | | 08:19 | | 09:31 (37) | 08:59 | | 09:41 (37) |
| | 21:57 | | 20:54 | | | 19:35 | 56 | 18:32 (40) | 18:20 | | | 16:20 | 16 | 09:47 (37) | 16:05 | 20 | 10:01 (37) |
| 23 | 05:24 | | 06:20 | | | 07:19 | | 08:10 (7) | 08:18 | | | 08:21 | | 09:31 (37) | 08:59 | | 09:41 (37) |
| | 21:55 | | 20:51 | | | 19:33 | 59 | 18:34 (40) | 18:18 | | | 16:19 | 17 | 09:48 (37) | 16:06 | 20 | 10:01 (37) |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 08:10 (7) | 08:20 | | | 08:23 | | 09:30 (37) | 09:00 | | 09:42 (37) |
| | 21:54 | | 20:49 | | | 19:30 | 59 | 18:34 (40) | 18:15 | | | 16:17 | 19 | 09:49 (37) | 16:06 | 20 | 10:02 (37) |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 08:11 (7) | 07:22 | | | 08:24 | | 09:30 (37) | 09:00 | | 09:43 (37) |
| | 21:52 | | 20:46 | | | 19:27 | 60 | 18:35 (40) | 17:13 | | | 16:16 | 20 | 09:50 (37) | 16:07 | 20 | 10:03 (37) |
| 26 | 05:29 | | 06:26 | | 08:33 (7) | 07:25 | | 08:12 (7) | 07:24 | | | 08:26 | | 09:30 (37) | 09:00 | | 09:43 (37) |
| | 21:50 | | 20:44 | 11 | 08:44 (7) | 19:25 | 59 | 18:36 (40) | 17:11 | | | 16:15 | 20 | 09:50 (37) | 16:08 | 20 | 10:03 (37) |
| 27 | 05:31 | | 06:28 | | 08:29 (7) | 07:27 | | 08:14 (7) | 07:26 | | | 08:28 | | 09:30 (37) | 09:00 | | 09:43 (37) |
| | 21:49 | | 20:42 | 20 | 08:49 (7) | 19:22 | 55 | 18:36 (40) | 17:08 | | | 16:14 | 21 | 09:51 (37) | 16:08 | 20 | 10:03 (37) |
| 28 | 05:32 | | 06:30 | | 08:26 (7) | 07:29 | | 08:17 (7) | 07:28 | | | 08:30 | | 09:30 (37) | 09:01 | | 09:43 (37) |
| | 21:47 | | 20:39 | 26 | 08:52 (7) | 19:20 | 49 | 18:36 (40) | 17:06 | | | 16:13 | 22 | 09:52 (37) | 16:09 | 21 | 10:04 (37) |
| 29 | 05:34 | | 06:32 | | 08:23 (7) | 07:31 | | 08:20 (7) | 07:30 | | | 08:31 | | 09:30 (37) | 09:01 | | 09:44 (37) |
| | 21:45 | | 20:37 | 31 | 08:54 (7) | 19:17 | 43 | 18:36 (40) | 17:04 | | | 16:12 | 22 | 09:52 (37) | 16:10 | 21 | 10:05 (37) |
| 30 | 05:36 | | 06:34 | | 08:22 (7) | 07:32 | | 18:10 (40) | 07:32 | | | 08:33 | | 09:30 (37) | 09:01 | | 09:44 (37) |
| | 21:43 | | 20:34 | 34 | 08:56 (7) | 19:14 | 26 | 18:36 (40) | 17:02 | | | 16:11 | 23 | 09:53 (37) | 16:11 | 21 | 10:05 (37) |
| 31 | 05:38 | | 06:36 | | 08:19 (7) | | | | 07:34 | | | | | | 09:01 | | 09:45 (37) |
| | 21:41 | | 20:32 | 37 | 08:56 (7) | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (37) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 159 | | | 1521 | | | 153 | | | 206 | | | 655 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | | 0,98 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 76 | | | 558 | | | 43 | | | 19 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (37) | 08:27 | | 07:26 | | | 07:08 | | 08:12 (7) | 05:55 | 05:02 |
| | 16:14 | 23 | 10:13 (37) | 17:08 | | 18:07 | | | 20:09 | 60 | 09:12 (7) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:51 (37) | 08:26 | | 07:24 | | | 07:05 | | 08:12 (7) | 05:53 | 05:01 |
| | 16:15 | 23 | 10:14 (37) | 17:10 | | 18:09 | | | 20:11 | 60 | 09:12 (7) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:51 (37) | 08:24 | | 07:22 | | | 07:03 | | 08:11 (7) | 05:50 | 05:00 |
| | 16:16 | 23 | 10:14 (37) | 17:12 | | 18:11 | | | 20:13 | 61 | 09:12 (7) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:52 (37) | 08:22 | | 07:19 | | | 07:00 | | 08:11 (7) | 05:48 | 04:59 |
| | 16:17 | 23 | 10:15 (37) | 17:14 | | 18:13 | | | 20:15 | 60 | 09:11 (7) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:52 (37) | 08:20 | | 07:17 | | | 06:57 | | 08:11 (7) | 05:46 | 04:58 |
| | 16:19 | 23 | 10:15 (37) | 17:16 | | 18:15 | | | 20:17 | 60 | 09:11 (7) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:53 (37) | 08:18 | | 07:14 | | | 06:55 | | 08:10 (7) | 05:44 | 04:57 |
| | 16:20 | 24 | 10:17 (37) | 17:19 | | 18:17 | | | 20:19 | 60 | 09:10 (7) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:53 (37) | 08:16 | | 07:12 | | | 06:52 | | 08:10 (7) | 05:42 | 04:56 |
| | 16:21 | 24 | 10:17 (37) | 17:21 | | 18:19 | | | 20:21 | 60 | 09:10 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:53 (37) | 08:14 | | 07:09 | | 17:45 (40) | 06:50 | | 08:10 (7) | 05:40 | 04:55 |
| | 16:23 | 24 | 10:17 (37) | 17:23 | | 18:22 | 9 | 17:54 (40) | 20:23 | 59 | 09:09 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:54 (37) | 08:12 | | 07:07 | | 17:41 (40) | 06:47 | | 08:10 (7) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:17 (37) | 17:25 | | 18:24 | 14 | 17:55 (40) | 20:25 | 59 | 09:09 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:54 (37) | 08:10 | | 07:04 | | 17:40 (40) | 06:45 | | 08:10 (7) | 05:36 | 04:54 |
| | 16:26 | 24 | 10:18 (37) | 17:27 | | 18:26 | 18 | 17:58 (40) | 20:27 | 57 | 09:07 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:55 (37) | 08:08 | | 07:02 | | 17:38 (40) | 06:42 | | 08:10 (7) | 05:34 | 04:54 |
| | 16:28 | 23 | 10:18 (37) | 17:29 | | 18:28 | 21 | 17:59 (40) | 20:29 | 57 | 09:07 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:55 (37) | 08:06 | | 06:59 | | 17:38 (40) | 06:40 | | 08:11 (7) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:18 (37) | 17:31 | | 18:30 | 22 | 18:00 (40) | 20:31 | 55 | 09:06 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:56 (37) | 08:03 | | 06:56 | | 17:36 (40) | 06:37 | | 08:11 (7) | 05:30 | 04:53 |
| | 16:31 | 22 | 10:18 (37) | 17:33 | | 18:32 | 24 | 18:00 (40) | 20:33 | 54 | 09:05 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:57 (37) | 08:01 | | 06:54 | | 17:36 (40) | 06:35 | | 08:12 (7) | 05:28 | 04:53 |
| | 16:33 | 22 | 10:19 (37) | 17:36 | | 18:34 | 25 | 18:01 (40) | 20:35 | 52 | 09:04 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:57 (37) | 07:59 | | 06:51 | | 17:35 (40) | 06:32 | | 08:11 (7) | 05:26 | 04:52 |
| | 16:34 | 21 | 10:18 (37) | 17:38 | | 18:36 | 26 | 18:01 (40) | 20:37 | 51 | 09:02 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:58 (37) | 07:57 | | 06:49 | | 17:35 (40) | 06:30 | | 08:12 (7) | 05:25 | 04:52 |
| | 16:36 | 20 | 10:18 (37) | 17:40 | | 18:38 | 25 | 18:00 (40) | 20:39 | 49 | 09:01 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:59 (37) | 07:55 | | 06:46 | | 07:39 (7) | 06:27 | | 08:14 (7) | 05:23 | 04:52 |
| | 16:38 | 19 | 10:18 (37) | 17:42 | | 18:40 | 41 | 18:00 (40) | 20:41 | 46 | 09:00 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 10:00 (37) | 07:52 | | 06:44 | | 07:34 (7) | 06:25 | | 08:14 (7) | 05:21 | 04:52 |
| | 16:40 | 17 | 10:17 (37) | 17:44 | | 18:42 | 49 | 17:59 (40) | 20:43 | 44 | 08:58 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 10:01 (37) | 07:50 | | 06:41 | | 07:31 (7) | 06:23 | | 08:15 (7) | 05:19 | 04:52 |
| | 16:42 | 16 | 10:17 (37) | 17:46 | | 18:44 | 53 | 17:58 (40) | 20:45 | 41 | 08:56 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 10:02 (37) | 07:48 | | 06:39 | | 07:28 (7) | 06:20 | | 08:17 (7) | 05:18 | 04:52 |
| | 16:44 | 14 | 10:16 (37) | 17:48 | | 18:46 | 57 | 17:57 (40) | 20:47 | 38 | 08:55 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 10:05 (37) | 07:46 | | 06:36 | | 07:26 (7) | 06:18 | | 08:17 (7) | 05:16 | 04:52 |
| | 16:46 | 10 | 10:15 (37) | 17:50 | | 18:48 | 57 | 17:55 (40) | 20:49 | 35 | 08:52 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 10:08 (37) | 07:43 | | 06:33 | | 07:24 (7) | 06:15 | | 08:20 (7) | 05:15 | 04:52 |
| | 16:48 | 4 | 10:12 (37) | 17:53 | | 18:50 | 57 | 17:53 (40) | 20:51 | 30 | 08:50 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | 06:31 | | 07:22 (7) | 06:13 | | 08:22 (7) | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | | 18:52 | 53 | 17:49 (40) | 20:53 | 25 | 08:47 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | 06:28 | | 07:21 (7) | 06:11 | | 08:25 (7) | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | | 18:54 | 49 | 08:10 (7) | 20:55 | 18 | 08:43 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 06:26 | | 07:19 (7) | 06:08 | | 08:31 (7) | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | | 18:56 | 51 | 08:10 (7) | 20:57 | 4 | 08:35 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | | 06:23 | | 07:17 (7) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | | 18:57 | 53 | 08:10 (7) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 06:21 | | 07:17 (7) | 06:04 | | | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | | 18:59 | 54 | 08:11 (7) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 06:18 | | 07:15 (7) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | | 19:01 | 56 | 08:11 (7) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | | | | 07:15 | | 08:15 (7) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | | | | | 20:03 | 57 | 09:12 (7) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:14 (7) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | | | | | 20:05 | 58 | 09:12 (7) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 08:14 (7) | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | 58 | 09:12 (7) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 445 | | | | | 987 | | | 1195 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,59 | | | | | 0,98 | | | 0,99 | | | |
| Total reduction | | 0,10 | | | | | 0,32 | | | 0,37 | | | |
| Total, real | | 44 | | | | | 313 | | | 438 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 08:09 (7) | 07:34 | | 18:16 (40) | 07:36 | | | 08:35 | | 09:37 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 57 | 09:06 (7) | 19:12 | 24 | 18:40 (40) | 16:58 | | | 16:10 | 23 | 10:00 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 08:09 (7) | 07:36 | | 18:17 (40) | 07:38 | | | 08:36 | | 09:37 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 57 | 09:06 (7) | 19:09 | 22 | 18:39 (40) | 16:55 | | | 16:09 | 24 | 10:01 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 08:08 (7) | 07:38 | | 18:17 (40) | 07:41 | | | 08:38 | | 09:38 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 59 | 09:07 (7) | 19:07 | 20 | 18:37 (40) | 16:53 | | | 16:08 | 23 | 10:01 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 08:08 (7) | 07:40 | | 18:19 (40) | 07:43 | | | 08:40 | | 09:37 (37) |
| | 22:16 | | 21:34 | | | 20:22 | 59 | 09:07 (7) | 19:04 | 16 | 18:35 (40) | 16:51 | | | 16:07 | 24 | 10:01 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 08:06 (7) | 07:42 | | 18:20 (40) | 07:45 | | | 08:41 | | 09:38 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 60 | 09:06 (7) | 19:02 | 12 | 18:32 (40) | 16:49 | | | 16:07 | 24 | 10:02 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 08:06 (7) | 07:44 | | 18:24 (40) | 07:47 | | | 08:43 | | 09:38 (37) |
| | 22:15 | | 21:30 | | | 20:16 | 60 | 09:06 (7) | 18:59 | 5 | 18:29 (40) | 16:47 | | | 16:06 | 24 | 10:02 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 08:06 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:39 (37) |
| | 22:14 | | 21:28 | | | 20:14 | 60 | 09:06 (7) | 18:57 | | | 16:45 | | | 16:05 | 24 | 10:03 (37) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 08:06 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:39 (37) |
| | 22:14 | | 21:25 | | | 20:11 | 60 | 09:06 (7) | 18:54 | | | 16:43 | | | 16:05 | 23 | 10:02 (37) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 08:06 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:40 (37) |
| | 22:13 | | 21:23 | | | 20:09 | 60 | 09:06 (7) | 18:52 | | | 16:41 | | | 16:05 | 23 | 10:03 (37) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 08:05 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:40 (37) |
| | 22:12 | | 21:21 | | | 20:06 | 60 | 09:05 (7) | 18:49 | | | 16:40 | | | 16:04 | 23 | 10:03 (37) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 08:05 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:41 (37) |
| | 22:11 | | 21:19 | | | 20:04 | 59 | 09:04 (7) | 18:47 | | | 16:38 | | | 16:04 | 24 | 10:05 (37) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 08:05 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:41 (37) |
| | 22:10 | | 21:17 | | | 20:01 | 59 | 09:04 (7) | 18:44 | | | 16:36 | | | 16:04 | 24 | 10:05 (37) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 08:05 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:42 (37) |
| | 22:09 | | 21:15 | | | 19:58 | 58 | 09:03 (7) | 18:42 | | | 16:34 | | | 16:04 | 23 | 10:05 (37) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 08:05 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:42 (37) |
| | 22:08 | | 21:12 | | | 19:56 | 58 | 09:03 (7) | 18:39 | | | 16:32 | | | 16:03 | 23 | 10:05 (37) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 08:06 (7) | 08:02 | | | 08:05 | | | 08:53 | | 09:43 (37) |
| | 22:06 | | 21:10 | | | 19:53 | 56 | 09:02 (7) | 18:37 | | | 16:31 | | | 16:03 | 22 | 10:05 (37) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 08:05 (7) | 08:04 | | | 08:07 | | | 08:54 | | 09:43 (37) |
| | 22:05 | | 21:08 | | | 19:51 | 55 | 09:00 (7) | 18:34 | | | 16:29 | | | 16:03 | 23 | 10:06 (37) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:06 (7) | 08:06 | | | 08:09 | | | 08:55 | | 09:44 (37) |
| | 22:04 | | 21:05 | | | 19:48 | 53 | 08:59 (7) | 18:32 | | | 16:27 | | | 16:04 | 22 | 10:06 (37) |
| 18 | 05:16 | | 06:11 | | 08:35 (7) | 07:10 | | 08:06 (7) | 08:08 | | | 08:11 | | | 08:56 | | 09:45 (37) |
| | 22:03 | | 21:03 | 9 | 08:44 (7) | 19:46 | 52 | 08:58 (7) | 18:29 | | | 16:26 | | | 16:04 | 22 | 10:07 (37) |
| 19 | 05:18 | | 06:13 | | 08:30 (7) | 07:12 | | 08:07 (7) | 08:10 | | | 08:13 | | | 08:57 | | 09:45 (37) |
| | 22:01 | | 21:01 | 20 | 08:50 (7) | 19:43 | 49 | 08:56 (7) | 18:27 | | | 16:24 | | | 16:04 | 22 | 10:07 (37) |
| 20 | 05:19 | | 06:15 | | 08:27 (7) | 07:13 | | 08:08 (7) | 08:12 | | | 08:15 | | 09:43 (37) | 08:57 | | 09:45 (37) |
| | 22:00 | | 20:58 | 26 | 08:53 (7) | 19:40 | 49 | 18:33 (40) | 18:25 | | | 16:23 | 4 | 09:47 (37) | 16:04 | 23 | 10:08 (37) |
| 21 | 05:21 | | 06:17 | | 08:24 (7) | 07:15 | | 08:09 (7) | 08:14 | | | 08:17 | | 09:40 (37) | 08:58 | | 09:45 (37) |
| | 21:58 | | 20:56 | 31 | 08:55 (7) | 19:38 | 56 | 18:38 (40) | 18:22 | | | 16:21 | 10 | 09:50 (37) | 16:05 | 22 | 10:07 (37) |
| 22 | 05:22 | | 06:19 | | 08:22 (7) | 07:17 | | 08:11 (7) | 08:16 | | | 08:19 | | 09:39 (37) | 08:59 | | 09:46 (37) |
| | 21:57 | | 20:54 | 35 | 08:57 (7) | 19:35 | 58 | 18:40 (40) | 18:20 | | | 16:20 | 13 | 09:52 (37) | 16:05 | 22 | 10:08 (37) |
| 23 | 05:24 | | 06:20 | | 08:20 (7) | 07:19 | | 08:12 (7) | 08:18 | | | 08:21 | | 09:38 (37) | 08:59 | | 09:46 (37) |
| | 21:55 | | 20:51 | 39 | 08:59 (7) | 19:33 | 57 | 18:41 (40) | 18:18 | | | 16:19 | 15 | 09:53 (37) | 16:06 | 22 | 10:08 (37) |
| 24 | 05:26 | | 06:22 | | 08:19 (7) | 07:21 | | 08:13 (7) | 08:20 | | | 08:23 | | 09:37 (37) | 09:00 | | 09:47 (37) |
| | 21:54 | | 20:49 | 41 | 09:00 (7) | 19:30 | 55 | 18:41 (40) | 18:15 | | | 16:17 | 17 | 09:54 (37) | 16:06 | 23 | 10:10 (37) |
| 25 | 05:27 | | 06:24 | | 08:17 (7) | 07:23 | | 08:16 (7) | 07:22 | | | 08:24 | | 09:36 (37) | 09:00 | | 09:48 (37) |
| | 21:52 | | 20:46 | 45 | 09:02 (7) | 19:27 | 50 | 18:41 (40) | 17:13 | | | 16:16 | 19 | 09:55 (37) | 16:07 | 22 | 10:10 (37) |
| 26 | 05:29 | | 06:26 | | 08:15 (7) | 07:25 | | 08:19 (7) | 07:24 | | | 08:26 | | 09:36 (37) | 09:00 | | 09:48 (37) |
| | 21:50 | | 20:44 | 47 | 09:02 (7) | 19:25 | 45 | 18:42 (40) | 17:11 | | | 16:15 | 20 | 09:56 (37) | 16:08 | 22 | 10:10 (37) |
| 27 | 05:31 | | 06:28 | | 08:14 (7) | 07:27 | | 08:27 (7) | 07:26 | | | 08:28 | | 09:36 (37) | 09:00 | | 09:48 (37) |
| | 21:49 | | 20:42 | 49 | 09:03 (7) | 19:22 | 29 | 18:42 (40) | 17:08 | | | 16:14 | 21 | 09:57 (37) | 16:08 | 23 | 10:11 (37) |
| 28 | 05:32 | | 06:30 | | 08:13 (7) | 07:29 | | 18:16 (40) | 07:28 | | | 08:30 | | 09:36 (37) | 09:01 | | 09:49 (37) |
| | 21:47 | | 20:39 | 51 | 09:04 (7) | 19:20 | 25 | 18:41 (40) | 17:06 | | | 16:13 | 22 | 09:58 (37) | 16:09 | 22 | 10:11 (37) |
| 29 | 05:34 | | 06:32 | | 08:12 (7) | 07:31 | | 18:16 (40) | 07:30 | | | 08:31 | | 09:36 (37) | 09:01 | | 09:49 (37) |
| | 21:45 | | 20:37 | 53 | 09:05 (7) | 19:17 | 25 | 18:41 (40) | 17:04 | | | 16:12 | 23 | 09:59 (37) | 16:10 | 23 | 10:12 (37) |
| 30 | 05:36 | | 06:34 | | 08:12 (7) | 07:32 | | 18:16 (40) | 07:32 | | | 08:33 | | 09:36 (37) | 09:01 | | 09:50 (37) |
| | 21:43 | | 20:34 | 54 | 09:06 (7) | 19:14 | 25 | 18:41 (40) | 17:02 | | | 16:11 | 23 | 09:59 (37) | 16:11 | 23 | 10:13 (37) |
| 31 | 05:38 | | 06:36 | | 08:10 (7) | | | | 07:34 | | | | | | 09:01 | | 09:50 (37) |
| | 21:41 | | 20:32 | 55 | 09:05 (7) | | | | 17:00 | | | | | | 16:12 | 23 | 10:13 (37) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 555 | | | 1565 | | | 99 | | | 187 | | | 710 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,98 | | | 0,97 | | | 0,59 | | | 0,59 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,07 | |
| Total, real | | | | 266 | | | 577 | | | 28 | | | 16 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:24 (37) | 07:26 | | | 07:08 | | 19:03 (40) | 05:55 | | 06:43 (7) | 05:02 | | 06:34 (7) |
| | 16:14 | | | 17:08 | 25 | 09:49 (37) | 18:07 | | | 20:09 | 27 | 19:30 (40) | 21:08 | 37 | 07:20 (7) | 22:02 | 53 | 07:27 (7) |
| 2 | 09:00 | | | 08:26 | | 09:24 (37) | 07:24 | | | 07:05 | | 19:03 (40) | 05:53 | | 06:40 (7) | 05:01 | | 06:35 (7) |
| | 16:15 | | | 17:10 | 25 | 09:49 (37) | 18:09 | | | 20:11 | 27 | 19:30 (40) | 21:10 | 40 | 07:20 (7) | 22:03 | 52 | 07:27 (7) |
| 3 | 09:00 | | | 08:24 | | 09:25 (37) | 07:22 | | | 07:03 | | 19:03 (40) | 05:50 | | 06:39 (7) | 05:00 | | 06:35 (7) |
| | 16:16 | | | 17:12 | 24 | 09:49 (37) | 18:11 | | | 20:13 | 26 | 19:29 (40) | 21:12 | 42 | 07:21 (7) | 22:05 | 52 | 07:27 (7) |
| 4 | 09:00 | | | 08:22 | | 09:25 (37) | 07:19 | | | 07:00 | | 19:03 (40) | 05:48 | | 06:38 (7) | 04:59 | | 06:36 (7) |
| | 16:17 | | | 17:14 | 22 | 09:47 (37) | 18:13 | | | 20:15 | 24 | 19:27 (40) | 21:14 | 44 | 07:22 (7) | 22:06 | 52 | 07:28 (7) |
| 5 | 08:59 | | | 08:20 | | 09:26 (37) | 07:17 | | | 06:57 | | 19:04 (40) | 05:46 | | 06:37 (7) | 04:58 | | 06:36 (7) |
| | 16:19 | | | 17:16 | 20 | 09:46 (37) | 18:15 | | | 20:17 | 23 | 19:27 (40) | 21:16 | 46 | 07:23 (7) | 22:07 | 51 | 07:27 (7) |
| 6 | 08:59 | | | 08:18 | | 09:28 (37) | 07:14 | | | 06:55 | | 19:04 (40) | 05:44 | | 06:37 (7) | 04:57 | | 06:36 (7) |
| | 16:20 | | | 17:19 | 17 | 09:45 (37) | 18:17 | | | 20:19 | 21 | 19:25 (40) | 21:18 | 48 | 07:25 (7) | 22:08 | 51 | 07:27 (7) |
| 7 | 08:58 | | | 08:16 | | 09:30 (37) | 07:12 | | | 06:52 | | 19:06 (40) | 05:42 | | 06:36 (7) | 04:56 | | 06:37 (7) |
| | 16:21 | | | 17:21 | 14 | 09:44 (37) | 18:19 | | | 20:21 | 17 | 19:23 (40) | 21:20 | 49 | 07:25 (7) | 22:09 | 50 | 07:27 (7) |
| 8 | 08:58 | | | 08:14 | | 09:32 (37) | 07:09 | | | 06:50 | | 19:08 (40) | 05:40 | | 06:35 (7) | 04:56 | | 06:37 (7) |
| | 16:23 | | | 17:23 | 9 | 09:41 (37) | 18:22 | | | 20:23 | 12 | 19:20 (40) | 21:22 | 51 | 07:26 (7) | 22:10 | 50 | 07:27 (7) |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | | 06:47 | | 19:13 (40) | 05:38 | | 06:35 (7) | 04:55 | | 06:37 (7) |
| | 16:24 | | | 17:25 | | | 18:24 | | | 20:25 | 3 | 19:16 (40) | 21:24 | 51 | 07:26 (7) | 22:11 | 50 | 07:27 (7) |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:34 (7) | 04:54 | | 06:37 (7) |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 52 | 07:26 (7) | 22:12 | 50 | 07:27 (7) |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:33 (7) | 04:54 | | 06:38 (7) |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 53 | 07:26 (7) | 22:13 | 49 | 07:27 (7) |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:34 (7) | 04:53 | | 06:39 (7) |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 53 | 07:27 (7) | 22:14 | 48 | 07:27 (7) |
| 13 | 08:54 | | | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:33 (7) | 04:53 | | 06:38 (7) |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 54 | 07:27 (7) | 22:15 | 49 | 07:27 (7) |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:32 (7) | 04:53 | | 06:39 (7) |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 55 | 07:27 (7) | 22:15 | 48 | 07:27 (7) |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:33 (7) | 04:52 | | 06:39 (7) |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 55 | 07:28 (7) | 22:16 | 48 | 07:27 (7) |
| 16 | 08:51 | | 09:28 (37) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:32 (7) | 04:52 | | 06:40 (7) |
| | 16:36 | 8 | 09:36 (37) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 56 | 07:28 (7) | 22:17 | 47 | 07:27 (7) |
| 17 | 08:50 | | 09:27 (37) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:32 (7) | 04:52 | | 06:40 (7) |
| | 16:38 | 12 | 09:39 (37) | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 55 | 07:27 (7) | 22:17 | 48 | 07:28 (7) |
| 18 | 08:49 | | 09:25 (37) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:32 (7) | 04:52 | | 06:40 (7) |
| | 16:40 | 15 | 09:40 (37) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 56 | 07:28 (7) | 22:18 | 48 | 07:28 (7) |
| 19 | 08:47 | | 09:25 (37) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:32 (7) | 04:52 | | 06:40 (7) |
| | 16:42 | 17 | 09:42 (37) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 56 | 07:28 (7) | 22:18 | 48 | 07:28 (7) |
| 20 | 08:46 | | 09:24 (37) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | 06:32 (7) | 04:52 | | 06:41 (7) |
| | 16:44 | 19 | 09:43 (37) | 17:48 | | | 18:46 | | | 20:47 | | | 21:44 | 56 | 07:28 (7) | 22:18 | 47 | 07:28 (7) |
| 21 | 08:45 | | 09:24 (37) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:32 (7) | 04:52 | | 06:41 (7) |
| | 16:46 | 20 | 09:44 (37) | 17:50 | | | 18:48 | | | 20:49 | | | 21:45 | 57 | 07:29 (7) | 22:19 | 47 | 07:28 (7) |
| 22 | 08:43 | | 09:23 (37) | 07:43 | | | 06:33 | | | 06:15 | | | 05:15 | | 06:32 (7) | 04:52 | | 06:41 (7) |
| | 16:48 | 22 | 09:45 (37) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 56 | 07:28 (7) | 22:19 | 47 | 07:28 (7) |
| 23 | 08:42 | | 09:22 (37) | 07:41 | | | 06:31 | | 18:16 (40) | 06:13 | | | 05:13 | | 06:32 (7) | 04:53 | | 06:42 (7) |
| | 16:50 | 23 | 09:45 (37) | 17:55 | | | 18:52 | 7 | 18:23 (40) | 20:53 | | | 21:49 | 56 | 07:28 (7) | 22:19 | 47 | 07:29 (7) |
| 24 | 08:41 | | 09:23 (37) | 07:38 | | | 06:28 | | 18:12 (40) | 06:11 | | | 05:12 | | 06:33 (7) | 04:53 | | 06:41 (7) |
| | 16:51 | 24 | 09:47 (37) | 17:57 | | | 18:54 | 15 | 18:27 (40) | 20:55 | | | 21:50 | 55 | 07:28 (7) | 22:19 | 48 | 07:29 (7) |
| 25 | 08:39 | | 09:22 (37) | 07:36 | | | 06:26 | | 18:09 (40) | 06:08 | | | 05:10 | | 06:32 (7) | 04:53 | | 06:42 (7) |
| | 16:53 | 25 | 09:47 (37) | 17:59 | | | 18:56 | 19 | 18:28 (40) | 20:57 | | | 21:52 | 56 | 07:28 (7) | 22:19 | 48 | 07:30 (7) |
| 26 | 08:37 | | 09:22 (37) | 07:34 | | | 06:23 | | 18:07 (40) | 06:06 | | 06:56 (7) | 05:09 | | 06:33 (7) | 04:54 | | 06:42 (7) |
| | 16:56 | 26 | 09:48 (37) | 18:01 | | | 18:57 | 22 | 18:29 (40) | 20:59 | 12 | 07:08 (7) | 21:53 | 55 | 07:28 (7) | 22:19 | 48 | 07:30 (7) |
| 27 | 08:36 | | 09:22 (37) | 07:31 | | | 06:21 | | 18:07 (40) | 06:04 | | 06:51 (7) | 05:08 | | 06:33 (7) | 04:54 | | 06:41 (7) |
| | 16:58 | 26 | 09:48 (37) | 18:03 | | | 18:59 | 23 | 18:30 (40) | 21:01 | 21 | 07:12 (7) | 21:55 | 55 | 07:28 (7) | 22:19 | 48 | 07:29 (7) |
| 28 | 08:34 | | 09:22 (37) | 07:29 | | | 06:18 | | 18:05 (40) | 06:02 | | 06:49 (7) | 05:06 | | 06:33 (7) | 04:55 | | 06:42 (7) |
| | 17:00 | 26 | 09:48 (37) | 18:05 | | | 19:01 | 25 | 18:30 (40) | 21:03 | 26 | 07:15 (7) | 21:56 | 55 | 07:28 (7) | 22:19 | 48 | 07:30 (7) |
| 29 | 08:33 | | 09:23 (37) | | | | 07:15 | | 19:05 (40) | 05:59 | | 06:46 (7) | 05:05 | | 06:34 (7) | 04:55 | | 06:43 (7) |
| | 17:02 | 26 | 09:49 (37) | | | | 20:03 | 26 | 19:31 (40) | 21:05 | 31 | 07:17 (7) | 21:58 | 54 | 07:28 (7) | 22:18 | 48 | 07:31 (7) |
| 30 | 08:31 | | 09:23 (37) | | | | 07:13 | | 19:04 (40) | 05:57 | | 06:44 (7) | 05:04 | | 06:34 (7) | 04:56 | | 06:42 (7) |
| | 17:04 | 26 | 09:49 (37) | | | | 20:05 | 26 | 19:30 (40) | 21:06 | 35 | 07:19 (7) | 21:59 | 54 | 07:28 (7) | 22:18 | 49 | 07:31 (7) |
| 31 | 08:29 | | 09:23 (37) | | | | 07:10 | | 19:04 (40) | | | | 05:03 | | 06:34 (7) | | | |
| | 17:06 | 26 | 09:49 (37) | | | | 20:07 | 27 | 19:31 (40) | | | | 22:01 | 54 | 07:28 (7) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 341 | | | 156 | | | 190 | | | 305 | | | 1616 | | | 1469 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,71 | | | 0,71 | | | 1,00 | | | 0,98 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,13 | | | 0,17 | | | 0,33 | | | 0,38 | | | 0,48 | | | 0,45 | |
| Total, real | | 43 | | | 27 | | | 63 | | | 115 | | | 779 | | | 661 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:42 (7) | 05:39 | | 06:44 (7) | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | |
| | 22:18 | 49 | 07:31 (7) | 21:40 | 54 | 07:38 (7) | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | |
| 2 | 04:57 | | 06:43 (7) | 05:41 | | 06:44 (7) | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | |
| | 22:17 | 49 | 07:32 (7) | 21:38 | 53 | 07:37 (7) | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | |
| 3 | 04:58 | | 06:42 (7) | 05:43 | | 06:44 (7) | 06:41 | | 19:11 (40) | 07:38 | | 07:41 | | 09:02 (37) | 08:38 | |
| | 22:17 | 50 | 07:32 (7) | 21:36 | 52 | 07:36 (7) | 20:24 | 3 | 19:14 (40) | 19:07 | | 16:53 | 9 | 09:11 (37) | 16:08 | |
| 4 | 04:59 | | 06:42 (7) | 05:45 | | 06:45 (7) | 06:43 | | 19:06 (40) | 07:40 | | 07:43 | | 08:59 (37) | 08:40 | |
| | 22:16 | 50 | 07:32 (7) | 21:34 | 51 | 07:36 (7) | 20:22 | 12 | 19:18 (40) | 19:04 | | 16:51 | 15 | 09:14 (37) | 16:07 | |
| 5 | 05:00 | | 06:42 (7) | 05:47 | | 06:45 (7) | 06:45 | | 19:02 (40) | 07:42 | | 07:45 | | 08:57 (37) | 08:41 | |
| | 22:16 | 51 | 07:33 (7) | 21:32 | 50 | 07:35 (7) | 20:19 | 17 | 19:19 (40) | 19:02 | | 16:49 | 18 | 09:15 (37) | 16:07 | |
| 6 | 05:01 | | 06:42 (7) | 05:49 | | 06:46 (7) | 06:47 | | 19:01 (40) | 07:44 | | 07:47 | | 08:57 (37) | 08:43 | |
| | 22:15 | 51 | 07:33 (7) | 21:30 | 48 | 07:34 (7) | 20:16 | 20 | 19:21 (40) | 18:59 | | 16:47 | 20 | 09:17 (37) | 16:06 | |
| 7 | 05:02 | | 06:42 (7) | 05:50 | | 06:47 (7) | 06:49 | | 18:59 (40) | 07:46 | | 07:49 | | 08:56 (37) | 08:44 | |
| | 22:14 | 51 | 07:33 (7) | 21:28 | 47 | 07:34 (7) | 20:14 | 23 | 19:22 (40) | 18:57 | | 16:45 | 22 | 09:18 (37) | 16:06 | |
| 8 | 05:03 | | 06:42 (7) | 05:52 | | 06:48 (7) | 06:51 | | 18:58 (40) | 07:48 | | 07:51 | | 08:55 (37) | 08:45 | |
| | 22:14 | 52 | 07:34 (7) | 21:25 | 45 | 07:33 (7) | 20:11 | 24 | 19:22 (40) | 18:54 | | 16:43 | 23 | 09:18 (37) | 16:05 | |
| 9 | 05:04 | | 06:42 (7) | 05:54 | | 06:48 (7) | 06:53 | | 18:57 (40) | 07:50 | | 07:53 | | 08:54 (37) | 08:47 | |
| | 22:13 | 52 | 07:34 (7) | 21:23 | 43 | 07:31 (7) | 20:09 | 26 | 19:23 (40) | 18:52 | | 16:41 | 25 | 09:19 (37) | 16:05 | |
| 10 | 05:05 | | 06:42 (7) | 05:56 | | 06:49 (7) | 06:55 | | 18:56 (40) | 07:52 | | 07:55 | | 08:55 (37) | 08:48 | |
| | 22:12 | 53 | 07:35 (7) | 21:21 | 42 | 07:31 (7) | 20:06 | 26 | 19:22 (40) | 18:49 | | 16:40 | 25 | 09:20 (37) | 16:04 | |
| 11 | 05:07 | | 06:42 (7) | 05:58 | | 06:50 (7) | 06:56 | | 18:55 (40) | 07:54 | | 07:57 | | 08:54 (37) | 08:49 | |
| | 22:11 | 53 | 07:35 (7) | 21:19 | 40 | 07:30 (7) | 20:04 | 27 | 19:22 (40) | 18:47 | | 16:38 | 26 | 09:20 (37) | 16:04 | |
| 12 | 05:08 | | 06:43 (7) | 06:00 | | 06:51 (7) | 06:58 | | 18:55 (40) | 07:56 | | 07:59 | | 08:54 (37) | 08:50 | |
| | 22:10 | 53 | 07:36 (7) | 21:17 | 36 | 07:27 (7) | 20:01 | 27 | 19:22 (40) | 18:44 | | 16:36 | 26 | 09:20 (37) | 16:04 | |
| 13 | 05:09 | | 06:42 (7) | 06:02 | | 06:52 (7) | 07:00 | | 18:55 (40) | 07:58 | | 08:01 | | 08:54 (37) | 08:51 | |
| | 22:09 | 54 | 07:36 (7) | 21:15 | 34 | 07:26 (7) | 19:58 | 27 | 19:22 (40) | 18:42 | | 16:34 | 26 | 09:20 (37) | 16:04 | |
| 14 | 05:11 | | 06:42 (7) | 06:03 | | 06:54 (7) | 07:02 | | 18:55 (40) | 08:00 | | 08:03 | | 08:55 (37) | 08:52 | |
| | 22:08 | 54 | 07:36 (7) | 21:12 | 30 | 07:24 (7) | 19:56 | 26 | 19:21 (40) | 18:39 | | 16:32 | 26 | 09:21 (37) | 16:03 | |
| 15 | 05:12 | | 06:42 (7) | 06:05 | | 06:57 (7) | 07:04 | | 18:55 (40) | 08:02 | | 08:05 | | 08:55 (37) | 08:53 | |
| | 22:06 | 54 | 07:36 (7) | 21:10 | 25 | 07:22 (7) | 19:53 | 25 | 19:20 (40) | 18:37 | | 16:31 | 26 | 09:21 (37) | 16:03 | |
| 16 | 05:13 | | 06:43 (7) | 06:07 | | 07:00 (7) | 07:06 | | 18:55 (40) | 08:04 | | 08:07 | | 08:55 (37) | 08:54 | |
| | 22:05 | 54 | 07:37 (7) | 21:08 | 19 | 07:19 (7) | 19:51 | 24 | 19:19 (40) | 18:34 | | 16:29 | 26 | 09:21 (37) | 16:03 | |
| 17 | 05:15 | | 06:42 (7) | 06:09 | | 07:04 (7) | 07:08 | | 18:56 (40) | 08:06 | | 08:09 | | 08:55 (37) | 08:55 | |
| | 22:04 | 55 | 07:37 (7) | 21:05 | 9 | 07:13 (7) | 19:48 | 21 | 19:17 (40) | 18:32 | | 16:27 | 25 | 09:20 (37) | 16:04 | |
| 18 | 05:16 | | 06:42 (7) | 06:11 | | | 07:10 | | 18:57 (40) | 08:08 | | 08:11 | | 08:57 (37) | 08:56 | |
| | 22:03 | 55 | 07:37 (7) | 21:03 | | | 19:46 | 19 | 19:16 (40) | 18:29 | | 16:26 | 24 | 09:21 (37) | 16:04 | |
| 19 | 05:18 | | 06:42 (7) | 06:13 | | | 07:12 | | 18:58 (40) | 08:10 | | 08:13 | | 08:57 (37) | 08:57 | |
| | 22:01 | 56 | 07:38 (7) | 21:01 | | | 19:43 | 16 | 19:14 (40) | 18:27 | | 16:24 | 23 | 09:20 (37) | 16:04 | |
| 20 | 05:19 | | 06:42 (7) | 06:15 | | | 07:13 | | 19:01 (40) | 08:12 | | 08:15 | | 08:58 (37) | 08:57 | |
| | 22:00 | 56 | 07:38 (7) | 20:58 | | | 19:40 | 9 | 19:10 (40) | 18:25 | | 16:23 | 22 | 09:20 (37) | 16:04 | |
| 21 | 05:21 | | 06:42 (7) | 06:17 | | | 07:15 | | | 08:14 | | 08:17 | | 08:59 (37) | 08:58 | |
| | 21:58 | 56 | 07:38 (7) | 20:56 | | | 19:38 | | | 18:22 | | 16:21 | 20 | 09:19 (37) | 16:05 | |
| 22 | 05:22 | | 06:42 (7) | 06:19 | | | 07:17 | | | 08:16 | | 08:19 | | 09:00 (37) | 08:59 | |
| | 21:57 | 56 | 07:38 (7) | 20:54 | | | 19:35 | | | 18:20 | | 16:20 | 19 | 09:19 (37) | 16:05 | |
| 23 | 05:24 | | 06:42 (7) | 06:21 | | | 07:19 | | | 08:18 | | 08:21 | | 09:01 (37) | 08:59 | |
| | 21:55 | 56 | 07:38 (7) | 20:51 | | | 19:33 | | | 18:18 | | 16:19 | 17 | 09:18 (37) | 16:06 | |
| 24 | 05:26 | | 06:42 (7) | 06:22 | | | 07:21 | | | 08:20 | | 08:23 | | 09:02 (37) | 09:00 | |
| | 21:54 | 56 | 07:38 (7) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | 15 | 09:17 (37) | 16:06 | |
| 25 | 05:27 | | 06:42 (7) | 06:24 | | | 07:23 | | | 07:22 | | 08:24 | | 09:04 (37) | 09:00 | |
| | 21:52 | 56 | 07:38 (7) | 20:46 | | | 19:27 | | | 17:13 | | 16:16 | 12 | 09:16 (37) | 16:07 | |
| 26 | 05:29 | | 06:42 (7) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | | 09:06 (37) | 09:00 | |
| | 21:50 | 56 | 07:38 (7) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | 8 | 09:14 (37) | 16:08 | |
| 27 | 05:31 | | 06:43 (7) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 | |
| | 21:49 | 56 | 07:39 (7) | 20:42 | | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 06:43 (7) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 | |
| | 21:47 | 55 | 07:38 (7) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 | |
| 29 | 05:34 | | 06:43 (7) | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 | |
| | 21:45 | 55 | 07:38 (7) | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 | |
| 30 | 05:36 | | 06:43 (7) | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 | |
| | 21:43 | 54 | 07:37 (7) | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 | |
| 31 | 05:38 | | 06:43 (7) | 06:36 | | | | | | 07:34 | | | | | 09:01 | |
| | 21:41 | 55 | 07:38 (7) | 20:32 | | | | | | 17:00 | | | | | 16:12 | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 | |
| Total, worst case | | 1663 | | | 678 | | | 372 | | | | | 498 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 1,00 | | | | | 0,71 | | | |
| Total reduction | | 0,45 | | | 0,48 | | | 0,39 | | | | | 0,11 | | | |
| Total, real | | 753 | | | 326 | | | 144 | | | | | 55 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:31 (37) | 07:26 | | | 07:08 | | 19:03 (40) | 05:55 | | 06:46 (7) | 05:02 | | 06:31 (7) |
| | 16:14 | | | 17:08 | 24 | 09:55 (37) | 18:07 | | | 20:09 | 26 | 19:29 (40) | 21:08 | 31 | 07:17 (7) | 22:02 | 60 | 07:31 (7) |
| 2 | 09:00 | | | 08:26 | | 09:31 (37) | 07:24 | | | 07:05 | | 19:04 (40) | 05:53 | | 06:43 (7) | 05:01 | | 06:31 (7) |
| | 16:15 | | | 17:10 | 23 | 09:54 (37) | 18:09 | | | 20:11 | 25 | 19:29 (40) | 21:10 | 35 | 07:18 (7) | 22:03 | 60 | 07:31 (7) |
| 3 | 09:00 | | | 08:24 | | 09:32 (37) | 07:22 | | | 07:03 | | 19:04 (40) | 05:50 | | 06:41 (7) | 05:00 | | 06:31 (7) |
| | 16:16 | | | 17:12 | 22 | 09:54 (37) | 18:11 | | | 20:13 | 24 | 19:28 (40) | 21:12 | 38 | 07:19 (7) | 22:05 | 59 | 07:30 (7) |
| 4 | 09:00 | | | 08:22 | | 09:33 (37) | 07:19 | | | 07:00 | | 19:04 (40) | 05:48 | | 06:39 (7) | 04:59 | | 06:32 (7) |
| | 16:17 | | | 17:14 | 19 | 09:52 (37) | 18:13 | | | 20:15 | 22 | 19:26 (40) | 21:14 | 41 | 07:20 (7) | 22:06 | 59 | 07:31 (7) |
| 5 | 08:59 | | | 08:20 | | 09:34 (37) | 07:17 | | | 06:57 | | 19:05 (40) | 05:46 | | 06:38 (7) | 04:58 | | 06:32 (7) |
| | 16:19 | | | 17:16 | 17 | 09:51 (37) | 18:15 | | | 20:17 | 20 | 19:25 (40) | 21:16 | 44 | 07:22 (7) | 22:07 | 59 | 07:31 (7) |
| 6 | 08:59 | | | 08:18 | | 09:37 (37) | 07:14 | | | 06:55 | | 19:06 (40) | 05:44 | | 06:38 (7) | 04:57 | | 06:32 (7) |
| | 16:20 | | | 17:19 | 12 | 09:49 (37) | 18:17 | | | 20:19 | 17 | 19:23 (40) | 21:18 | 45 | 07:23 (7) | 22:08 | 59 | 07:31 (7) |
| 7 | 08:58 | | | 08:16 | | 09:41 (37) | 07:12 | | | 06:52 | | 19:08 (40) | 05:42 | | 06:37 (7) | 04:56 | | 06:33 (7) |
| | 16:21 | | | 17:21 | 3 | 09:44 (37) | 18:19 | | | 20:21 | 13 | 19:21 (40) | 21:20 | 47 | 07:24 (7) | 22:09 | 58 | 07:31 (7) |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | | 06:50 | | 19:12 (40) | 05:40 | | 06:36 (7) | 04:56 | | 06:32 (7) |
| | 16:23 | | | 17:23 | | | 18:22 | | | 20:23 | 4 | 19:16 (40) | 21:22 | 49 | 07:25 (7) | 22:10 | 59 | 07:31 (7) |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | | 06:35 (7) | 04:55 | | 06:33 (7) |
| | 16:24 | | | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 50 | 07:25 (7) | 22:11 | 58 | 07:31 (7) |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:34 (7) | 04:54 | | 06:33 (7) |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 52 | 07:26 (7) | 22:12 | 58 | 07:31 (7) |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:33 (7) | 04:54 | | 06:33 (7) |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 53 | 07:26 (7) | 22:13 | 58 | 07:31 (7) |
| 12 | 08:55 | | 09:35 (37) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:33 (7) | 04:53 | | 06:34 (7) |
| | 16:29 | 3 | 09:38 (37) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 55 | 07:28 (7) | 22:14 | 58 | 07:32 (7) |
| 13 | 08:54 | | 09:33 (37) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:32 (7) | 04:53 | | 06:34 (7) |
| | 16:31 | 9 | 09:42 (37) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 56 | 07:28 (7) | 22:15 | 57 | 07:31 (7) |
| 14 | 08:53 | | 09:32 (37) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:31 (7) | 04:53 | | 06:34 (7) |
| | 16:33 | 12 | 09:44 (37) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 57 | 07:28 (7) | 22:15 | 57 | 07:31 (7) |
| 15 | 08:52 | | 09:30 (37) | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:32 (7) | 04:52 | | 06:34 (7) |
| | 16:34 | 15 | 09:45 (37) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 57 | 07:29 (7) | 22:16 | 58 | 07:32 (7) |
| 16 | 08:51 | | 09:30 (37) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:31 (7) | 04:52 | | 06:35 (7) |
| | 16:36 | 17 | 09:47 (37) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 58 | 07:29 (7) | 22:17 | 57 | 07:32 (7) |
| 17 | 08:50 | | 09:29 (37) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:30 (7) | 04:52 | | 06:35 (7) |
| | 16:38 | 20 | 09:49 (37) | 17:42 | | | 18:40 | | | 20:41 | | | 21:38 | 59 | 07:29 (7) | 22:17 | 57 | 07:32 (7) |
| 18 | 08:49 | | 09:28 (37) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:30 (7) | 04:52 | | 06:35 (7) |
| | 16:40 | 21 | 09:49 (37) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 59 | 07:29 (7) | 22:18 | 57 | 07:32 (7) |
| 19 | 08:47 | | 09:29 (37) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:30 (7) | 04:52 | | 06:36 (7) |
| | 16:42 | 22 | 09:51 (37) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 59 | 07:29 (7) | 22:18 | 56 | 07:32 (7) |
| 20 | 08:46 | | 09:28 (37) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | 06:30 (7) | 04:52 | | 06:36 (7) |
| | 16:44 | 23 | 09:51 (37) | 17:48 | | | 18:46 | | | 20:47 | | | 21:44 | 60 | 07:30 (7) | 22:18 | 56 | 07:32 (7) |
| 21 | 08:45 | | 09:28 (37) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:30 (7) | 04:52 | | 06:36 (7) |
| | 16:46 | 24 | 09:52 (37) | 17:50 | | | 18:48 | | | 20:49 | | | 21:45 | 60 | 07:30 (7) | 22:19 | 57 | 07:33 (7) |
| 22 | 08:43 | | 09:28 (37) | 07:43 | | | 06:33 | | | 06:15 | | | 05:15 | | 06:30 (7) | 04:52 | | 06:36 (7) |
| | 16:48 | 25 | 09:53 (37) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 60 | 07:30 (7) | 22:19 | 56 | 07:32 (7) |
| 23 | 08:42 | | 09:27 (37) | 07:41 | | | 06:31 | | 18:14 (40) | 06:13 | | | 05:13 | | 06:30 (7) | 04:53 | | 06:37 (7) |
| | 16:50 | 26 | 09:53 (37) | 17:55 | | | 18:52 | 10 | 18:24 (40) | 20:53 | | | 21:49 | 60 | 07:30 (7) | 22:19 | 56 | 07:33 (7) |
| 24 | 08:41 | | 09:28 (37) | 07:38 | | | 06:28 | | 18:11 (40) | 06:11 | | | 05:12 | | 06:30 (7) | 04:53 | | 06:36 (7) |
| | 16:51 | 26 | 09:54 (37) | 17:57 | | | 18:54 | 16 | 18:27 (40) | 20:55 | | | 21:50 | 61 | 07:31 (7) | 22:19 | 57 | 07:33 (7) |
| 25 | 08:39 | | 09:28 (37) | 07:36 | | | 06:26 | | 18:09 (40) | 06:08 | | | 05:10 | | 06:29 (7) | 04:53 | | 06:37 (7) |
| | 16:53 | 26 | 09:54 (37) | 17:59 | | | 18:56 | 19 | 18:28 (40) | 20:57 | | | 21:52 | 61 | 07:30 (7) | 22:19 | 57 | 07:34 (7) |
| 26 | 08:37 | | 09:28 (37) | 07:34 | | | 06:23 | | 18:07 (40) | 06:06 | | | 05:09 | | 06:30 (7) | 04:54 | | 06:37 (7) |
| | 16:56 | 27 | 09:55 (37) | 18:01 | | | 18:57 | 22 | 18:29 (40) | 20:59 | | | 21:53 | 60 | 07:30 (7) | 22:19 | 57 | 07:34 (7) |
| 27 | 08:36 | | 09:28 (37) | 07:31 | | | 06:21 | | 18:06 (40) | 06:04 | | | 05:08 | | 06:30 (7) | 04:54 | | 06:37 (7) |
| | 16:58 | 27 | 09:55 (37) | 18:03 | | | 18:59 | 24 | 18:30 (40) | 21:01 | | | 21:55 | 60 | 07:30 (7) | 22:19 | 57 | 07:34 (7) |
| 28 | 08:34 | | 09:28 (37) | 07:29 | | | 06:18 | | 18:05 (40) | 06:01 | | 06:56 (7) | 05:06 | | 06:30 (7) | 04:55 | | 06:37 (7) |
| | 17:00 | 27 | 09:55 (37) | 18:05 | | | 19:01 | 25 | 18:30 (40) | 21:03 | 11 | 07:07 (7) | 21:56 | 61 | 07:31 (7) | 22:19 | 58 | 07:35 (7) |
| 29 | 08:33 | | 09:29 (37) | | | | 07:15 | | 19:05 (40) | 05:59 | | 06:51 (7) | 05:05 | | 06:30 (7) | 04:55 | | 06:38 (7) |
| | 17:02 | 27 | 09:56 (37) | | | | 20:03 | 25 | 19:30 (40) | 21:05 | 21 | 07:12 (7) | 21:58 | 61 | 07:31 (7) | 22:18 | 57 | 07:35 (7) |
| 30 | 08:31 | | 09:29 (37) | | | | 07:13 | | 19:04 (40) | 05:57 | | 06:48 (7) | 05:04 | | 06:31 (7) | 04:56 | | 06:37 (7) |
| | 17:04 | 26 | 09:55 (37) | | | | 20:05 | 26 | 19:30 (40) | 21:06 | 27 | 07:15 (7) | 21:59 | 60 | 07:31 (7) | 22:18 | 58 | 07:35 (7) |
| 31 | 08:29 | | 09:30 (37) | | | | 07:10 | | 19:04 (40) | | | | 05:03 | | 06:31 (7) | | | |
| | 17:06 | 25 | 09:55 (37) | | | | 20:07 | 26 | 19:30 (40) | | | | 22:01 | 60 | 07:31 (7) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 428 | | | 120 | | | 193 | | | 210 | | | 1669 | | | 1730 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,69 | | | 1,00 | | | 0,98 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,33 | | | 0,38 | | | 0,48 | | | 0,45 | |
| Total, real | | 52 | | | 20 | | | 64 | | | 79 | | | 798 | | | 773 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:38 (7) | 05:39 | | 06:43 (7) | 06:38 | | | 07:34 | | 07:36 | | | 08:35 |
| | 22:18 | 57 | 07:35 (7) | 21:40 | 55 | 07:38 (7) | 20:29 | | | 19:12 | | 16:58 | | | 16:10 |
| 2 | 04:57 | | 06:38 (7) | 05:41 | | 06:43 (7) | 06:39 | | | 07:36 | | 07:38 | | | 08:36 |
| | 22:17 | 58 | 07:36 (7) | 21:38 | 53 | 07:36 (7) | 20:27 | | | 19:09 | | 16:55 | | | 16:09 |
| 3 | 04:58 | | 06:37 (7) | 05:43 | | 06:44 (7) | 06:41 | | | 07:38 | | 07:41 | | | 08:38 |
| | 22:17 | 59 | 07:36 (7) | 21:36 | 52 | 07:36 (7) | 20:24 | | | 19:07 | | 16:53 | | | 16:08 |
| 4 | 04:59 | | 06:38 (7) | 05:45 | | 06:45 (7) | 06:43 | | 19:10 (40) | 07:40 | | 07:43 | | 09:10 (37) | 08:40 |
| | 22:16 | 58 | 07:36 (7) | 21:34 | 51 | 07:36 (7) | 20:22 | 4 | 19:14 (40) | 19:04 | | 16:51 | 5 | 09:15 (37) | 16:07 |
| 5 | 05:00 | | 06:38 (7) | 05:47 | | 06:45 (7) | 06:45 | | 19:04 (40) | 07:42 | | 07:45 | | 09:06 (37) | 08:41 |
| | 22:16 | 58 | 07:36 (7) | 21:32 | 49 | 07:34 (7) | 20:19 | 13 | 19:17 (40) | 19:02 | | 16:49 | 13 | 09:19 (37) | 16:07 |
| 6 | 05:01 | | 06:38 (7) | 05:49 | | 06:46 (7) | 06:47 | | 19:02 (40) | 07:44 | | 07:47 | | 09:05 (37) | 08:43 |
| | 22:15 | 59 | 07:37 (7) | 21:30 | 47 | 07:33 (7) | 20:16 | 17 | 19:19 (40) | 18:59 | | 16:47 | 16 | 09:21 (37) | 16:06 |
| 7 | 05:02 | | 06:38 (7) | 05:50 | | 06:47 (7) | 06:49 | | 19:00 (40) | 07:46 | | 07:49 | | 09:03 (37) | 08:44 |
| | 22:14 | 59 | 07:37 (7) | 21:28 | 46 | 07:33 (7) | 20:14 | 20 | 19:20 (40) | 18:57 | | 16:45 | 20 | 09:23 (37) | 16:06 |
| 8 | 05:03 | | 06:38 (7) | 05:52 | | 06:49 (7) | 06:51 | | 18:59 (40) | 07:48 | | 07:51 | | 09:02 (37) | 08:45 |
| | 22:14 | 59 | 07:37 (7) | 21:25 | 43 | 07:32 (7) | 20:11 | 22 | 19:21 (40) | 18:54 | | 16:43 | 22 | 09:24 (37) | 16:05 |
| 9 | 05:04 | | 06:38 (7) | 05:54 | | 06:49 (7) | 06:53 | | 18:58 (40) | 07:50 | | 07:53 | | 09:01 (37) | 08:47 |
| | 22:13 | 60 | 07:38 (7) | 21:23 | 40 | 07:29 (7) | 20:09 | 24 | 19:22 (40) | 18:52 | | 16:41 | 23 | 09:24 (37) | 16:05 |
| 10 | 05:05 | | 06:38 (7) | 05:56 | | 06:51 (7) | 06:55 | | 18:56 (40) | 07:52 | | 07:55 | | 09:01 (37) | 08:48 |
| | 22:12 | 60 | 07:38 (7) | 21:21 | 37 | 07:28 (7) | 20:06 | 25 | 19:21 (40) | 18:49 | | 16:40 | 25 | 09:26 (37) | 16:04 |
| 11 | 05:07 | | 06:38 (7) | 05:58 | | 06:53 (7) | 06:56 | | 18:56 (40) | 07:54 | | 07:57 | | 09:01 (37) | 08:49 |
| | 22:11 | 60 | 07:38 (7) | 21:19 | 34 | 07:27 (7) | 20:04 | 25 | 19:21 (40) | 18:47 | | 16:38 | 25 | 09:26 (37) | 16:04 |
| 12 | 05:08 | | 06:39 (7) | 06:00 | | 06:54 (7) | 06:58 | | 18:55 (40) | 07:56 | | 07:59 | | 09:00 (37) | 08:50 |
| | 22:10 | 60 | 07:39 (7) | 21:17 | 30 | 07:24 (7) | 20:01 | 26 | 19:21 (40) | 18:44 | | 16:36 | 26 | 09:26 (37) | 16:04 |
| 13 | 05:09 | | 06:39 (7) | 06:02 | | 06:56 (7) | 07:00 | | 18:55 (40) | 07:58 | | 08:01 | | 09:00 (37) | 08:51 |
| | 22:09 | 60 | 07:39 (7) | 21:15 | 25 | 07:21 (7) | 19:58 | 26 | 19:21 (40) | 18:42 | | 16:34 | 27 | 09:27 (37) | 16:04 |
| 14 | 05:11 | | 06:39 (7) | 06:03 | | 07:00 (7) | 07:02 | | 18:55 (40) | 08:00 | | 08:03 | | 09:01 (37) | 08:52 |
| | 22:08 | 60 | 07:39 (7) | 21:12 | 18 | 07:18 (7) | 19:56 | 26 | 19:21 (40) | 18:39 | | 16:32 | 27 | 09:28 (37) | 16:03 |
| 15 | 05:12 | | 06:39 (7) | 06:05 | | 07:06 (7) | 07:04 | | 18:55 (40) | 08:02 | | 08:05 | | 09:01 (37) | 08:53 |
| | 22:06 | 60 | 07:39 (7) | 21:10 | 6 | 07:12 (7) | 19:53 | 25 | 19:20 (40) | 18:37 | | 16:31 | 27 | 09:28 (37) | 16:03 |
| 16 | 05:13 | | 06:40 (7) | 06:07 | | | 07:06 | | 18:55 (40) | 08:04 | | 08:07 | | 09:01 (37) | 08:54 |
| | 22:05 | 60 | 07:40 (7) | 21:08 | | | 19:51 | 23 | 19:18 (40) | 18:34 | | 16:29 | 27 | 09:28 (37) | 16:03 |
| 17 | 05:15 | | 06:39 (7) | 06:09 | | | 07:08 | | 18:55 (40) | 08:06 | | 08:09 | | 09:01 (37) | 08:55 |
| | 22:04 | 61 | 07:40 (7) | 21:05 | | | 19:48 | 22 | 19:17 (40) | 18:32 | | 16:27 | 26 | 09:27 (37) | 16:04 |
| 18 | 05:16 | | 06:39 (7) | 06:11 | | | 07:10 | | 18:56 (40) | 08:08 | | 08:11 | | 09:02 (37) | 08:56 |
| | 22:03 | 61 | 07:40 (7) | 21:03 | | | 19:46 | 20 | 19:16 (40) | 18:29 | | 16:26 | 26 | 09:28 (37) | 16:04 |
| 19 | 05:18 | | 06:40 (7) | 06:13 | | | 07:12 | | 18:57 (40) | 08:10 | | 08:13 | | 09:02 (37) | 08:57 |
| | 22:01 | 60 | 07:40 (7) | 21:01 | | | 19:43 | 17 | 19:14 (40) | 18:27 | | 16:24 | 26 | 09:28 (37) | 16:04 |
| 20 | 05:19 | | 06:40 (7) | 06:15 | | | 07:13 | | 19:00 (40) | 08:12 | | 08:15 | | 09:03 (37) | 08:57 |
| | 22:00 | 60 | 07:40 (7) | 20:58 | | | 19:40 | 11 | 19:11 (40) | 18:25 | | 16:23 | 25 | 09:28 (37) | 16:04 |
| 21 | 05:21 | | 06:39 (7) | 06:17 | | | 07:15 | | | 08:14 | | 08:17 | | 09:03 (37) | 08:58 |
| | 21:58 | 61 | 07:40 (7) | 20:56 | | | 19:38 | | | 18:22 | | 16:21 | 24 | 09:27 (37) | 16:05 |
| 22 | 05:22 | | 06:40 (7) | 06:19 | | | 07:17 | | | 08:16 | | 08:19 | | 09:04 (37) | 08:59 |
| | 21:57 | 60 | 07:40 (7) | 20:54 | | | 19:35 | | | 18:20 | | 16:20 | 23 | 09:27 (37) | 16:05 |
| 23 | 05:24 | | 06:40 (7) | 06:21 | | | 07:19 | | | 08:18 | | 08:21 | | 09:05 (37) | 08:59 |
| | 21:55 | 60 | 07:40 (7) | 20:51 | | | 19:33 | | | 18:18 | | 16:19 | 22 | 09:27 (37) | 16:06 |
| 24 | 05:26 | | 06:40 (7) | 06:22 | | | 07:21 | | | 08:20 | | 08:23 | | 09:05 (37) | 09:00 |
| | 21:54 | 60 | 07:40 (7) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | 21 | 09:26 (37) | 16:06 |
| 25 | 05:27 | | 06:40 (7) | 06:24 | | | 07:23 | | | 07:22 | | 08:24 | | 09:06 (37) | 09:00 |
| | 21:52 | 59 | 07:39 (7) | 20:46 | | | 19:27 | | | 17:13 | | 16:16 | 20 | 09:26 (37) | 16:07 |
| 26 | 05:29 | | 06:41 (7) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | | 09:08 (37) | 09:00 |
| | 21:50 | 59 | 07:40 (7) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | 17 | 09:25 (37) | 16:08 |
| 27 | 05:31 | | 06:42 (7) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | | 09:09 (37) | 09:00 |
| | 21:49 | 58 | 07:40 (7) | 20:42 | | | 19:22 | | | 17:08 | | 16:14 | 15 | 09:24 (37) | 16:08 |
| 28 | 05:32 | | 06:41 (7) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | | 09:11 (37) | 09:01 |
| | 21:47 | 58 | 07:39 (7) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | 12 | 09:23 (37) | 16:09 |
| 29 | 05:34 | | 06:42 (7) | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | 09:13 (37) | 09:01 |
| | 21:45 | 57 | 07:39 (7) | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | 9 | 09:22 (37) | 16:10 |
| 30 | 05:36 | | 06:42 (7) | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | 09:16 (37) | 09:01 |
| | 21:43 | 56 | 07:38 (7) | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | 4 | 09:20 (37) | 16:11 |
| 31 | 05:38 | | 06:43 (7) | 06:36 | | | | | | 07:34 | | | | | 09:01 |
| | 21:41 | 55 | 07:38 (7) | 20:32 | | | | | | 17:00 | | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 |
| Total, worst case | | 1832 | | | 586 | | | 346 | | | | | 553 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 1,00 | | | | | 0,69 | | |
| Total reduction | | 0,45 | | | 0,48 | | | 0,39 | | | | | 0,11 | | |
| Total, real | | 823 | | | 279 | | | 134 | | | | | 59 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | | 09:25 (7) | 07:08 | 10:23 (7) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | 93 | 10:58 (7) | 20:09 | 70 11:33 (7) | 21:08 | 22:02 |
| 2 | 09:00 | 08:26 | | 07:24 | | 09:24 (7) | 07:05 | 10:23 (7) | 05:53 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | 94 | 10:58 (7) | 20:11 | 67 11:30 (7) | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | | 09:24 (7) | 07:03 | 10:25 (7) | 05:50 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | 95 | 10:59 (7) | 20:13 | 63 11:28 (7) | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 09:23 (7) | 07:00 | 10:26 (7) | 05:48 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | 97 | 17:45 (40) | 20:15 | 58 11:24 (7) | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | | 09:23 (7) | 06:57 | 10:28 (7) | 05:46 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | 103 | 17:48 (40) | 20:17 | 54 11:22 (7) | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 09:22 (7) | 06:55 | 10:29 (7) | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | 107 | 17:49 (40) | 20:19 | 49 11:18 (7) | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 10:11 (7) | 07:12 | | 09:22 (7) | 06:52 | 10:32 (7) | 05:42 | 04:56 |
| | 16:21 | 17:21 | 2 10:13 (7) | 18:19 | 112 | 17:52 (40) | 20:21 | 42 11:14 (7) | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 10:01 (7) | 07:09 | | 09:21 (7) | 06:50 | 10:34 (7) | 05:40 | 04:55 |
| | 16:23 | 17:23 | 23 10:24 (7) | 18:21 | 116 | 17:54 (40) | 20:23 | 35 11:09 (7) | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 09:57 (7) | 07:07 | | 09:20 (7) | 06:47 | 10:39 (7) | 05:38 | 04:55 |
| | 16:24 | 17:25 | 32 10:29 (7) | 18:24 | 119 | 17:55 (40) | 20:25 | 25 11:04 (7) | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 | 09:53 (7) | 07:04 | | 09:20 (7) | 06:45 | 10:47 (7) | 05:36 | 04:54 |
| | 16:26 | 17:27 | 39 10:32 (7) | 18:26 | 120 | 17:56 (40) | 20:27 | 5 10:52 (7) | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 09:50 (7) | 07:02 | | 09:19 (7) | 06:42 | | 05:34 | 04:54 |
| | 16:28 | 17:29 | 45 10:35 (7) | 18:28 | 119 | 17:55 (40) | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 09:48 (7) | 06:59 | | 09:19 (7) | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 17:31 | 50 10:38 (7) | 18:30 | 120 | 17:55 (40) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 | 09:46 (7) | 06:56 | | 09:19 (7) | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 17:33 | 54 10:40 (7) | 18:32 | 118 | 17:54 (40) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 09:43 (7) | 06:54 | | 09:19 (7) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 17:36 | 59 10:42 (7) | 18:34 | 117 | 17:54 (40) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 09:42 (7) | 06:51 | | 09:18 (7) | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 17:38 | 62 10:44 (7) | 18:36 | 114 | 17:52 (40) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 09:40 (7) | 06:49 | | 09:18 (7) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 17:40 | 66 10:46 (7) | 18:38 | 109 | 17:49 (40) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 09:38 (7) | 06:46 | | 09:18 (7) | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 69 10:47 (7) | 18:40 | 98 | 10:56 (7) | 20:41 | | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 | 09:37 (7) | 06:44 | | 09:18 (7) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 72 10:49 (7) | 18:42 | 97 | 10:55 (7) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | 09:36 (7) | 06:41 | | 09:18 (7) | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 17:46 | 74 10:50 (7) | 18:44 | 96 | 10:54 (7) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 09:34 (7) | 06:39 | | 09:18 (7) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 17:48 | 77 10:51 (7) | 18:46 | 95 | 10:53 (7) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 09:33 (7) | 06:36 | | 09:17 (7) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 17:50 | 79 10:52 (7) | 18:48 | 95 | 10:52 (7) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 | 09:32 (7) | 06:33 | | 09:18 (7) | 06:15 | | 05:15 | 04:52 |
| | 16:47 | 17:53 | 81 10:53 (7) | 18:50 | 93 | 10:51 (7) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 09:31 (7) | 06:31 | | 09:18 (7) | 06:13 | | 05:13 | 04:52 |
| | 16:49 | 17:55 | 83 10:54 (7) | 18:52 | 91 | 10:49 (7) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 | 09:29 (7) | 06:28 | | 09:19 (7) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 17:57 | 86 10:55 (7) | 18:54 | 90 | 10:49 (7) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 09:29 (7) | 06:26 | | 09:19 (7) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 17:59 | 87 10:56 (7) | 18:55 | 88 | 10:47 (7) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 | 09:27 (7) | 06:23 | | 09:18 (7) | 06:06 | | 05:09 | 04:54 |
| | 16:55 | 18:01 | 89 10:56 (7) | 18:57 | 87 | 10:45 (7) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 | 09:27 (7) | 06:21 | | 09:19 (7) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | 18:03 | 90 10:57 (7) | 18:59 | 85 | 10:44 (7) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 09:25 (7) | 06:18 | | 09:20 (7) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | 18:05 | 92 10:57 (7) | 19:01 | 82 | 10:42 (7) | 21:03 | | 21:56 | 22:19 |
| 29 | 08:33 | | | 07:15 | | 10:21 (7) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 79 | 11:40 (7) | 21:04 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | | 10:21 (7) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 77 | 11:38 (7) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | | 10:22 (7) | | | 05:03 | |
| | 17:06 | | | 20:07 | 74 | 11:36 (7) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 1411 | | 3080 | | | 468 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,69 | | 0,71 | | | 0,69 | | |
| Total reduction | | | 0,17 | | 0,24 | | | 0,27 | | |
| Total, real | | | 238 | | 741 | | | 127 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 09:58 (7) | 07:36 | | 09:23 (7) | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 119 | 18:34 (40) | 16:58 | 38 | 10:01 (7) | 16:10 |
| 2 | 04:57 | | 05:41 | | 06:39 | | 10:46 (7) | 07:36 | | 09:58 (7) | 07:38 | | 09:27 (7) | 08:36 |
| | 22:17 | | 21:38 | | 20:27 | 5 | 10:51 (7) | 19:09 | 119 | 18:34 (40) | 16:55 | 31 | 09:58 (7) | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:41 | | 10:37 (7) | 07:38 | | 09:58 (7) | 07:40 | | 09:32 (7) | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | 25 | 11:02 (7) | 19:07 | 120 | 18:34 (40) | 16:53 | 21 | 09:53 (7) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:43 | | 10:32 (7) | 07:40 | | 09:58 (7) | 07:43 | | | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | 35 | 11:07 (7) | 19:04 | 120 | 18:34 (40) | 16:51 | | | 16:07 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 10:28 (7) | 07:42 | | 09:58 (7) | 07:45 | | | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | 42 | 11:10 (7) | 19:02 | 117 | 18:32 (40) | 16:49 | | | 16:07 |
| 6 | 05:01 | | 05:48 | | 06:47 | | 10:25 (7) | 07:44 | | 09:57 (7) | 07:47 | | | 08:43 |
| | 22:15 | | 21:30 | | 20:16 | 49 | 11:14 (7) | 18:59 | 114 | 18:29 (40) | 16:47 | | | 16:06 |
| 7 | 05:02 | | 05:50 | | 06:49 | | 10:23 (7) | 07:46 | | 09:57 (7) | 07:49 | | | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | 54 | 11:17 (7) | 18:57 | 111 | 18:27 (40) | 16:45 | | | 16:05 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 10:21 (7) | 07:48 | | 09:58 (7) | 07:51 | | | 08:45 |
| | 22:14 | | 21:25 | | 20:11 | 58 | 11:19 (7) | 18:54 | 106 | 18:24 (40) | 16:43 | | | 16:05 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 10:19 (7) | 07:50 | | 09:58 (7) | 07:53 | | | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | 63 | 11:22 (7) | 18:52 | 101 | 18:22 (40) | 16:41 | | | 16:05 |
| 10 | 05:05 | | 05:56 | | 06:55 | | 10:17 (7) | 07:52 | | 09:58 (7) | 07:55 | | | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | 66 | 11:23 (7) | 18:49 | 95 | 11:33 (7) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:58 | | 06:56 | | 10:15 (7) | 07:54 | | 09:58 (7) | 07:57 | | | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | 70 | 11:25 (7) | 18:47 | 95 | 11:33 (7) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | | 10:14 (7) | 07:56 | | 09:58 (7) | 07:59 | | | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | 73 | 11:27 (7) | 18:44 | 94 | 11:32 (7) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | | 10:12 (7) | 07:58 | | 09:58 (7) | 08:01 | | | 08:51 |
| | 22:09 | | 21:15 | | 19:58 | 77 | 11:29 (7) | 18:42 | 93 | 11:31 (7) | 16:34 | | | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 10:11 (7) | 08:00 | | 09:59 (7) | 08:03 | | | 08:52 |
| | 22:08 | | 21:12 | | 19:56 | 79 | 11:30 (7) | 18:39 | 91 | 11:30 (7) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 10:10 (7) | 08:02 | | 09:59 (7) | 08:05 | | | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | 82 | 11:32 (7) | 18:37 | 90 | 11:29 (7) | 16:31 | | | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 10:08 (7) | 08:04 | | 10:00 (7) | 08:07 | | | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | 84 | 11:32 (7) | 18:34 | 88 | 11:28 (7) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 10:07 (7) | 08:06 | | 10:00 (7) | 08:09 | | | 08:55 |
| | 22:04 | | 21:05 | | 19:48 | 86 | 11:33 (7) | 18:32 | 87 | 11:27 (7) | 16:27 | | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 10:06 (7) | 08:08 | | 10:02 (7) | 08:11 | | | 08:56 |
| | 22:03 | | 21:03 | | 19:45 | 88 | 11:34 (7) | 18:29 | 84 | 11:26 (7) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 10:05 (7) | 08:10 | | 10:02 (7) | 08:13 | | | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | 90 | 11:35 (7) | 18:27 | 83 | 11:25 (7) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 10:05 (7) | 08:12 | | 10:03 (7) | 08:15 | | | 08:57 |
| | 22:00 | | 20:58 | | 19:40 | 91 | 11:36 (7) | 18:25 | 81 | 11:24 (7) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 10:04 (7) | 08:14 | | 10:04 (7) | 08:17 | | | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | 92 | 11:36 (7) | 18:22 | 78 | 11:22 (7) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 10:03 (7) | 08:16 | | 10:05 (7) | 08:19 | | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | 94 | 11:37 (7) | 18:20 | 76 | 11:21 (7) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:20 | | 07:19 | | 10:02 (7) | 08:18 | | 10:06 (7) | 08:21 | | | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | 96 | 11:38 (7) | 18:18 | 73 | 11:19 (7) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 10:01 (7) | 08:20 | | 10:08 (7) | 08:23 | | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 96 | 11:37 (7) | 18:15 | 70 | 11:18 (7) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 10:00 (7) | 07:22 | | 09:09 (7) | 08:24 | | | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | 97 | 11:37 (7) | 17:13 | 68 | 10:17 (7) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 10:00 (7) | 07:24 | | 09:10 (7) | 08:26 | | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | 98 | 11:38 (7) | 17:11 | 65 | 10:15 (7) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 09:59 (7) | 07:26 | | 09:12 (7) | 08:28 | | | 09:00 |
| | 21:49 | | 20:42 | | 19:22 | 108 | 18:30 (40) | 17:08 | 61 | 10:13 (7) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 06:30 | | 07:29 | | 09:59 (7) | 07:28 | | 09:13 (7) | 08:30 | | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | 112 | 18:32 (40) | 17:06 | 58 | 10:11 (7) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 06:32 | | 07:31 | | 09:59 (7) | 07:30 | | 09:16 (7) | 08:31 | | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | 115 | 18:33 (40) | 17:04 | 53 | 10:09 (7) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 06:34 | | 07:32 | | 09:58 (7) | 07:32 | | 09:18 (7) | 08:33 | | | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | 119 | 18:34 (40) | 17:02 | 49 | 10:07 (7) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | 09:20 (7) | | | | 09:01 |
| | 21:41 | | 20:32 | | | | | 17:00 | 44 | 10:04 (7) | | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | | | | | 2244 | | | 2703 | | | 90 | | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | | 0,70 | | | 0,70 | | | 0,69 | | |
| Total reduction | | | | | | 0,28 | | | 0,22 | | | 0,11 | | |
| Total, real | | | | | | 617 | | | 583 | | | 10 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:20 (37) | 08:27 | | | 07:26 | | 08:39 (7) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 10:33 (37) | 17:08 | | | 18:07 | 78 | 17:39 (40) | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 10:22 (37) | 08:26 | | | 07:24 | | 08:38 (7) | 07:05 | 05:53 | 05:00 |
| | 16:15 | 12 | 10:34 (37) | 17:10 | | | 18:09 | 80 | 17:39 (40) | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 10:22 (37) | 08:24 | | | 07:22 | | 08:38 (7) | 07:03 | 05:50 | 05:00 |
| | 16:16 | 11 | 10:33 (37) | 17:12 | | | 18:11 | 81 | 17:40 (40) | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 10:24 (37) | 08:22 | | | 07:19 | | 08:37 (7) | 07:00 | 05:48 | 04:59 |
| | 16:17 | 9 | 10:33 (37) | 17:14 | | | 18:13 | 81 | 17:39 (40) | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 10:25 (37) | 08:20 | | | 07:17 | | 08:38 (7) | 06:57 | 05:46 | 04:58 |
| | 16:19 | 7 | 10:32 (37) | 17:16 | | | 18:15 | 81 | 17:40 (40) | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | 08:37 (7) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | 81 | 17:39 (40) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | 08:38 (7) | 06:52 | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | 79 | 17:39 (40) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | 08:38 (7) | 06:50 | 05:40 | 04:55 |
| | 16:23 | | | 17:23 | | | 18:21 | 76 | 17:38 (40) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | 08:37 (7) | 06:47 | 05:38 | 04:55 |
| | 16:24 | | | 17:25 | | | 18:24 | 74 | 17:36 (40) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | 08:38 (7) | 06:45 | 05:36 | 04:54 |
| | 16:26 | | | 17:27 | | | 18:26 | 70 | 17:35 (40) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | 08:38 (7) | 06:42 | 05:34 | 04:54 |
| | 16:28 | | | 17:29 | | | 18:28 | 64 | 17:32 (40) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:03 (7) | 06:59 | | 08:39 (7) | 06:40 | 05:32 | 04:53 |
| | 16:29 | | | 17:31 | 12 | 09:15 (7) | 18:30 | 52 | 17:27 (40) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | | 08:03 | | 08:59 (7) | 06:56 | | 08:40 (7) | 06:37 | 05:30 | 04:53 |
| | 16:31 | | | 17:33 | 21 | 09:20 (7) | 18:32 | 48 | 09:28 (7) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | | 08:01 | | 08:55 (7) | 06:54 | | 08:41 (7) | 06:35 | 05:28 | 04:53 |
| | 16:33 | | | 17:36 | 27 | 09:22 (7) | 18:34 | 46 | 09:27 (7) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | | 07:59 | | 08:53 (7) | 06:51 | | 08:41 (7) | 06:32 | 05:26 | 04:52 |
| | 16:34 | | | 17:38 | 32 | 09:25 (7) | 18:36 | 44 | 09:25 (7) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | | 07:57 | | 08:51 (7) | 06:49 | | 08:42 (7) | 06:30 | 05:25 | 04:52 |
| | 16:36 | | | 17:40 | 36 | 09:27 (7) | 18:38 | 41 | 09:23 (7) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | 08:49 (7) | 06:46 | | 08:44 (7) | 06:27 | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | 39 | 09:28 (7) | 18:40 | 37 | 09:21 (7) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | | 07:52 | | 08:48 (7) | 06:44 | | 08:45 (7) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | 42 | 09:30 (7) | 18:42 | 33 | 09:18 (7) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | | 07:50 | | 08:47 (7) | 06:41 | | 08:48 (7) | 06:23 | 05:19 | 04:52 |
| | 16:42 | | | 17:46 | 44 | 09:31 (7) | 18:44 | 27 | 09:15 (7) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | | 07:48 | | 08:45 (7) | 06:39 | | 08:51 (7) | 06:20 | 05:18 | 04:52 |
| | 16:44 | | | 17:48 | 47 | 09:32 (7) | 18:46 | 20 | 09:11 (7) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | | 07:46 | | 08:44 (7) | 06:36 | | 08:56 (7) | 06:18 | 05:16 | 04:52 |
| | 16:46 | | | 17:50 | 49 | 09:33 (7) | 18:48 | 8 | 09:04 (7) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | | 07:43 | | 08:43 (7) | 06:33 | | | 06:15 | 05:15 | 04:52 |
| | 16:48 | | | 17:53 | 50 | 09:33 (7) | 18:50 | | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | 08:42 (7) | 06:31 | | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | 53 | 09:35 (7) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | 08:41 (7) | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 54 | 09:35 (7) | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 08:41 (7) | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 57 | 17:30 (40) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | | 08:39 (7) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | | 18:01 | 66 | 17:32 (40) | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 08:39 (7) | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 71 | 17:35 (40) | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 08:38 (7) | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 75 | 17:36 (40) | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 52 | | | 775 | | | 1201 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,49 | | | 0,84 | | | 0,86 | | | | |
| Total reduction | | 0,09 | | | 0,20 | | | 0,29 | | | | |
| Total, real | | 5 | | | 157 | | | 343 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 09:19 (7) | 07:36 | | 08:35 | | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 49 | 10:08 (7) | 16:58 | | 16:10 | | |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 09:17 (7) | 07:38 | | 08:36 | | |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 61 | 18:10 (40) | 16:55 | | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 09:17 (7) | 07:41 | | 08:38 | | |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 66 | 18:12 (40) | 16:53 | | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 09:16 (7) | 07:43 | | 08:40 | | |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | 71 | 18:13 (40) | 16:51 | | 16:07 | | |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 09:15 (7) | 07:45 | | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 75 | 18:14 (40) | 16:49 | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 09:14 (7) | 07:47 | | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | 78 | 18:15 (40) | 16:47 | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | 09:14 (7) | 07:49 | | 08:44 | | 10:13 (37) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | 80 | 18:15 (40) | 16:45 | | 16:05 | 6 | 10:19 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 09:13 (7) | 07:51 | | 08:45 | | 10:11 (37) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | 81 | 18:15 (40) | 16:43 | | 16:05 | 9 | 10:20 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 09:13 (7) | 07:53 | | 08:47 | | 10:11 (37) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | 81 | 18:15 (40) | 16:41 | | 16:05 | 11 | 10:22 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | 09:12 (7) | 07:55 | | 08:48 | | 10:11 (37) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | 81 | 18:14 (40) | 16:40 | | 16:04 | 12 | 10:23 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | 09:12 (7) | 07:57 | | 08:49 | | 10:11 (37) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | 81 | 18:14 (40) | 16:38 | | 16:04 | 13 | 10:24 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | 09:12 (7) | 07:59 | | 08:50 | | 10:11 (37) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | 80 | 18:13 (40) | 16:36 | | 16:04 | 14 | 10:25 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | 09:12 (7) | 08:01 | | 08:51 | | 10:11 (37) |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | 76 | 18:11 (40) | 16:34 | | 16:04 | 15 | 10:26 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | 09:12 (7) | 08:03 | | 08:52 | | 10:11 (37) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | 73 | 18:08 (40) | 16:32 | | 16:03 | 15 | 10:26 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | | 08:02 | | 09:12 (7) | 08:05 | | 08:53 | | 10:11 (37) |
| | 22:06 | | 21:10 | | 19:53 | | | 18:37 | 68 | 18:06 (40) | 16:31 | | 16:03 | 16 | 10:27 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | 09:12 (7) | 08:07 | | 08:54 | | 10:12 (37) |
| | 22:05 | | 21:08 | | 19:51 | | | 18:34 | 62 | 18:03 (40) | 16:29 | | 16:03 | 16 | 10:28 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | 09:12 (7) | 08:09 | | 08:55 | | 10:12 (37) |
| | 22:04 | | 21:05 | | 19:48 | | | 18:32 | 54 | 10:06 (7) | 16:27 | | 16:04 | 17 | 10:29 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | 09:13 (7) | 08:11 | | 08:56 | | 10:13 (37) |
| | 22:03 | | 21:03 | | 19:46 | | | 18:29 | 54 | 10:07 (7) | 16:26 | | 16:04 | 16 | 10:29 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 09:14 (7) | 08:13 | | 08:57 | | 10:12 (37) |
| | 22:01 | | 21:01 | | 19:43 | | | 18:27 | 51 | 10:05 (7) | 16:24 | | 16:04 | 17 | 10:29 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | | 08:12 | | 09:14 (7) | 08:15 | | 08:57 | | 10:13 (37) |
| | 22:00 | | 20:58 | | 19:40 | | | 18:25 | 50 | 10:04 (7) | 16:23 | | 16:04 | 17 | 10:30 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | 09:15 (7) | 08:17 | | 08:58 | | 10:14 (37) |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | 48 | 10:03 (7) | 16:21 | | 16:05 | 17 | 10:31 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 09:15 (7) | 08:19 | | 08:59 | | 10:14 (37) |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | 47 | 10:02 (7) | 16:20 | | 16:05 | 17 | 10:31 (37) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 09:37 (7) | 08:18 | | 09:16 (7) | 08:21 | | 08:59 | | 10:14 (37) |
| | 21:55 | | 20:51 | | 19:33 | 17 | 09:54 (7) | 18:18 | 44 | 10:00 (7) | 16:19 | | 16:06 | 17 | 10:31 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 09:32 (7) | 08:20 | | 09:18 (7) | 08:23 | | 09:00 | | 10:15 (37) |
| | 21:54 | | 20:49 | | 19:30 | 25 | 09:57 (7) | 18:15 | 42 | 10:00 (7) | 16:17 | | 16:06 | 17 | 10:32 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 09:29 (7) | 07:22 | | 08:20 (7) | 08:24 | | 09:00 | | 10:16 (37) |
| | 21:52 | | 20:46 | | 19:27 | 31 | 10:00 (7) | 17:13 | 38 | 08:58 (7) | 16:16 | | 16:07 | 16 | 10:32 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 09:26 (7) | 07:24 | | 08:21 (7) | 08:26 | | 09:00 | | 10:16 (37) |
| | 21:50 | | 20:44 | | 19:25 | 36 | 10:02 (7) | 17:11 | 35 | 08:56 (7) | 16:15 | | 16:08 | 17 | 10:33 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 09:24 (7) | 07:26 | | 08:23 (7) | 08:28 | | 09:00 | | 10:16 (37) |
| | 21:49 | | 20:42 | | 19:22 | 40 | 10:04 (7) | 17:08 | 31 | 08:54 (7) | 16:14 | | 16:08 | 17 | 10:33 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 09:23 (7) | 07:28 | | 08:25 (7) | 08:30 | | 09:01 | | 10:17 (37) |
| | 21:47 | | 20:39 | | 19:20 | 42 | 10:05 (7) | 17:06 | 26 | 08:51 (7) | 16:13 | | 16:09 | 16 | 10:33 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 09:21 (7) | 07:30 | | 08:29 (7) | 08:31 | | 09:01 | | 10:18 (37) |
| | 21:45 | | 20:37 | | 19:17 | 45 | 10:06 (7) | 17:04 | 19 | 08:48 (7) | 16:12 | | 16:10 | 15 | 10:33 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 09:20 (7) | 07:32 | | 08:34 (7) | 08:33 | | 09:01 | | 10:19 (37) |
| | 21:43 | | 20:34 | | 19:14 | 47 | 10:07 (7) | 17:02 | 9 | 08:43 (7) | 16:11 | | 16:11 | 15 | 10:34 (37) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | | 10:20 (37) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | 14 | 10:34 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | 224 | | |
| Total, worst case | | | | | | 283 | | | 1711 | | | | | 372 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | | | 1,00 | |
| Wind dir. red. | | | | | | 0,84 | | | 0,85 | | | | | 0,49 | |
| Total reduction | | | | | | 0,32 | | | 0,26 | | | | | 0,07 | |
| Total, real | | | | | | 92 | | | 439 | | | | | 24 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 08:59 (25) | 07:26 | | 17:22 (19) | 07:07 | | | 05:55 | | | 05:01 | | 20:06 (21) |
| | 16:13 | | | 17:08 | 99 | 16:21 (8) | 18:07 | 17 | 17:39 (19) | 20:09 | | | 21:08 | | | 22:02 | 38 | 20:44 (21) |
| 2 | 09:00 | | | 08:25 | | 08:58 (25) | 07:24 | | 17:21 (19) | 07:05 | | | 05:52 | | 20:17 (21) | 05:00 | | 20:06 (21) |
| | 16:15 | | | 17:10 | 102 | 16:21 (8) | 18:09 | 20 | 17:41 (19) | 20:11 | | | 21:10 | 14 | 20:31 (21) | 22:03 | 38 | 20:44 (21) |
| 3 | 09:00 | | | 08:23 | | 08:58 (25) | 07:21 | | 17:21 (19) | 07:02 | | | 05:50 | | 20:14 (21) | 04:59 | | 20:06 (21) |
| | 16:16 | | | 17:12 | 105 | 16:39 (20) | 18:11 | 22 | 17:43 (19) | 20:13 | | | 21:12 | 19 | 20:33 (21) | 22:04 | 38 | 20:44 (21) |
| 4 | 08:59 | | | 08:22 | | 08:58 (25) | 07:19 | | 17:20 (19) | 07:00 | | 19:38 (18) | 05:48 | | 20:12 (21) | 04:58 | | 20:07 (21) |
| | 16:17 | | | 17:14 | 110 | 16:41 (20) | 18:13 | 23 | 17:43 (19) | 20:15 | 9 | 19:47 (18) | 21:14 | 23 | 20:35 (21) | 22:06 | 36 | 20:43 (21) |
| 5 | 08:59 | | | 08:20 | | 08:58 (25) | 07:16 | | 17:20 (19) | 06:57 | | 19:36 (18) | 05:46 | | 20:10 (21) | 04:58 | | 20:08 (21) |
| | 16:18 | | | 17:16 | 111 | 16:44 (20) | 18:15 | 22 | 17:42 (19) | 20:17 | 13 | 19:49 (18) | 21:16 | 27 | 20:37 (21) | 22:07 | 36 | 20:44 (21) |
| 6 | 08:59 | | | 08:18 | | 08:58 (25) | 07:14 | | 17:20 (19) | 06:55 | | 19:34 (18) | 05:44 | | 20:09 (21) | 04:57 | | 20:08 (21) |
| | 16:20 | | | 17:18 | 115 | 16:46 (20) | 18:17 | 22 | 17:42 (19) | 20:19 | 17 | 19:51 (18) | 21:18 | 29 | 20:38 (21) | 22:08 | 36 | 20:44 (21) |
| 7 | 08:58 | | | 08:16 | | 08:59 (25) | 07:11 | | 17:20 (19) | 06:52 | | 19:33 (18) | 05:42 | | 20:07 (21) | 04:56 | | 20:09 (21) |
| | 16:21 | | | 17:20 | 117 | 16:49 (20) | 18:19 | 26 | 17:46 (22) | 20:21 | 20 | 19:53 (18) | 21:20 | 32 | 20:39 (21) | 22:09 | 35 | 20:44 (21) |
| 8 | 08:57 | | | 08:14 | | 08:59 (25) | 07:09 | | 17:21 (19) | 06:50 | | 19:31 (18) | 05:40 | | 20:07 (21) | 04:55 | | 20:09 (21) |
| | 16:23 | | | 17:23 | 117 | 16:51 (20) | 18:21 | 29 | 17:50 (22) | 20:23 | 24 | 19:55 (18) | 21:22 | 34 | 20:41 (21) | 22:10 | 35 | 20:44 (21) |
| 9 | 08:57 | | | 08:12 | | 08:59 (25) | 07:06 | | 17:22 (19) | 06:47 | | 19:30 (18) | 05:38 | | 20:06 (21) | 04:55 | | 20:09 (21) |
| | 16:24 | | | 17:25 | 119 | 16:53 (20) | 18:23 | 30 | 17:52 (22) | 20:25 | 26 | 19:56 (18) | 21:24 | 35 | 20:41 (21) | 22:11 | 34 | 20:43 (21) |
| 10 | 08:56 | | | 08:10 | | 08:59 (25) | 07:04 | | 17:24 (19) | 06:45 | | 19:29 (18) | 05:36 | | 20:05 (21) | 04:54 | | 20:10 (21) |
| | 16:26 | | | 17:27 | 117 | 16:54 (20) | 18:25 | 30 | 17:54 (22) | 20:27 | 26 | 19:55 (18) | 21:25 | 37 | 20:42 (21) | 22:12 | 33 | 20:43 (21) |
| 11 | 08:55 | | | 08:07 | | 09:00 (25) | 07:01 | | 17:27 (22) | 06:42 | | 19:29 (18) | 05:34 | | 20:04 (21) | 04:54 | | 20:11 (21) |
| | 16:27 | | | 17:29 | 110 | 16:54 (20) | 18:27 | 28 | 17:55 (22) | 20:29 | 27 | 19:56 (18) | 21:27 | 38 | 20:42 (21) | 22:13 | 33 | 20:44 (21) |
| 12 | 08:55 | | | 08:05 | | 09:01 (25) | 06:59 | | 17:25 (22) | 06:40 | | 19:28 (18) | 05:32 | | 20:04 (21) | 04:53 | | 20:10 (21) |
| | 16:29 | | | 17:31 | 107 | 16:54 (20) | 18:29 | 30 | 17:55 (22) | 20:31 | 27 | 19:55 (18) | 21:29 | 38 | 20:42 (21) | 22:14 | 33 | 20:43 (21) |
| 13 | 08:54 | | 15:15 (44) | 08:03 | | 09:02 (25) | 06:56 | | 17:25 (22) | 06:37 | | 19:28 (18) | 05:30 | | 20:04 (21) | 04:53 | | 20:11 (21) |
| | 16:31 | 8 | 15:23 (44) | 17:33 | 98 | 16:53 (20) | 18:31 | 32 | 17:57 (22) | 20:33 | 27 | 19:55 (18) | 21:31 | 39 | 20:43 (21) | 22:14 | 32 | 20:43 (21) |
| 14 | 08:53 | | 15:13 (44) | 08:01 | | 09:03 (25) | 06:54 | | 17:23 (22) | 06:35 | | 19:29 (18) | 05:28 | | 20:03 (21) | 04:52 | | 20:12 (21) |
| | 16:32 | 13 | 15:26 (44) | 17:35 | 88 | 16:52 (20) | 18:33 | 34 | 17:57 (22) | 20:35 | 26 | 19:55 (18) | 21:33 | 41 | 20:44 (21) | 22:15 | 31 | 20:43 (21) |
| 15 | 08:52 | | 15:12 (44) | 07:59 | | 09:06 (25) | 06:51 | | 17:23 (22) | 06:32 | | 19:28 (18) | 05:26 | | 20:03 (21) | 04:52 | | 20:12 (21) |
| | 16:34 | 17 | 15:29 (44) | 17:38 | 75 | 16:51 (20) | 18:35 | 34 | 17:57 (22) | 20:37 | 26 | 19:54 (18) | 21:35 | 40 | 20:43 (21) | 22:16 | 32 | 20:44 (21) |
| 16 | 08:51 | | 15:11 (44) | 07:57 | | 09:08 (25) | 06:49 | | 17:22 (22) | 06:30 | | 19:29 (18) | 05:24 | | 20:03 (21) | 04:52 | | 20:13 (21) |
| | 16:36 | 20 | 15:31 (44) | 17:40 | 56 | 16:49 (20) | 18:37 | 35 | 17:57 (22) | 20:39 | 24 | 19:53 (18) | 21:36 | 41 | 20:44 (21) | 22:16 | 31 | 20:44 (21) |
| 17 | 08:49 | | 15:09 (44) | 07:54 | | 15:19 (44) | 06:46 | | 17:22 (22) | 06:27 | | 19:29 (18) | 05:23 | | 20:02 (21) | 04:52 | | 20:13 (21) |
| | 16:38 | 23 | 15:32 (44) | 17:42 | 25 | 16:11 (8) | 18:39 | 36 | 17:58 (22) | 20:41 | 23 | 19:52 (18) | 21:38 | 42 | 20:44 (21) | 22:17 | 31 | 20:44 (21) |
| 18 | 08:48 | | 15:09 (44) | 07:52 | | | 06:43 | | 17:22 (22) | 06:25 | | 19:30 (18) | 05:21 | | 20:03 (21) | 04:52 | | 20:13 (21) |
| | 16:40 | 25 | 15:34 (44) | 17:44 | | | 18:41 | 35 | 17:57 (22) | 20:43 | 21 | 19:51 (18) | 21:40 | 42 | 20:45 (21) | 22:17 | 31 | 20:44 (21) |
| 19 | 08:47 | | 15:08 (44) | 07:50 | | | 06:41 | | 17:21 (22) | 06:22 | | 19:31 (18) | 05:19 | | 20:02 (21) | 04:52 | | 20:14 (21) |
| | 16:42 | 27 | 15:35 (44) | 17:46 | | | 18:43 | 35 | 17:56 (22) | 20:45 | 19 | 19:50 (18) | 21:42 | 42 | 20:44 (21) | 22:18 | 30 | 20:44 (21) |
| 20 | 08:46 | | 15:07 (44) | 07:48 | | | 06:38 | | 17:22 (22) | 06:20 | | 19:32 (18) | 05:18 | | 20:03 (21) | 04:52 | | 20:14 (21) |
| | 16:43 | 30 | 15:37 (44) | 17:48 | | | 18:45 | 34 | 17:56 (22) | 20:47 | 15 | 19:47 (18) | 21:43 | 42 | 20:45 (21) | 22:18 | 30 | 20:44 (21) |
| 21 | 08:45 | | 15:06 (44) | 07:45 | | | 06:36 | | 17:21 (22) | 06:18 | | 19:35 (18) | 05:16 | | 20:02 (21) | 04:52 | | 20:14 (21) |
| | 16:45 | 32 | 15:38 (44) | 17:50 | | | 18:47 | 34 | 17:55 (22) | 20:49 | 9 | 19:44 (18) | 21:45 | 42 | 20:44 (21) | 22:18 | 30 | 20:44 (21) |
| 22 | 08:43 | | 15:07 (44) | 07:43 | | | 06:33 | | 17:22 (22) | 06:15 | | | 05:14 | | 20:03 (21) | 04:52 | | 20:14 (21) |
| | 16:47 | 43 | 16:08 (8) | 17:52 | | | 18:49 | 33 | 17:55 (22) | 20:50 | | | 21:47 | 42 | 20:45 (21) | 22:18 | 30 | 20:44 (21) |
| 23 | 08:42 | | 15:06 (44) | 07:41 | | | 06:31 | | 17:22 (22) | 06:13 | | | 05:13 | | 20:03 (21) | 04:52 | | 20:15 (21) |
| | 16:49 | 49 | 16:10 (8) | 17:54 | | | 18:51 | 32 | 17:54 (22) | 20:52 | | | 21:48 | 42 | 20:45 (21) | 22:19 | 30 | 20:45 (21) |
| 24 | 08:40 | | 15:05 (44) | 07:38 | | | 06:28 | | 17:22 (22) | 06:11 | | | 05:11 | | 20:03 (21) | 04:53 | | 20:14 (21) |
| | 16:51 | 54 | 16:12 (8) | 17:57 | | | 18:53 | 30 | 17:52 (22) | 20:54 | | | 21:50 | 41 | 20:44 (21) | 22:19 | 31 | 20:45 (21) |
| 25 | 08:39 | | 15:06 (44) | 07:36 | | | 06:25 | | 17:24 (22) | 06:08 | | | 05:10 | | 20:03 (21) | 04:53 | | 20:14 (21) |
| | 16:53 | 59 | 16:15 (8) | 17:59 | | | 18:55 | 27 | 17:51 (22) | 20:56 | | | 21:52 | 42 | 20:45 (21) | 22:19 | 31 | 20:45 (21) |
| 26 | 08:37 | | 09:08 (25) | 07:33 | | 17:26 (19) | 06:23 | | 17:25 (22) | 06:06 | | | 05:09 | | 20:04 (21) | 04:53 | | 20:15 (21) |
| | 16:55 | 70 | 16:16 (8) | 18:01 | 6 | 17:32 (19) | 18:57 | 24 | 17:49 (22) | 20:58 | | | 21:53 | 41 | 20:45 (21) | 22:19 | 31 | 20:46 (21) |
| 27 | 08:36 | | 09:06 (25) | 07:31 | | 17:25 (19) | 06:20 | | 17:27 (22) | 06:04 | | | 05:07 | | 20:04 (21) | 04:54 | | 20:14 (21) |
| | 16:57 | 77 | 16:17 (8) | 18:03 | 10 | 17:35 (19) | 18:59 | 20 | 17:47 (22) | 21:00 | | | 21:55 | 41 | 20:45 (21) | 22:19 | 32 | 20:46 (21) |
| 28 | 08:34 | | 09:04 (25) | 07:29 | | 17:23 (19) | 06:18 | | 17:29 (22) | 06:01 | | | 05:06 | | 20:04 (21) | 04:54 | | 20:15 (21) |
| | 16:59 | 84 | 16:18 (8) | 18:05 | 13 | 17:36 (19) | 19:01 | 15 | 17:44 (22) | 21:02 | | | 21:56 | 41 | 20:45 (21) | 22:18 | 32 | 20:47 (21) |
| 29 | 08:32 | | 09:02 (25) | | | | 07:15 | | 18:34 (22) | 05:59 | | | 05:05 | | 20:05 (21) | 04:55 | | 20:14 (21) |
| | 17:01 | 89 | 16:19 (8) | | | | 20:03 | 4 | 18:38 (22) | 21:04 | | | 21:58 | 40 | 20:45 (21) | 22:18 | 32 | 20:46 (21) |
| 30 | 08:31 | | 09:00 (25) | | | | 07:13 | | | 05:57 | | | 05:04 | | 20:05 (21) | 04:56 | | 20:15 (21) |
| | 17:04 | 93 | 16:19 (8) | | | | 20:05 | | | 21:06 | | | 21:59 | 40 | 20:45 (21) | 22:18 | 32 | 20:47 (21) |
| 31 | 08:29 | | 08:59 (25) | | | | 07:10 | | | | | | 05:02 | | 20:05 (21) | | | |
| | 17:06 | 96 | 16:20 (8) | | | | 20:07 | | | | | | 22:00 | 40 | 20:45 (21) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 909 | | | 1700 | | | 793 | | | 379 | | | 1107 | | | 984 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,67 | | | 0,72 | | | 0,96 | | | 0,99 | | | 0,93 | | | 0,93 | |
| Total reduction | | 0,11 | | | 0,17 | | | 0,31 | | | 0,37 | | | 0,46 | | | 0,43 | |
| Total, real | | 104 | | | 285 | | | 248 | | | 141 | | | 504 | | | 419 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | 20:15 (21) | 05:39 | | 20:14 (21) | 06:37 | | 19:28 (18) | 07:34 | | 18:05 (22) | 07:36 | | 08:29 (25) | 08:35 |
| | 22:17 | 33 | 20:48 (21) | 21:39 | 39 | 20:53 (21) | 20:29 | 27 | 19:55 (18) | 19:12 | 31 | 18:36 (22) | 16:57 | 115 | 16:24 (20) | 16:10 |
| 2 | 04:57 | | 20:14 (21) | 05:41 | | 20:15 (21) | 06:39 | | 19:28 (18) | 07:36 | | 18:06 (22) | 07:38 | | 08:28 (25) | 08:36 |
| | 22:17 | 33 | 20:47 (21) | 21:37 | 37 | 20:52 (21) | 20:26 | 26 | 19:54 (18) | 19:09 | 28 | 18:34 (22) | 16:55 | 117 | 16:22 (20) | 16:09 |
| 3 | 04:58 | | 20:14 (21) | 05:43 | | 20:16 (21) | 06:41 | | 19:28 (18) | 07:38 | | 18:04 (19) | 07:40 | | 08:29 (25) | 08:38 |
| | 22:17 | 34 | 20:48 (21) | 21:35 | 36 | 20:52 (21) | 20:24 | 26 | 19:54 (18) | 19:07 | 29 | 18:33 (22) | 16:53 | 117 | 16:21 (20) | 16:08 |
| 4 | 04:59 | | 20:14 (21) | 05:45 | | 20:16 (21) | 06:43 | | 19:28 (18) | 07:40 | | 18:01 (19) | 07:42 | | 08:28 (25) | 08:39 |
| | 22:16 | 35 | 20:49 (21) | 21:33 | 34 | 20:50 (21) | 20:21 | 24 | 19:52 (18) | 19:04 | 30 | 18:31 (22) | 16:51 | 115 | 16:18 (20) | 16:07 |
| 5 | 05:00 | | 20:14 (21) | 05:46 | | 20:17 (21) | 06:45 | | 19:29 (18) | 07:42 | | 17:59 (19) | 07:44 | | 08:28 (25) | 08:41 |
| | 22:15 | 35 | 20:49 (21) | 21:31 | 33 | 20:50 (21) | 20:19 | 20 | 19:49 (18) | 19:01 | 30 | 18:29 (22) | 16:49 | 114 | 16:16 (20) | 16:06 |
| 6 | 05:01 | | 20:14 (21) | 05:48 | | 20:18 (21) | 06:47 | | 19:30 (18) | 07:44 | | 17:58 (19) | 07:46 | | 08:28 (25) | 08:42 |
| | 22:15 | 36 | 20:50 (21) | 21:29 | 31 | 20:49 (21) | 20:16 | 17 | 19:47 (18) | 18:59 | 27 | 18:25 (22) | 16:47 | 111 | 16:13 (20) | 16:06 |
| 7 | 05:02 | | 20:14 (21) | 05:50 | | 20:19 (21) | 06:49 | | 19:31 (18) | 07:46 | | 17:57 (19) | 07:48 | | 08:29 (25) | 08:44 |
| | 22:14 | 36 | 20:50 (21) | 21:27 | 29 | 20:48 (21) | 20:14 | 14 | 19:45 (18) | 18:56 | 21 | 18:18 (19) | 16:45 | 109 | 16:12 (20) | 16:05 |
| 8 | 05:03 | | 20:14 (21) | 05:52 | | 20:20 (21) | 06:51 | | 19:33 (18) | 07:48 | | 17:56 (19) | 07:51 | | 08:29 (25) | 08:45 |
| | 22:13 | 37 | 20:51 (21) | 21:25 | 26 | 20:46 (21) | 20:11 | 9 | 19:42 (18) | 18:54 | 22 | 18:18 (19) | 16:43 | 103 | 16:09 (20) | 16:05 |
| 9 | 05:04 | | 20:14 (21) | 05:54 | | 20:22 (21) | 06:52 | | | 07:50 | | 17:55 (19) | 07:53 | | 08:29 (25) | 08:46 |
| | 22:12 | 37 | 20:51 (21) | 21:23 | 22 | 20:44 (21) | 20:09 | | | 18:51 | 23 | 18:18 (19) | 16:41 | 101 | 15:52 (8) | 16:04 |
| 10 | 05:05 | | 20:14 (21) | 05:56 | | 20:24 (21) | 06:54 | | | 07:52 | | 17:55 (19) | 07:55 | | 08:30 (25) | 08:48 |
| | 22:11 | 37 | 20:51 (21) | 21:21 | 18 | 20:42 (21) | 20:06 | | | 18:49 | 23 | 18:18 (19) | 16:39 | 98 | 15:51 (8) | 16:04 |
| 11 | 05:06 | | 20:13 (21) | 05:58 | | 20:27 (21) | 06:56 | | | 07:54 | | 17:55 (19) | 07:57 | | 08:31 (25) | 08:49 |
| | 22:11 | 39 | 20:52 (21) | 21:19 | 11 | 20:38 (21) | 20:03 | | | 18:46 | 21 | 18:16 (19) | 16:38 | 96 | 15:52 (8) | 16:04 |
| 12 | 05:08 | | 20:13 (21) | 05:59 | | | 06:58 | | | 07:56 | | 17:55 (19) | 07:59 | | 08:32 (25) | 08:50 |
| | 22:09 | 39 | 20:52 (21) | 21:17 | | | 20:01 | | | 18:44 | 19 | 18:14 (19) | 16:36 | 93 | 15:51 (8) | 16:04 |
| 13 | 05:09 | | 20:14 (21) | 06:01 | | | 07:00 | | | 07:58 | | 17:56 (19) | 08:01 | | 08:34 (25) | 08:51 |
| | 22:08 | 39 | 20:53 (21) | 21:14 | | | 19:58 | | | 18:41 | 15 | 18:11 (19) | 16:34 | 87 | 15:50 (8) | 16:03 |
| 14 | 05:10 | | 20:13 (21) | 06:03 | | | 07:02 | | | 08:00 | | 17:56 (19) | 08:03 | | 08:36 (25) | 08:52 |
| | 22:07 | 40 | 20:53 (21) | 21:12 | | | 19:56 | | | 18:39 | 12 | 18:08 (19) | 16:32 | 84 | 15:50 (8) | 16:03 |
| 15 | 05:12 | | 20:13 (21) | 06:05 | | | 07:04 | | 18:19 (22) | 08:02 | | 17:57 (19) | 08:05 | | 08:39 (25) | 08:53 |
| | 22:06 | 40 | 20:53 (21) | 21:10 | | | 19:53 | 14 | 18:33 (22) | 18:36 | 9 | 18:06 (19) | 16:30 | 77 | 15:50 (8) | 16:03 |
| 16 | 05:13 | | 20:13 (21) | 06:07 | | | 07:06 | | 18:16 (22) | 08:04 | | 17:59 (19) | 08:07 | | 08:41 (25) | 08:54 |
| | 22:05 | 40 | 20:53 (21) | 21:08 | | | 19:50 | 19 | 18:35 (22) | 18:34 | 4 | 18:03 (19) | 16:29 | 70 | 15:49 (8) | 16:03 |
| 17 | 05:15 | | 20:13 (21) | 06:09 | | | 07:08 | | 18:14 (22) | 08:06 | | | 08:09 | | 14:38 (44) | 08:55 |
| | 22:04 | 41 | 20:54 (21) | 21:05 | | | 19:48 | 23 | 18:37 (22) | 18:32 | | | 16:27 | 59 | 15:48 (8) | 16:03 |
| 18 | 05:16 | | 20:13 (21) | 06:11 | | | 07:09 | | 18:12 (22) | 08:08 | | | 08:11 | | 14:39 (44) | 08:56 |
| | 22:02 | 41 | 20:54 (21) | 21:03 | | | 19:45 | 26 | 18:38 (22) | 18:29 | | | 16:26 | 54 | 15:46 (8) | 16:04 |
| 19 | 05:17 | | 20:12 (21) | 06:13 | | | 07:11 | | 18:10 (22) | 08:10 | | | 08:13 | | 14:40 (44) | 08:56 |
| | 22:01 | 42 | 20:54 (21) | 21:01 | | | 19:43 | 29 | 18:39 (22) | 18:27 | | | 16:24 | 49 | 15:44 (8) | 16:04 |
| 20 | 05:19 | | 20:13 (21) | 06:15 | | | 07:13 | | 18:09 (22) | 08:12 | | | 08:15 | | 14:42 (44) | 08:57 |
| | 21:59 | 42 | 20:55 (21) | 20:58 | | | 19:40 | 31 | 18:40 (22) | 18:24 | | | 16:23 | 43 | 15:43 (8) | 16:04 |
| 21 | 05:21 | | 20:12 (21) | 06:16 | | | 07:15 | | 18:08 (22) | 08:14 | | | 08:17 | | 14:42 (44) | 08:58 |
| | 21:58 | 42 | 20:54 (21) | 20:56 | | | 19:37 | 32 | 18:40 (22) | 18:22 | | | 16:21 | 32 | 15:14 (44) | 16:05 |
| 22 | 05:22 | | 20:13 (21) | 06:18 | | 19:39 (18) | 07:17 | | 18:06 (22) | 08:16 | | | 08:18 | | 14:43 (44) | 08:58 |
| | 21:57 | 42 | 20:55 (21) | 20:53 | 11 | 19:50 (18) | 19:35 | 34 | 18:40 (22) | 18:20 | | | 16:20 | 30 | 15:13 (44) | 16:05 |
| 23 | 05:24 | | 20:13 (21) | 06:20 | | 19:37 (18) | 07:19 | | 18:05 (22) | 08:18 | | | 08:20 | | 14:45 (44) | 08:59 |
| | 21:55 | 42 | 20:55 (21) | 20:51 | 15 | 19:52 (18) | 19:32 | 35 | 18:40 (22) | 18:17 | | | 16:18 | 27 | 15:12 (44) | 16:06 |
| 24 | 05:25 | | 20:13 (21) | 06:22 | | 19:35 (18) | 07:21 | | 18:05 (22) | 08:20 | | 15:53 (44) | 08:22 | | 14:46 (44) | 08:59 |
| | 21:53 | 42 | 20:55 (21) | 20:49 | 19 | 19:54 (18) | 19:30 | 35 | 18:40 (22) | 18:15 | 7 | 16:00 (44) | 16:17 | 26 | 15:12 (44) | 16:06 |
| 25 | 05:27 | | 20:13 (21) | 06:24 | | 19:32 (18) | 07:23 | | 18:04 (22) | 07:22 | | 14:48 (44) | 08:24 | | 14:47 (44) | 09:00 |
| | 21:52 | 42 | 20:55 (21) | 20:46 | 22 | 19:54 (18) | 19:27 | 36 | 18:40 (22) | 17:13 | 34 | 16:16 (20) | 16:16 | 24 | 15:11 (44) | 16:07 |
| 26 | 05:29 | | 20:13 (21) | 06:26 | | 19:31 (18) | 07:25 | | 18:04 (22) | 07:24 | | 08:37 (25) | 08:26 | | 14:49 (44) | 09:00 |
| | 21:50 | 42 | 20:55 (21) | 20:44 | 24 | 19:55 (18) | 19:25 | 35 | 18:39 (22) | 17:11 | 62 | 16:20 (20) | 16:15 | 21 | 15:10 (44) | 16:07 |
| 27 | 05:30 | | 20:13 (21) | 06:28 | | 19:31 (18) | 07:26 | | 18:04 (22) | 07:26 | | 08:34 (25) | 08:28 | | 14:51 (44) | 09:00 |
| | 21:48 | 41 | 20:54 (21) | 20:41 | 24 | 19:55 (18) | 19:22 | 35 | 18:39 (22) | 17:08 | 80 | 16:21 (20) | 16:14 | 17 | 15:08 (44) | 16:08 |
| 28 | 05:32 | | 20:13 (21) | 06:30 | | 19:30 (18) | 07:28 | | 18:04 (22) | 07:28 | | 08:32 (25) | 08:29 | | 14:53 (44) | 09:00 |
| | 21:47 | 42 | 20:55 (21) | 20:39 | 26 | 19:56 (18) | 19:19 | 34 | 18:38 (22) | 17:06 | 92 | 16:22 (20) | 16:12 | 14 | 15:07 (44) | 16:09 |
| 29 | 05:34 | | 20:14 (21) | 06:32 | | 19:29 (18) | 07:30 | | 18:04 (22) | 07:30 | | 08:31 (25) | 08:31 | | 14:56 (44) | 09:00 |
| | 21:45 | 41 | 20:55 (21) | 20:36 | 27 | 19:56 (18) | 19:17 | 34 | 18:38 (22) | 17:04 | 99 | 16:22 (20) | 16:11 | 8 | 15:04 (44) | 16:10 |
| 30 | 05:36 | | 20:14 (21) | 06:34 | | 19:28 (18) | 07:32 | | 18:04 (22) | 07:32 | | 08:31 (25) | 08:33 | | | 09:00 |
| | 21:43 | 40 | 20:54 (21) | 20:34 | 27 | 19:55 (18) | 19:14 | 33 | 18:37 (22) | 17:02 | 105 | 16:24 (20) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:14 (21) | 06:35 | | 19:28 (18) | | | | 07:34 | | 08:30 (25) | | | | 09:00 |
| | 21:41 | 40 | 20:54 (21) | 20:31 | 27 | 19:55 (18) | | | | 16:59 | 112 | 16:24 (20) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 1212 | | | 538 | | | 648 | | | 935 | | | 2011 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,93 | | | 0,96 | | | 0,98 | | | 0,81 | | | 0,69 | | |
| Total reduction | | 0,43 | | | 0,47 | | | 0,37 | | | 0,24 | | | 0,10 | | |
| Total, real | | 519 | | | 251 | | | 238 | | | 220 | | | 208 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | | 09:18 (25) | 07:26 | | 09:08 (25) | 07:07 | | 05:55 | 20:14 (18) | 05:01 | 20:46 (21) |
| | 16:13 | | 17:08 | 27 | 09:45 (25) | 18:07 | 54 | 17:39 (8) | 20:09 | | 21:08 | 1 20:15 (18) | 22:02 | 18 21:04 (21) |
| 2 | 09:00 | | 08:25 | | 09:17 (25) | 07:24 | | 09:09 (25) | 07:05 | | 05:52 | | 05:00 | 20:46 (21) |
| | 16:15 | | 17:10 | 30 | 09:47 (25) | 18:09 | 57 | 17:41 (20) | 20:11 | | 21:10 | | 22:03 | 18 21:04 (21) |
| 3 | 09:00 | | 08:23 | | 09:15 (25) | 07:21 | | 09:10 (25) | 07:02 | | 05:50 | | 04:59 | 20:47 (21) |
| | 16:16 | | 17:12 | 34 | 09:49 (25) | 18:11 | 58 | 17:43 (20) | 20:13 | 6 19:46 (22) | 21:12 | | 22:04 | 16 21:03 (21) |
| 4 | 08:59 | | 08:21 | | 09:14 (25) | 07:19 | | 09:11 (25) | 07:00 | | 19:37 (22) | 05:48 | 04:58 | 20:47 (21) |
| | 16:17 | | 17:14 | 37 | 09:51 (25) | 18:13 | 58 | 17:45 (20) | 20:15 | 10 19:47 (22) | 21:14 | | 22:06 | 15 21:02 (21) |
| 5 | 08:59 | | 08:20 | | 09:13 (25) | 07:16 | | 09:12 (25) | 06:57 | | 19:35 (22) | 05:46 | 04:58 | 20:49 (21) |
| | 16:18 | | 17:16 | 39 | 09:52 (25) | 18:15 | 60 | 17:47 (20) | 20:17 | 14 19:49 (22) | 21:16 | | 22:07 | 14 21:03 (21) |
| 6 | 08:59 | | 08:18 | | 09:12 (25) | 07:14 | | 09:14 (25) | 06:55 | | 19:34 (22) | 05:44 | 04:57 | 20:49 (21) |
| | 16:20 | | 17:18 | 42 | 09:54 (25) | 18:17 | 60 | 17:49 (20) | 20:19 | 17 19:51 (22) | 21:18 | | 22:08 | 13 21:02 (21) |
| 7 | 08:58 | | 08:16 | | 09:11 (25) | 07:11 | | 09:16 (25) | 06:52 | | 19:33 (22) | 05:42 | 04:56 | 20:50 (21) |
| | 16:21 | | 17:20 | 44 | 09:55 (25) | 18:19 | 58 | 17:50 (20) | 20:21 | 20 19:53 (22) | 21:20 | | 22:09 | 11 21:01 (21) |
| 8 | 08:57 | | 08:14 | | 09:10 (25) | 07:09 | | 09:20 (25) | 06:50 | | 19:32 (22) | 05:40 | 04:55 | 20:52 (21) |
| | 16:23 | | 17:23 | 46 | 09:56 (25) | 18:21 | 52 | 17:50 (20) | 20:23 | 23 19:55 (22) | 21:22 | | 22:10 | 8 21:00 (21) |
| 9 | 08:57 | | 08:12 | | 09:09 (25) | 07:06 | | 17:14 (44) | 06:47 | | 19:32 (22) | 05:38 | 04:55 | 20:52 (21) |
| | 16:24 | | 17:25 | 47 | 09:56 (25) | 18:23 | 34 | 17:48 (20) | 20:25 | 23 19:55 (22) | 21:23 | | 22:11 | 7 20:59 (21) |
| 10 | 08:56 | | 08:10 | | 09:08 (25) | 07:04 | | 17:14 (44) | 06:45 | | 19:31 (22) | 05:36 | 20:48 (21) | 04:54 20:55 (21) |
| | 16:26 | | 17:27 | 49 | 09:57 (25) | 18:25 | 34 | 17:48 (8) | 20:27 | 23 19:54 (22) | 21:25 | 5 20:53 (21) | 22:12 | 3 20:58 (21) |
| 11 | 08:55 | | 08:07 | | 09:08 (25) | 07:01 | | 17:13 (44) | 06:42 | | 19:31 (22) | 05:34 | 20:46 (21) | 04:54 |
| | 16:27 | | 17:29 | 50 | 09:58 (25) | 18:27 | 34 | 17:47 (8) | 20:29 | 23 19:54 (22) | 21:27 | 8 20:54 (21) | 22:13 | |
| 12 | 08:54 | | 08:05 | | 09:08 (25) | 06:59 | | 17:11 (44) | 06:40 | | 19:30 (22) | 05:32 | 20:44 (21) | 04:53 |
| | 16:29 | | 17:31 | 51 | 09:59 (25) | 18:29 | 35 | 17:46 (8) | 20:31 | 23 19:53 (22) | 21:29 | 12 20:56 (21) | 22:14 | |
| 13 | 08:54 | | 08:03 | | 09:06 (25) | 06:56 | | 17:11 (44) | 06:37 | | 19:31 (22) | 05:30 | 20:44 (21) | 04:53 |
| | 16:31 | | 17:33 | 53 | 09:59 (25) | 18:31 | 34 | 17:45 (8) | 20:33 | 22 19:53 (22) | 21:31 | 14 20:58 (21) | 22:14 | |
| 14 | 08:53 | | 08:01 | | 09:06 (25) | 06:54 | | 17:11 (44) | 06:35 | | 19:31 (22) | 05:28 | 20:43 (21) | 04:52 |
| | 16:32 | | 17:35 | 54 | 10:00 (25) | 18:33 | 33 | 17:44 (8) | 20:35 | 20 19:51 (22) | 21:33 | 17 21:00 (21) | 22:15 | |
| 15 | 08:52 | | 07:59 | | 09:06 (25) | 06:51 | | 17:11 (44) | 06:32 | | 19:32 (22) | 05:26 | 20:42 (21) | 04:52 |
| | 16:34 | | 17:37 | 54 | 10:00 (25) | 18:35 | 32 | 17:43 (44) | 20:37 | 18 19:50 (22) | 21:35 | 19 21:01 (21) | 22:16 | |
| 16 | 08:51 | | 07:57 | | 09:05 (25) | 06:49 | | 17:10 (44) | 06:30 | | 19:34 (22) | 05:24 | 20:42 (21) | 04:52 |
| | 16:36 | | 17:40 | 55 | 10:00 (25) | 18:37 | 33 | 17:43 (44) | 20:39 | 15 19:49 (22) | 21:36 | 21 21:03 (21) | 22:16 | |
| 17 | 08:49 | | 07:54 | | 09:05 (25) | 06:46 | | 17:10 (44) | 06:27 | | 19:35 (22) | 05:23 | 20:42 (21) | 04:52 |
| | 16:38 | | 17:42 | 55 | 10:00 (25) | 18:39 | 32 | 17:42 (44) | 20:41 | 11 19:46 (22) | 21:38 | 22 21:04 (21) | 22:17 | |
| 18 | 08:48 | | 07:52 | | 09:06 (25) | 06:43 | | 17:11 (44) | 06:25 | | | 05:21 | 20:42 (21) | 04:52 |
| | 16:40 | | 17:44 | 55 | 10:01 (25) | 18:41 | 30 | 17:41 (44) | 20:43 | | | 21:40 24 | 21:06 (21) | 22:17 |
| 19 | 08:47 | | 07:50 | | 09:05 (25) | 06:41 | | 17:11 (44) | 06:22 | | 20:11 (18) | 05:19 | 20:41 (21) | 04:52 |
| | 16:42 | | 17:46 | 55 | 10:00 (25) | 18:43 | 29 | 17:40 (44) | 20:45 | 5 20:16 (18) | | 21:42 24 | 21:05 (21) | 22:18 |
| 20 | 08:46 | | 07:48 | | 09:05 (25) | 06:38 | | 17:12 (44) | 06:20 | | 20:09 (18) | 05:18 | 20:42 (21) | 04:52 |
| | 16:43 | | 17:48 | 56 | 10:01 (25) | 18:45 | 30 | 18:18 (19) | 20:47 | 8 20:17 (18) | | 21:43 24 | 21:06 (21) | 22:18 |
| 21 | 08:44 | | 07:45 | | 09:05 (25) | 06:36 | | 17:13 (44) | 06:18 | | 20:08 (18) | 05:16 | 20:41 (21) | 04:52 |
| | 16:45 | | 17:50 | 55 | 10:00 (25) | 18:47 | 32 | 18:20 (19) | 20:48 | 11 20:19 (18) | | 21:45 24 | 21:05 (21) | 22:18 |
| 22 | 08:43 | | 07:43 | | 09:05 (25) | 06:33 | | 17:15 (44) | 06:15 | | 20:08 (18) | 05:14 | 20:41 (21) | 04:52 |
| | 16:47 | | 17:52 | 55 | 10:00 (25) | 18:49 | 30 | 18:22 (19) | 20:50 | 13 20:21 (18) | | 21:47 25 | 21:06 (21) | 22:18 |
| 23 | 08:42 | | 07:41 | | 09:06 (25) | 06:31 | | 17:16 (44) | 06:13 | | 20:08 (18) | 05:13 | 20:42 (21) | 04:52 |
| | 16:49 | | 17:54 | 54 | 10:00 (25) | 18:51 | 30 | 18:24 (19) | 20:52 | 15 20:23 (18) | | 21:48 24 | 21:06 (21) | 22:19 |
| 24 | 08:40 | | 07:38 | | 09:05 (25) | 06:28 | | 17:19 (44) | 06:10 | | 20:07 (18) | 05:11 | 20:41 (21) | 04:53 |
| | 16:51 | | 17:56 | 54 | 09:59 (25) | 18:53 | 26 | 18:26 (19) | 20:54 | 17 20:24 (18) | | 21:50 24 | 21:05 (21) | 22:19 |
| 25 | 08:39 | | 07:36 | | 09:06 (25) | 06:25 | | 18:12 (19) | 06:08 | | 20:07 (18) | 05:10 | 20:42 (21) | 04:53 |
| | 16:53 | | 17:59 | 53 | 09:59 (25) | 18:55 | 16 | 18:28 (19) | 20:56 | 18 20:25 (18) | | 21:52 24 | 21:06 (21) | 22:19 |
| 26 | 08:37 | | 07:33 | | 09:06 (25) | 06:23 | | 18:11 (19) | 06:06 | | 20:07 (18) | 05:09 | 20:42 (21) | 04:53 |
| | 16:55 | | 18:01 | 51 | 09:57 (25) | 18:57 | 16 | 18:27 (19) | 20:58 | 18 20:25 (18) | | 21:53 24 | 21:06 (21) | 22:19 |
| 27 | 08:36 | | 07:31 | | 09:07 (25) | 06:20 | | 18:12 (19) | 06:04 | | 20:08 (18) | 05:07 | 20:43 (21) | 04:54 |
| | 16:57 | | 18:03 | 50 | 09:57 (25) | 18:59 | 15 | 18:27 (19) | 21:00 | 16 20:24 (18) | | 21:55 23 | 21:06 (21) | 22:18 |
| 28 | 08:34 | | 07:29 | | 09:07 (25) | 06:18 | | 18:13 (19) | 06:01 | | 20:08 (18) | 05:06 | 20:44 (21) | 04:54 |
| | 16:59 | | 18:05 | 48 | 09:55 (25) | 19:01 | 12 | 18:25 (19) | 21:02 | 16 20:24 (18) | | 21:56 21 | 21:05 (21) | 22:18 |
| 29 | 08:32 | | | | | 07:15 | | 19:15 (19) | 05:59 | | 20:09 (18) | 05:05 | 20:44 (21) | 04:55 |
| | 17:01 | | | | | 20:03 | 6 | 19:21 (19) | 21:04 | 12 20:21 (18) | | 21:58 21 | 21:05 (21) | 22:18 |
| 30 | 08:31 | | 09:24 (25) | | | 07:13 | | | 05:57 | | 20:10 (18) | 05:04 | 20:45 (21) | 04:56 |
| | 17:04 | 15 | 09:39 (25) | | | 20:05 | | | 21:06 | 10 20:20 (18) | | 21:59 20 | 21:05 (21) | 22:18 |
| 31 | 08:29 | | 09:21 (25) | | | 07:10 | | | | | | 05:02 | 20:45 (21) | |
| | 17:06 | 21 | 09:42 (25) | | | 20:07 | | | | | | 22:00 20 | 21:05 (21) | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | 520 |
| Total, worst case | | 36 | | | 1353 | | 1030 | | | 427 | | 441 | | 123 |
| Sun reduction | | 0,18 | | | 0,25 | | 0,34 | | | 0,39 | | 0,52 | | 0,48 |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | 0,76 | | | 0,76 | | 0,91 | | | 0,98 | | 0,88 | | 0,88 |
| Total reduction | | 0,13 | | | 0,18 | | 0,31 | | | 0,38 | | 0,45 | | 0,42 |
| Total, real | | 5 | | | 247 | | 315 | | | 162 | | 197 | | 51 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | | 05:39 | | 20:55 (21) | 06:37 | | 19:30 (22) | 07:34 | | 17:51 (44) | 07:36 | | 08:38 (25) | 08:34 |
| | 22:17 | | | 21:39 | 11 | 21:06 (21) | 20:29 | 23 | 19:53 (22) | 19:12 | 34 | 18:25 (8) | 16:57 | 49 | 09:27 (25) | 16:10 |
| 2 | 04:57 | | | 05:41 | | 20:57 (21) | 06:39 | | 19:30 (22) | 07:36 | | 17:51 (44) | 07:38 | | 08:38 (25) | 08:36 |
| | 22:17 | | | 21:37 | 7 | 21:04 (21) | 20:26 | 23 | 19:53 (22) | 19:09 | 35 | 18:26 (8) | 16:55 | 48 | 09:26 (25) | 16:09 |
| 3 | 04:58 | | 20:58 (21) | 05:43 | | 20:59 (21) | 06:41 | | 19:30 (22) | 07:38 | | 17:52 (44) | 07:40 | | 08:40 (25) | 08:38 |
| | 22:17 | 6 | 21:04 (21) | 21:35 | 4 | 21:03 (21) | 20:24 | 23 | 19:53 (22) | 19:06 | 34 | 18:26 (8) | 16:53 | 46 | 09:26 (25) | 16:08 |
| 4 | 04:59 | | 20:57 (21) | 05:45 | | | 06:43 | | 19:29 (22) | 07:40 | | 17:52 (44) | 07:42 | | 08:41 (25) | 08:39 |
| | 22:16 | 8 | 21:05 (21) | 21:33 | | | 20:21 | 23 | 19:52 (22) | 19:04 | 33 | 18:25 (20) | 16:51 | 43 | 09:24 (25) | 16:07 |
| 5 | 05:00 | | 20:57 (21) | 05:46 | | | 06:45 | | 19:29 (22) | 07:42 | | 09:59 (25) | 07:44 | | 08:42 (25) | 08:41 |
| | 22:15 | 10 | 21:07 (21) | 21:31 | | | 20:19 | 20 | 19:49 (22) | 19:01 | 46 | 18:26 (20) | 16:49 | 41 | 09:23 (25) | 16:06 |
| 6 | 05:01 | | 20:56 (21) | 05:48 | | | 06:47 | | 19:30 (22) | 07:44 | | 09:54 (25) | 07:46 | | 08:43 (25) | 08:42 |
| | 22:15 | 12 | 21:08 (21) | 21:29 | | | 20:16 | 17 | 19:47 (22) | 18:59 | 55 | 18:26 (20) | 16:47 | 39 | 09:22 (25) | 16:06 |
| 7 | 05:02 | | 20:56 (21) | 05:50 | | | 06:49 | | 19:30 (22) | 07:46 | | 09:51 (25) | 07:48 | | 08:45 (25) | 08:44 |
| | 22:14 | 13 | 21:09 (21) | 21:27 | | | 20:14 | 15 | 19:45 (22) | 18:56 | 60 | 18:26 (20) | 16:45 | 36 | 09:21 (25) | 16:05 |
| 8 | 05:03 | | 20:55 (21) | 05:52 | | | 06:51 | | 19:32 (22) | 07:48 | | 09:49 (25) | 07:51 | | 08:46 (25) | 08:45 |
| | 22:13 | 14 | 21:09 (21) | 21:25 | | | 20:11 | 10 | 19:42 (22) | 18:54 | 60 | 18:24 (20) | 16:43 | 34 | 09:20 (25) | 16:05 |
| 9 | 05:04 | | 20:54 (21) | 05:54 | | | 06:52 | | 19:33 (22) | 07:50 | | 09:47 (25) | 07:53 | | 08:48 (25) | 08:46 |
| | 22:12 | 16 | 21:10 (21) | 21:23 | | | 20:08 | 6 | 19:39 (22) | 18:51 | 60 | 18:22 (20) | 16:41 | 30 | 09:18 (25) | 16:04 |
| 10 | 05:05 | | 20:54 (21) | 05:56 | | | 06:54 | | | 07:52 | | 09:45 (25) | 07:55 | | 08:50 (25) | 08:48 |
| | 22:11 | 17 | 21:11 (21) | 21:21 | | | 20:06 | | | 18:49 | 59 | 18:19 (20) | 16:39 | 25 | 09:15 (25) | 16:04 |
| 11 | 05:06 | | 20:53 (21) | 05:58 | | | 06:56 | | | 07:54 | | 09:44 (25) | 07:57 | | 08:53 (25) | 08:49 |
| | 22:10 | 18 | 21:11 (21) | 21:19 | | | 20:03 | | | 18:46 | 57 | 18:16 (20) | 16:37 | 21 | 09:14 (25) | 16:04 |
| 12 | 05:08 | | 20:53 (21) | 05:59 | | 20:21 (18) | 06:58 | | | 07:56 | | 09:42 (25) | 07:59 | | 08:56 (25) | 08:50 |
| | 22:09 | 19 | 21:12 (21) | 21:16 | 5 | 20:26 (18) | 20:01 | | | 18:44 | 56 | 18:14 (20) | 16:36 | 14 | 09:10 (25) | 16:03 |
| 13 | 05:09 | | 20:53 (21) | 06:01 | | 20:18 (18) | 07:00 | | | 07:58 | | 09:41 (25) | 08:01 | | | 08:51 |
| | 22:08 | 20 | 21:13 (21) | 21:14 | 11 | 20:29 (18) | 19:58 | | | 18:41 | 47 | 10:28 (25) | 16:34 | | | 16:03 |
| 14 | 05:10 | | 20:53 (21) | 06:03 | | 20:17 (18) | 07:02 | | 19:07 (19) | 07:59 | | 09:40 (25) | 08:03 | | | 08:52 |
| | 22:07 | 21 | 21:14 (21) | 21:12 | 13 | 20:30 (18) | 19:56 | 5 | 19:12 (19) | 18:39 | 49 | 10:29 (25) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 20:52 (21) | 06:05 | | 20:16 (18) | 07:04 | | 19:03 (19) | 08:01 | | 09:39 (25) | 08:05 | | | 08:53 |
| | 22:06 | 22 | 21:14 (21) | 21:10 | 15 | 20:31 (18) | 19:53 | 11 | 19:14 (19) | 18:36 | 50 | 10:29 (25) | 16:30 | | | 16:03 |
| 16 | 05:13 | | 20:52 (21) | 06:07 | | 20:14 (18) | 07:06 | | 19:01 (19) | 08:03 | | 09:38 (25) | 08:07 | | | 08:54 |
| | 22:05 | 22 | 21:14 (21) | 21:07 | 17 | 20:31 (18) | 19:50 | 14 | 19:15 (19) | 18:34 | 52 | 10:30 (25) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 20:52 (21) | 06:09 | | 20:13 (18) | 07:07 | | 19:00 (19) | 08:05 | | 09:37 (25) | 08:09 | | | 08:55 |
| | 22:04 | 23 | 21:15 (21) | 21:05 | 19 | 20:32 (18) | 19:48 | 16 | 19:16 (19) | 18:32 | 53 | 10:30 (25) | 16:27 | | | 16:03 |
| 18 | 05:16 | | 20:52 (21) | 06:11 | | 20:13 (18) | 07:09 | | 18:59 (19) | 08:07 | | 09:36 (25) | 08:11 | | | 08:56 |
| | 22:02 | 23 | 21:15 (21) | 21:03 | 19 | 20:32 (18) | 19:45 | 17 | 19:16 (19) | 18:29 | 54 | 10:30 (25) | 16:26 | | | 16:04 |
| 19 | 05:17 | | 20:51 (21) | 06:13 | | 20:13 (18) | 07:11 | | 18:07 (44) | 08:09 | | 09:36 (25) | 08:13 | | | 08:56 |
| | 22:01 | 24 | 21:15 (21) | 21:01 | 17 | 20:30 (18) | 19:43 | 24 | 19:14 (19) | 18:27 | 54 | 10:30 (25) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 20:52 (21) | 06:15 | | 20:12 (18) | 07:13 | | 18:03 (44) | 08:12 | | 09:36 (25) | 08:15 | | | 08:57 |
| | 21:59 | 24 | 21:16 (21) | 20:58 | 15 | 20:27 (18) | 19:40 | 30 | 19:11 (19) | 18:24 | 55 | 10:31 (25) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 20:51 (21) | 06:16 | | 20:12 (18) | 07:15 | | 18:01 (44) | 08:14 | | 09:36 (25) | 08:17 | | | 08:58 |
| | 21:58 | 25 | 21:16 (21) | 20:56 | 13 | 20:25 (18) | 19:37 | 31 | 19:09 (19) | 18:22 | 55 | 10:31 (25) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 20:52 (21) | 06:18 | | 20:13 (18) | 07:17 | | 17:58 (44) | 08:16 | | 09:35 (25) | 08:18 | | | 08:58 |
| | 21:56 | 24 | 21:16 (21) | 20:53 | 10 | 20:23 (18) | 19:35 | 31 | 19:05 (19) | 18:20 | 56 | 10:31 (25) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 20:51 (21) | 06:20 | | 20:14 (18) | 07:19 | | 17:56 (44) | 08:18 | | 09:35 (25) | 08:20 | | | 08:59 |
| | 21:55 | 25 | 21:16 (21) | 20:51 | 7 | 20:21 (18) | 19:32 | 31 | 19:03 (19) | 18:17 | 56 | 10:31 (25) | 16:18 | | | 16:06 |
| 24 | 05:25 | | 20:52 (21) | 06:22 | | 20:15 (18) | 07:21 | | 17:55 (44) | 08:20 | | 09:35 (25) | 08:22 | | | 08:59 |
| | 21:53 | 24 | 21:16 (21) | 20:49 | 4 | 20:19 (18) | 19:30 | 28 | 18:23 (44) | 18:15 | 55 | 10:30 (25) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 20:52 (21) | 06:24 | | 19:42 (22) | 07:23 | | 17:54 (44) | 07:22 | | 08:35 (25) | 08:24 | | | 09:00 |
| | 21:52 | 24 | 21:16 (21) | 20:46 | 3 | 19:45 (22) | 19:27 | 30 | 18:24 (44) | 17:13 | 55 | 09:30 (25) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:52 (21) | 06:26 | | 19:38 (22) | 07:25 | | 17:53 (44) | 07:24 | | 08:36 (25) | 08:26 | | | 09:00 |
| | 21:50 | 24 | 21:16 (21) | 20:44 | 11 | 19:49 (22) | 19:24 | 31 | 18:24 (44) | 17:10 | 54 | 09:30 (25) | 16:15 | | | 16:07 |
| 27 | 05:30 | | 20:52 (21) | 06:28 | | 19:35 (22) | 07:26 | | 17:52 (44) | 07:26 | | 08:36 (25) | 08:28 | | | 09:00 |
| | 21:48 | 22 | 21:14 (21) | 20:41 | 16 | 19:51 (22) | 19:22 | 32 | 18:24 (44) | 17:08 | 54 | 09:30 (25) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 20:53 (21) | 06:30 | | 19:34 (22) | 07:28 | | 17:52 (44) | 07:28 | | 08:36 (25) | 08:29 | | | 09:00 |
| | 21:47 | 20 | 21:13 (21) | 20:39 | 18 | 19:52 (22) | 19:19 | 32 | 18:24 (44) | 17:06 | 53 | 09:29 (25) | 16:12 | | | 16:09 |
| 29 | 05:34 | | 20:54 (21) | 06:32 | | 19:32 (22) | 07:30 | | 17:51 (44) | 07:30 | | 08:36 (25) | 08:31 | | | 09:00 |
| | 21:45 | 18 | 21:12 (21) | 20:36 | 20 | 19:52 (22) | 19:17 | 33 | 18:24 (44) | 17:04 | 52 | 09:28 (25) | 16:11 | | | 16:10 |
| 30 | 05:36 | | 20:54 (21) | 06:34 | | 19:31 (22) | 07:32 | | 17:51 (44) | 07:32 | | 08:37 (25) | 08:33 | | | 09:00 |
| | 21:43 | 15 | 21:09 (21) | 20:34 | 22 | 19:53 (22) | 19:14 | 34 | 18:25 (8) | 17:02 | 52 | 09:29 (25) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:55 (21) | 06:35 | | 19:30 (22) | | | | 07:34 | | 08:38 (25) | | | | 09:00 |
| | 21:41 | 13 | 21:08 (21) | 20:31 | 23 | 19:53 (22) | | | | 16:59 | 50 | 09:28 (25) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 546 | | | 300 | | | 590 | | | 1595 | | | 426 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,88 | | | 0,97 | | | 0,97 | | | 0,81 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,49 | | | 0,38 | | | 0,24 | | | 0,12 | | |
| Total, real | | 230 | | | 147 | | | 223 | | | 387 | | | 50 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:32 (10) | 05:55 | | 05:02 | 05:37 (9) |
| | 16:14 | 17:08 | 18:07 | | 20:10 | 29 08:01 (6) | 21:09 | | 22:02 | 20 05:57 (9) |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:30 (10) | 05:53 | | 05:01 | 05:37 (9) |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 31 08:01 (6) | 21:11 | | 22:04 | 22 05:59 (9) |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:27 (10) | 05:51 | | 05:00 | 05:36 (9) |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 32 07:59 (6) | 21:13 | | 22:05 | 24 06:00 (9) |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:26 (10) | 05:49 | | 04:59 | 05:36 (9) |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 32 07:58 (6) | 21:14 | | 22:06 | 24 06:00 (9) |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:24 (10) | 05:46 | | 04:58 | 05:35 (9) |
| | 16:19 | 17:17 | 18:16 | | 20:17 | 31 07:55 (6) | 21:16 | | 22:07 | 26 06:01 (9) |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:24 (10) | 05:44 | | 04:57 | 05:35 (9) |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 27 07:51 (10) | 21:18 | | 22:08 | 27 06:02 (9) |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:23 (10) | 05:42 | | 04:57 | 05:35 (9) |
| | 16:22 | 17:21 | 18:20 | | 20:21 | 28 07:51 (10) | 21:20 | | 22:09 | 27 06:02 (9) |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:23 (10) | 05:40 | | 04:56 | 05:35 (9) |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 28 07:51 (10) | 21:22 | | 22:10 | 28 06:03 (9) |
| 9 | 08:57 | 08:12 | 07:07 | | 06:48 | 07:22 (10) | 05:38 | | 04:55 | 05:34 (9) |
| | 16:25 | 17:25 | 18:24 | | 20:25 | 28 07:50 (10) | 21:24 | | 22:11 | 29 06:03 (9) |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:22 (10) | 05:36 | | 04:55 | 05:35 (9) |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 28 07:50 (10) | 21:26 | | 22:12 | 29 06:04 (9) |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 07:22 (10) | 05:34 | | 04:54 | 05:34 (9) |
| | 16:28 | 17:30 | 18:28 | | 20:29 | 27 07:49 (10) | 21:28 | | 22:13 | 30 06:04 (9) |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:22 (10) | 05:32 | | 04:54 | 05:34 (9) |
| | 16:30 | 17:32 | 18:30 | | 20:31 | 27 07:49 (10) | 21:30 | | 22:14 | 31 06:05 (9) |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 07:22 (10) | 05:30 | | 04:53 | 05:35 (9) |
| | 16:31 | 17:34 | 18:32 | | 20:33 | 25 07:47 (10) | 21:31 | | 22:15 | 30 06:05 (9) |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 07:23 (10) | 05:29 | | 04:53 | 05:34 (9) |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 23 07:46 (10) | 21:33 | | 22:16 | 31 06:05 (9) |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | 07:24 (10) | 05:27 | | 04:53 | 05:34 (9) |
| | 16:35 | 17:38 | 18:36 | | 20:37 | 21 07:45 (10) | 21:35 | | 22:16 | 31 06:05 (9) |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 06:55 (11) | 05:25 | | 04:53 | 05:34 (9) |
| | 16:37 | 17:40 | 18:38 | | 20:39 | 20 07:43 (10) | 21:37 | | 22:17 | 32 06:06 (9) |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 06:53 (11) | 05:23 | | 04:52 | 05:35 (9) |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21 07:41 (10) | 21:39 | | 22:17 | 31 06:06 (9) |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 06:51 (11) | 05:22 | | 04:52 | 05:35 (9) |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 18 07:38 (10) | 21:40 | | 22:18 | 31 06:06 (9) |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 06:48 (11) | 05:20 | | 04:52 | 05:35 (9) |
| | 16:42 | 17:47 | 18:44 | | 20:45 | 13 07:01 (11) | 21:42 | | 22:18 | 32 06:07 (9) |
| 20 | 08:46 | 07:48 | 06:39 | | 06:21 | 06:46 (11) | 05:18 | | 04:52 | 05:35 (9) |
| | 16:44 | 17:49 | 18:46 | | 20:47 | 16 07:02 (11) | 21:44 | | 22:18 | 32 06:07 (9) |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 06:44 (11) | 05:17 | | 04:52 | 05:36 (9) |
| | 16:46 | 17:51 | 18:48 | | 20:49 | 19 07:03 (11) | 21:46 | | 22:19 | 32 06:08 (9) |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 06:41 (11) | 05:15 | | 04:53 | 05:36 (9) |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 21 07:02 (11) | 21:47 | | 22:19 | 32 06:08 (9) |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 06:41 (11) | 05:14 | | 04:53 | 05:36 (9) |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 21 07:02 (11) | 21:49 | | 22:19 | 32 06:08 (9) |
| 24 | 08:41 | 07:39 | 06:29 | 06:53 (6) | 06:11 | 06:41 (11) | 05:12 | | 04:53 | 05:36 (9) |
| | 16:52 | 17:57 | 18:54 | 7 07:00 (6) | 20:55 | 21 07:02 (11) | 21:51 | | 22:19 | 32 06:08 (9) |
| 25 | 08:39 | 07:36 | 06:26 | 06:50 (6) | 06:09 | 06:41 (11) | 05:11 | | 04:54 | 05:37 (9) |
| | 16:54 | 17:59 | 18:56 | 11 07:01 (6) | 20:57 | 21 07:02 (11) | 21:52 | | 22:19 | 31 06:08 (9) |
| 26 | 08:38 | 07:34 | 06:23 | 06:48 (6) | 06:06 | 06:41 (11) | 05:09 | | 04:54 | 05:36 (9) |
| | 16:56 | 18:01 | 18:58 | 15 07:03 (6) | 20:59 | 19 07:00 (11) | 21:54 | | 22:19 | 32 06:08 (9) |
| 27 | 08:36 | 07:32 | 06:21 | 06:45 (6) | 06:04 | 06:41 (11) | 05:08 | | 04:54 | 05:37 (9) |
| | 16:58 | 18:03 | 19:00 | 18 07:03 (6) | 21:01 | 19 07:00 (11) | 21:55 | | 22:19 | 32 06:09 (9) |
| 28 | 08:34 | 07:29 | 06:18 | 06:43 (6) | 06:02 | 06:42 (11) | 05:07 | 05:43 (9) | 04:55 | 05:37 (9) |
| | 17:00 | 18:05 | 19:02 | 20 07:03 (6) | 21:03 | 17 06:59 (11) | 21:57 | 8 05:51 (9) | 22:19 | 31 06:08 (9) |
| 29 | 08:33 | | 07:16 | 07:41 (6) | 06:00 | 06:44 (11) | 05:05 | 05:41 (9) | 04:56 | 05:38 (9) |
| | 17:02 | | 20:04 | 22 08:03 (6) | 21:05 | 13 06:57 (11) | 21:58 | 13 05:54 (9) | 22:19 | 31 06:09 (9) |
| 30 | 08:31 | | 07:13 | 07:41 (6) | 05:57 | 06:45 (11) | 05:04 | 05:39 (9) | 04:56 | 05:39 (9) |
| | 17:04 | | 20:06 | 21 08:02 (6) | 21:07 | 10 06:55 (11) | 22:00 | 16 05:55 (9) | 22:18 | 30 06:09 (9) |
| 31 | 08:29 | | 07:11 | 07:35 (10) | | | 05:03 | 05:38 (9) | | |
| | 17:06 | | 20:08 | 27 08:02 (6) | | | 22:01 | 18 05:56 (9) | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 | |
| Total, worst case | | | | 141 | | 686 | | 55 | | 882 |
| Sun reduction | | | | 0,34 | | 0,39 | | 0,52 | | 0,48 |
| Oper. time red. | | | | 1,00 | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | | | 1,00 | | 0,99 | | 0,81 | | 0,81 |
| Total reduction | | | | 0,34 | | 0,39 | | 0,42 | | 0,40 |
| Total, real | | | | 48 | | 268 | | 23 | | 350 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:38 (9) | 05:40 | | 06:38 | 07:21 (10) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 30 | 06:08 (9) | 21:40 | | 20:29 | 27 | 07:48 (10) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | | 05:39 (9) | 05:42 | | 06:40 | 07:20 (10) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 30 | 06:09 (9) | 21:38 | | 20:27 | 28 | 07:48 (10) | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 | | 05:40 (9) | 05:43 | | 06:42 | 07:20 (10) | 07:39 | 07:41 | 08:38 |
| | 22:17 | 29 | 06:09 (9) | 21:36 | | 20:24 | 28 | 07:48 (10) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 05:40 (9) | 05:45 | | 06:44 | 07:20 (10) | 07:40 | 07:43 | 08:40 |
| | 22:16 | 29 | 06:09 (9) | 21:34 | | 20:22 | 28 | 07:48 (10) | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 | | 05:41 (9) | 05:47 | | 06:45 | 07:20 (10) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 28 | 06:09 (9) | 21:32 | | 20:19 | 28 | 07:48 (10) | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | | 05:41 (9) | 05:49 | | 06:47 | 07:19 (10) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 27 | 06:08 (9) | 21:30 | | 20:17 | 27 | 07:46 (10) | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | | 05:41 (9) | 05:51 | | 06:49 | 07:19 (10) | 07:46 | 07:49 | 08:44 |
| | 22:14 | 26 | 06:07 (9) | 21:28 | | 20:14 | 31 | 07:50 (6) | 18:57 | 16:46 | 16:06 |
| 8 | 05:04 | | 05:42 (9) | 05:53 | | 06:51 | 07:20 (10) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 25 | 06:07 (9) | 21:26 | | 20:12 | 32 | 07:52 (6) | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | | 05:44 (9) | 05:54 | | 06:53 | 07:21 (10) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 24 | 06:08 (9) | 21:24 | | 20:09 | 32 | 07:53 (6) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 05:44 (9) | 05:56 | | 06:55 | 07:23 (10) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 23 | 06:07 (9) | 21:21 | | 20:06 | 31 | 07:54 (6) | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 | | 05:45 (9) | 05:58 | | 06:57 | 07:25 (10) | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21 | 06:06 (9) | 21:19 | | 20:04 | 30 | 07:55 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 05:46 (9) | 06:00 | 06:56 (11) | 06:59 | 07:26 (10) | 07:56 | 07:59 | 08:50 |
| | 22:10 | 19 | 06:05 (9) | 21:17 | 5 | 07:01 (11) | 20:01 | 28 | 07:54 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 05:10 | | 05:47 (9) | 06:02 | 06:53 (11) | 07:01 | 07:32 (6) | 07:58 | 08:01 | 08:52 |
| | 22:09 | 17 | 06:04 (9) | 21:15 | 11 | 07:04 (11) | 19:59 | 22 | 07:54 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 05:48 (9) | 06:04 | 06:51 (11) | 07:02 | 07:32 (6) | 08:00 | 08:03 | 08:53 |
| | 22:08 | 15 | 06:03 (9) | 21:13 | 14 | 07:05 (11) | 19:56 | 21 | 07:53 (6) | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 05:51 (9) | 06:06 | 06:50 (11) | 07:04 | 07:32 (6) | 08:02 | 08:05 | 08:54 |
| | 22:07 | 11 | 06:02 (9) | 21:10 | 16 | 07:06 (11) | 19:54 | 21 | 07:53 (6) | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | | 05:54 (9) | 06:08 | 06:49 (11) | 07:06 | 07:34 (6) | 08:04 | 08:07 | 08:55 |
| | 22:05 | 5 | 05:59 (9) | 21:08 | 18 | 07:07 (11) | 19:51 | 18 | 07:52 (6) | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | | | 06:09 | 06:48 (11) | 07:08 | 07:36 (6) | 08:06 | 08:09 | 08:55 |
| | 22:04 | | | 21:06 | 20 | 07:08 (11) | 19:48 | 15 | 07:51 (6) | 18:32 | 16:28 | 16:04 |
| 18 | 05:17 | | | 06:11 | 06:47 (11) | 07:10 | 07:37 (6) | 08:08 | 08:11 | 08:56 |
| | 22:03 | | | 21:03 | 20 | 07:07 (11) | 19:46 | 12 | 07:49 (6) | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | | 06:13 | 06:47 (11) | 07:12 | 07:39 (6) | 08:10 | 08:13 | 08:57 |
| | 22:01 | | | 21:01 | 21 | 07:08 (11) | 19:43 | 8 | 07:47 (6) | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | | | 06:15 | 06:46 (11) | 07:14 | 07:41 (6) | 08:12 | 08:15 | 08:58 |
| | 22:00 | | | 20:59 | 22 | 07:08 (11) | 19:41 | 3 | 07:44 (6) | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | | | 06:17 | 06:47 (11) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | | 20:56 | 21 | 07:08 (11) | 19:38 | | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | | | 06:19 | 06:49 (11) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | | 20:54 | 18 | 07:07 (11) | 19:35 | | | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | | | 06:21 | 06:50 (11) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | | 20:52 | 16 | 07:06 (11) | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | | 06:23 | 06:52 (11) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | | 20:49 | 13 | 07:05 (11) | 19:30 | | | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | | | 06:25 | 06:54 (11) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | | 20:47 | 19 | 07:41 (10) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | | 06:27 | 06:56 (11) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | | 20:44 | 21 | 07:44 (10) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | 06:57 (11) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 21 | 07:45 (10) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | 07:25 (10) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 21 | 07:46 (10) | 19:20 | | | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | | | 06:32 | 07:24 (10) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 23 | 07:47 (10) | 19:17 | | | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | | | 06:34 | 07:23 (10) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | | 20:34 | 25 | 07:48 (10) | 19:15 | | | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | | | 06:36 | 07:22 (10) | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 27 | 07:49 (10) | | | | 17:00 | | 16:13 |
| Potential sun hours | 521 | | | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | 359 | | | 372 | | 470 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,81 | | | 0,98 | | 1,00 | | | |
| Total reduction | | 0,40 | | | 0,51 | | 0,40 | | | |
| Total, real | | 143 | | | 188 | | 187 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 06:23 (6) | 05:02 | 04:57 | 05:40 | 06:30 (6) | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 28 | 06:51 (35) | 22:02 | 22:18 | 21:40 28 | 06:58 (6) | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:22 (6) | 05:01 | 04:58 | 05:42 | 06:30 (6) | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 29 | 06:51 (35) | 22:04 | 22:17 | 21:38 29 | 06:59 (6) | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 06:21 (6) | 05:00 | 04:59 | 05:43 | 06:29 (6) | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:12 29 | 06:50 (35) | 22:05 | 22:17 | 21:36 29 | 06:58 (6) | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 06:21 (6) | 04:59 | 04:59 | 05:45 | 06:29 (6) | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 28 | 06:49 (35) | 22:06 | 22:16 | 21:34 29 | 06:58 (6) | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 06:20 (6) | 04:58 | 05:00 | 05:47 | 06:30 (6) | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 28 | 06:48 (6) | 22:07 | 22:16 | 21:32 29 | 06:59 (6) | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:20 (6) | 04:57 | 05:01 | 05:49 | 06:29 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 28 | 06:48 (6) | 22:08 | 22:15 | 21:30 29 | 06:58 (6) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 06:19 (6) | 04:57 | 05:02 | 05:51 | 06:29 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 29 | 06:48 (6) | 22:09 | 22:14 | 21:28 29 | 06:58 (6) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:19 (6) | 04:56 | 05:04 | 05:53 | 06:30 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 29 | 06:48 (6) | 22:10 | 22:14 | 21:26 28 | 06:58 (6) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 06:19 (6) | 04:55 | 05:05 | 05:54 | 06:30 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 29 | 06:48 (6) | 22:11 | 22:13 | 21:23 29 | 06:59 (35) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 06:19 (6) | 04:55 | 05:06 | 05:56 | 06:30 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 29 | 06:48 (6) | 22:12 | 22:12 | 21:21 28 | 06:58 (35) | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 06:20 (6) | 04:54 | 05:07 | 05:58 | 06:31 (6) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 28 | 06:48 (6) | 22:13 | 22:11 | 21:19 28 | 06:59 (35) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:20 (6) | 04:54 | 05:08 | 06:00 | 06:32 (6) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 28 | 06:48 (6) | 22:14 | 22:10 | 21:17 28 | 07:00 (35) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 06:20 (6) | 04:53 | 05:10 | 06:02 | 06:33 (6) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 27 | 06:47 (6) | 22:15 | 22:09 | 21:15 27 | 07:00 (35) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 06:21 (6) | 04:53 | 05:11 | 06:04 | 06:34 (6) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 26 | 06:47 (6) | 22:15 | 22:08 | 21:13 25 | 06:59 (35) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:21 (6) | 04:53 | 05:12 | 06:06 | 06:36 (6) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 25 | 06:46 (6) | 22:16 | 22:07 | 21:10 23 | 06:59 (35) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:21 (6) | 04:53 | 05:14 | 06:08 | 06:40 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 24 | 06:45 (6) | 22:17 | 22:05 | 21:08 19 | 06:59 (35) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 06:22 (6) | 04:52 | 05:15 | 06:09 | 06:40 (35) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 23 | 06:45 (6) | 22:17 | 22:04 | 21:06 19 | 06:59 (35) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 06:23 (6) | 04:52 | 05:17 | 06:11 | 06:41 (35) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 21 | 06:44 (6) | 22:18 | 22:03 | 21:03 16 | 06:57 (35) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 06:24 (6) | 04:52 | 05:18 | 06:13 | 06:43 (35) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 19 | 06:43 (6) | 22:18 | 22:01 | 21:01 13 | 06:56 (35) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 06:25 (6) | 04:52 | 05:20 | 06:15 | 06:45 (35) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 17 | 06:42 (6) | 22:18 | 22:00 | 20:59 9 | 06:54 (35) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 06:27 (6) | 04:52 | 05:21 | 06:40 (6) | 06:17 | 06:47 (35) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 14 | 06:41 (6) | 22:19 | 21:58 8 | 06:48 (6) | 20:56 5 | 06:52 (35) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 06:41 (35) | 05:15 | 06:28 (6) | 04:53 | 05:23 | 06:37 (6) | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 6 06:47 (35) | 21:47 10 | 06:38 (6) | 22:19 | 21:57 13 | 06:50 (6) | 20:54 | | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39 (35) | 05:14 | 06:31 (6) | 04:53 | 05:24 | 06:36 (6) | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 10 06:49 (35) | 21:49 4 | 06:35 (6) | 22:19 | 21:55 16 | 06:52 (6) | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 06:37 (35) | 05:12 | | 04:53 | 05:26 | 06:35 (6) | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 13 06:50 (35) | 21:50 | | 22:19 | 21:54 17 | 06:52 (6) | 20:49 | | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 06:35 (35) | 05:11 | | 04:54 | 05:28 | 06:34 (6) | 06:25 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 16 06:51 (35) | 21:52 | | 22:19 | 21:52 20 | 06:54 (6) | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:33 (35) | 05:09 | | 04:54 | 05:29 | 06:33 (6) | 06:27 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 18 06:51 (35) | 21:54 | | 22:19 | 21:51 21 | 06:54 (6) | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 06:31 (6) | 05:08 | | 04:54 | 05:31 | 06:32 (6) | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 20 06:51 (35) | 21:55 | | 22:19 | 21:49 24 | 06:56 (6) | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:28 (6) | 05:07 | | 04:55 | 05:33 | 06:31 (6) | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 24 06:52 (35) | 21:57 | | 22:19 | 21:47 25 | 06:56 (6) | 20:39 | | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 06:26 (6) | 05:05 | | 04:56 | 05:34 | 06:31 (6) | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 26 06:52 (35) | 21:58 | | 22:19 | 21:45 26 | 06:57 (6) | 20:37 | | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 06:24 (6) | 05:04 | | 04:56 | 05:36 | 06:31 (6) | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 28 06:52 (35) | 22:00 | | 22:18 | 21:43 27 | 06:58 (6) | 20:34 | | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | | 05:38 | 06:30 (6) | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 27 | 06:57 (6) | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 161 | 552 | | 224 | 499 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | 1,00 | | | | |
| Wind dir. red. | | | | 0,94 | 0,93 | | 0,93 | 0,94 | | | | |
| Total reduction | | | | 0,37 | 0,48 | | 0,45 | 0,48 | | | | |
| Total, real | | | | 60 | 266 | | 101 | 241 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:42 (6) | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 24 | 06:01 (6) 22:18 26 | 06:08 (6) | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 05:38 (6) 04:58 | 05:43 (6) | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 24 | 06:02 (6) 22:17 25 | 06:08 (6) | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 05:37 (6) 04:59 | 05:43 (6) | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | 22:05 25 | 06:02 (6) 22:17 26 | 06:09 (6) | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 05:37 (6) 05:00 | 05:44 (6) | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 25 | 06:02 (6) 22:16 25 | 06:09 (6) | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:37 (6) 05:00 | 05:44 (6) | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 25 | 06:02 (6) 22:16 25 | 06:09 (6) | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:38 (6) 05:01 | 05:44 (6) | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 25 | 06:03 (6) 22:15 26 | 06:10 (6) | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:38 (6) 05:02 | 05:43 (6) | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 25 | 06:03 (6) 22:14 26 | 06:09 (6) | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:38 (6) 05:04 | 05:44 (6) | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 26 | 06:04 (6) 22:14 25 | 06:09 (6) | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:38 (6) 05:05 | 05:45 (6) | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 25 | 06:03 (6) 22:13 25 | 06:10 (6) | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:39 (6) 05:06 | 05:45 (6) | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 25 | 06:04 (6) 22:12 25 | 06:10 (6) | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:38 (6) 05:07 | 05:45 (6) | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 25 | 06:03 (6) 22:11 25 | 06:10 (6) | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:39 (6) 05:08 | 05:45 (6) | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 25 | 06:04 (6) 22:10 25 | 06:10 (6) | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | 04:53 | 05:39 (6) 05:10 | 05:45 (6) | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 25 | 06:04 (6) 22:09 24 | 06:09 (6) | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:40 (6) 05:11 | 05:46 (6) | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 25 | 06:05 (6) 22:08 23 | 06:09 (6) | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:39 (6) 05:12 | 05:47 (6) | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 25 | 06:04 (6) 22:07 22 | 06:09 (6) | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:39 (6) 05:14 | 05:48 (6) | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 25 | 06:04 (6) 22:05 21 | 06:09 (6) | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:40 (6) 05:15 | 05:49 (6) | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 25 | 06:05 (6) 22:04 19 | 06:08 (6) | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:40 (6) 05:17 | 05:51 (6) | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 25 | 06:05 (6) 22:03 17 | 06:08 (6) | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:40 (6) 05:18 | 05:52 (6) | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 25 | 06:05 (6) 22:01 16 | 06:08 (6) | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 05:48 (6) | 04:52 | 05:40 (6) 05:20 | 05:53 (6) | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 3 05:51 (6) | 22:18 25 | 06:05 (6) 22:00 13 | 06:06 (6) | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 05:47 (6) | 04:53 | 05:41 (6) 05:21 | 05:55 (6) | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 7 05:54 (6) | 22:19 25 | 06:06 (6) 21:58 11 | 06:06 (6) | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 05:46 (6) | 04:53 | 05:41 (6) 05:23 | 05:56 (6) | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 10 05:56 (6) | 22:19 25 | 06:06 (6) 21:57 8 | 06:04 (6) | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 05:44 (6) | 04:53 | 05:41 (6) 05:24 | 05:58 (6) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 12 05:56 (6) | 22:19 25 | 06:06 (6) 21:55 5 | 06:03 (6) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 05:43 (6) | 04:53 | 05:41 (6) 05:26 | | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 14 05:57 (6) | 22:19 25 | 06:06 (6) 21:54 | | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 05:42 (6) | 04:54 | 05:42 (6) 05:28 | | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 17 05:59 (6) | 22:19 25 | 06:07 (6) 21:52 | | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 05:41 (6) | 04:54 | 05:41 (6) 05:29 | | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 18 05:59 (6) | 22:19 25 | 06:06 (6) 21:50 | | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 05:39 (6) | 04:55 | 05:42 (6) 05:31 | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 20 05:59 (6) | 22:19 25 | 06:07 (6) 21:49 | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 05:38 (6) | 04:55 | 05:42 (6) 05:33 | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 22 06:00 (6) | 22:19 25 | 06:07 (6) 21:47 | | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 05:37 (6) | 04:56 | 05:42 (6) 05:34 | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 23 06:00 (6) | 22:19 26 | 06:08 (6) 21:45 | | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 05:37 (6) | 04:56 | 05:43 (6) 05:36 | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 24 06:01 (6) | 22:18 25 | 06:08 (6) 21:43 | | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 05:37 (6) | | 05:38 | | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 24 06:01 (6) | | 21:42 | | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Total, worst case | | | | | 194 | 750 | 483 | | | | | | |
| Sun reduction | | | | | 0,52 | 0,48 | 0,49 | | | | | | |
| Oper. time red. | | | | | 1,00 | 1,00 | 1,00 | | | | | | |
| Wind dir. red. | | | | | 0,83 | 0,83 | 0,83 | | | | | | |
| Total reduction | | | | | 0,43 | 0,40 | 0,40 | | | | | | |
| Total, real | | | | | 83 | 301 | 195 | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 11:50 (35) | 07:27 | | 11:54 (35) | 07:08 | | 18:30 (11) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 121 | 16:02 (6) | 18:07 | 116 | 17:35 (10) | 20:09 | 65 | 19:42 (9) | 21:09 | 22:02 |
| 2 | 09:00 | | | 08:26 | | 11:49 (35) | 07:24 | | 11:55 (35) | 07:05 | | 18:30 (11) | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 125 | 16:03 (6) | 18:09 | 106 | 17:36 (10) | 20:11 | 67 | 19:44 (9) | 21:10 | 22:04 |
| 3 | 09:00 | | 12:13 (35) | 08:24 | | 11:49 (35) | 07:22 | | 11:56 (35) | 07:03 | | 18:30 (11) | 05:51 | 05:00 |
| | 16:16 | 9 | 12:22 (35) | 17:12 | 125 | 16:03 (6) | 18:11 | 88 | 17:35 (10) | 20:13 | 68 | 19:45 (9) | 21:12 | 22:05 |
| 4 | 09:00 | | 12:11 (35) | 08:22 | | 11:49 (35) | 07:19 | | 11:58 (35) | 07:00 | | 18:30 (11) | 05:48 | 04:59 |
| | 16:18 | 15 | 12:26 (35) | 17:14 | 127 | 16:04 (6) | 18:14 | 84 | 17:35 (10) | 20:15 | 70 | 19:46 (9) | 21:14 | 22:06 |
| 5 | 08:59 | | 12:08 (35) | 08:20 | | 11:48 (35) | 07:17 | | 12:00 (35) | 06:58 | | 18:29 (11) | 05:46 | 04:58 |
| | 16:19 | 20 | 12:28 (35) | 17:17 | 129 | 16:04 (6) | 18:16 | 80 | 17:35 (10) | 20:17 | 70 | 19:45 (9) | 21:16 | 22:07 |
| 6 | 08:59 | | 12:08 (35) | 08:18 | | 11:48 (35) | 07:14 | | 12:02 (35) | 06:55 | | 18:30 (11) | 05:44 | 04:57 |
| | 16:20 | 23 | 12:31 (35) | 17:19 | 131 | 16:05 (6) | 18:18 | 73 | 17:34 (10) | 20:19 | 69 | 19:45 (9) | 21:18 | 22:08 |
| 7 | 08:58 | | 12:06 (35) | 08:16 | | 11:47 (35) | 07:12 | | 12:06 (35) | 06:53 | | 18:29 (11) | 05:42 | 04:56 |
| | 16:22 | 27 | 12:33 (35) | 17:21 | 133 | 16:05 (6) | 18:20 | 66 | 17:34 (10) | 20:21 | 68 | 19:44 (9) | 21:20 | 22:09 |
| 8 | 08:58 | | 12:05 (35) | 08:14 | | 11:47 (35) | 07:09 | | 12:10 (35) | 06:50 | | 18:30 (11) | 05:40 | 04:56 |
| | 16:23 | 30 | 12:35 (35) | 17:23 | 134 | 16:06 (6) | 18:22 | 55 | 17:33 (10) | 20:23 | 64 | 19:43 (9) | 21:22 | 22:10 |
| 9 | 08:57 | | 12:04 (35) | 08:12 | | 11:47 (35) | 07:07 | | 12:18 (35) | 06:48 | | 18:30 (11) | 05:38 | 04:55 |
| | 16:25 | 32 | 12:36 (35) | 17:25 | 136 | 16:07 (6) | 18:24 | 37 | 17:32 (10) | 20:25 | 62 | 19:42 (9) | 21:24 | 22:11 |
| 10 | 08:57 | | 12:03 (35) | 08:10 | | 11:48 (35) | 07:04 | | 17:08 (10) | 06:45 | | 18:31 (11) | 05:36 | 04:55 |
| | 16:26 | 35 | 12:38 (35) | 17:27 | 135 | 16:07 (6) | 18:26 | 23 | 17:31 (10) | 20:27 | 57 | 19:40 (9) | 21:26 | 22:12 |
| 11 | 08:56 | | 12:02 (35) | 08:08 | | 11:47 (35) | 07:02 | | 17:09 (10) | 06:43 | | 18:31 (11) | 05:34 | 04:54 |
| | 16:28 | 38 | 12:40 (35) | 17:29 | 137 | 16:07 (6) | 18:28 | 20 | 17:29 (10) | 20:29 | 53 | 19:38 (9) | 21:28 | 22:13 |
| 12 | 08:55 | | 12:01 (35) | 08:06 | | 11:47 (35) | 06:59 | | 17:11 (10) | 06:40 | | 18:32 (11) | 05:32 | 04:54 |
| | 16:30 | 41 | 12:42 (35) | 17:32 | 137 | 16:07 (6) | 18:30 | 16 | 17:27 (10) | 20:31 | 43 | 19:34 (9) | 21:30 | 22:14 |
| 13 | 08:54 | | 12:00 (35) | 08:04 | | 11:47 (35) | 06:57 | | 17:14 (10) | 06:38 | | 18:33 (11) | 05:30 | 04:53 |
| | 16:31 | 43 | 12:43 (35) | 17:34 | 136 | 16:07 (6) | 18:32 | 9 | 17:23 (10) | 20:33 | 35 | 19:08 (11) | 21:31 | 22:15 |
| 14 | 08:53 | | 12:00 (35) | 08:01 | | 11:46 (35) | 06:54 | | | 06:35 | | 18:34 (11) | 05:28 | 04:53 |
| | 16:33 | 45 | 12:45 (35) | 17:36 | 138 | 16:07 (6) | 18:34 | | | 20:35 | 33 | 19:07 (11) | 21:33 | 22:15 |
| 15 | 08:52 | | 11:58 (35) | 07:59 | | 11:47 (35) | 06:52 | | | 06:33 | | 18:36 (11) | 05:27 | 04:53 |
| | 16:35 | 48 | 12:46 (35) | 17:38 | 136 | 16:07 (6) | 18:36 | | | 20:37 | 29 | 19:05 (11) | 21:35 | 22:16 |
| 16 | 08:51 | | 11:58 (35) | 07:57 | | 11:47 (35) | 06:49 | | | 06:30 | | 18:37 (11) | 05:25 | 04:52 |
| | 16:36 | 50 | 12:48 (35) | 17:40 | 136 | 16:07 (6) | 18:38 | | | 20:39 | 26 | 19:03 (11) | 21:37 | 22:17 |
| 17 | 08:50 | | 11:58 (35) | 07:55 | | 11:47 (35) | 06:46 | | | 06:28 | | 18:40 (11) | 05:23 | 04:52 |
| | 16:38 | 51 | 12:49 (35) | 17:42 | 134 | 16:06 (6) | 18:40 | | | 20:41 | 20 | 19:00 (11) | 21:39 | 22:17 |
| 18 | 08:49 | | 11:56 (35) | 07:53 | | 11:47 (35) | 06:44 | | | 06:25 | | 18:43 (11) | 05:21 | 04:52 |
| | 16:40 | 54 | 12:50 (35) | 17:44 | 133 | 16:06 (6) | 18:42 | | | 20:43 | 13 | 18:56 (11) | 21:40 | 22:18 |
| 19 | 08:48 | | 11:56 (35) | 07:50 | | 11:48 (35) | 06:41 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 56 | 12:52 (35) | 17:46 | 132 | 16:06 (6) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 11:55 (35) | 07:48 | | 11:48 (35) | 06:39 | | 17:49 (11) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | 58 | 12:53 (35) | 17:49 | 130 | 16:05 (6) | 18:46 | 17 | 18:06 (11) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | 11:55 (35) | 07:46 | | 11:48 (35) | 06:36 | | 17:46 (11) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 69 | 15:41 (6) | 17:51 | 127 | 16:04 (6) | 18:48 | 23 | 18:09 (11) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 11:54 (35) | 07:43 | | 11:48 (35) | 06:34 | | 17:43 (11) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 78 | 15:45 (6) | 17:53 | 125 | 16:03 (6) | 18:50 | 28 | 18:11 (11) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | 11:53 (35) | 07:41 | | 11:49 (35) | 06:31 | | 17:40 (11) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 85 | 15:47 (6) | 17:55 | 130 | 17:26 (10) | 18:52 | 32 | 18:12 (11) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 11:53 (35) | 07:39 | | 11:49 (35) | 06:28 | | 17:39 (11) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 91 | 15:50 (6) | 17:57 | 133 | 17:28 (10) | 18:54 | 35 | 18:14 (11) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | 11:52 (35) | 07:36 | | 11:50 (35) | 06:26 | | 17:37 (11) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 97 | 15:52 (6) | 17:59 | 132 | 17:30 (10) | 18:56 | 38 | 18:15 (11) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | 11:52 (35) | 07:34 | | 11:51 (35) | 06:23 | | 17:36 (11) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 100 | 15:54 (6) | 18:01 | 132 | 17:33 (10) | 18:58 | 40 | 18:16 (11) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 11:51 (35) | 07:31 | | 11:52 (35) | 06:21 | | 17:34 (11) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 105 | 15:55 (6) | 18:03 | 128 | 17:34 (10) | 19:00 | 42 | 18:16 (11) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | 11:51 (35) | 07:29 | | 11:53 (35) | 06:18 | | 17:33 (11) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 109 | 15:57 (6) | 18:05 | 123 | 17:35 (10) | 19:02 | 43 | 18:16 (11) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 11:51 (35) | | | | 07:16 | | 18:33 (11) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | 112 | 15:58 (6) | | | | 20:04 | 50 | 19:36 (9) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 11:50 (35) | | | | 07:13 | | 18:31 (11) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 116 | 16:00 (6) | | | | 20:06 | 57 | 19:38 (9) | 21:07 | | | 21:59 | 22:18 |
| 31 | 08:29 | | 11:50 (35) | | | | 07:10 | | 18:31 (11) | | | | 05:03 | |
| | 17:06 | 118 | 16:01 (6) | | | | 20:08 | 60 | 19:40 (9) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 1755 | | | 3675 | | | 1238 | | | 912 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,21 | | | 0,34 | | | 0,67 | | | 0,99 | | | |
| Total reduction | | 0,03 | | | 0,07 | | | 0,19 | | | 0,34 | | | |
| Total, real | | 57 | | | 260 | | | 241 | | | 306 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 18:30 (11) | 07:35 | | 17:51 (10) | 07:37 | | 11:16 (35) | 08:35 | | 11:44 (35) |
| | 22:18 | | 21:40 | | | 20:29 | 53 | 19:37 (9) | 19:12 | 14 | 18:05 (10) | 16:58 | 136 | 15:36 (6) | 16:10 | 38 | 12:22 (35) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 18:29 (11) | 07:36 | | 17:49 (10) | 07:39 | | 11:17 (35) | 08:37 | | 11:46 (35) |
| | 22:17 | | 21:38 | | | 20:27 | 57 | 19:38 (9) | 19:09 | 18 | 18:07 (10) | 16:56 | 135 | 15:36 (6) | 16:09 | 35 | 12:21 (35) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 18:28 (11) | 07:38 | | 17:47 (10) | 07:41 | | 11:17 (35) | 08:38 | | 11:48 (35) |
| | 22:17 | | 21:36 | | | 20:24 | 62 | 19:40 (9) | 19:07 | 21 | 18:08 (10) | 16:54 | 134 | 15:36 (6) | 16:08 | 33 | 12:21 (35) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:27 (11) | 07:40 | | 17:45 (10) | 07:43 | | 11:17 (35) | 08:40 | | 11:49 (35) |
| | 22:16 | | 21:34 | | | 20:22 | 64 | 19:40 (9) | 19:04 | 24 | 18:09 (10) | 16:52 | 132 | 15:35 (6) | 16:08 | 30 | 12:19 (35) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:27 (11) | 07:42 | | 12:50 (35) | 07:45 | | 11:18 (35) | 08:41 | | 11:51 (35) |
| | 22:16 | | 21:32 | | | 20:19 | 67 | 19:41 (9) | 19:02 | 48 | 18:10 (10) | 16:49 | 131 | 15:35 (6) | 16:07 | 27 | 12:18 (35) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 18:25 (11) | 07:44 | | 12:44 (35) | 07:47 | | 11:18 (35) | 08:43 | | 11:54 (35) |
| | 22:15 | | 21:30 | | | 20:17 | 69 | 19:40 (9) | 18:59 | 61 | 18:10 (10) | 16:47 | 130 | 15:35 (6) | 16:06 | 23 | 12:17 (35) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 18:24 (11) | 07:46 | | 12:40 (35) | 07:49 | | 11:19 (35) | 08:44 | | 11:55 (35) |
| | 22:14 | | 21:28 | | | 20:14 | 70 | 19:40 (9) | 18:57 | 70 | 18:10 (10) | 16:46 | 128 | 15:34 (6) | 16:06 | 20 | 12:15 (35) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:24 (11) | 07:48 | | 12:37 (35) | 07:51 | | 11:19 (35) | 08:45 | | 11:59 (35) |
| | 22:14 | | 21:26 | | | 20:11 | 70 | 19:40 (9) | 18:54 | 76 | 18:10 (10) | 16:44 | 125 | 15:33 (6) | 16:05 | 15 | 12:14 (35) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:24 (11) | 07:50 | | 12:34 (35) | 07:53 | | 11:20 (35) | 08:47 | | 12:02 (35) |
| | 22:13 | | 21:23 | | | 20:09 | 70 | 19:40 (9) | 18:52 | 82 | 18:10 (10) | 16:42 | 123 | 15:33 (6) | 16:05 | 9 | 12:11 (35) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 18:24 (11) | 07:52 | | 12:32 (35) | 07:55 | | 11:20 (35) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 67 | 19:38 (9) | 18:49 | 86 | 18:10 (10) | 16:40 | 121 | 15:32 (6) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 18:23 (11) | 07:54 | | 12:30 (35) | 07:57 | | 11:21 (35) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 64 | 19:34 (9) | 18:47 | 94 | 18:09 (10) | 16:38 | 117 | 15:31 (6) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:59 | | 18:23 (11) | 07:56 | | 12:28 (35) | 07:59 | | 11:21 (35) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 61 | 19:32 (9) | 18:44 | 110 | 18:09 (10) | 16:36 | 115 | 15:30 (6) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:23 (11) | 07:58 | | 12:26 (35) | 08:01 | | 11:23 (35) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:59 | 56 | 19:29 (9) | 18:42 | 119 | 18:08 (10) | 16:34 | 112 | 15:30 (6) | 16:04 | | |
| 14 | 05:11 | | 06:04 | | | 07:02 | | 18:23 (11) | 08:00 | | 12:25 (35) | 08:03 | | 11:23 (35) | 08:53 | | |
| | 22:08 | | 21:12 | | | 19:56 | 51 | 19:27 (9) | 18:39 | 126 | 18:07 (10) | 16:33 | 109 | 15:29 (6) | 16:04 | | |
| 15 | 05:12 | | 06:06 | | | 07:04 | | 18:23 (11) | 08:02 | | 12:23 (35) | 08:05 | | 11:24 (35) | 08:54 | | |
| | 22:07 | | 21:10 | | | 19:53 | 45 | 19:24 (9) | 18:37 | 129 | 18:05 (10) | 16:31 | 105 | 15:28 (6) | 16:04 | | |
| 16 | 05:14 | | 06:07 | | | 07:06 | | 18:24 (11) | 08:04 | | 12:22 (35) | 08:07 | | 11:25 (35) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 42 | 19:06 (11) | 18:34 | 131 | 18:03 (10) | 16:29 | 99 | 15:26 (6) | 16:04 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:23 (11) | 08:06 | | 12:22 (35) | 08:09 | | 11:26 (35) | 08:55 | | |
| | 22:04 | | 21:06 | | | 19:48 | 41 | 19:04 (11) | 18:32 | 133 | 18:02 (10) | 16:28 | 97 | 15:26 (6) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:24 (11) | 08:08 | | 12:21 (35) | 08:11 | | 11:27 (35) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 38 | 19:02 (11) | 18:30 | 132 | 17:59 (10) | 16:26 | 91 | 15:24 (6) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:25 (11) | 08:10 | | 12:20 (35) | 08:13 | | 11:28 (35) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 36 | 19:01 (11) | 18:27 | 126 | 17:55 (10) | 16:25 | 85 | 15:22 (6) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 18:26 (11) | 08:12 | | 12:19 (35) | 08:15 | | 11:29 (35) | 08:58 | | |
| | 22:00 | | 20:59 | | | 19:40 | 33 | 18:59 (11) | 18:25 | 126 | 16:34 (6) | 16:23 | 78 | 15:20 (6) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:28 (11) | 08:14 | | 12:18 (35) | 08:17 | | 11:30 (35) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 29 | 18:57 (11) | 18:22 | 129 | 16:35 (6) | 16:22 | 69 | 15:16 (6) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | | 07:17 | | 18:30 (11) | 08:16 | | 12:18 (35) | 08:19 | | 11:31 (35) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 25 | 18:55 (11) | 18:20 | 130 | 16:35 (6) | 16:20 | 58 | 12:29 (35) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:32 (11) | 08:18 | | 12:17 (35) | 08:21 | | 11:32 (35) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 20 | 18:52 (11) | 18:18 | 132 | 16:35 (6) | 16:19 | 56 | 12:28 (35) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | | 07:21 | | 18:37 (11) | 08:20 | | 12:18 (35) | 08:23 | | 11:33 (35) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 9 | 18:46 (11) | 18:15 | 133 | 16:36 (6) | 16:18 | 54 | 12:27 (35) | 16:07 | | |
| 25 | 05:28 | | 06:24 | | 18:46 (11) | 07:23 | | | 07:22 | | 11:17 (35) | 08:24 | | 11:36 (35) | 09:00 | | |
| | 21:52 | | 20:47 | 14 | 19:00 (11) | 19:28 | | | 17:13 | 135 | 15:36 (6) | 16:16 | 51 | 12:27 (35) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 18:43 (11) | 07:25 | | | 07:24 | | 11:17 (35) | 08:26 | | 11:37 (35) | 09:00 | | |
| | 21:50 | | 20:44 | 20 | 19:03 (11) | 19:25 | | | 17:11 | 136 | 15:36 (6) | 16:15 | 50 | 12:27 (35) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 18:39 (11) | 07:27 | | | 07:26 | | 11:16 (35) | 08:28 | | 11:38 (35) | 09:01 | | |
| | 21:49 | | 20:42 | 26 | 19:05 (11) | 19:22 | | | 17:09 | 136 | 15:36 (6) | 16:14 | 48 | 12:26 (35) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 18:37 (11) | 07:29 | | | 07:28 | | 11:16 (35) | 08:30 | | 11:39 (35) | 09:01 | | |
| | 21:47 | | 20:39 | 29 | 19:06 (11) | 19:20 | | | 17:06 | 137 | 15:36 (6) | 16:13 | 45 | 12:24 (35) | 16:10 | | |
| 29 | 05:34 | | 06:32 | | 18:35 (11) | 07:31 | | | 07:30 | | 11:17 (35) | 08:32 | | 11:40 (35) | 09:01 | | |
| | 21:45 | | 20:37 | 33 | 19:08 (11) | 19:17 | | | 17:04 | 137 | 15:37 (6) | 16:12 | 43 | 12:23 (35) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 18:34 (11) | 07:33 | | 17:56 (10) | 07:32 | | 11:16 (35) | 08:33 | | 11:42 (35) | 09:01 | | |
| | 21:43 | | 20:34 | 35 | 19:09 (11) | 19:15 | 4 | 18:00 (10) | 17:02 | 137 | 15:37 (6) | 16:11 | 41 | 12:23 (35) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 18:32 (11) | | | | 07:34 | | 11:16 (35) | | | | 09:01 | | |
| | 21:42 | | 20:32 | 44 | 19:35 (9) | | | | 17:00 | 136 | 15:36 (6) | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 201 | | | 1203 | | | 3204 | | | 2818 | | | 230 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,37 | | | 0,27 | | | 0,10 | |
| Total reduction | | | | 0,44 | | | 0,34 | | | 0,10 | | | 0,04 | | | 0,01 | |
| Total, real | | | | 88 | | | 406 | | | 315 | | | 103 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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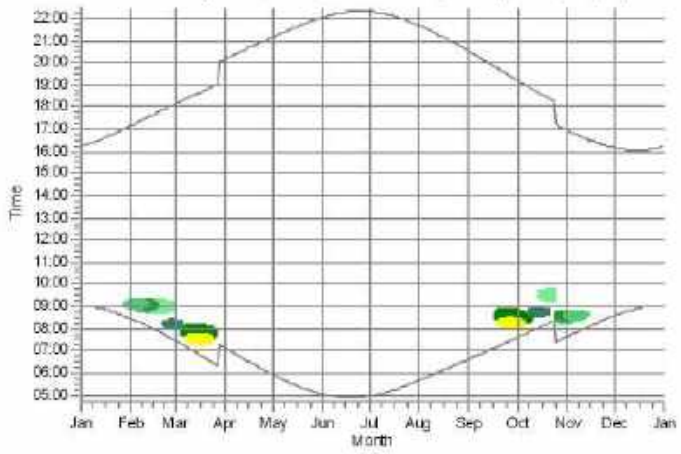
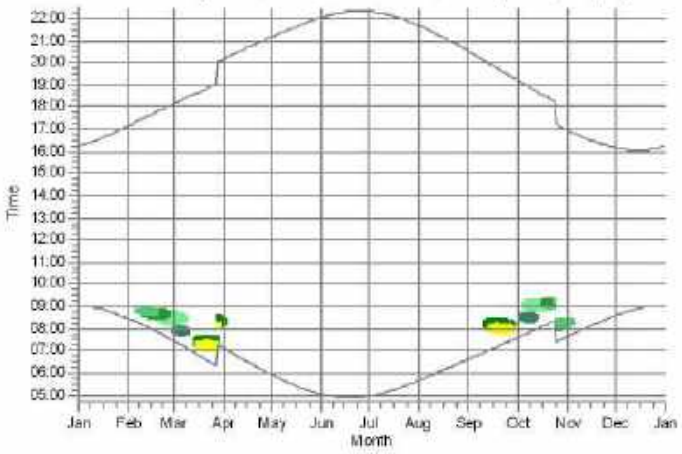
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

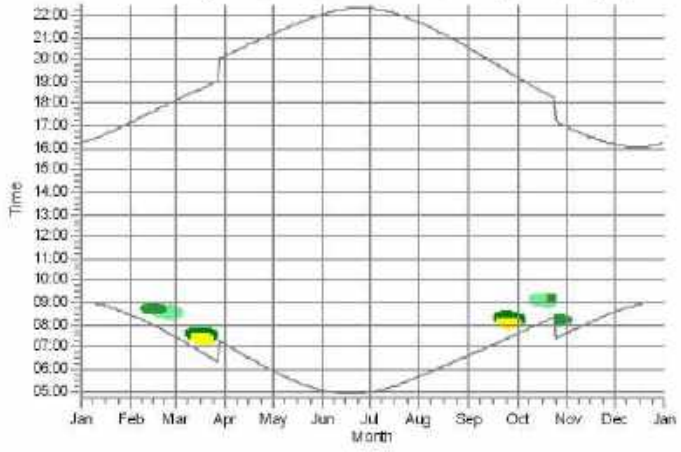
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)



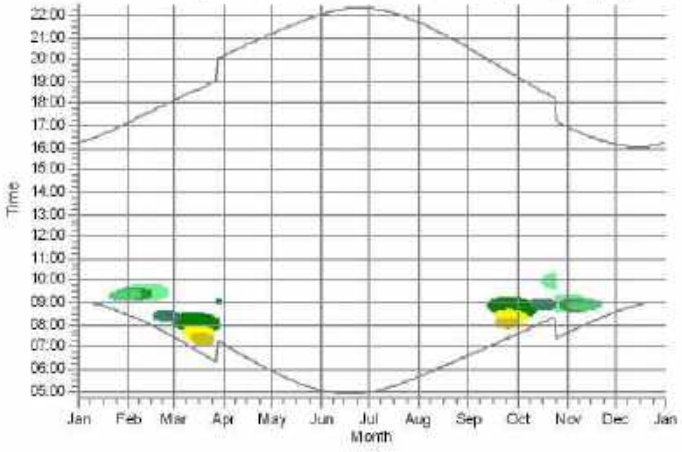

B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)



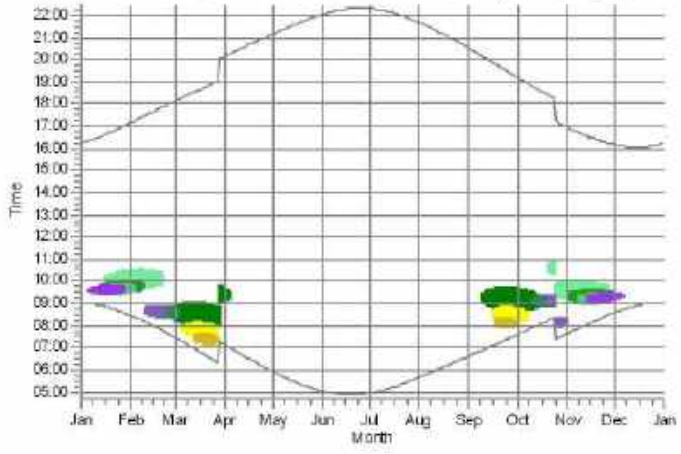

C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)



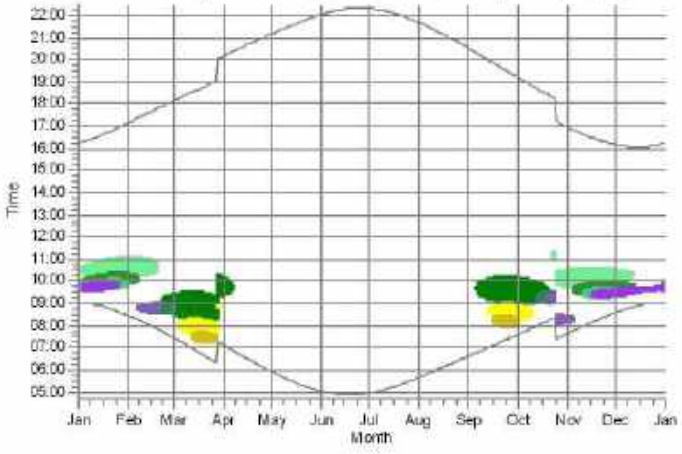

D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)




E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)




F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
46: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

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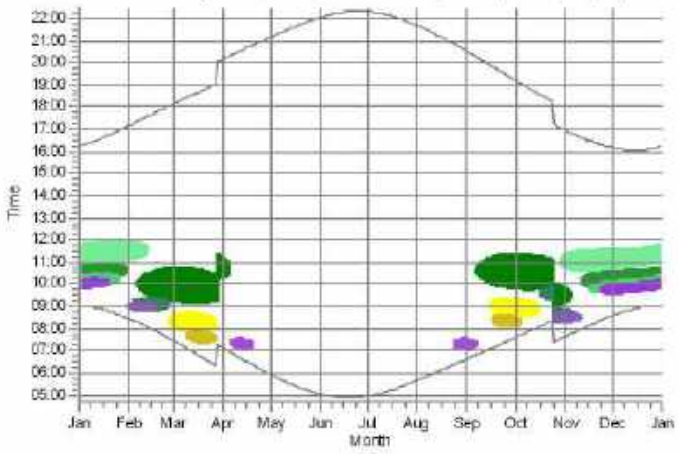
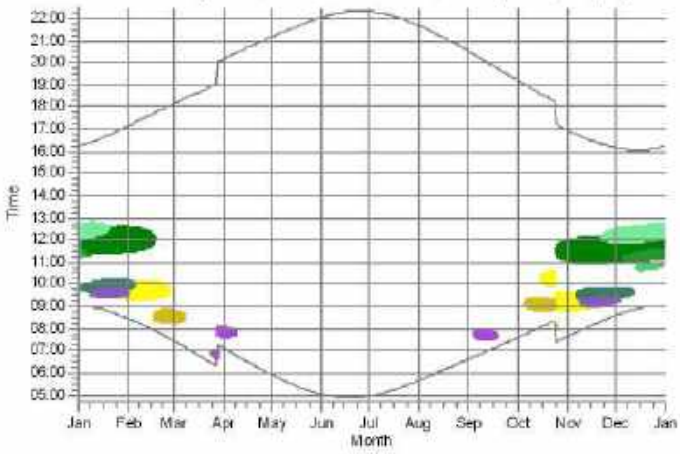
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

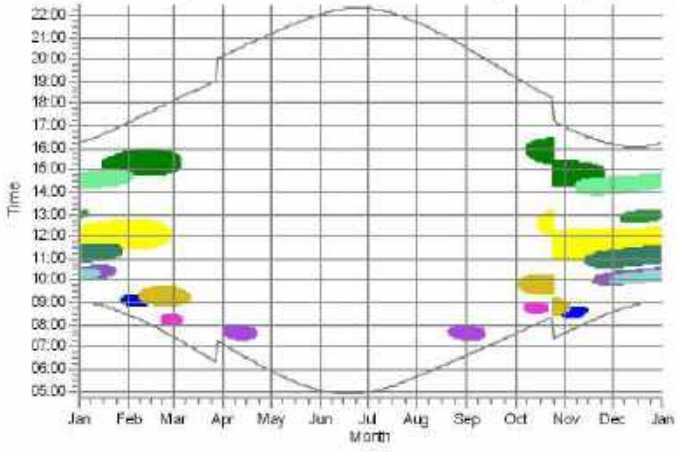
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)



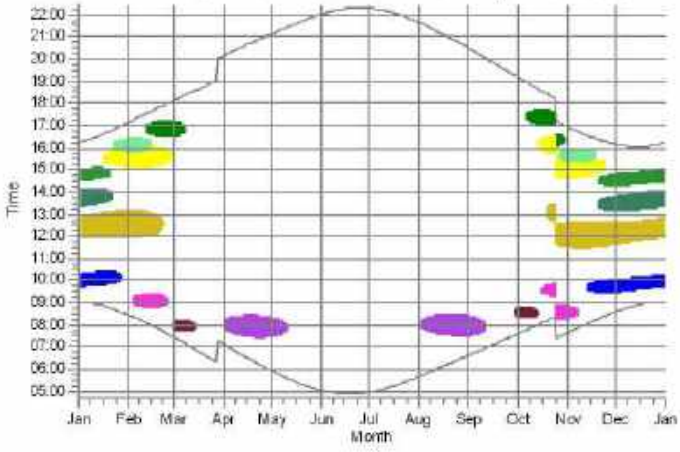

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)



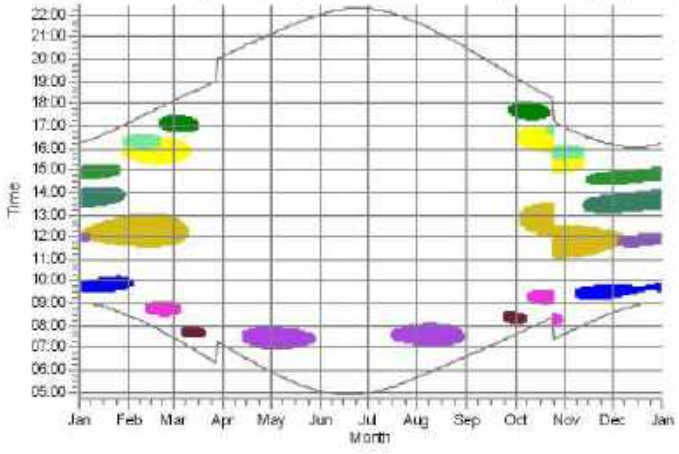

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)



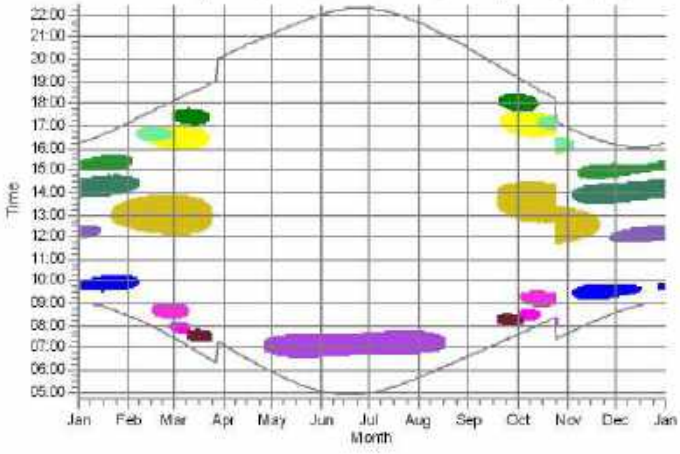

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
43: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
46: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)
48: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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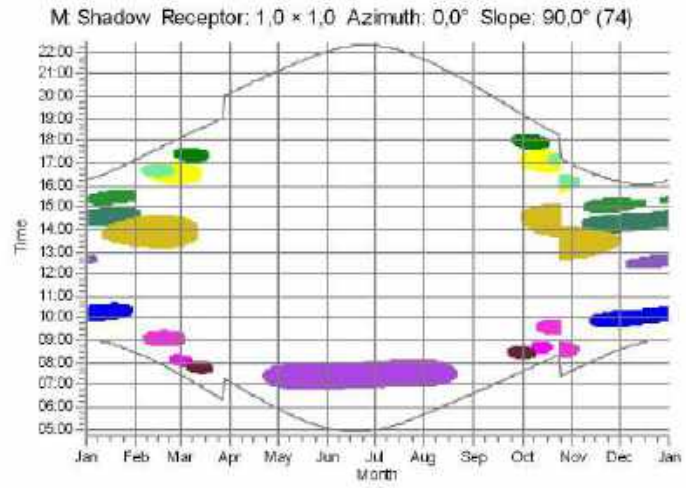
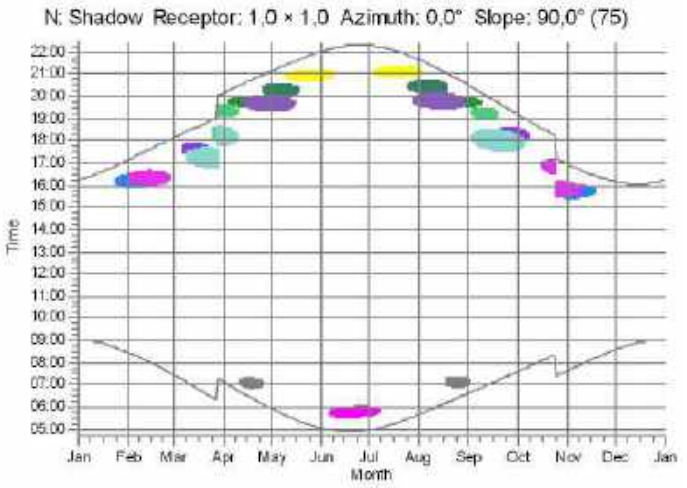
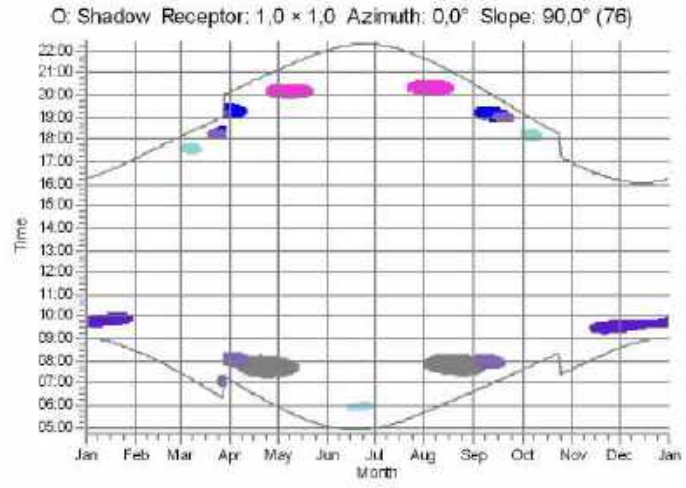
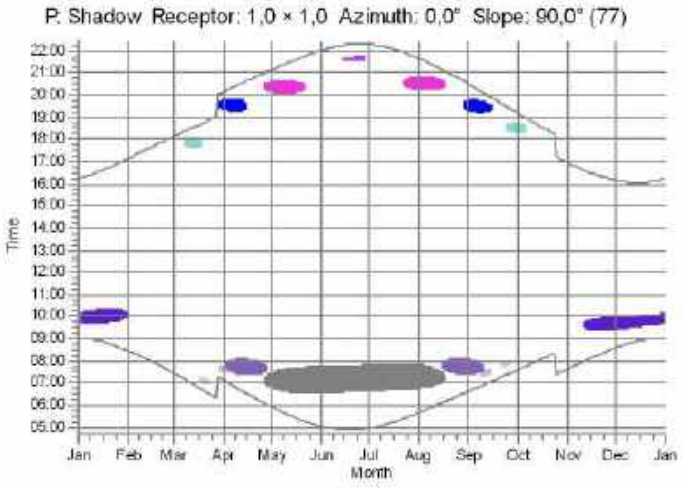
## SHADOW - Calendar, graphical

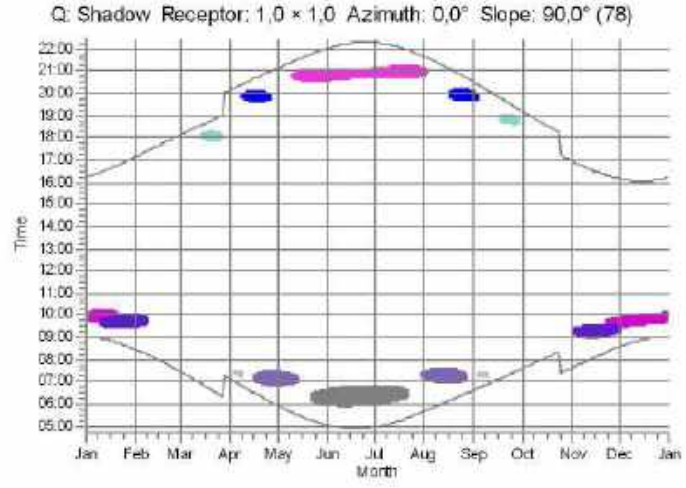
Calculation: Suminis poveikis Enercon E138

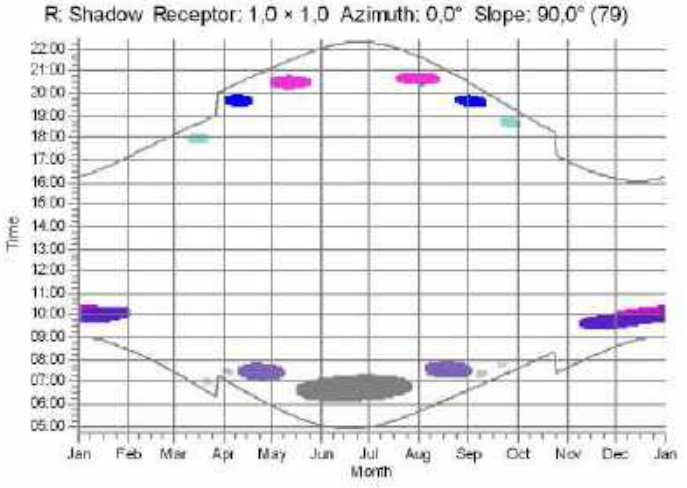



WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)
34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
43: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
46: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)
47: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)
48: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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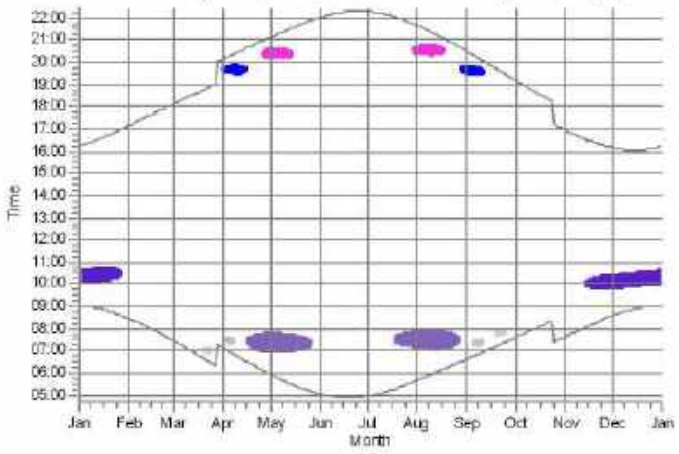
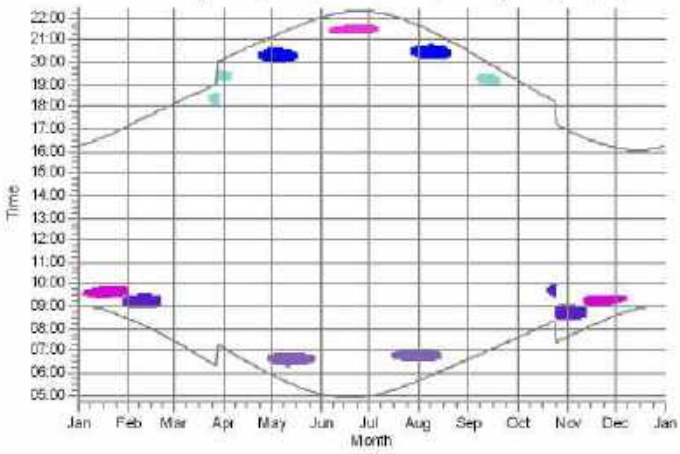
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

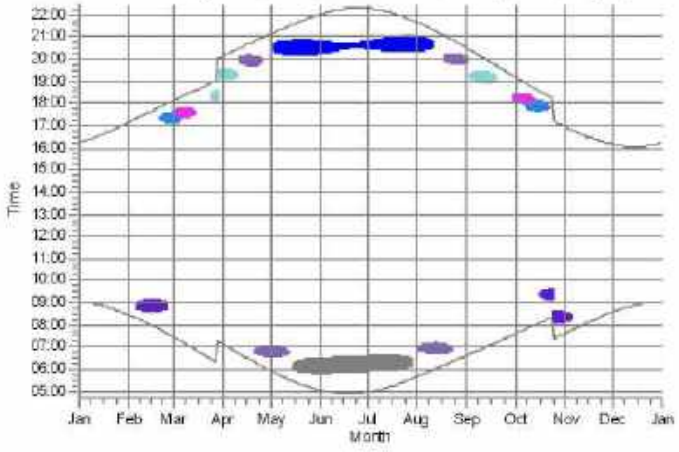
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)



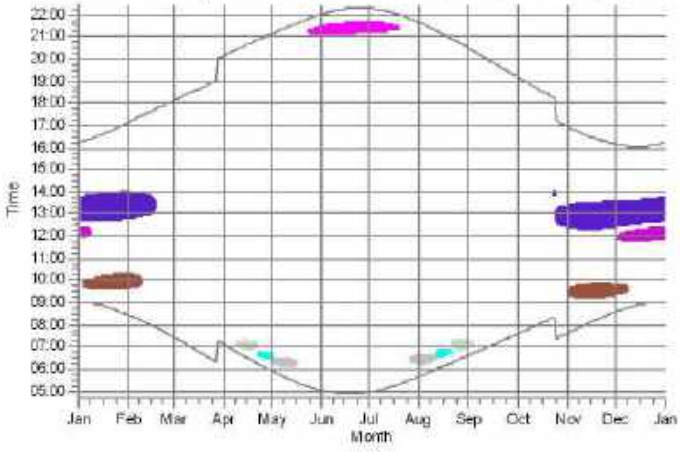

T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)



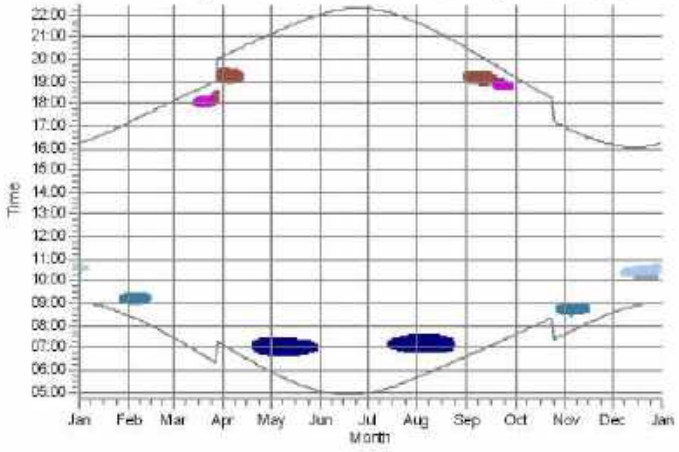

U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)



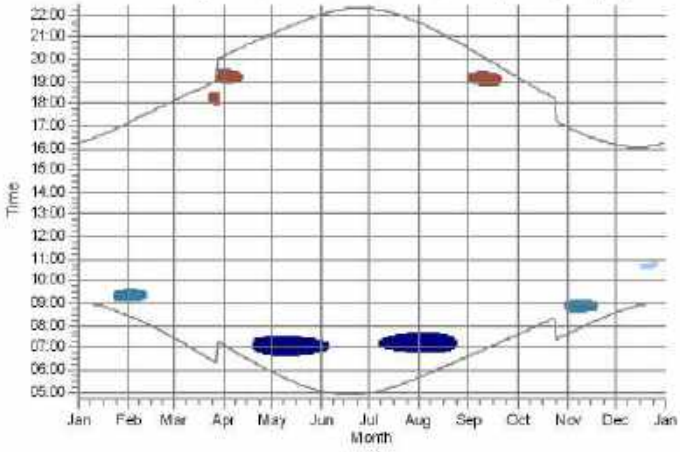

V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)




W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)




X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)




WTGs

3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)
12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)
14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
15: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)
16: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
37: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)
41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
47: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)
48: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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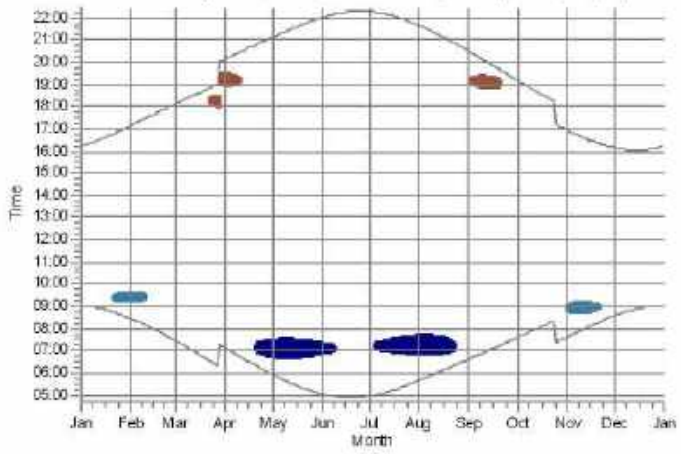
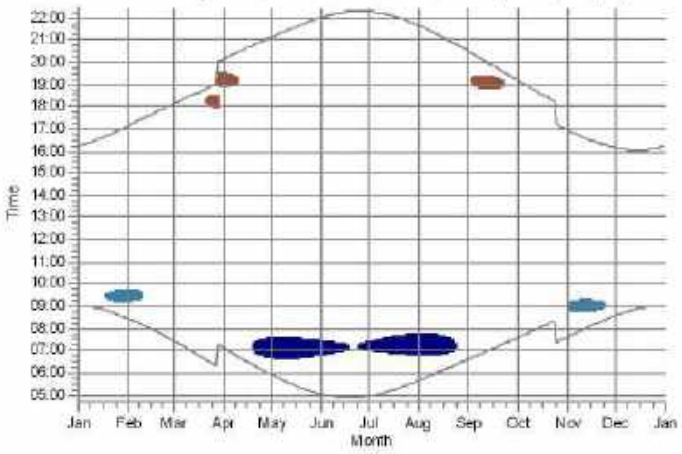
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

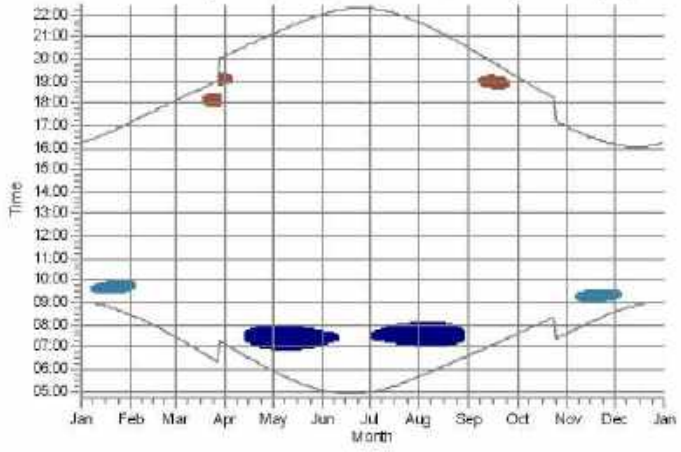
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)



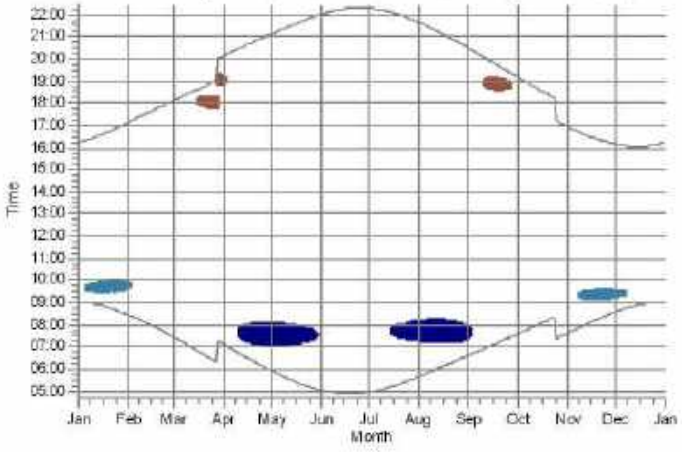

Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)



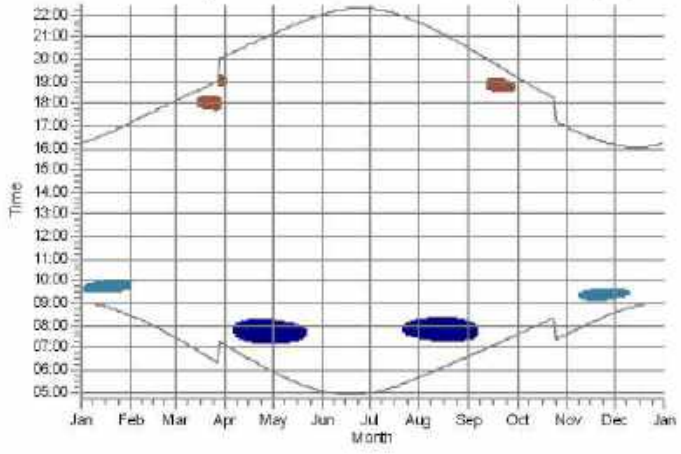

AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)



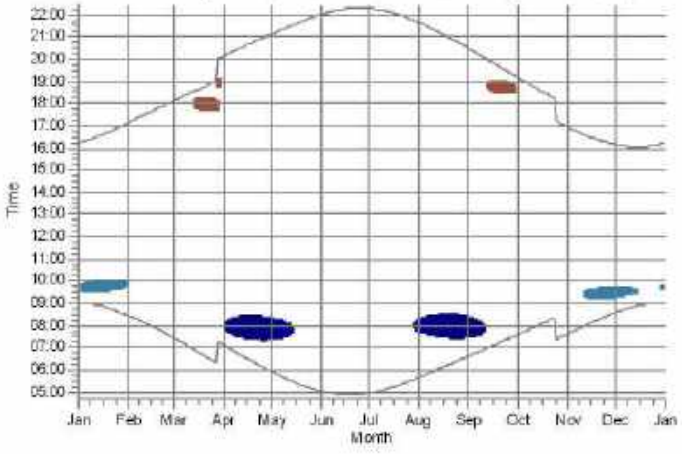

AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)




AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)




AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

37: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

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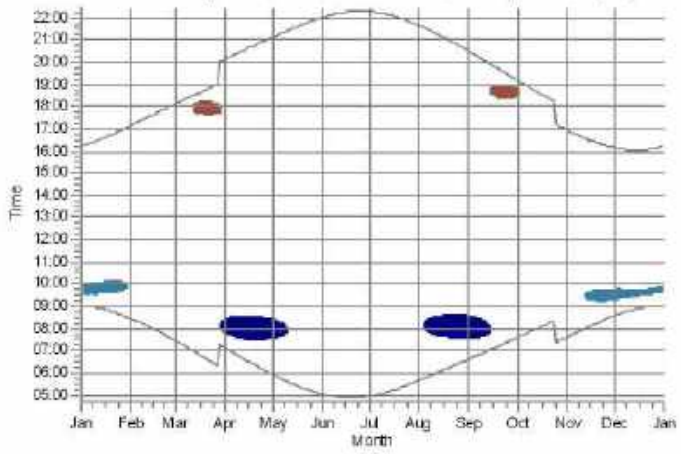
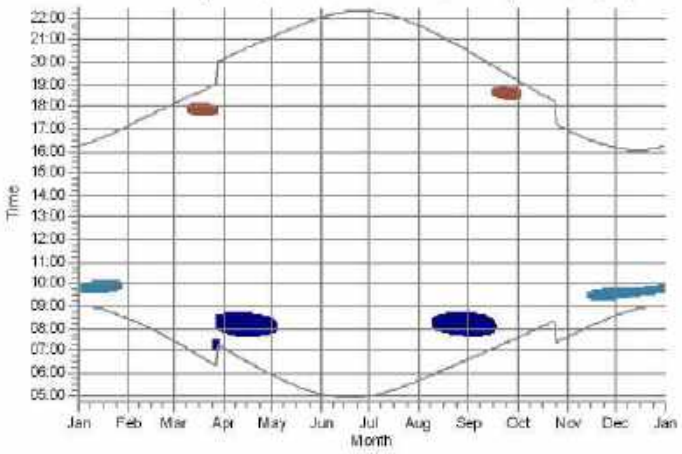
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

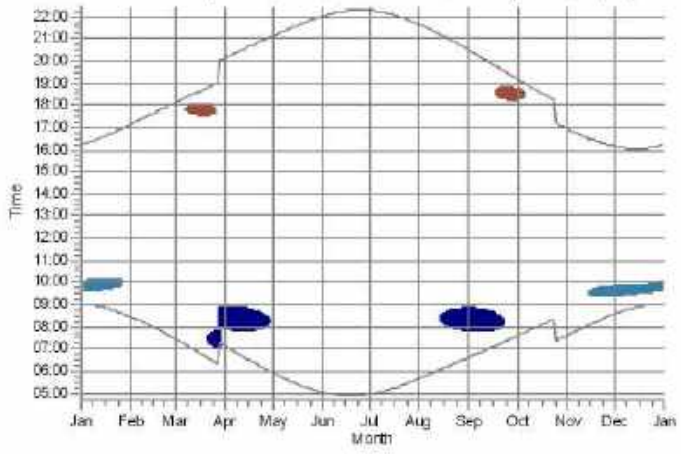
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)



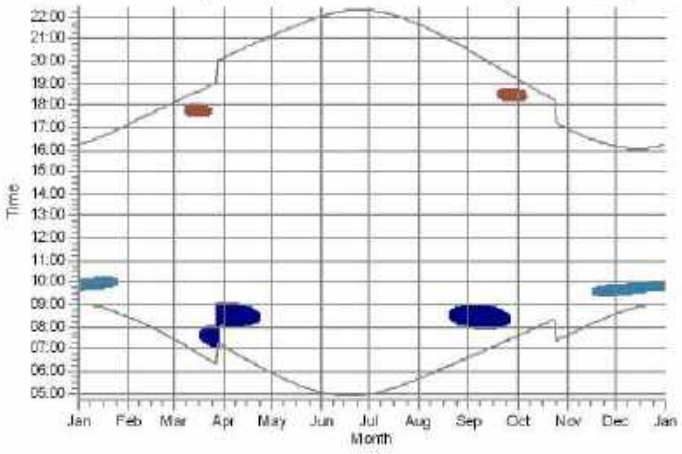

AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)



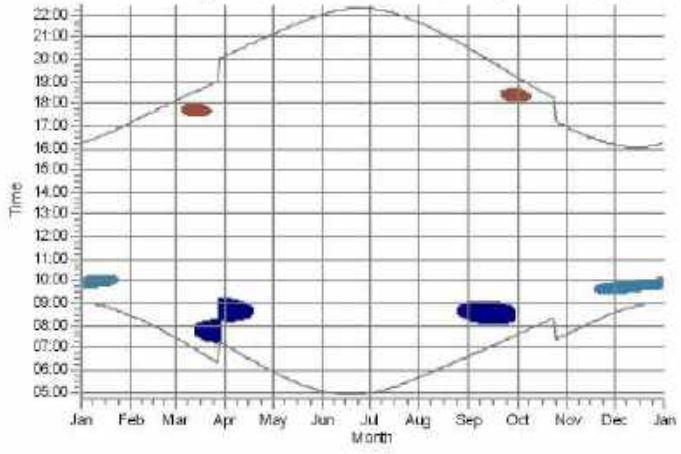

AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)



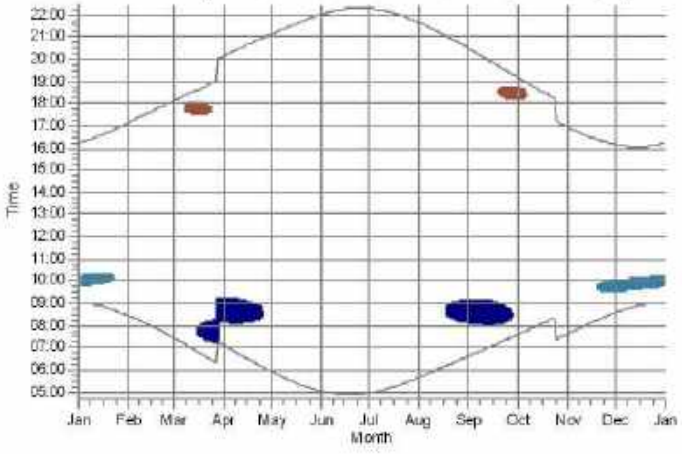

AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)




AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)




AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

37: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

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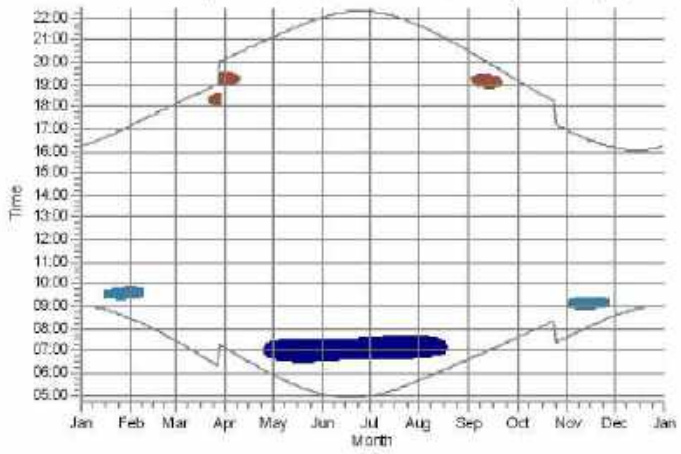
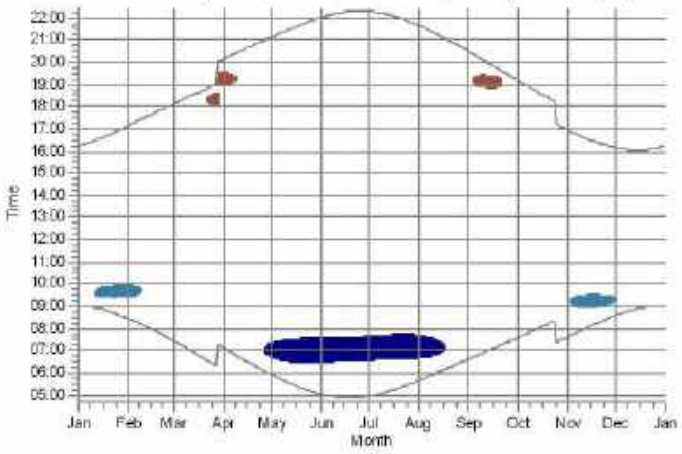
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

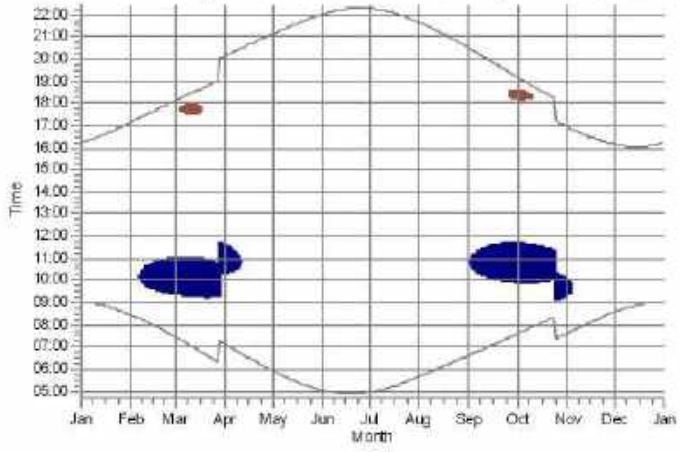
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)



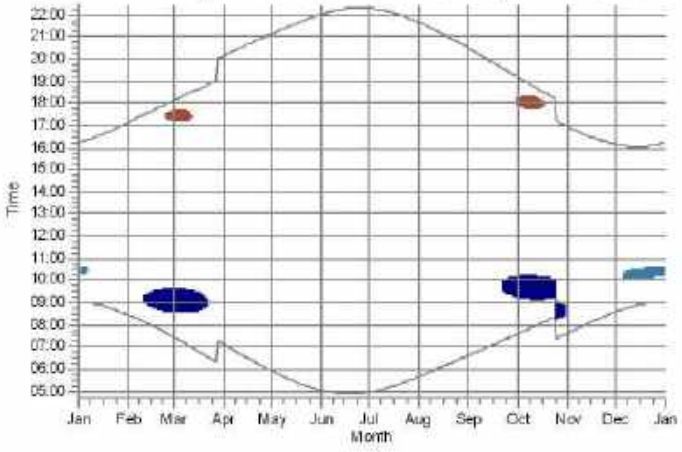

AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)



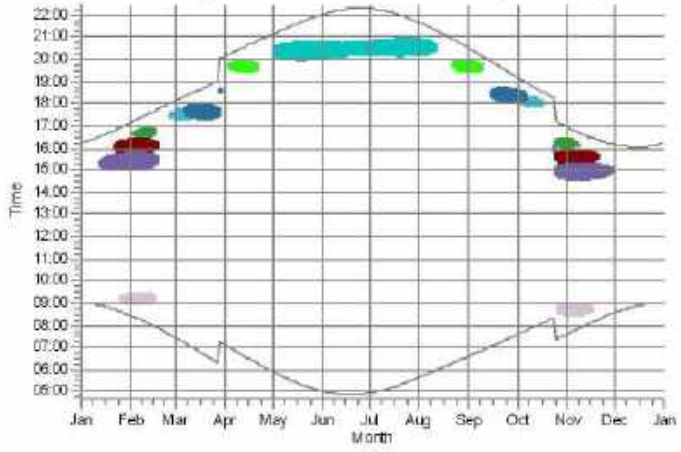

AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)



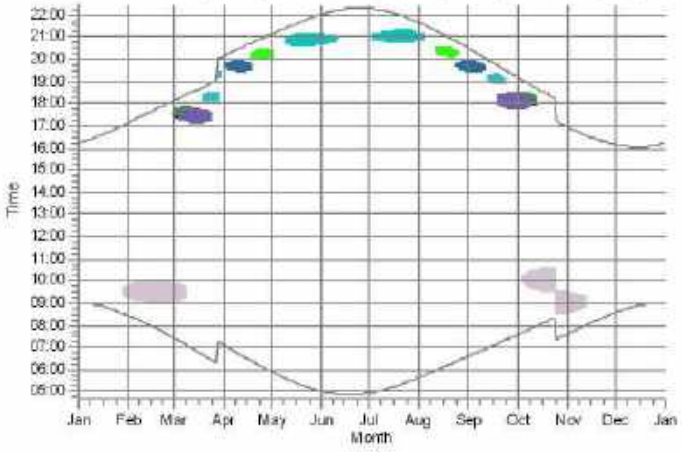

AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)




AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)




AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)




WTGs

7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)
8: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)
18: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)
20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)
21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)
22: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)
25: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)
37: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)
44: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

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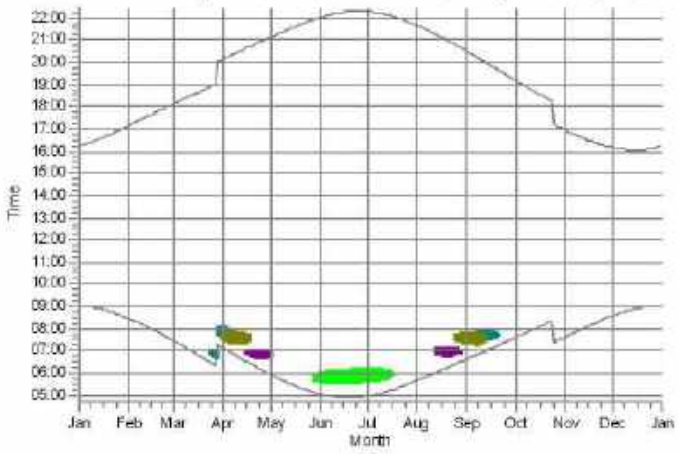
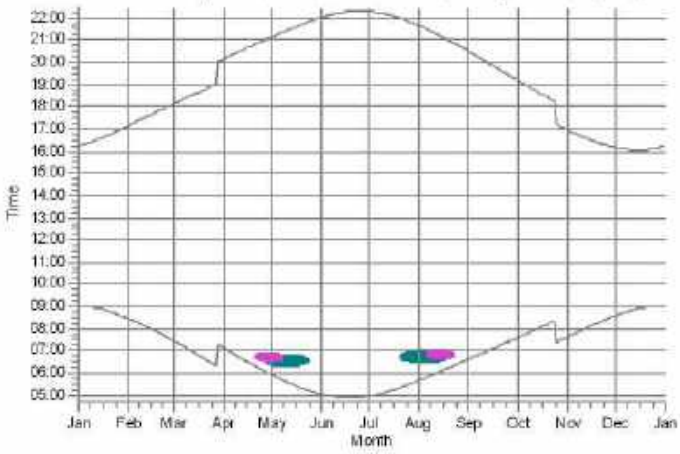
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138

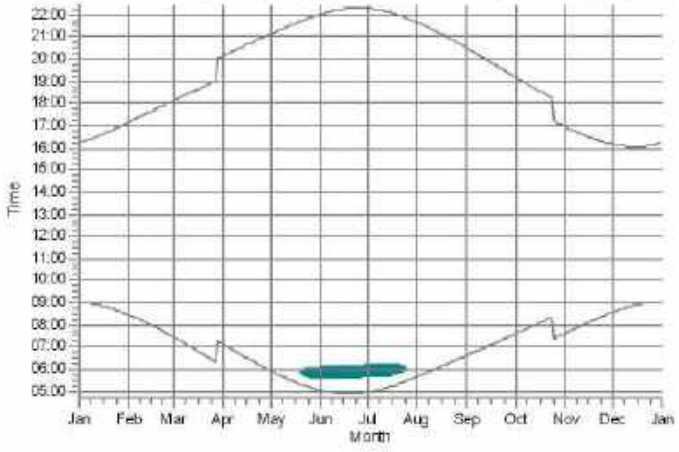
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)



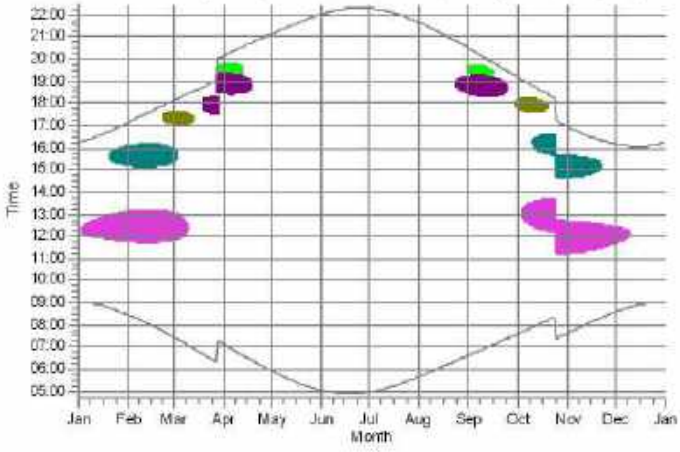

AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)




AS: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)




AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)
9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)
10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)
11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)
35: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62 | 08:28 14:52-15:47/55 | 07:27 16:35-17:35/60 08:17-10:43/146 | 07:08 10:21-11:08/47 08:11-08:28/17 | 05:55 | 05:02 |
| | 16:14 | 17:08 11:28-12:33/65 | 18:07 15:00-15:40/40 | 20:10 09:08-10:11/63 | 21:09 | 22:03 |
| 2 | 09:01 11:20-12:22/62 | 08:26 14:51-15:47/56 | 07:24 16:36-17:37/61 08:05-10:43/158 | 07:05 10:24-11:05/41 08:14-08:25/11 | 05:53 | 05:01 |
| | 16:15 | 17:10 11:29-12:33/64 | 18:10 15:03-15:38/35 | 20:12 09:11-10:09/58 | 21:11 | 22:04 |
| 3 | 09:01 11:20-12:23/63 | 08:24 14:51-15:48/57 | 07:22 16:36-17:38/62 08:00-10:43/163 | 07:03 10:26-11:00/34 | 05:51 | 05:00 |
| | 16:16 | 17:12 11:30-12:32/62 | 18:12 15:06-15:35/29 | 20:14 09:15-10:06/51 | 21:13 | 22:05 |
| 4 | 09:00 11:20-12:23/63 | 08:22 14:51-15:49/58 | 07:19 16:38-17:40/62 07:58-10:44/166 | 07:00 10:30-10:56/26 | 05:49 | 04:59 |
| | 16:18 | 17:15 11:30-12:32/62 | 18:14 15:10-15:32/22 | 20:16 09:28-10:03/35 | 21:15 | 22:06 |
| 5 | 09:00 11:21-12:24/63 | 08:20 14:50-15:50/60 | 07:17 16:39-17:41/62 07:48-10:43/175 | 06:58 10:37-10:46/9 | 05:46 | 04:58 |
| | 16:19 | 17:17 11:31-12:32/61 | 18:16 15:16-15:25/9 | 20:18 09:30-09:59/29 | 21:17 | 22:08 |
| 6 | 08:59 11:21-12:25/64 | 08:18 14:50-15:50/60 | 07:15 16:42-17:42/60 | 06:55 09:34-09:55/21 | 05:44 | 04:57 |
| | 16:20 | 17:19 11:32-12:31/59 | 18:18 07:45-10:44/179 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 11:21-12:25/64 | 08:16 14:50-15:51/61 09:54-10:08/14 | 07:12 16:45-17:43/58 | 06:53 09:42-09:46/4 | 05:42 | 04:56 |
| | 16:22 | 17:21 11:33-12:30/57 | 18:20 07:42-10:43/181 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 11:21-12:25/64 | 08:14 14:49-15:51/62 09:47-10:13/26 | 07:10 16:47-17:43/56 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 11:33-12:29/56 | 18:22 07:39-10:43/184 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 11:22-12:27/65 | 08:12 14:49-15:51/62 09:44-10:17/33 | 07:07 16:48-17:43/55 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 11:35-12:28/53 | 18:24 07:33-10:43/190 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 11:22-12:28/66 | 08:10 14:49-15:52/63 09:41-10:20/39 | 07:04 16:48-17:43/55 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 11:36-12:27/51 | 18:26 07:29-10:42/193 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 11:22-12:28/66 | 08:08 14:49-15:52/63 09:39-10:23/44 | 07:02 16:50-17:44/54 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 11:38-12:26/48 | 18:28 07:27-10:42/195 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 11:22-12:28/66 | 08:06 14:49-15:51/62 09:36-10:25/49 | 06:59 16:50-17:43/53 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 11:39-12:23/44 | 18:30 07:25-10:41/196 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 11:22-12:29/67 | 08:04 16:46-16:58/12 11:41-12:21/40 | 06:57 16:51-17:42/51 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 14:49-15:52/63 09:34-10:27/53 | 18:32 07:24-10:41/197 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 11:22-12:29/67 | 08:02 16:43-17:01/18 11:44-12:19/35 | 06:54 16:54-17:42/48 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 14:49-15:52/63 09:32-10:29/57 | 18:34 07:22-10:40/198 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 11:23-12:30/67 | 08:00 16:40-17:02/22 11:46-12:16/30 | 06:52 16:56-17:41/45 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 14:49-15:51/62 09:30-10:30/60 | 18:36 07:18-10:39/201 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 11:22-12:30/68 | 07:57 16:39-17:04/25 11:50-12:12/22 | 06:49 17:08-17:41/33 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 14:49-15:51/62 09:29-10:32/63 | 18:38 07:16-10:39/203 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 15:09-15:21/12 | 07:55 16:38-17:06/28 11:58-12:05/7 | 06:47 17:08-17:40/32 | 06:28 | 05:23 | 04:52 |
| | 16:38 11:23-12:31/68 | 17:42 14:50-15:52/62 09:28-10:34/66 | 18:40 07:13-10:38/205 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 15:07-15:25/18 | 07:53 16:37-17:06/29 09:26-10:35/69 | 06:44 17:09-17:38/29 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:24-12:32/68 | 17:44 14:50-15:51/61 | 18:42 07:12-10:37/205 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 15:04-15:28/24 | 07:51 16:36-17:07/31 09:25-10:36/71 | 06:42 17:10-17:37/27 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:23-12:32/69 | 17:47 14:50-15:51/61 | 18:44 07:11-10:36/205 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 15:03-15:30/27 | 07:48 16:36-17:08/32 09:24-10:38/74 | 06:39 17:11-17:35/24 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:24-12:32/68 | 17:49 14:51-15:51/60 | 18:46 07:09-10:34/205 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 15:01-15:32/31 | 07:46 16:35-17:14/39 09:22-10:38/76 | 06:36 17:14-17:33/19 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:24-12:32/68 | 17:51 14:51-15:49/58 | 18:48 07:09-10:33/204 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:59-15:34/35 | 07:44 16:35-17:17/42 09:22-10:39/77 | 06:34 17:16-17:30/14 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:24-12:32/68 | 17:53 14:52-15:49/57 08:50-09:09/19 | 18:50 07:08-10:31/203 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:59-15:36/37 | 07:41 16:34-17:19/45 09:20-10:40/80 | 06:31 07:08-10:30/202 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:25-12:33/68 | 17:55 14:53-15:48/55 08:45-09:13/28 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:57-15:37/40 | 07:39 16:34-17:21/47 09:20-10:41/81 | 06:29 07:07-10:28/201 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:25-12:33/68 | 17:57 14:54-15:47/53 08:42-09:16/34 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:56-15:39/43 | 07:36 16:34-17:21/47 08:39-10:41/122 | 06:26 07:06-10:26/200 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:25-12:33/68 | 17:59 14:54-15:46/52 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 14:56-15:41/45 | 07:34 16:34-17:30/56 08:29-10:42/133 | 06:23 07:42-10:25/163 | 06:06 | 05:09 | 04:54 |
| | 16:56 11:26-12:34/68 | 18:01 14:56-15:45/49 | 18:58 07:07-07:38/31 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 14:55-15:42/47 | 07:32 16:34-17:32/58 08:23-10:42/139 | 06:21 07:51-10:22/151 | 06:04 | 05:08 | 04:54 |
| | 16:58 11:26-12:34/68 | 18:03 14:57-15:43/46 | 19:00 07:07-07:36/29 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:54-15:43/49 | 07:29 16:35-17:34/59 08:20-10:43/143 | 06:18 07:54-10:20/146 | 06:02 | 05:06 | 04:55 |
| | 17:00 11:27-12:34/67 | 18:05 14:59-15:42/43 | 19:02 07:07-07:36/29 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:54-15:44/50 | | 07:16 08:58-11:18/140 | 06:00 | 05:05 | 04:55 |
| | 17:02 11:27-12:34/67 | | 20:04 08:08-08:34/26 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:53-15:45/52 | | 07:13 10:19-11:15/56 08:09-08:33/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 11:27-12:34/67 | | 20:06 09:06-10:16/70 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:52-15:46/54 | | 07:11 10:20-11:12/52 08:09-08:31/22 | | 05:03 | |
| | 17:06 11:28-12:33/65 | | 20:08 09:07-10:13/66 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 4682 | 6915 | 446 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 17:30-18:22/52 | 07:37 14:19-15:21/62 09:11-09:49/38 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 08:03-11:20/197 | 16:58 11:06-11:57/51 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 17:28-18:22/54 | 07:39 14:19-15:21/62 09:14-09:46/32 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-11:20/196 | 16:56 11:04-11:58/54 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 17:27-18:21/54 | 07:41 14:19-15:20/61 09:17-09:42/25 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-11:20/194 | 16:54 11:03-11:58/55 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 17:26-18:21/55 | 07:43 14:20-15:21/61 09:25-09:36/11 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-11:20/192 | 16:52 11:03-12:00/57 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 09:40-09:41/1 | 07:43 17:25-18:20/55 | 07:45 14:20-15:20/60 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-11:20/184 | 16:50 11:02-12:01/59 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 09:31-09:51/20 | 07:44 17:24-18:19/55 | 07:47 14:20-15:19/59 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-11:19/182 | 16:48 11:01-12:01/60 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 10:34-10:40/6 | 07:46 17:19-18:18/59 | 07:49 14:20-15:19/59 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 09:26-09:54/28 | 18:57 08:19-11:19/180 | 16:46 11:00-12:02/62 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 10:25-10:49/24 | 07:48 17:15-18:17/62 | 07:51 14:22-15:19/57 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 09:23-09:57/34 | 18:54 08:21-11:19/178 | 16:44 11:00-12:03/63 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 10:21-10:54/33 | 07:50 17:13-18:15/62 08:31-11:18/167 | 07:53 14:22-15:18/56 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 09:09-10:00/51 | 18:52 15:47-16:03/16 08:26-08:30/4 | 16:42 11:00-12:04/64 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 10:17-10:58/41 08:07-08:18/11 | 07:52 17:11-18:13/62 08:33-11:18/165 | 07:55 14:23-15:17/54 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 09:05-10:02/57 | 18:49 15:42-16:07/25 | 16:40 10:59-12:04/65 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 10:15-11:01/46 08:04-08:21/17 | 07:54 17:10-18:11/61 08:35-11:17/162 | 07:57 14:23-15:16/53 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 09:02-10:04/62 | 18:47 15:38-16:10/32 | 16:38 10:59-12:04/65 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 10:11-11:03/52 08:02-08:23/21 | 07:56 17:08-18:09/61 08:49-11:16/147 | 07:59 14:25-15:17/52 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 08:59-10:05/66 | 18:44 15:35-16:12/37 08:41-08:46/5 | 16:36 10:59-12:05/66 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 10:09-11:05/56 07:59-08:23/24 | 07:58 17:07-18:08/61 08:51-11:15/144 | 08:01 14:25-15:16/51 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 08:56-10:06/70 | 18:42 15:33-16:13/40 | 16:34 10:59-12:06/67 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 10:08-11:08/60 07:58-08:24/26 | 08:00 17:06-18:06/60 08:54-11:16/142 | 08:03 14:26-15:15/49 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 08:49-10:07/78 | 18:39 15:31-16:16/45 | 16:33 10:58-12:06/68 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 08:44-11:10/146 | 08:02 17:07-18:04/57 08:58-11:15/137 | 08:06 14:27-15:14/47 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 07:57-08:25/28 | 18:37 15:29-16:17/48 | 16:31 10:58-12:06/68 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 08:41-11:11/150 | 08:04 17:06-18:01/55 09:10-11:14/124 | 08:08 14:29-15:14/45 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 07:56-08:25/29 | 18:35 15:28-16:17/49 09:05-09:08/3 | 16:29 10:59-12:07/68 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 08:31-11:13/162 | 08:06 17:06-17:53/47 09:51-11:13/82 | 08:10 14:30-15:12/42 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 07:55-08:26/31 | 18:32 15:26-16:18/52 09:12-09:49/37 | 16:28 10:59-12:07/68 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-11:14/199 | 08:08 17:05-17:51/46 09:51-11:12/81 | 08:11 14:31-15:11/40 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 15:25-16:19/54 09:14-09:46/32 | 16:26 10:59-12:07/68 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-11:15/201 | 08:10 17:05-17:49/44 09:52-11:11/79 | 08:13 14:33-15:10/37 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 15:24-16:19/55 09:17-09:43/26 | 16:25 10:59-12:07/68 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-11:16/203 | 08:12 17:05-17:47/42 09:52-11:09/77 | 08:15 14:34-15:09/35 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 15:22-16:20/58 09:22-09:38/16 | 16:23 10:59-12:07/68 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:02-18:14/12 | 08:14 17:05-17:43/38 09:53-11:08/75 | 08:17 14:37-15:08/31 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 07:53-11:17/204 | 18:23 15:21-16:20/59 | 16:22 11:00-12:08/68 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 17:59-18:17/18 | 08:16 17:06-17:38/32 09:55-11:08/73 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 07:53-11:18/205 | 18:20 15:21-16:21/60 | 16:20 11:00-12:08/68 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 17:56-18:19/23 | 08:18 17:07-17:37/30 09:56-11:06/70 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 07:54-11:18/204 | 18:18 15:21-16:21/60 | 16:19 11:00-12:09/69 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 17:54-18:20/26 | 08:20 17:07-17:36/29 09:56-11:05/69 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 07:54-11:19/205 | 18:16 15:20-16:21/61 | 16:18 11:01-12:09/68 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 17:53-18:21/28 | 07:22 16:08-16:35/27 11:24-11:37/13 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 07:55-11:20/205 | 17:13 14:19-15:21/62 08:57-10:03/66 | 16:16 11:01-12:09/68 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 17:52-18:22/30 | 07:24 16:09-16:33/24 11:18-11:43/25 | 08:27 11:02-12:09/67 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 07:56-11:20/204 | 17:11 14:19-15:21/62 08:59-10:01/62 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 17:49-18:22/33 | 07:26 16:11-16:32/21 11:15-11:47/32 | 08:28 11:02-12:09/67 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 07:57-11:21/204 | 17:09 14:19-15:22/63 09:01-10:00/59 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 17:39-18:22/43 | 07:29 16:13-16:30/17 11:13-11:49/36 | 08:30 11:03-12:09/66 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 07:59-11:20/201 | 17:07 14:19-15:22/63 09:02-09:58/56 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 17:35-18:22/47 | 07:31 16:16-16:26/10 11:10-11:51/41 | 08:32 11:03-12:10/67 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 08:01-11:20/199 | 17:04 14:18-15:21/63 09:04-09:56/52 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 17:32-18:22/50 | 07:33 14:18-15:21/63 09:06-09:54/48 | 08:34 11:04-12:10/66 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 08:03-11:20/197 | 17:02 11:08-11:53/45 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 14:19-15:22/63 09:09-09:52/43 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 11:07-11:55/48 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 4371 | 6568 | 3199 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:13-16:06/53 09:23-10:05/42<br>17:08 11:27-12:44/77 | 07:27 15:27-16:57/90<br>18:07 08:07-08:34/27 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02 20:50-21:07/17<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:12-16:08/56 09:22-10:06/44<br>17:10 11:27-12:44/77 | 07:24 15:28-16:58/90<br>18:10 08:05-08:36/31 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01 20:51-21:06/15<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 15:12-16:10/58 09:22-10:06/44<br>17:12 11:27-12:44/77 | 07:22 15:28-16:58/90<br>18:12 08:03-08:37/34 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00 20:52-21:07/15<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 15:12-16:12/60 09:22-10:07/45<br>17:15 11:28-12:44/76 | 07:19 15:30-16:58/88<br>18:14 08:02-08:39/37 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59 20:53-21:06/13<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 15:12-16:13/61 09:22-10:08/46<br>17:17 11:28-12:44/76 | 07:17 15:31-16:57/86<br>18:16 07:51-08:39/48 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58 20:53-21:05/12<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 15:12-16:15/63 09:21-10:08/47<br>17:19 11:28-12:44/76 | 07:14 15:33-16:58/85<br>18:18 07:47-08:41/54 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57 20:55-21:05/10<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 15:11-16:15/64 09:22-10:09/47<br>17:21 11:29-12:44/75 | 07:12 15:35-16:57/82<br>18:20 07:41-08:41/60 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56 20:56-21:04/8<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 15:11-16:17/66 09:21-10:08/47<br>17:23 11:28-12:43/75 | 07:09 15:36-16:56/80<br>18:22 07:35-08:41/66 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56 20:57-21:02/5<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 15:11-16:18/67 09:21-10:08/47<br>17:25 11:29-12:43/74 | 07:07 15:40-16:56/76<br>18:24 07:32-08:42/70 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 15:12-16:19/67 09:21-10:09/48<br>17:27 11:30-12:43/73 | 07:04 16:01-16:55/54 07:29-08:41/72<br>18:26 15:44-16:00/16 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14 11:31-12:43/72<br>17:29 15:12-16:20/68 09:21-10:09/48 | 07:02 16:02-16:55/53<br>18:28 07:27-08:42/75 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:22-16:43/21 11:30-12:41/71<br>17:32 15:12-16:20/68 09:21-10:08/47 | 06:59 16:02-16:53/51<br>18:30 07:24-08:41/77 | 06:40<br>20:31 | 05:32 20:51-20:57/6<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 15:12-16:46/94 09:21-10:08/47<br>17:34 11:31-12:41/70 | 06:57 16:02-16:52/50<br>18:32 07:22-08:42/80 | 06:38<br>20:33 | 05:30 20:50-20:58/8<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 15:13-16:48/95 09:22-10:08/46<br>17:36 11:32-12:40/68 | 06:54 16:04-16:51/47<br>18:34 07:19-08:41/82 | 06:35<br>20:35 | 05:29 20:48-21:00/12<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 15:13-16:49/96 09:22-10:07/45<br>17:38 11:32-12:39/67 | 06:52 16:04-16:50/46<br>18:36 07:16-08:40/84 | 06:33<br>20:37 | 05:27 20:48-21:02/14<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 15:14-16:51/97 09:23-10:06/43<br>17:40 11:34-12:38/64 | 06:49 16:06-16:49/43<br>18:38 07:14-08:40/86 | 06:30<br>20:39 | 05:25 20:47-21:03/16<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 15:15-16:53/98 09:24-10:06/42<br>17:42 11:35-12:37/62 | 06:47 16:07-16:47/40<br>18:40 07:11-08:39/88 | 06:28<br>20:41 | 05:23 20:47-21:05/18<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 15:15-16:53/98 09:24-10:05/41<br>17:44 11:36-12:35/59 | 06:44 16:08-16:44/36<br>18:42 07:09-08:39/90 | 06:25<br>20:43 | 05:21 20:47-21:07/20<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 15:16-16:54/98 09:25-10:04/39<br>17:47 11:37-12:34/57 | 06:41 16:11-16:43/32<br>18:44 07:06-08:37/91 | 06:23<br>20:45 | 05:20 20:47-21:09/22<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 15:17-16:55/98 09:26-10:03/37<br>17:49 11:39-12:33/54 | 06:39 16:13-16:39/26<br>18:46 07:03-08:36/93 | 06:21<br>20:47 | 05:18 20:46-21:08/22<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 15:18-16:55/97 09:27-10:01/34<br>17:51 11:40-12:30/50 | 06:36 16:17-16:36/19<br>18:48 07:03-08:35/92 | 06:18<br>20:49 | 05:16 20:47-21:09/22<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 15:20-16:56/96 09:29-10:00/31<br>17:53 11:43-12:28/45 | 06:34 16:25-16:27/2<br>18:50 07:02-08:33/91 | 06:16<br>20:51 | 05:15 20:46-21:08/22<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 15:21-16:56/95 09:30-09:57/27<br>17:55 11:44-12:25/41 | 06:31 07:02-08:32/90<br>18:52 | 06:13<br>20:53 | 05:13 20:46-21:09/23<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 15:24-16:57/93 09:33-09:55/22<br>17:57 11:48-12:22/34 | 06:29 07:30-08:30/60<br>18:54 07:02-07:25/23 | 06:11<br>20:55 | 05:12 20:47-21:09/22<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 15:24-16:56/92 09:36-09:50/14<br>17:59 11:51-12:17/26 | 06:26 07:33-08:27/54<br>18:56 07:02-07:22/20 | 06:09<br>20:57 | 05:10 20:47-21:09/22<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 15:25-16:57/92<br>18:01 12:00-12:09/9 | 06:23 07:35-08:25/50<br>18:58 07:03-07:22/19 | 06:06<br>20:59 | 05:09 20:47-21:08/21<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 15:25-16:57/92<br>18:03 08:13-08:28/15 | 06:21 08:04-08:21/17 07:03-07:20/17<br>19:00 07:37-08:03/26 | 06:04<br>21:01 | 05:08 20:47-21:08/21<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 15:26-16:58/92<br>18:05 08:10-08:32/22 | 06:18 07:44-08:01/17<br>19:02 07:05-07:18/13 | 06:02<br>21:03 | 05:06 20:48-21:08/20<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 08:08-08:14/6 | 06:00<br>21:05 | 05:05 20:48-21:08/20<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04 20:49-21:08/19<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03 20:49-21:07/18<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 4971 | 3229 | 0 | 370 | 95 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:07/5<br>21:40 | 06:38<br>20:30 | 07:35 16:42-17:32/50<br>19:12 08:02-09:20/78 | 07:37 14:41-15:48/67 08:51-09:38/47<br>16:58 10:59-12:12/73 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 16:40-17:32/52<br>19:10 08:04-09:20/76 | 07:39 14:41-15:47/66 08:50-09:38/48<br>16:56 10:59-12:13/74 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 16:39-17:33/54 08:06-09:20/74<br>19:07 16:25-16:35/10 | 07:41 14:41-15:46/65 08:50-09:38/48<br>16:54 10:58-12:13/75 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59 21:04-21:08/4<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 16:19-17:33/74<br>19:05 08:08-09:19/71 | 07:43 14:42-15:46/64 08:51-09:38/47<br>16:52 10:58-12:14/76 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00 21:02-21:09/7<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 16:15-17:33/78<br>19:02 08:10-09:18/68 | 07:45 14:42-15:44/62 08:51-09:38/47<br>16:50 10:58-12:14/76 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01 21:01-21:10/9<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 16:12-17:33/81<br>18:59 08:14-09:17/63 | 07:47 14:42-15:43/61 08:51-09:37/46<br>16:48 10:58-12:14/76 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02 21:00-21:11/11<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 16:09-17:33/84<br>18:57 08:20-09:16/56 | 07:49 14:42-15:41/59 08:51-09:37/46<br>16:46 10:57-12:14/77 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03 20:59-21:12/13<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 16:07-17:33/86<br>18:54 08:25-09:15/50 | 07:51 14:43-15:41/58 08:53-09:37/44<br>16:44 10:58-12:15/77 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04 20:59-21:13/14<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 16:05-17:32/87<br>18:52 08:29-09:14/45 | 07:53 14:43-15:39/56 08:53-09:36/43<br>16:42 10:58-12:15/77 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06 20:58-21:13/15<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 16:03-17:32/89<br>18:49 08:36-09:12/36 | 07:55 14:44-15:36/52 08:53-09:36/43<br>16:40 10:58-12:14/76 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07 20:59-21:15/16<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 16:02-17:31/89<br>18:47 08:38-09:11/33 | 07:57 14:44-15:34/50 08:54-09:35/41<br>16:38 10:57-12:14/77 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08 20:58-21:16/18<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 16:00-17:31/91<br>18:44 08:39-09:09/30 | 07:59 14:46-15:31/45 08:56-09:35/39<br>16:36 10:58-12:15/77 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09 20:58-21:16/18<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 15:59-17:30/91<br>18:42 08:41-09:06/25 | 08:01 14:46-15:29/43 08:56-09:34/38<br>16:34 10:58-12:15/77 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11 20:57-21:16/19<br>22:08 | 06:04<br>21:13 | 07:02 08:41-08:43/2<br>19:56 07:59-08:04/5 | 08:00 15:58-17:30/92<br>18:39 08:44-09:04/20 | 08:03 14:47-15:28/41 08:57-09:33/36<br>16:33 10:58-12:15/77 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12 20:57-21:16/19<br>22:07 | 06:06<br>21:10 | 07:04 08:34-08:49/15<br>19:54 07:55-08:07/12 | 08:02 15:58-17:30/92<br>18:37 08:48-09:00/12 | 08:05 14:48-15:27/39 08:58-09:32/34<br>16:31 10:58-12:15/77 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14 20:57-21:18/21<br>22:06 | 06:08<br>21:08 | 07:06 08:55-09:09/14 07:53-08:09/16<br>19:51 08:27-08:52/25 | 08:04 15:57-17:29/92 10:13-10:18/5<br>18:35 12:28-12:45/17 | 08:07 14:50-15:27/37 09:00-09:32/32<br>16:29 11:00-12:15/75 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15 20:57-21:18/21<br>22:04 | 06:09<br>21:06 | 07:08 08:24-09:13/49<br>19:48 07:51-08:10/19 | 08:06 15:56-17:28/92 10:06-10:24/18<br>18:32 12:22-12:51/29 | 08:09 14:51-15:26/35 09:01-09:31/30<br>16:28 11:00-12:15/75 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16 20:56-21:18/22<br>22:03 | 06:11<br>21:04 | 07:10 08:22-09:15/53<br>19:46 07:50-08:11/21 | 08:08 15:54-17:28/94 10:03-10:27/24<br>18:30 12:18-12:54/36 | 08:11 14:52-15:25/33 09:03-09:29/26<br>16:26 11:00-12:15/75 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18 20:57-21:19/22<br>22:02 | 06:13<br>21:01 | 07:12 08:17-09:16/59<br>19:43 07:48-08:10/22 | 08:10 15:52-17:27/95 10:01-10:29/28<br>18:27 12:15-12:57/42 | 08:13 14:53-15:24/31 09:04-09:28/24<br>16:25 11:00-12:15/75 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19 20:56-21:18/22<br>22:00 | 06:15<br>20:59 | 07:14 07:48-09:17/89<br>19:41 | 08:12 15:50-17:26/96 09:59-10:30/31<br>18:25 12:12-12:59/47 | 08:15 14:54-15:23/29 09:06-09:26/20<br>16:23 11:01-12:15/74 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21 20:57-21:19/22<br>21:59 | 06:17<br>20:56 | 07:16 07:47-09:19/92<br>19:38 | 08:14 15:48-17:25/97 09:57-10:32/35<br>18:23 12:10-13:01/51 | 08:17 14:57-15:22/25 09:10-09:25/15<br>16:22 11:02-12:15/73 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 20:56-21:19/23<br>21:57 | 06:19<br>20:54 | 07:18 17:03-17:19/16<br>19:35 07:47-09:20/93 | 08:16 15:47-17:25/98 09:56-10:34/38<br>18:20 12:09-13:04/55 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-12:15/73 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24 20:57-21:19/22<br>21:56 | 06:21<br>20:52 | 07:19 16:59-17:23/24<br>19:33 07:47-09:20/93 | 08:18 15:46-17:24/98 09:55-10:35/40<br>18:18 12:07-13:05/58 | 08:21 15:01-15:19/18<br>16:19 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 20:57-21:19/22<br>21:54 | 06:23<br>20:49 | 07:21 16:56-17:26/30<br>19:30 07:49-09:21/92 | 08:20 15:45-17:23/98 09:54-10:35/41<br>18:16 12:06-13:06/60 | 08:23 15:05-15:16/11<br>16:18 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28 20:57-21:18/21<br>21:52 | 06:25<br>20:47 | 07:23 16:53-17:27/34<br>19:28 07:51-09:21/90 | 08:22 14:44-16:22/98 08:53-09:36/43<br>17:13 11:04-12:07/63 | 08:25 11:04-12:15/71<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29 20:57-21:16/19<br>21:51 | 06:26<br>20:44 | 07:25 16:51-17:29/38<br>19:25 07:53-09:22/89 | 07:24 14:43-16:20/97 08:52-09:36/44<br>17:11 11:03-12:08/65 | 08:27 11:05-12:15/70<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31 20:58-21:15/17<br>21:49 | 06:28<br>20:42 | 07:27 16:48-17:29/41<br>19:23 07:55-09:22/87 | 07:26 14:43-16:19/96 08:52-09:37/45<br>17:09 11:03-12:09/66 | 08:28 11:05-12:15/70<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33 20:58-21:13/15<br>21:47 | 06:30<br>20:39 | 07:29 16:46-17:30/44<br>19:20 07:57-09:21/84 | 07:29 14:42-16:17/95 08:52-09:37/45<br>17:07 11:02-12:10/68 | 08:30 11:06-12:15/69<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34 20:59-21:12/13<br>21:46 | 06:32<br>20:37 | 07:31 16:44-17:31/47<br>19:17 07:58-09:21/83 | 07:31 14:42-16:15/93 08:51-09:38/47<br>17:04 11:01-12:10/69 | 08:32 11:07-12:15/68<br>16:12 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36 21:00-21:10/10<br>21:44 | 06:34<br>20:35 | 07:33 16:43-17:31/48<br>19:15 08:00-09:21/81 | 07:33 15:52-16:12/20 11:00-12:11/71<br>17:02 14:41-15:49/68 08:50-09:38/48 | 08:34 11:08-12:15/67<br>16:11 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38 21:00-21:08/8<br>21:42 | 06:36<br>20:32 | | 07:35 15:56-16:08/12 11:00-12:12/72<br>17:00 14:41-15:48/67 08:51-09:38/47 | | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 463 | 5 | 1607 | 4891 | 4091 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:11/26<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:42/39<br>20:10 | 05:55 20:08-20:34/26<br>21:09 | 05:02 20:20-20:46/26<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:03-19:44/41<br>20:12 | 05:53 20:07-20:34/27<br>21:11 | 05:01 20:21-20:46/25<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:03-19:46/43<br>20:14 | 05:51 20:07-20:38/31<br>21:13 | 05:00 20:22-20:46/24<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:04-19:48/44<br>20:16 | 05:48 20:07-20:41/34<br>21:15 | 04:59 20:23-20:46/23<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:03-19:49/46<br>20:18 | 05:46 20:07-20:42/35<br>21:16 | 04:58 20:23-20:45/22<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:05-19:52/47<br>20:19 | 05:44 20:07-20:44/37<br>21:18 | 04:57 20:23-20:44/21<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:05-19:53/48<br>20:21 | 05:42 20:07-20:45/38<br>21:20 | 04:56 20:25-20:44/19<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:07-19:54/47<br>20:23 | 05:40 20:07-20:46/39<br>21:22 | 04:56 20:25-20:43/18<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:08-19:57/49<br>20:25 | 05:38 20:07-20:46/39<br>21:24 | 04:55 20:26-20:43/17<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:21-19:59/38<br>20:27 19:13-19:18/5 | 05:36 20:08-20:47/39<br>21:26 | 04:54 20:27-20:42/15<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:21-20:01/40<br>20:29 | 05:34 20:08-20:47/39<br>21:28 | 04:54 20:28-20:42/14<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:23-20:03/40<br>20:31 | 05:32 20:10-20:48/38<br>21:30 | 04:54 20:29-20:42/13<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:24-20:04/40<br>20:33 | 05:30 20:11-20:48/37<br>21:32 | 04:53 20:29-20:41/12<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:26-20:06/40<br>20:35 | 05:28 20:12-20:48/36<br>21:33 | 04:53 20:30-20:41/11<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:31-20:06/35<br>20:37 | 05:27 20:14-20:49/35<br>21:35 | 04:53 20:31-20:41/10<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:32-20:06/34<br>20:39 | 05:25 20:15-20:49/34<br>21:37 | 04:52 20:32-20:40/8<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:34-20:06/32<br>20:41 | 05:23 20:15-20:49/34<br>21:39 | 04:52 20:33-20:40/7<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:15-20:49/34<br>21:41 | 04:52 20:34-20:40/6<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20 20:15-20:49/34<br>21:42 | 04:52 20:34-20:39/5<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18 20:15-20:49/34<br>21:44 | 04:52 20:35-20:39/4<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16 20:16-20:49/33<br>21:46 | 04:52 20:35-20:39/4<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15 20:15-20:48/33<br>21:47 | 04:52 20:36-20:40/4<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13 20:16-20:49/33<br>21:49 | 04:53 20:36-20:40/4<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12 20:16-20:49/33<br>21:51 | 04:53 20:35-20:40/5<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:13-20:26/13<br>20:57 19:44-19:58/14 | 05:10 20:17-20:49/32<br>21:52 | 04:53 20:35-20:42/7<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 20:12-20:28/16<br>20:59 19:46-19:55/9 | 05:09 20:17-20:48/31<br>21:54 | 04:54 20:35-20:42/7<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:10-20:30/20<br>21:01 | 05:08 20:17-20:48/31<br>21:55 | 04:54 20:35-20:44/9<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:09-20:32/23<br>21:03 | 05:06 20:18-20:47/29<br>21:57 | 04:55 20:34-20:44/10<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:09-20:33/24<br>21:05 | 05:05 20:18-20:47/29<br>21:58 | 04:55 20:34-20:45/11<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:38/34<br>20:06 | 05:57 20:08-20:34/26<br>21:07 | 05:04 20:19-20:47/28<br>22:00 | 04:56 20:33-20:45/12<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:40/36<br>20:08 | | 05:03 20:20-20:47/27<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 353 | 207 | 1022 | 1039 | 373 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 20:32-20:46/14<br>22:18 | 05:40 20:20-20:58/38<br>21:40 | 06:38 19:20-20:00/40<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58 20:32-20:47/15<br>22:18 | 05:41 20:18-20:57/39<br>21:38 | 06:40 19:19-19:57/38<br>20:27 19:10-19:16/6 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58 20:32-20:48/16<br>22:17 | 05:43 20:18-20:57/39<br>21:36 | 06:42 19:06-19:55/49<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59 20:31-20:48/17<br>22:17 | 05:45 20:18-20:56/38<br>21:34 | 06:43 19:04-19:51/47<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00 20:30-20:49/19<br>22:16 | 05:47 20:17-20:56/39<br>21:32 | 06:45 19:02-19:50/48<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01 20:30-20:50/20<br>22:15 | 05:49 20:16-20:54/38<br>21:30 | 06:47 19:00-19:47/47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02 20:30-20:51/21<br>22:15 | 05:51 20:16-20:53/37<br>21:28 | 06:49 18:59-19:45/46<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03 20:29-20:52/23<br>22:14 | 05:52 20:16-20:51/35<br>21:26 | 06:51 18:58-19:42/44<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04 20:29-20:52/23<br>22:13 | 05:54 20:15-20:48/33<br>21:24 | 06:53 18:57-19:40/43<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06 20:28-20:53/25<br>22:12 | 05:56 20:15-20:45/30<br>21:21 | 06:55 18:57-19:38/41<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07 20:29-20:54/25<br>22:11 | 05:58 20:16-20:43/27<br>21:19 | 06:57 18:55-19:34/39<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08 20:28-20:55/27<br>22:10 | 06:00 20:16-20:43/27<br>21:17 | 06:59 18:55-19:32/37<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09 20:28-20:55/27<br>22:09 | 06:02 20:16-20:41/25<br>21:15 | 07:00 18:55-19:29/34<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11 20:27-20:56/29<br>22:08 | 06:04 20:16-20:41/25<br>21:13 | 07:02 19:24-19:27/3<br>19:56 18:55-19:22/27 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12 20:27-20:56/29<br>22:07 | 06:06 20:17-20:39/22<br>21:10 | 07:04 18:56-19:22/26<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13 20:27-20:57/30<br>22:06 | 06:07 20:18-20:37/19<br>21:08 | 07:06 18:56-19:21/25<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15 20:26-20:57/31<br>22:04 | 06:09 20:18-20:34/16<br>21:06 19:52-20:03/11 | 07:08 18:57-19:19/22<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16 20:26-20:57/31<br>22:03 | 06:11 20:20-20:32/12<br>21:03 19:50-20:05/15 | 07:10 18:57-19:16/19<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18 20:26-20:58/32<br>22:02 | 06:13 20:23-20:30/7<br>21:01 19:48-20:06/18 | 07:12 18:59-19:14/15<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19 20:26-20:58/32<br>22:00 | 06:15 19:47-20:08/21<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21 20:26-20:59/33<br>21:59 | 06:17 19:46-20:08/22<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23 20:25-20:59/34<br>21:57 | 06:19 19:44-20:08/24<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24 20:26-20:59/33<br>21:56 | 06:21 19:44-20:09/25<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26 20:25-20:59/34<br>21:54 | 06:23 19:43-20:09/26<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:26-21:00/34<br>21:52 | 06:25 19:40-20:09/29<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29 20:25-20:59/34<br>21:51 | 06:26 19:37-20:09/32<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:26-21:00/34<br>21:49 | 06:28 19:34-20:08/34<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:25-20:59/34<br>21:47 | 06:30 19:32-20:07/35<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:24-20:59/35<br>21:45 | 06:32 19:27-20:07/40<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:22-20:59/37<br>21:44 | 06:34 19:24-20:05/41<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:21-20:58/37<br>21:42 | 06:36 19:23-20:03/40<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 865 | 959 | 705 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:52-08:05/73 | 05:02 | 05:51-07:40/109 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:50-08:04/74 | 05:01 | 05:51-07:40/109 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:48-08:03/75 | 05:00 | 05:52-07:41/109 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 06:46-08:02/76 | 04:59 | 05:52-07:41/109 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | 06:45-08:01/76 | 04:58 | 05:51-07:41/110 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-07:59/76 | 04:57 | 05:51-07:40/109 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-07:58/76 | 04:56 | 05:52-07:41/109 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-07:56/75 | 04:56 | 05:52-07:41/109 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-07:54/74 | 04:55 | 05:52-07:41/109 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-07:52/73 | 04:54 | 05:52-07:41/109 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:49/71 | 04:54 | 05:52-07:41/109 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:36/58 | 04:53 | 05:53-07:42/109 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | 07:37-07:45/8 | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:36/59 | 04:53 | 05:52-07:41/109 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:36/60 | 04:53 | 05:53-07:42/109 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 07:24-08:10/46 | 05:27 | 06:04-06:11/7 | 04:52 | 05:53-07:42/109 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 06:58-07:14/16 | 21:35 | 06:37-07:37/60 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:22-08:10/48 | 05:25 | 06:00-06:14/14 | 04:52 | 05:54-07:42/108 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 06:55-07:14/19 | 21:37 | 06:36-07:37/61 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 07:22-08:10/48 | 05:23 | 05:59-06:16/17 | 04:52 | 05:54-07:42/108 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 06:54-07:14/20 | 21:39 | 06:36-07:38/62 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 07:21-08:10/49 | 05:21 | 05:57-06:17/20 | 04:52 | 05:54-07:43/109 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 06:53-07:14/21 | 21:40 | 06:29-07:38/69 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 07:20-08:10/50 | 05:20 | 05:56-06:19/23 | 04:52 | 05:54-07:43/109 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 06:53-07:14/21 | 21:42 | 06:26-07:39/73 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:20-08:11/51 | 05:18 | 05:55-06:20/25 | 04:52 | 05:54-07:43/109 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 06:54-07:13/19 | 21:44 | 06:23-07:39/76 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:19-08:10/51 | 05:16 | 05:54-07:39/105 | 04:52 | 05:54-07:43/109 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 06:54-07:13/19 | 21:46 | | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 07:19-08:10/51 | 05:15 | 05:53-07:39/106 | 04:52 | 05:55-07:44/109 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 06:54-07:11/17 | 21:47 | | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:19-08:10/51 | 05:13 | 05:53-07:39/106 | 04:53 | 05:55-07:44/109 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 06:55-07:10/15 | 21:49 | | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 07:19-08:10/51 | 05:12 | 05:53-07:40/107 | 04:53 | 05:55-07:44/109 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 06:57-07:09/12 | 21:51 | | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 07:19-08:08/49 | 05:10 | 05:53-07:39/106 | 04:53 | 05:56-07:44/108 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 06:59-07:06/7 | 21:52 | | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 07:19-08:08/49 | 05:09 | 05:52-07:39/107 | 04:54 | 05:56-07:44/108 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:19-08:08/49 | 05:08 | 05:51-07:40/109 | 04:54 | 05:56-07:45/109 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-07:40/109 | 04:55 | 05:56-07:45/109 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 07:20-08:07/47 | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:19/21 | 05:05 | 05:51-07:40/109 | 04:55 | 05:57-07:45/108 |
| | 17:02 | | 20:04 | 21:05 | 07:20-08:07/47 | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-08:06/72 | 05:04 | 05:51-07:40/109 | 04:56 | 05:56-07:45/109 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-07:40/109 | | |
| | 17:06 | | 20:08 | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 1377 | | 2693 | | 3266 | |

Table layout: For each day in each month the following matrix apply

| | |
|---|---|
| Day in month | Sun rise (hh:mm) — First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) — First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:57-07:46/109 | 05:40 | 06:49-07:58/69 | 06:38 | 07:27-08:06/39 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:57-07:46/109 | 05:41 | 06:49-08:00/71 | 06:40 | 07:28-08:05/37 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:58-07:47/109 | 05:43 | 06:50-08:03/73 | 06:41 | 07:29-08:03/34 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:57-07:46/109 | 05:45 | 06:51-08:05/74 | 06:43 | 07:31-08:01/30 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:57-07:46/109 | 05:47 | 06:52-08:07/75 | 06:45 | 07:33-07:59/26 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:58-07:47/109 | 05:49 | 06:52-08:08/76 | 06:47 | 07:35-07:54/19 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:58-07:47/109 | 05:50 | 06:53-08:09/76 | 06:49 | 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:58-07:47/109 | 05:52 | 06:55-08:11/76 | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:58-07:47/109 | 05:54 | 06:55-08:11/76 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | 05:58-07:48/110 | 05:56 | 06:57-08:12/75 | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:59-07:49/110 | 05:58 | 06:59-08:13/74 | 06:57 | | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00-07:49/109 | 06:00 | 07:01-08:14/73 | 06:58 | | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:00-07:49/109 | 06:02 | 07:03-08:13/70 | 07:00 | | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:00-07:49/109 | 06:04 | 07:06-07:25/19 | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | 07:27-08:14/47 | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:00-07:49/109 | 06:05 | 07:13-07:18/5 | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | 07:27-08:15/48 | 19:53 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:01-07:49/108 | 06:07 | 07:27-08:15/48 | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:01-07:49/108 | 06:09 | 07:25-08:15/50 | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:01-07:49/108 | 06:11 | 07:25-08:15/50 | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | 07:04-07:12/8 | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:02-07:49/107 | 06:13 | 07:25-08:15/50 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | 07:02-07:15/13 | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:02-07:49/107 | 06:15 | 07:25-08:15/50 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | 07:01-07:16/15 | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:04-07:50/106 | 06:17 | 07:25-08:15/50 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | 07:00-07:17/17 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:04-07:49/105 | 06:19 | 07:24-08:14/50 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | 06:58-07:17/19 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:05-06:31/26 | 06:21 | 07:24-08:14/50 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 06:33-07:49/76 | 20:52 | 06:57-07:17/20 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:06-06:30/24 | 06:23 | 07:24-08:14/50 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 06:34-07:49/75 | 20:49 | 06:57-07:17/20 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:07-06:29/22 | 06:24 | 07:24-08:14/50 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 06:37-07:49/72 | 20:47 | 06:57-07:17/20 | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:08-06:27/19 | 06:26 | 07:25-08:13/48 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 06:41-07:48/67 | 20:44 | 06:57-07:17/20 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:10-06:26/16 | 06:28 | 07:24-08:12/48 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 06:47-07:48/61 | 20:42 | 06:57-07:16/19 | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:12-06:23/11 | 06:30 | 07:25-08:11/46 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 06:46-07:48/62 | 20:39 | 06:59-07:15/16 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:47-07:48/61 | 06:32 | 07:25-08:10/45 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | 07:01-07:14/13 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-07:47/59 | 06:34 | 07:26-08:09/43 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | 07:03-07:13/10 | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-07:46/58 | 06:36 | 07:27-08:08/41 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | 07:05-07:11/6 | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 3095 | | 2062 | | 194 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:52-08:15/23 | 07:08 | 05:55 | 05:02 21:11-21:26/15 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 07:50-08:15/25 | 07:05 | 05:53 | 05:01 21:11-21:27/16 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 07:47-08:14/27 | 07:03 | 05:51 | 05:00 21:11-21:28/17 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 07:45-08:14/29 | 07:00 | 05:48 | 04:59 21:12-21:29/17 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 07:44-08:12/28 | 06:58 | 05:46 | 04:58 21:11-21:30/19 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:11/27 | 06:55 | 05:44 | 04:57 21:11-21:31/20 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 |
| 7 | 08:59 | 08:16 | 07:12 07:44-08:06/22 | 06:53 | 05:42 | 04:56 21:12-21:32/20 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 |
| 8 | 08:58 | 08:14 | 07:09 07:44-08:01/17 | 06:50 | 05:40 | 04:56 21:11-21:33/22 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 |
| 9 | 08:57 | 08:12 | 07:07 07:46-08:00/14 | 06:48 | 05:38 | 04:55 21:12-21:34/22 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 |
| 10 | 08:57 | 08:10 | 07:04 07:47-07:57/10 | 06:45 | 05:36 | 04:54 21:12-21:34/22 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:35-05:52/17 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:35-05:53/18 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:34-05:53/19 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:34-05:54/20 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:34-05:55/21 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:55/21 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:55/21 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:56/22 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:56/22 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:56/22 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:57/22 |
| 23 | 08:42 | 07:41 08:07-08:12/5 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:57/22 |
| 24 | 08:41 | 07:39 08:05-08:14/9 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:35-05:57/22 |
| 25 | 08:39 | 07:36 08:02-08:14/12 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:57/21 |
| 26 | 08:38 | 07:34 08:00-08:16/16 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:36-05:57/21 |
| 27 | 08:36 | 07:32 07:57-08:15/18 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:57/20 |
| 28 | 08:35 | 07:29 07:55-08:16/21 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:37-05:57/20 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:38-05:57/19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:38-05:56/18 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 81 | 222 | 0 | 54 | 1083 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:16-21:39/23 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 22:18 05:39-05:56/17 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 21:17-21:39/22 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 22:18 05:40-05:56/16 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:17-21:40/23 | 05:43 | 06:42 | 07:38 08:26-08:34/8 | 07:41 | 08:38 |
| | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:17-21:38/21 | 05:45 | 06:43 | 07:40 08:24-08:36/12 | 07:43 | 08:40 |
| | 22:17 05:43-05:54/11 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 21:17-21:38/21 | 05:47 | 06:45 | 07:42 08:22-08:37/15 | 07:45 | 08:41 |
| | 22:16 05:44-05:52/8 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 21:17-21:38/21 | 05:49 | 06:47 | 07:44 08:21-08:38/17 | 07:47 | 08:43 |
| | 22:15 05:48-05:49/1 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 21:18-21:37/19 | 05:51 | 06:49 | 07:46 08:20-08:44/24 | 07:49 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 21:18-21:36/18 | 05:52 | 06:51 | 07:48 08:19-08:46/27 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 21:18-21:35/17 | 05:54 | 06:53 | 07:50 08:19-08:48/29 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 21:19-21:35/16 | 05:56 | 06:55 | 07:52 08:20-08:48/28 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 21:19-21:34/15 | 05:58 | 06:57 | 07:54 08:22-08:49/27 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 21:20-21:34/14 | 06:00 | 06:59 | 07:56 08:24-08:49/25 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 21:20-21:33/13 | 06:02 | 07:00 | 07:58 08:26-08:48/22 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 21:21-21:31/10 | 06:04 | 07:02 | 08:00 08:28-08:48/20 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 21:21-21:30/9 | 06:06 | 07:04 | 08:02 08:31-08:48/17 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 21:22-21:30/8 | 06:07 | 07:06 | 08:04 08:33-08:47/14 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 21:23-21:28/5 | 06:09 | 07:08 | 08:06 08:35-08:46/11 | 08:09 | 08:56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 21:24-21:27/3 | 06:11 | 07:10 | 08:08 08:37-08:45/8 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 08:39-08:42/3 | 08:13 | 08:57 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 344 | 0 | 0 | 307 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 15:16-16:02/46 | 07:27 | 15:28-15:51/23 | 07:08 | 07:41-08:01/20 | 05:55 | 06:23-06:46/23 | 05:02 | 05:37-06:01/24 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | 21:09 | | 22:02 | |
| 2 | 09:00 | | 08:26 | 15:15-16:03/48 | 07:24 | 15:33-15:47/14 | 07:05 | 07:41-08:01/20 | 05:53 | 06:22-06:47/25 | 05:01 | 05:38-06:02/24 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | | 21:10 | | 22:04 | |
| 3 | 09:00 | | 08:24 | 15:15-16:03/48 | 07:22 | | 07:03 | 07:42-07:59/17 | 05:51 | 06:21-06:48/27 | 05:00 | 05:37-06:02/25 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | | 22:05 | |
| 4 | 09:00 | | 08:22 | 15:15-16:04/49 | 07:19 | | 07:00 | 07:43-07:58/15 | 05:49 | 06:21-06:48/27 | 04:59 | 05:37-06:02/25 |
| | 16:18 | | 17:15 | | 18:14 | | 20:15 | | 21:14 | | 22:06 | |
| 5 | 08:59 | | 08:20 | 15:13-16:04/51 | 07:17 | | 06:58 | 07:44-07:55/11 | 05:46 | 06:20-06:48/28 | 04:58 | 05:37-06:02/25 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | | 08:18 | 15:13-16:05/52 | 07:14 | | 06:55 | | 05:44 | 06:20-06:48/28 | 04:57 | 05:38-06:03/25 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:58 | | 08:16 | 15:13-16:05/52 | 07:12 | | 06:53 | | 05:42 | 06:19-06:48/29 | 04:56 | 05:38-06:03/25 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | | 21:20 | | 22:09 | |
| 8 | 08:58 | | 08:14 | 15:13-16:06/53 | 07:09 | | 06:50 | | 05:40 | 06:19-06:48/29 | 04:56 | 05:38-06:04/26 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | | 21:22 | | 22:10 | |
| 9 | 08:57 | | 08:12 | 15:13-16:07/54 | 07:07 | | 06:48 | | 05:38 | 06:19-06:48/29 | 04:55 | 05:38-06:03/25 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | | 21:24 | | 22:11 | |
| 10 | 08:57 | | 08:10 | 15:13-16:07/54 | 07:04 | | 06:45 | | 05:36 | 06:19-06:48/29 | 04:55 | 05:39-06:04/25 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | | 08:08 | 15:12-16:07/55 | 07:02 | | 06:43 | | 05:34 | 06:20-06:48/28 | 04:54 | 05:38-06:03/25 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | | 08:06 | 15:12-16:07/55 | 06:59 | | 06:40 | | 05:32 | 06:20-06:48/28 | 04:54 | 05:39-06:04/25 |
| | 16:30 | | 17:32 | | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | | 08:04 | 15:13-16:07/54 | 06:57 | | 06:38 | | 05:30 | 06:20-06:47/27 | 04:53 | 05:39-06:04/25 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | | 21:31 | | 22:15 | |
| 14 | 08:53 | | 08:01 | 15:12-16:07/55 | 06:54 | | 06:35 | | 05:29 | 06:21-06:47/26 | 04:53 | 05:40-06:05/25 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | | 22:15 | |
| 15 | 08:52 | | 07:59 | 15:13-16:07/54 | 06:52 | | 06:33 | | 05:27 | 06:21-06:46/25 | 04:53 | 05:39-06:04/25 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | | 22:16 | |
| 16 | 08:51 | | 07:57 | 15:13-16:07/54 | 06:49 | | 06:30 | | 05:25 | 06:21-06:45/24 | 04:52 | 05:39-06:04/25 |
| | 16:37 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | | 22:17 | |
| 17 | 08:50 | | 07:55 | 15:13-16:06/53 | 06:46 | | 06:28 | | 05:23 | 06:22-06:45/23 | 04:52 | 05:40-06:05/25 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | | 22:17 | |
| 18 | 08:49 | | 07:53 | 15:14-16:06/52 | 06:44 | | 06:25 | | 05:21 | 06:23-06:44/21 | 04:52 | 05:40-06:05/25 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | | 22:18 | |
| 19 | 08:48 | | 07:50 | 15:14-16:06/52 | 06:41 | | 06:23 | | 05:20 | 06:24-06:43/19 | 04:52 | 05:40-06:05/25 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 | | 22:18 | |
| 20 | 08:46 | | 07:48 | 15:14-16:05/51 | 06:39 | | 06:20 | | 05:18 | 05:48-05:51/3 | 04:52 | 05:40-06:05/25 |
| | 16:44 | | 17:49 | | 18:46 | | 20:47 | | 21:44 | 06:25-06:42/17 | 22:18 | |
| 21 | 08:45 | 15:31-15:41/10 | 07:46 | 15:16-16:04/48 | 06:36 | | 06:18 | | 05:17 | 05:47-05:54/7 | 04:52 | 05:41-06:06/25 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | 21:46 | 06:27-06:41/14 | 22:19 | |
| 22 | 08:44 | 15:28-15:45/17 | 07:43 | 15:16-16:03/47 | 06:34 | | 06:16 | | 05:15 | 05:46-05:56/10 | 04:53 | 05:41-06:06/25 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | 21:47 | 06:28-06:38/10 | 22:19 | |
| 23 | 08:42 | 15:25-15:47/22 | 07:41 | 15:17-16:02/45 | 06:31 | | 06:13 | | 05:13 | 05:44-05:56/12 | 04:53 | 05:41-06:06/25 |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | 21:49 | 06:31-06:35/4 | 22:19 | |
| 24 | 08:41 | 15:24-15:50/26 | 07:39 | 15:18-16:01/43 | 06:28 | 06:53-07:00/7 | 06:11 | | 05:12 | 05:43-05:57/14 | 04:53 | 05:41-06:06/25 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | 21:50 | | 22:19 | |
| 25 | 08:39 | 15:22-15:52/30 | 07:36 | 15:20-16:00/40 | 06:26 | 06:50-07:01/11 | 06:09 | | 05:11 | 05:42-05:59/17 | 04:53 | 05:42-06:07/25 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | 21:52 | | 22:19 | |
| 26 | 08:38 | 15:21-15:54/33 | 07:34 | 15:22-15:59/37 | 06:23 | 06:48-07:03/15 | 06:06 | | 05:09 | 05:41-05:59/18 | 04:54 | 05:41-06:06/25 |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 15:19-15:55/36 | 07:31 | 15:23-15:56/33 | 06:21 | 06:45-07:03/18 | 06:04 | 06:31-06:39/8 | 05:08 | 05:39-05:59/20 | 04:54 | 05:42-06:07/25 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 15:19-15:57/38 | 07:29 | 15:26-15:55/29 | 06:18 | 06:43-07:03/20 | 06:02 | 06:28-06:42/14 | 05:07 | 05:38-06:00/22 | 04:55 | 05:42-06:07/25 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | 15:18-15:58/40 | | | 07:16 | 07:41-08:03/22 | 05:59 | 06:26-06:44/18 | 05:05 | 05:37-06:00/23 | 04:56 | 05:42-06:08/26 |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | 15:17-16:00/43 | | | 07:13 | 07:41-08:02/21 | 05:57 | 06:24-06:45/21 | 05:04 | 05:37-06:01/24 | 04:56 | 05:43-06:08/25 |
| | 17:04 | | | | 20:06 | | 21:07 | | 21:59 | | 22:18 | |
| 31 | 08:29 | 15:17-16:01/44 | | | 07:10 | 07:41-08:02/21 | | | 05:03 | 05:37-06:01/24 | | |
| | 17:06 | | | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | | 339 | | 1364 | | 172 | | 144 | | 734 | | 750 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:42-06:08/26 | 05:40 06:30-06:58/28 | 06:38 | 07:35 | 07:37 14:42-15:36/54 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:43-06:08/25 | 05:41 06:30-06:59/29 | 06:40 | 07:37 | 07:39 14:42-15:36/54 | 08:37 |
| | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:43-06:09/26 | 05:43 06:29-06:58/29 | 06:42 | 07:38 | 07:41 14:43-15:36/53 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:44-06:09/25 | 05:45 06:29-06:58/29 | 06:43 | 07:40 | 07:43 14:43-15:35/52 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:44-06:09/25 | 05:47 06:30-06:59/29 | 06:45 | 07:42 | 07:45 14:44-15:35/51 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:44-06:10/26 | 05:49 06:29-06:58/29 | 06:47 | 07:44 | 07:47 14:44-15:35/51 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:43-06:09/26 | 05:51 06:29-06:58/29 | 06:49 07:40-07:50/10 | 07:46 | 07:49 14:44-15:34/50 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:44-06:09/25 | 05:52 06:30-06:58/28 | 06:51 07:37-07:52/15 | 07:48 | 07:51 14:45-15:33/48 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:45-06:10/25 | 05:54 06:30-06:57/27 | 06:53 07:36-07:53/17 | 07:50 | 07:53 14:46-15:33/47 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:45-06:10/25 | 05:56 06:30-06:56/26 | 06:55 07:35-07:54/19 | 07:52 | 07:55 14:47-15:32/45 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:10/25 | 05:58 06:31-06:55/24 | 06:57 07:34-07:55/21 | 07:54 16:11-16:16/5 | 07:57 14:48-15:31/43 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:45-06:10/25 | 06:00 06:32-06:54/22 | 06:59 07:32-07:54/22 | 07:56 16:04-16:22/18 | 07:59 14:48-15:30/42 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:45-06:09/24 | 06:02 06:33-06:53/20 | 07:00 07:32-07:54/22 | 07:58 16:00-16:25/25 | 08:01 14:50-15:30/40 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:46-06:09/23 | 06:04 06:34-06:51/17 | 07:02 07:32-07:53/21 | 08:00 15:57-16:28/31 | 08:03 14:51-15:29/38 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:47-06:09/22 | 06:06 06:36-06:49/13 | 07:04 07:32-07:53/21 | 08:02 15:54-16:29/35 | 08:05 14:52-15:28/36 | 08:54 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:48-06:09/21 | 06:07 06:40-06:45/5 | 07:06 07:34-07:52/18 | 08:04 15:52-16:30/38 | 08:07 14:54-15:26/32 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 05:49-06:08/19 | 06:09 | 07:08 07:36-07:51/15 | 08:06 15:51-16:32/41 | 08:09 14:56-15:26/30 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 05:51-06:08/17 | 06:11 | 07:10 07:37-07:49/12 | 08:08 15:49-16:33/44 | 08:11 14:58-15:24/26 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 05:52-06:08/16 | 06:13 | 07:12 07:39-07:47/8 | 08:10 15:48-16:34/46 | 08:13 15:00-15:22/22 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:19 05:53-06:06/13 | 06:15 | 07:14 07:41-07:44/3 | 08:12 15:47-16:34/47 | 08:15 15:03-15:20/17 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 05:55-06:06/11 | 06:17 | 07:16 | 08:14 15:46-16:35/49 | 08:17 15:06-15:16/10 | 08:58 |
| | 21:58 06:40-06:48/8 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 05:56-06:04/8 | 06:19 | 07:17 | 08:16 15:45-16:35/50 | 08:19 | 08:59 |
| | 21:57 06:37-06:50/13 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 05:58-06:03/5 | 06:21 | 07:19 | 08:18 15:44-16:35/51 | 08:21 | 08:59 |
| | 21:55 06:36-06:52/16 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:35-06:52/17 | 06:23 | 07:21 | 08:20 15:44-16:36/52 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 06:34-06:54/20 | 06:25 | 07:23 | 07:22 14:43-15:36/53 | 08:24 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:33-06:54/21 | 06:26 | 07:25 | 07:24 14:42-15:36/54 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:32-06:56/24 | 06:28 | 07:27 | 07:26 14:42-15:36/54 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 06:31-06:56/25 | 06:30 | 07:29 | 07:28 14:41-15:36/55 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 05:34 06:31-06:57/26 | 06:32 | 07:31 | 07:30 14:42-15:37/55 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 06:31-06:58/27 | 06:34 | 07:33 | 07:32 14:42-15:37/55 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 06:30-06:57/27 | 06:36 | | 07:34 14:42-15:36/54 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 707 | 384 | 224 | 912 | 841 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26 08:39-10:58/139<br>18:07 | 07:08 10:23-11:33/70<br>20:09 07:54-09:12/78 | 05:55 06:41-08:20/99<br>21:08 | 05:02 06:31-07:40/69<br>22:02 |
| 2 | 09:00<br>16:15 | 08:25<br>17:10 | 07:24 08:38-10:58/140<br>18:09 | 07:05 10:23-11:30/67<br>20:11 07:51-09:12/81 | 05:53 06:40-08:18/98<br>21:10 | 05:00 06:31-07:39/68<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:38-10:59/141<br>18:11 | 07:03 10:25-11:28/63<br>20:13 07:48-09:12/84 | 05:50 06:39-08:16/97<br>21:12 | 05:00 06:31-07:38/67<br>22:05 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19 08:37-10:59/142<br>18:13 | 07:00 10:26-11:24/58<br>20:15 07:46-09:11/85 | 05:48 06:38-08:14/96<br>21:14 | 04:59 06:32-07:38/66<br>22:06 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17 08:38-10:59/141<br>18:15 | 06:57 10:28-11:22/54<br>20:17 07:43-09:11/88 | 05:46 06:37-08:13/96<br>21:16 | 04:58 06:32-07:36/64<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14 08:37-10:59/142<br>18:17 | 06:55 10:29-11:18/49<br>20:19 07:40-09:10/90 | 05:44 06:37-08:11/94<br>21:18 | 04:57 06:32-07:35/63<br>22:08 |
| 7 | 08:58<br>16:21 | 08:16 10:11-10:13/2<br>17:21 | 07:12 08:38-11:00/142<br>18:19 | 06:52 10:32-11:14/42<br>20:21 07:39-09:10/91 | 05:42 06:36-08:10/94<br>21:20 | 04:56 06:33-07:34/61<br>22:09 |
| 8 | 08:58<br>16:23 | 08:14 10:01-10:24/23<br>17:23 | 07:09 08:38-10:59/141<br>18:21 | 06:50 10:34-11:09/35<br>20:23 07:36-09:09/93 | 05:40 06:35-08:08/93<br>21:22 | 04:55 06:32-07:33/61<br>22:10 |
| 9 | 08:57<br>16:24 | 08:12 09:57-10:29/32<br>17:25 | 07:07 08:37-10:59/142<br>18:24 | 06:47 10:39-11:04/25<br>20:25 07:33-09:09/96 | 05:38 06:35-08:07/92<br>21:24 | 04:55 06:33-07:32/59<br>22:11 |
| 10 | 08:56<br>16:26 | 08:10 09:53-10:32/39<br>17:27 | 07:04 08:38-10:59/141<br>18:26 | 06:45 10:47-10:52/5<br>20:27 07:30-09:07/97 | 05:36 06:34-08:05/91<br>21:26 | 04:54 06:33-07:31/58<br>22:12 |
| 11 | 08:56<br>16:28 | 08:08 09:50-10:35/45<br>17:29 | 07:02 08:38-10:58/140<br>18:28 | 06:42 07:29-09:07/98<br>20:29 | 05:34 06:33-08:03/90<br>21:28 | 04:54 06:33-07:31/58<br>22:13 |
| 12 | 08:55<br>16:29 | 08:06 09:03-09:15/12<br>17:31 09:48-10:38/50 | 06:59 08:39-10:59/140<br>18:30 | 06:40 07:27-09:06/99<br>20:31 | 05:32 06:33-08:02/89<br>21:29 | 04:53 06:34-07:32/58<br>22:14 |
| 13 | 08:54<br>16:31 | 08:03 08:59-09:20/21<br>17:33 09:46-10:40/54 | 06:56 08:40-10:58/138<br>18:32 | 06:37 07:23-09:05/102<br>20:33 | 05:30 06:32-08:00/88<br>21:31 | 04:53 06:34-07:31/57<br>22:15 |
| 14 | 08:53<br>16:33 | 08:01 08:55-09:22/27<br>17:36 09:43-10:42/59 | 06:54 08:41-10:58/137<br>18:34 07:42-07:55/13 | 06:35 07:21-09:04/103<br>20:35 | 05:28 06:31-07:59/88<br>21:33 | 04:53 06:34-07:31/57<br>22:15 |
| 15 | 08:52<br>16:34 | 07:59 08:53-09:25/32<br>17:38 09:42-10:44/62 | 06:51 08:41-10:57/136<br>18:36 07:37-07:59/22 | 06:32 07:19-09:02/103<br>20:37 | 05:26 06:32-07:58/86<br>21:35 | 04:52 06:34-07:32/58<br>22:16 |
| 16 | 08:51<br>16:36 | 07:57 08:51-09:27/36<br>17:40 09:40-10:46/66 | 06:49 08:42-10:56/134<br>18:38 07:33-08:01/28 | 06:30 07:17-09:01/104<br>20:39 | 05:25 06:31-07:56/85<br>21:37 | 04:52 06:35-07:32/57<br>22:17 |
| 17 | 08:50<br>16:38 | 07:55 08:49-09:28/39<br>17:42 09:38-10:47/69 | 06:46 08:44-10:56/132<br>18:40 07:31-08:04/33 | 06:27 07:14-09:00/106<br>20:41 | 05:23 06:30-07:54/84<br>21:38 | 04:52 06:35-07:32/57<br>22:17 |
| 18 | 08:49<br>16:40 | 07:52 08:48-09:30/42<br>17:44 09:37-10:49/72 | 06:44 08:45-10:55/130<br>18:42 07:29-08:05/36 | 06:25 07:11-08:58/107<br>20:43 | 05:21 06:30-07:53/83<br>21:40 | 04:52 06:35-07:32/57<br>22:18 |
| 19 | 08:47<br>16:42 | 07:50 08:47-09:31/44<br>17:46 09:36-10:50/74 | 06:41 08:48-09:15/27 07:27-08:07/40<br>18:44 09:18-10:54/96 | 06:23 07:10-08:56/106<br>20:45 | 05:19 06:30-07:52/82<br>21:42 | 04:52 06:36-07:32/56<br>22:18 |
| 20 | 08:46<br>16:44 | 07:48 08:45-09:32/47<br>17:48 09:34-10:51/77 | 06:39 08:51-09:11/20 07:24-08:08/44<br>18:46 09:18-10:53/95 | 06:20 06:59-08:55/116<br>20:47 | 05:18 06:30-07:51/81<br>21:44 | 04:52 06:36-07:32/56<br>22:18 |
| 21 | 08:45<br>16:46 | 07:45 08:44-10:52/128<br>17:50 | 06:36 08:56-09:04/8 07:21-08:08/47<br>18:48 09:17-10:52/95 | 06:18 06:54-08:52/118<br>20:49 | 05:16 06:30-07:51/81<br>21:45 | 04:52 06:36-07:33/57<br>22:19 |
| 22 | 08:43<br>16:47 | 07:43 08:43-10:53/130<br>17:53 | 06:33 09:18-10:51/93<br>18:50 07:19-08:10/51 | 06:15 06:52-08:50/118<br>20:51 | 05:15 06:30-07:49/79<br>21:47 | 04:52 06:36-07:32/56<br>22:19 |
| 23 | 08:42<br>16:49 | 07:41 08:42-10:54/132<br>17:55 | 06:31 09:18-10:49/91<br>18:52 07:17-08:10/53 | 06:13 06:50-08:47/117<br>20:53 | 05:13 06:30-07:48/78<br>21:49 | 04:52 06:37-07:33/56<br>22:19 |
| 24 | 08:41<br>16:51 | 07:38 08:41-10:55/134<br>17:57 | 06:28 09:19-10:49/90<br>18:54 07:14-08:11/57 | 06:11 06:48-08:43/115<br>20:55 | 05:12 06:30-07:47/77<br>21:50 | 04:53 06:36-07:33/57<br>22:19 |
| 25 | 08:39<br>16:53 | 07:36 08:41-10:56/135<br>17:59 | 06:26 09:19-10:47/88<br>18:55 07:11-08:11/60 | 06:08 08:31-08:35/4<br>20:57 06:46-08:30/104 | 05:10 06:29-07:45/76<br>21:52 | 04:53 06:37-07:34/57<br>22:19 |
| 26 | 08:37<br>16:55 | 07:34 08:39-10:56/137<br>18:01 | 06:23 09:18-10:45/87<br>18:57 07:08-08:10/62 | 06:06 06:45-08:29/104<br>20:59 | 05:09 06:30-07:44/74<br>21:53 | 04:54 06:37-07:34/57<br>22:19 |
| 27 | 08:36<br>16:58 | 07:31 08:39-10:57/138<br>18:03 | 06:21 09:19-10:44/85<br>18:59 07:07-08:11/64 | 06:04 06:44-08:27/103<br>21:01 | 05:07 06:30-07:44/74<br>21:55 | 04:54 06:37-07:34/57<br>22:19 |
| 28 | 08:34<br>17:00 | 07:29 08:38-10:57/139<br>18:05 | 06:18 09:20-10:42/82<br>19:01 07:04-08:11/67 | 06:01 06:43-08:26/103<br>21:03 | 05:06 06:30-07:43/73<br>21:56 | 04:55 06:37-07:35/58<br>22:19 |
| 29 | 08:33<br>17:02 | | 07:15 10:21-11:40/79<br>20:03 08:01-09:12/71 | 05:59 06:43-08:24/101<br>21:04 | 05:05 06:30-07:42/72<br>21:58 | 04:55 06:38-07:35/57<br>22:18 |
| 30 | 08:31<br>17:04 | | 07:13 10:21-11:38/77<br>20:05 07:58-09:12/74 | 05:57 06:42-08:22/100<br>21:06 | 05:04 06:31-07:42/71<br>21:59 | 04:56 06:37-07:35/58<br>22:18 |
| 31 | 08:29<br>17:06 | | 07:10 10:22-11:36/74<br>20:07 07:57-09:12/75 | | 05:03 06:31-07:41/70<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 2097 | 4582 | 3482 | 2631 | 1777 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 06:38-07:35/57<br>22:18 | 05:39 06:43-08:13/90<br>21:39 | 06:38 07:28-09:06/98<br>20:29 | 07:34 09:19-11:38/139<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57 06:38-07:36/58<br>22:17 | 05:41 06:43-08:14/91<br>21:38 | 06:39 10:46-10:51/5<br>20:27 07:29-09:06/97 | 07:36 09:17-11:37/140<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58 06:37-07:36/59<br>22:17 | 05:43 06:44-08:16/92<br>21:36 | 06:41 10:37-11:02/25<br>20:24 07:31-09:07/96 | 07:38 09:17-11:37/140<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59 06:38-07:37/59<br>22:16 | 05:45 06:45-08:18/93<br>21:34 | 06:43 10:32-11:07/35<br>20:22 07:34-09:07/93 | 07:40 09:16-11:37/141<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00 06:38-07:39/61<br>22:16 | 05:47 06:45-08:18/93<br>21:32 | 06:45 10:28-11:10/42<br>20:19 07:35-09:06/91 | 07:42 09:15-11:36/141<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01 06:38-07:41/63<br>22:15 | 05:48 06:46-08:20/94<br>21:30 | 06:47 10:25-11:14/49<br>20:16 07:36-09:06/90 | 07:44 09:14-11:36/142<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02 06:38-07:42/64<br>22:14 | 05:50 06:47-08:22/95<br>21:27 | 06:49 10:23-11:17/54<br>20:14 07:38-09:06/88 | 07:46 09:14-11:35/141<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03 06:38-07:43/65<br>22:13 | 05:52 06:48-08:24/96<br>21:25 | 06:51 10:21-11:19/58<br>20:11 07:41-09:06/85 | 07:48 09:13-11:35/142<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04 06:38-07:45/67<br>22:13 | 05:54 06:48-08:24/96<br>21:23 | 06:53 10:19-11:22/63<br>20:09 07:42-09:06/84 | 07:50 09:13-11:34/141<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05 06:38-07:46/68<br>22:12 | 05:56 06:49-08:26/97<br>21:21 | 06:55 10:17-11:23/66<br>20:06 07:43-09:05/82 | 07:52 09:12-11:33/141<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07 06:38-07:47/69<br>22:11 | 05:58 06:50-08:27/97<br>21:19 | 06:56 10:15-11:25/70<br>20:04 07:46-09:04/78 | 07:54 09:12-11:33/141<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-07:49/70<br>22:10 | 06:00 06:49-08:28/99<br>21:17 | 06:58 10:14-11:27/73<br>20:01 07:48-09:04/76 | 07:56 09:12-11:32/140<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-07:50/71<br>22:09 | 06:02 06:50-08:30/100<br>21:15 | 07:00 10:12-11:29/77<br>19:58 07:49-09:03/74 | 07:58 09:12-11:31/139<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-07:50/71<br>22:08 | 06:03 06:50-08:32/102<br>21:12 | 07:02 10:11-11:30/79<br>19:56 07:51-09:03/72 | 08:00 09:12-11:30/138<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12 06:39-07:51/72<br>22:06 | 06:05 06:51-08:34/103<br>21:10 | 07:04 10:10-11:32/82<br>19:53 07:53-09:02/69 | 08:02 09:12-11:29/137<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13 06:40-07:53/73<br>22:05 | 06:07 06:52-08:35/103<br>21:08 | 07:06 10:08-11:32/84<br>19:51 07:55-09:00/65 | 08:04 09:12-11:28/136<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-07:53/74<br>22:04 | 06:09 06:52-08:35/103<br>21:05 | 07:08 10:07-11:33/86<br>19:48 07:56-08:59/63 | 08:06 09:12-11:27/135<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-07:54/75<br>22:03 | 06:11 06:53-08:44/111<br>21:03 | 07:10 10:06-11:34/88<br>19:45 07:58-08:58/60 | 08:08 09:13-11:26/133<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-07:56/76<br>22:01 | 06:13 06:54-08:50/116<br>21:01 | 07:11 10:05-11:35/90<br>19:43 08:00-08:57/57 | 08:10 09:14-11:25/131<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-07:57/77<br>22:00 | 06:15 06:56-08:53/117<br>20:58 | 07:13 10:05-11:36/91<br>19:40 08:03-08:56/53 | 08:12 09:14-11:24/130<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-07:58/79<br>21:58 | 06:17 06:57-08:55/118<br>20:56 | 07:15 10:04-11:36/92<br>19:38 08:04-08:55/51 | 08:14 09:15-10:03/48<br>18:22 10:04-11:22/78 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-08:00/80<br>21:57 | 06:19 06:59-08:57/118<br>20:54 | 07:17 10:03-11:37/94<br>19:35 08:06-08:54/48 | 08:16 09:15-10:02/47<br>18:20 10:05-11:21/76 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-08:00/80<br>21:55 | 06:20 07:04-08:59/115<br>20:51 | 07:19 09:37-09:54/17 08:08-08:53/45<br>19:32 10:02-11:38/96 | 08:18 09:16-10:00/44<br>18:18 10:06-11:19/73 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-08:02/82<br>21:54 | 06:22 07:14-09:00/106<br>20:49 | 07:21 09:32-09:57/25 08:10-08:50/40<br>19:30 10:01-11:37/96 | 08:20 09:18-10:00/42<br>18:15 10:08-11:18/70 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-08:03/83<br>21:52 | 06:24 07:15-09:02/107<br>20:46 | 07:23 09:29-11:37/128<br>19:27 08:11-08:49/38 | 07:22 08:20-08:58/38<br>17:13 09:09-10:17/68 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-08:04/83<br>21:50 | 06:26 07:17-09:02/105<br>20:44 | 07:25 09:26-11:38/132<br>19:25 08:12-08:47/35 | 07:24 08:21-08:56/35<br>17:11 09:10-10:15/65 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-08:06/84<br>21:49 | 06:28 07:19-09:03/104<br>20:42 | 07:27 09:24-11:38/134<br>19:22 08:14-08:44/30 | 07:26 08:23-08:54/31<br>17:08 09:12-10:13/61 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-08:07/86<br>21:47 | 06:30 07:21-09:04/103<br>20:39 | 07:29 09:23-11:38/135<br>19:20 08:17-08:41/24 | 07:28 08:25-08:51/26<br>17:06 09:13-10:11/58 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-08:09/87<br>21:45 | 06:32 07:22-09:05/103<br>20:37 | 07:31 09:21-11:38/137<br>19:17 08:20-08:37/17 | 07:30 08:29-08:48/19<br>17:04 09:16-10:09/53 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-08:09/87<br>21:43 | 06:34 07:24-09:06/102<br>20:34 | 07:32 09:20-11:38/138<br>19:14 | 07:32 08:34-08:43/9<br>17:02 09:18-10:07/49 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-08:11/88<br>21:41 | 06:36 07:26-09:05/99<br>20:32 | | 07:34 09:20-10:04/44<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2268 | 3168 | 4340 | 3802 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 15:20-15:51/31 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 15:19-15:51/32 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 15:19-15:52/33 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 15:19-15:52/33 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 15:19-15:52/33 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 15:18-15:52/34 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:19-15:53/34 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 15:19-15:52/33 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:19-15:52/33 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:19-15:51/32 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:21-15:52/31 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:21-15:51/30 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:22-15:50/28 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:22-15:50/28 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:24-15:50/26 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:25-15:49/24 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:26-15:48/22 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:28-15:46/18 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:29-15:44/15 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 15:21-15:51/30 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 435 | 560 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27<br>18:07 | 07:08 19:24-19:42/18<br>20:10 | 05:55<br>21:09 | 05:02 05:37-05:57/20<br>22:02 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05 19:24-19:44/20<br>20:12 | 05:53<br>21:11 | 05:01 05:37-05:59/22<br>22:04 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:12 | 07:03 19:23-19:45/22<br>20:13 | 05:51<br>21:13 | 05:00 05:36-06:00/24<br>22:05 |
| 4 | 09:00<br>16:18 | 08:22<br>17:15 | 07:19<br>18:14 | 07:00 19:23-19:46/23<br>20:15 | 05:49<br>21:14 | 04:59 05:36-06:00/24<br>22:06 |
| 5 | 09:00<br>16:19 | 08:20<br>17:17 | 07:17<br>18:16 | 06:58 19:22-19:45/23<br>20:17 | 05:46<br>21:16 | 04:58 05:35-06:01/26<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:18 | 06:55 19:22-19:45/23<br>20:19 | 05:44<br>21:18 | 04:57 05:35-06:02/27<br>22:08 |
| 7 | 08:59<br>16:22 | 08:16<br>17:21 | 07:12<br>18:20 | 06:53 19:22-19:44/22<br>20:21 | 05:42<br>21:20 | 04:57 05:35-06:02/27<br>22:09 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50 19:23-19:43/20<br>20:23 | 05:40<br>21:22 | 04:56 05:35-06:03/28<br>22:10 |
| 9 | 08:57<br>16:25 | 08:12<br>17:25 | 07:07<br>18:24 | 06:48 19:23-19:42/19<br>20:25 | 05:38<br>21:24 | 04:55 05:34-06:03/29<br>22:11 |
| 10 | 08:57<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45 19:24-19:40/16<br>20:27 | 05:36<br>21:26 | 04:55 05:35-06:04/29<br>22:12 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:43 19:25-19:38/13<br>20:29 | 05:34<br>21:28 | 04:54 05:34-06:04/30<br>22:13 |
| 12 | 08:55<br>16:30 | 08:06<br>17:32 | 06:59<br>18:30 | 06:40 19:29-19:34/5<br>20:31 | 05:32<br>21:30 | 04:54 05:34-06:05/31<br>22:14 |
| 13 | 08:54<br>16:31 | 08:04<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53 05:35-06:05/30<br>22:15 |
| 14 | 08:53<br>16:33 | 08:01<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53 05:34-06:05/31<br>22:15 |
| 15 | 08:52<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53 05:34-06:05/31<br>22:16 |
| 16 | 08:51<br>16:37 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52 05:34-06:06/32<br>22:17 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52 05:35-06:06/31<br>22:17 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52 05:35-06:06/31<br>22:18 |
| 19 | 08:48<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52 05:35-06:07/32<br>22:18 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52 05:35-06:07/32<br>22:18 |
| 21 | 08:45<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:17<br>21:46 | 04:52 05:36-06:08/32<br>22:19 |
| 22 | 08:44<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:53 05:36-06:08/32<br>22:19 |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53 05:36-06:08/32<br>22:19 |
| 24 | 08:41<br>16:52 | 07:39<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53 05:36-06:08/32<br>22:19 |
| 25 | 08:39<br>16:54 | 07:36<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 | 05:11<br>21:52 | 04:53 05:37-06:08/31<br>22:19 |
| 26 | 08:38<br>16:56 | 07:34<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54 05:36-06:08/32<br>22:19 |
| 27 | 08:36<br>16:58 | 07:32<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54 05:37-06:09/32<br>22:19 |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:07 05:43-05:51/8<br>21:57 | 04:55 05:37-06:08/31<br>22:19 |
| 29 | 08:33<br>17:02 | | 07:16 19:30-19:36/6<br>20:04 | 06:00<br>21:05 | 05:05 05:41-05:54/13<br>21:58 | 04:56 05:38-06:09/31<br>22:19 |
| 30 | 08:31<br>17:04 | | 07:13 19:27-19:38/11<br>20:06 | 05:57<br>21:07 | 05:04 05:39-05:55/16<br>22:00 | 04:56 05:39-06:09/30<br>22:18 |
| 31 | 08:29<br>17:06 | | 07:11 19:26-19:40/14<br>20:08 | | 05:03 05:38-05:56/18<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 0 | 31 | 224 | 55 | 882 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:38-06:08/30 | 05:40 | 06:38 19:24-19:37/13 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:39-06:09/30 | 05:42 | 06:40 19:22-19:38/16 | 07:37 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:40-06:09/29 | 05:43 | 06:42 19:21-19:40/19 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:40-06:09/29 | 05:45 | 06:44 19:20-19:40/20 | 07:40 | 07:43 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:41-06:09/28 | 05:47 | 06:45 19:19-19:41/22 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:41-06:08/27 | 05:49 | 06:47 19:17-19:40/23 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:41-06:07/26 | 05:51 | 06:49 19:17-19:40/23 | 07:46 | 07:49 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:42-06:07/25 | 05:53 | 06:51 19:17-19:40/23 | 07:48 | 07:51 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:44-06:08/24 | 05:54 | 06:53 19:17-19:40/23 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:44-06:07/23 | 05:56 | 06:55 19:17-19:38/21 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:06/21 | 05:58 | 06:57 19:16-19:34/18 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:46-06:05/19 | 06:00 | 06:59 19:17-19:32/15 | 07:56 | 07:59 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:47-06:04/17 | 06:02 | 07:00 19:18-19:29/11 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:48-06:03/15 | 06:04 | 07:02 19:20-19:27/7 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:51-06:02/11 | 06:06 | 07:04 19:23-19:24/1 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:54-05:59/5 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 19:29-19:35/6 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 359 | 6 | 255 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 17:07-17:35/28 | 07:08 07:32-07:46/14 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 17:07-17:36/29 | 07:05 07:30-07:48/18 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 17:06-17:35/29 | 07:03 07:27-07:49/22 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 17:06-17:35/29 | 07:00 07:26-07:50/24 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 17:06-17:35/29 | 06:58 07:24-07:50/26 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 17:06-17:34/28 | 06:55 07:24-07:51/27 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 17:06-17:34/28 | 06:53 07:23-07:51/28 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 17:06-17:33/27 | 06:50 07:23-07:51/28 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 17:07-17:32/25 | 06:48 07:22-07:50/28 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 17:08-17:31/23 | 06:45 07:22-07:50/28 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 17:09-17:29/20 | 06:43 07:22-07:49/27 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 17:11-17:27/16 | 06:40 07:22-07:49/27 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:14-17:23/9 | 06:38 07:22-07:47/25 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:23-07:46/23 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 07:24-07:45/21 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:25-07:43/18 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 07:27-07:41/14 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 07:30-07:38/8 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 17:18-17:26/8 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 17:14-17:28/14 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:54 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 17:11-17:33/22 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 17:09-17:34/25 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 17:09-17:35/26 | 06:18 | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:10 07:35-07:44/9 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 113 | 329 | 406 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | | 06:38 | 07:21-07:48/27 | 07:35 | 17:51-18:05/14 | 07:37 | 08:35 |
| | 22:18 | 21:40 | | 20:29 | | 19:12 | | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | | 06:40 | 07:20-07:48/28 | 07:37 | 17:49-18:07/18 | 07:39 | 08:37 |
| | 22:17 | 21:38 | | 20:27 | | 19:10 | | 16:56 | 16:09 |
| 3 | 04:59 | 05:43 | | 06:42 | 07:20-07:48/28 | 07:38 | 17:47-18:08/21 | 07:41 | 08:38 |
| | 22:17 | 21:36 | | 20:24 | | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | | 06:43 | 07:20-07:48/28 | 07:40 | 17:45-18:09/24 | 07:43 | 08:40 |
| | 22:16 | 21:34 | | 20:22 | | 19:04 | | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | | 06:45 | 07:20-07:48/28 | 07:42 | 17:44-18:10/26 | 07:45 | 08:41 |
| | 22:16 | 21:32 | | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | | 06:47 | 07:19-07:46/27 | 07:44 | 17:43-18:10/27 | 07:47 | 08:43 |
| | 22:15 | 21:30 | | 20:17 | | 18:59 | | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | | 06:49 | 07:19-07:45/26 | 07:46 | 17:42-18:10/28 | 07:49 | 08:44 |
| | 22:14 | 21:28 | | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | | 06:51 | 07:20-07:44/24 | 07:48 | 17:41-18:10/29 | 07:51 | 08:45 |
| | 22:14 | 21:26 | | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | | 06:53 | 07:21-07:43/22 | 07:50 | 17:41-18:10/29 | 07:53 | 08:47 |
| | 22:13 | 21:23 | | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | | 06:55 | 07:23-07:42/19 | 07:52 | 17:41-18:10/29 | 07:55 | 08:48 |
| | 22:12 | 21:21 | | 20:06 | | 18:49 | | 16:40 | 16:05 |
| 11 | 05:07 | 05:58 | | 06:57 | 07:25-07:40/15 | 07:54 | 17:40-18:09/29 | 07:57 | 08:49 |
| | 22:11 | 21:19 | | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | | 06:59 | 07:26-07:36/10 | 07:56 | 17:40-18:09/29 | 07:59 | 08:50 |
| | 22:10 | 21:17 | | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | | 07:00 | | 07:58 | 17:41-18:08/27 | 08:01 | 08:52 |
| | 22:09 | 21:15 | | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | | 07:02 | | 08:00 | 17:41-18:07/26 | 08:03 | 08:53 |
| | 22:08 | 21:12 | | 19:56 | | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | | 07:04 | | 08:02 | 17:42-18:05/23 | 08:05 | 08:54 |
| | 22:07 | 21:10 | | 19:53 | | 18:37 | | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | | 07:06 | | 08:04 | 17:43-18:03/20 | 08:07 | 08:54 |
| | 22:05 | 21:08 | | 19:51 | | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | | 07:08 | | 08:06 | 17:45-18:02/17 | 08:09 | 08:55 |
| | 22:04 | 21:06 | | 19:48 | | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | | 07:10 | | 08:08 | 17:47-17:59/12 | 08:11 | 08:56 |
| | 22:03 | 21:03 | | 19:46 | | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | | 07:12 | | 08:10 | 17:52-17:55/3 | 08:13 | 08:57 |
| | 22:01 | 21:01 | | 19:43 | | 18:27 | | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | | 07:14 | | 08:12 | | 08:15 | 08:58 |
| | 22:00 | 20:59 | | 19:41 | | 18:25 | | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 08:58 |
| | 21:58 | 20:56 | | 19:38 | | 18:23 | | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | | 07:17 | | 08:16 | | 08:19 | 08:59 |
| | 21:57 | 20:54 | | 19:35 | | 18:20 | | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | | 07:19 | | 08:18 | | 08:21 | 08:59 |
| | 21:55 | 20:51 | | 19:33 | | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | | 07:21 | | 08:20 | | 08:23 | 09:00 |
| | 21:54 | 20:49 | | 19:30 | | 18:16 | | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:32-07:41/9 | 07:23 | | 07:22 | | 08:25 | 09:00 |
| | 21:52 | 20:47 | | 19:28 | | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:29-07:44/15 | 07:25 | | 07:24 | | 08:26 | 09:00 |
| | 21:50 | 20:44 | | 19:25 | | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:26-07:45/19 | 07:27 | | 07:26 | | 08:28 | 09:01 |
| | 21:49 | 20:42 | | 19:22 | | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:25-07:46/21 | 07:29 | | 07:28 | | 08:30 | 09:01 |
| | 21:47 | 20:39 | | 19:20 | | 17:07 | | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:24-07:47/23 | 07:31 | | 07:30 | | 08:32 | 09:01 |
| | 21:45 | 20:37 | | 19:17 | | 17:04 | | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:23-07:48/25 | 07:33 | 17:56-18:00/4 | 07:32 | | 08:33 | 09:01 |
| | 21:43 | 20:34 | | 19:15 | | 17:02 | | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 | 07:22-07:49/27 | | | 07:34 | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | | | 16:13 |
| Potential sun hours | 521 | 465 | | 383 | | 326 | | 253 | 224 |
| Sum of minutes with flicker | 0 | 139 | | 286 | | 431 | | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 18:30-19:17/47 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 18:30-19:10/40 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 18:30-19:17/47 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 18:29-19:10/41 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 18:30-19:16/46 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 18:28-19:11/43 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 18:30-19:17/47 | 05:49 | 04:59 | 04:59 | 05:45 | 06:43 18:27-19:11/44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 18:29-19:16/47 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 18:27-19:12/45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 18:30-19:16/46 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 18:25-19:11/46 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 18:29-19:15/46 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 18:24-19:11/47 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 18:30-19:14/44 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 18:24-19:11/47 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 18:30-19:13/43 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 18:24-19:11/47 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 18:31-19:12/41 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 18:24-19:10/46 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 18:31-19:11/40 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 18:23-19:09/46 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 18:32-19:10/38 | 05:32 | 04:54 | 05:08 | 06:00 06:56-07:01/5 | 06:59 18:23-19:09/46 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 18:33-19:08/35 | 05:30 | 04:53 | 05:09 | 06:02 06:53-07:04/11 | 07:00 18:23-19:08/45 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 18:34-19:07/33 | 05:29 | 04:53 | 05:11 | 06:04 06:51-07:05/14 | 07:02 18:23-19:07/44 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 18:36-19:05/29 | 05:27 | 04:53 | 05:12 | 06:06 06:50-07:06/16 | 07:04 18:23-19:07/44 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 18:37-19:03/26 | 05:25 | 04:52 | 05:14 | 06:07 06:49-07:07/18 | 07:06 18:24-19:06/42 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 06:55-06:57/2 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 18:40-19:00/20 | 05:23 | 04:52 | 05:15 | 06:09 06:48-07:08/20 | 07:08 18:23-19:04/41 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 06:53-07:00/7 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 18:43-18:56/13 | 05:21 | 04:52 | 05:16 | 06:11 06:47-07:07/20 | 07:10 18:24-19:02/38 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 06:51-07:01/10 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:48-07:01/13 | 05:20 | 04:52 | 05:18 | 06:13 06:47-07:08/21 | 07:12 18:25-19:01/36 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 17:49-18:06/17 | 06:20 06:46-07:02/16 | 05:18 | 04:52 | 05:19 | 06:15 06:46-07:08/22 | 07:14 18:26-18:59/33 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 17:46-18:09/23 | 06:18 06:44-07:03/19 | 05:16 | 04:52 | 05:21 | 06:17 06:47-07:08/21 | 07:16 18:28-18:57/29 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 17:43-18:11/28 | 06:16 06:41-07:02/21 | 05:15 | 04:53 | 05:23 | 06:19 06:49-07:07/18 | 07:17 18:30-18:55/25 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:40-18:12/32 | 06:13 06:41-07:02/21 | 05:13 | 04:53 | 05:24 | 06:21 06:50-07:06/16 | 07:19 18:32-18:52/20 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 17:39-18:14/35 | 06:11 06:41-07:02/21 | 05:12 | 04:53 | 05:26 | 06:23 06:52-07:05/13 | 07:21 18:37-18:46/9 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 17:37-18:15/38 | 06:09 06:41-07:02/21 | 05:11 | 04:53 | 05:28 | 06:25 18:46-19:00/14 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 06:54-07:04/10 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 17:36-18:16/40 | 06:06 06:41-07:00/19 | 05:09 | 04:54 | 05:29 | 06:26 18:43-19:03/20 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 06:56-07:02/6 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 17:34-18:16/42 | 06:04 06:41-07:00/19 | 05:08 | 04:54 | 05:31 | 06:28 18:39-19:05/26 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 06:57-06:59/2 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 17:33-18:16/43 | 06:02 06:42-06:59/17 | 05:06 | 04:55 | 05:33 | 06:30 18:37-19:06/29 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 18:33-19:17/44 | 05:59 06:44-06:57/13 | 05:05 | 04:56 | 05:34 | 06:32 18:35-19:08/33 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 18:31-19:17/46 | 05:57 06:45-06:55/10 | 05:04 | 04:56 | 05:36 | 06:34 18:34-19:09/35 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 18:31-19:17/46 | | 05:03 | | 05:38 | 06:36 18:32-19:10/38 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 434 | 917 | 0 | 0 | 0 | 428 | 944 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | | 07:08 | 07:32-07:39/7 | 05:55 | | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 07:30-07:38/8 | 05:53 | 06:20-06:22/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:10 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:27-07:36/9 | 05:50 | 06:18-06:24/6 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:25-07:33/8 | 05:48 | 06:16-06:24/8 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:58 | 07:22-07:32/10 | 05:46 | 06:14-06:25/11 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:20-07:31/11 | 05:44 | 06:12-06:25/13 | 04:57 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 07:17-07:28/11 | 05:42 | 06:10-06:25/15 | 04:56 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:17-07:23/6 | 05:40 | 06:08-06:25/17 | 04:55 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 05:38 | 06:07-06:25/18 | 04:55 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | | 05:36 | 06:07-06:24/17 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 05:34 | 06:07-06:24/17 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 05:32 | 06:08-06:24/16 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | | 05:30 | 06:08-06:23/15 | 04:53 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | | 21:31 | | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 05:28 | 06:09-06:22/13 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:15 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 05:26 | 06:11-06:21/10 | 04:52 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 05:25 | 06:12-06:19/7 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 05:23 | | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 05:21 | | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | | 22:18 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 05:19 | | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 05:18 | | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 05:16 | | 04:52 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | | 21:46 | | 22:19 |
| 22 | 08:44 | 07:43 | 06:33 | | 06:15 | | 05:15 | | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | | 05:13 | | 04:52 |
| | 16:49 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | | 05:12 | | 04:53 |
| | 16:51 | 17:57 | 18:54 | | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | | 06:08 | | 05:10 | | 04:53 |
| | 16:53 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | | 06:06 | | 05:09 | | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | | 06:04 | | 05:07 | | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:01 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:15 | | 05:59 | | 05:05 | | 04:55 |
| | 17:02 | | 20:03 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:37-07:40/3 | 05:57 | | 05:04 | | 04:56 |
| | 17:04 | | 20:05 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:35-07:40/5 | | | 05:03 | | |
| | 17:06 | | 20:07 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 8 | | 70 | | 185 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:18-06:34/16 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:17-06:34/17 | 06:39 | | 07:36 | 07:39 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:17-06:35/18 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:17-06:35/18 | 06:43 | 07:14-07:20/6 | 07:40 | 07:43 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:18-06:34/16 | 06:45 | 07:14-07:25/11 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:20-06:34/14 | 06:47 | 07:15-07:26/11 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:22-06:34/12 | 06:49 | 07:17-07:27/10 | 07:46 | 07:49 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 05:03 | | 05:52 | 06:24-06:34/10 | 06:51 | 07:19-07:27/8 | 07:48 | 07:51 | 08:45 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:25-06:33/8 | 06:53 | 07:21-07:30/9 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:27-06:32/5 | 06:55 | 07:23-07:32/9 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:29-06:30/1 | 06:56 | 07:24-07:31/7 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 07:26-07:31/5 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 07:28-07:31/3 | 07:58 | 08:01 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 21:52 | | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:25-06:27/2 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:22-06:30/8 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:20-06:32/12 | 06:32 | | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:19-06:32/13 | 06:34 | | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:18-06:33/15 | 06:36 | | | | 07:34 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 50 | | 135 | | 79 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 06:32-06:38/6 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 06:39-06:47/8 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 06:37-06:48/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 06:36-06:49/13 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 06:36-06:49/13 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 06:38-06:50/12 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 06:39-06:49/10 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 06:41-06:49/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 06:43-06:49/6 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 06:45-06:48/3 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39-06:42/3 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 06:37-06:43/6 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:34-06:42/8 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:32-06:42/10 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:30-06:42/12 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:28-06:42/14 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:29-06:41/12 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:30-06:40/10 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 75 | 6 | 0 | 0 | 84 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 07:06-07:11/5 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 07:08-07:09/1 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 07:10-07:11/1 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:07-07:12/5 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05-07:13/8 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 07:02-07:13/11 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:00-07:14/14 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 06:57-07:13/16 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:56-07:13/17 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 06:56-07:13/17 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:08-07:10/2 | 06:25 06:56-07:11/15 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:06-07:10/4 | 06:23 06:57-07:10/13 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 07:42-07:49/7 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:03-07:09/6 | 06:20 06:59-07:09/10 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 07:41-07:50/9 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:01-07:08/7 | 06:18 07:01-07:04/3 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 07:43-07:51/8 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 06:58-07:05/7 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 07:05-07:10/5 | 07:17 07:45-07:52/7 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 06:55-07:04/9 | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 07:02-07:13/11 | 07:19 07:47-07:53/6 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 06:55-07:03/8 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 07:01-07:14/13 | 07:21 07:49-07:54/5 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 07:00-07:15/15 | 07:23 07:51-07:53/2 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 06:58-07:15/17 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 06:57-07:15/18 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 06:59-07:15/16 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 07:01-07:15/14 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 07:03-07:14/11 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 07:04-07:12/8 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 43 | 130 | 0 | 0 | 0 | 128 | 50 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:27-10:41/14 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 10:29-10:41/12 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 10:30-10:40/10 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 10:32-10:40/8 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 10:34-10:37/3 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | 10:22-10:24/2 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | 10:19-10:27/8 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | 10:19-10:29/10 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | 10:18-10:30/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | 10:18-10:31/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | 10:18-10:33/15 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | 10:18-10:33/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | 10:18-10:34/16 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:18-10:35/17 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:18-10:36/18 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:19-10:37/18 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:39-10:43/4 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | 10:19-10:37/18 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:38-10:43/5 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | 10:19-10:37/18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:20-10:44/24 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:19-10:44/25 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:20-10:45/25 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:21-10:45/24 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:41-10:46/5 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | 10:22-10:40/18 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:42-10:46/4 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | 10:22-10:40/18 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:43-10:45/2 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | 10:23-10:40/17 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:23-10:41/18 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 | 10:24-10:41/17 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | 10:25-10:41/16 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | 10:26-10:41/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | 10:27-10:42/15 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 | 08:24 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:05-10:06/1 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:04-10:08/4 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:04-10:10/6 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:04-10:11/7 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:04-10:11/7 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:04-10:12/8 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:04-10:12/8 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:05-10:13/8 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:05-10:13/8 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:06-10:14/8 |
| | 16:52 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:07-10:14/7 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:08-10:14/6 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:09-10:13/4 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 | 10:10-10:13/3 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:14 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 18 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 20:14-20:15/1 | 05:01 | 04:56 | 05:39 | 06:37 19:28-19:55/27 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:28-19:54/26 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:28-19:54/26 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:38-19:47/9 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:28-19:52/24 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:36-19:49/13 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:31-19:45/14 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:31-19:55/24 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:33-19:42/9 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 19:30-19:56/26 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 19:29-19:55/26 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 | 06:42 19:29-19:56/27 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 19:28-19:55/27 | 05:32 | 04:53 | 05:08 | 06:00 20:21-20:26/5 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 19:28-19:55/27 | 05:30 | 04:53 | 05:09 | 06:01 20:18-20:29/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 19:29-19:55/26 | 05:28 | 04:52 | 05:10 | 06:03 20:17-20:30/13 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 19:28-19:54/26 | 05:26 | 04:52 | 05:12 | 06:05 20:16-20:31/15 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 19:29-19:53/24 | 05:24 | 04:52 | 05:13 | 06:07 20:14-20:31/17 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 19:29-19:52/23 | 05:23 | 04:52 | 05:15 | 06:09 20:13-20:32/19 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 19:30-19:51/21 | 05:21 | 04:52 | 05:16 | 06:11 20:13-20:32/19 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 20:11-20:16/5 | 05:19 | 04:52 | 05:18 | 06:13 20:13-20:30/17 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 19:31-19:50/19 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 20:09-20:17/8 | 05:18 | 04:52 | 05:19 | 06:15 20:12-20:27/15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 19:32-19:47/15 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 20:08-20:19/11 | 05:16 | 04:52 | 05:21 | 06:17 20:12-20:25/13 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 19:35-19:44/9 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 20:08-20:21/13 | 05:15 | 04:52 | 05:22 | 06:18 20:13-20:23/10 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 19:39-19:50/11 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 20:08-20:23/15 | 05:13 | 04:52 | 05:24 | 06:20 20:14-20:21/7 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 19:37-19:52/15 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 20:07-20:24/17 | 05:12 | 04:53 | 05:25 | 06:22 20:15-20:19/4 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 19:35-19:54/19 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 20:07-20:25/18 | 05:10 | 04:53 | 05:27 | 06:24 19:32-19:54/22 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 20:07-20:25/18 | 05:09 | 04:53 | 05:29 | 06:26 19:31-19:55/24 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 20:08-20:24/16 | 05:07 | 04:54 | 05:31 | 06:28 19:31-19:55/24 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 20:08-20:24/16 | 05:06 | 04:54 | 05:32 | 06:30 19:30-19:56/26 | 07:28 | 07:28 | 08:30 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 20:09-20:21/12 | 05:05 | 04:55 | 05:34 | 06:32 19:29-19:56/27 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:10-20:20/10 | 05:04 | 04:56 | 05:36 | 06:34 19:28-19:55/27 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:28-19:55/27 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 538 | 1 | 0 | 0 | 387 | 163 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 19 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 17:22-17:39/17 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:21-17:41/20 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 17:21-17:43/22 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:04-18:14/10 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 17:20-17:43/23 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:01-18:16/15 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 17:20-17:42/22 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 17:59-18:17/18 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 17:20-17:42/22 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 17:58-18:17/19 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:20-17:41/21 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:18/21 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:21-17:40/19 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 17:56-18:18/22 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:22-17:38/16 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 17:55-18:18/23 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:24-17:37/13 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 17:55-18:18/23 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 17:27-17:33/6 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 17:55-18:16/21 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 17:55-18:14/19 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 17:56-18:11/15 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 19:07-19:12/5 | 08:00 17:56-18:08/12 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 19:03-19:14/11 | 08:02 17:57-18:06/9 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 19:01-19:15/14 | 08:04 17:59-18:03/4 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 19:00-19:16/16 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:59-19:16/17 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:59-19:14/15 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 18:15-18:18/3 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:58-19:11/13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 18:13-18:20/7 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:58-19:09/11 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 18:13-18:22/9 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:58-19:05/7 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:12-18:24/12 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:59-19:03/4 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 18:11-18:26/15 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:12-18:28/16 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 17:26-17:32/6 | 06:23 18:11-18:27/16 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 17:25-17:35/10 | 06:20 18:12-18:27/15 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 17:23-17:36/13 | 06:18 18:13-18:25/12 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 19:15-19:21/6 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 29 | 312 | 0 | 0 | 0 | 0 | 0 | 113 | 231 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 20 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 16:03-16:24/21 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:37-17:41/4 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 16:03-16:22/19 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 16:37-16:39/2 | 07:21 17:36-17:43/7 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:18-18:23/5 | 07:40 16:04-16:21/17 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:22 16:35-16:41/6 | 07:19 17:35-17:45/10 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:15-18:25/10 | 07:42 16:04-16:18/14 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 16:35-16:44/9 | 07:16 17:34-17:47/13 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:12-18:26/14 | 07:44 16:04-16:16/12 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 16:34-16:46/12 | 07:14 17:35-17:49/14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 18:11-18:26/15 | 07:46 16:05-16:13/8 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 16:34-16:49/15 | 07:11 17:34-17:50/16 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 18:10-18:26/16 | 07:49 16:06-16:12/6 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 16:34-16:51/17 | 07:09 17:35-17:50/15 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 18:10-18:24/14 | 07:51 16:08-16:09/1 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 16:33-16:53/20 | 07:06 17:36-17:48/12 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 18:10-18:22/12 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 16:33-16:54/21 | 07:04 17:39-17:46/7 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 18:10-18:19/9 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 16:34-16:54/20 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 18:11-18:16/5 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 16:34-16:54/20 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 18:11-18:14/3 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 16:34-16:53/19 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 16:36-16:52/16 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 16:37-16:51/14 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 16:38-16:49/11 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:55 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 16:11-16:16/5 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 16:08-16:20/12 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 16:06-16:21/15 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 16:05-16:22/17 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 16:04-16:22/18 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 16:04-16:24/20 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 16:03-16:24/21 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 202 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 98 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 21 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 20:46-21:04/18 | 04:56 20:15-20:48/33 | 05:39 20:55-21:06/11 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 20:06-20:44/38 | 22:18 | 21:39 20:14-20:53/39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 20:17-20:31/14 | 05:00 20:46-21:04/18 | 04:57 20:14-20:47/33 | 05:41 20:57-21:04/7 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 20:06-20:44/38 | 22:17 | 21:37 20:15-20:52/37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 20:14-20:33/19 | 04:59 20:47-21:03/16 | 04:58 20:58-21:04/6 | 05:43 20:59-21:03/4 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 20:06-20:44/38 | 22:17 20:14-20:48/34 | 21:35 20:16-20:52/36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 20:12-20:35/23 | 04:58 20:47-21:02/15 | 04:59 20:57-21:05/8 | 05:45 20:16-20:50/34 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 20:07-20:43/36 | 22:16 20:14-20:49/35 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 20:10-20:37/27 | 04:58 20:49-21:03/14 | 05:00 20:57-21:07/10 | 05:47 20:17-20:50/33 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 20:08-20:44/36 | 22:15 20:14-20:49/35 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 20:09-20:38/29 | 04:57 20:49-21:02/13 | 05:01 20:56-21:08/12 | 05:48 20:18-20:49/31 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 20:08-20:44/36 | 22:15 20:14-20:50/36 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 20:07-20:39/32 | 04:56 20:50-21:01/11 | 05:02 20:56-21:09/13 | 05:50 20:19-20:48/29 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 20:09-20:44/35 | 22:14 20:14-20:50/36 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 20:07-20:41/34 | 04:55 20:52-21:00/8 | 05:03 20:55-21:09/14 | 05:52 20:20-20:46/26 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 20:09-20:44/35 | 22:13 20:14-20:51/37 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 20:06-20:41/35 | 04:55 20:52-20:59/7 | 05:04 20:54-21:10/16 | 05:54 20:22-20:44/22 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 20:09-20:43/34 | 22:12 20:14-20:51/37 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 20:48-20:53/5 | 04:54 20:55-20:58/3 | 05:05 20:54-21:11/17 | 05:56 20:24-20:42/18 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 20:05-20:42/37 | 22:12 20:10-20:43/33 | 22:12 20:14-20:51/37 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 20:46-20:54/8 | 04:54 20:11-20:44/33 | 05:06 20:53-21:11/18 | 05:58 20:27-20:38/11 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 20:04-20:42/38 | 22:13 | 22:11 20:13-20:52/39 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 20:44-20:56/12 | 04:53 20:10-20:43/33 | 05:08 20:53-21:12/19 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 20:04-20:42/38 | 22:14 | 22:10 20:13-20:52/39 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 20:44-20:58/14 | 04:53 20:11-20:43/32 | 05:09 20:14-21:13/59 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 20:04-20:43/39 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 20:03-21:00/57 | 04:52 20:12-20:43/31 | 05:10 20:13-21:14/61 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 20:03-21:01/58 | 04:52 20:12-20:44/32 | 05:12 20:13-21:14/61 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 20:03-21:03/60 | 04:52 20:13-20:44/31 | 05:13 20:13-21:14/61 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 20:02-21:04/62 | 04:52 20:13-20:44/31 | 05:15 20:13-21:15/62 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 20:03-21:06/63 | 04:52 20:13-20:44/31 | 05:16 20:13-21:15/62 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:18 20:12-21:15/63 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:19 20:13-21:16/63 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:21 20:12-21:16/64 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:14 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:22 20:13-21:16/63 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 20:03-21:06/63 | 04:52 20:15-20:45/30 | 05:24 20:13-21:16/63 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:11 20:03-21:05/62 | 04:53 20:14-20:45/31 | 05:25 20:13-21:16/63 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 20:03-21:06/63 | 04:53 20:14-20:45/31 | 05:27 20:13-21:16/63 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 20:04-21:06/62 | 04:53 20:15-20:46/31 | 05:29 20:13-21:16/63 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 20:04-21:06/62 | 04:54 20:14-20:46/32 | 05:30 20:13-21:14/61 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 20:04-21:05/61 | 04:54 20:15-20:47/32 | 05:32 20:13-21:13/60 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 20:05-21:05/60 | 04:55 20:14-20:46/32 | 05:34 20:14-21:12/58 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 20:05-21:05/60 | 04:56 20:15-20:47/32 | 05:36 20:14-21:09/55 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:02 20:05-21:05/60 | | 05:37 20:55-21:08/13 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 20:14-20:54/40 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 1509 | 1107 | 1722 | 338 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 22 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 19:30-19:53/23 | 07:34 18:05-18:36/31 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:30-19:53/23 | 07:36 18:06-18:34/28 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 19:40-19:46/6 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:30-19:53/23 | 07:38 18:07-18:33/26 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:37-19:47/10 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:29-19:52/23 | 07:40 18:08-18:31/23 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:35-19:49/14 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 18:10-18:29/19 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 18:12-18:25/13 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:38-17:46/8 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:30-19:45/15 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:34-17:50/16 | 06:50 19:32-19:55/23 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:32-19:42/10 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:31-17:52/21 | 06:47 19:32-19:55/23 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 19:33-19:39/6 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:29-17:54/25 | 06:45 19:31-19:54/23 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 17:27-17:55/28 | 06:42 19:31-19:54/23 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 17:25-17:55/30 | 06:40 19:30-19:53/23 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 17:25-17:57/32 | 06:37 19:31-19:53/22 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 17:23-17:57/34 | 06:35 19:31-19:51/20 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 17:23-17:57/34 | 06:32 19:32-19:50/18 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 18:19-18:33/14 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 17:22-17:57/35 | 06:30 19:34-19:49/15 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 18:16-18:35/19 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 17:22-17:58/36 | 06:27 19:35-19:46/11 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 18:14-18:37/23 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 17:22-17:57/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:12-18:38/26 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 17:21-17:56/35 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:10-18:39/29 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 17:22-17:56/34 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:09-18:40/31 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 17:21-17:55/34 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:08-18:40/32 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 17:22-17:55/33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:06-18:40/34 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:22-17:54/32 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:05-18:40/35 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 17:22-17:52/30 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 18:05-18:40/35 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 17:24-17:51/27 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 19:42-19:45/3 | 07:23 18:04-18:40/36 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 17:25-17:49/24 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 19:38-19:49/11 | 07:25 18:04-18:39/35 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 17:27-17:47/20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 19:35-19:51/16 | 07:27 18:04-18:39/35 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 17:29-17:44/15 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 19:34-19:52/18 | 07:28 18:04-18:38/34 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 18:34-18:38/4 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 19:32-19:52/20 | 07:30 18:04-18:38/34 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 19:31-19:53/22 | 07:32 18:04-18:37/33 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:30-19:53/23 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 622 | 268 | 0 | 0 | 0 | 113 | 645 | 140 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 23 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 225 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 24 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:50 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:05 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:09 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:26 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 25 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00<br>16:13 | 08:27 08:59-09:45/46<br>17:08 | 07:26 09:08-09:55/47<br>18:07 | 07:07<br>20:09 | 05:55<br>21:08 | 05:01<br>22:02 | 04:56<br>22:17 | 05:39<br>21:39 | 06:37<br>20:29 | 07:34<br>19:12 | 07:36 08:29-09:27/58<br>16:57 | 08:34<br>16:10 |
| 2 | 09:00<br>16:15 | 08:25 08:58-09:47/49<br>17:10 | 07:24 09:09-09:53/44<br>18:09 | 07:05<br>20:11 | 05:52<br>21:10 | 05:00<br>22:03 | 04:57<br>22:17 | 05:41<br>21:37 | 06:39<br>20:26 | 07:36<br>19:09 | 07:38 08:28-09:26/58<br>16:55 | 08:36<br>16:09 |
| 3 | 09:00<br>16:16 | 08:23 08:58-09:49/51<br>17:12 | 07:21 09:10-09:52/42<br>18:11 | 07:02<br>20:13 | 05:50<br>21:12 | 04:59<br>22:04 | 04:58<br>22:16 | 05:43<br>21:35 | 06:41<br>20:24 | 07:38<br>19:06 | 07:40 08:29-09:26/57<br>16:53 | 08:38<br>16:08 |
| 4 | 08:59<br>16:17 | 08:21 08:58-09:51/53<br>17:14 | 07:19 09:11-09:49/38<br>18:13 | 07:00<br>20:15 | 05:48<br>21:14 | 04:58<br>22:06 | 04:59<br>22:16 | 05:45<br>21:33 | 06:43<br>20:21 | 07:40<br>19:04 | 07:42 08:28-09:24/56<br>16:51 | 08:39<br>16:07 |
| 5 | 08:59<br>16:18 | 08:20 08:58-09:52/54<br>17:16 | 07:16 09:12-09:47/35<br>18:15 | 06:57<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 | 05:00<br>22:15 | 05:46<br>21:31 | 06:45<br>20:19 | 07:42 09:59-10:11/12<br>19:01 | 07:44 08:28-09:23/55<br>16:49 | 08:41<br>16:06 |
| 6 | 08:59<br>16:20 | 08:18 08:58-09:54/56<br>17:18 | 07:14 09:14-09:45/31<br>18:17 | 06:55<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 | 05:01<br>22:15 | 05:48<br>21:29 | 06:47<br>20:16 | 07:44 09:54-10:16/22<br>18:59 | 07:46 08:28-09:22/54<br>16:47 | 08:42<br>16:06 |
| 7 | 08:58<br>16:21 | 08:16 08:59-09:55/56<br>17:20 | 07:11 09:16-09:41/25<br>18:19 | 06:52<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 | 05:02<br>22:14 | 05:50<br>21:27 | 06:49<br>20:14 | 07:46 09:51-10:19/28<br>18:56 | 07:48 08:29-09:21/52<br>16:45 | 08:44<br>16:05 |
| 8 | 08:57<br>16:23 | 08:14 08:59-09:56/57<br>17:23 | 07:09 09:20-09:38/18<br>18:21 | 06:50<br>20:23 | 05:40<br>21:22 | 04:55<br>22:10 | 05:03<br>22:13 | 05:52<br>21:25 | 06:51<br>20:11 | 07:48 09:49-10:22/33<br>18:54 | 07:50 08:29-09:20/51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:24 | 08:12 08:59-09:56/57<br>17:25 | 07:06<br>18:23 | 06:47<br>20:25 | 05:38<br>21:23 | 04:55<br>22:11 | 05:04<br>22:12 | 05:54<br>21:23 | 06:52<br>20:08 | 07:50 09:47-10:24/37<br>18:51 | 07:53 08:29-09:18/49<br>16:41 | 08:46<br>16:04 |
| 10 | 08:56<br>16:26 | 08:09 08:59-09:57/58<br>17:27 | 07:04<br>18:25 | 06:45<br>20:27 | 05:36<br>21:25 | 04:54<br>22:12 | 05:05<br>22:11 | 05:56<br>21:21 | 06:54<br>20:06 | 07:52 09:45-10:25/40<br>18:49 | 07:55 08:30-09:15/45<br>16:39 | 08:48<br>16:04 |
| 11 | 08:55<br>16:27 | 08:07 09:00-09:58/58<br>17:29 | 07:01<br>18:27 | 06:42<br>20:29 | 05:34<br>21:27 | 04:54<br>22:13 | 05:06<br>22:10 | 05:58<br>21:19 | 06:56<br>20:03 | 07:54 09:44-10:26/42<br>18:46 | 07:57 08:31-09:14/43<br>16:37 | 08:49<br>16:04 |
| 12 | 08:54<br>16:29 | 08:05 09:01-09:59/58<br>17:31 | 06:59<br>18:29 | 06:40<br>20:31 | 05:32<br>21:29 | 04:53<br>22:13 | 05:08<br>22:09 | 05:59<br>21:16 | 06:58<br>20:01 | 07:56 09:42-10:27/45<br>18:44 | 07:59 08:56-09:10/14<br>16:36 | 08:50<br>16:03 |
| 13 | 08:54<br>16:31 | 08:03 09:02-09:59/57<br>17:33 | 06:56<br>18:31 | 06:37<br>20:33 | 05:30<br>21:31 | 04:53<br>22:14 | 05:09<br>22:08 | 06:01<br>21:14 | 07:00<br>19:58 | 07:57 09:41-10:28/47<br>18:41 | 08:01 08:34-08:53/19<br>16:34 | 08:51<br>16:03 |
| 14 | 08:53<br>16:32 | 08:01 09:03-10:00/57<br>17:35 | 06:54<br>18:33 | 06:35<br>20:35 | 05:28<br>21:33 | 04:52<br>22:15 | 05:10<br>22:07 | 06:03<br>21:12 | 07:02<br>19:56 | 07:59 09:40-10:29/49<br>18:39 | 08:03 08:36-08:52/16<br>16:32 | 08:52<br>16:03 |
| 15 | 08:52<br>16:34 | 07:59 09:06-10:00/54<br>17:37 | 06:51<br>18:35 | 06:32<br>20:37 | 05:26<br>21:35 | 04:52<br>22:16 | 05:12<br>22:06 | 06:05<br>21:10 | 07:04<br>19:53 | 08:01 09:39-10:29/50<br>18:36 | 08:05 08:39-08:51/12<br>16:30 | 08:53<br>16:03 |
| 16 | 08:51<br>16:36 | 07:57 09:05-10:00/55<br>17:40 | 06:49<br>18:37 | 06:30<br>20:39 | 05:24<br>21:36 | 04:52<br>22:16 | 05:13<br>22:05 | 06:07<br>21:07 | 07:06<br>19:50 | 08:03 09:38-10:30/52<br>18:34 | 08:07 08:41-08:49/8<br>16:29 | 08:54<br>16:03 |
| 17 | 08:49<br>16:38 | 07:54 09:05-10:00/55<br>17:42 | 06:46<br>18:39 | 06:27<br>20:41 | 05:23<br>21:38 | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:05 | 07:07<br>19:48 | 08:05 09:37-10:30/53<br>18:32 | 08:09<br>16:27 | 08:55<br>16:03 |
| 18 | 08:48<br>16:40 | 07:52 09:06-10:01/55<br>17:44 | 06:43<br>18:41 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:17 | 05:16<br>22:02 | 06:11<br>21:03 | 07:09<br>19:45 | 08:07 09:36-10:30/54<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:47<br>16:42 | 07:50 09:05-10:00/55<br>17:46 | 06:41<br>18:43 | 06:22<br>20:44 | 05:19<br>21:42 | 04:52<br>22:18 | 05:17<br>22:01 | 06:13<br>21:00 | 07:11<br>19:43 | 08:09 09:36-10:30/54<br>18:27 | 08:13<br>16:24 | 08:56<br>16:04 |
| 20 | 08:46<br>16:43 | 07:47 09:05-10:01/56<br>17:48 | 06:38<br>18:45 | 06:20<br>20:46 | 05:18<br>21:43 | 04:52<br>22:18 | 05:19<br>21:59 | 06:15<br>20:58 | 07:13<br>19:40 | 08:11 09:36-10:31/55<br>18:24 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 08:44<br>16:45 | 07:45 09:05-10:00/55<br>17:50 | 06:36<br>18:47 | 06:18<br>20:48 | 05:16<br>21:45 | 04:52<br>22:18 | 05:21<br>21:58 | 06:16<br>20:56 | 07:15<br>19:37 | 08:13 09:36-10:31/55<br>18:22 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 08:43<br>16:47 | 07:43 09:05-10:00/55<br>17:52 | 06:33<br>18:49 | 06:15<br>20:50 | 05:14<br>21:47 | 04:52<br>22:18 | 05:22<br>21:56 | 06:18<br>20:53 | 07:17<br>19:35 | 08:16 09:35-10:31/56<br>18:20 | 08:18<br>16:20 | 08:58<br>16:05 |
| 23 | 08:42<br>16:49 | 07:41 09:06-10:00/54<br>17:54 | 06:31<br>18:51 | 06:13<br>20:52 | 05:13<br>21:48 | 04:52<br>22:18 | 05:24<br>21:55 | 06:20<br>20:51 | 07:19<br>19:32 | 08:18 09:35-10:31/56<br>18:17 | 08:20<br>16:18 | 08:59<br>16:06 |
| 24 | 08:40<br>16:51 | 07:38 09:05-09:59/54<br>17:56 | 06:28<br>18:53 | 06:10<br>20:54 | 05:11<br>21:50 | 04:53<br>22:19 | 05:25<br>21:53 | 06:22<br>20:49 | 07:21<br>19:30 | 08:20 09:35-10:30/55<br>18:15 | 08:22<br>16:17 | 08:59<br>16:06 |
| 25 | 08:39<br>16:53 | 07:36 09:06-09:59/53<br>17:59 | 06:25<br>18:55 | 06:08<br>20:56 | 05:10<br>21:52 | 04:53<br>22:19 | 05:27<br>21:52 | 06:24<br>20:46 | 07:23<br>19:27 | 07:22 08:35-09:30/55<br>17:13 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 08:37 09:08-09:16/8<br>16:55 | 07:33 09:06-09:57/51<br>18:01 | 06:23<br>18:57 | 06:06<br>20:58 | 05:09<br>21:53 | 04:53<br>22:19 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:24 | 07:24 08:36-09:30/54<br>17:10 | 08:26<br>16:15 | 09:00<br>16:07 |
| 27 | 08:36 09:06-09:18/12<br>16:57 | 07:31 09:07-09:57/50<br>18:03 | 06:20<br>18:59 | 06:04<br>21:00 | 05:07<br>21:55 | 04:54<br>22:18 | 05:30<br>21:48 | 06:28<br>20:41 | 07:26<br>19:22 | 07:26 08:34-09:30/56<br>17:08 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 08:34 09:04-09:20/16<br>16:59 | 07:29 09:07-09:55/48<br>18:05 | 06:18<br>19:01 | 06:01<br>21:02 | 05:06<br>21:56 | 04:54<br>22:18 | 05:32<br>21:47 | 06:30<br>20:39 | 07:28<br>19:19 | 07:28 08:32-09:29/57<br>17:06 | 08:29<br>16:12 | 09:00<br>16:09 |
| 29 | 08:32 09:02-09:21/19<br>17:01 | | 07:15<br>20:03 | 05:59<br>21:04 | 05:05<br>21:58 | 04:55<br>22:18 | 05:34<br>21:45 | 06:32<br>20:36 | 07:30<br>19:17 | 07:30 08:31-09:28/57<br>17:04 | 08:31<br>16:11 | 09:00<br>16:10 |
| 30 | 08:31 09:24-09:39/15<br>17:04 09:00-09:22/22 | | 07:13<br>20:05 | 05:57<br>21:06 | 05:04<br>21:59 | 04:56<br>22:18 | 05:36<br>21:43 | 06:34<br>20:34 | 07:32<br>19:14 | 07:32 08:31-09:29/58<br>17:02 | 08:33<br>16:10 | 09:00<br>16:11 |
| 31 | 08:29 08:59-09:42/43<br>17:06 | | 07:10<br>20:07 | | 05:02<br>22:00 | | 05:37<br>21:41 | 06:35<br>20:31 | | 07:34 08:30-09:28/58<br>16:59 | | 09:00<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 135 | 1517 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 1290 | 669 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:14-14:50/36 10:59-11:45/46 | 08:28 15:55-16:27/32 11:07-11:56/49 09:16-09:39/23 | 07:27 08:14-08:44/30 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:05-12:43/38 10:25-10:32/7 | 17:08 14:32-14:53/21 09:45-11:03/78 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:14-14:50/36 10:58-11:45/47 | 08:26 15:55-16:29/34 11:07-11:56/49 09:15-09:41/26 | 07:24 08:14-08:43/29 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:06-12:43/37 10:23-10:34/11 | 17:10 14:35-14:51/16 09:45-11:03/78 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:15-14:51/36 10:59-11:46/47 | 08:24 15:55-16:30/35 11:08-11:56/48 09:14-09:42/28 | 07:22 08:14-08:41/27 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:07-12:44/37 10:22-10:36/14 | 17:12 14:39-14:47/8 09:45-11:03/78 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:14-14:51/37 10:59-11:46/47 | 08:22 15:55-16:31/36 09:45-11:04/79 | 07:19 08:15-08:41/26 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:07-12:44/37 10:21-10:37/16 | 17:15 11:09-11:55/46 09:13-09:43/30 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:15-14:53/38 11:00-11:48/48 | 08:20 15:55-16:32/37 09:45-11:03/78 | 07:17 08:15-08:39/24 | 06:58 | 05:46 | 04:58 |
| | 16:19 12:08-12:44/36 10:20-10:40/20 | 17:17 11:10-11:54/44 09:13-09:44/31 | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 14:15-14:53/38 11:00-11:48/48 | 08:18 16:37-16:42/5 11:12-11:53/41 | 07:15 08:17-08:38/21 | 06:55 | 05:44 | 04:57 |
| | 16:20 12:09-12:44/35 10:19-10:41/22 | 17:19 15:56-16:33/37 09:12-11:03/111 | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 14:15-14:53/38 10:59-11:48/49 | 08:16 15:55-16:45/50 09:12-11:03/111 | 07:12 08:18-08:36/18 | 06:53 | 05:42 | 04:56 |
| | 16:22 12:09-12:44/35 10:19-10:42/23 | 17:21 11:13-11:52/39 08:55-09:05/10 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:15-14:54/39 10:59-11:49/50 | 08:14 15:56-16:47/51 09:11-11:02/111 | 07:10 08:20-08:34/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 12:10-12:44/34 10:18-10:44/26 | 17:23 11:14-11:50/36 08:52-09:07/15 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:17-14:55/38 11:00-11:51/51 | 08:12 15:57-16:49/52 09:11-11:02/111 | 07:07 08:24-08:29/5 | 06:48 | 05:38 | 04:55 |
| | 16:25 12:12-12:45/33 10:18-10:46/28 | 17:25 11:16-11:49/33 08:50-09:09/19 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:17-14:56/39 11:01-11:51/50 | 08:10 15:58-16:50/52 08:49-11:01/132 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 12:13-12:45/32 10:18-10:47/29 | 17:27 11:18-11:47/29 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:17-14:56/39 11:01-11:52/51 | 08:08 15:59-16:51/52 08:48-11:01/133 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 12:14-12:44/30 10:17-10:48/31 | 17:30 11:21-11:44/23 | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 14:17-14:56/39 11:00-11:52/52 | 08:06 16:00-16:51/51 08:46-10:59/133 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 12:14-12:43/29 10:16-10:49/33 | 17:32 11:24-11:39/15 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:17-14:57/40 11:00-11:52/52 | 08:04 16:02-16:52/50 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 12:15-12:43/28 10:15-10:50/35 | 17:34 08:46-10:58/132 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:17-14:57/40 11:01-11:53/52 | 08:02 16:06-16:52/46 08:46-09:47/61 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 12:17-12:43/26 10:15-10:51/36 | 17:36 09:48-10:57/69 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:18-14:58/40 11:01-11:54/53 | 08:00 16:07-16:52/45 08:45-09:46/61 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 12:18-12:42/24 10:15-10:53/38 | 17:38 09:48-10:54/66 08:33-08:38/5 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:18-14:58/40 11:01-11:54/53 09:58-10:07/9 | 07:57 16:08-16:53/45 08:45-09:46/61 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 12:19-12:40/21 10:14-10:53/39 | 17:40 09:50-10:53/63 08:28-08:41/13 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:19-14:58/39 11:01-11:55/54 09:56-10:10/14 | 07:55 16:09-16:53/44 09:51-10:24/33 08:27-08:44/17 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 12:22-12:39/17 10:14-10:54/40 | 17:42 10:27-10:50/23 08:45-09:46/61 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:19-14:59/40 11:02-11:56/54 09:54-10:13/19 | 07:53 16:10-16:53/43 09:52-10:22/30 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 12:25-12:38/13 10:14-10:56/42 | 17:44 10:30-10:46/16 08:24-09:45/81 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:19-14:59/40 11:01-11:55/54 | 07:51 16:13-16:53/40 08:24-09:44/80 | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 12:29-12:34/5 09:52-10:56/64 | 17:47 09:54-10:20/26 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:20-14:59/39 09:52-10:58/66 | 07:48 16:26-16:53/27 09:57-10:18/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:02-11:56/54 | 17:49 16:17-16:23/6 08:22-09:44/82 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:20-14:59/39 09:50-10:58/68 | 07:46 16:26-16:52/26 09:15-09:42/27 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 11:02-11:56/54 | 17:51 10:00-10:13/13 08:20-09:14/54 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:21-14:59/38 09:49-10:58/69 | 07:44 16:27-16:51/24 08:18-09:14/56 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:02-11:56/54 | 17:53 09:16-09:40/24 | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:22-14:59/37 09:49-11:00/71 | 07:41 16:27-16:50/23 08:17-09:12/55 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:03-11:57/54 | 17:55 09:18-09:38/20 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 16:02-16:11/9 11:03-11:57/54 | 07:39 16:29-16:49/20 08:16-09:12/56 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 14:22-14:59/37 09:48-11:00/72 | 17:57 09:21-09:35/14 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 15:59-16:13/14 11:03-11:57/54 | 07:36 16:30-16:46/16 08:48-09:10/22 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 14:23-14:58/35 09:47-11:00/73 | 17:59 08:15-08:47/32 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:59-16:15/16 11:04-11:58/54 | 07:34 16:33-16:44/11 08:50-09:08/18 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:24-14:59/35 09:47-11:02/75 | 18:01 08:15-08:47/32 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:58-16:17/19 11:04-11:58/54 | 07:32 08:14-08:46/32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 14:25-14:58/33 09:47-11:02/75 | 18:03 08:52-09:05/13 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:57-16:18/21 11:05-11:58/53 | 07:29 08:14-08:45/31 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 14:26-14:58/32 09:46-11:02/76 | 18:05 08:57-09:00/3 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:56-16:19/23 11:05-11:57/52 09:23-09:31/8 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 14:27-14:57/30 09:46-11:03/77 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:56-16:22/26 11:06-11:57/51 09:20-09:35/15 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 14:29-14:56/27 09:45-11:03/78 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:55-16:25/30 11:06-11:57/51 09:18-09:37/19 | | 07:11 | | 05:03 | |
| | 17:06 14:30-14:54/24 09:45-11:03/78 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4956 | 4405 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 15:27-16:19/52 08:19-10:31/132 | 08:35 13:58-14:37/39 10:42-11:33/51 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 10:47-11:17/30 | 16:10 11:56-12:26/30 09:59-10:31/32 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 15:26-16:18/52 08:40-10:31/111 | 08:37 13:59-14:38/39 10:43-11:33/50 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 10:45-11:18/33 08:20-08:39/19 | 16:09 11:55-12:27/32 10:00-10:29/29 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 15:25-16:16/51 08:40-10:32/112 | 08:38 14:00-14:38/38 10:44-11:34/50 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 10:43-11:20/37 08:22-08:36/14 | 16:08 11:55-12:28/33 10:01-10:29/28 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 15:26-16:15/49 08:42-10:33/111 | 08:40 14:01-14:39/38 10:45-11:34/49 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 10:43-11:22/39 08:26-08:34/8 | 16:08 11:55-12:29/34 10:03-10:29/26 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 08:58-09:09/11 | 07:45 16:07-16:11/4 10:41-11:23/42 | 08:42 14:00-14:39/39 10:45-11:34/49 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 15:25-16:02/37 08:42-10:33/111 | 16:07 11:54-12:29/35 10:04-10:27/23 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 08:55-09:11/16 | 07:47 15:25-16:02/37 09:15-10:33/78 | 08:43 14:01-14:39/38 10:46-11:34/48 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 10:40-11:24/44 08:42-09:14/32 | 16:06 11:55-12:30/35 10:05-10:27/22 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 08:53-09:13/20 | 07:49 15:25-16:01/36 09:15-10:33/78 | 08:44 14:01-14:39/38 10:46-11:34/48 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 10:39-11:25/46 08:43-09:13/30 | 16:06 11:54-12:30/36 10:06-10:26/20 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 08:51-09:14/23 | 07:51 15:26-16:01/35 10:39-11:26/47 08:45-09:13/28 | 08:46 14:03-14:40/37 10:47-11:34/47 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 14:09-14:18/9 09:16-10:34/78 | 16:05 11:55-12:32/37 10:09-10:26/17 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 08:50-09:15/25 | 07:53 15:26-15:59/33 10:38-11:27/49 08:46-09:11/25 | 08:47 14:03-14:39/36 10:47-11:34/47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 14:05-14:22/17 09:16-10:34/78 | 16:05 11:55-12:32/37 10:10-10:24/14 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 08:49-09:15/26 | 07:55 15:26-15:58/32 10:37-11:27/50 08:47-09:10/23 | 08:48 14:04-14:40/36 10:48-11:35/47 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 14:03-14:24/21 09:16-10:34/78 | 16:05 11:56-12:33/37 10:13-10:24/11 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 08:48-09:15/27 | 07:57 15:26-15:56/30 10:37-11:28/51 08:49-09:08/19 | 08:50 14:04-14:40/36 10:49-11:35/46 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 14:01-14:25/24 09:16-10:34/78 | 16:04 11:56-12:33/37 10:15-10:22/7 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 08:47-09:16/29 | 07:59 15:27-15:53/26 10:37-11:29/52 08:52-09:07/15 | 08:51 14:05-14:40/35 10:49-11:35/46 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 14:00-14:28/28 09:17-10:35/78 | 16:04 11:56-12:34/38 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 08:48-09:18/30 | 08:01 15:28-15:51/23 10:37-11:29/52 08:55-09:03/8 | 08:52 14:05-14:40/35 10:50-11:35/45 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 13:59-14:29/30 09:18-10:35/77 | 16:04 11:56-12:34/38 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 08:47-09:19/32 | 08:03 15:29-15:50/21 10:37-11:30/53 | 08:53 14:06-14:41/35 10:50-11:35/45 |
| | 22:08 | 21:13 | 19:56 | 18:39 09:27-09:36/9 | 16:33 13:58-14:29/31 09:18-10:34/76 | 16:04 11:56-12:35/39 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 17:08-17:13/5 09:24-09:39/15 | 08:06 15:30-15:49/19 10:36-11:30/54 | 08:54 14:06-14:41/35 10:52-11:36/44 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:47-09:19/32 | 16:31 13:57-14:30/33 09:19-10:34/75 | 16:04 11:57-12:36/39 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 17:04-17:17/13 09:21-09:41/20 | 08:08 15:32-15:48/16 10:37-11:31/54 | 08:55 14:07-14:41/34 10:52-11:36/44 |
| | 22:06 | 21:08 | 19:51 | 18:35 08:47-09:19/32 | 16:29 13:57-14:32/35 09:20-10:35/75 | 16:04 11:57-12:36/39 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 17:01-17:19/18 08:47-09:42/55 | 08:09 15:33-15:47/14 10:37-11:31/54 | 08:56 14:08-14:42/34 10:52-11:36/44 |
| | 22:04 | 21:06 | 19:48 | 18:32 09:55-10:04/9 | 16:28 13:57-14:32/35 09:21-10:34/73 | 16:04 11:57-12:36/39 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 16:59-17:20/21 08:48-09:43/55 | 08:11 15:36-15:45/9 10:37-11:31/54 | 08:56 14:08-14:42/34 10:53-11:37/44 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-10:07/16 | 16:26 13:56-14:33/37 09:22-10:34/72 | 16:04 11:58-12:37/39 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 16:58-17:21/23 08:48-09:44/56 | 08:13 13:56-14:33/37 09:23-10:34/71 | 08:57 14:09-14:43/34 10:54-11:37/43 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:48-10:10/22 | 16:25 10:37-11:31/54 | 16:04 11:59-12:38/39 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 16:57-17:22/25 08:49-09:44/55 | 08:15 13:56-14:34/38 09:24-10:33/69 | 08:58 14:09-14:43/34 10:54-11:37/43 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:46-10:11/25 | 16:23 10:37-11:31/54 | 16:05 11:58-12:38/40 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 16:56-17:22/26 08:50-10:12/82 | 08:17 13:56-14:35/39 09:26-10:34/68 | 08:59 14:10-14:44/34 10:55-11:38/43 |
| | 21:59 | 20:57 | 19:38 | 18:23 10:29-10:45/16 | 16:22 10:38-11:32/54 | 16:05 11:59-12:39/40 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 16:56-17:23/27 10:27-10:49/22 | 08:19 13:56-14:35/39 09:28-10:34/66 | 08:59 14:10-14:44/34 10:56-11:39/43 |
| | 21:57 | 20:54 | 19:35 | 18:20 16:46-16:55/9 08:53-10:14/81 | 16:20 10:38-11:32/54 | 16:05 12:00-12:40/40 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 16:42-17:23/41 10:24-10:51/27 | 08:21 13:56-14:36/40 10:38-11:33/55 | 09:00 14:11-14:45/34 10:56-11:39/43 |
| | 21:56 | 20:52 | 19:33 | 18:18 11:05-11:12/7 08:54-10:15/81 | 16:19 12:06-12:10/4 09:29-10:33/64 | 16:06 12:00-12:40/40 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 16:40-17:23/43 10:22-10:53/31 | 08:23 13:56-14:36/40 10:39-11:33/54 09:31-09:50/19 | 09:00 14:11-14:45/34 10:56-11:39/43 |
| | 21:54 | 20:49 | 19:30 | 18:16 10:59-11:18/19 08:55-10:15/80 | 16:18 12:02-12:15/13 09:51-10:33/42 | 16:07 12:01-12:40/39 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 15:38-16:23/45 09:20-09:54/34 07:56-08:12/16 | 08:25 13:57-14:36/39 10:39-11:33/54 09:34-09:49/15 | 09:00 14:11-14:45/34 10:56-11:40/44 |
| | 21:52 | 20:47 | 19:28 | 17:13 09:56-10:21/25 08:14-09:16/62 | 16:16 12:00-12:17/17 09:52-10:33/41 | 16:07 12:01-12:40/39 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 15:37-16:22/45 08:14-09:16/62 | 08:27 13:57-14:37/40 10:40-11:33/53 09:37-09:46/9 | 09:01 14:12-14:47/35 10:57-11:41/44 |
| | 21:51 | 20:44 | 19:25 | 17:11 09:19-10:23/64 07:59-08:10/11 | 16:15 11:58-12:19/21 09:53-10:32/39 | 16:08 12:02-12:41/39 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 15:37-16:23/46 08:15-09:17/62 | 08:28 13:57-14:37/40 10:40-11:33/53 | 09:01 14:13-14:47/34 10:57-11:42/45 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:19-10:25/66 | 16:14 11:57-12:21/24 09:54-10:32/38 | 16:09 12:03-12:42/39 |
| 28 | 05:33 | 06:30 | 07:29 | 07:29 15:35-16:22/47 08:15-09:17/62 | 08:30 13:58-14:37/39 10:41-11:33/52 | 09:01 14:13-14:48/35 10:58-11:42/44 |
| | 21:47 | 20:40 | 19:20 | 17:07 09:18-10:27/69 | 16:13 11:57-12:23/26 09:55-10:31/36 | 16:10 12:03-12:42/39 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 15:31-16:21/50 | 08:32 13:58-14:38/40 10:41-11:33/52 | 09:01 14:13-14:48/35 10:58-11:43/45 |
| | 21:46 | 20:37 | 19:17 | 17:04 08:16-10:28/132 | 16:12 11:56-12:24/28 09:57-10:31/34 | 16:11 12:04-12:43/39 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 15:29-16:20/51 08:16-10:29/133 | 08:34 13:59-14:38/39 10:42-11:34/52 | 09:01 14:13-14:48/35 10:58-11:43/45 |
| | 21:44 | 20:35 | 19:15 | 17:02 10:53-11:10/17 | 16:11 11:56-12:25/29 09:58-10:31/33 | 16:11 12:04-12:42/38 |
| 31 | 05:38 | 06:36 | | 07:35 15:28-16:19/51 08:18-10:30/132 | | 09:01 14:13-14:49/36 10:58-11:44/46 |
| | 21:42 | 20:32 | | 17:00 10:50-11:14/24 | | 16:13 12:04-12:43/39 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 2643 | 5426 | 3912 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:33-15:27/54 11:14-11:29/15 09:53-10:02/9 | 08:28 15:16-15:36/20 08:57-09:07/10 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:53-13:10/17 10:13-10:45/32 | 17:08 09:10-10:20/70 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:33-15:28/55 11:15-11:29/14 09:51-10:03/12 | 08:26 15:19-15:30/11 08:55-09:09/14 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:53-13:09/16 10:12-10:45/33 | 17:10 09:10-10:19/69 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:34-15:29/55 11:17-11:29/12 09:51-10:04/13 | 08:24 08:54-10:18/84 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:55-13:09/14 10:13-10:47/34 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:34-15:30/56 11:18-11:27/9 09:50-10:05/15 | 08:22 08:53-10:17/84 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:56-13:08/12 10:13-10:47/34 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:35-15:32/57 11:21-11:26/5 09:50-10:07/17 | 08:20 08:53-10:15/82 | 07:17 | 06:58 19:46-19:49/3 | 05:46 | 04:58 |
| | 16:19 12:59-13:07/8 10:14-10:48/34 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:35-15:32/57 09:50-10:08/18 | 08:18 10:04-10:12/8 08:52-09:37/45 | 07:14 | 06:55 19:42-19:52/10 | 05:44 | 04:57 |
| | 16:20 10:14-10:48/34 | 17:19 09:38-10:00/22 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:36-15:33/57 09:49-10:09/20 | 08:16 09:40-09:59/19 | 07:12 | 06:53 19:40-19:53/13 | 05:42 | 04:56 |
| | 16:22 10:14-10:48/34 | 17:21 08:52-09:37/45 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:36-15:34/58 09:49-10:10/21 | 08:14 09:41-09:56/15 08:42-08:45/3 | 07:09 | 06:50 19:39-19:56/17 | 05:40 | 04:56 |
| | 16:23 10:14-10:49/35 | 17:23 08:51-09:35/44 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:37-15:35/58 09:49-10:12/23 | 08:12 09:44-09:53/9 08:40-08:49/9 | 07:07 | 06:48 19:37-19:56/19 | 05:38 | 04:55 |
| | 16:25 10:15-10:50/35 | 17:25 08:51-09:35/44 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:38-15:37/59 09:49-10:13/24 | 08:10 08:52-09:34/42 | 07:04 | 06:45 19:37-19:57/20 | 05:36 | 04:55 |
| | 16:26 10:16-10:51/35 | 17:27 08:38-08:51/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:38-15:36/58 09:49-10:14/25 | 08:08 08:36-09:33/57 | 07:02 | 06:43 19:36-19:56/20 | 05:34 | 04:54 |
| | 16:28 10:16-10:51/35 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 14:39-15:37/58 09:48-10:14/26 | 08:06 09:16-09:31/15 | 06:59 | 06:40 19:36-19:56/20 | 05:32 | 04:54 |
| | 16:30 10:15-10:51/36 | 17:32 08:33-09:14/41 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:40-15:38/58 09:48-10:15/27 | 08:04 09:19-09:29/10 | 06:57 | 06:38 19:35-19:55/20 | 05:30 | 04:53 |
| | 16:31 10:16-10:51/35 09:38-09:47/9 | 17:34 08:32-09:13/41 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:41-15:39/58 09:37-10:16/39 | 08:02 08:31-09:13/42 | 06:54 | 06:35 19:36-19:55/19 | 05:29 | 04:53 |
| | 16:33 10:17-10:52/35 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:42-15:40/58 | 07:59 08:31-08:54/23 | 06:52 | 06:33 19:37-19:54/17 | 05:27 | 04:53 |
| | 16:35 09:36-10:52/76 | 17:38 08:55-09:12/17 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:43-15:40/57 | 07:57 08:29-08:53/24 | 06:49 | 06:30 19:37-19:53/16 | 05:25 | 04:52 |
| | 16:37 09:35-10:52/77 | 17:40 08:56-09:10/14 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:44-15:41/57 | 07:55 08:29-08:54/25 | 06:47 | 06:28 19:39-19:51/12 | 05:23 | 04:52 |
| | 16:38 09:34-10:53/79 | 17:42 08:59-09:07/8 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:46-15:42/56 | 07:53 08:29-08:52/23 | 06:44 | 06:25 19:40-19:48/8 | 05:21 | 04:52 |
| | 16:40 09:34-10:53/79 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:47-15:42/55 | 07:50 08:29-08:52/23 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:33-10:53/80 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:48-15:42/54 | 07:48 08:30-08:51/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 09:33-10:53/80 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:49-15:42/53 | 07:46 08:30-08:49/19 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:33-10:53/80 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:49-15:42/53 | 07:44 08:31-08:49/18 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:32-10:52/80 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 14:51-15:43/52 | 07:41 08:31-08:47/16 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:32-10:52/80 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:53-15:43/50 09:32-10:22/50 | 07:39 08:33-08:46/13 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 10:23-10:52/29 09:17-09:25/8 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:55-15:42/47 09:32-10:21/49 | 07:36 08:36-08:42/6 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 10:23-10:51/28 09:15-09:28/13 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:09-15:43/34 10:25-10:51/26 09:14-09:30/16 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:58-15:06/8 09:33-10:22/49 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:10-15:42/32 09:32-10:22/50 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:26-10:50/24 09:13-09:31/18 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:11-15:42/31 09:12-10:22/70 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 10:28-10:49/21 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:11-15:41/30 09:11-10:22/71 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 10:30-10:47/17 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:13-15:40/27 09:11-10:21/70 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 10:32-10:44/12 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:14-15:38/24 | | 07:11 | | 05:03 | |
| | 17:06 09:10-10:21/71 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3880 | 1218 | 0 | 214 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 | 06:38 19:35-19:55/20<br>20:30 | 07:35<br>19:12 | 07:37 08:21-09:04/43<br>16:58 08:08-08:20/12 | 08:35 14:20-15:19/59 09:31-09:56/25<br>16:10 09:57-10:32/35 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40 19:35-19:55/20<br>20:27 | 07:37<br>19:10 | 07:39 09:13-09:24/11 08:10-08:18/8<br>16:56 08:21-09:05/44 | 08:37 14:20-15:19/59 09:31-09:55/24<br>16:09 09:58-10:33/35 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42 19:35-19:54/19<br>20:24 | 07:39<br>19:07 | 07:41 09:10-09:26/16 08:12-08:14/2<br>16:54 08:21-09:05/44 | 08:38 14:21-15:19/58 09:32-09:55/23<br>16:08 09:58-10:33/35 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44 19:36-19:53/17<br>20:22 | 07:41<br>19:05 | 07:43 09:09-09:29/20<br>16:52 08:22-09:06/44 | 08:40 14:21-15:19/58 09:34-09:55/21<br>16:08 09:59-10:34/35 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45 19:37-19:50/13<br>20:19 | 07:42<br>19:02 | 07:45 09:33-09:42/9 08:22-09:06/44<br>16:50 09:08-09:30/22 | 08:41 14:21-15:18/57 09:34-09:54/20<br>16:07 09:59-10:34/35 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47 19:37-19:47/10<br>20:17 | 07:44<br>18:59 | 07:47 08:23-09:45/82<br>16:48 | 08:43 14:22-15:19/57 09:36-09:54/18<br>16:06 10:00-10:34/34 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49 19:41-19:45/4<br>20:14 | 07:46<br>18:57 | 07:49 08:23-09:47/84<br>16:46 | 08:44 14:21-15:18/57 11:07-11:12/5 09:36-09:53/17<br>16:06 12:45-12:53/8 10:00-10:34/34 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:25-09:49/84<br>16:44 | 08:46 14:22-15:18/56 11:06-11:15/9 09:38-09:54/16<br>16:05 12:44-12:56/12 10:01-10:35/34 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 14:49-15:01/12 08:26-08:40/14<br>16:42 08:41-09:50/69 | 08:47 14:22-15:18/56 11:05-11:17/12 09:39-09:53/14<br>16:05 12:43-12:57/14 10:01-10:35/34 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 14:47-15:07/20 08:28-08:37/9<br>16:40 08:41-09:51/70 | 08:48 14:23-15:18/55 11:05-11:19/14 09:41-09:53/12<br>16:04 12:43-12:59/16 10:02-10:36/34 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 14:45-15:09/24<br>16:38 08:41-09:52/71 | 08:50 14:23-15:18/55 11:04-11:19/15 09:43-09:52/9<br>16:04 12:43-13:00/17 10:03-10:36/33 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 14:44-15:12/28 08:43-09:53/70<br>16:36 10:04-10:16/12 | 08:51 14:24-15:17/53 11:04-11:20/16 09:44-09:51/7<br>16:04 12:42-13:01/19 10:03-10:36/33 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 14:43-15:13/30 08:43-09:54/71<br>16:34 10:02-10:19/17 | 08:52 14:24-15:17/53 11:04-11:21/17 09:47-09:48/1<br>16:04 12:42-13:01/19 10:04-10:36/32 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00<br>18:39 | 08:03 14:42-15:14/32 08:44-09:54/70<br>16:33 10:00-10:21/21 | 08:53 14:24-15:16/52 11:04-11:22/18<br>16:04 12:42-13:02/20 10:04-10:36/32 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02<br>18:37 | 08:05 14:42-15:14/32 09:04-09:54/50<br>16:31 09:58-10:22/24 08:45-09:03/18 | 08:54 14:25-15:16/51 11:05-11:24/19<br>16:04 12:42-13:03/21 10:06-10:37/31 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04<br>18:35 | 08:07 14:42-15:16/34 09:58-10:24/26 08:47-09:03/16<br>16:29 14:31-14:39/8 09:05-09:55/50 | 08:55 14:25-15:15/50 11:04-11:23/19<br>16:04 12:42-13:04/22 10:05-10:37/32 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 09:07-09:15/8<br>18:32 | 08:09 14:28-15:16/48 09:06-09:55/49<br>16:28 09:57-10:25/28 08:49-09:01/12 | 08:56 15:00-15:12/12 12:43-13:05/22 10:06-10:37/31<br>16:04 14:26-14:59/33 11:04-11:24/20 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 09:04-09:18/14<br>18:30 | 08:11 14:27-15:17/50 09:06-09:56/50<br>16:26 09:57-10:26/29 08:51-08:59/8 | 08:56 15:01-15:12/11 12:43-13:05/22 10:07-10:38/31<br>16:04 14:26-15:00/34 11:05-11:25/20 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 09:02-09:19/17<br>18:27 | 08:13 14:25-15:17/52<br>16:25 09:06-10:26/80 | 08:57 15:02-15:13/11 12:44-13:06/22 10:07-10:39/32<br>16:04 14:27-15:01/34 11:06-11:26/20 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 09:01-09:19/18<br>18:25 | 08:15 14:24-15:17/53<br>16:23 09:07-10:27/80 | 08:58 15:02-15:12/10 12:44-13:06/22 10:07-10:38/31<br>16:05 14:27-15:00/33 11:05-11:26/21 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 09:00-09:20/20<br>18:23 | 08:17 14:25-15:18/53<br>16:22 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:08-10:39/31<br>16:05 14:28-15:01/33 11:06-11:27/21 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 09:00-09:22/22<br>18:20 | 08:19 14:24-15:19/55<br>16:20 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:09-10:40/31<br>16:05 14:28-15:01/33 11:07-11:28/21 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:59-09:23/24<br>18:18 | 08:21 14:24-15:19/55<br>16:19 09:10-10:30/80 | 09:00 15:04-15:14/10 12:45-13:08/23 10:09-10:40/31<br>16:06 14:29-15:02/33 11:07-11:28/21 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:59-09:23/24<br>18:16 | 08:23 14:23-15:19/56<br>16:18 09:11-10:30/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:40/31<br>16:07 14:29-15:02/33 11:07-11:28/21 |
| 25 | 05:28<br>21:52 | 06:25 19:43-19:52/9<br>20:47 | 07:23<br>19:28 | 07:22 07:59-08:23/24<br>17:13 08:28-08:38/10 | 08:25 14:22-15:19/57<br>16:16 09:12-10:31/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:41/32<br>16:07 14:29-15:03/34 11:08-11:28/20 |
| 26 | 05:29<br>21:51 | 06:27 19:41-19:54/13<br>20:44 | 07:25<br>19:25 | 07:24 07:59-08:23/24<br>17:11 08:25-08:40/15 | 08:27 14:22-15:19/57<br>16:15 09:14-10:31/77 | 09:01 15:05-15:17/12 12:48-13:10/22 10:11-10:42/31<br>16:08 14:31-15:04/33 11:09-11:29/20 |
| 27 | 05:31<br>21:49 | 06:28 19:39-19:54/15<br>20:42 | 07:27<br>19:23 | 07:26 08:00-08:42/42<br>17:09 | 08:28 14:21-15:19/58<br>16:14 09:15-10:31/76 | 09:01 14:31-15:20/49 11:10-11:29/19<br>16:09 12:48-13:10/22 10:11-10:43/32 |
| 28 | 05:33<br>21:47 | 06:30 19:38-19:55/17<br>20:39 | 07:29<br>19:20 | 07:29 08:01-08:43/42<br>17:07 | 08:30 14:21-15:19/58 09:17-09:56/39<br>16:13 09:57-10:32/35 | 09:01 14:31-15:22/51 11:11-11:30/19<br>16:10 12:49-13:10/21 10:11-10:43/32 |
| 29 | 05:34<br>21:45 | 06:32 19:37-19:56/19<br>20:37 | 07:31<br>19:17 | 07:31 08:47-08:59/12<br>17:04 08:01-08:43/42 | 08:32 14:21-15:19/58 09:29-09:56/27<br>16:12 09:57-10:32/35 09:19-09:28/9 | 09:01 14:32-15:24/52 11:11-11:30/19<br>16:11 12:50-13:10/20 10:12-10:44/32 |
| 30 | 05:36<br>21:44 | 06:34 19:36-19:56/20<br>20:35 | 07:33<br>19:15 | 07:33 08:45-09:01/16<br>17:02 08:03-08:43/40 | 08:34 14:21-15:19/58 09:30-09:56/26<br>16:11 09:58-10:33/35 | 09:01 14:32-15:24/52 11:11-11:29/18<br>16:11 12:50-13:09/19 10:11-10:44/33 |
| 31 | 05:38<br>21:42 | 06:36 19:36-19:56/20<br>20:32 | | 07:35 08:22-09:03/41<br>17:00 08:06-08:21/15 | | 09:01 14:32-15:25/53 11:13-11:29/16 09:53-09:59/6<br>16:13 12:51-13:10/19 10:12-10:44/32 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 113 | 103 | 470 | 3328 | 3740 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:59-14:33/34 09:41-09:49/8 | 08:28 09:33-09:49/16 | 07:27 | 07:08 19:09-19:32/23 | 05:55 | 05:02 |
| | 16:14 09:56-10:21/25 | 17:08 08:57-09:32/35 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:00-14:32/32 09:40-09:50/10 | 08:26 09:34-09:47/13 | 07:24 | 07:05 19:09-19:33/24 | 05:53 | 05:01 |
| | 16:15 09:55-10:21/26 | 17:10 08:55-09:32/37 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 14:01-14:33/32 09:40-09:51/11 | 08:24 09:37-09:45/8 | 07:22 | 07:03 19:08-19:32/24 | 05:51 | 05:00 |
| | 16:16 09:56-10:22/26 | 17:12 08:55-09:31/36 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:01-14:33/32 09:39-09:52/13 | 08:22 08:55-09:31/36 | 07:19 | 07:00 19:09-19:32/23 | 05:49 | 04:59 |
| | 16:18 09:56-10:22/26 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:03-14:33/30 09:39-09:54/15 | 08:20 08:56-09:30/34 | 07:17 | 06:58 19:09-19:30/21 | 05:46 | 04:58 |
| | 16:19 09:57-10:23/26 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:04-14:32/28 09:39-09:55/16 | 08:18 08:56-09:29/33 | 07:14 | 06:55 19:10-19:29/19 | 05:44 | 04:57 |
| | 16:20 09:57-10:24/27 | 17:19 08:47-08:50/3 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:05-14:32/27 09:38-09:56/18 | 08:16 09:18-09:27/9 08:57-09:15/18 | 07:12 | 06:53 19:10-19:27/17 | 05:42 | 04:56 |
| | 16:22 09:57-10:24/27 | 17:21 08:45-08:52/7 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:06-14:31/25 09:38-09:56/18 | 08:14 08:42-08:52/10 | 07:09 | 06:50 19:12-19:26/14 | 05:40 | 04:56 |
| | 16:23 09:57-10:24/27 | 17:23 08:56-09:13/17 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 14:22-14:30/8 09:59-10:26/27 | 08:12 08:40-08:54/14 | 07:07 | 06:48 19:14-19:22/8 | 05:38 | 04:55 |
| | 16:25 14:08-14:19/11 09:39-09:58/19 | 17:25 08:58-09:13/15 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:11-14:18/7 | 08:10 08:38-08:54/16 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 09:39-10:26/47 | 17:27 08:59-09:12/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:39-10:26/47 | 08:08 08:37-08:55/18 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 09:32-09:38/6 | 17:30 09:01-09:10/9 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:30-10:26/56 | 08:06 08:37-08:55/18 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:29-10:26/57 | 08:04 08:37-08:55/18 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:29-10:27/58 | 08:02 08:37-08:55/18 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:28-10:27/59 | 07:59 08:38-08:55/17 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:27-10:26/59 | 07:57 08:38-08:53/15 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:27-10:27/60 | 07:55 08:40-08:52/12 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-10:27/59 | 07:53 08:41-08:49/8 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:27-10:26/59 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 09:27-10:27/60 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:06-10:26/20 09:17-09:22/5 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:27-10:05/38 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:07-10:24/17 09:16-09:25/9 | 07:44 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:27-10:05/38 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:09-10:24/15 09:14-09:26/12 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:27-10:05/38 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 10:11-10:22/11 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:12-10:05/53 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 10:14-10:19/5 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:11-10:04/53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:11-10:05/54 | 07:34 | 06:23 18:17-18:29/12 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:11-10:04/53 | 07:32 | 06:21 18:14-18:30/16 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:11-10:03/52 | 07:29 | 06:18 18:13-18:32/19 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:05-09:07/2 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:10-10:02/52 | | 07:16 19:11-19:32/21 | 06:00 | 05:05 | 04:55 |
| | 17:02 09:03-09:09/6 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:01-10:01/60 | | 07:13 19:10-19:32/22 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 09:51-09:58/7 | | 07:11 19:10-19:33/23 | | 05:03 | |
| | 17:06 08:59-09:50/51 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1909 | 503 | 113 | 173 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:08-08:24/16<br>16:58 08:28-08:41/13 | 08:35 09:14-10:07/53<br>16:10 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:10-08:23/13<br>16:56 08:27-08:42/15 | 08:37 13:54-14:00/6<br>16:09 09:21-10:08/47 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42 19:13-19:20/7<br>20:24 | 07:39<br>19:07 | 07:41 08:50-08:53/3 08:26-08:43/17<br>16:54 08:12-08:22/10 | 08:38 14:06-14:14/8 09:42-10:09/27<br>16:08 13:52-14:02/10 09:22-09:41/19 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44 19:09-19:23/14<br>20:22 | 07:41<br>19:05 | 07:43 08:47-08:57/10 08:26-08:44/18<br>16:52 08:15-08:21/6 | 08:40 13:51-14:16/25 09:23-09:42/19<br>16:08 09:43-10:09/26 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45 19:07-19:24/17<br>20:19 | 07:42<br>19:02 | 07:45 08:45-08:59/14 08:26-08:44/18<br>16:50 08:17-08:19/2 | 08:41 13:50-14:17/27 09:24-09:41/17<br>16:07 09:42-10:09/27 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47 19:05-19:24/19<br>20:17 | 07:44<br>18:59 | 07:47 08:25-09:00/35<br>16:48 | 08:43 13:50-14:18/28 09:25-09:41/16<br>16:06 09:43-10:10/27 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49 19:04-19:25/21<br>20:14 | 07:46<br>18:57 | 07:49 08:25-09:01/36<br>16:46 | 08:44 13:49-14:19/30 09:25-09:40/15<br>16:06 09:43-10:10/27 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51 19:03-19:26/23<br>20:12 | 07:48<br>18:54 | 07:51 09:07-09:16/9<br>16:44 08:26-09:02/36 | 08:46 13:50-14:21/31 09:27-09:40/13<br>16:05 09:44-10:10/26 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53 19:02-19:26/24<br>20:09 | 07:50<br>18:52 | 07:53 09:05-09:18/13<br>16:42 08:26-09:02/36 | 08:47 13:49-14:21/32 09:28-09:40/12<br>16:05 09:44-10:10/26 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55 19:02-19:26/24<br>20:07 | 07:52<br>18:49 | 07:55 09:03-09:20/17<br>16:40 08:28-09:02/34 | 08:48 13:50-14:23/33 09:30-09:40/10<br>16:04 09:45-10:11/26 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57 19:02-19:26/24<br>20:04 | 07:54<br>18:47 | 07:57 08:31-09:29/58<br>16:38 | 08:50 13:49-14:23/34 09:31-09:39/8<br>16:04 09:46-10:11/25 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59 19:01-19:24/23<br>20:01 | 07:56<br>18:44 | 07:59 08:33-09:33/60<br>16:36 | 08:51 13:49-14:24/35 09:32-09:38/6<br>16:04 09:46-10:11/25 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01 19:01-19:24/23<br>19:59 | 07:58<br>18:42 | 08:01 08:42-09:34/52<br>16:34 08:35-08:41/6 | 08:52 13:49-14:24/35<br>16:04 09:46-10:12/26 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02 19:02-19:23/21<br>19:56 | 08:00<br>18:39 | 08:03 08:42-09:35/53<br>16:33 08:37-08:39/2 | 08:53 13:50-14:25/35 10:42-10:44/2<br>16:04 13:42-13:43/1 09:47-10:12/25 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04 19:02-19:22/20<br>19:54 | 08:02<br>18:37 | 08:05 08:43-09:36/53<br>16:31 | 08:54 13:50-14:25/35 10:42-10:47/5<br>16:04 13:40-13:46/6 09:48-10:13/25 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06 19:03-19:20/17<br>19:51 | 08:04<br>18:35 | 08:07 08:44-09:38/54<br>16:29 | 08:55 13:50-14:26/36 10:40-10:47/7<br>16:04 13:40-13:47/7 09:48-10:13/25 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 19:05-19:18/13<br>19:48 | 08:06<br>18:32 | 08:09 09:48-09:53/5<br>16:28 08:45-09:38/53 | 08:56 13:51-14:27/36 10:40-10:49/9<br>16:04 13:40-13:48/8 09:49-10:13/24 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 19:07-19:13/6<br>19:46 | 08:08<br>18:30 | 08:11 09:45-09:56/11<br>16:26 08:46-09:39/53 | 08:56 13:51-14:27/36 10:41-10:50/9<br>16:04 13:40-13:49/9 09:49-10:14/25 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10<br>18:27 | 08:13 09:43-09:58/15 08:48-09:00/12<br>16:25 09:01-09:39/38 | 08:57 13:52-14:28/36 10:41-10:51/10<br>16:04 13:40-13:50/10 09:50-10:14/24 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12<br>18:25 | 08:15 09:42-09:59/17 08:50-08:59/9<br>16:23 09:02-09:40/38 | 08:58 13:52-14:28/36 10:41-10:51/10<br>16:05 13:40-13:50/10 09:50-10:14/24 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:42-10:02/20 08:53-08:58/5<br>16:22 09:03-09:41/38 | 08:58 13:52-14:29/37 10:42-10:52/10<br>16:05 13:41-13:51/10 09:51-10:15/24 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16<br>18:20 | 08:19 09:03-10:03/60<br>16:20 | 08:59 13:52-14:29/37 10:43-10:53/10<br>16:05 13:41-13:51/10 09:52-10:16/24 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:04-10:03/59<br>16:19 | 09:00 13:54-14:30/36 10:43-10:53/10<br>16:06 13:42-13:52/10 09:52-10:16/24 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 09:11-09:20/9<br>18:16 | 08:23 09:05-10:04/59<br>16:18 | 09:00 13:54-14:30/36 10:43-10:53/10<br>16:07 13:42-13:52/10 09:52-10:16/24 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 08:09-08:22/13<br>17:13 | 08:25 09:05-10:05/60<br>16:16 | 09:00 13:54-14:30/36 10:43-10:53/10<br>16:07 13:43-13:52/9 09:52-10:17/25 |
| 26 | 05:29<br>21:51 | 06:27<br>20:44 | 07:25<br>19:25 | 07:24 08:08-08:23/15<br>17:11 | 08:27 09:06-10:05/59<br>16:15 | 09:01 13:55-14:32/37 10:45-10:54/9<br>16:08 13:44-13:53/9 09:54-10:18/24 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:23 | 07:26 08:08-08:24/16<br>17:09 | 08:28 09:07-10:06/59<br>16:14 | 09:01 13:56-14:32/36 10:46-10:54/8<br>16:09 13:45-13:53/8 09:54-10:18/24 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 08:07-08:24/17<br>17:07 | 08:30 09:09-10:07/58<br>16:13 | 09:01 13:56-14:32/36 10:47-10:53/6<br>16:10 13:47-13:53/6 09:54-10:19/25 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 08:06-08:24/18<br>17:04 | 08:32 09:10-10:07/57<br>16:12 | 09:01 13:57-14:32/35 10:49-10:53/4<br>16:11 13:49-13:52/3 09:55-10:20/25 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 08:06-08:24/18<br>17:02 | 08:34 09:12-10:08/56<br>16:11 | 09:01 13:57-14:32/35<br>16:11 09:54-10:19/25 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 08:07-08:25/18<br>17:00 08:30-08:40/10 | | 09:01 13:58-14:32/34 09:42-09:46/4<br>16:13 09:55-10:20/25 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 296 | 134 | 1550 | 2202 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:22-14:49/87 09:47-09:53/6 | 08:28 14:06-14:52/46 | 07:27 08:02-08:49/47 | 07:08 | 05:55 20:07-20:31/24 | 05:02 |
| | 16:14 10:52-11:32/40 | 17:08 09:49-10:10/21 | 18:07 07:52-08:00/8 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 13:22-14:49/87 09:46-09:54/8 | 08:26 14:08-14:50/42 | 07:24 08:03-08:40/37 | 07:05 | 05:53 20:07-20:31/24 | 05:01 |
| | 16:15 10:52-11:32/40 | 17:10 09:51-10:09/18 | 18:10 07:50-08:02/12 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 13:22-14:50/88 09:45-09:56/11 | 08:24 14:09-14:47/38 | 07:22 08:03-08:28/25 | 07:03 | 05:51 20:06-20:32/26 | 05:00 |
| | 16:16 10:53-11:33/40 | 17:12 09:53-10:07/14 | 18:12 07:47-08:02/15 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 13:22-14:50/88 09:44-09:57/13 | 08:22 14:12-14:35/23 09:02-09:09/7 | 07:19 08:20-08:24/4 08:05-08:17/12 | 07:00 | 05:49 20:06-20:32/26 | 04:59 |
| | 16:18 10:53-11:33/40 | 17:15 09:56-10:04/8 | 18:14 07:46-08:03/17 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 13:24-14:51/87 09:44-09:59/15 | 08:20 14:15-14:33/18 | 07:17 07:45-08:03/18 | 06:58 | 05:46 20:06-20:32/26 | 04:58 |
| | 16:19 10:54-11:34/40 | 17:17 08:59-09:13/14 | 18:16 08:07-08:14/7 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 13:24-14:52/88 09:44-10:00/16 | 08:18 14:19-14:29/10 | 07:14 07:45-08:03/18 | 06:55 | 05:44 20:05-20:32/27 | 04:57 |
| | 16:20 10:54-11:34/40 | 17:19 08:57-09:15/18 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 13:24-14:52/88 09:43-10:01/18 | 08:16 08:55-09:17/22 | 07:12 07:45-08:02/17 | 06:53 | 05:42 20:05-20:31/26 | 04:56 |
| | 16:22 10:54-11:34/40 | 17:21 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 13:24-14:52/88 09:43-10:02/19 | 08:14 08:53-09:17/24 | 07:09 07:46-08:02/16 | 06:50 | 05:40 20:05-20:31/26 | 04:56 |
| | 16:23 10:55-11:35/40 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 13:25-14:53/88 09:43-10:04/21 | 08:12 08:53-09:18/25 | 07:07 07:46-08:00/14 | 06:48 | 05:38 20:06-20:30/24 | 04:55 |
| | 16:25 10:56-11:36/40 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 13:26-14:54/88 09:43-10:05/22 | 08:10 08:52-09:19/27 | 07:04 07:47-07:58/11 | 06:45 | 05:36 20:06-20:30/24 | 04:55 |
| | 16:26 10:57-11:36/39 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 13:26-14:54/88 09:43-10:06/23 | 08:08 08:52-09:20/28 | 07:02 07:50-07:55/5 | 06:43 | 05:34 20:07-20:30/23 | 04:54 |
| | 16:28 10:57-11:36/39 | 17:29 08:43-08:50/7 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 13:26-14:55/89 09:42-10:06/24 | 08:06 08:39-09:20/41 | 06:59 | 06:40 | 05:32 20:07-20:29/22 | 04:54 |
| | 16:30 10:57-11:36/39 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 13:27-14:55/88 09:42-10:07/25 | 08:04 08:37-09:21/44 | 06:57 | 06:38 | 05:30 20:08-20:28/20 | 04:53 |
| | 16:31 10:58-11:36/38 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 13:28-14:56/88 09:42-10:08/26 | 08:02 08:34-09:21/47 | 06:54 | 06:35 | 05:29 20:09-20:27/18 | 04:53 |
| | 16:33 10:58-11:36/38 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 13:29-14:57/88 09:42-10:09/27 | 07:59 08:30-09:21/51 | 06:52 | 06:33 | 05:27 20:10-20:26/16 | 04:53 |
| | 16:35 10:59-11:37/38 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 13:29-14:56/87 09:42-10:09/27 | 07:57 08:28-09:21/53 | 06:49 | 06:30 | 05:25 20:11-20:24/13 | 04:52 |
| | 16:36 10:59-11:36/37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 13:30-14:57/87 09:42-10:10/28 | 07:55 08:27-09:21/54 | 06:47 | 06:28 | 05:23 20:14-20:23/9 | 04:52 |
| | 16:38 11:00-11:36/36 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 13:31-14:58/87 09:43-10:11/28 | 07:53 08:20-09:20/60 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:02-11:36/34 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 13:31-14:57/86 09:42-10:11/29 | 07:50 08:17-09:20/63 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:02-11:36/34 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 13:33-14:58/85 09:43-10:12/29 | 07:48 08:16-09:19/63 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:04-11:36/32 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 13:33-14:58/85 09:43-10:12/29 | 07:46 08:12-09:18/66 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:04-11:35/31 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 13:34-14:57/83 09:42-10:12/30 | 07:44 08:10-09:17/67 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 11:05-11:34/29 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 13:36-14:58/82 09:43-10:13/30 | 07:41 08:07-09:15/68 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:07-11:34/27 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 13:37-14:58/81 09:43-10:13/30 | 07:39 08:05-09:13/68 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:08-11:32/24 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 13:38-14:57/79 09:44-10:13/29 | 07:36 09:00-09:09/9 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:10-11:31/21 | 17:59 08:03-08:57/54 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 13:41-14:58/77 09:45-10:14/29 | 07:34 08:03-08:56/53 | 06:23 | 06:06 20:14-20:25/11 | 05:09 | 04:54 |
| | 16:56 11:13-11:30/17 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 13:43-14:57/74 09:45-10:13/28 | 07:32 08:02-08:54/52 | 06:21 | 06:04 20:12-20:27/15 | 05:08 | 04:54 |
| | 16:58 11:16-11:26/10 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:02-14:56/54 09:46-10:13/27 | 07:29 08:02-08:52/50 | 06:18 | 06:02 20:10-20:28/18 | 05:06 | 04:55 |
| | 17:00 13:46-14:01/15 | 18:05 07:55-07:59/4 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:03-14:56/53 09:46-10:12/26 | | 07:16 | 06:00 20:09-20:30/21 | 05:05 | 04:55 |
| | 17:02 13:52-13:55/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:04-14:55/51 | | 07:13 | 05:57 20:08-20:30/22 | 05:04 | 04:56 |
| | 17:04 09:47-10:12/25 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:05-14:54/49 | | 07:11 | | 05:03 | |
| | 17:06 09:48-10:11/23 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4180 | 1377 | 283 | 87 | 374 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:17-20:40/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:22-08:49/27<br>16:58 | 08:35 13:08-14:36/88 09:25-09:48/23<br>16:10 10:38-11:17/39 |
| 2 | 04:58<br>22:18 | 05:41 20:17-20:41/24<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:23-08:48/25<br>16:56 | 08:37 13:08-14:37/89 09:25-09:47/22<br>16:09 10:39-11:18/39 |
| 3 | 04:58<br>22:17 | 05:43 20:16-20:40/24<br>21:36 | 06:42<br>20:24 | 07:39 08:26-08:35/9<br>19:07 | 07:41 08:23-08:47/24<br>16:54 | 08:38 13:09-14:37/88 09:26-09:47/21<br>16:08 10:39-11:19/40 |
| 4 | 04:59<br>22:17 | 05:45 20:16-20:41/25<br>21:34 | 06:44<br>20:22 | 07:41 08:24-08:37/13<br>19:05 | 07:43 08:25-08:46/21<br>16:52 | 08:40 13:09-14:38/89 09:28-09:47/19<br>16:08 10:40-11:20/40 |
| 5 | 05:00<br>22:16 | 05:47 20:16-20:41/25<br>21:32 | 06:45<br>20:19 | 07:42 08:22-08:38/16<br>19:02 | 07:45 13:48-13:59/11<br>16:50 08:27-08:44/17 | 08:41 13:09-14:37/88 09:28-09:46/18<br>16:07 10:39-11:20/41 |
| 6 | 05:01<br>22:15 | 05:49 20:15-20:41/26<br>21:30 | 06:47<br>20:17 | 07:44 08:21-08:38/17<br>18:59 | 07:47 13:44-14:03/19<br>16:48 08:29-08:42/13 | 08:43 13:10-14:38/88 09:30-09:46/16<br>16:06 10:40-11:20/40 |
| 7 | 05:02<br>22:15 | 05:51 20:15-20:41/26<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:38/18<br>18:57 | 07:49 13:41-14:05/24 08:32-08:38/6<br>16:46 09:26-09:34/8 | 08:44 13:10-14:37/87 09:30-09:45/15<br>16:06 10:40-11:20/40 |
| 8 | 05:03<br>22:14 | 05:52 20:15-20:41/26<br>21:26 | 06:51<br>20:12 | 07:48 08:20-08:38/18<br>18:54 | 07:51 13:40-14:19/39<br>16:44 09:24-09:38/14 | 08:46 13:11-14:38/87 09:32-09:45/13<br>16:05 10:41-11:21/40 |
| 9 | 05:04<br>22:13 | 05:54 20:14-20:40/26<br>21:24 | 06:53<br>20:09 | 07:50 08:20-08:38/18<br>18:52 08:40-08:51/11 | 07:53 13:38-14:21/43<br>16:42 09:22-09:40/18 | 08:47 13:11-14:38/87 09:33-09:44/11<br>16:05 10:41-11:21/40 |
| 10 | 05:06<br>22:12 | 05:56 20:15-20:40/25<br>21:22 | 06:55<br>20:07 | 07:52 08:38-09:00/22<br>18:49 08:20-08:37/17 | 07:55 13:37-14:23/46<br>16:40 09:20-09:41/21 | 08:48 13:12-14:39/87 09:35-09:44/9<br>16:04 10:42-11:22/40 |
| 11 | 05:07<br>22:11 | 05:58 20:15-20:40/25<br>21:19 | 06:57<br>20:04 | 07:54 09:05-09:11/6 08:22-08:36/14<br>18:47 08:37-09:03/26 | 07:57 13:36-14:25/49<br>16:38 09:19-09:42/23 | 08:50 13:12-14:39/87 09:37-09:43/6<br>16:04 10:42-11:23/41 |
| 12 | 05:08<br>22:10 | 06:00 20:16-20:39/23<br>21:17 | 06:59<br>20:01 | 07:56 08:24-09:14/50<br>18:44 | 07:59 13:35-14:27/52<br>16:36 09:19-09:44/25 | 08:51 13:12-14:39/87<br>16:04 10:42-11:23/41 |
| 13 | 05:09<br>22:09 | 06:02 20:16-20:38/22<br>21:15 | 07:01<br>19:59 | 07:58 08:36-09:23/47<br>18:42 08:27-08:34/7 | 08:01 13:35-14:28/53 09:18-09:44/26<br>16:34 13:23-13:28/5 | 08:52 13:12-14:39/87<br>16:04 10:43-11:23/40 |
| 14 | 05:11<br>22:08 | 06:04 20:17-20:37/20<br>21:13 | 07:02<br>19:56 | 08:00 08:35-09:26/51<br>18:39 | 08:03 13:34-14:28/54 09:18-09:45/27<br>16:33 13:18-13:33/15 | 08:53 13:13-14:39/86<br>16:04 10:43-11:23/40 |
| 15 | 05:12<br>22:07 | 06:06 20:18-20:36/18<br>21:10 | 07:04<br>19:54 | 08:02 08:35-09:28/53<br>18:37 | 08:05 13:15-14:29/74 09:17-09:45/28<br>16:31 10:48-10:58/10 | 08:54 13:13-14:40/87<br>16:04 10:44-11:24/40 |
| 16 | 05:14<br>22:06 | 06:08 20:20-20:34/14<br>21:08 | 07:06<br>19:51 | 08:04 08:35-09:29/54<br>18:35 | 08:07 13:14-14:31/77 09:18-09:47/29<br>16:29 10:46-11:03/17 | 08:55 13:14-14:40/86<br>16:04 10:44-11:24/40 |
| 17 | 05:15<br>22:04 | 06:09 20:22-20:31/9<br>21:06 | 07:08<br>19:48 | 08:06 09:31-09:43/12<br>18:32 08:35-09:29/54 | 08:09 13:12-14:31/79 09:18-09:47/29<br>16:28 10:44-11:05/21 | 08:56 13:14-14:40/86<br>16:04 10:45-11:25/40 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 08:37-09:45/68<br>18:30 | 08:11 13:11-14:32/81 09:17-09:47/30<br>16:26 10:42-11:06/24 | 08:56 13:15-14:41/86<br>16:04 10:45-11:25/40 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 08:39-09:47/68<br>18:27 | 08:13 13:10-14:32/82 09:17-09:47/30<br>16:25 10:41-11:08/27 | 08:57 13:16-14:42/86<br>16:04 10:46-11:26/40 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 08:41-09:48/67<br>18:25 | 08:15 13:09-14:32/83 09:17-09:47/30<br>16:23 10:40-11:09/29 | 08:58 13:16-14:41/85<br>16:05 10:46-11:26/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 08:45-09:48/63<br>18:23 | 08:17 13:09-14:34/85 09:19-09:48/29<br>16:22 10:40-11:11/31 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 08:47-09:50/63<br>18:20 | 08:19 13:09-14:34/85 09:19-09:48/29<br>16:20 10:40-11:12/32 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:48-09:50/62<br>18:18 | 08:21 13:09-14:34/85 09:19-09:48/29<br>16:19 10:39-11:13/34 | 09:00 13:17-14:43/86<br>16:06 10:48-11:28/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:51-09:50/59<br>18:16 | 08:23 13:08-14:35/87 09:20-09:48/28<br>16:18 10:39-11:13/34 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 07:56-08:50/54<br>17:13 | 08:25 13:08-14:35/87 09:20-09:48/28<br>16:16 10:39-11:14/35 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 26 | 05:29 20:26-20:31/5<br>21:51 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 07:58-08:50/52<br>17:11 | 08:27 13:08-14:35/87 09:21-09:48/27<br>16:15 10:38-11:15/37 | 09:01 13:19-14:45/86<br>16:08 10:50-11:30/40 |
| 27 | 05:31 20:23-20:34/11<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 08:01-08:51/50<br>17:09 | 08:28 13:08-14:36/88 09:21-09:48/27<br>16:14 10:38-11:16/38 | 09:01 13:19-14:46/87<br>16:09 10:50-11:30/40 |
| 28 | 05:33 20:21-20:35/14<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 08:06-08:51/45<br>17:07 | 08:30 13:08-14:36/88 09:22-09:48/26<br>16:13 10:39-11:16/37 | 09:01 13:20-14:46/86<br>16:10 10:50-11:31/41 |
| 29 | 05:34 20:20-20:37/17<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 08:07-08:50/43<br>17:04 | 08:32 13:08-14:36/88 09:23-09:48/25<br>16:12 10:39-11:17/38 | 09:01 13:20-14:47/87<br>16:10 10:51-11:31/40 |
| 30 | 05:36 20:19-20:38/19<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 08:09-08:50/41<br>17:02 | 08:34 13:08-14:37/89 09:24-09:48/24<br>16:11 10:39-11:18/39 | 09:01 13:20-14:47/87<br>16:11 10:50-11:31/41 |
| 31 | 05:38 20:18-20:39/21<br>21:42 | 06:36<br>20:32 | | 07:35 08:22-08:50/28<br>17:00 08:14-08:18/4 | | 09:01 13:21-14:48/87<br>16:12 10:51-11:31/40 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 87 | 381 | 0 | 1300 | 2981 | 4107 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:59-12:48/49<br>16:14 | 08:28 11:39-14:28/169<br>17:08 | 07:27 11:43-14:29/166 08:18-08:46/28<br>18:07 08:56-09:39/43 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:58-12:48/50<br>16:15 | 08:26 11:39-14:29/170<br>17:10 | 07:24 11:45-14:28/163 08:19-08:46/27<br>18:09 08:57-09:38/41 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:59-12:49/50<br>16:16 | 08:24 11:39-14:30/171<br>17:12 | 07:22 11:46-14:27/161 08:19-08:45/26<br>18:12 08:57-09:37/40 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:58-12:50/52<br>16:18 | 08:22 11:38-14:30/172<br>17:15 | 07:19 11:48-14:26/158 08:20-08:44/24<br>18:14 08:58-09:36/38 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:59-12:51/52<br>16:19 | 08:20 11:38-14:31/173<br>17:17 | 07:17 11:49-14:24/155 08:21-08:42/21<br>18:16 08:58-09:34/36 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 |
| 6 | 08:59 11:59-12:52/53<br>16:20 | 08:18 11:38-14:32/174<br>17:19 | 07:14 11:52-14:23/151 08:23-08:40/17<br>18:18 09:00-09:33/33 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 11:57-12:52/55<br>16:22 | 08:16 11:37-14:32/175<br>17:21 | 07:12 11:55-14:20/145 08:25-08:37/12<br>18:20 09:01-09:30/29 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:56-12:53/57<br>16:23 | 08:14 11:37-14:33/176<br>17:23 09:13-09:24/11 | 07:09 11:58-14:17/139<br>18:22 09:02-09:27/25 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:54-12:54/60<br>16:25 | 08:12 11:37-14:33/176<br>17:25 09:09-09:28/19 | 07:07 12:06-14:15/129<br>18:24 09:05-09:25/20 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:54-12:55/61<br>16:26 | 08:10 11:37-14:34/177<br>17:27 09:07-09:31/24 | 07:04 12:13-14:11/118 07:36-07:44/8<br>18:26 09:09-09:19/10 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 11:52-12:55/63<br>16:28 | 08:08 11:37-14:34/177<br>17:29 09:05-09:33/28 | 07:02 12:14-14:07/113<br>18:28 07:33-07:48/15 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 13:45-13:50/5<br>16:29 11:51-12:56/65 | 08:06 11:37-14:34/177<br>17:32 09:03-09:34/31 | 06:59 12:14-13:44/90<br>18:30 07:30-07:49/19 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 13:40-13:56/16<br>16:31 11:51-12:57/66 | 08:04 11:37-14:35/178<br>17:34 09:02-09:36/34 | 06:57 12:14-13:42/88<br>18:32 07:22-07:51/29 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 13:38-14:00/22<br>16:33 11:50-12:58/68 | 08:02 11:37-14:35/178<br>17:36 09:01-09:37/36 | 06:54 12:16-13:41/85<br>18:34 07:19-07:51/32 | 06:35<br>20:35 | 05:28<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 13:36-14:03/27<br>16:35 11:49-12:59/70 | 07:59 11:36-14:35/179<br>17:38 08:59-09:38/39 | 06:52 12:16-13:40/84<br>18:36 07:16-07:51/35 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 13:33-14:04/31<br>16:36 11:48-12:59/71 | 07:57 11:37-14:35/178<br>17:40 08:59-09:39/40 | 06:49 12:18-13:39/81<br>18:38 07:14-07:52/38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 13:32-14:07/35<br>16:38 11:48-13:00/72 | 07:55 11:37-14:35/178 08:30-08:39/9<br>17:42 08:58-09:40/42 | 06:47 12:19-13:36/77<br>18:40 07:13-07:52/39 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 13:31-14:09/38<br>16:40 11:47-13:01/74 | 07:53 11:37-14:35/178 08:26-08:41/15<br>17:44 08:57-09:40/43 | 06:44 12:20-13:34/74<br>18:42 07:13-07:52/39 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 13:30-14:11/41<br>16:42 11:46-13:02/76 | 07:50 11:37-14:35/178 08:24-08:43/19<br>17:46 08:57-09:41/44 | 06:41 12:23-13:32/69<br>18:44 07:12-07:51/39 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 13:29-14:13/44<br>16:44 11:46-13:03/77 | 07:48 11:38-14:35/177 08:23-08:45/22<br>17:49 08:57-09:41/44 | 06:39 12:25-13:30/65<br>18:46 07:11-07:50/39 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 13:28-14:14/46<br>16:46 11:45-13:03/78 | 07:46 11:38-14:34/176 08:21-08:46/25<br>17:51 08:56-09:41/45 | 06:36 12:28-13:27/59<br>18:48 07:12-07:50/38 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 13:26-14:16/50<br>16:48 11:44-13:07/83 | 07:44 11:39-14:34/175 08:21-08:47/26<br>17:53 08:56-09:42/46 | 06:34 12:31-13:23/52<br>18:50 07:12-07:49/37 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 13:26-14:18/52<br>16:50 11:44-13:13/89 | 07:41 11:38-14:33/175 08:19-08:47/28<br>17:55 08:55-09:41/46 | 06:31 12:35-13:19/44<br>18:52 07:13-07:48/35 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 13:25-14:19/54<br>16:52 11:43-13:16/93 | 07:39 11:39-14:33/174 08:19-08:48/29<br>17:57 08:55-09:41/46 | 06:29 12:41-13:13/32<br>18:54 07:14-07:46/32 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 13:24-14:20/56<br>16:54 11:42-13:18/96 | 07:36 11:40-14:32/172 08:18-08:47/29<br>17:59 08:55-09:41/46 | 06:26 12:55-12:59/4<br>18:56 07:14-07:44/30 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 13:24-14:22/58<br>16:56 11:43-13:22/99 | 07:34 11:41-14:32/171 08:19-08:48/29<br>18:01 08:55-09:41/46 | 06:23 07:17-07:42/25<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:42-14:23/161<br>16:58 | 07:32 11:41-14:31/170 08:18-08:47/29<br>18:03 08:55-09:40/45 | 06:21 07:33-07:36/3<br>19:00 07:20-07:31/11 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 11:41-14:24/163<br>17:00 | 07:29 11:42-14:30/168 08:18-08:47/29<br>18:05 08:56-09:40/44 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:41-14:25/164<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 11:40-14:26/166<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 11:40-14:27/167<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3175 | 5980 | 3515 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35 12:53-14:22/89<br>19:12 08:07-08:28/21 | 07:37 11:07-14:03/176<br>16:58 08:37-09:00/23 | 08:35 11:34-12:37/63<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 14:24-14:42/18 08:10-08:26/16<br>19:10 12:52-14:23/91 | 07:39 11:07-14:03/176<br>16:56 08:40-08:57/17 | 08:37 11:36-12:38/62<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 12:51-14:47/116<br>19:07 08:12-08:24/12 | 07:41 11:07-14:02/175<br>16:54 08:44-08:53/9 | 08:38 11:38-12:38/60<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 12:50-14:51/121<br>19:04 09:44-10:00/16 | 07:43 11:08-14:02/174<br>16:52 | 08:40 11:41-12:38/57<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:38-14:53/135<br>19:02 09:41-10:03/22 | 07:45 11:08-14:02/174<br>16:50 | 08:41 11:42-12:37/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 12:33-14:55/142 09:03-09:11/8<br>18:59 09:38-10:05/27 | 07:47 11:08-14:01/173<br>16:48 | 08:43 11:45-12:38/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 12:29-14:57/148 08:59-09:14/15<br>18:57 09:36-10:07/31 | 07:49 11:08-14:00/172<br>16:46 | 08:44 11:45-12:37/52<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 12:26-14:58/152 08:57-09:16/19<br>18:54 09:34-10:08/34 | 07:51 11:10-14:00/170<br>16:44 | 08:46 11:46-12:38/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 12:23-14:59/156 08:55-09:18/23<br>18:52 09:33-10:09/36 | 07:53 11:10-14:00/170<br>16:42 | 08:47 11:47-12:37/50<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 12:21-15:00/159 08:54-09:18/24<br>18:49 09:31-10:10/39 | 07:55 11:10-13:59/169<br>16:40 | 08:48 11:48-12:38/50<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 12:19-15:01/162 08:53-09:19/26<br>18:47 09:30-10:11/41 | 07:57 11:11-13:58/167<br>16:38 | 08:50 11:49-12:38/49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 12:17-15:02/165 08:52-09:19/27<br>18:44 09:29-10:11/42 | 07:59 11:12-13:58/166<br>16:36 | 08:51 11:49-12:38/49<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 12:15-15:02/167 08:51-09:19/28<br>18:42 09:28-10:12/44 | 08:01 11:13-13:57/164<br>16:34 | 08:52 11:50-12:38/48<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 12:14-15:03/169 08:51-09:20/29<br>18:39 09:29-10:13/44 | 08:03 11:13-13:56/163<br>16:33 | 08:53 11:50-12:38/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 12:14-15:04/170 08:51-09:20/29<br>18:37 09:28-10:13/45 | 08:05 11:14-13:55/161<br>16:31 | 08:54 11:51-12:38/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 08:10-08:19/9<br>19:51 | 08:04 12:12-15:04/172 08:51-09:20/29<br>18:35 09:27-10:13/46 | 08:07 12:57-13:55/58<br>16:29 11:16-12:55/99 | 08:55 11:52-12:38/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 08:06-08:30/24<br>19:48 | 08:06 12:11-15:05/174 08:51-09:19/28<br>18:32 09:27-10:13/46 | 08:09 12:58-13:54/56<br>16:28 11:16-12:52/96 | 08:56 11:53-12:39/46<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 08:03-08:32/29<br>19:46 | 08:08 12:10-15:05/175 08:51-09:19/28<br>18:30 09:27-10:13/46 | 08:11 12:59-13:53/54<br>16:26 11:17-12:50/93 | 08:56 11:53-12:39/46<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 13:29-13:58/29<br>19:43 08:01-08:32/31 | 08:10 12:10-15:05/175 08:51-09:18/27<br>18:27 09:26-10:12/46 | 08:13 13:00-13:52/52<br>16:25 11:18-12:47/89 | 08:57 11:54-12:40/46<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 13:22-14:04/42<br>19:41 07:59-08:34/35 | 08:12 12:09-15:05/176 08:51-09:17/26<br>18:25 09:26-10:12/46 | 08:15 13:01-13:51/50<br>16:23 11:19-12:42/83 | 08:58 11:54-12:40/46<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 13:17-14:08/51<br>19:38 07:58-08:34/36 | 08:14 12:08-15:05/177 08:52-09:16/24<br>18:23 09:26-10:11/45 | 08:17 13:04-13:50/46<br>16:22 11:21-12:39/78 | 08:59 11:55-12:40/45<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18 13:13-14:11/58<br>19:35 07:57-08:35/38 | 08:16 12:08-15:05/177 08:54-09:15/21<br>18:20 09:27-10:12/45 | 08:19 13:05-13:49/44<br>16:20 11:22-12:39/77 | 08:59 11:55-12:40/45<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 13:10-14:13/63<br>19:33 07:56-08:35/39 | 08:18 12:08-15:05/177 08:55-09:13/18<br>18:18 09:27-10:11/44 | 08:21 13:07-13:48/41<br>16:19 11:23-12:39/76 | 09:00 11:56-12:42/46<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21 13:07-14:16/69<br>19:30 07:55-08:35/40 | 08:20 12:07-15:05/178 08:57-09:11/14<br>18:16 09:28-10:10/42 | 08:23 13:08-13:47/39<br>16:18 11:24-12:39/75 | 09:00 11:56-12:42/46<br>16:07 |
| 25 | 05:27<br>21:52 | 06:25<br>20:47 | 07:23 13:05-14:17/72<br>19:28 07:55-08:35/40 | 07:22 11:07-14:05/178 08:00-08:07/7<br>17:13 08:28-09:09/41 | 08:25 13:10-13:45/35<br>16:16 11:26-12:38/72 | 09:00 11:56-12:42/46<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 13:03-14:19/76<br>19:25 07:55-08:34/39 | 07:24 11:06-14:04/178<br>17:11 08:28-09:08/40 | 08:27 13:12-13:44/32<br>16:15 11:27-12:38/71 | 09:01 11:58-12:44/46<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 13:00-14:19/79<br>19:22 07:56-08:34/38 | 07:26 11:07-14:05/178<br>17:09 08:30-09:08/38 | 08:28 13:15-13:42/27<br>16:14 11:28-12:38/70 | 09:01 11:58-12:44/46<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 12:58-14:20/82<br>19:20 07:57-08:32/35 | 07:28 11:07-14:05/178<br>17:07 08:31-09:06/35 | 08:30 13:18-13:40/22<br>16:13 11:30-12:38/68 | 09:01 11:58-12:45/47<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31 12:56-14:21/85<br>19:17 07:58-08:31/33 | 07:31 11:06-14:04/178<br>17:04 08:32-09:05/33 | 08:32 13:21-13:37/16<br>16:12 11:32-12:38/66 | 09:01 11:58-12:46/48<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33 12:55-14:22/87<br>19:15 08:00-08:30/30 | 07:33 11:06-14:04/178<br>17:02 08:33-09:03/30 | 08:34 13:26-13:33/7<br>16:11 11:33-12:38/65 | 09:01 11:58-12:45/47<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 11:06-14:03/177<br>17:00 08:35-09:02/27 | | 09:01 11:58-12:46/48<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1289 | 6556 | 4356 | 1535 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27 08:24-09:13/49<br>18:07 08:02-08:23/21 | 07:08<br>20:10 | 05:55 19:59-20:36/37<br>21:09 | 05:02 20:37-21:02/25<br>22:02 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24 08:57-09:10/13 08:03-08:23/20<br>18:09 08:25-08:56/31 | 07:05<br>20:12 | 05:53 19:59-20:38/39<br>21:11 | 05:01 20:38-21:02/24<br>22:04 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:24-08:55/31<br>18:12 08:03-08:22/19 | 07:03<br>20:14 | 05:51 19:58-20:40/42<br>21:13 | 05:00 20:39-21:03/24<br>22:05 |
| 4 | 09:00<br>16:18 | 08:22 09:01-09:07/6<br>17:14 | 07:19 08:25-08:55/30<br>18:14 08:04-08:21/17 | 07:00<br>20:16 | 05:48 19:58-20:41/43<br>21:15 | 04:59 20:39-21:02/23<br>22:06 |
| 5 | 09:00<br>16:19 | 08:20 08:58-09:11/13<br>17:17 | 07:17 08:26-08:53/27<br>18:16 08:04-08:19/15 | 06:58<br>20:17 | 05:46 19:57-20:42/45<br>21:16 | 04:58 20:39-21:02/23<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18 08:56-09:13/17<br>17:19 | 07:14 08:27-08:52/25<br>18:18 08:07-08:17/10 | 06:55<br>20:19 | 05:44 19:57-20:43/46<br>21:18 | 04:57 20:39-21:01/22<br>22:09 |
| 7 | 08:59<br>16:22 | 08:16 08:54-09:14/20<br>17:21 | 07:12 08:28-08:50/22<br>18:20 | 06:53<br>20:21 | 05:42 19:57-20:43/46<br>21:20 | 04:56 21:25-21:27/2<br>22:10 20:40-21:02/22 |
| 8 | 08:58<br>16:23 | 08:14 08:53-09:16/23<br>17:23 | 07:09 08:30-08:47/17<br>18:22 | 06:50<br>20:23 | 05:40 19:57-20:43/46<br>21:22 | 04:56 21:22-21:29/7<br>22:11 20:40-21:01/21 |
| 9 | 08:57<br>16:25 | 08:12 08:52-09:17/25<br>17:25 | 07:07 08:33-08:44/11<br>18:24 | 06:48<br>20:25 | 05:38 19:57-20:43/46<br>21:24 | 04:55 21:22-21:31/9<br>22:12 20:41-21:02/21 |
| 10 | 08:57<br>16:26 | 08:10 08:52-09:18/26<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36 19:57-20:43/46<br>21:26 | 04:54 21:21-21:32/11<br>22:13 20:41-21:01/20 |
| 11 | 08:56<br>16:28 | 08:08 08:51-09:19/28<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34 19:57-20:43/46<br>21:28 20:46-20:50/4 | 04:54 21:21-21:33/12<br>22:13 20:42-21:01/19 |
| 12 | 08:55<br>16:29 | 08:06 08:50-09:19/29<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32 19:58-20:54/56<br>21:30 | 04:53 21:21-21:34/13<br>22:14 20:43-21:02/19 |
| 13 | 08:54<br>16:31 | 08:04 08:41-09:20/39<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30 19:58-20:56/58<br>21:32 | 04:53 21:20-21:34/14<br>22:15 20:43-21:01/18 |
| 14 | 08:53<br>16:33 | 08:02 08:38-09:21/43<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28 19:58-20:57/59<br>21:33 | 04:53 21:20-21:35/15<br>22:16 20:43-21:01/18 |
| 15 | 08:52<br>16:35 | 07:59 08:36-09:21/45<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27 20:00-20:59/59<br>21:35 | 04:53 21:20-21:35/15<br>22:16 20:44-21:01/17 |
| 16 | 08:51<br>16:36 | 07:57 08:35-09:22/47<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25 20:00-20:59/59<br>21:37 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 17 | 08:50<br>16:38 | 07:55 08:34-09:23/49<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23 20:01-21:00/59<br>21:39 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 18 | 08:49<br>16:40 | 07:53 08:32-09:22/50<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21 20:02-21:00/58<br>21:41 | 04:52 21:20-21:37/17<br>22:18 20:45-21:01/16 |
| 19 | 08:48<br>16:42 | 07:50 08:30-09:23/53<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 20:04-21:01/57<br>21:42 | 04:52 21:20-21:37/17<br>22:18 20:46-21:01/15 |
| 20 | 08:46<br>16:44 | 07:48 08:29-09:23/54<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18 20:05-21:01/56<br>21:44 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 21 | 08:45<br>16:46 | 07:46 08:27-09:22/55<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16 20:21-21:02/41<br>21:46 20:07-20:18/11 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 22 | 08:44<br>16:48 | 07:43 08:27-09:22/55<br>17:53 08:10-08:19/9 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15 20:24-21:02/38<br>21:47 20:10-20:15/5 | 04:52 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 23 | 08:42<br>16:50 | 07:41 08:26-09:21/55<br>17:55 08:07-08:20/13 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13 20:26-21:02/36<br>21:49 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 24 | 08:41<br>16:52 | 07:39 08:25-09:21/56<br>17:57 08:05-08:22/17 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12 20:28-20:35/7<br>21:51 20:36-21:03/27 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 25 | 08:39<br>16:54 | 07:36 08:24-09:19/55<br>17:59 08:04-08:22/18 | 06:26<br>18:56 | 06:09 20:09-20:17/8<br>20:57 | 05:10 20:35-21:02/27<br>21:52 | 04:53 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 26 | 08:38<br>16:56 | 07:34 08:25-09:19/54<br>18:01 08:03-08:23/20 | 06:23<br>18:58 | 06:06 20:23-20:28/5<br>20:59 20:06-20:21/15 | 05:09 20:36-21:02/26<br>21:54 | 04:54 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 27 | 08:36<br>16:58 | 07:32 08:24-09:17/53<br>18:03 08:02-08:23/21 | 06:21<br>19:00 | 06:04 20:04-20:30/26<br>21:01 | 05:08 20:36-21:02/26<br>21:55 | 04:54 21:23-21:39/16<br>22:19 20:47-21:04/17 |
| 28 | 08:35<br>17:00 | 07:29 08:03-09:15/72<br>18:05 | 06:18<br>19:02 | 06:02 20:02-20:32/30<br>21:03 | 05:06 20:36-21:03/27<br>21:57 | 04:55 21:23-21:38/15<br>22:19 20:47-21:04/17 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59 20:01-20:34/33<br>21:05 | 05:05 20:37-21:03/26<br>21:58 | 04:55 21:24-21:38/14<br>22:19 20:47-21:05/18 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57 20:00-20:36/36<br>21:07 | 05:04 20:37-21:03/26<br>22:00 | 04:56 21:24-21:37/13<br>22:19 20:46-21:05/19 |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 | | 05:03 20:37-21:02/25<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 1120 | 358 | 153 | 1355 | 896 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:25-21:37/12 | 05:40 20:08-20:54/46 | 06:38 | 07:35 | 07:37 08:21-08:47/26 | 08:35 |
| | 22:18 20:47-21:05/18 | 21:40 20:55-21:04/9 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 21:26-21:37/11 | 05:41 20:07-20:53/46 | 06:40 | 07:37 | 07:39 08:22-08:46/24 | 08:37 |
| | 22:18 20:47-21:06/19 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:27-21:37/10 | 05:43 20:07-20:53/46 | 06:42 | 07:39 | 07:41 08:23-08:45/22 | 08:38 |
| | 22:17 20:47-21:07/20 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:27-21:35/8 | 05:45 20:07-20:53/46 | 06:43 | 07:40 09:13-09:18/5 | 07:43 08:24-08:45/21 | 08:40 |
| | 22:17 20:46-21:07/21 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 21:29-21:34/5 | 05:47 20:07-20:53/46 | 06:45 | 07:42 09:08-09:23/15 | 07:45 08:26-08:43/17 | 08:41 |
| | 22:16 20:46-21:07/21 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 20:46-21:08/22 | 05:49 20:06-20:52/46 | 06:47 | 07:44 09:05-09:25/20 | 07:47 08:28-08:41/13 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 20:46-21:08/22 | 05:51 20:07-20:52/45 | 06:49 | 07:46 09:03-09:26/23 | 07:49 08:31-08:37/6 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:43-08:51/8 | 16:45 | 16:06 |
| 8 | 05:03 20:46-21:09/23 | 05:52 20:07-20:51/44 | 06:51 | 07:48 09:01-09:27/26 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:40-08:53/13 | 16:44 | 16:05 |
| 9 | 05:04 20:45-21:09/24 | 05:54 20:06-20:49/43 | 06:53 | 07:50 09:00-09:28/28 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:39-08:55/16 | 16:42 | 16:05 |
| 10 | 05:06 20:45-21:09/24 | 05:56 20:07-20:48/41 | 06:55 | 07:52 08:59-09:29/30 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 08:37-08:55/18 | 16:40 | 16:04 |
| 11 | 05:07 20:46-21:11/25 | 05:58 20:07-20:46/39 | 06:57 | 07:54 09:33-09:41/8 08:36-08:56/20 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:58-09:29/31 | 16:38 | 16:04 |
| 12 | 05:08 20:46-21:11/25 | 06:00 20:08-20:44/36 | 06:59 | 07:56 08:57-09:44/47 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:35-08:56/21 | 16:36 | 16:04 |
| 13 | 05:09 20:46-21:11/25 | 06:02 20:08-20:43/35 | 07:00 | 07:58 08:57-09:47/50 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:35-08:56/21 | 16:34 | 16:04 |
| 14 | 05:11 20:45-21:11/26 | 06:04 20:09-20:41/32 | 07:02 | 08:00 08:36-09:48/72 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 20:45-21:11/26 | 06:06 20:10-20:39/29 | 07:04 | 08:02 08:57-09:50/53 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:36-08:56/20 | 16:31 | 16:04 |
| 16 | 05:13 20:46-21:12/26 | 06:07 20:12-20:37/25 | 07:06 | 08:04 08:57-09:51/54 | 08:07 | 08:55 |
| | 22:06 | 21:08 | 19:51 | 18:34 08:36-08:55/19 | 16:29 | 16:04 |
| 17 | 05:15 20:45-21:12/27 | 06:09 20:31-20:34/3 | 07:08 | 08:06 08:57-09:52/55 | 08:09 | 08:56 |
| | 22:04 | 21:06 20:13-20:27/14 | 19:48 | 18:32 08:36-08:54/18 | 16:28 | 16:04 |
| 18 | 05:16 20:45-21:12/27 | 06:11 20:17-20:23/6 | 07:10 | 08:08 08:57-09:52/55 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 08:37-08:53/16 | 16:26 | 16:04 |
| 19 | 05:18 20:39-20:43/4 | 06:13 | 07:12 | 08:10 08:57-09:52/55 | 08:13 | 08:57 |
| | 22:02 20:46-21:12/26 | 21:01 | 19:43 | 18:27 08:39-08:51/12 | 16:25 | 16:04 |
| 20 | 05:19 20:36-21:12/36 | 06:15 | 07:14 | 08:12 08:57-09:52/55 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 08:41-08:48/7 | 16:23 | 16:05 |
| 21 | 05:21 20:35-21:12/37 | 06:17 | 07:16 | 08:14 08:58-09:52/54 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 20:34-21:12/38 | 06:19 | 07:17 | 08:16 09:00-09:53/53 | 08:19 | 08:59 |
| | 21:57 20:18-20:27/9 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 20:16-21:12/56 | 06:21 | 07:19 | 08:18 09:01-09:53/52 | 08:21 | 09:00 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 20:14-21:11/57 | 06:23 | 07:21 | 08:20 09:03-09:52/49 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 20:14-21:12/58 | 06:25 | 07:23 | 07:22 08:04-08:52/48 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 20:12-21:11/59 | 06:26 | 07:25 | 07:24 08:05-08:51/46 | 08:27 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 20:11-21:10/59 | 06:28 | 07:27 | 07:26 08:07-08:51/44 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 20:10-21:09/59 | 06:30 | 07:29 | 07:28 08:08-08:50/42 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 20:10-21:09/59 | 06:32 | 07:31 | 07:30 08:11-08:49/38 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 20:09-21:08/59 | 06:34 | 07:33 | 07:33 08:20-08:48/28 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 20:08-21:06/58 | 06:36 | | 07:35 08:20-08:47/27 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1141 | 677 | 0 | 1372 | 129 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 32 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:53-08:03/10 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 08:04-08:42/38 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 07:51-08:05/14 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 08:06-08:43/37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 07:49-08:06/17 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 08:09-08:44/35 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 07:48-08:08/20 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 08:10-08:44/34 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 07:47-08:08/21 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 08:11-08:44/33 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:08/24 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 08:13-08:44/31 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 07:38-08:08/30 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 08:15-08:44/29 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 07:35-08:07/32 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 08:20-08:43/23 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 07:34-08:07/33 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 08:22-08:42/20 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 07:32-08:06/34 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 08:22-08:41/19 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 07:29-08:05/36 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:23-08:40/17 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 07:26-08:03/37 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 08:25-08:38/13 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 07:24-08:01/37 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 08:27-08:34/7 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 07:23-07:59/36 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 07:22-07:58/36 | 06:33 | 05:27 | 04:52 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 07:22-07:58/36 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 07:21-07:56/35 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 07:20-07:55/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 07:20-07:53/33 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:12-08:22/10 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:20-07:50/30 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:09-08:24/15 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:21-07:42/21 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 08:07-08:25/18 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 07:21-07:40/19 | 06:16 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 08:06-08:26/20 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:23-07:39/16 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:05-08:34/29 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 07:25-07:36/11 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:04-08:36/32 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 08:04-08:38/34 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 08:03-08:39/36 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:02-08:38/36 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:02-08:39/37 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:03-08:39/36 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:03-08:40/37 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 653 | 0 | 0 | 0 | 0 | 0 | 340 | 336 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | | 04:57 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | 22:05 | | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:51-05:56/5 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | | 22:08 | 21:13 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 05:50-05:58/8 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:50-05:59/9 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:49-06:00/11 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:49-06:00/11 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:49-06:01/12 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:49-06:01/12 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:19 | | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:49-06:01/12 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | | 21:59 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:50-06:02/12 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:50-06:02/12 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:50-06:01/11 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:51-06:02/11 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:51-06:01/10 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:53-06:01/8 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:54-06:00/6 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:57-05:58/1 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 151 | | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:50-08:19/29 | 05:55 | 06:31-07:45/74 | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:50-08:19/29 | 05:53 | 06:29-07:45/76 | 05:01 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:11 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:49-08:18/29 | 05:51 | 06:28-07:45/77 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:41-08:19/38 | 05:48 | 06:27-07:45/78 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:37-08:17/40 | 05:46 | 06:26-07:45/79 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:35-08:17/42 | 05:44 | 06:25-07:45/80 | 04:57 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:33-08:16/43 | 05:42 | 06:24-07:44/80 | 04:56 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:32-08:15/43 | 05:40 | 06:24-06:55/31 | 04:56 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | 06:56-07:44/48 | 22:11 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 07:30-08:13/43 | 05:38 | 06:23-06:54/31 | 04:55 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | 06:57-07:43/46 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:29-08:11/42 | 05:36 | 06:23-06:52/29 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | 06:58-07:42/44 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 07:27-08:08/41 | 05:34 | 06:22-06:52/30 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | 06:59-07:42/43 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:22-08:05/43 | 05:32 | 06:23-06:52/29 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | 07:01-07:42/41 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | 07:19-08:01/42 | 05:30 | 06:23-06:52/29 | 04:53 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:31 | 07:02-07:41/39 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 07:17-08:01/44 | 05:28 | 06:23-06:52/29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | 07:02-07:40/38 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 | | 06:32 | 07:16-08:01/45 | 05:27 | 06:24-06:52/28 | 04:52 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | 07:03-07:40/37 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:14-08:00/46 | 05:25 | 06:23-06:51/28 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | 07:04-07:39/35 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:28 | 07:08-08:00/52 | 05:23 | 06:24-06:51/27 | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | 07:05-07:38/33 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:03-07:59/56 | 05:21 | 06:24-06:51/27 | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | 07:05-07:37/32 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:01-07:58/57 | 05:20 | 06:25-06:51/26 | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | 07:06-07:35/29 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:00-07:58/58 | 05:18 | 06:25-06:49/24 | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | 07:07-07:35/28 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 06:57-07:56/59 | 05:16 | 06:27-06:49/22 | 04:52 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | 07:09-07:34/25 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 06:46-06:52/6 | 05:15 | 06:27-06:48/21 | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 06:56-07:55/59 | 21:47 | 07:09-07:32/23 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 06:43-06:55/12 | 05:13 | 06:28-06:47/19 | 04:53 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 06:56-07:54/58 | 21:49 | 07:11-07:31/20 | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | 06:41-07:53/72 | 05:12 | 06:29-06:47/18 | 04:53 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | 07:13-07:29/16 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 07:01-07:13/12 | 06:08 | 06:40-07:50/70 | 05:10 | 06:30-06:45/15 | 04:53 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | 07:15-07:26/11 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:58-07:16/18 | 06:06 | 06:38-07:47/69 | 05:09 | 06:31-06:44/13 | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | 06:56-07:17/21 | 06:04 | 06:37-07:44/67 | 05:08 | 06:33-06:42/9 | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:54-07:17/23 | 06:02 | 06:37-07:45/68 | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:16 | 07:53-08:18/25 | 05:59 | 06:36-07:45/69 | 05:05 | | 04:55 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:51-08:18/27 | 05:57 | 06:33-07:45/72 | 05:04 | | 04:56 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:51-08:19/28 | | | 05:03 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 154 | | 1543 | | 1617 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 06:34-07:03/29 | 06:38 | 07:26-08:07/41 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | 07:12-07:52/40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:33-07:02/29 | 06:40 | 07:27-08:09/42 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | 07:09-07:52/43 | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:33-07:03/30 | 06:41 | 07:28-08:11/43 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | 07:08-07:53/45 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:34-07:05/31 | 06:43 | 07:29-08:12/43 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | 07:07-07:54/47 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:34-07:54/80 | 06:45 | 07:30-08:13/43 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:34-07:54/80 | 06:47 | 07:30-08:12/42 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:35-07:54/79 | 06:49 | 07:32-08:12/40 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 05:52 | 06:35-07:54/79 | 06:51 | 07:35-08:13/38 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:35-07:54/79 | 06:53 | 07:43-08:13/30 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:37-07:54/77 | 06:55 | 07:43-08:12/29 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:38-07:54/76 | 06:57 | 07:42-08:11/29 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | 06:40-07:54/74 | 06:58 | 07:42-08:11/29 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | 06:42-07:53/71 | 07:00 | 07:42-08:10/28 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:04 | 06:44-07:52/68 | 07:02 | 07:43-08:09/26 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | | 06:05 | 06:44-07:52/68 | 07:04 | 07:44-08:08/24 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:44-06:50/6 | 06:07 | 06:45-07:52/67 | 07:06 | 07:45-08:06/21 | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:42-06:53/11 | 06:09 | 06:45-07:55/70 | 07:08 | 07:46-08:04/18 | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:40-06:54/14 | 06:11 | 06:46-07:57/71 | 07:10 | 07:47-08:01/14 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 07:27-07:34/7 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:39-06:56/17 | 06:13 | 06:47-07:58/71 | 07:12 | 07:52-07:55/3 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 07:24-07:38/14 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:38-06:57/19 | 06:15 | 06:49-08:00/71 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 07:22-07:40/18 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:38-06:58/20 | 06:17 | 06:53-06:57/4 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 07:21-07:42/21 | 20:56 | 07:02-08:01/59 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:37-06:59/22 | 06:19 | 07:02-08:01/59 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 07:19-07:43/24 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:37-07:00/23 | 06:21 | 07:03-08:01/58 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 07:19-07:45/26 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:36-07:00/24 | 06:23 | 07:05-08:02/57 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 07:17-07:46/29 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:36-07:01/25 | 06:24 | 07:07-08:02/55 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 07:17-07:47/30 | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:35-07:01/26 | 06:26 | 07:12-08:03/51 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 07:15-07:48/33 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:35-07:02/27 | 06:28 | 07:16-08:02/46 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 07:15-07:49/34 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:34-07:02/28 | 06:30 | 07:17-08:02/45 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 07:14-07:49/35 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:34-07:02/28 | 06:32 | 07:18-08:02/44 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | 07:13-07:51/38 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34-07:03/29 | 06:34 | 07:20-08:01/41 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | 07:13-07:52/39 | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:33-07:02/29 | 06:36 | 07:22-08:05/43 | | | 07:34 | | 09:01 |
| | 21:42 | 07:12-07:52/40 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 736 | | 2037 | | 583 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 11:50-13:05/75<br>17:08 | 07:27 11:54-12:59/65<br>18:07 | 07:08<br>20:09 | 05:55 06:32-06:51/19<br>21:09 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 11:49-13:06/77<br>17:10 | 07:24 11:55-12:58/63<br>18:09 | 07:05<br>20:11 | 05:53 06:33-06:51/18<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00 12:13-12:22/9<br>16:16 | 08:24 11:49-13:06/77<br>17:12 | 07:22 11:56-12:55/59<br>18:11 | 07:03<br>20:13 | 05:51 06:33-06:50/17<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 12:11-12:26/15<br>16:18 | 08:22 11:49-13:07/78<br>17:15 | 07:19 11:58-12:53/55<br>18:14 | 07:00<br>20:15 | 05:48 06:34-06:49/15<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 12:08-12:28/20<br>16:19 | 08:20 11:48-13:06/78<br>17:17 | 07:17 12:00-12:51/51<br>18:16 | 06:58<br>20:17 | 05:46 06:35-06:47/12<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 12:08-12:31/23<br>16:20 | 08:18 11:48-13:07/79<br>17:19 | 07:14 12:02-12:47/45<br>18:18 | 06:55<br>20:19 | 05:44 06:37-06:45/8<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 12:06-12:33/27<br>16:22 | 08:16 11:47-13:08/81<br>17:21 | 07:12 12:06-12:44/38<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 12:05-12:35/30<br>16:23 | 08:14 11:47-13:08/81<br>17:23 | 07:09 12:10-12:38/28<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 12:04-12:36/32<br>16:25 | 08:12 11:47-13:09/82<br>17:25 | 07:07 12:18-12:30/12<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 12:03-12:38/35<br>16:26 | 08:10 11:48-13:09/81<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:12 |
| 11 | 08:56 12:02-12:40/38<br>16:28 | 08:08 11:47-13:09/82<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 12:01-12:42/41<br>16:30 | 08:06 11:47-13:09/82<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 12:00-12:43/43<br>16:31 | 08:04 11:47-13:09/82<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 12:00-12:45/45<br>16:33 | 08:01 11:46-13:09/83<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 11:58-12:46/48<br>16:35 | 07:59 11:47-13:09/82<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:58-12:48/50<br>16:36 | 07:57 11:47-13:09/82<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:58-12:49/51<br>16:38 | 07:55 11:47-13:08/81<br>17:42 | 06:46<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 11:56-12:50/54<br>16:40 | 07:53 11:47-13:08/81<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 11:56-12:52/56<br>16:42 | 07:50 11:48-13:08/80<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 11:55-12:53/58<br>16:44 | 07:48 11:48-13:07/79<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 11:55-12:54/59<br>16:46 | 07:46 11:48-13:07/79<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 11:54-12:55/61<br>16:48 | 07:43 11:48-13:06/78<br>17:53 | 06:34<br>18:50 | 06:16 06:41-06:47/6<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 |
| 23 | 08:42 11:53-12:56/63<br>16:50 | 07:41 11:49-13:06/77<br>17:55 | 06:31<br>18:52 | 06:13 06:39-06:49/10<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 11:53-12:58/65<br>16:52 | 07:39 11:49-13:05/76<br>17:57 | 06:28<br>18:54 | 06:11 06:37-06:50/13<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 11:52-12:59/67<br>16:54 | 07:36 11:50-13:04/74<br>17:59 | 06:26<br>18:56 | 06:09 06:35-06:51/16<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 11:52-12:59/67<br>16:56 | 07:34 11:51-13:04/73<br>18:01 | 06:23<br>18:58 | 06:06 06:33-06:51/18<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:51-13:00/69<br>16:58 | 07:31 11:52-13:02/70<br>18:03 | 06:21<br>19:00 | 06:04 06:32-06:51/19<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 11:51-13:02/71<br>17:00 | 07:29 11:53-13:01/68<br>18:05 | 06:18<br>19:02 | 06:02 06:32-06:52/20<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:51-13:03/72<br>17:02 | | 07:16<br>20:04 | 05:59 06:32-06:52/20<br>21:05 | 05:05<br>21:58 | 04:56<br>22:18 |
| 30 | 08:31 11:50-13:03/73<br>17:04 | | 07:13<br>20:06 | 05:57 06:32-06:52/20<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 11:50-13:04/74<br>17:06 | | 07:10<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1416 | 2198 | 416 | 142 | 89 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:36 11:16-12:38/82<br>16:58 | 08:35 11:44-12:22/38<br>16:10 |
| 2 | 04:58<br>22:17 | 05:41<br>21:38 | 06:40<br>20:27 | 07:36<br>19:09 | 07:39 11:17-12:38/81<br>16:56 | 08:37 11:46-12:21/35<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:38<br>19:07 | 07:41 11:17-12:38/81<br>16:54 | 08:38 11:48-12:21/33<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 11:17-12:37/80<br>16:52 | 08:40 11:49-12:19/30<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:50-13:12/22<br>19:02 | 07:45 11:18-12:38/80<br>16:49 | 08:41 11:51-12:18/27<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 06:48-06:52/4<br>21:30 | 06:47<br>20:17 | 07:44 12:44-13:18/34<br>18:59 | 07:47 11:18-12:37/79<br>16:47 | 08:43 11:54-12:17/23<br>16:06 |
| 7 | 05:02<br>22:14 | 05:51 06:45-06:55/10<br>21:28 | 06:49<br>20:14 | 07:46 12:40-13:22/42<br>18:57 | 07:49 11:19-12:37/78<br>16:46 | 08:44 11:55-12:15/20<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 06:44-06:57/13<br>21:26 | 06:51<br>20:11 | 07:48 12:37-13:24/47<br>18:54 | 07:51 11:19-12:36/77<br>16:44 | 08:45 11:59-12:14/15<br>16:05 |
| 9 | 05:05<br>22:13 | 05:54 06:43-06:59/16<br>21:23 | 06:53<br>20:09 | 07:50 12:34-13:27/53<br>18:52 | 07:53 11:20-12:36/76<br>16:42 | 08:47 12:02-12:11/9<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 06:41-06:58/17<br>21:21 | 06:55<br>20:06 | 07:52 12:32-13:29/57<br>18:49 | 07:55 11:20-12:36/76<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:41-06:59/18<br>21:19 | 06:57<br>20:04 | 07:54 12:30-13:30/60<br>18:47 | 07:57 11:21-12:35/74<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 06:41-07:00/19<br>21:17 | 06:59<br>20:01 | 07:56 12:28-13:31/63<br>18:44 | 07:59 11:21-12:34/73<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 06:40-07:00/20<br>21:15 | 07:00<br>19:59 | 07:58 12:26-13:33/67<br>18:42 | 08:01 11:23-12:35/72<br>16:34 | 08:51<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 06:39-06:59/20<br>21:12 | 07:02<br>19:56 | 08:00 12:25-13:34/69<br>18:39 | 08:03 11:23-12:34/71<br>16:33 | 08:52<br>16:04 |
| 15 | 05:12<br>22:06 | 06:06 06:40-06:59/19<br>21:10 | 07:04<br>19:53 | 08:02 12:23-13:34/71<br>18:37 | 08:05 11:24-12:33/69<br>16:31 | 08:53<br>16:04 |
| 16 | 05:14<br>22:05 | 06:07 06:40-06:59/19<br>21:08 | 07:06<br>19:51 | 08:04 12:22-13:35/73<br>18:34 | 08:07 11:25-12:32/67<br>16:29 | 08:54<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09 06:40-06:59/19<br>21:06 | 07:08<br>19:48 | 08:06 12:22-13:37/75<br>18:32 | 08:09 11:26-12:33/67<br>16:28 | 08:55<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 06:41-06:57/16<br>21:03 | 07:10<br>19:46 | 08:08 12:21-13:37/76<br>18:30 | 08:11 11:27-12:32/65<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18<br>22:01 | 06:13 06:43-06:56/13<br>21:01 | 07:12<br>19:43 | 08:10 12:20-13:37/77<br>18:27 | 08:13 11:28-12:31/63<br>16:25 | 08:57<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15 06:45-06:54/9<br>20:59 | 07:14<br>19:40 | 08:12 12:19-13:38/79<br>18:25 | 08:15 11:29-12:30/61<br>16:23 | 08:58<br>16:05 |
| 21 | 05:21<br>21:58 | 06:17 06:47-06:52/5<br>20:56 | 07:15<br>19:38 | 08:14 12:18-13:38/80<br>18:22 | 08:17 11:30-12:29/59<br>16:22 | 08:58<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16 12:18-13:38/80<br>18:20 | 08:19 11:31-12:29/58<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24<br>21:55 | 06:21<br>20:51 | 07:19<br>19:33 | 08:18 12:17-13:38/81<br>18:18 | 08:21 11:32-12:28/56<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 12:18-13:39/81<br>18:16 | 08:23 11:33-12:27/54<br>16:18 | 09:00<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 11:17-12:39/82<br>17:13 | 08:24 11:36-12:27/51<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 11:17-12:39/82<br>17:11 | 08:26 11:37-12:27/50<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 11:16-12:38/82<br>17:09 | 08:28 11:38-12:26/48<br>16:14 | 09:01<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 11:16-12:38/82<br>17:06 | 08:30 11:39-12:24/45<br>16:13 | 09:01<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:30 11:17-12:39/82<br>17:04 | 08:32 11:40-12:23/43<br>16:12 | 09:01<br>16:11 |
| 30 | 05:36<br>21:43 | 06:34<br>20:34 | 07:33<br>19:15 | 07:32 11:16-12:38/82<br>17:02 | 08:33 11:42-12:23/41<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:34 11:16-12:38/82<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 237 | 0 | 1861 | 1977 | 230 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 37 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:20-10:33/13 | 08:27 09:03-09:55/52 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 08:33-09:01/28 | 08:35 09:15-10:00/45 |
| | 16:14 09:38-10:13/35 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 10:22-10:34/12 | 08:25 09:02-09:54/52 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:33-09:05/32 | 08:36 09:17-10:01/44 |
| | 16:15 09:38-10:14/36 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 10:22-10:33/11 | 08:24 09:02-09:54/52 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:32-09:11/39 | 08:38 09:19-10:01/42 |
| | 16:16 09:37-10:14/37 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 10:24-10:33/9 | 08:22 09:01-09:52/51 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:32-09:15/43 | 08:39 09:19-10:01/42 |
| | 16:17 09:38-10:15/37 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 10:25-10:32/7 | 08:20 09:01-09:51/50 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 08:31-09:19/48 | 08:41 09:21-10:02/41 |
| | 16:19 09:37-10:15/38 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 09:37-10:17/40 | 08:18 09:02-09:49/47 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 08:32-09:21/49 | 08:42 09:22-10:02/40 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 09:36-10:17/41 | 08:16 09:02-09:44/42 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 08:32-09:23/51 | 08:44 10:13-10:19/6 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:05 09:24-10:03/39 |
| 8 | 08:58 09:35-10:17/42 | 08:14 09:03-09:41/38 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 08:32-09:24/52 | 08:45 10:11-10:20/9 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 09:25-10:02/37 |
| 9 | 08:57 09:35-10:17/42 | 08:12 09:03-09:35/32 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 08:32-09:24/52 | 08:47 10:11-10:22/11 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 09:26-10:03/37 |
| 10 | 08:56 09:34-10:18/44 | 08:10 09:03-09:30/27 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 08:34-09:26/52 | 08:48 10:11-10:23/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 09:27-10:03/36 |
| 11 | 08:56 09:33-10:18/45 | 08:08 09:05-09:27/22 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 08:34-09:28/54 | 08:49 10:11-10:24/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-10:05/37 |
| 12 | 08:55 09:32-10:18/46 | 08:06 09:06-09:22/16 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 08:35-09:29/54 | 08:50 10:11-10:25/14 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:30-10:05/35 |
| 13 | 08:54 09:32-10:18/46 | 08:03 09:08-09:20/12 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 08:37-09:32/55 | 08:51 10:11-10:26/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 09:31-10:05/34 |
| 14 | 08:53 09:32-10:19/47 | 08:01 09:11-09:16/5 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 08:38-09:33/55 | 08:52 10:11-10:26/15 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 09:32-10:05/33 |
| 15 | 08:52 09:30-10:18/48 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 08:40-09:35/55 | 08:53 10:11-10:27/16 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 09:33-10:05/32 |
| 16 | 08:51 09:28-10:18/50 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 08:44-09:37/53 | 08:54 10:12-10:28/16 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 09:34-10:06/32 |
| 17 | 08:50 09:27-10:18/51 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 08:45-09:38/53 | 08:55 10:12-10:29/17 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 09:35-10:06/31 |
| 18 | 08:49 09:25-10:17/52 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 08:48-09:41/53 | 08:56 10:13-10:29/16 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 09:36-10:07/31 |
| 19 | 08:47 09:23-10:17/54 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 08:50-09:42/52 | 08:57 10:12-10:29/17 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:35-10:07/32 |
| 20 | 08:46 09:20-10:16/56 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 08:52-09:47/55 | 08:57 10:13-10:30/17 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 09:36-10:08/32 |
| 21 | 08:45 09:19-10:15/56 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 08:54-09:50/56 | 08:58 10:14-10:31/17 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 09:36-10:07/31 |
| 22 | 08:43 09:17-10:12/55 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 08:56-09:52/56 | 08:59 10:14-10:31/17 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:37-10:08/31 |
| 23 | 08:42 09:15-10:07/52 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 08:59-09:53/54 | 08:59 10:14-10:31/17 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 09:37-10:08/31 |
| 24 | 08:40 09:14-10:07/53 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 09:02-09:54/52 | 08:59 10:15-10:32/17 |
| | 16:51 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 09:38-10:10/32 |
| 25 | 08:39 09:12-10:05/53 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 09:04-09:55/51 | 09:00 10:16-10:32/16 |
| | 16:53 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 09:39-10:10/31 |
| 26 | 08:37 09:11-10:04/53 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 09:06-09:56/50 | 09:00 10:16-10:33/17 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 09:39-10:10/31 |
| 27 | 08:36 09:07-10:02/55 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 09:09-09:57/48 | 09:00 10:16-10:33/17 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 09:39-10:11/32 |
| 28 | 08:34 09:05-10:00/55 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 08:39-08:47/8 | 08:30 09:11-09:58/47 | 09:01 10:17-10:33/16 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 09:39-10:11/32 |
| 29 | 08:33 09:05-10:00/55 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:37-08:50/13 | 08:31 09:12-09:59/47 | 09:01 10:18-10:33/15 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 09:39-10:12/33 |
| 30 | 08:31 09:04-09:58/54 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:35-08:52/17 | 08:33 09:13-09:59/46 | 09:01 10:19-10:34/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 09:39-10:13/34 |
| 31 | 08:29 09:03-09:57/54 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 08:34-08:57/23 | | 09:01 10:20-10:34/14 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 09:39-10:13/34 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1534 | 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 1492 | 1456 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 38 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28 16:00-16:26/26<br>17:08 | 07:27 17:11-17:30/19<br>18:07 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:02 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 15:29-15:57/28<br>16:58 | 08:35<br>16:10 |
| 2 | 09:01<br>16:15 | 08:26 15:59-16:26/27<br>17:10 | 07:24 17:12-17:30/18<br>18:10 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 15:29-15:57/28<br>16:56 | 08:37<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24 15:59-16:27/28<br>17:12 | 07:22 17:12-17:29/17<br>18:12 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 | 04:59<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 15:28-15:57/29<br>16:54 | 08:38<br>16:08 |
| 4 | 09:00<br>16:18 | 08:22 15:59-16:28/29<br>17:15 | 07:19 17:14-17:28/14<br>18:14 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41<br>19:05 | 07:43 15:28-15:57/29<br>16:52 | 08:40<br>16:08 |
| 5 | 09:00<br>16:19 | 08:20 15:59-16:28/29<br>17:17 | 07:17 17:15-17:25/10<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 15:29-15:58/29<br>16:50 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18 15:59-16:28/29<br>17:19 | 07:14<br>18:18 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 15:29-15:58/29<br>16:48 | 08:43<br>16:06 |
| 7 | 08:59<br>16:22 | 08:16 15:58-16:28/30<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 15:29-15:57/28<br>16:46 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14 15:59-16:28/29<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48 17:52-17:59/7<br>18:54 | 07:51 15:30-15:58/28<br>16:44 | 08:46<br>16:05 |
| 9 | 08:57<br>16:25 | 08:12 15:59-16:28/29<br>17:25 | 07:07<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 17:49-18:01/12<br>18:52 | 07:53 15:30-15:57/27<br>16:42 | 08:47<br>16:05 |
| 10 | 08:57<br>16:26 | 08:10 16:00-16:28/28<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 | 05:06<br>22:12 | 05:56<br>21:21 | 06:55<br>20:07 | 07:52 17:47-18:02/15<br>18:49 | 07:55 15:30-15:56/26<br>16:40 | 08:48<br>16:05 |
| 11 | 08:56<br>16:28 | 08:08 16:01-16:27/26<br>17:30 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:45-18:03/18<br>18:47 | 07:57 15:31-15:56/25<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:30 | 08:06 16:01-16:26/25<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:44-18:04/20<br>18:44 | 07:59 15:33-15:56/23<br>16:36 | 08:51<br>16:04 |
| 13 | 08:54<br>16:31 | 08:04 16:02-16:26/24<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:44-18:04/20<br>18:42 | 08:01 15:34-15:54/20<br>16:34 | 08:52<br>16:04 |
| 14 | 08:53<br>16:33 | 08:02 16:04-16:25/21<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:16 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 17:43-18:04/21<br>18:39 | 08:03 15:35-15:53/18<br>16:33 | 08:53<br>16:04 |
| 15 | 08:52<br>16:35 | 07:59 16:04-16:22/18<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 17:43-18:03/20<br>18:37 | 08:05 15:36-15:51/15<br>16:31 | 08:54<br>16:04 |
| 16 | 08:51<br>16:37 | 07:57 16:07-16:21/14<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04 17:44-18:04/20<br>18:35 | 08:07 15:39-15:50/11<br>16:29 | 08:55<br>16:04 |
| 17 | 08:50<br>16:38 | 07:55 16:12-16:17/5<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 17:44-18:01/17<br>18:32 | 08:09 15:44-15:45/1<br>16:28 | 08:56<br>16:04 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 | 05:16<br>22:03 | 06:11<br>21:03 | 07:10<br>19:46 | 08:08 17:45-17:59/14<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:48<br>16:42 | 07:50<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 17:45-17:56/11<br>18:27 | 08:13<br>16:25 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 | 05:20<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 17:47-17:54/7<br>18:25 | 08:15<br>16:23 | 08:58<br>16:05 |
| 21 | 08:45<br>16:46 | 07:46 17:18-17:21/3<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:17<br>21:46 | 04:52<br>22:19 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 17:50-17:51/1<br>18:23 | 08:17<br>16:22 | 08:58<br>16:05 |
| 22 | 08:44<br>16:48 | 07:44 17:16-17:24/8<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41 17:14-17:26/12<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:52 | 07:39 17:13-17:28/15<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23<br>16:18 | 09:00<br>16:07 |
| 25 | 08:39 16:10-16:12/2<br>16:54 | 07:36 17:12-17:30/18<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 | 05:11<br>21:52 | 04:53<br>22:19 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 15:39-15:48/9<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 08:38 16:05-16:16/11<br>16:56 | 07:34 17:12-17:32/20<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 | 05:29<br>21:51 | 06:27<br>20:44 | 07:25<br>19:25 | 07:24 15:36-15:51/15<br>17:11 | 08:27<br>16:15 | 09:01<br>16:08 |
| 27 | 08:36 16:04-16:20/16<br>16:58 | 07:32 17:11-17:31/20<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 15:33-15:52/19<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 08:35 16:03-16:21/18<br>17:00 | 07:29 17:11-17:31/20<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:07<br>21:57 | 04:55<br>22:19 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 15:33-15:54/21<br>17:07 | 08:30<br>16:13 | 09:01<br>16:10 |
| 29 | 08:33 16:02-16:23/21<br>17:02 | | 07:16<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:56<br>22:19 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 15:31-15:55/24<br>17:04 | 08:32<br>16:12 | 09:01<br>16:11 |
| 30 | 08:31 16:01-16:24/23<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 15:30-15:56/26<br>17:02 | 08:33<br>16:11 | 09:01<br>16:12 |
| 31 | 08:29 16:00-16:25/25<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 15:29-15:56/27<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 116 | 533 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 394 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 09:43-10:16/33<br>17:08 | 07:27 17:18-17:39/21<br>18:07 | 07:08 18:55-19:32/37<br>20:09 | 05:55<br>21:08 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 09:44-10:15/31<br>17:10 | 07:24 17:17-17:39/22<br>18:09 | 07:05 18:58-19:33/35<br>20:11 | 05:53<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24 09:45-10:15/30<br>17:12 | 07:22 17:17-17:40/23<br>18:11 | 07:03 18:59-19:32/33<br>20:13 | 05:51<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 09:48-09:53/5<br>16:17 | 08:22 09:46-10:14/28<br>17:14 | 07:19 17:16-17:39/23<br>18:13 17:44-17:45/1 | 07:00 18:59-19:31/32<br>20:15 | 05:48<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 09:46-09:55/9<br>16:19 | 08:20 09:47-10:13/26<br>17:16 | 07:17 17:16-17:40/24<br>18:15 17:41-17:48/7 | 06:58 19:00-19:31/31<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:45-09:58/13<br>16:20 | 08:18 09:48-10:11/23<br>17:19 | 07:14 17:16-17:49/33<br>18:18 | 06:55 19:00-19:30/30<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 09:44-09:59/15<br>16:22 | 08:16 09:50-10:09/19<br>17:21 | 07:12 17:17-17:52/35<br>18:20 | 06:52 19:01-19:30/29<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 09:43-10:01/18<br>16:23 | 08:14 09:52-10:07/15<br>17:23 | 07:09 17:17-17:54/37<br>18:22 | 06:50 19:01-19:28/27<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 09:43-10:02/19<br>16:25 | 08:12 09:56-10:04/8<br>17:25 | 07:07 17:17-17:55/38<br>18:24 | 06:47 19:02-19:28/26<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 09:42-10:03/21<br>16:26 | 08:10<br>17:27 | 07:04 17:19-17:58/39<br>18:26 | 06:45 19:02-19:26/24<br>20:27 | 05:36<br>21:26 | 04:54<br>22:12 |
| 11 | 08:56 09:42-10:04/22<br>16:28 | 08:08<br>17:29 | 07:02 17:20-18:00/40<br>18:28 | 06:42 19:04-19:24/20<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:42-10:06/24<br>16:29 | 08:06<br>17:31 | 06:59 17:26-17:27/1<br>18:30 17:31-18:02/31 | 06:40 19:06-19:23/17<br>20:31 | 05:32<br>21:30 | 04:53<br>22:14 |
| 13 | 08:54 09:41-10:07/26<br>16:31 | 08:04<br>17:34 | 06:57 17:30-18:04/34<br>18:32 | 06:37 19:08-19:19/11<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 09:41-10:08/27<br>16:33 | 08:01<br>17:36 | 06:54 17:30-18:07/37<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 09:40-10:08/28<br>16:35 | 07:59<br>17:38 | 06:51 17:30-18:08/38<br>18:36 | 06:32<br>20:37 | 05:27<br>21:35 | 04:52<br>22:16 |
| 16 | 08:51 09:40-10:10/30<br>16:36 | 07:57<br>17:40 | 06:49 17:29-18:10/41<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:41-10:11/30<br>16:38 | 07:55<br>17:42 | 06:46 17:30-18:13/43<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:40-10:11/31<br>16:40 | 07:52<br>17:44 | 06:44 17:30-18:14/44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 09:40-10:12/32<br>16:42 | 07:50<br>17:46 | 06:41 17:32-18:17/45<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:40-10:12/32<br>16:44 | 07:48<br>17:48 | 06:39 17:33-18:18/45<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 09:40-10:14/34<br>16:46 | 07:46<br>17:51 | 06:36 17:34-18:19/45<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 09:40-10:14/34<br>16:48 | 07:43<br>17:53 | 06:34 17:37-18:21/44<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:40-10:14/34<br>16:50 | 07:41<br>17:55 | 06:31 17:39-18:24/45<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:41-10:15/34<br>16:52 | 07:39<br>17:57 | 06:28 17:41-18:27/46<br>18:54 | 06:11<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:15/35<br>16:54 | 07:36 17:27-17:30/3<br>17:59 | 06:26 17:42-18:28/46<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:40-10:15/35<br>16:56 | 07:34 17:22-17:32/10<br>18:01 | 06:23 17:44-18:29/45<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:41-10:15/34<br>16:58 | 07:31 17:21-17:35/14<br>18:03 | 06:21 17:46-18:30/44<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 09:42-10:16/34<br>17:00 | 07:29 17:19-17:36/17<br>18:05 | 06:18 17:48-18:30/42<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 09:42-10:16/34<br>17:02 | | 07:15 18:50-19:31/41<br>20:03 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:42-10:16/34<br>17:04 | | 07:13 18:51-19:31/40<br>20:05 | 05:57<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 09:43-10:16/33<br>17:06 | | 07:10 18:54-19:32/38<br>20:07 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 757 | 257 | 1178 | 352 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 19:03-19:23/20 | 07:34 18:10-18:42/32 | 07:36 | 08:35 09:24-09:47/23 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 | 06:40 19:01-19:25/24 | 07:36 18:01-18:40/39 | 07:39 09:25-09:34/9 | 08:37 09:25-09:46/21 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 19:00-19:26/26 | 07:38 17:58-18:37/39 | 07:41 09:22-09:37/15 | 08:38 09:27-09:46/19 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 18:59-19:26/27 | 07:40 17:56-18:35/39 | 07:43 09:19-09:39/20 | 08:40 09:27-09:45/18 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 18:57-19:26/29 | 07:42 17:54-18:32/38 | 07:45 09:18-09:42/24 | 08:41 09:29-09:45/16 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 18:56-19:26/30 | 07:44 17:53-18:29/36 | 07:47 09:17-09:43/26 | 08:43 09:31-09:44/13 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 18:56-19:26/30 | 07:46 17:52-18:27/35 | 07:49 09:16-09:44/28 | 08:44 09:33-09:43/10 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 18:55-19:26/31 | 07:48 17:52-18:24/32 | 07:51 09:15-09:44/29 | 08:45 09:36-09:41/5 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 18:54-19:26/32 | 07:50 17:51-18:15/24 | 07:53 09:15-09:46/31 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 18:17-18:22/5 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 18:50-19:25/35 | 07:52 17:51-18:14/23 | 07:55 09:14-09:46/32 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 18:48-19:24/36 | 07:54 17:51-18:14/23 | 07:57 09:14-09:47/33 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 18:46-19:24/38 | 07:56 17:51-18:13/22 | 07:59 09:13-09:47/34 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:00 18:43-19:23/40 | 07:58 17:52-18:11/19 | 08:01 09:14-09:48/34 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:41-19:22/41 | 08:00 17:52-18:08/16 | 08:03 09:14-09:48/34 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | 06:05 | 07:04 18:38-19:20/42 | 08:02 17:54-18:06/12 | 08:05 09:13-09:48/35 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:07 | 07:06 18:35-19:19/44 | 08:04 17:56-18:03/7 | 08:07 09:13-09:48/35 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 18:33-19:17/44 | 08:06 | 08:09 09:14-09:49/35 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 18:30-19:16/46 | 08:08 | 08:11 09:15-09:49/34 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 18:28-19:14/46 | 08:10 | 08:13 09:15-09:49/34 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:26-19:11/45 | 08:12 | 08:15 09:15-09:49/34 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 18:23-19:07/44 | 08:14 | 08:17 09:15-09:49/34 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 18:21-19:05/44 | 08:16 | 08:19 09:16-09:49/33 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:18-19:04/46 | 08:18 | 08:21 09:16-09:48/32 | 08:59 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:22 | 07:21 18:15-19:00/45 | 08:20 | 08:23 09:18-09:49/31 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 18:13-18:58/45 | 07:22 | 08:24 09:19-09:49/30 | 09:00 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:12-18:55/43 | 07:24 | 08:26 09:20-09:49/29 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:11-18:53/42 | 07:26 | 08:28 09:20-09:49/29 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:30 | 07:29 18:11-18:50/39 | 07:28 | 08:30 09:21-09:48/27 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 18:10-18:47/37 | 07:30 | 08:32 09:21-09:47/26 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 19:09-19:20/11 | 07:33 18:10-18:45/35 | 07:32 | 08:33 09:23-09:47/24 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 19:05-19:22/17 | | 07:34 | | 09:01 |
| | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 28 | 1126 | 441 | 851 | 125 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:58-12:21/23 09:46-10:22/36 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 10:24-10:36/12 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:00 12:00-12:21/21 09:46-10:22/36 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 10:24-10:36/12 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 |
| 3 | 09:00 12:01-12:21/20 09:47-10:22/35 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 10:26-10:36/10 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:02-12:20/18 09:47-10:22/35 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 10:27-10:34/7 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 12:03-12:19/16 10:29-10:32/3 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:35-09:37/2 09:47-10:22/35 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:06-12:19/13 09:48-10:23/35 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:35-09:39/4 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 12:07-12:18/11 09:48-10:22/34 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:34-09:41/7 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:11-12:14/3 09:48-10:22/34 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:33-09:42/9 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 09:32-09:43/11 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:49-10:22/33 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 09:31-09:44/13 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:49-10:21/32 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 09:30-09:45/15 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:50-10:20/30 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-09:46/17 09:51-10:11/20 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 10:13-10:19/6 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-09:47/19 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:52-10:11/19 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 09:28-09:48/20 | 08:01 | 06:54 18:04-18:07/3 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:53-10:11/18 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 09:28-09:49/21 | 07:59 | 06:52 18:01-18:08/7 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:54-10:11/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:28-09:49/21 | 07:57 | 06:49 17:59-18:10/11 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:54-10:10/16 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:28-09:50/22 | 07:55 | 06:46 17:58-18:13/15 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:56-10:10/14 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-09:50/22 | 07:53 | 06:44 17:57-18:14/17 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:57-10:09/12 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 09:28-09:51/23 | 07:50 | 06:41 17:57-18:17/20 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:59-10:08/9 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:28-09:51/23 | 07:48 | 06:39 17:56-18:17/21 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 09:29-09:52/23 | 07:46 | 06:36 17:56-18:16/20 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:29-09:51/22 | 07:43 | 06:34 17:56-18:16/20 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:30-09:52/22 | 07:41 | 06:31 17:56-18:14/18 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:30-09:52/22 | 07:39 | 06:28 17:58-18:13/15 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 09:31-09:51/20 | 07:36 | 06:26 17:59-18:11/12 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:31-09:51/20 | 07:34 | 06:23 18:01-18:07/6 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:33-09:51/18 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 09:34-09:50/16 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:36-09:49/13 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:38-09:47/9 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 | | 05:03 | |
| | 17:06 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1109 | 0 | 185 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:36 | 08:35 09:12-09:27/15 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 09:32-10:02/30 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 09:14-09:27/13 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 09:32-10:04/32 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 09:16-09:27/11 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 09:33-10:06/33 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 11:56-11:58/2 09:32-10:06/34 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 09:17-09:26/9 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 11:53-12:03/10 09:33-10:07/34 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 09:19-09:26/7 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 11:52-12:05/13 09:34-10:09/35 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 09:21-09:26/5 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 11:50-12:06/16 10:17-10:19/2 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 09:22-09:24/2 09:34-10:09/35 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 11:50-12:08/18 09:35-10:10/35 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 10:15-10:22/7 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 11:50-12:09/19 09:35-10:10/35 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 10:14-10:24/10 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 11:49-12:10/21 09:35-10:11/36 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 10:13-10:25/12 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 11:49-12:12/23 09:36-10:12/36 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 10:14-10:26/12 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 09:09-09:18/9 | 08:50 11:49-12:12/23 09:36-10:12/36 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 10:14-10:27/13 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 09:08-09:21/13 | 08:51 11:49-12:13/24 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:37-10:28/51 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:06-09:22/16 | 08:53 11:49-12:14/25 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 09:37-10:29/52 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 09:05-09:23/18 | 08:54 11:49-12:14/25 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 09:37-10:29/52 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 09:04-09:24/20 | 08:54 11:49-12:15/26 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 09:38-10:30/52 |
| 17 | 05:15 | 06:09 | 07:08 18:51-18:55/4 | 08:06 | 08:09 09:05-09:25/20 | 08:55 11:50-12:16/26 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 09:39-10:31/52 |
| 18 | 05:16 | 06:11 | 07:10 18:47-18:58/11 | 08:08 | 08:11 09:04-09:26/22 | 08:56 11:50-12:17/27 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:39-10:32/53 |
| 19 | 05:18 | 06:13 | 07:12 18:45-19:00/15 | 08:10 | 08:13 09:04-09:26/22 | 08:57 11:50-12:17/27 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:40-10:32/52 |
| 20 | 05:19 | 06:15 | 07:14 18:43-19:01/18 | 08:12 | 08:15 09:04-09:26/22 | 08:58 11:51-12:18/27 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 09:40-10:32/52 |
| 21 | 05:21 | 06:17 | 07:15 18:42-19:01/19 | 08:14 | 08:17 09:04-09:27/23 | 08:58 11:52-12:18/26 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 09:41-10:33/52 |
| 22 | 05:23 | 06:19 | 07:17 18:41-19:01/20 | 08:16 | 08:19 09:04-09:27/23 | 08:59 11:52-12:18/26 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:41-10:33/52 |
| 23 | 05:24 | 06:21 | 07:19 18:41-19:01/20 | 08:18 | 08:21 09:05-09:28/23 | 08:59 11:53-12:19/26 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 09:36-09:45/9 | 16:06 09:42-10:34/52 |
| 24 | 05:26 | 06:23 | 07:21 18:40-19:00/20 | 08:20 | 08:23 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 09:35-09:47/12 | 16:06 09:42-10:34/52 |
| 25 | 05:27 | 06:24 | 07:23 18:40-18:58/18 | 07:22 | 08:24 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 09:34-09:48/14 | 16:07 09:42-10:34/52 |
| 26 | 05:29 | 06:26 | 07:25 18:40-18:55/15 | 07:24 | 08:26 09:07-09:28/21 | 09:00 11:54-12:20/26 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 09:33-09:49/16 | 16:08 09:42-10:35/53 |
| 27 | 05:31 | 06:28 | 07:27 18:40-18:53/13 | 07:26 | 08:28 09:07-09:28/21 | 09:01 11:54-12:20/26 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:33-09:50/17 | 16:09 09:43-10:35/52 |
| 28 | 05:33 | 06:30 | 07:29 18:41-18:50/9 | 07:28 | 08:30 09:08-09:28/20 | 09:01 11:55-12:20/25 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 09:33-09:51/18 | 16:09 09:43-10:35/52 |
| 29 | 05:34 | 06:32 | 07:31 18:43-18:47/4 | 07:30 | 08:32 09:09-09:28/19 | 09:01 11:56-12:21/25 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 09:33-09:52/19 | 16:10 09:44-10:35/51 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 09:10-09:27/17 09:32-09:52/20 | 09:01 11:57-12:21/24 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 09:54-10:00/6 | 16:11 09:44-10:36/52 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:01 11:58-12:21/23 09:45-10:21/36 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 10:22-10:36/14 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 186 | 0 | 504 | 2148 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:44-13:42/58 | 08:27 12:52-13:57/65 10:04-10:09/5 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:39-10:37/58 | 17:08 09:03-09:23/20 09:32-10:00/28 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:01 12:45-13:43/58 | 08:26 12:53-13:56/63 09:33-09:59/26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:38-10:37/59 | 17:10 09:02-09:24/22 | 18:09 | 20:11 | 21:11 | 22:04 |
| 3 | 09:00 12:46-13:45/59 | 08:24 12:53-13:56/63 09:34-09:59/25 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 09:39-10:38/59 | 17:12 09:01-09:26/25 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:45-13:45/60 | 08:22 12:54-13:56/62 09:35-09:58/23 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 09:38-10:38/60 | 17:14 09:01-09:27/26 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 12:45-13:45/60 | 08:20 12:55-13:56/61 09:36-09:57/21 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:39-10:38/59 | 17:17 09:00-09:28/28 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:46-13:46/60 | 08:18 12:55-13:54/59 09:37-09:55/18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:39-10:39/60 | 17:19 08:59-09:27/28 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 12:46-13:47/61 | 08:16 12:56-13:54/58 08:59-09:28/29 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:38-10:39/61 | 17:21 08:46-08:55/9 09:39-09:53/14 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:46-13:47/61 | 08:14 12:57-13:53/56 08:59-09:29/30 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:38-10:40/62 | 17:23 08:44-08:58/14 09:43-09:50/7 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 12:46-13:48/62 | 08:12 12:58-13:52/54 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:38-10:40/62 | 17:25 08:42-09:29/47 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 12:46-13:49/63 | 08:10 13:00-13:52/52 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:38-10:40/62 | 17:27 08:41-09:29/48 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 12:46-13:49/63 | 08:08 13:00-13:50/50 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:35-10:41/66 | 17:29 08:40-09:29/49 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:47-13:50/63 | 08:06 13:02-13:49/47 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 09:34-10:41/67 | 17:31 08:39-09:29/50 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:47-13:51/64 | 08:04 13:04-13:47/43 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:33-10:42/69 | 17:34 08:39-09:29/50 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 12:47-13:52/65 | 08:01 13:07-13:46/39 | 06:54 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:33-10:42/69 | 17:36 08:39-09:29/50 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 12:47-13:51/64 | 07:59 13:09-13:43/34 | 06:52 | 06:33 | 05:27 | 04:52 |
| | 16:35 09:32-10:42/70 | 17:38 08:38-09:27/49 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 12:47-13:52/65 | 07:57 13:12-13:40/28 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:31-10:42/71 | 17:40 08:38-09:27/49 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 12:48-13:53/65 | 07:55 13:16-13:35/19 | 06:46 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:31-10:42/71 | 17:42 08:39-09:26/47 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 12:47-13:53/66 | 07:53 08:38-09:24/46 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:30-10:42/72 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 12:48-13:54/66 | 07:50 08:39-09:04/25 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:30-10:42/72 | 17:46 09:05-09:23/18 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 12:48-13:54/66 | 07:48 08:39-09:03/24 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 09:29-10:41/72 | 17:48 09:07-09:19/12 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 12:48-13:55/67 | 07:46 08:40-09:02/22 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 09:30-10:41/71 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 12:48-13:55/67 | 07:43 08:42-09:01/19 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 09:29-10:41/72 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 12:48-13:55/67 | 07:41 08:42-08:59/17 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:30-10:41/71 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 12:49-13:56/67 | 07:39 08:45-08:57/12 | 06:28 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:30-10:39/69 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 12:49-13:56/67 09:29-10:18/49 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 10:20-10:38/18 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 12:49-13:56/67 09:29-10:18/49 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 10:21-10:36/15 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 12:49-13:56/67 09:30-10:18/48 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:25-10:34/9 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 12:51-13:57/66 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:31-10:17/46 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 12:51-13:57/66 09:31-10:16/45 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 09:11-09:14/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 12:51-13:57/66 09:31-10:15/44 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 09:07-09:19/12 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 12:52-13:57/65 09:32-10:13/41 | | 07:10 | | 05:03 | |
| | 17:06 09:05-09:21/16 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3960 | 1885 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 12:28-13:20/52 | 08:35 12:28-13:31/63 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 08:11-08:59/48 | 16:10 09:17-10:23/66 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 12:28-13:22/54 | 08:37 12:29-13:32/63 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 08:12-08:59/47 | 16:09 09:21-10:23/62 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 12:27-13:23/56 09:12-09:20/8 | 08:38 12:30-13:32/62 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 08:14-08:58/44 | 16:08 09:22-10:24/62 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 12:25-13:23/58 08:28-08:58/30 | 08:40 12:30-13:32/62 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 08:16-08:24/8 09:08-09:23/15 | 16:07 09:22-10:24/62 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 12:25-13:25/60 09:07-09:26/19 | 08:41 12:31-13:32/61 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 08:30-08:58/28 | 16:07 09:23-10:24/61 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 12:25-13:25/60 09:06-09:27/21 | 08:43 12:32-13:33/61 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 08:30-08:57/27 | 16:06 09:25-10:25/60 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 12:24-13:26/62 09:04-09:28/24 | 08:44 12:32-13:32/60 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 08:31-08:56/25 | 16:06 09:25-10:25/60 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 12:23-13:26/63 09:03-09:29/26 | 08:45 12:33-13:33/60 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 08:31-08:55/24 | 16:05 09:26-10:26/60 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 12:23-13:27/64 09:04-09:30/26 | 08:47 12:34-13:33/59 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 08:33-08:55/22 | 16:05 09:27-10:26/59 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 12:23-13:27/64 09:34-09:41/7 | 08:48 12:34-13:33/59 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 08:34-08:54/20 09:03-09:31/28 | 16:04 09:28-10:26/58 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 12:22-13:28/66 09:02-09:44/42 | 08:49 12:35-13:33/58 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 08:36-08:52/16 | 16:04 09:29-10:27/58 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 12:22-13:28/66 09:02-09:46/44 | 08:50 12:36-13:34/58 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 08:38-08:49/11 | 16:04 09:29-10:27/58 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 12:23-13:29/66 | 08:52 12:36-13:34/58 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 09:03-09:48/45 | 16:04 09:30-10:27/57 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 12:23-13:29/66 | 08:53 12:37-13:34/57 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 09:02-09:49/47 | 16:04 09:31-10:27/56 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 12:22-13:29/67 09:02-09:50/48 | 08:54 12:37-13:34/57 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 09:57-10:06/9 | 16:04 09:32-10:28/56 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 12:22-13:29/67 09:02-09:51/49 | 08:54 12:38-13:34/56 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 09:54-10:09/15 | 16:04 09:33-10:28/55 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 09:19-09:26/7 | 08:09 12:23-13:30/67 09:03-09:52/49 | 08:55 12:39-13:35/56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 09:54-10:12/18 | 16:04 09:34-10:29/55 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 09:15-09:29/14 | 08:11 12:23-13:30/67 | 08:56 12:39-13:36/57 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 09:04-10:13/69 | 16:04 09:35-10:29/54 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 09:13-09:31/18 | 08:13 12:23-13:30/67 | 08:57 12:39-13:35/56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 09:04-10:15/71 | 16:04 09:36-10:30/54 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 09:11-09:32/21 | 08:15 12:23-13:30/67 | 08:58 12:40-13:36/56 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 09:04-10:16/72 | 16:04 09:36-10:30/54 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 09:10-09:33/23 | 08:17 12:23-13:30/67 | 08:58 12:41-13:37/56 |
| | 21:58 | 20:56 | 19:38 | 18:22 09:41-09:47/6 | 16:22 09:05-10:17/72 | 16:05 09:37-10:31/54 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 09:09-09:33/24 | 08:19 12:24-13:30/66 | 08:59 12:41-13:37/56 |
| | 21:57 | 20:54 | 19:35 | 18:20 09:36-09:51/15 | 16:20 09:05-10:17/72 | 16:05 09:37-10:31/54 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 09:09-09:34/25 | 08:21 12:24-13:30/66 | 08:59 12:42-13:38/56 |
| | 21:55 | 20:51 | 19:33 | 18:18 09:35-09:54/19 | 16:19 09:07-10:19/72 | 16:06 09:38-10:32/54 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 13:54-13:59/5 | 08:23 12:25-13:31/66 | 09:00 12:42-13:38/56 |
| | 21:54 | 20:49 | 19:30 | 18:15 09:09-09:55/46 | 16:17 09:08-10:20/72 | 16:06 09:38-10:32/54 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 12:45-13:07/22 | 08:25 12:26-13:31/65 | 09:00 12:42-13:38/56 |
| | 21:52 | 20:47 | 19:27 | 17:13 08:08-08:56/48 | 16:16 09:09-10:20/71 | 16:07 09:38-10:32/54 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 12:41-13:10/29 | 08:26 12:26-13:31/65 | 09:00 12:43-13:39/56 |
| | 21:50 | 20:44 | 19:25 | 17:11 08:08-08:57/49 | 16:15 09:10-10:21/71 | 16:08 09:38-10:33/55 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 12:37-13:13/36 | 08:28 12:27-13:31/64 | 09:01 12:43-13:39/56 |
| | 21:49 | 20:42 | 19:22 | 17:09 08:08-08:57/49 | 16:14 09:11-10:21/70 | 16:09 09:38-10:33/55 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 12:36-13:16/40 | 08:30 12:27-13:32/65 | 09:01 12:43-13:40/57 |
| | 21:47 | 20:39 | 19:20 | 17:06 08:09-08:58/49 | 16:13 09:13-10:22/69 | 16:09 09:38-10:34/56 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 12:33-13:17/44 | 08:32 12:27-13:31/64 | 09:01 12:44-13:41/57 |
| | 21:45 | 20:37 | 19:17 | 17:04 08:09-08:58/49 | 16:12 09:14-10:23/69 | 16:10 09:38-10:34/56 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 12:32-13:18/46 | 08:33 12:28-13:31/63 | 09:01 12:44-13:41/57 |
| | 21:43 | 20:34 | 19:15 | 17:02 08:09-08:58/49 | 16:11 09:15-10:22/67 | 16:11 09:38-10:35/57 |
| 31 | 05:38 | 06:36 | | 07:34 12:30-13:20/50 | | 09:01 12:45-13:42/57 |
| | 21:42 | 20:32 | | 17:00 08:10-08:58/48 | | 16:12 09:38-10:36/58 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 831 | 3717 | 3573 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 43 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:38-08:01/23 | 05:55 | 06:49-08:15/86 | 05:02 | 06:38-07:53/75 |
| | 16:14 | 17:08 | 18:07 | | 20:10 | | 21:09 | | 22:03 | |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:36-08:01/25 | 05:53 | 06:47-08:13/86 | 05:01 | 06:38-07:53/75 |
| | 16:15 | 17:10 | 18:09 | | 20:12 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:32-08:07/35 | 05:51 | 06:46-08:12/86 | 05:00 | 06:39-07:54/75 |
| | 16:16 | 17:12 | 18:12 | | 20:14 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:31-08:11/40 | 05:48 | 06:44-08:11/87 | 04:59 | 06:39-07:54/75 |
| | 16:17 | 17:14 | 18:14 | | 20:16 | | 21:15 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:29-08:13/44 | 05:46 | 06:43-08:09/86 | 04:58 | 06:39-07:53/74 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:28-08:16/48 | 05:44 | 06:42-08:08/86 | 04:57 | 06:40-07:54/74 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 07:20-07:26/6 | 21:18 | | 22:09 | |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:17-08:17/60 | 05:42 | 06:41-08:06/85 | 04:56 | 06:40-07:53/73 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:15-08:19/64 | 05:40 | 06:40-08:03/83 | 04:56 | 06:40-07:53/73 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | 07:12-08:19/67 | 05:38 | 06:39-08:01/82 | 04:55 | 06:41-07:53/72 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:10-08:20/70 | 05:36 | 06:39-07:57/78 | 04:54 | 06:41-07:53/72 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:13 | |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 07:09-08:20/71 | 05:34 | 06:39-07:53/74 | 04:54 | 06:41-07:53/72 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:09-08:21/72 | 05:32 | 06:38-07:53/75 | 04:53 | 06:42-07:54/72 |
| | 16:29 | 17:32 | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 07:09-08:21/72 | 05:30 | 06:37-07:53/76 | 04:53 | 06:43-07:54/71 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 07:08-08:22/74 | 05:28 | 06:37-07:53/76 | 04:53 | 06:42-07:53/71 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | 07:09-08:22/73 | 05:27 | 06:37-07:54/77 | 04:52 | 21:37-21:38/1 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 | 06:43-07:53/70 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:09-08:22/73 | 05:25 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 | 06:43-07:54/71 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 07:10-08:22/72 | 05:23 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 | 06:43-07:54/71 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:11-08:23/72 | 05:21 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:41 | | 22:18 | 06:44-07:54/70 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:11-08:22/71 | 05:20 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 | 06:44-07:54/70 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:10-08:22/72 | 05:18 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | | 21:44 | | 22:19 | 06:44-07:54/70 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 07:09-08:22/73 | 05:16 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | | 22:19 | 06:44-07:54/70 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 07:07-08:21/74 | 05:15 | 06:36-07:54/78 | 04:52 | 21:37-21:41/4 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 | 06:45-07:55/70 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 07:06-08:20/74 | 05:13 | 06:36-07:54/78 | 04:53 | 21:37-21:41/4 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 | 06:45-07:55/70 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 07:06-08:20/74 | 05:12 | 06:37-07:54/77 | 04:53 | 21:37-21:41/4 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | | 22:19 | 06:45-07:55/70 |
| 25 | 08:39 | 07:36 | 06:26 | 06:50-06:54/4 | 06:09 | 07:05-08:20/75 | 05:10 | 06:37-07:54/77 | 04:53 | 21:38-21:41/3 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 | 06:45-07:56/71 |
| 26 | 08:38 | 07:34 | 06:23 | 06:48-06:58/10 | 06:06 | 07:03-08:18/75 | 05:09 | 06:36-07:53/77 | 04:54 | 21:38-21:41/3 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 | 06:45-07:56/71 |
| 27 | 08:36 | 07:32 | 06:21 | 06:45-06:59/14 | 06:04 | 07:01-08:18/77 | 05:08 | 06:37-07:54/77 | 04:54 | 21:40-21:41/1 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 | 06:46-07:57/71 |
| 28 | 08:35 | 07:29 | 06:18 | 06:43-07:01/18 | 06:02 | 06:56-08:17/81 | 05:06 | 06:37-07:54/77 | 04:55 | 06:45-07:56/71 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 07:40-08:01/21 | 05:59 | 06:53-08:16/83 | 05:05 | 06:37-07:54/77 | 04:55 | 06:46-07:57/71 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 07:40-08:02/22 | 05:57 | 06:51-08:15/84 | 05:04 | 06:38-07:54/76 | 04:56 | 06:45-07:57/72 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:19 | |
| 31 | 08:29 | | 07:11 | 07:39-08:01/22 | | | 05:03 | 06:38-07:53/75 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 111 | | 1974 | | 2456 | | 2195 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 43 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:46-07:57/71 | 05:40 | 06:49-08:03/74 | 06:38 | 07:09-08:19/70 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 06:46-07:58/72 | 05:41 | 06:49-08:03/74 | 06:40 | 07:08-08:18/70 | 07:37 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 | 06:46-07:59/73 | 05:43 | 06:49-08:09/80 | 06:42 | 07:10-08:17/67 | 07:39 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 06:46-07:59/73 | 05:45 | 06:50-08:12/82 | 06:43 | 07:12-08:16/64 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 06:46-07:59/73 | 05:47 | 06:51-08:15/84 | 06:45 | 07:14-08:14/60 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 06:46-07:59/73 | 05:49 | 06:51-08:16/85 | 06:47 | 07:24-08:11/47 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | 07:16-07:22/6 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 06:46-07:59/73 | 05:51 | 06:52-08:18/86 | 06:49 | 07:24-08:09/45 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 06:46-08:00/74 | 05:52 | 06:53-08:19/86 | 06:51 | 07:25-08:06/41 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 06:46-08:00/74 | 05:54 | 06:53-08:20/87 | 06:53 | 07:26-08:01/35 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 06:46-08:00/74 | 05:56 | 06:54-08:21/87 | 06:55 | 07:29-07:54/25 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 06:47-08:02/75 | 05:58 | 06:56-08:22/86 | 06:57 | 07:31-07:54/23 | 07:54 | 07:57 | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:46-08:02/76 | 06:00 | 06:58-08:23/85 | 06:59 | 07:30-07:53/23 | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:46-08:02/76 | 06:02 | 06:59-08:23/84 | 07:00 | 07:30-07:52/22 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:46-08:02/76 | 06:04 | 07:01-08:24/83 | 07:02 | 07:31-07:51/20 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:46-08:02/76 | 06:06 | 07:05-08:25/80 | 07:04 | 07:32-07:50/18 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:46-08:03/77 | 06:07 | 07:11-08:25/74 | 07:06 | 07:34-07:49/15 | 08:04 | 08:07 | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:46-08:03/77 | 06:09 | 07:11-08:26/75 | 07:08 | 07:36-07:47/11 | 08:06 | 08:09 | 08:56 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:46-08:03/77 | 06:11 | 07:11-08:25/74 | 07:10 | 07:38-07:44/6 | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:46-08:04/78 | 06:13 | 07:11-08:26/75 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:46-08:04/78 | 06:15 | 07:12-08:26/74 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:47-08:04/77 | 06:17 | 07:13-08:26/73 | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:46-08:04/78 | 06:19 | 07:13-08:25/72 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:47-08:05/78 | 06:21 | 07:14-08:26/72 | 07:19 | | 08:18 | 08:21 | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:47-08:04/77 | 06:23 | 07:15-08:25/70 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 | 06:47-08:05/78 | 06:25 | 07:14-08:25/71 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:47-08:04/77 | 06:26 | 07:13-08:25/72 | 07:25 | | 07:24 | 08:27 | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:47-08:04/77 | 06:28 | 07:11-08:24/73 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:47-08:04/77 | 06:30 | 07:10-08:23/73 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:48-08:04/76 | 06:32 | 07:09-08:23/74 | 07:31 | | 07:31 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-08:04/76 | 06:34 | 07:09-08:22/73 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-08:03/75 | 06:36 | 07:09-08:21/72 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 2342 | | 2410 | | 668 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 44 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:04-15:46/42 | 07:26 | | 07:07 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:04-15:46/42 | 07:24 | | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:04-15:46/42 | 07:21 | | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:04-15:46/42 | 07:19 | | 07:00 | 05:48 | 04:58 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:05-15:46/41 | 07:16 | 17:22-17:35/13 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:05-15:46/41 | 07:14 | 17:20-17:39/19 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:06-15:46/40 | 07:11 | 17:17-17:40/23 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:20 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:57 | | 08:14 | 15:07-15:46/39 | 07:09 | 17:16-17:42/26 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:06-15:45/39 | 07:06 | 17:14-17:42/28 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:07-15:45/38 | 07:04 | 17:14-17:43/29 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:09-15:44/35 | 07:01 | 17:13-17:43/30 | 06:42 | 05:34 | 04:54 |
| | 16:27 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:10-15:44/34 | 06:59 | 17:11-17:43/32 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 15:15-15:23/8 | 08:03 | 15:10-15:42/32 | 06:56 | 17:11-17:44/33 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | 15:13-15:26/13 | 08:01 | 15:12-15:41/29 | 06:54 | 17:11-17:43/32 | 06:35 | 05:28 | 04:52 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 15:12-15:29/17 | 07:59 | 15:14-15:40/26 | 06:51 | 17:11-17:43/32 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 15:11-15:31/20 | 07:57 | 15:16-15:37/21 | 06:49 | 17:10-17:43/33 | 06:30 | 05:24 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | 15:09-15:32/23 | 07:54 | 15:19-15:34/15 | 06:46 | 17:10-17:42/32 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | 15:09-15:34/25 | 07:52 | | 06:43 | 17:11-17:41/30 | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | 15:08-15:35/27 | 07:50 | | 06:41 | 17:11-17:40/29 | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 15:07-15:37/30 | 07:48 | | 06:38 | 17:12-17:39/27 | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | 15:06-15:38/32 | 07:45 | | 06:36 | 17:13-17:38/25 | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:07-15:40/33 | 07:43 | | 06:33 | 17:15-17:36/21 | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:50 | 21:47 | 22:18 |
| 23 | 08:42 | 15:06-15:40/34 | 07:41 | | 06:31 | 17:16-17:34/18 | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:05-15:41/36 | 07:38 | | 06:28 | 17:19-17:30/11 | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:06-15:43/37 | 07:36 | | 06:25 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:05-15:43/38 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:53 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:05-15:44/39 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:04-15:44/40 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:04-15:45/41 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:04-15:45/41 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:04-15:45/41 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 575 | | 598 | | 523 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 44 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | 05:39 | 06:37 | | 07:34 | 17:51-18:23/32 | 07:36 | 14:37-15:14/37 | 08:35 |
| | 22:17 | 21:39 | 20:29 | | 19:12 | | 16:57 | | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | | 07:36 | 17:51-18:22/31 | 07:38 | 14:36-15:15/39 | 08:36 |
| | 22:17 | 21:37 | 20:26 | | 19:09 | | 16:55 | | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | | 07:38 | 17:52-18:22/30 | 07:40 | 14:36-15:16/40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | | 19:07 | | 16:53 | | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | | 07:40 | 17:52-18:21/29 | 07:42 | 14:36-15:16/40 | 08:39 |
| | 22:16 | 21:33 | 20:21 | | 19:04 | | 16:51 | | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | | 07:42 | 17:52-18:18/26 | 07:44 | 14:35-15:16/41 | 08:41 |
| | 22:15 | 21:31 | 20:19 | | 19:01 | | 16:49 | | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | | 07:44 | 17:53-18:17/24 | 07:46 | 14:35-15:16/41 | 08:42 |
| | 22:15 | 21:29 | 20:16 | | 18:59 | | 16:47 | | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | | 07:46 | 17:54-18:15/21 | 07:49 | 14:35-15:17/42 | 08:44 |
| | 22:14 | 21:27 | 20:14 | | 18:56 | | 16:45 | | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | | 07:48 | 17:57-18:13/16 | 07:51 | 14:35-15:17/42 | 08:45 |
| | 22:13 | 21:25 | 20:11 | | 18:54 | | 16:43 | | 16:05 |
| 9 | 05:04 | 05:54 | 06:52 | | 07:50 | 18:00-18:09/9 | 07:53 | 14:35-15:17/42 | 08:46 |
| | 22:12 | 21:23 | 20:09 | | 18:51 | | 16:41 | | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | | 07:52 | | 07:55 | 14:35-15:16/41 | 08:48 |
| | 22:11 | 21:21 | 20:06 | | 18:49 | | 16:39 | | 16:04 |
| 11 | 05:06 | 05:58 | 06:56 | | 07:54 | | 07:57 | 14:36-15:17/41 | 08:49 |
| | 22:10 | 21:19 | 20:03 | | 18:46 | | 16:38 | | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | | 07:56 | | 07:59 | 14:36-15:17/41 | 08:50 |
| | 22:09 | 21:17 | 20:01 | | 18:44 | | 16:36 | | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | | 07:58 | | 08:01 | 14:36-15:16/40 | 08:51 |
| | 22:08 | 21:14 | 19:58 | | 18:41 | | 16:34 | | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | | 08:00 | | 08:03 | 14:36-15:16/40 | 08:52 |
| | 22:07 | 21:12 | 19:56 | | 18:39 | | 16:32 | | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | | 08:02 | | 08:05 | 14:38-15:17/39 | 08:53 |
| | 22:06 | 21:10 | 19:53 | | 18:36 | | 16:31 | | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | | 08:04 | | 08:07 | 14:38-15:16/38 | 08:54 |
| | 22:05 | 21:08 | 19:50 | | 18:34 | | 16:29 | | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | | 08:06 | | 08:09 | 14:38-15:15/37 | 08:55 |
| | 22:04 | 21:05 | 19:48 | | 18:32 | | 16:27 | | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | | 08:08 | | 08:11 | 14:39-15:15/36 | 08:56 |
| | 22:02 | 21:03 | 19:45 | | 18:29 | | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 18:07-18:16/9 | 08:10 | | 08:13 | 14:40-15:14/34 | 08:56 |
| | 22:01 | 21:01 | 19:43 | | 18:27 | | 16:24 | | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 18:03-18:20/17 | 08:12 | | 08:15 | 14:42-15:15/33 | 08:57 |
| | 21:59 | 20:58 | 19:40 | | 18:24 | | 16:23 | | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 18:01-18:21/20 | 08:14 | | 08:17 | 14:42-15:14/32 | 08:58 |
| | 21:58 | 20:56 | 19:37 | | 18:22 | | 16:21 | | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 17:58-18:22/24 | 08:16 | | 08:18 | 14:43-15:13/30 | 08:58 |
| | 21:57 | 20:53 | 19:35 | | 18:20 | | 16:20 | | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 17:56-18:23/27 | 08:18 | | 08:20 | 14:45-15:12/27 | 08:59 |
| | 21:55 | 20:51 | 19:32 | | 18:17 | | 16:19 | | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 17:55-18:23/28 | 08:20 | 15:53-16:00/7 | 08:22 | 14:46-15:12/26 | 08:59 |
| | 21:53 | 20:49 | 19:30 | | 18:15 | | 16:17 | | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 17:54-18:24/30 | 07:22 | 14:48-15:05/17 | 08:24 | 14:47-15:11/24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | | 17:13 | | 16:16 | | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 17:53-18:24/31 | 07:24 | 14:46-15:08/22 | 08:26 | 14:49-15:10/21 | 09:00 |
| | 21:50 | 20:44 | 19:25 | | 17:11 | | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 17:52-18:24/32 | 07:26 | 14:43-15:10/27 | 08:28 | 14:51-15:08/17 | 09:00 |
| | 21:48 | 20:41 | 19:22 | | 17:08 | | 16:14 | | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 | 17:52-18:24/32 | 07:28 | 14:41-15:11/30 | 08:29 | 14:53-15:07/14 | 09:00 |
| | 21:47 | 20:39 | 19:19 | | 17:06 | | 16:13 | | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 | 17:51-18:24/33 | 07:30 | 14:40-15:12/32 | 08:31 | 14:56-15:04/8 | 09:00 |
| | 21:45 | 20:36 | 19:17 | | 17:04 | | 16:12 | | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 | 17:51-18:24/33 | 07:32 | 14:39-15:13/34 | 08:33 | | 09:00 |
| | 21:43 | 20:34 | 19:14 | | 17:02 | | 16:11 | | 16:11 |
| 31 | 05:37 | 06:35 | | | 07:34 | 14:38-15:14/36 | | | 09:00 |
| | 21:41 | 20:31 | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | | 326 | | 253 | | 224 |
| Sum of minutes with flicker | 0 | 0 | 316 | | 423 | | 983 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 45 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:29-12:48/19 10:05-10:33/28 | 08:28 09:38-09:41/3 | 07:27 | 07:08 | 05:55 19:22-20:00/38 | 05:02 |
| | 16:14 11:47-12:28/41 | 17:08 08:58-09:02/4 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 12:29-12:47/18 10:05-10:33/28 | 08:26 08:55-09:06/11 | 07:24 | 07:05 | 05:53 19:22-20:00/38 | 05:01 |
| | 16:15 11:48-12:28/40 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 12:31-12:47/16 10:06-10:34/28 | 08:24 08:53-09:07/14 | 07:22 | 07:03 | 05:51 19:22-19:59/37 | 05:00 |
| | 16:16 11:49-12:28/39 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 12:32-12:46/14 10:06-10:34/28 | 08:22 08:52-09:09/17 | 07:19 | 07:00 | 05:49 19:23-19:59/36 | 04:59 |
| | 16:18 11:50-12:28/38 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 12:34-12:46/12 10:07-10:35/28 | 08:20 08:52-09:10/18 | 07:17 | 06:58 | 05:46 19:23-19:58/35 | 04:58 |
| | 16:19 11:52-12:28/36 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 12:36-12:44/8 10:07-10:35/28 | 08:18 08:51-09:11/20 | 07:14 | 06:55 | 05:44 19:24-19:58/34 | 04:57 |
| | 16:20 11:53-12:28/35 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 11:55-12:27/32 | 08:16 08:45-09:12/27 | 07:12 | 06:53 | 05:42 19:24-19:57/33 | 04:56 |
| | 16:22 10:08-10:35/27 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 12:05-12:27/22 | 08:14 08:42-09:11/29 | 07:09 | 06:50 | 05:40 19:25-19:56/31 | 04:56 |
| | 16:23 10:08-10:35/27 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 12:06-12:26/20 09:33-09:34/1 | 08:12 08:40-09:12/32 | 07:07 | 06:48 | 05:38 19:25-19:55/30 | 04:55 |
| | 16:25 10:09-10:36/27 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 12:09-12:27/18 09:32-09:38/6 | 08:10 08:38-09:12/34 | 07:04 | 06:45 | 05:36 19:26-19:53/27 | 04:55 |
| | 16:26 10:10-10:37/27 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 12:09-12:25/16 09:31-09:39/8 | 08:08 08:36-09:12/36 | 07:02 | 06:43 | 05:34 19:28-19:53/25 | 04:54 |
| | 16:28 10:10-10:37/27 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:12-12:23/11 09:29-09:40/11 | 08:06 08:33-09:11/38 | 06:59 | 06:40 19:54-20:03/9 | 05:32 19:30-19:51/21 | 04:54 |
| | 16:30 10:10-10:36/26 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:16-12:20/4 09:28-09:41/13 | 08:04 08:31-09:11/40 | 06:57 | 06:38 19:51-20:04/13 | 05:30 19:31-19:49/18 | 04:53 |
| | 16:31 10:11-10:37/26 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 10:12-10:37/25 | 08:02 08:31-09:10/39 | 06:54 | 06:35 19:50-20:06/16 | 05:29 19:33-19:47/14 | 04:53 |
| | 16:33 09:27-09:43/16 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 10:13-10:37/24 | 07:59 08:30-09:08/38 | 06:52 | 06:33 19:39-20:07/28 | 05:27 19:37-19:44/7 | 04:53 |
| | 16:35 09:27-09:44/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 10:13-10:36/23 | 07:57 08:30-09:07/37 | 06:49 | 06:30 19:35-20:07/32 | 05:25 | 04:52 |
| | 16:36 09:26-09:44/18 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 10:14-10:36/22 | 07:55 08:59-09:04/5 | 06:47 | 06:28 19:32-20:08/36 | 05:23 | 04:52 |
| | 16:38 09:26-09:45/19 | 17:42 08:31-08:56/25 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 10:15-10:37/22 | 07:53 08:30-08:55/25 | 06:44 | 06:25 19:30-20:07/37 | 05:21 | 04:52 |
| | 16:40 09:27-09:47/20 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 10:16-10:35/19 | 07:50 08:31-08:54/23 | 06:41 18:11-18:17/6 | 06:23 19:28-20:07/39 | 05:20 | 04:52 |
| | 16:42 09:26-09:47/21 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 10:18-10:35/17 | 07:48 08:33-08:52/19 | 06:39 18:08-18:18/10 | 06:20 19:27-20:07/40 | 05:18 | 04:52 |
| | 16:44 09:27-09:48/21 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:19-10:34/15 | 07:46 08:33-08:45/12 | 06:36 18:07-18:21/14 | 06:18 19:26-20:06/40 | 05:16 | 04:52 |
| | 16:46 09:26-09:48/22 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:21-10:32/11 | 07:44 08:36-08:43/7 | 06:34 18:06-18:22/16 | 06:16 19:25-20:05/40 | 05:15 | 04:52 |
| | 16:48 09:26-09:48/22 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:25-10:30/5 | 07:41 | 06:31 18:05-18:22/17 | 06:13 19:24-20:04/40 | 05:13 | 04:53 |
| | 16:50 09:27-09:49/22 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:27-09:49/22 | 07:39 | 06:29 18:05-18:23/18 | 06:11 19:24-20:02/38 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 09:28-09:48/20 | 07:36 | 06:26 18:04-18:22/18 | 06:09 19:23-20:01/38 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:29-09:49/20 | 07:34 | 06:23 18:05-18:22/17 | 06:06 19:22-20:00/38 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:29-09:49/20 | 07:32 | 06:21 18:05-18:20/15 | 06:04 19:22-20:00/38 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:30-09:48/18 | 07:29 | 06:18 18:06-18:18/12 | 06:02 19:22-20:00/38 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:31-09:47/16 | | 07:16 19:09-19:16/7 | 06:00 19:22-20:00/38 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:32-09:46/14 | | 07:13 | 05:57 19:22-20:00/38 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:29 09:34-09:45/11 | | 07:11 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1355 | 553 | 150 | 636 | 424 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 45 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 19:39-20:02/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:08-08:42/34<br>16:58 | 08:35 11:52-12:07/15 09:13-09:22/9<br>16:10 09:51-10:18/27 |
| 2 | 04:58<br>22:18 | 05:41 19:38-20:04/26<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:10-08:41/31<br>16:56 | 08:37 11:51-12:09/18 09:14-09:20/6<br>16:09 09:52-10:19/27 |
| 3 | 04:58<br>22:17 | 05:43 19:36-20:04/28<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:12-08:41/29<br>16:54 | 08:38 11:50-12:10/20 09:16-09:18/2<br>16:08 09:52-10:20/28 |
| 4 | 04:59<br>22:17 | 05:45 19:35-20:05/30<br>21:34 | 06:44<br>20:22 | 07:40<br>19:04 | 07:43 08:21-08:41/20<br>16:52 08:15-08:20/5 | 08:40 11:50-12:12/22<br>16:08 09:53-10:20/27 |
| 5 | 05:00<br>22:16 | 05:47 19:35-20:06/31<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 08:21-08:41/20<br>16:50 | 08:41 11:40-12:12/32<br>16:07 09:53-10:20/27 |
| 6 | 05:01<br>22:15 | 05:49 19:33-20:06/33<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 08:22-08:40/18<br>16:48 | 08:43 12:23-12:30/7 09:53-10:21/28<br>16:06 11:39-12:14/35 |
| 7 | 05:02<br>22:15 | 05:51 19:33-20:07/34<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 08:22-08:39/17<br>16:46 | 08:44 12:21-12:32/11 09:53-10:21/28<br>16:06 11:38-12:14/36 |
| 8 | 05:03<br>22:14 | 05:52 19:32-20:08/36<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:24-08:38/14<br>16:44 | 08:46 12:20-12:34/14 09:54-10:22/28<br>16:05 11:38-12:16/38 |
| 9 | 05:04<br>22:13 | 05:54 19:31-20:07/36<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 08:26-08:36/10<br>16:42 | 08:47 12:19-12:35/16 09:54-10:22/28<br>16:05 11:37-12:16/39 |
| 10 | 05:06<br>22:12 | 05:56 19:31-20:08/37<br>21:21 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 09:08-09:13/5<br>16:40 08:30-08:32/2 | 08:48 12:20-12:37/17 09:55-10:23/28<br>16:04 11:38-12:18/40 |
| 11 | 05:07<br>22:11 | 05:58 19:30-20:08/38<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:05-09:16/11<br>16:38 | 08:49 12:19-12:38/19 09:56-10:23/27<br>16:04 11:37-12:18/41 |
| 12 | 05:08<br>22:10 | 06:00 19:30-20:09/39<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:04-09:18/14<br>16:36 | 08:51 11:37-12:39/62<br>16:04 09:56-10:23/27 |
| 13 | 05:09<br>22:09 | 06:02 19:29-20:08/39<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 09:03-09:19/16<br>16:34 | 08:52 11:37-12:39/62<br>16:04 09:56-10:23/27 |
| 14 | 05:11<br>22:08 | 06:04 19:29-20:08/39<br>21:13 | 07:02 19:00-19:05/5<br>19:56 | 08:00<br>18:39 | 08:03 09:02-09:20/18<br>16:33 | 08:53 11:37-12:40/63<br>16:04 09:57-10:24/27 |
| 15 | 05:12<br>22:07 | 06:06 19:29-20:08/39<br>21:10 | 07:04 18:57-19:08/11<br>19:54 | 08:02<br>18:37 | 08:05 09:01-09:21/20<br>16:31 | 08:54 11:37-12:41/64<br>16:04 09:57-10:24/27 |
| 16 | 05:14<br>22:06 | 06:08 19:29-20:08/39<br>21:08 | 07:06 18:55-19:09/14<br>19:51 | 08:04<br>18:35 | 08:07 09:02-09:22/20<br>16:29 | 08:55 11:37-12:42/65<br>16:04 09:58-10:24/26 |
| 17 | 05:15<br>22:04 | 06:09 19:30-20:08/38<br>21:06 | 07:08 18:54-19:10/16<br>19:48 | 08:06<br>18:32 | 08:09 09:02-09:22/20<br>16:28 | 08:56 11:38-12:42/64<br>16:04 09:58-10:25/27 |
| 18 | 05:16<br>22:03 | 06:11 19:29-20:06/37<br>21:03 | 07:10 18:52-19:09/17<br>19:46 | 08:08<br>18:30 | 08:11 09:01-09:23/22<br>16:26 | 08:56 11:38-12:43/65<br>16:04 09:59-10:26/27 |
| 19 | 05:18<br>22:02 | 06:13 19:29-20:08/39<br>21:01 | 07:12 18:52-19:09/17<br>19:43 | 08:10<br>18:27 | 08:13 09:59-10:04/5<br>16:25 09:01-09:23/22 | 08:57 11:39-12:44/65<br>16:04 10:00-10:26/26 |
| 20 | 05:19<br>22:00 | 06:15 19:30-20:09/39<br>20:59 | 07:14 18:51-19:09/18<br>19:41 | 08:12 09:05-09:14/9<br>18:25 | 08:15 09:56-10:07/11<br>16:23 09:01-09:23/22 | 08:58 11:39-12:44/65<br>16:05 10:00-10:26/26 |
| 21 | 05:21<br>21:59 | 06:17 19:30-20:10/40<br>20:56 | 07:16 18:51-19:09/18<br>19:38 | 08:14 09:03-09:19/16<br>18:23 | 08:17 09:55-10:10/15<br>16:22 09:03-09:24/21 | 08:58 11:40-12:45/65<br>16:05 10:00-10:27/27 |
| 22 | 05:23<br>21:57 | 06:19 19:30-20:10/40<br>20:54 | 07:18 18:52-19:06/14<br>19:35 | 08:16 09:02-09:23/21<br>18:20 | 08:19 09:54-10:11/17<br>16:20 09:03-09:24/21 | 08:59 11:40-12:45/65<br>16:05 10:00-10:27/27 |
| 23 | 05:24<br>21:56 | 06:21 19:31-20:10/39<br>20:52 | 07:19 18:52-19:04/12<br>19:33 | 08:18 09:01-09:25/24<br>18:18 | 08:21 09:53-10:13/20<br>16:19 09:03-09:24/21 | 09:00 11:41-12:46/65<br>16:06 10:02-10:28/26 |
| 24 | 05:26<br>21:54 | 06:23 19:32-20:11/39<br>20:49 | 07:21 18:54-19:01/7<br>19:30 | 08:20 09:01-09:25/24<br>18:16 | 08:23 09:52-10:14/22<br>16:18 09:04-09:24/20 | 09:00 11:41-12:46/65<br>16:07 10:02-10:28/26 |
| 25 | 05:28<br>21:52 | 06:25 19:34-20:11/37<br>20:47 | 07:23 18:56-18:59/3<br>19:28 | 07:22 08:27-08:34/7<br>17:13 08:00-08:26/26 | 08:25 09:52-10:14/22<br>16:16 09:04-09:23/19 | 09:00 11:41-12:46/65<br>16:07 10:02-10:28/26 |
| 26 | 05:29<br>21:51 | 06:26 19:35-20:10/35<br>20:44 | 07:25<br>19:25 | 07:24 08:00-08:37/37<br>17:11 | 08:27 09:52-10:15/23<br>16:15 09:05-09:23/18 | 09:01 11:43-12:47/64<br>16:08 10:03-10:30/27 |
| 27 | 05:31<br>21:49 | 06:28 19:37-20:09/32<br>20:42 | 07:27<br>19:22 | 07:26 08:00-08:39/39<br>17:09 | 08:28 09:52-10:16/24<br>16:14 09:06-09:23/17 | 09:01 11:43-12:48/65<br>16:09 10:03-10:30/27 |
| 28 | 05:33<br>21:47 | 06:30 19:40-20:08/28<br>20:39 | 07:29<br>19:20 | 07:28 08:00-08:40/40<br>17:07 | 08:30 09:52-10:17/25<br>16:13 09:07-09:23/16 | 09:01 11:44-12:48/64<br>16:10 10:04-10:31/27 |
| 29 | 05:34 19:46-19:56/10<br>21:45 | 06:32 19:51-20:07/16<br>20:37 | 07:31<br>19:17 | 07:31 08:01-08:40/39<br>17:04 | 08:32 11:57-12:01/4 09:09-09:23/14<br>16:12 09:52-10:18/26 | 09:01 11:45-12:48/63<br>16:10 10:04-10:31/27 |
| 30 | 05:36 19:43-19:59/16<br>21:44 | 06:34 19:52-20:05/13<br>20:34 | 07:33<br>19:15 | 07:33 08:03-08:41/38<br>17:02 | 08:34 11:54-12:05/11 09:11-09:22/11<br>16:11 09:52-10:18/26 | 09:01 11:45-12:47/62<br>16:11 10:04-10:31/27 |
| 31 | 05:38 19:41-20:01/20<br>21:42 | 06:36 19:54-20:03/9<br>20:32 | | 07:35 08:06-08:42/36<br>17:00 | | 09:01 11:46-12:48/62<br>16:12 10:05-10:32/27 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 46 | 1028 | 152 | 356 | 819 | 2554 |

Table layout: For each day in each month the following matrix apply

| Day in month | | |
|---|---|---|
| | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 46 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:50-10:11/21 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:38-09:49/11 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 09:50-10:11/21 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:37-09:49/12 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 09:37-10:12/35 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 09:36-10:12/36 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 09:36-10:13/37 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 09:35-10:13/38 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 09:34-10:13/39 | 08:16 | 07:12 17:33-17:45/12 | 06:53 | 05:42 | 04:56 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 09:33-10:14/41 | 08:14 | 07:09 17:30-17:47/17 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 09:33-10:15/42 | 08:12 | 07:07 17:29-17:49/20 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 09:32-10:15/43 | 08:10 | 07:04 17:27-17:49/22 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:31-10:15/44 | 08:08 | 07:02 17:26-17:51/25 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-10:14/45 | 08:06 | 06:59 17:25-17:51/26 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-10:14/46 | 08:04 | 06:57 17:24-17:51/27 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:28-10:14/46 | 08:02 | 06:54 17:24-17:51/27 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:59-10:14/15 | 07:59 | 06:52 17:23-17:51/28 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:28-09:58/30 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:59-10:13/14 | 07:57 | 06:49 17:23-17:51/28 | 06:30 | 05:25 | 04:52 |
| | 16:37 09:28-09:58/30 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 10:01-10:13/12 | 07:55 | 06:47 17:23-17:50/27 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:28-09:58/30 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 10:03-10:12/9 | 07:53 | 06:44 17:23-17:49/26 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:29-09:59/30 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:28-09:58/30 | 07:50 | 06:41 17:24-17:48/24 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:29-09:59/30 | 07:48 | 06:39 17:24-17:47/23 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 09:29-09:58/29 | 07:46 | 06:36 17:26-17:46/20 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:30-09:57/27 | 07:44 | 06:34 17:27-17:43/16 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:31-09:57/26 | 07:41 | 06:31 17:29-17:40/11 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:31-09:55/24 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 09:49-09:52/3 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:32-09:47/15 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:34-09:47/13 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:36-09:46/10 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:38-09:43/5 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:29 | | 07:11 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 939 | 0 | 379 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 46 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 18:03-18:30/27 | 07:37 | 08:35 09:13-09:56/43 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 18:04-18:29/25 | 07:39 | 08:37 09:14-09:57/43 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 18:04-18:28/24 | 07:41 | 08:38 09:16-09:58/42 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 18:05-18:26/21 | 07:43 | 08:40 09:18-09:59/41 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 18:06-18:25/19 | 07:45 | 08:41 09:19-09:59/40 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 18:08-18:22/14 | 07:47 | 08:43 09:21-09:59/38 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 18:11-18:18/7 | 07:49 | 08:44 09:22-09:59/37 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 | 08:46 09:24-10:00/36 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 09:25-10:00/35 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 09:27-10:01/34 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 09:40-10:01/21 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-09:39/11 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 09:41-10:02/21 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:29-09:39/10 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 09:41-10:02/21 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:30-09:39/9 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:10-09:15/5 | 08:53 09:41-10:02/21 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 09:31-09:39/8 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 09:07-09:18/11 | 08:54 09:43-10:04/21 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 09:33-09:40/7 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 09:07-09:20/13 | 08:55 09:42-10:03/21 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 09:33-09:39/6 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 09:23-09:26/3 | 08:56 09:43-10:04/21 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 09:06-09:21/15 | 16:04 09:34-09:39/5 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 09:05-09:29/24 | 08:56 09:44-10:04/20 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:35-09:40/5 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 09:05-09:31/26 | 08:57 09:45-10:05/20 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 09:36-09:40/4 |
| 20 | 05:19 | 06:15 | 07:14 18:16-18:26/10 | 08:12 | 08:15 09:05-09:32/27 | 08:58 09:44-10:05/21 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 09:36-09:40/4 |
| 21 | 05:21 | 06:17 | 07:16 18:13-18:28/15 | 08:14 | 08:17 09:05-09:34/29 | 08:58 09:45-10:06/21 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 09:37-09:41/4 |
| 22 | 05:23 | 06:19 | 07:18 18:11-18:30/19 | 08:16 | 08:19 09:05-09:35/30 | 08:59 09:46-10:07/21 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:38-09:42/4 |
| 23 | 05:24 | 06:21 | 07:19 18:09-18:31/22 | 08:18 | 08:21 09:06-09:35/29 | 09:00 09:46-10:07/21 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 09:38-09:42/4 |
| 24 | 05:26 | 06:23 | 07:21 18:08-18:32/24 | 08:20 | 08:23 09:41-09:49/8 | 09:00 09:46-10:07/21 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 09:06-09:36/30 | 16:07 09:38-09:42/4 |
| 25 | 05:28 | 06:25 | 07:23 18:07-18:32/25 | 07:22 | 08:25 09:39-09:51/12 | 09:00 09:47-10:07/20 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 09:06-09:36/30 | 16:07 09:38-09:43/5 |
| 26 | 05:29 | 06:26 | 07:25 18:06-18:32/26 | 07:24 | 08:27 09:38-09:52/14 | 09:01 09:48-10:08/20 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 09:07-09:37/30 | 16:08 09:39-09:44/5 |
| 27 | 05:31 | 06:28 | 07:27 18:04-18:32/28 | 07:26 | 08:28 09:38-09:53/15 | 09:01 09:48-10:09/21 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:07-09:37/30 | 16:09 09:39-09:45/6 |
| 28 | 05:33 | 06:30 | 07:29 18:04-18:31/27 | 07:28 | 08:30 09:08-09:54/46 | 09:01 09:49-10:09/20 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 09:39-09:46/7 |
| 29 | 05:34 | 06:32 | 07:31 18:03-18:31/28 | 07:31 | 08:32 09:09-09:55/46 | 09:01 09:49-10:10/21 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 09:39-09:47/8 |
| 30 | 05:36 | 06:34 | 07:33 18:03-18:31/28 | 07:33 | 08:34 09:11-09:56/45 | 09:01 09:49-10:10/21 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 09:38-09:47/9 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 09:49-10:10/21 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 09:38-09:48/10 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 252 | 137 | 518 | 960 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 47 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 18:08-18:22/14 | 07:37 15:35-16:05/30 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 16:17-16:22/5 | 07:24 17:34-17:42/8 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 18:06-18:23/17 | 07:39 15:35-16:04/29 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 16:13-16:26/13 | 07:22 17:31-17:43/12 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 18:05-18:23/18 | 07:41 15:36-16:03/27 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 16:11-16:29/18 | 07:19 17:30-17:46/16 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 18:04-18:24/20 | 07:43 15:36-16:02/26 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 16:09-16:31/22 | 07:17 17:29-17:47/18 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:04-18:24/20 | 07:45 15:38-16:02/24 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 16:08-16:32/24 | 07:14 17:27-17:47/20 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 18:03-18:23/20 | 07:47 15:39-16:00/21 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 16:07-16:32/25 | 07:12 17:27-17:47/20 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 18:03-18:23/20 | 07:49 15:41-15:58/17 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 16:06-16:34/28 | 07:09 17:27-17:47/20 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 18:03-18:22/19 | 07:51 15:44-15:57/13 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 16:06-16:35/29 | 07:07 17:27-17:47/20 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 18:04-18:21/17 | 07:53 15:49-15:52/3 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 16:05-16:35/30 | 07:04 17:27-17:46/19 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 18:05-18:19/14 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 16:05-16:36/31 | 07:02 17:28-17:45/17 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 18:06-18:16/10 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 16:04-16:36/32 | 06:59 17:28-17:44/16 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 18:09-18:14/5 | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 16:04-16:36/32 | 06:57 17:29-17:41/12 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 16:04-16:37/33 | 06:54 17:33-17:38/5 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 16:04-16:36/32 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 16:04-16:36/32 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 16:05-16:36/31 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 16:47-16:57/10 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 16:05-16:35/30 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 16:43-17:00/17 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 16:06-16:35/29 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 16:41-17:01/20 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 16:06-16:33/27 | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 16:39-17:03/24 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 16:07-16:33/26 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 16:37-17:03/26 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 16:09-16:32/23 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 16:36-17:04/28 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 16:10-16:30/20 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 16:36-17:05/29 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 16:13-16:28/15 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 16:35-17:06/31 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 16:17-16:22/5 | 06:26 | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 15:34-16:06/32 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 15:34-16:06/32 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 15:33-16:06/33 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 15:34-16:06/32 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 15:34-16:06/32 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 18:10-18:20/10 | 07:33 15:34-16:05/31 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 15:34-16:05/31 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 592 | 203 | 0 | 0 | 0 | 0 | 0 | 10 | 602 | 190 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138WTG: 48 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 10:06-10:25/19 | 08:28 | 07:27 17:35-17:39/4 | 07:08 19:07-19:31/24 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 17:50-18:33/43 | 21:09 | 22:02 |
| 2 | 09:01 10:06-10:25/19 | 08:26 | 07:24 17:32-17:42/10 | 07:05 19:07-19:31/24 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 17:52-18:32/40 | 21:11 | 22:04 |
| 3 | 09:00 10:07-10:25/18 | 08:24 | 07:22 17:30-17:43/13 | 07:03 19:06-19:30/24 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:14 17:52-18:31/39 | 21:13 | 22:05 |
| 4 | 09:00 10:07-10:25/18 | 08:22 | 07:19 17:29-17:46/17 | 07:00 19:07-19:29/22 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:16 17:54-18:30/36 | 21:15 | 22:06 |
| 5 | 09:00 10:08-10:26/18 | 08:20 | 07:17 17:28-17:46/18 | 06:58 19:07-19:28/21 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:18 17:55-18:27/32 | 21:17 | 22:07 |
| 6 | 08:59 10:09-10:25/16 | 08:18 | 07:14 17:27-17:46/19 | 06:55 19:08-19:27/19 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 17:57-18:26/29 | 21:18 | 22:09 |
| 7 | 08:59 10:10-10:25/15 | 08:16 | 07:12 17:27-17:46/19 | 06:53 19:09-19:25/16 | 05:42 | 04:56 |
| | 16:22 | 17:21 | 18:20 | 20:21 17:58-18:23/25 | 21:20 | 22:10 |
| 8 | 08:58 10:10-10:25/15 | 08:14 | 07:09 17:48-17:54/6 | 06:50 19:11-19:23/12 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 17:26-17:46/20 | 20:23 18:02-18:20/18 | 21:22 | 22:11 |
| 9 | 08:57 10:12-10:25/13 | 08:12 | 07:07 17:47-17:56/9 | 06:48 19:15-19:17/2 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 17:27-17:46/19 | 20:25 18:06-18:14/8 | 21:24 | 22:12 |
| 10 | 08:57 10:14-10:25/11 | 08:10 | 07:04 17:45-17:58/13 17:09-17:26/17 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 17:27-17:44/17 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 10:15-10:24/9 | 08:08 | 07:02 17:44-18:01/17 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 17:06-17:43/37 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 10:17-10:22/5 | 08:06 | 06:59 17:43-18:02/19 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 17:03-17:41/38 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:42-18:04/22 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 17:00-17:38/38 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 06:54 17:43-18:07/24 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 16:59-17:35/36 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 17:43-18:08/25 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 16:57-17:36/39 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 17:44-18:11/27 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 | 18:38 16:56-17:37/41 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:47 17:44-18:13/29 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 16:54-17:37/43 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 17:46-18:14/28 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 16:53-17:38/45 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 17:51-18:15/24 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 16:53-17:39/46 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 17:52-18:15/23 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 16:51-17:38/47 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 06:36 17:54-18:15/21 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 16:51-17:39/48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 17:56-18:14/18 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 16:50-17:39/49 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 17:56-18:13/17 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 16:49-17:38/49 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:29 18:22-18:27/5 16:50-17:39/49 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 17:57-18:12/15 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 18:17-18:28/11 16:49-17:38/49 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 17:58-18:10/12 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 18:14-18:31/17 16:49-17:38/49 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 18:01-18:07/6 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 06:21 18:12-18:32/20 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 16:49-17:37/48 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | 07:29 | 06:18 18:10-18:32/22 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 16:49-17:37/48 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 19:09-19:33/24 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 17:49-18:36/47 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 19:08-19:32/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 17:49-18:35/46 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:11 19:08-19:32/24 | | 05:03 | |
| | 17:06 | | 20:08 17:50-18:35/45 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 176 | 0 | 1612 | 434 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

## Calculation: Suminis poveikis Enercon E138WTG: 48 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

### Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 18:22-18:42/20 | 07:37 | 08:35 09:56-10:05/9 |
| | 22:18 | 21:40 | 20:29 | 19:12 17:41-18:19/38 | 16:58 | 16:10 |
| 2 | 04:58 | 05:41 | 06:40 | 07:37 18:22-18:40/18 | 07:39 | 08:37 09:56-10:07/11 |
| | 22:18 | 21:38 | 20:27 | 19:10 17:43-18:21/38 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 19:14-19:15/1 | 07:39 17:46-18:37/51 | 07:41 | 08:38 09:55-10:08/13 |
| | 22:17 | 21:36 | 20:24 18:04-18:12/8 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 19:08-19:20/12 | 07:40 18:23-18:35/12 17:50-18:01/11 | 07:43 | 08:40 09:55-10:10/15 |
| | 22:17 | 21:34 | 20:22 17:59-18:17/18 | 19:04 18:04-18:22/18 | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 19:06-19:22/16 | 07:42 18:24-18:32/8 | 07:45 | 08:41 09:55-10:10/15 |
| | 22:16 | 21:32 | 20:19 17:56-18:20/24 | 19:02 18:03-18:23/20 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 19:04-19:22/18 | 07:44 18:27-18:29/2 | 07:47 | 08:43 09:55-10:12/17 |
| | 22:15 | 21:30 | 20:17 17:52-18:21/29 | 18:59 18:03-18:22/19 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 19:02-19:23/21 | 07:46 18:03-18:22/19 | 07:49 | 08:44 09:55-10:12/17 |
| | 22:15 | 21:28 | 20:14 17:50-18:22/32 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 19:01-19:24/23 | 07:48 18:03-18:22/19 | 07:51 | 08:46 09:55-10:13/18 |
| | 22:14 | 21:26 | 20:12 17:48-18:24/36 | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 19:01-19:24/23 | 07:50 18:03-18:21/18 | 07:53 | 08:47 09:55-10:13/18 |
| | 22:13 | 21:24 | 20:09 17:46-18:25/39 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 19:00-19:24/24 | 07:52 18:03-18:19/16 | 07:55 | 08:48 09:56-10:15/19 |
| | 22:12 | 21:21 | 20:07 17:45-18:26/41 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 19:00-19:24/24 | 07:54 18:04-18:16/12 | 07:57 | 08:49 09:56-10:15/19 |
| | 22:11 | 21:19 | 20:04 17:44-18:26/42 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 18:59-19:24/25 | 07:56 18:06-18:14/8 | 07:59 | 08:51 09:56-10:15/19 |
| | 22:10 | 21:17 | 20:01 17:42-18:26/44 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 18:59-19:23/24 | 07:58 | 08:01 | 08:52 09:56-10:16/20 |
| | 22:09 | 21:15 | 19:59 17:41-18:26/45 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:59-19:23/24 | 08:00 | 08:03 | 08:53 09:56-10:16/20 |
| | 22:08 | 21:13 | 19:56 17:40-18:26/46 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 19:00-19:22/22 | 08:02 | 08:05 | 08:54 09:57-10:17/20 |
| | 22:07 | 21:10 | 19:54 17:39-18:27/48 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 19:01-19:22/21 | 08:04 | 08:07 | 08:55 09:57-10:17/20 |
| | 22:06 | 21:08 | 19:51 17:38-18:27/49 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 19:02-19:20/18 17:38-18:27/49 | 08:06 | 08:09 | 08:56 09:58-10:18/20 |
| | 22:04 | 21:06 | 19:48 18:51-18:55/4 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 19:03-19:16/13 17:36-18:26/50 | 08:08 | 08:11 | 08:56 09:58-10:19/21 |
| | 22:03 | 21:03 | 19:46 18:46-18:57/11 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 19:07-19:14/7 17:36-18:25/49 | 08:10 | 08:13 | 08:57 09:59-10:19/20 |
| | 22:02 | 21:01 | 19:43 18:44-18:58/14 | 18:27 | 16:25 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:43-18:59/16 | 08:12 | 08:15 | 08:58 09:59-10:19/20 |
| | 22:00 | 20:59 | 19:41 17:36-18:25/49 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:42-19:00/18 | 08:14 | 08:17 | 08:58 10:00-10:20/20 |
| | 21:59 | 20:56 | 19:38 17:36-18:24/48 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 18:39-19:00/21 | 08:16 | 08:19 | 08:59 10:00-10:20/20 |
| | 21:57 | 20:54 | 19:35 17:36-18:24/48 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:37-19:00/23 | 08:18 | 08:21 | 08:59 10:01-10:21/20 |
| | 21:56 | 20:52 | 19:33 17:36-18:23/47 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 18:35-18:59/24 | 08:20 | 08:23 | 09:00 10:01-10:21/20 |
| | 21:54 | 20:49 | 19:30 17:36-18:22/46 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 18:31-18:59/28 | 07:22 | 08:25 | 09:00 10:01-10:21/20 |
| | 21:52 | 20:47 | 19:28 17:36-18:22/46 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:27-18:55/28 | 07:24 | 08:27 | 09:01 10:02-10:23/21 |
| | 21:51 | 20:44 | 19:25 17:37-18:21/44 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:25-18:53/28 | 07:26 | 08:28 | 09:01 10:03-10:23/20 |
| | 21:49 | 20:42 | 19:22 17:37-18:18/41 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 18:24-18:50/26 | 07:28 | 08:30 | 09:01 10:03-10:23/20 |
| | 21:47 | 20:39 | 19:20 17:37-18:17/40 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 18:23-18:47/24 | 07:30 | 08:32 | 09:01 10:04-10:24/20 |
| | 21:45 | 20:37 | 19:17 17:38-18:15/37 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 18:22-18:45/23 | 07:33 | 08:33 09:59-10:03/4 | 09:01 10:04-10:23/19 |
| | 21:44 | 20:34 | 19:15 17:40-18:14/34 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 10:04-10:24/20 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1733 | 347 | 4 | 571 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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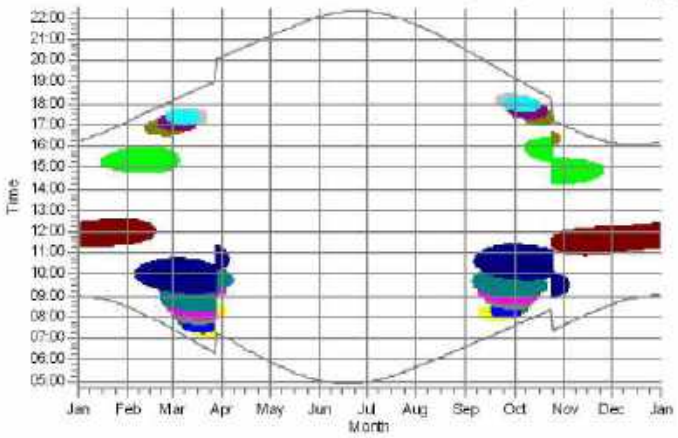
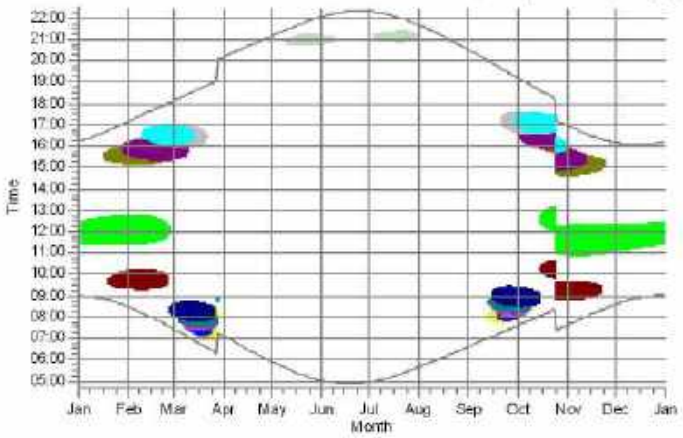
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

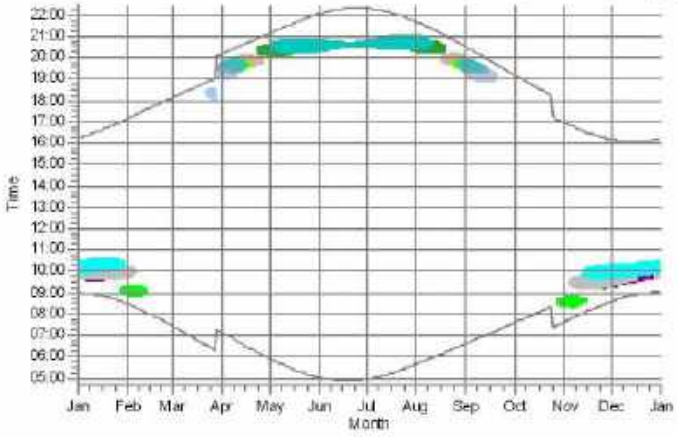
1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1



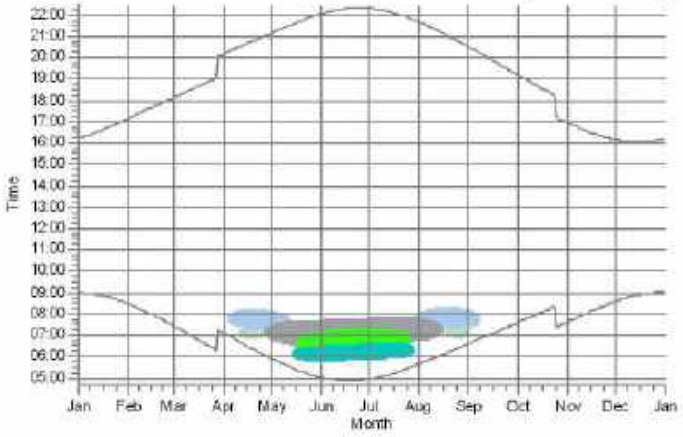

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (2



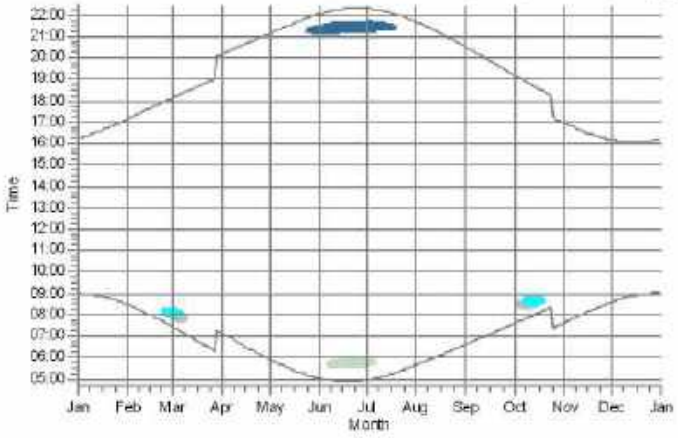

3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3



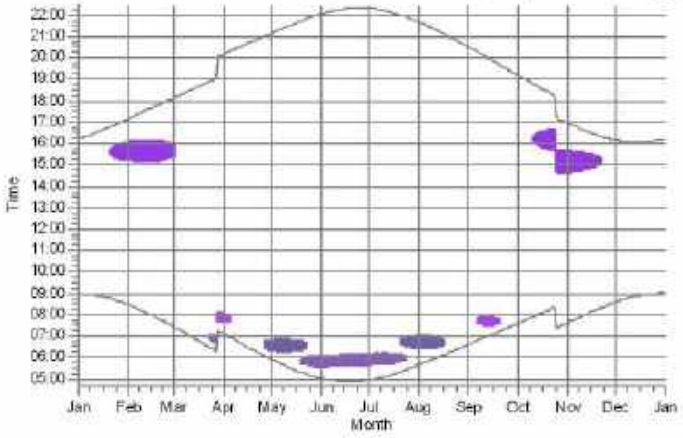

4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (4




5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5




6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (6




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)
AS: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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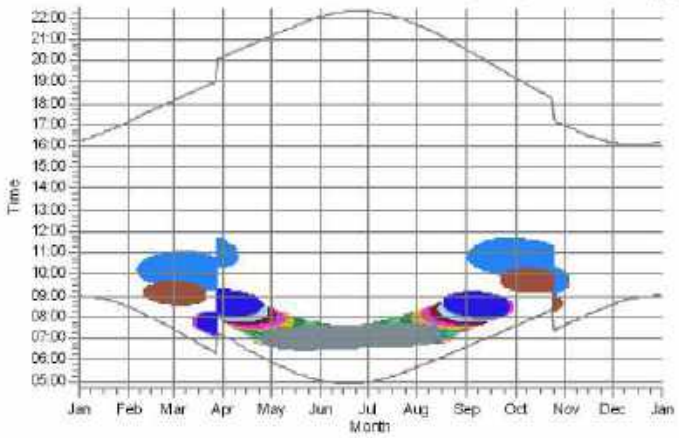
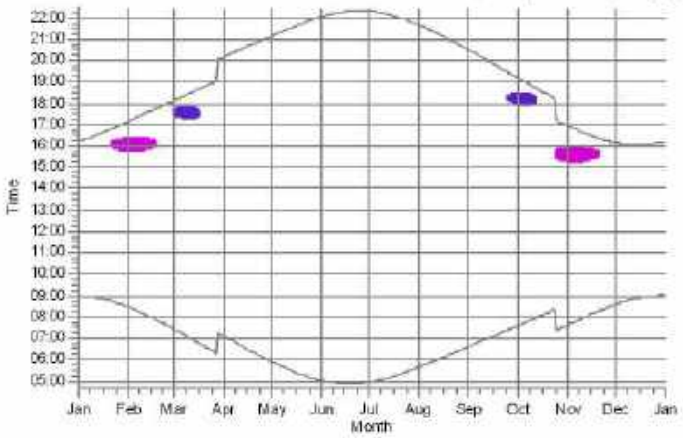
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

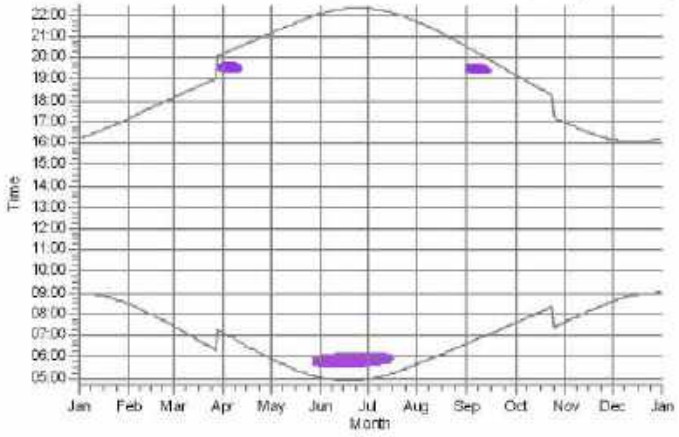
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7



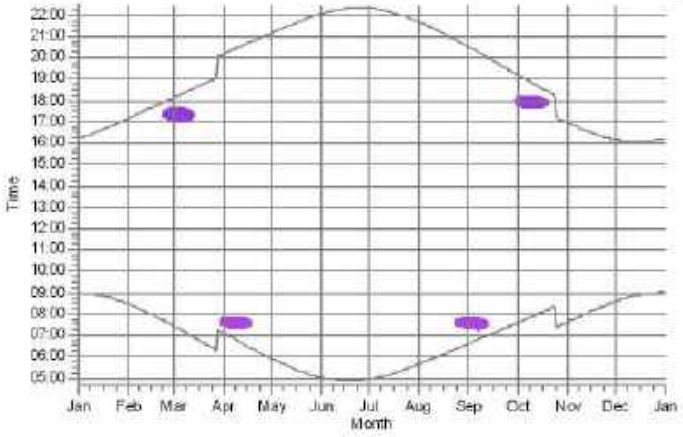

8: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8



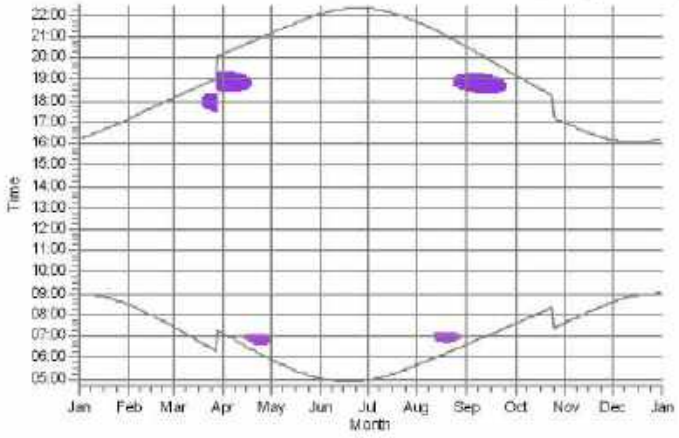

9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0



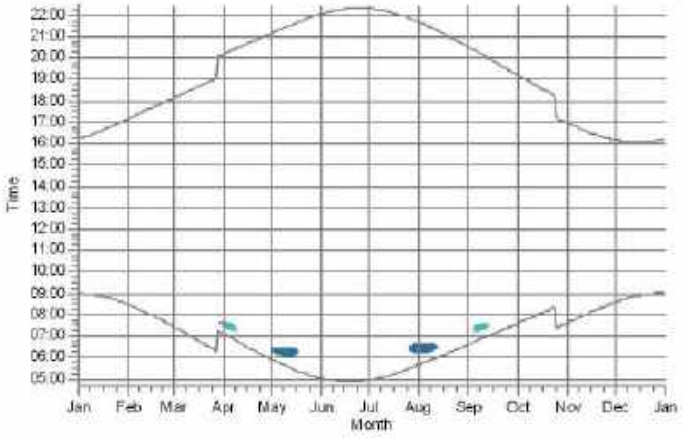

10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
- V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
- W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
- X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
- Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
- Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
- AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
- AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
- AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
- AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
- AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
- AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
- AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
- AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
- AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
- AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
- AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
- AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
- AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
- AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)
- AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
- AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)
- AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
- AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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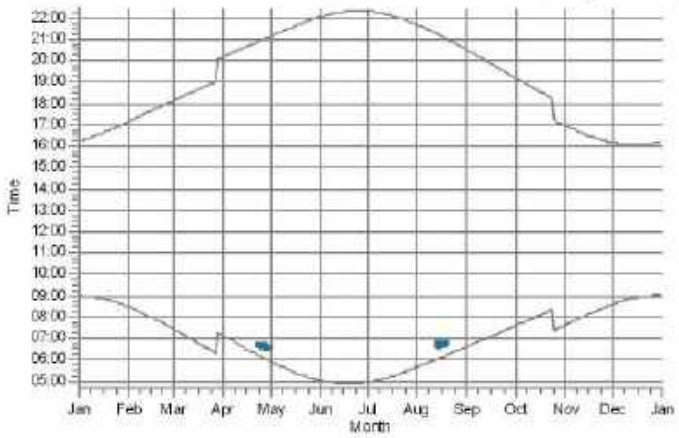
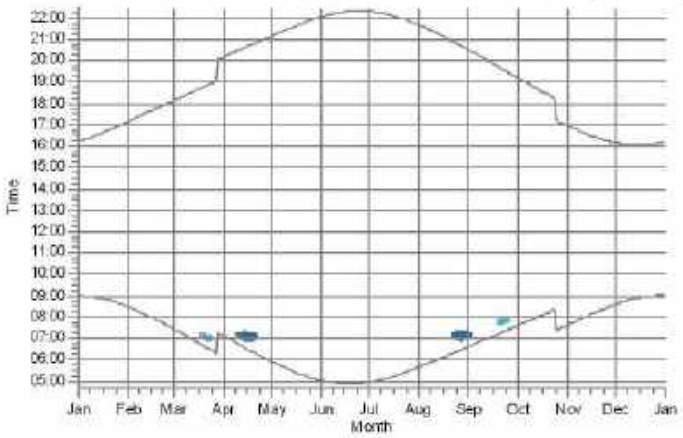
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

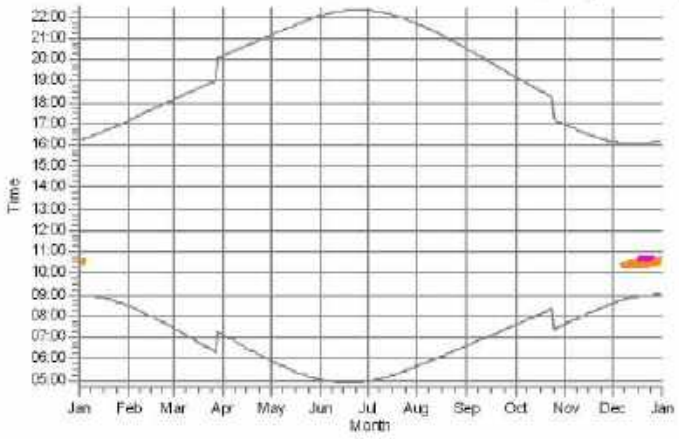
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



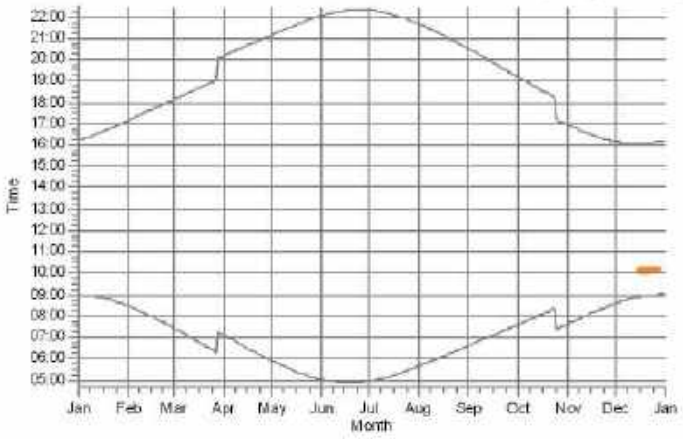

14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



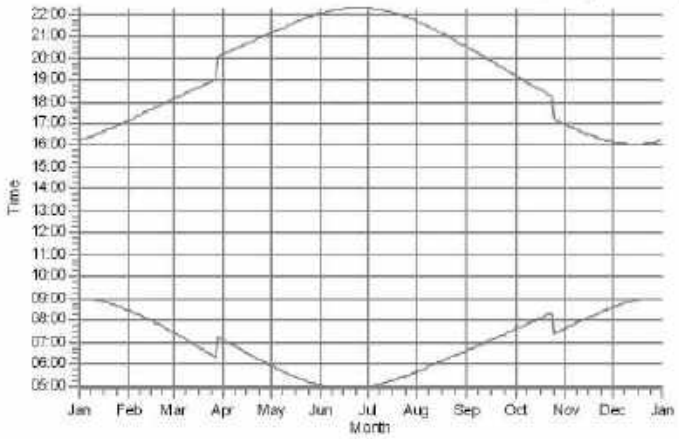

15: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



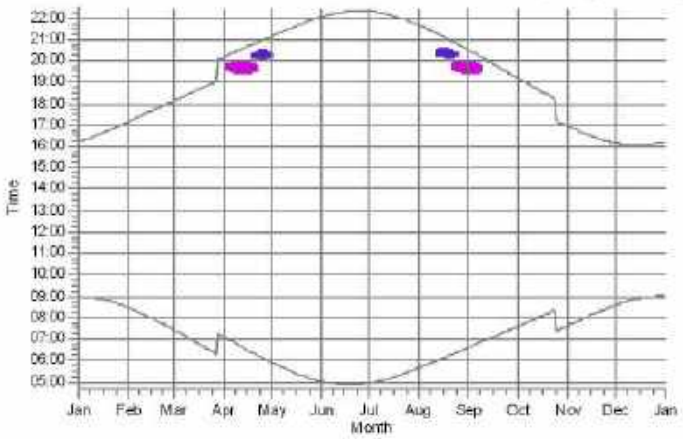

16: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




17: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




18: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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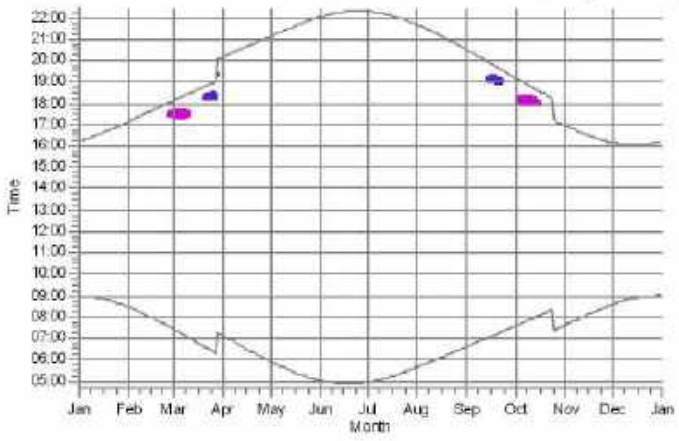
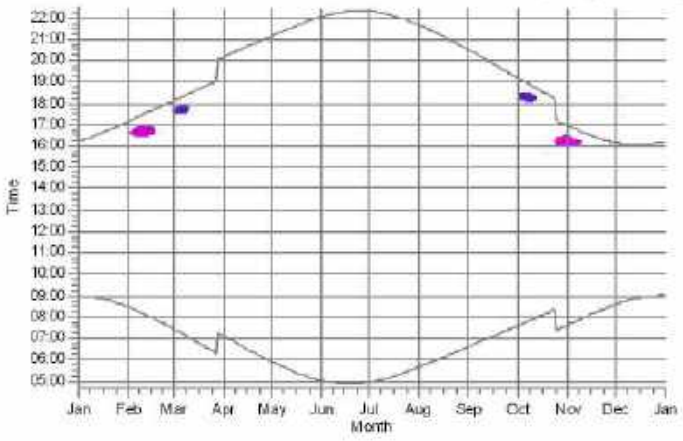
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138

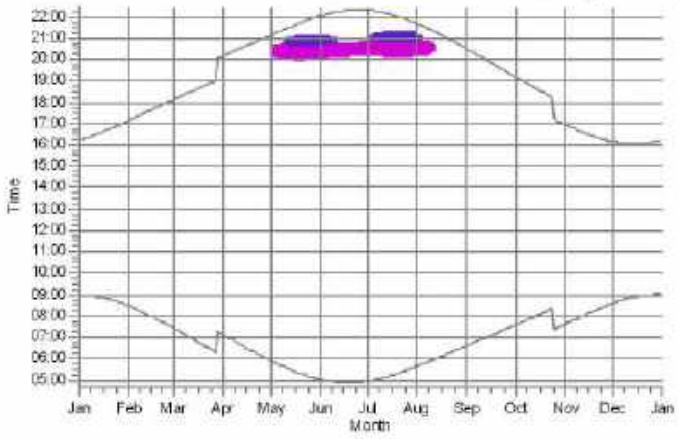
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



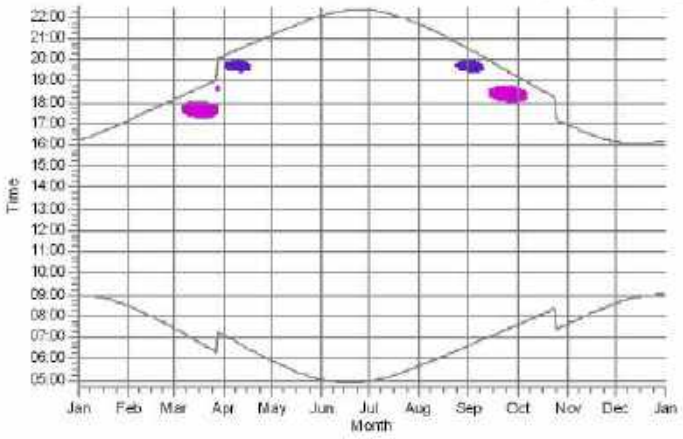

20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



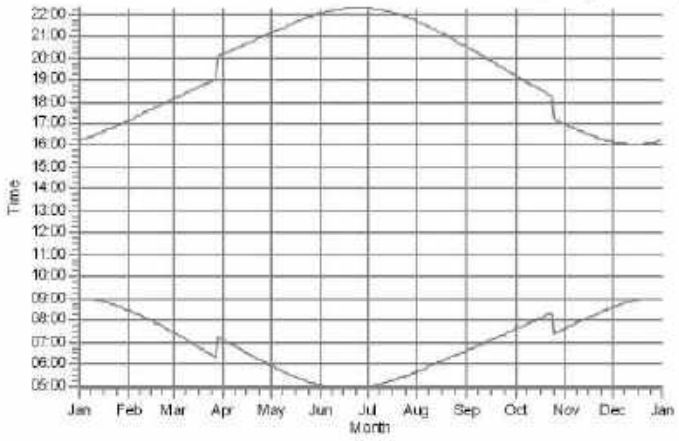

21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



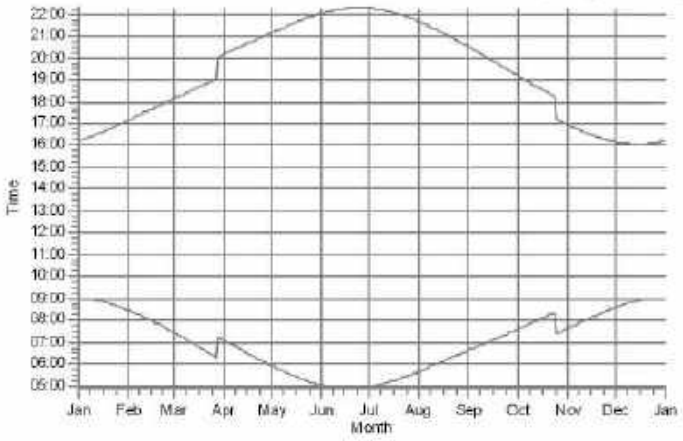

22: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




23: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




24: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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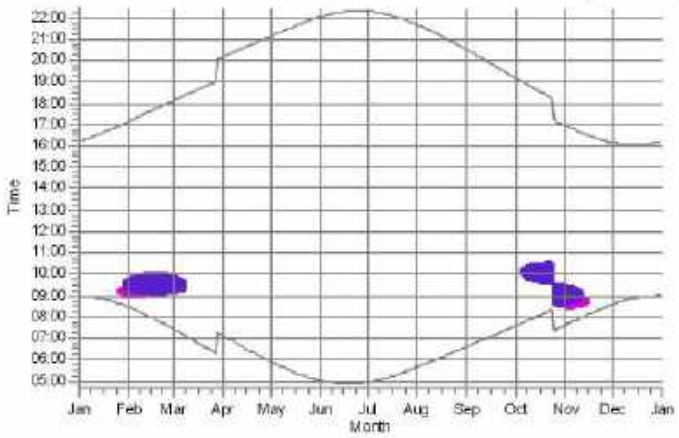
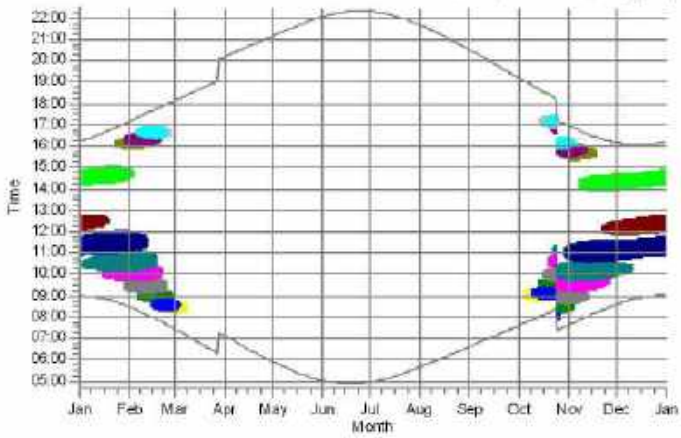
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

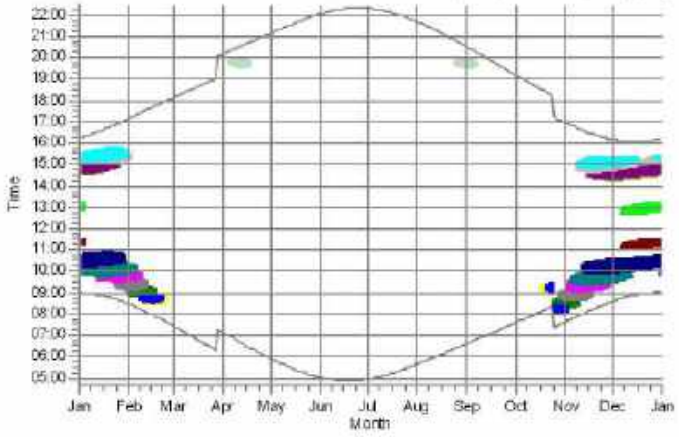
25: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



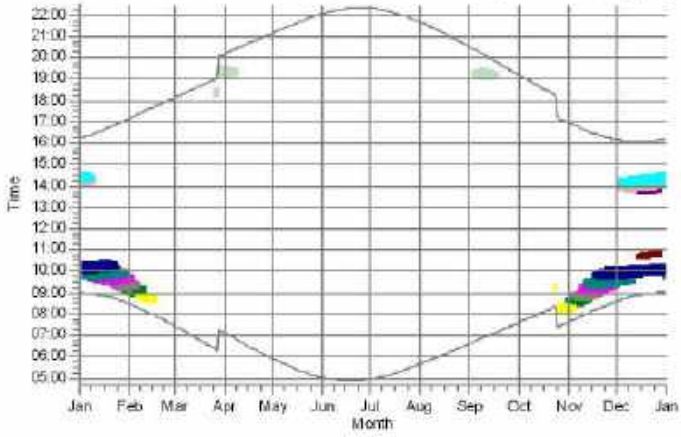

26: NORDEX N131/3000 3000 131.0 !O! hub: 141.0 m (TOT: 206.5 m) (18)



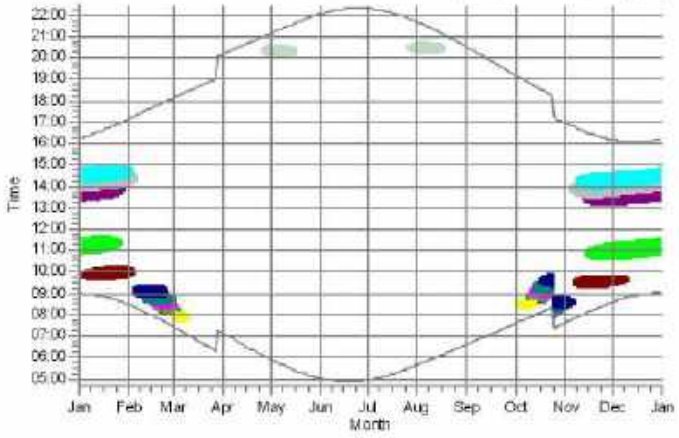

27: NORDEX N131/3000 3000 131.0 !O! hub: 141.0 m (TOT: 206.5 m) (19)



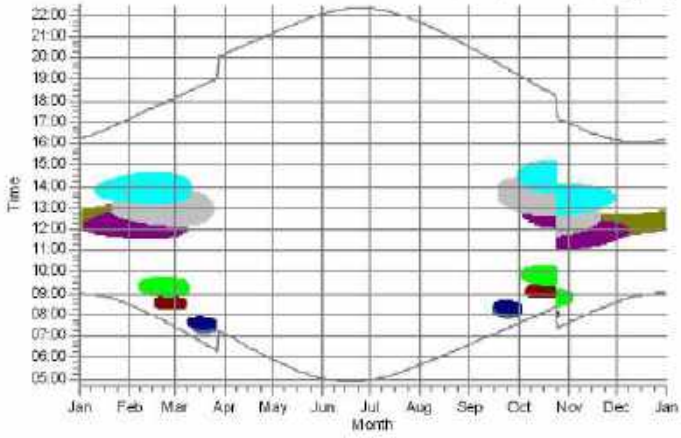

28: NORDEX N131/3000 3000 131.0 !O! hub: 141.0 m (TOT: 206.5 m) (20)




29: NORDEX N131/3000 3000 131.0 !O! hub: 141.0 m (TOT: 206.5 m) (21)




30: NORDEX N131/3000 3000 131.0 !O! hub: 141.0 m (TOT: 206.5 m) (22)




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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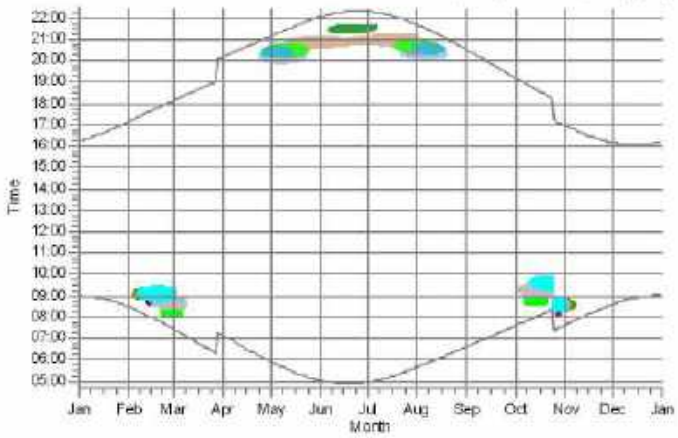
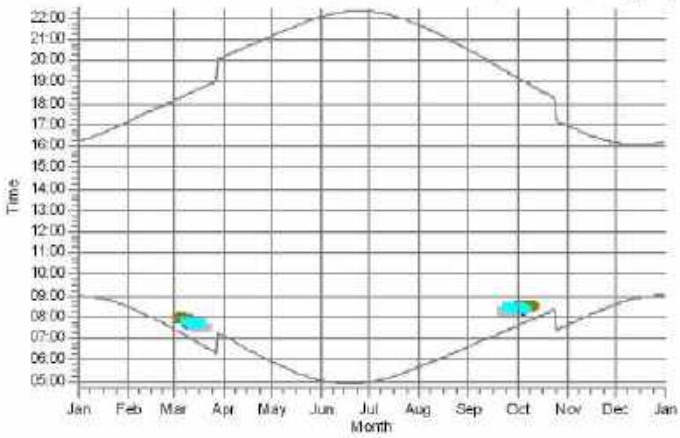
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

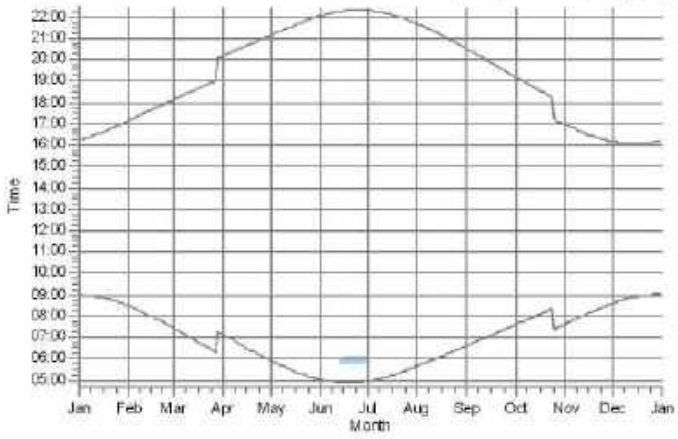
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)



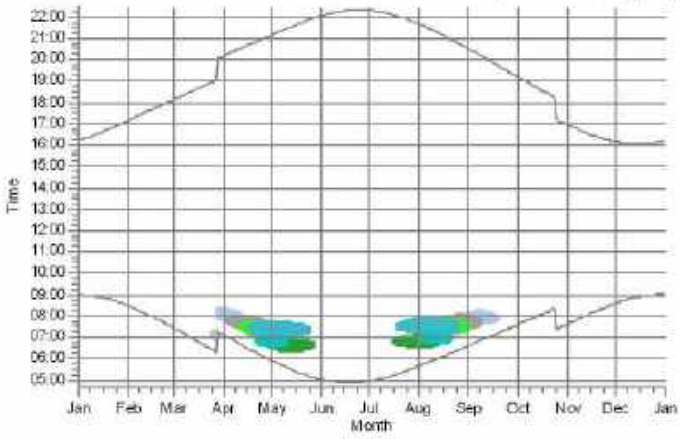

32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)



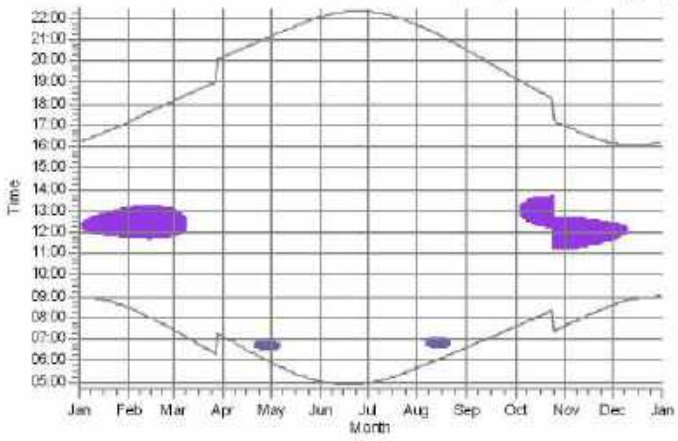

33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)



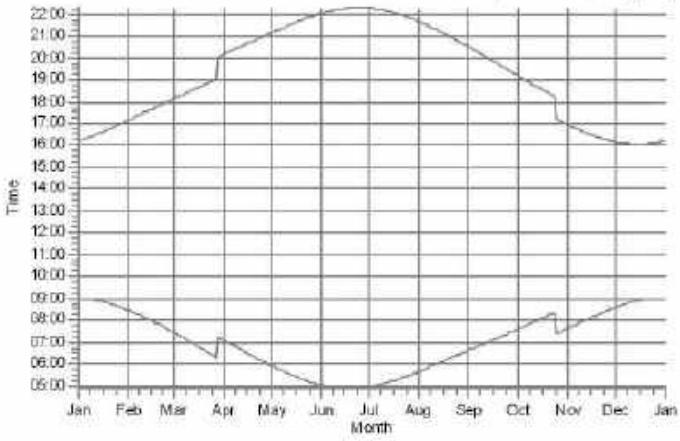

34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)




35: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)




36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)




Shadow receptors

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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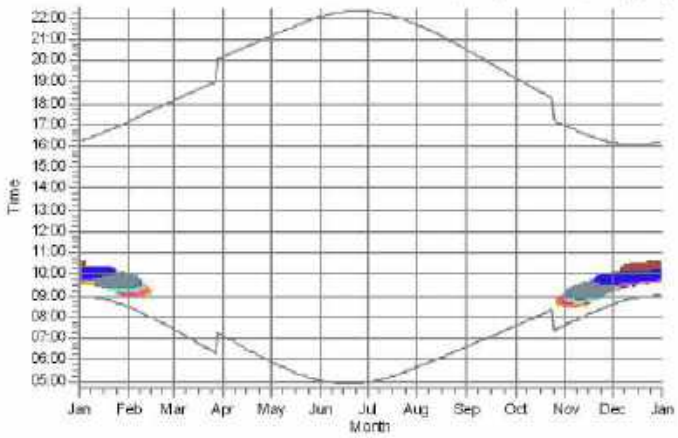
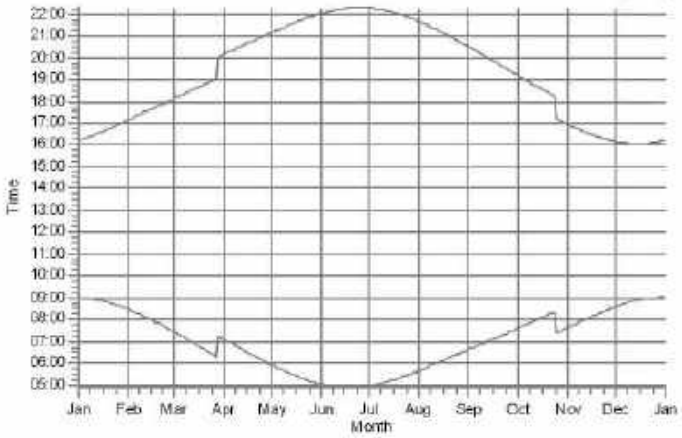
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

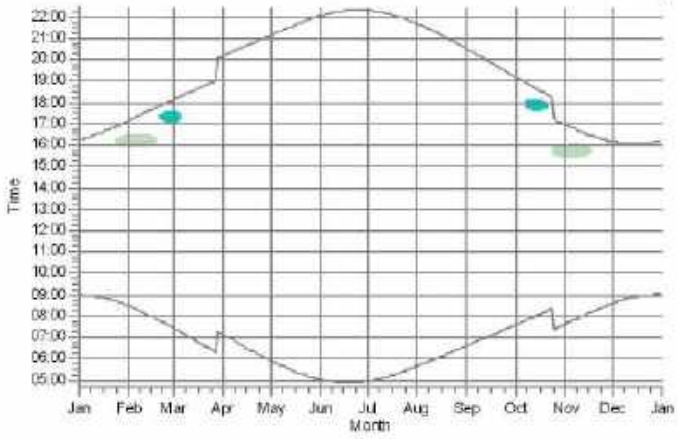
37: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)



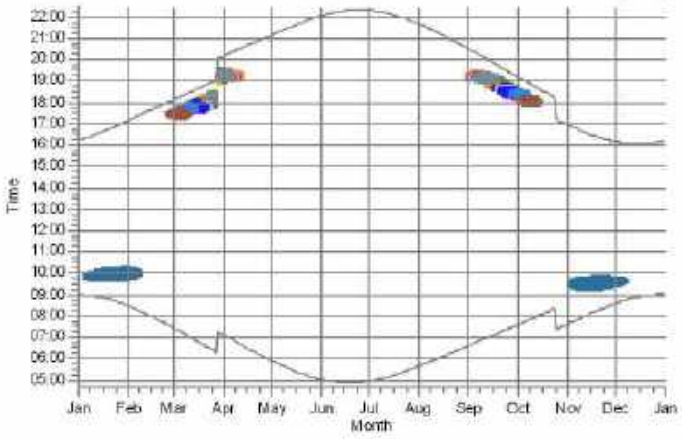

38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



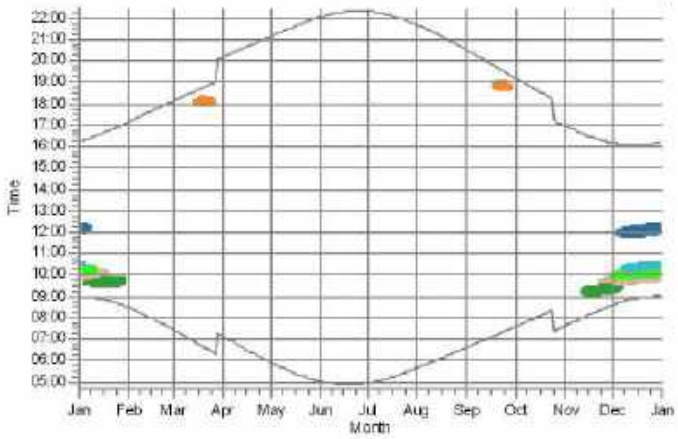

39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



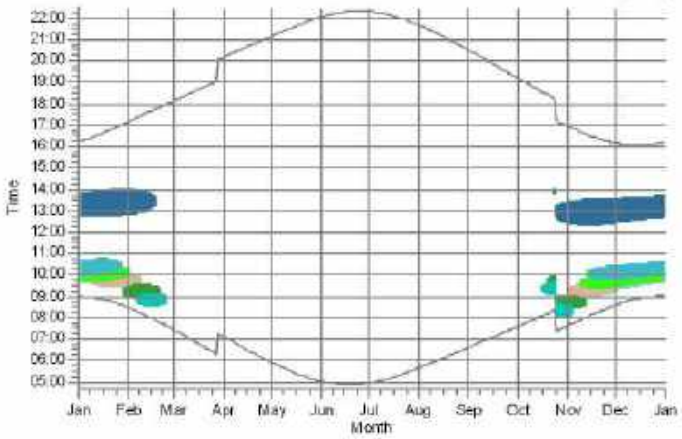

40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




Shadow receptors

N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

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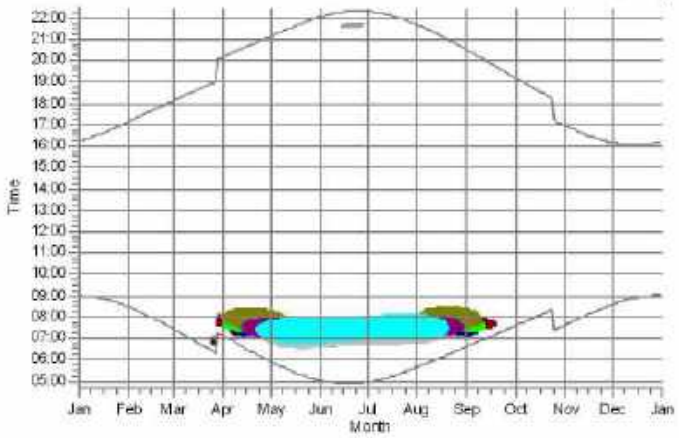
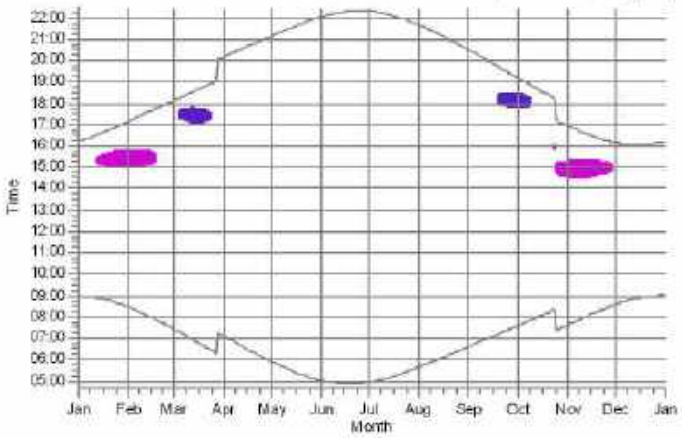
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138

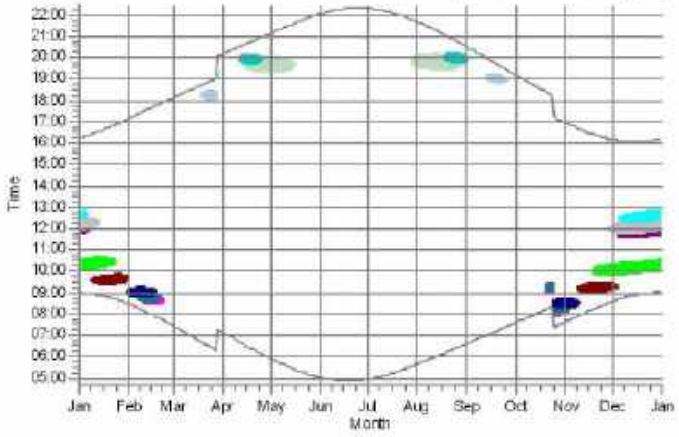
43: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159.0 m (T



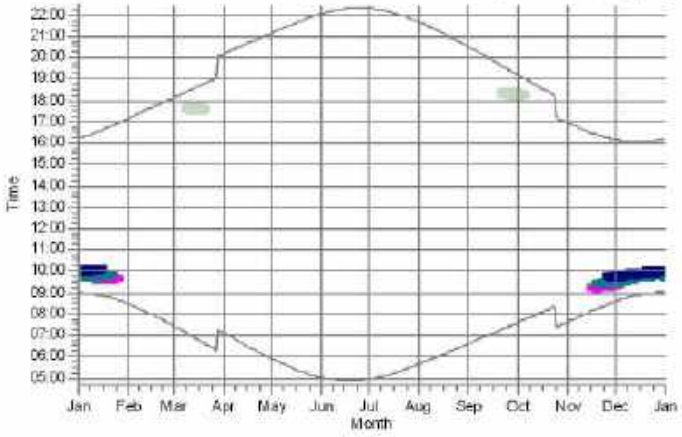

44: NORDEX N131/3000 3000 131.0 !O! hub: 141.0 m (TOT: 206.5 m) (37)



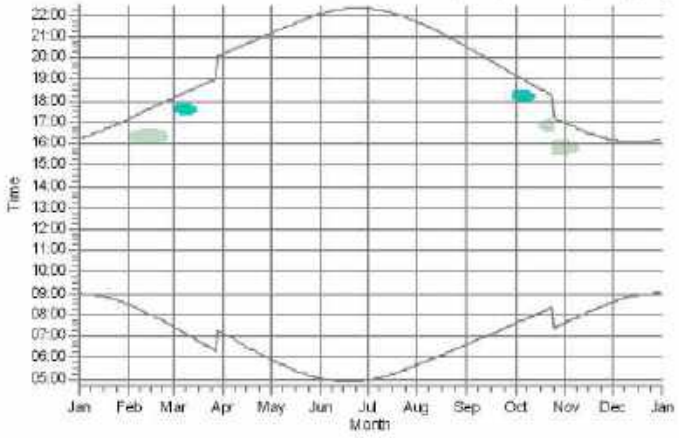

45: NORDEX N131/3000 3000 131.0 !O! hub: 144.0 m (TOT: 209.5 m) (38)



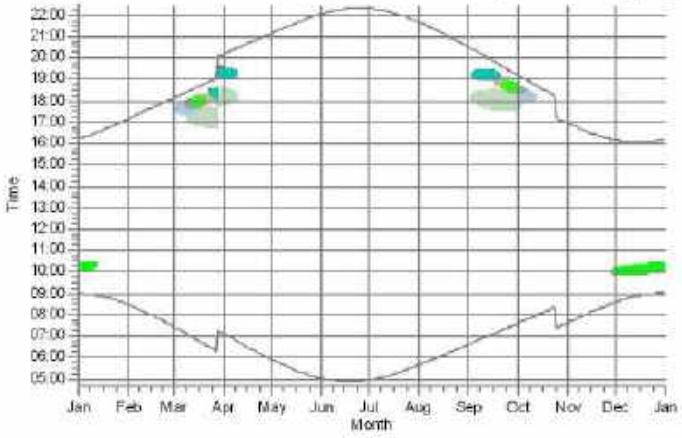

46: NORDEX N131/3000 3000 131.0 !O! hub: 144.0 m (TOT: 209.5 m) (39)




47: NORDEX N131/3000 3000 131.0 !O! hub: 144.0 m (TOT: 209.5 m) (40)




48: NORDEX N131/3000 3000 131.0 !O! hub: 144.0 m (TOT: 209.5 m) (41)




Shadow receptors

- E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
- F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
- G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
- H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
- I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
- J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
- O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
- T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
- U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
- AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
- AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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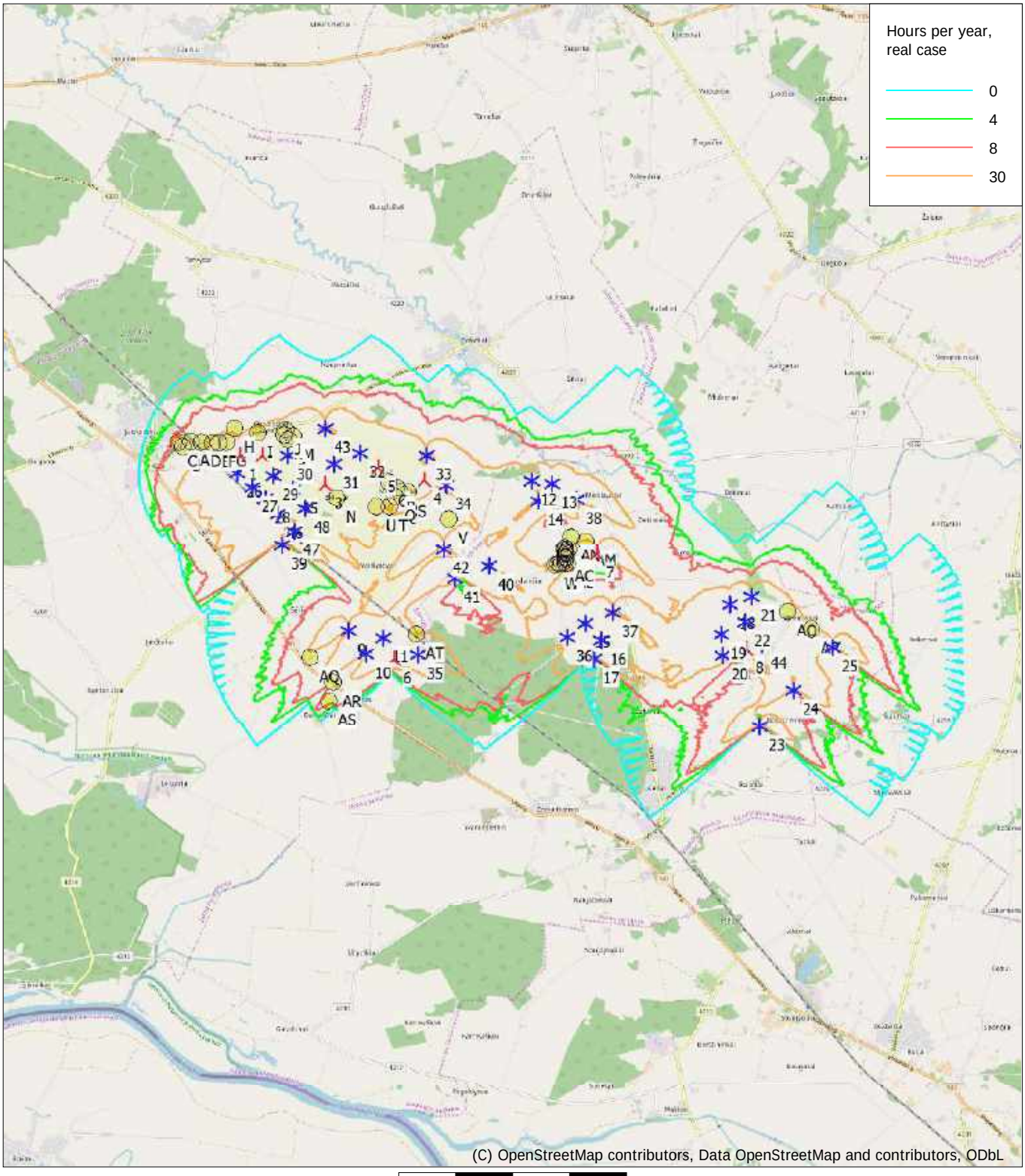
Calculated:
2021.12.03 10:43/3.5.552

# SHADOW - Map

## Calculation: Suminis poveikis Enercon E138




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.580 North: 6.127.900

New WTG Existing WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

Time step: 3 minutes, Day step: 7 days, Map resolution: 20 m, Visibility resolution: 10 m, Eye height: 1,5 m

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

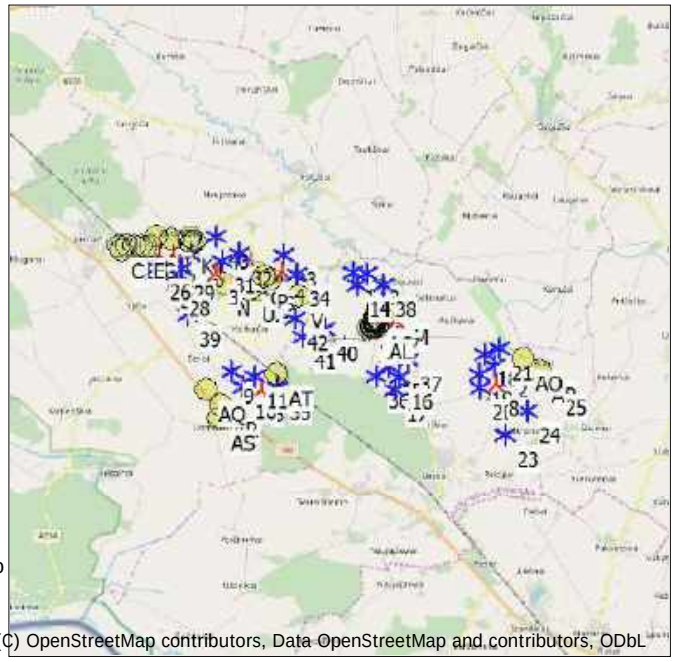
Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

Flicker curtailment according to specified plan

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Đilutės r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200.000

New WTG | Existing WTG | Shadow receptor

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 350.546 | 6.126.757 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 8 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 9 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 10 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 11 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 12 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 13 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 14 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 15 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 16 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 17 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 18 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 19 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 20 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 21 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 22 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 23 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 24 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 25 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 26 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 27 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 28 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 29 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 30 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 31 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 32 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 33 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 34 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down

...continued from previous page

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 35 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 36 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 37 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 38 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 39 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 40 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 41 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 42 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 43 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |

## Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down

### Calculation Results

Shadow receptor

| No. | Shadow, expected values: Shadow hours per year [h/year] | Avoided hours per year [h/year] |
|---|---|---|
| A* | 10:08 | 5:20 |
| AA* | 10:13 | 34:33 |
| AB* | 11:10 | 28:40 |
| AC* | 11:14 | 25:31 |
| AD* | 11:22 | 22:51 |
| AE* | 10:53 | 21:06 |
| AF* | 10:09 | 19:39 |
| AG* | 9:19 | 18:23 |
| AH* | 9:45 | 16:00 |
| AI* | 10:40 | 13:07 |
| AJ* | 9:14 | 20:27 |
| AK* | 7:23 | 42:34 |
| AL* | 7:05 | 44:58 |
| AM* | 8:35 | 29:59 |
| AN* | 5:44 | 12:00 |
| AO* | 48:09 | 1:05 |
| AP | 30:19 | |
| AQ | 20:08 | |
| AR* | 9:13 | 1:54 |
| AS* | 6:30 | 3:09 |
| AT* | 27:34 | 2:09 |
| B* | 11:16 | 2:52 |
| C* | 8:12 | 1:54 |
| D* | 11:33 | 12:12 |
| E* | 17:54 | 18:50 |
| F* | 22:51 | 25:47 |
| G* | 23:34 | 38:06 |
| H* | 10:46 | 7:32 |
| I* | 23:36 | 12:24 |
| J* | 31:45 | 11:22 |
| K* | 41:14 | 16:49 |
| L* | 58:28 | 20:25 |
| M* | 72:29 | 14:21 |
| N* | 21:18 | 8:22 |
| O* | 24:48 | 20:20 |
| P* | 27:01 | 46:21 |
| Q* | 28:24 | 19:32 |
| R* | 23:57 | 27:40 |
| S* | 28:34 | 2:07 |
| T* | 17:14 | 7:27 |
| U* | 11:49 | 32:49 |
| V* | 13:12 | 1:50 |
| W* | 12:24 | 18:55 |
| X* | 9:08 | 24:16 |
| Y* | 8:51 | 27:11 |
| Z* | 8:34 | 31:27 |

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Stopped due to flicker curtailment [h/year] | Expected [h/year] |
|---|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 158:11 | 353:39 | 23:40 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 99:08 | 308:56 | 8:39 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 96:42 | 72:03 | 13:45 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 38:58 | 172:29 | 17:56 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 15:46 | 19:05 | 6:13 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6) | 85:19 | 24:12 | 22:58 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 90:24 | 380:13 | 27:31 |
| 8 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 26:53 | 8:57 | 6:20 |
| 9 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1) | 30:12 | | 11:54 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down

...continued from previous page

| No. | Name | Worst case [h/year] | Stopped due to flicker curtailment [h/year] | Expected [h/year] |
|---|---|---|---|---|
| 10 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2) | 28:24 | | 9:56 |
| 11 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3) | 45:23 | | 18:09 |
| 12 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4) | 8:47 | | 3:52 |
| 13 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5) | 2:45 | | 1:11 |
| 14 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6) | 5:51 | | 2:28 |
| 15 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7) | 7:59 | | 0:30 |
| 16 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8) | 1:25 | | 0:06 |
| 17 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9) | 0:00 | | 0:00 |
| 18 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10) | 18:09 | | 7:48 |
| 19 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11) | 11:25 | | 3:40 |
| 20 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12) | 10:09 | | 2:23 |
| 21 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13) | 77:56 | | 35:00 |
| 22 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14) | 29:48 | | 10:59 |
| 23 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15) | 0:00 | | 0:00 |
| 24 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16) | 0:00 | | 0:00 |
| 25 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17) | 64:51 | | 12:34 |
| 26 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18) | 358:56 | | 38:01 |
| 27 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19) | 217:46 | | 24:32 |
| 28 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20) | 114:40 | | 14:14 |
| 29 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21) | 252:37 | | 32:14 |
| 30 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22) | 440:06 | | 40:32 |
| 31 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23) | 120:01 | | 43:37 |
| 32 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24) | 22:09 | | 7:26 |
| 33 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25) | 2:31 | | 0:59 |
| 34 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26) | 111:10 | | 50:29 |
| 35 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27) | 142:46 | | 6:31 |
| 36 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28) | 0:00 | | 0:00 |
| 37 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29) | 84:01 | | 9:16 |
| 38 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30) | 0:00 | | 0:00 |
| 39 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31) | 24:25 | | 4:41 |
| 40 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32) | 85:15 | | 22:20 |
| 41 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33) | 68:52 | | 6:53 |
| 42 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34) | 232:46 | | 17:08 |
| 43 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35) | 202:36 | | 93:59 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 08:57 (28) | 07:27 | 08:02 (29) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 16 | 09:13 (28) | 18:08 | 18 | 08:20 (29) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 08:55 (28) | 07:24 | 08:03 (29) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 18 | 09:13 (28) | 18:10 | 17 | 08:20 (29) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 08:54 (27) | 07:22 | 08:03 (29) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:13 | 20 | 09:14 (28) | 18:12 | 16 | 08:19 (29) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 08:53 (27) | 07:20 | 08:05 (29) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 21 | 09:14 (28) | 18:14 | 12 | 08:17 (29) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 08:53 (27) | 07:17 | 07:48 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 22 | 09:15 (28) | 18:16 | 18 | 08:14 (29) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 08:52 (27) | 07:15 | 07:45 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 23 | 09:15 (28) | 18:18 | 13 | 07:58 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 08:52 (27) | 07:12 | 07:42 (1) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 23 | 09:15 (28) | 18:20 | 13 | 07:55 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 08:51 (27) | 07:10 | 07:39 (1) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 23 | 09:14 (27) | 18:22 | 14 | 07:53 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 08:50 (26) | 07:07 | 07:32 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 24 | 09:14 (27) | 18:24 | 18 | 07:52 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 08:49 (26) | 07:05 | 07:29 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 26 | 09:15 (27) | 18:26 | 17 | 07:50 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 08:48 (26) | 07:02 | 07:27 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 27 | 09:15 (27) | 18:28 | 19 | 07:50 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 08:46 (26) | 06:59 | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 28 | 09:14 (27) | 18:30 | 19 | 07:48 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 08:46 (26) | 06:57 | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 28 | 09:14 (26) | 18:32 | 20 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 08:46 (26) | 06:54 | 07:21 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 29 | 09:15 (26) | 18:34 | 19 | 07:47 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 08:45 (26) | 06:52 | 07:20 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 31 | 09:16 (26) | 18:36 | 19 | 07:46 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 08:45 (26) | 06:49 | 07:21 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 30 | 09:15 (26) | 18:38 | 16 | 07:46 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 08:45 (26) | 06:47 | 07:24 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 31 | 09:16 (26) | 18:40 | 9 | 07:45 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:44 (26) | 06:44 | 07:39 (1) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 31 | 09:15 (26) | 18:42 | 6 | 07:45 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:44 (26) | 06:42 | 07:40 (1) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 31 | 09:15 (26) | 18:44 | 4 | 07:44 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:45 (26) | 06:39 | 07:41 (1) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 30 | 09:15 (26) | 18:46 | 3 | 07:44 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 07:46 | | 08:12 (29) | 06:36 | 07:42 (1) | 06:18 | 05:17 | 04:52 |
| | 16:46 | | 17:51 | 32 | 09:14 (26) | 18:48 | 2 | 07:44 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 07:44 | | 08:10 (29) | 06:34 | 07:42 (1) | 06:16 | 05:15 | 04:53 |
| | 16:48 | | 17:53 | 36 | 09:14 (26) | 18:50 | 2 | 07:44 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | | 07:41 | | 08:07 (29) | 06:31 | 07:43 (1) | 06:13 | 05:13 | 04:53 |
| | 16:50 | | 17:55 | 38 | 09:12 (26) | 18:52 | 1 | 07:44 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 07:39 | | 08:05 (29) | 06:29 | 07:42 (1) | 06:11 | 05:12 | 04:53 |
| | 16:52 | | 17:57 | 41 | 09:12 (26) | 18:54 | 2 | 07:44 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | | 07:37 | | 08:03 (29) | 06:26 | 07:42 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | | 17:59 | 40 | 09:10 (26) | 18:56 | 2 | 07:44 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 07:34 | | 08:03 (29) | 06:24 | 07:42 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | 18:01 | 37 | 09:08 (26) | 18:58 | 3 | 07:45 (1) | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | | 07:32 | | 08:02 (29) | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | | 18:03 | 32 | 09:05 (26) | 19:00 | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:05 (28) | 07:29 | | 08:02 (29) | 06:18 | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 2 09:07 (28) | 18:05 | 22 | 09:00 (26) | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:03 (28) | | | | 07:16 | | 06:00 | 05:05 | 04:56 |
| | 17:02 | 6 09:09 (28) | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:01 (28) | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 10 09:11 (28) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 08:59 (28) | | | | 07:11 | | | 05:03 | |
| | 17:06 | 13 09:12 (28) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 31 | | 790 | | 302 | | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,80 | | 0,84 | | 0,96 | | | |
| Total reduction | | 0,14 | | 0,20 | | 0,32 | | | |
| Total, real | | 4 | | 161 | | 98 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 42 | 08:44 (1) | | 16:58 | 25 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 40 | 08:44 (1) | | 16:56 | 24 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 39 | 08:45 (1) | | 16:54 | 23 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 36 | 08:44 (1) | | 16:52 | 22 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:10 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 31 | 08:43 (1) | | 16:50 | 22 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | 08:17 (1) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 24 | 08:41 (1) | | 16:48 | 21 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:19 (1) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 20 | 08:39 (1) | | 16:46 | 21 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:21 (1) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 15 | 08:36 (1) | | 16:44 | 20 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:26 (1) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 15 | 08:51 (29) | | 16:42 | 18 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:38 (29) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 14 | 08:52 (29) | | 16:40 | 15 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:37 (29) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16 | 08:53 (29) | | 16:38 | 13 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:35 (29) | | 08:00 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 18 | 08:53 (29) | | 16:36 | 9 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:36 (29) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 08:55 (29) | | 16:34 | 6 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 08:00 | | 08:35 (29) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 29 | 09:36 (26) | | 16:33 | 2 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:35 (29) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 34 | 09:39 (26) | | 16:31 | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:35 (29) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 39 | 09:41 (26) | | 16:29 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:31 (1) | 08:06 | | 08:35 (29) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:49 | 3 08:34 (1) | 18:32 | 41 | 09:42 (26) | | 16:28 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:27 (1) | 08:08 | | 08:37 (29) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 6 08:33 (1) | 18:30 | 40 | 09:43 (26) | | 16:26 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:24 (1) | 08:10 | | 08:39 (29) | | 08:14 | |
| | 22:02 | | 21:01 | | 19:43 | 7 08:31 (1) | 18:27 | 38 | 09:44 (26) | | 16:25 | |
| 20 | 05:20 | | 06:15 | | 07:14 | 08:22 (1) | 08:12 | | 08:41 (29) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 8 08:30 (1) | 18:25 | 35 | 09:44 (26) | | 16:23 | |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:08 (2) | 08:14 | | 09:15 (26) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 11 08:29 (1) | 18:23 | 30 | 09:45 (26) | | 16:22 | |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:06 (2) | 08:16 | | 09:15 (26) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 14 08:29 (1) | 18:20 | 31 | 09:46 (26) | | 16:20 | |
| 23 | 05:24 | | 06:21 | | 07:20 | 08:05 (2) | 08:18 | | 09:15 (26) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 14 08:28 (1) | 18:18 | 31 | 09:46 (26) | | 16:19 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 08:04 (2) | 08:20 | | 09:14 (26) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 15 08:28 (1) | 18:16 | 31 | 09:45 (26) | | 16:18 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 08:03 (2) | 07:22 | | 08:14 (26) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 17 08:28 (1) | 17:13 | 31 | 08:45 (26) | | 16:16 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:02 (2) | 07:24 | | 08:14 (26) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 17 08:27 (1) | 17:11 | 30 | 08:44 (26) | | 16:15 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:02 (2) | 07:27 | | 08:15 (26) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 18 08:27 (1) | 17:09 | 30 | 08:45 (26) | | 16:14 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:02 (2) | 07:29 | | 08:15 (26) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 18 08:27 (1) | 17:07 | 29 | 08:44 (26) | | 16:13 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (2) | 07:31 | | 08:16 (26) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 18 08:26 (1) | 17:04 | 27 | 08:43 (27) | | 16:12 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:01 (2) | 07:33 | | 08:16 (26) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 20 08:27 (1) | 17:02 | 27 | 08:43 (27) | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:18 (26) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 26 | 08:44 (27) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | | 186 | | 908 | | | 241 | |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | 0,16 | |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,97 | | 0,89 | | | 0,81 | |
| Total reduction | | | | | | 0,38 | | 0,27 | | | 0,13 | |
| Total, real | | | | | | 71 | | 245 | | | 30 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 07:52 (29) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | | 18:08 | 36 | 08:42 (26) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 07:50 (29) | 07:06 | 05:53 | 05:01 |
| | 16:15 | 17:10 | | | 18:10 | 40 | 08:42 (26) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | | 07:22 | | 07:47 (29) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:13 | | | 18:12 | 42 | 08:41 (26) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:20 | | 07:46 (29) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | | | 18:14 | 43 | 08:41 (26) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | 07:45 (29) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | 42 | 08:39 (26) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | 08:47 (28) | 07:15 | | 07:45 (29) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 3 | 08:50 (28) | 18:18 | 39 | 08:38 (26) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | | 08:45 (28) | 07:12 | | 07:45 (29) | 06:53 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 7 | 08:52 (28) | 18:20 | 35 | 08:36 (26) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | | 08:42 (28) | 07:10 | | 07:46 (29) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 10 | 08:52 (28) | 18:22 | 30 | 08:34 (26) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | | 08:40 (28) | 07:07 | | 07:46 (29) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 14 | 08:54 (28) | 18:24 | 19 | 08:29 (26) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | | 08:38 (28) | 07:05 | | 07:47 (29) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 16 | 08:54 (28) | 18:26 | 11 | 07:58 (29) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | | 08:36 (27) | 07:02 | | 07:50 (29) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 19 | 08:55 (28) | 18:28 | 5 | 07:55 (29) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | | 08:33 (27) | 06:59 | | | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 22 | 08:55 (28) | 18:30 | | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | | 08:32 (27) | 06:57 | | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 23 | 08:55 (28) | 18:32 | | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | | 08:31 (27) | 06:54 | | | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 24 | 08:55 (28) | 18:34 | | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | | 08:31 (27) | 06:52 | | 07:18 (1) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 24 | 08:55 (28) | 18:36 | 8 | 07:32 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | | 08:29 (27) | 06:49 | | 07:16 (1) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 24 | 08:53 (28) | 18:38 | 4 | 07:20 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 08:29 (27) | 06:47 | | 07:13 (1) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 23 | 08:52 (28) | 18:40 | 3 | 07:16 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | | 08:29 (27) | 06:44 | | 07:12 (1) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 21 | 08:50 (27) | 18:42 | 3 | 07:15 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | | 08:25 (26) | 06:42 | | 07:11 (1) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 26 | 08:51 (27) | 18:44 | 2 | 07:13 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | | 08:22 (26) | 06:39 | | 07:03 (2) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 29 | 08:51 (27) | 18:46 | 3 | 07:11 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | | 08:20 (26) | 06:36 | | 07:09 (1) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 29 | 08:49 (27) | 18:48 | 1 | 07:10 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | | 08:18 (26) | 06:34 | | 07:08 (1) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 31 | 08:49 (27) | 18:50 | 1 | 07:09 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | | 08:17 (26) | 06:31 | | 07:08 (1) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 30 | 08:47 (27) | 18:52 | 1 | 07:09 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | | 08:16 (26) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 30 | 08:46 (27) | 18:54 | | | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | | 08:15 (26) | 06:26 | | 07:06 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17:59 | 27 | 08:42 (27) | 18:56 | 1 | 07:07 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | | 08:15 (26) | 06:24 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 28 | 08:43 (26) | 18:58 | | | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | | 08:14 (26) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 28 | 08:42 (26) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | | 07:55 (29) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 33 | 08:43 (26) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 521 | | | 369 | | | | |
| Sun reduction | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | 0,88 | | | 0,93 | | | | |
| Total reduction | | | 0,21 | | | 0,32 | | | | |
| Total, real | | | 112 | | | 116 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:08 (28) | 08:35 |
| | 22:18 | 21:40 | 20:30 | | 19:12 | | 16:58 | 16 08:24 (28) | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | | 07:37 | | 07:39 | 08:10 (28) | 08:37 |
| | 22:18 | 21:38 | 20:27 | | 19:10 | | 16:56 | 13 08:23 (28) | 16:09 |
| 3 | 04:59 | 05:43 | 06:42 | | 07:39 | 08:26 (29) | 07:41 | 08:12 (28) | 08:39 |
| | 22:17 | 21:36 | 20:25 | | 19:07 | 9 08:35 (29) | 16:54 | 10 08:22 (28) | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:24 (29) | 07:43 | 08:15 (28) | 08:40 |
| | 22:17 | 21:34 | 20:22 | | 19:05 | 13 08:37 (29) | 16:52 | 6 08:21 (28) | 16:08 |
| 5 | 05:00 | 05:47 | 06:46 | | 07:43 | 08:22 (29) | 07:45 | 08:17 (28) | 08:42 |
| | 22:16 | 21:32 | 20:19 | | 19:02 | 27 09:09 (26) | 16:50 | 2 08:19 (28) | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | | 07:45 | 08:21 (29) | 07:47 | | 08:43 |
| | 22:16 | 21:30 | 20:17 | | 19:00 | 33 09:11 (26) | 16:48 | | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | | 07:46 | 08:20 (29) | 07:49 | | 08:44 |
| | 22:15 | 21:28 | 20:14 | | 18:57 | 38 09:13 (26) | 16:46 | | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | | 07:48 | 08:20 (29) | 07:51 | | 08:46 |
| | 22:14 | 21:26 | 20:12 | | 18:54 | 41 09:14 (26) | 16:44 | | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | | 07:50 | 08:20 (29) | 07:53 | | 08:47 |
| | 22:13 | 21:24 | 20:09 | | 18:52 | 43 09:15 (26) | 16:42 | | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | 08:07 (1) | 07:52 | 08:20 (29) | 07:55 | | 08:48 |
| | 22:12 | 21:22 | 20:07 | 11 08:18 (1) | 18:49 | 43 09:15 (26) | 16:40 | | 16:05 |
| 11 | 05:07 | 05:58 | 06:57 | 08:04 (1) | 07:54 | 08:22 (29) | 07:57 | | 08:50 |
| | 22:11 | 21:19 | 20:04 | 17 08:21 (1) | 18:47 | 41 09:15 (26) | 16:38 | | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 | 08:02 (1) | 07:56 | 08:24 (29) | 08:00 | | 08:51 |
| | 22:10 | 21:17 | 20:01 | 21 08:23 (1) | 18:44 | 39 09:15 (26) | 16:36 | | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 | 07:59 (1) | 07:58 | 08:27 (29) | 08:02 | | 08:52 |
| | 22:09 | 21:15 | 19:59 | 24 08:23 (1) | 18:42 | 35 09:16 (26) | 16:34 | | 16:04 |
| 14 | 05:11 | 06:04 | 07:03 | 07:58 (1) | 08:00 | 08:47 (26) | 08:04 | | 08:53 |
| | 22:08 | 21:13 | 19:56 | 26 08:24 (1) | 18:40 | 29 09:16 (26) | 16:33 | | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 | 07:55 (2) | 08:02 | 08:47 (26) | 08:06 | | 08:54 |
| | 22:07 | 21:11 | 19:54 | 30 08:25 (1) | 18:37 | 28 09:15 (26) | 16:31 | | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 | 07:53 (2) | 08:04 | 08:47 (26) | 08:08 | | 08:55 |
| | 22:06 | 21:08 | 19:51 | 32 08:25 (1) | 18:35 | 28 09:15 (26) | 16:29 | | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 07:51 (2) | 08:06 | 08:47 (26) | 08:10 | | 08:56 |
| | 22:04 | 21:06 | 19:49 | 35 08:26 (1) | 18:32 | 28 09:15 (27) | 16:28 | | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 07:50 (2) | 08:08 | 08:48 (26) | 08:12 | | 08:57 |
| | 22:03 | 21:04 | 19:46 | 36 08:26 (1) | 18:30 | 30 09:18 (27) | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 07:48 (2) | 08:10 | 08:48 (26) | 08:14 | | 08:57 |
| | 22:02 | 21:01 | 19:43 | 37 08:25 (1) | 18:27 | 31 09:19 (27) | 16:25 | | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 07:48 (2) | 08:12 | 08:49 (26) | 08:15 | | 08:58 |
| | 22:00 | 20:59 | 19:41 | 36 08:24 (1) | 18:25 | 30 09:19 (27) | 16:23 | | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 07:47 (2) | 08:14 | 08:50 (26) | 08:17 | | 08:59 |
| | 21:59 | 20:57 | 19:38 | 37 08:24 (1) | 18:23 | 30 09:20 (27) | 16:22 | | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 | 07:47 (2) | 08:16 | 08:53 (26) | 08:19 | | 08:59 |
| | 21:57 | 20:54 | 19:36 | 36 08:23 (1) | 18:20 | 28 09:21 (27) | 16:20 | | 16:06 |
| 23 | 05:24 | 06:21 | 07:20 | 07:47 (2) | 08:18 | 08:56 (26) | 08:21 | | 09:00 |
| | 21:56 | 20:52 | 19:33 | 36 08:23 (1) | 18:18 | 25 09:21 (27) | 16:19 | | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 07:49 (2) | 08:20 | 08:59 (27) | 08:23 | | 09:00 |
| | 21:54 | 20:49 | 19:30 | 33 08:22 (1) | 18:16 | 22 09:21 (27) | 16:18 | | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:51 (2) | 07:22 | 07:59 (27) | 08:25 | | 09:00 |
| | 21:53 | 20:47 | 19:28 | 29 08:20 (1) | 17:13 | 23 08:22 (28) | 16:16 | | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 | 07:53 (2) | 07:24 | 07:59 (27) | 08:27 | | 09:01 |
| | 21:51 | 20:44 | 19:25 | 26 08:19 (1) | 17:11 | 24 08:23 (28) | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | 08:00 (27) | 08:28 | | 09:01 |
| | 21:49 | 20:42 | 19:23 | 22 08:17 (1) | 17:09 | 24 08:24 (28) | 16:14 | | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | 08:01 (27) | 08:30 | | 09:01 |
| | 21:47 | 20:40 | 19:20 | 18 08:15 (1) | 17:07 | 23 08:24 (28) | 16:13 | | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 08:01 (1) | 07:31 | 08:01 (27) | 08:32 | | 09:01 |
| | 21:46 | 20:37 | 19:17 | 9 08:10 (1) | 17:04 | 23 08:24 (28) | 16:12 | | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | | 07:33 | 08:03 (27) | 08:34 | | 09:01 |
| | 21:44 | 20:35 | 19:15 | | 17:02 | 21 08:24 (28) | 16:11 | | 16:12 |
| 31 | 05:38 | 06:36 | | | 07:35 | 08:06 (27) | | | 09:01 |
| | 21:42 | 20:32 | | | 17:00 | 19 08:25 (28) | | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | | 326 | | 253 | | 224 |
| Total, worst case | | | | 551 | | 828 | | 47 | |
| Sun reduction | | | | 0,40 | | 0,31 | | 0,16 | |
| Oper. time red. | | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | 0,90 | | 0,85 | |
| Total reduction | | | | 0,39 | | 0,27 | | 0,13 | |
| Total, real | | | | 215 | | 228 | | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 08:22 (26) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | | 18:08 | 22 | 08:44 (26) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 08:24 (26) | 07:06 | 05:53 | 05:01 |
| | 16:15 | 17:10 | | | 18:10 | 19 | 08:43 (26) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | | 07:22 | | 08:25 (26) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:13 | | | 18:12 | 15 | 08:40 (26) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:20 | | 08:29 (26) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | | | 18:14 | 8 | 08:37 (26) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | | | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | | 07:15 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | | | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | | | 07:12 | | | 06:53 | 05:42 | 04:57 |
| | 16:22 | 17:21 | | | 18:20 | | | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | | 08:42 (27) | 07:10 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 3 | 08:45 (27) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | | 08:40 (27) | 07:07 | | 07:33 (1) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 9 | 08:49 (27) | 18:24 | 7 | 07:40 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | | 08:38 (27) | 07:05 | | 07:29 (1) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 13 | 08:51 (27) | 18:26 | 15 | 07:44 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | | 08:36 (27) | 07:02 | | 07:27 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 16 | 08:52 (27) | 18:28 | 19 | 07:46 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | | 08:34 (27) | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18 | 08:52 (27) | 18:30 | 23 | 07:47 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | | 08:34 (27) | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 19 | 08:53 (27) | 18:32 | 26 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:54 | 08:02 | | 08:34 (27) | 06:54 | | 07:19 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 20 | 08:54 (27) | 18:34 | 28 | 07:47 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | | 08:33 (26) | 06:52 | | 07:16 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 21 | 08:54 (27) | 18:36 | 26 | 07:46 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | | 08:28 (26) | 06:49 | | 07:21 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 25 | 08:53 (27) | 18:38 | 16 | 07:46 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 08:27 (26) | 06:47 | | 07:24 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 27 | 08:54 (27) | 18:40 | 9 | 07:45 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | | 08:24 (26) | 06:44 | | 07:39 (1) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 28 | 08:52 (27) | 18:42 | 6 | 07:45 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | | 08:24 (26) | 06:42 | | 07:40 (1) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 28 | 08:52 (27) | 18:44 | 4 | 07:44 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | | 08:23 (26) | 06:39 | | 07:41 (1) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 28 | 08:51 (27) | 18:46 | 3 | 07:44 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | | 08:22 (26) | 06:36 | | 07:42 (1) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 27 | 08:49 (27) | 18:48 | 2 | 07:44 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | | 08:22 (26) | 06:34 | | 07:42 (1) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 26 | 08:48 (26) | 18:50 | 2 | 07:44 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | | 08:21 (26) | 06:31 | | 07:43 (1) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 26 | 08:47 (26) | 18:52 | 1 | 07:44 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | | 08:21 (26) | 06:29 | | 07:42 (1) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 27 | 08:48 (26) | 18:54 | 1 | 07:43 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | | 08:21 (26) | 06:26 | | | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17:59 | 26 | 08:47 (26) | 18:56 | | | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | | 08:21 (26) | 06:24 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 26 | 08:47 (26) | 18:58 | | | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | | 08:21 (26) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 25 | 08:46 (26) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | | 08:22 (26) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 23 | 08:45 (26) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | | 20:04 | | | 21:05 | 21:59 | 22:19 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 461 | | | 252 | | | | |
| Sun reduction | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | 0,88 | | | 0,96 | | | | |
| Total reduction | | | 0,21 | | | 0,32 | | | | |
| Total, real | | | 99 | | | 82 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | 07:37 | 08:08 (27) | 08:35 |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 24 | 08:26 (1) | 16:58 | 12 08:20 (27) | 16:10 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (1) | 07:39 | 08:10 (27) | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 21 | 08:25 (1) | 16:56 | 8 08:18 (27) | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (1) | 07:41 | 08:12 (27) | 08:39 |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 17 | 08:23 (1) | 16:54 | 2 08:14 (27) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (1) | 07:43 | | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 12 | 08:20 (1) | 16:52 | | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | | 07:45 | | 08:42 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | | 07:47 | | 08:43 |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | | | 16:48 | | 16:06 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | 07:51 | | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | | 16:05 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 09:01 (26) | 07:55 | | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 12 | 09:13 (26) | 16:40 | | 16:05 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:58 (26) | 07:57 | | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 17 | 09:15 (26) | 16:38 | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:56 (26) | 08:00 | | 08:51 |
| | 22:10 | | 21:17 | | 20:02 | | 18:44 | 20 | 09:16 (26) | 16:36 | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:56 (26) | 08:02 | | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 22 | 09:18 (26) | 16:34 | | 16:04 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 08:00 | | 08:55 (26) | 08:04 | | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 24 | 09:19 (26) | 16:33 | | 16:04 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:54 (26) | 08:06 | | 08:54 |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 25 | 09:19 (26) | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:53 (26) | 08:08 | | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 26 | 09:19 (26) | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:15 (1) | 08:06 | | 08:53 (26) | 08:10 | | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | 11 08:26 (1) | 18:32 | 26 | 09:19 (26) | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:12 (1) | 08:08 | | 08:52 (26) | 08:12 | | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 17 08:29 (1) | 18:30 | 27 | 09:19 (26) | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:04 (2) | 08:10 | | 08:52 (26) | 08:14 | | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 25 08:29 (1) | 18:27 | 26 | 09:18 (26) | 16:25 | | 16:04 |
| 20 | 05:20 | | 06:15 | | 07:14 | 08:01 (2) | 08:12 | | 08:52 (26) | 08:15 | | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 29 08:30 (1) | 18:25 | 26 | 09:18 (27) | 16:23 | | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (2) | 08:14 | | 08:52 (26) | 08:17 | | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 30 08:29 (1) | 18:23 | 28 | 09:20 (27) | 16:22 | | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:57 (2) | 08:16 | | 08:54 (26) | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 32 08:29 (1) | 18:20 | 28 | 09:22 (27) | 16:20 | | 16:06 |
| 23 | 05:24 | | 06:21 | | 07:20 | 07:56 (2) | 08:18 | | 08:54 (26) | 08:21 | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 32 08:28 (1) | 18:18 | 29 | 09:23 (27) | 16:19 | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:55 (2) | 08:20 | | 08:55 (26) | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 33 08:28 (1) | 18:16 | 28 | 09:23 (27) | 16:18 | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:55 (2) | 07:22 | | 07:56 (26) | 08:25 | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 33 08:28 (1) | 17:13 | 27 | 08:23 (27) | 16:16 | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:55 (2) | 07:24 | | 07:59 (26) | 08:27 | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 32 08:27 (1) | 17:11 | 24 | 08:23 (27) | 16:15 | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:55 (2) | 07:27 | | 08:03 (27) | 08:29 | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 32 08:27 (1) | 17:09 | 21 | 08:24 (27) | 16:14 | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:57 (2) | 07:29 | | 08:03 (27) | 08:30 | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 30 08:27 (1) | 17:07 | 20 | 08:23 (27) | 16:13 | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:58 (2) | 07:31 | | 08:03 (27) | 08:32 | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 28 08:26 (1) | 17:04 | 19 | 08:22 (27) | 16:12 | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:00 (2) | 07:33 | | 08:04 (27) | 08:34 | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | 27 08:27 (1) | 17:02 | 18 | 08:22 (27) | 16:11 | | 16:12 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:06 (27) | | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | 15 | 08:21 (27) | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 391 | | 582 | | | 22 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,98 | | 0,89 | | | 0,86 | | |
| Total reduction | | | | | 0,39 | | 0,27 | | | 0,13 | | |
| Total, real | | | | | 151 | | 158 | | | 3 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 09:10 (27) | | 07:27 | 08:13 (29) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 29 | 09:39 (26) | | 18:08 | 18 | 08:31 (29) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 09:10 (27) | | 07:24 | | 08:05 (1) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 31 | 09:41 (26) | | 18:10 | 25 | 08:30 (29) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 09:10 (27) | | 07:22 | | 08:00 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:12 | 32 | 09:42 (26) | | 18:12 | 20 | 08:28 (29) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:10 (27) | | 07:20 | | 07:58 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 33 | 09:43 (26) | | 18:14 | 10 | 08:24 (29) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 09:11 (27) | | 07:17 | | 07:55 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 33 | 09:44 (26) | | 18:16 | 5 | 08:00 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 09:11 (27) | | 07:15 | | 07:54 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 34 | 09:45 (26) | | 18:18 | 4 | 07:58 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 09:12 (27) | | 07:12 | | 07:41 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 34 | 09:46 (26) | | 18:20 | 6 | 07:55 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 09:11 (27) | | 07:10 | | 07:35 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 35 | 09:46 (26) | | 18:22 | 9 | 07:53 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 09:11 (26) | | 07:07 | | 07:33 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 36 | 09:47 (26) | | 18:24 | 6 | 07:52 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 09:11 (26) | | 07:05 | | 07:30 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 36 | 09:47 (26) | | 18:26 | 5 | 07:50 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 09:11 (26) | | 07:02 | | 07:29 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 37 | 09:48 (26) | | 18:28 | 5 | 07:50 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 09:10 (26) | | 06:59 | | 07:28 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 37 | 09:47 (26) | | 18:30 | 3 | 07:48 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 09:10 (26) | | 06:57 | | 07:22 (30) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 37 | 09:47 (26) | | 18:32 | 7 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 09:11 (26) | | 06:54 | | 07:19 (30) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 36 | 09:47 (26) | | 18:34 | 11 | 07:47 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 09:10 (26) | | 06:52 | | 07:16 (30) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 36 | 09:46 (26) | | 18:36 | 15 | 07:46 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 09:11 (26) | | 06:49 | | 07:14 (30) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 35 | 09:46 (26) | | 18:38 | 18 | 07:46 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 09:12 (26) | | 06:47 | | 07:13 (30) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 34 | 09:46 (26) | | 18:40 | 18 | 07:31 (30) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:20 (29) | | 06:44 | | 07:13 (30) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 40 | 09:45 (26) | | 18:42 | 19 | 07:32 (30) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:17 (29) | | 06:42 | | 07:12 (30) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 44 | 09:44 (26) | | 18:44 | 19 | 07:31 (30) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:16 (29) | | 06:39 | | 07:11 (30) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 46 | 09:44 (26) | | 18:46 | 20 | 07:31 (30) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:17 (28) | 07:46 | | 08:14 (29) | | 06:36 | 07:12 (30) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 5 | 09:22 (28) | 17:51 | 46 | 09:42 (26) | | 18:48 | 19 | 07:31 (30) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:16 (28) | 07:44 | | 08:14 (29) | | 06:34 | 07:12 (30) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 9 | 09:25 (28) | 17:53 | 44 | 09:40 (26) | | 18:50 | 17 | 07:29 (30) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | | 09:14 (28) | 07:41 | | 08:12 (29) | | 06:31 | 07:13 (30) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 12 | 09:26 (28) | 17:55 | 42 | 09:38 (26) | | 18:52 | 15 | 07:28 (30) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:12 (28) | 07:39 | | 08:13 (29) | | 06:29 | 07:14 (30) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 15 | 09:27 (28) | 17:57 | 35 | 09:35 (26) | | 18:54 | 12 | 07:26 (30) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | | 09:11 (28) | 07:37 | | 08:12 (29) | | 06:26 | 07:16 (30) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17 | 09:28 (28) | 17:59 | 22 | 08:34 (29) | | 18:56 | 6 | 07:22 (30) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 09:11 (28) | 07:34 | | 08:12 (29) | | 06:24 | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 19 | 09:30 (28) | 18:01 | 22 | 08:34 (29) | | 18:58 | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:11 (28) | 07:32 | | 08:12 (29) | | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 20 | 09:31 (27) | 18:03 | 21 | 08:33 (29) | | 19:00 | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | | 09:11 (28) | 07:29 | | 08:13 (29) | | 06:18 | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 22 | 09:33 (27) | 18:05 | 20 | 08:33 (29) | | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:10 (28) | | | | | 07:16 | | 06:00 | 05:05 | 04:56 |
| | 17:02 | 23 | 09:33 (27) | | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:10 (28) | | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 25 | 09:35 (26) | | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:10 (27) | | | | | 07:11 | | | 05:03 | |
| | 17:06 | 27 | 09:37 (26) | | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 194 | | | 967 | | | 312 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,75 | | | 0,79 | | | 0,97 | | | | |
| Total reduction | | 0,13 | | | 0,19 | | | 0,32 | | | | |
| Total, real | | 26 | | | 183 | | | 101 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (2) | | 08:40 (26) | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 26 | 08:44 (1) | | 09:17 (26) | |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:07 (2) | | 08:40 (26) | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 27 | 08:44 (1) | | 09:16 (26) | |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:08 (2) | | 08:40 (26) | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 27 | 08:45 (1) | | 09:15 (26) | |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:09 (2) | | 08:41 (27) | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 27 | 08:45 (1) | | 09:16 (26) | |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:11 (2) | | 08:41 (27) | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 27 | 08:46 (1) | | 09:15 (26) | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:14 (2) | | 08:40 (27) | |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 27 | 08:47 (1) | | 09:14 (26) | |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:28 (1) | | 08:40 (27) | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 20 | 08:48 (1) | | 09:13 (26) | |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:29 (1) | | 08:41 (27) | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 20 | 08:49 (1) | | 09:13 (26) | |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:31 (1) | | 08:41 (27) | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 19 | 08:50 (1) | | 09:11 (26) | |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:33 (1) | | 08:41 (27) | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 27 | 09:00 (29) | | 09:10 (26) | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:35 (1) | | 08:41 (28) | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 28 | 09:03 (29) | | 09:08 (26) | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:41 (1) | | 08:42 (28) | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 22 | 09:04 (29) | | 09:07 (26) | |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:46 (29) | | 08:42 (28) | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 09:05 (29) | | 09:05 (27) | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:46 (29) | | 08:42 (28) | |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 20 | 09:06 (29) | | 09:04 (27) | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:45 (29) | | 08:43 (28) | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 21 | 09:06 (29) | | 09:03 (27) | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:44 (29) | | 08:44 (28) | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 22 | 09:06 (29) | | 09:03 (28) | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 08:44 (29) | | 08:45 (28) | |
| | 22:04 | | 21:06 | | 19:49 | | 18:32 | 31 | 10:04 (26) | | 09:02 (28) | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 (30) | | 08:44 (29) | | 08:46 (28) | |
| | 22:03 | | 21:04 | | 19:46 | 3 | 08:09 (30) | | 18:30 | 37 | 10:07 (26) | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:01 (30) | | 08:10 | | 08:44 (29) | |
| | 22:02 | | 21:01 | | 19:43 | 11 | 08:12 (30) | | 18:27 | 43 | 10:10 (26) | |
| 20 | 05:20 | | 06:15 | | 07:14 | | 07:59 (30) | | 08:12 | | 08:44 (29) | |
| | 22:00 | | 20:59 | | 19:41 | 15 | 08:14 (30) | | 18:25 | 45 | 10:11 (26) | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 07:58 (30) | | 08:14 | | 08:45 (29) | |
| | 21:59 | | 20:57 | | 19:38 | 16 | 08:14 (30) | | 18:23 | 46 | 10:12 (26) | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 07:57 (30) | | 08:16 | | 08:47 (29) | |
| | 21:57 | | 20:54 | | 19:36 | 18 | 08:15 (30) | | 18:20 | 45 | 10:14 (26) | |
| 23 | 05:24 | | 06:21 | | 07:20 | | 07:56 (30) | | 08:18 | | 08:48 (29) | |
| | 21:56 | | 20:52 | | 19:33 | 19 | 08:15 (30) | | 18:18 | 44 | 10:15 (26) | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 07:55 (30) | | 08:20 | | 08:51 (29) | |
| | 21:54 | | 20:49 | | 19:30 | 20 | 08:15 (30) | | 18:16 | 38 | 10:15 (26) | |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:55 (30) | | 07:22 | | 08:41 (26) | |
| | 21:53 | | 20:47 | | 19:28 | 20 | 08:15 (30) | | 17:13 | 35 | 09:16 (26) | |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:55 (30) | | 07:24 | | 08:40 (26) | |
| | 21:51 | | 20:44 | | 19:25 | 19 | 08:14 (30) | | 17:11 | 36 | 09:16 (26) | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:56 (30) | | 07:27 | | 08:41 (26) | |
| | 21:49 | | 20:42 | | 19:23 | 17 | 08:13 (30) | | 17:09 | 36 | 09:17 (26) | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:57 (30) | | 07:29 | | 08:40 (26) | |
| | 21:47 | | 20:40 | | 19:20 | 15 | 08:12 (30) | | 17:07 | 37 | 09:17 (26) | |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:58 (30) | | 07:31 | | 08:40 (26) | |
| | 21:46 | | 20:37 | | 19:17 | 12 | 08:26 (1) | | 17:04 | 37 | 09:17 (26) | |
| 30 | 05:36 | | 06:34 | | 07:33 | | 08:00 (30) | | 07:33 | | 08:39 (26) | |
| | 21:44 | | 20:35 | | 19:15 | 10 | 08:27 (1) | | 17:02 | 37 | 09:16 (26) | |
| 31 | 05:38 | | 06:36 | | | | | | 07:35 | | 08:40 (26) | |
| | 21:42 | | 20:32 | | | | | | 17:00 | 37 | 09:17 (26) | |
| Potential sun hours | 521 | | 465 | | 383 | | | | 326 | | 253 | |
| Total, worst case | | | | | | 195 | | | | 963 | | 529 |
| Sun reduction | | | | | | 0,40 | | | | 0,31 | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | | | 1,00 | | 1,00 |
| Wind dir. red. | | | | | | 0,99 | | | | 0,85 | | 0,75 |
| Total reduction | | | | | | 0,38 | | | | 0,26 | | 0,12 |
| Total, real | | | | | | 75 | | | | 246 | | 62 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 09:33 (28) | 07:27 | 08:17 (1) | 07:08 | 09:08 (1) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 56 | 10:29 (26) | 18:08 | 33 08:50 (1) | 20:10 | 9 09:17 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 09:34 (28) | 07:24 | 08:15 (1) | 07:06 | 09:11 (1) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 55 | 10:29 (26) | 18:10 | 38 08:53 (1) | 20:12 | 7 09:18 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 09:35 (27) | 07:22 | 08:18 (1) | 07:03 | 09:15 (1) | 05:51 | 05:00 |
| | 16:16 | | 17:12 | 55 | 10:30 (26) | 18:12 | 36 08:54 (1) | 20:14 | 3 09:18 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:36 (27) | 07:20 | 08:23 (1) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 54 | 10:30 (26) | 18:14 | 33 08:56 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 09:37 (27) | 07:17 | 08:26 (1) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 53 | 10:30 (26) | 18:16 | 30 08:56 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 09:38 (27) | 07:15 | 07:47 (2) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 52 | 10:30 (26) | 18:18 | 38 08:58 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 09:40 (27) | 07:12 | 07:42 (2) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 51 | 10:31 (26) | 18:20 | 46 08:58 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | | 08:14 | | 09:41 (27) | 07:10 | 07:39 (2) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 49 | 10:30 (26) | 18:22 | 41 08:58 (1) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 09:44 (27) | 07:07 | 07:52 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 46 | 10:30 (26) | 18:24 | 34 08:59 (1) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 09:46 (26) | 07:05 | 07:54 (2) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 44 | 10:30 (26) | 18:26 | 30 08:59 (1) | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | 09:32 (28) | 08:08 | | 09:47 (26) | 07:02 | 07:56 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 6 09:38 (28) | 17:30 | 43 | 10:30 (26) | 18:28 | 27 09:00 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | 09:30 (28) | 08:06 | | 09:46 (26) | 06:59 | 08:34 (1) | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 10 09:40 (28) | 17:32 | 42 | 10:28 (26) | 18:30 | 26 09:00 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | 09:29 (28) | 08:04 | | 09:47 (26) | 06:57 | 07:24 (30) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 18 09:47 (27) | 17:34 | 41 | 10:28 (26) | 18:32 | 31 09:00 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | 09:29 (28) | 08:02 | | 08:34 (29) | 06:54 | 07:20 (30) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 21 09:50 (27) | 17:36 | 45 | 10:28 (26) | 18:34 | 38 09:00 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | 09:28 (28) | 08:00 | | 08:30 (29) | 06:52 | 07:17 (30) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 24 09:52 (27) | 17:38 | 50 | 10:26 (26) | 18:36 | 42 08:59 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:27 (28) | 07:57 | | 08:28 (29) | 06:49 | 07:16 (30) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 35 10:07 (26) | 17:40 | 51 | 10:25 (26) | 18:38 | 44 09:00 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:27 (28) | 07:55 | | 08:27 (29) | 06:47 | 07:15 (30) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 41 10:10 (26) | 17:42 | 52 | 10:24 (26) | 18:40 | 45 08:59 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | 09:28 (28) | 07:53 | | 08:25 (29) | 06:44 | 07:15 (30) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 45 10:13 (26) | 17:44 | 51 | 10:22 (26) | 18:42 | 45 08:59 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | 09:27 (28) | 07:51 | | 08:25 (29) | 06:42 | 07:13 (30) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 48 10:15 (26) | 17:47 | 49 | 10:20 (26) | 18:44 | 47 08:58 (1) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | 09:27 (28) | 07:48 | | 08:24 (29) | 06:39 | 07:13 (30) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 50 10:17 (26) | 17:49 | 45 | 10:18 (26) | 18:46 | 46 08:57 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | 09:27 (28) | 07:46 | | 08:23 (29) | 06:36 | 07:13 (30) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | 51 10:18 (26) | 17:51 | 38 | 10:13 (26) | 18:48 | 46 08:57 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 09:27 (28) | 07:44 | | 08:23 (29) | 06:34 | 07:13 (30) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 52 10:19 (26) | 17:53 | 26 | 08:49 (29) | 18:50 | 45 08:56 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | 09:27 (28) | 07:41 | | 08:23 (29) | 06:31 | 07:14 (30) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 54 10:21 (26) | 17:55 | 25 | 08:48 (29) | 18:52 | 43 08:55 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:27 (28) | 07:39 | | 08:23 (29) | 06:29 | 07:14 (30) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 55 10:22 (26) | 17:57 | 25 | 08:48 (29) | 18:54 | 42 08:54 (1) | 20:55 | | 21:51 | 22:20 |
| 25 | 08:40 | 09:27 (28) | 07:37 | | 08:23 (29) | 06:26 | 07:14 (30) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | 56 10:23 (26) | 17:59 | 24 | 08:47 (29) | 18:56 | 42 08:52 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | 09:28 (28) | 07:34 | | 08:24 (29) | 06:24 | 07:17 (30) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 57 10:25 (26) | 18:01 | 23 | 08:47 (29) | 18:58 | 39 08:51 (1) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 09:29 (28) | 07:32 | | 08:23 (1) | 06:21 | 07:20 (30) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 57 10:26 (26) | 18:03 | 22 | 08:45 (29) | 19:00 | 29 08:49 (1) | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | 09:29 (28) | 07:29 | | 08:20 (1) | 06:18 | 08:26 (1) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 57 10:26 (26) | 18:05 | 28 | 08:48 (1) | 19:02 | 22 08:48 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 09:30 (28) | | | | 07:16 | 09:24 (1) | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 57 10:27 (26) | | | | 20:04 | 22 09:46 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | 09:30 (28) | | | | 07:13 | 09:22 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 58 10:28 (26) | | | | 20:06 | 22 09:44 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | 09:31 (28) | | | | 07:11 | 09:19 (1) | | | 05:03 | |
| | 17:06 | 57 10:28 (26) | | | | 20:08 | 22 09:41 (1) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 909 | | 1195 | | | 1124 | | 19 | | |
| Sun reduction | | 0,18 | | 0,25 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,67 | | 0,71 | | | 0,94 | | 0,92 | | |
| Total reduction | | 0,12 | | 0,17 | | | 0,31 | | 0,35 | | |
| Total, real | | 105 | | 200 | | | 345 | | 7 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:12 (2) | 07:37 | | 09:15 (26) | 08:35 | 09:14 (28) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 5 | 08:44 (1) | 16:58 | 44 | 09:59 (26) | 16:10 | 7 09:21 (28) |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:12 (2) | 07:39 | | 09:13 (27) | 08:37 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 5 | 08:44 (1) | 16:56 | 46 | 09:59 (26) | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:13 (2) | 07:41 | | 09:10 (27) | 08:39 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 6 | 08:45 (1) | 16:54 | 49 | 09:59 (26) | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:14 (2) | 07:43 | | 09:09 (27) | 08:40 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 6 | 08:45 (1) | 16:52 | 51 | 10:00 (26) | 16:08 | |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:15 (2) | 07:45 | | 09:08 (27) | 08:42 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 8 | 08:46 (1) | 16:50 | 52 | 10:00 (26) | 16:07 | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:17 (2) | 07:47 | | 09:06 (27) | 08:43 | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | 8 | 08:47 (1) | 16:48 | 54 | 10:00 (26) | 16:06 | |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:20 (2) | 07:49 | | 09:05 (27) | 08:44 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 7 | 08:48 (1) | 16:46 | 55 | 10:00 (26) | 16:06 | |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:44 (1) | 07:51 | | 09:06 (27) | 08:46 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 5 | 08:49 (1) | 16:44 | 54 | 10:00 (26) | 16:05 | |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:45 (1) | 07:53 | | 09:05 (28) | 08:47 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 5 | 08:50 (1) | 16:42 | 55 | 10:00 (26) | 16:05 | |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:46 (1) | 07:55 | | 09:03 (28) | 08:48 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 6 | 08:52 (1) | 16:40 | 56 | 09:59 (26) | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:48 (1) | 07:57 | | 09:02 (28) | 08:50 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 12 | 09:11 (29) | 16:38 | 57 | 09:59 (26) | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:49 (1) | 07:59 | | 09:02 (28) | 08:51 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 20 | 09:14 (29) | 16:36 | 57 | 09:59 (26) | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:51 (1) | 08:02 | | 09:02 (28) | 08:52 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 25 | 09:16 (29) | 16:34 | 57 | 09:59 (26) | 16:04 | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:54 (1) | 08:04 | | 09:01 (28) | 08:53 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 24 | 09:18 (29) | 16:33 | 57 | 09:58 (26) | 16:04 | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:57 (29) | 08:06 | | 09:01 (28) | 08:54 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 22 | 09:19 (29) | 16:31 | 56 | 09:57 (26) | 16:04 | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:56 (29) | 08:08 | | 09:01 (28) | 08:55 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 23 | 09:19 (29) | 16:29 | 57 | 09:58 (26) | 16:04 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:06 (30) | 08:06 | | 08:55 (29) | 08:10 | | 09:01 (28) | 08:56 | |
| | 22:04 | | 21:06 | | 19:49 | 10 08:16 (30) | 18:32 | 24 | 09:19 (29) | 16:28 | 56 | 09:57 (26) | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:03 (30) | 08:08 | | 08:54 (29) | 08:12 | | 09:01 (28) | 08:57 | |
| | 22:03 | | 21:04 | | 19:46 | 15 08:18 (30) | 18:30 | 25 | 09:19 (29) | 16:26 | 55 | 09:56 (26) | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:01 (30) | 08:10 | | 08:54 (29) | 08:13 | | 09:01 (28) | 08:57 | |
| | 22:02 | | 21:01 | | 19:43 | 18 08:19 (30) | 18:27 | 25 | 09:19 (29) | 16:25 | 54 | 09:55 (26) | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:14 | 07:59 (30) | 08:12 | | 08:54 (29) | 08:15 | | 09:02 (28) | 08:58 | |
| | 22:00 | | 20:59 | | 19:41 | 20 08:19 (30) | 18:25 | 25 | 09:19 (29) | 16:23 | 52 | 09:54 (26) | 16:05 | |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (30) | 08:14 | | 08:54 (29) | 08:17 | | 09:03 (28) | 08:59 | |
| | 21:59 | | 20:57 | | 19:38 | 21 08:20 (30) | 18:23 | 40 | 10:45 (26) | 16:22 | 51 | 09:54 (26) | 16:05 | |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:58 (30) | 08:16 | | 08:55 (29) | 08:19 | | 09:03 (28) | 08:59 | |
| | 21:57 | | 20:54 | | 19:36 | 22 08:20 (30) | 18:20 | 46 | 10:49 (26) | 16:20 | 50 | 09:53 (26) | 16:05 | |
| 23 | 05:24 | | 06:21 | | 07:19 | 07:57 (30) | 08:18 | | 08:55 (29) | 08:21 | | 09:04 (28) | 09:00 | |
| | 21:56 | | 20:52 | | 19:33 | 23 08:20 (30) | 18:18 | 50 | 10:51 (26) | 16:19 | 48 | 09:52 (26) | 16:06 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:57 (30) | 08:20 | | 08:56 (29) | 08:23 | | 09:05 (28) | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | 23 08:20 (30) | 18:16 | 52 | 10:53 (26) | 16:18 | 45 | 09:50 (26) | 16:07 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:57 (30) | 07:22 | | 07:56 (29) | 08:25 | | 09:05 (28) | 09:00 | |
| | 21:53 | | 20:47 | | 19:28 | 22 08:19 (30) | 17:13 | 53 | 09:54 (26) | 16:16 | 42 | 09:49 (26) | 16:07 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:57 (30) | 07:24 | | 07:58 (29) | 08:27 | | 09:06 (28) | 09:01 | |
| | 21:51 | | 20:44 | | 19:25 | 21 08:18 (30) | 17:11 | 51 | 09:55 (26) | 16:15 | 35 | 09:46 (26) | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:58 (30) | 07:27 | | 08:01 (29) | 08:28 | | 09:07 (28) | 09:01 | |
| | 21:49 | | 20:42 | | 19:23 | 19 08:17 (30) | 17:09 | 49 | 09:57 (26) | 16:14 | 24 | 09:31 (27) | 16:09 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:58 (30) | 07:29 | | 09:18 (26) | 08:30 | | 09:09 (28) | 09:01 | |
| | 21:47 | | 20:40 | | 19:20 | 17 08:15 (30) | 17:07 | 39 | 09:57 (26) | 16:13 | 21 | 09:30 (27) | 16:10 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:59 (30) | 07:31 | | 09:17 (26) | 08:32 | | 09:10 (28) | 09:01 | |
| | 21:46 | | 20:37 | | 19:17 | 14 08:13 (30) | 17:04 | 41 | 09:58 (26) | 16:12 | 18 | 09:28 (27) | 16:11 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:01 (30) | 07:33 | | 09:16 (26) | 08:34 | | 09:12 (28) | 09:01 | |
| | 21:44 | | 20:35 | | 19:15 | 9 08:10 (30) | 17:02 | 42 | 09:58 (26) | 16:11 | 10 | 09:22 (28) | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 09:16 (26) | | | | 09:01 | |
| | 21:42 | | 20:32 | | | | 17:00 | 43 | 09:59 (26) | | | | 16:13 | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | | 224 | |
| Total, worst case | | | | | 254 | | 792 | | | 1418 | | | 7 | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | 0,99 | | 0,78 | | | 0,66 | | | 0,69 | |
| Total reduction | | | | | 0,38 | | 0,23 | | | 0,10 | | | 0,09 | |
| Total, real | | | | | 95 | | 181 | | | 142 | | | 1 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:41 (28) | 08:28 | | 09:54 (27) | 07:27 | 08:31 (1) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 24 | 10:32 (26) | 17:08 | 69 | 11:03 (26) | 18:07 | 48 | 09:19 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:40 (28) | 08:26 | | 09:55 (27) | 07:24 | 08:30 (1) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 33 | 10:34 (26) | 17:10 | 68 | 11:03 (26) | 18:10 | 48 | 09:18 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:40 (28) | 08:24 | | 09:56 (27) | 07:22 | 08:28 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 38 | 10:36 (26) | 17:12 | 67 | 11:03 (26) | 18:12 | 49 | 09:17 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:39 (28) | 08:22 | | 09:58 (27) | 07:20 | 08:28 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 42 | 10:37 (26) | 17:15 | 66 | 11:04 (26) | 18:14 | 49 | 09:17 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:39 (28) | 08:20 | | 10:00 (27) | 07:17 | 07:51 (2) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 48 | 10:40 (26) | 17:17 | 63 | 11:03 (26) | 18:16 | 62 | 09:15 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:39 (28) | 08:18 | | 10:04 (27) | 07:15 | 07:49 (2) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 51 | 10:41 (26) | 17:19 | 56 | 11:03 (26) | 18:18 | 61 | 09:15 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 09:38 (28) | 08:16 | | 10:16 (26) | 07:12 | 07:46 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 54 | 10:42 (26) | 17:21 | 47 | 11:03 (26) | 18:20 | 60 | 09:14 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:38 (28) | 08:14 | | 10:15 (26) | 07:10 | 07:47 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 58 | 10:44 (26) | 17:23 | 47 | 11:02 (26) | 18:22 | 55 | 09:13 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:39 (28) | 08:12 | | 10:16 (26) | 07:07 | 07:52 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 61 | 10:46 (26) | 17:25 | 46 | 11:02 (26) | 18:24 | 48 | 09:13 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:39 (28) | 08:10 | | 10:17 (26) | 07:04 | 07:54 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 63 | 10:47 (26) | 17:27 | 44 | 11:01 (26) | 18:26 | 43 | 09:12 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:39 (28) | 08:08 | | 08:43 (29) | 07:02 | 07:56 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 66 | 10:48 (26) | 17:30 | 50 | 11:01 (26) | 18:28 | 39 | 09:12 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:38 (28) | 08:06 | | 08:39 (29) | 06:59 | 08:34 (1) | 06:40 | 05:32 | 04:54 |
| | 16:30 | 69 | 10:49 (26) | 17:32 | 54 | 10:59 (26) | 18:30 | 37 | 09:11 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:38 (28) | 08:04 | | 08:37 (29) | 06:57 | 07:25 (30) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 72 | 10:50 (26) | 17:34 | 56 | 10:58 (26) | 18:32 | 46 | 09:11 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:38 (28) | 08:02 | | 08:36 (29) | 06:54 | 07:22 (30) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 73 | 10:51 (26) | 17:36 | 57 | 10:57 (26) | 18:34 | 50 | 09:10 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:39 (28) | 08:00 | | 08:34 (29) | 06:52 | 07:20 (30) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 74 | 10:53 (26) | 17:38 | 55 | 10:54 (26) | 18:36 | 53 | 09:09 (1) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (28) | 07:57 | | 08:34 (29) | 06:49 | 07:19 (30) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 75 | 10:53 (26) | 17:40 | 53 | 10:53 (26) | 18:38 | 55 | 09:09 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (28) | 07:55 | | 08:33 (29) | 06:47 | 07:17 (30) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 75 | 10:54 (26) | 17:42 | 49 | 10:50 (26) | 18:40 | 58 | 09:09 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (28) | 07:53 | | 08:32 (29) | 06:44 | 07:17 (30) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 77 | 10:56 (26) | 17:44 | 43 | 10:46 (26) | 18:42 | 58 | 09:09 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (28) | 07:51 | | 08:32 (29) | 06:42 | 07:16 (30) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 77 | 10:56 (26) | 17:47 | 28 | 09:00 (29) | 18:44 | 58 | 09:08 (1) | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:40 (28) | 07:48 | | 08:33 (29) | 06:39 | 07:15 (30) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 78 | 10:58 (26) | 17:49 | 27 | 09:00 (29) | 18:46 | 60 | 09:08 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:40 (28) | 07:46 | | 08:32 (29) | 06:36 | 07:15 (30) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 78 | 10:58 (26) | 17:51 | 27 | 08:59 (29) | 18:48 | 60 | 09:08 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:40 (28) | 07:44 | | 08:32 (29) | 06:34 | 07:15 (30) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 78 | 10:58 (26) | 17:53 | 37 | 09:09 (1) | 18:50 | 60 | 09:08 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:41 (28) | 07:41 | | 08:32 (29) | 06:31 | 07:16 (30) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 79 | 11:00 (26) | 17:55 | 41 | 09:13 (1) | 18:52 | 58 | 09:08 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (28) | 07:39 | | 08:33 (29) | 06:29 | 07:16 (30) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 79 | 11:00 (26) | 17:57 | 43 | 09:16 (1) | 18:54 | 59 | 09:08 (1) | 20:55 | 21:51 | 22:19 |
| 25 | 08:40 | | 09:42 (28) | 07:37 | | 08:33 (29) | 06:26 | 07:16 (30) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 78 | 11:00 (26) | 17:59 | 45 | 09:18 (1) | 18:56 | 61 | 09:08 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 09:43 (28) | 07:34 | | 08:34 (29) | 06:23 | 07:18 (30) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 79 | 11:02 (26) | 18:01 | 47 | 09:21 (1) | 18:58 | 61 | 09:08 (1) | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:44 (28) | 07:32 | | 08:35 (29) | 06:21 | 07:20 (30) | 06:04 | 05:08 | 04:54 |
| | 16:58 | 78 | 11:02 (26) | 18:03 | 47 | 09:22 (1) | 19:00 | 61 | 09:08 (1) | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | | 09:45 (28) | 07:29 | | 08:33 (1) | 06:18 | 07:44 (2) | 06:02 | 05:06 | 04:55 |
| | 17:00 | 77 | 11:02 (26) | 18:05 | 51 | 09:24 (1) | 19:02 | 56 | 09:09 (1) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:46 (28) | | | | 07:16 | 08:48 (2) | 06:00 | 05:05 | 04:55 |
| | 17:02 | 77 | 11:03 (26) | | | | 20:04 | 52 | 10:09 (1) | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:48 (28) | | | | 07:13 | 09:22 (1) | 05:57 | 05:04 | 04:56 |
| | 17:04 | 75 | 11:03 (26) | | | | 20:06 | 48 | 10:10 (1) | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:51 (28) | | | | 07:11 | 09:22 (1) | | 05:03 | |
| | 17:06 | 72 | 11:03 (26) | | | | 20:08 | 47 | 10:09 (1) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 2058 | | | 1383 | | | 1660 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,59 | | | 0,67 | | | 0,90 | | | |
| Total reduction | | 0,10 | | | 0,15 | | | 0,29 | | | |
| Total, real | | 204 | | | 214 | | | 480 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (30) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 4 | 08:11 (30) | | 16:58 | 45 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | | 16:56 | 45 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | | | | 16:54 | 47 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | | 16:52 | 48 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | | 16:50 | 57 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | | 16:48 | 63 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | | 16:46 | 66 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | | 16:44 | 67 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | | 16:42 | 69 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | | | | 16:40 | 70 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | | 16:38 | 73 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | | | 16:36 | 75 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 09:11 (29) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 12 | 09:23 (29) | | 16:34 | 77 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 09:10 (29) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16 | 09:26 (29) | | 16:33 | 77 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 09:08 (29) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 20 | 09:28 (29) | | 16:31 | 78 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:10 (30) | 08:04 | | 09:06 (29) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 9 08:19 (30) | 18:35 | 23 | 09:29 (29) | | 16:29 | 79 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:07 (30) | 08:06 | | 09:05 (29) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:48 | 15 08:22 (30) | 18:32 | 24 | 09:29 (29) | | 16:28 | 78 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:05 (30) | 08:08 | | 09:04 (29) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 18 08:23 (30) | 18:30 | 26 | 09:30 (29) | | 16:26 | 79 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:03 (30) | 08:10 | | 09:03 (29) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 20 08:23 (30) | 18:27 | 27 | 09:30 (29) | | 16:25 | 79 |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:02 (30) | 08:12 | | 09:03 (29) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 22 08:24 (30) | 18:25 | 27 | 09:30 (29) | | 16:23 | 78 |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:01 (30) | 08:14 | | 09:02 (29) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 23 08:24 (30) | 18:23 | 28 | 09:30 (29) | | 16:22 | 78 |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:00 (30) | 08:16 | | 09:03 (29) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 24 08:24 (30) | 18:20 | 27 | 09:30 (29) | | 16:20 | 78 |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:00 (30) | 08:18 | | 09:03 (29) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 24 08:24 (30) | 18:18 | 34 | 11:12 (26) | | 16:19 | 77 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:59 (30) | 08:20 | | 09:03 (29) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 25 08:24 (30) | 18:16 | 45 | 11:18 (26) | | 16:18 | 77 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:59 (30) | 07:22 | | 08:03 (29) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 24 08:23 (30) | 17:13 | 50 | 10:21 (26) | | 16:16 | 76 |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:00 (30) | 07:24 | | 08:03 (29) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 23 08:23 (30) | 17:11 | 54 | 10:23 (26) | | 16:15 | 75 |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:00 (30) | 07:27 | | 08:05 (29) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 22 08:22 (30) | 17:09 | 55 | 10:25 (26) | | 16:14 | 74 |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:00 (30) | 07:29 | | 08:06 (29) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 19 08:19 (30) | 17:07 | 57 | 10:27 (26) | | 16:13 | 73 |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (30) | 07:31 | | 08:07 (29) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 17 08:18 (30) | 17:04 | 56 | 10:28 (26) | | 16:12 | 71 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:03 (30) | 07:33 | | 08:09 (29) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 12 08:15 (30) | 17:02 | 53 | 10:29 (26) | | 16:11 | 69 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:14 (29) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 47 | 10:30 (26) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 297 | | 685 | | | | 2098 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,99 | | 0,73 | | | | 0,57 |
| Total reduction | | | | | | 0,37 | | 0,21 | | | | 0,08 |
| Total, real | | | | | | 109 | | 144 | | | | 178 |

| | December | | |
|---|---|---|---|
| 1 | 08:35 | | 09:21 (28) |
| | 16:10 | 67 | 10:31 (26) |
| 2 | 08:37 | | 09:21 (28) |
| | 16:09 | 63 | 10:29 (26) |
| 3 | 08:39 | | 09:22 (28) |
| | 16:08 | 61 | 10:29 (26) |
| 4 | 08:40 | | 09:23 (28) |
| | 16:08 | 58 | 10:29 (26) |
| 5 | 08:42 | | 09:24 (28) |
| | 16:07 | 53 | 10:27 (26) |
| 6 | 08:43 | | 09:25 (28) |
| | 16:06 | 51 | 10:27 (26) |
| 7 | 08:44 | | 09:25 (28) |
| | 16:06 | 48 | 10:26 (26) |
| 8 | 08:46 | | 09:27 (28) |
| | 16:05 | 44 | 10:26 (26) |
| 9 | 08:47 | | 09:28 (28) |
| | 16:05 | 39 | 10:24 (26) |
| 10 | 08:48 | | 09:30 (28) |
| | 16:04 | 33 | 10:24 (26) |
| 11 | 08:50 | | 09:31 (28) |
| | 16:04 | 24 | 10:22 (26) |
| 12 | 08:51 | | 09:32 (28) |
| | 16:04 | 13 | 09:51 (27) |
| 13 | 08:52 | | 09:47 (27) |
| | 16:04 | 1 | 09:48 (27) |
| 14 | 08:53 | | |
| | 16:04 | | |
| 15 | 08:54 | | |
| | 16:04 | | |
| 16 | 08:55 | | |
| | 16:04 | | |
| 17 | 08:56 | | |
| | 16:04 | | |
| 18 | 08:57 | | |
| | 16:04 | | |
| 19 | 08:57 | | |
| | 16:04 | | |
| 20 | 08:58 | | |
| | 16:05 | | |
| 21 | 08:59 | | |
| | 16:05 | | |
| 22 | 08:59 | | |
| | 16:05 | | |
| 23 | 09:00 | | |
| | 16:06 | | |
| 24 | 09:00 | | |
| | 16:07 | | |
| 25 | 09:00 | | |
| | 16:07 | | |
| 26 | 09:01 | | |
| | 16:08 | | |
| 27 | 09:01 | | |
| | 16:09 | | |
| 28 | 09:01 | | |
| | 16:10 | | |
| 29 | 09:01 | | |
| | 16:11 | | |
| 30 | 09:01 | | |
| | 16:11 | | |
| 31 | 09:01 | | 09:42 (28) |
| | 16:13 | 10 | 09:59 (27) |
| Potential sun hours | 224 | | |
| Total, worst case | | 565 | |
| Sun reduction | | 0,14 | |
| Oper. time red. | | 1,00 | |
| Wind dir. red. | | 0,59 | |
| Total reduction | | 0,08 | |
| Total, real | | 43 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:56 (28) | 08:28 | | 11:07 (26) | 07:27 | | 08:07 (2) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | 95 | 11:45 (26) | 17:08 | 49 | 11:56 (26) | 18:07 | 10 | 09:19 (1) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:55 (28) | 08:26 | | 11:07 (26) | 07:24 | | 08:05 (2) | 07:05 | | 05:53 | 05:01 |
| | 16:15 | 97 | 11:45 (26) | 17:10 | 49 | 11:56 (26) | 18:10 | 8 | 09:18 (1) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:56 (28) | 08:24 | | 11:08 (26) | 07:22 | | 08:03 (2) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 98 | 11:46 (26) | 17:12 | 48 | 11:56 (26) | 18:12 | 7 | 09:17 (1) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:56 (28) | 08:22 | | 09:02 (29) | 07:19 | | 08:02 (2) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | 98 | 11:46 (26) | 17:15 | 53 | 11:55 (26) | 18:14 | 7 | 09:17 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:57 (28) | 08:20 | | 08:59 (29) | 07:17 | | 08:00 (2) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 99 | 11:48 (26) | 17:17 | 58 | 11:54 (26) | 18:16 | 6 | 09:15 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:57 (28) | 08:18 | | 08:57 (29) | 07:15 | | 07:59 (2) | 06:55 | 07:20 (43) | 05:44 | 04:57 |
| | 16:20 | 99 | 11:48 (26) | 17:19 | 59 | 11:53 (26) | 18:18 | 6 | 09:15 (1) | 20:20 | 6 07:26 (43) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:57 (28) | 08:16 | | 08:55 (29) | 07:12 | | 07:58 (2) | 06:53 | 07:17 (43) | 05:42 | 04:56 |
| | 16:22 | 100 | 11:48 (26) | 17:21 | 75 | 11:52 (26) | 18:20 | 5 | 09:14 (1) | 20:22 | 10 07:27 (43) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:57 (28) | 08:14 | | 08:53 (29) | 07:10 | | 07:57 (2) | 06:50 | 07:15 (43) | 05:40 | 04:56 |
| | 16:23 | 102 | 11:49 (26) | 17:23 | 86 | 11:50 (26) | 18:22 | 3 | 09:13 (1) | 20:24 | 14 07:29 (43) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:59 (28) | 08:12 | | 08:53 (29) | 07:07 | | 07:57 (2) | 06:48 | 07:12 (43) | 05:38 | 04:55 |
| | 16:25 | 102 | 11:51 (26) | 17:25 | 91 | 11:49 (26) | 18:24 | 3 | 09:13 (1) | 20:26 | 17 07:29 (43) | 21:24 | 22:12 |
| 10 | 08:57 | | 09:59 (28) | 08:10 | | 08:52 (29) | 07:04 | | 07:36 (30) | 06:45 | 07:10 (43) | 05:36 | 04:55 |
| | 16:26 | 102 | 11:51 (26) | 17:27 | 95 | 11:47 (26) | 18:26 | 11 | 09:12 (1) | 20:27 | 20 07:30 (43) | 21:26 | 22:13 |
| 11 | 08:56 | | 10:00 (28) | 08:08 | | 08:52 (29) | 07:02 | | 07:33 (30) | 06:43 | 07:09 (43) | 05:34 | 04:54 |
| | 16:28 | 102 | 11:52 (26) | 17:30 | 95 | 11:44 (26) | 18:28 | 16 | 07:57 (2) | 20:29 | 20 07:29 (43) | 21:28 | 22:14 |
| 12 | 08:55 | | 09:59 (28) | 08:06 | | 08:51 (29) | 06:59 | | 07:30 (30) | 06:40 | 07:09 (43) | 05:32 | 04:54 |
| | 16:30 | 104 | 11:52 (26) | 17:32 | 93 | 11:39 (26) | 18:30 | 19 | 07:49 (30) | 20:31 | 21 07:30 (43) | 21:30 | 22:14 |
| 13 | 08:54 | | 10:00 (28) | 08:04 | | 08:51 (29) | 06:57 | | 07:29 (30) | 06:38 | 07:09 (43) | 05:30 | 04:53 |
| | 16:31 | 103 | 11:52 (26) | 17:34 | 83 | 10:27 (1) | 18:32 | 22 | 07:51 (30) | 20:33 | 21 07:30 (43) | 21:32 | 22:15 |
| 14 | 08:53 | | 10:00 (28) | 08:02 | | 08:51 (29) | 06:54 | | 07:27 (30) | 06:35 | 07:08 (43) | 05:29 | 04:53 |
| | 16:33 | 104 | 11:53 (26) | 17:36 | 87 | 10:29 (1) | 18:34 | 24 | 07:51 (30) | 20:35 | 21 07:29 (43) | 21:34 | 22:16 |
| 15 | 08:52 | | 10:01 (28) | 08:00 | | 08:50 (29) | 06:52 | | 07:26 (30) | 06:33 | 07:09 (43) | 05:27 | 04:53 |
| | 16:35 | 104 | 11:54 (26) | 17:38 | 91 | 10:30 (1) | 18:36 | 25 | 07:51 (30) | 20:37 | 19 07:28 (43) | 21:35 | 22:16 |
| 16 | 08:51 | | 10:01 (28) | 07:57 | | 08:50 (29) | 06:49 | | 07:25 (30) | 06:30 | 07:09 (43) | 05:25 | 04:52 |
| | 16:37 | 104 | 11:54 (26) | 17:40 | 94 | 10:32 (1) | 18:38 | 27 | 07:52 (30) | 20:39 | 18 07:27 (43) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:02 (28) | 07:55 | | 08:51 (29) | 06:47 | | 07:24 (30) | 06:28 | 07:10 (43) | 05:23 | 04:52 |
| | 16:38 | 105 | 11:55 (26) | 17:42 | 96 | 10:34 (1) | 18:40 | 28 | 07:52 (30) | 20:41 | 16 07:26 (43) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:04 (28) | 07:53 | | 08:51 (29) | 06:44 | | 07:25 (30) | 06:25 | 07:11 (43) | 05:21 | 04:52 |
| | 16:40 | 103 | 11:56 (26) | 17:44 | 98 | 10:35 (1) | 18:42 | 27 | 07:52 (30) | 20:43 | 14 07:25 (43) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (28) | 07:51 | | 08:52 (29) | 06:42 | | 07:24 (30) | 06:23 | 07:13 (43) | 05:20 | 04:52 |
| | 16:42 | 103 | 11:55 (26) | 17:47 | 99 | 10:36 (1) | 18:44 | 27 | 07:51 (30) | 20:45 | 8 07:21 (43) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (28) | 07:48 | | 08:53 (29) | 06:39 | | 07:23 (30) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 102 | 11:56 (26) | 17:49 | 100 | 10:38 (1) | 18:46 | 27 | 07:50 (30) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:06 (28) | 07:46 | | 08:53 (29) | 06:36 | | 07:24 (30) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 101 | 11:56 (26) | 17:51 | 101 | 10:38 (1) | 18:48 | 26 | 07:50 (30) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:07 (28) | 07:44 | | 08:54 (29) | 06:34 | | 07:24 (30) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 99 | 11:56 (26) | 17:53 | 100 | 10:39 (1) | 18:50 | 25 | 07:49 (30) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:09 (28) | 07:41 | | 08:55 (29) | 06:31 | | 07:25 (30) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 97 | 11:57 (26) | 17:55 | 100 | 10:40 (1) | 18:52 | 23 | 07:48 (30) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:11 (28) | 07:39 | | 08:57 (29) | 06:29 | | 07:25 (30) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 94 | 11:57 (26) | 17:57 | 97 | 10:41 (1) | 18:54 | 21 | 07:46 (30) | 20:55 | | 21:51 | 22:19 |
| 25 | 08:40 | | 10:14 (28) | 07:37 | | 09:00 (29) | 06:26 | | 07:26 (30) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 87 | 11:57 (26) | 17:59 | 92 | 10:41 (1) | 18:56 | 18 | 07:44 (30) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | | 10:25 (27) | 07:34 | | 09:18 (1) | 06:23 | | 07:29 (30) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 80 | 11:58 (26) | 18:01 | 84 | 10:42 (1) | 18:58 | 13 | 07:42 (30) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:26 (27) | 07:32 | | 08:13 (2) | 06:21 | | 07:33 (30) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:58 (26) | 18:03 | 100 | 10:42 (1) | 19:00 | 3 | 07:36 (30) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:28 (27) | 07:29 | | 08:10 (2) | 06:18 | | | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 74 | 11:58 (26) | 18:05 | 109 | 10:43 (1) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:30 (27) | | | | 07:16 | | | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 69 | 11:57 (26) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 10:32 (27) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 63 | 11:57 (26) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 11:06 (26) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 51 | 11:57 (26) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 2919 | | | 2382 | | | 437 | | | 225 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,42 | | | 0,67 | | | 0,96 | | | 0,99 | | |
| Total reduction | | 0,07 | | | 0,15 | | | 0,29 | | | 0,35 | | |
| Total, real | | 197 | | | 348 | | | 128 | | | 78 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:09 (43) | 07:35 | | 08:08 (30) | 07:37 | | 08:22 (29) | 08:35 | | 09:41 (28) |
| | 22:18 | | 21:40 | | | 20:30 | 20 | 07:29 (43) | 19:12 | 20 | 08:28 (30) | 16:58 | 95 | 11:17 (26) | 16:10 | 102 | 11:33 (26) |
| 2 | 04:58 | | 05:42 | | | 06:40 | | 07:08 (43) | 07:37 | | 08:10 (30) | 07:39 | | 08:23 (29) | 08:37 | | 09:41 (28) |
| | 22:18 | | 21:38 | | | 20:27 | 20 | 07:28 (43) | 19:10 | 16 | 08:26 (30) | 16:56 | 90 | 11:18 (26) | 16:09 | 102 | 11:33 (26) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:10 (43) | 07:39 | | 08:12 (30) | 07:41 | | 08:23 (29) | 08:39 | | 09:42 (28) |
| | 22:17 | | 21:36 | | | 20:25 | 17 | 07:27 (43) | 19:07 | 12 | 08:24 (30) | 16:54 | 86 | 11:20 (26) | 16:08 | 101 | 11:34 (26) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:12 (43) | 07:41 | | | 07:43 | | 08:25 (29) | 08:40 | | 09:43 (28) |
| | 22:17 | | 21:34 | | | 20:22 | 14 | 07:26 (43) | 19:05 | | | 16:52 | 71 | 11:22 (26) | 16:08 | 100 | 11:34 (26) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:14 (43) | 07:43 | | | 07:45 | | 08:27 (29) | 08:42 | | 09:42 (28) |
| | 22:16 | | 21:32 | | | 20:19 | 10 | 07:24 (43) | 19:02 | | | 16:50 | 59 | 11:23 (26) | 16:07 | 101 | 11:34 (26) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:16 (43) | 07:44 | | | 07:47 | | 08:29 (29) | 08:43 | | 09:43 (28) |
| | 22:16 | | 21:30 | | | 20:17 | 6 | 07:22 (43) | 18:59 | | | 16:48 | 57 | 11:24 (26) | 16:06 | 99 | 11:34 (26) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | | 07:46 | | | 07:49 | | 08:32 (29) | 08:44 | | 09:43 (28) |
| | 22:15 | | 21:28 | | | 20:14 | | | 18:57 | | | 16:46 | 52 | 11:25 (26) | 16:06 | 99 | 11:34 (26) |
| 8 | 05:03 | | 05:53 | | | 06:51 | | | 07:48 | | | 07:51 | | 10:39 (26) | 08:46 | | 09:44 (28) |
| | 22:14 | | 21:26 | | | 20:12 | | | 18:54 | | | 16:44 | 47 | 11:26 (26) | 16:05 | 98 | 11:34 (26) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | | 07:53 | | 10:38 (26) | 08:47 | | 09:44 (28) |
| | 22:13 | | 21:24 | | | 20:09 | | | 18:52 | | | 16:42 | 49 | 11:27 (26) | 16:05 | 98 | 11:34 (26) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | | 07:52 | | 08:36 (2) | 07:55 | | 10:37 (26) | 08:48 | | 09:45 (28) |
| | 22:12 | | 21:22 | | | 20:07 | | | 18:49 | 5 | 08:41 (2) | 16:40 | 50 | 11:27 (26) | 16:04 | 98 | 11:35 (26) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | | 07:54 | | 08:38 (2) | 07:57 | | 10:37 (26) | 08:50 | | 09:46 (28) |
| | 22:11 | | 21:19 | | | 20:04 | | | 18:47 | 4 | 08:42 (2) | 16:38 | 51 | 11:28 (26) | 16:04 | 96 | 11:35 (26) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:39 (2) | 07:59 | | 10:04 (27) | 08:51 | | 09:46 (28) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 6 | 08:45 (2) | 16:36 | 64 | 11:29 (26) | 16:04 | 96 | 11:35 (26) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:41 (2) | 08:01 | | 10:02 (27) | 08:52 | | 09:46 (28) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 7 | 08:48 (2) | 16:34 | 69 | 11:29 (26) | 16:04 | 95 | 11:35 (26) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:44 (2) | 08:04 | | 10:00 (27) | 08:53 | | 09:47 (28) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 15 | 09:04 (2) | 16:33 | 74 | 11:30 (26) | 16:04 | 94 | 11:35 (26) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:48 (2) | 08:06 | | 09:58 (27) | 08:54 | | 09:48 (28) |
| | 22:07 | | 21:11 | | | 19:54 | | | 18:37 | 12 | 09:00 (2) | 16:31 | 78 | 11:30 (26) | 16:04 | 93 | 11:36 (26) |
| 16 | 05:14 | | 06:08 | | | 07:06 | | | 08:04 | | 09:52 (1) | 08:08 | | 09:58 (27) | 08:55 | | 09:48 (28) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 3 | 09:55 (1) | 16:29 | 80 | 11:31 (26) | 16:04 | 93 | 11:36 (26) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:18 (30) | 08:06 | | 09:31 (29) | 08:10 | | 09:48 (28) | 08:56 | | 09:49 (28) |
| | 22:04 | | 21:06 | | | 19:48 | 12 | 08:30 (30) | 18:32 | 17 | 09:56 (1) | 16:28 | 87 | 11:31 (26) | 16:04 | 92 | 11:36 (26) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:15 (30) | 08:08 | | 09:28 (29) | 08:12 | | 09:45 (28) | 08:57 | | 09:49 (28) |
| | 22:03 | | 21:04 | | | 19:46 | 17 | 08:32 (30) | 18:30 | 23 | 09:57 (1) | 16:26 | 94 | 11:31 (26) | 16:04 | 93 | 11:37 (26) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:12 (30) | 08:10 | | 09:26 (29) | 08:13 | | 09:43 (28) | 08:57 | | 09:50 (28) |
| | 22:02 | | 21:01 | | | 19:43 | 20 | 08:32 (30) | 18:27 | 26 | 09:57 (1) | 16:25 | 97 | 11:31 (26) | 16:04 | 92 | 11:37 (26) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 08:11 (30) | 08:12 | | 09:24 (29) | 08:15 | | 09:42 (28) | 08:58 | | 09:50 (28) |
| | 22:00 | | 20:59 | | | 19:41 | 23 | 08:34 (30) | 18:25 | 31 | 09:59 (1) | 16:23 | 99 | 11:31 (26) | 16:05 | 91 | 11:37 (26) |
| 21 | 05:21 | | 06:17 | | | 07:16 | | 08:10 (30) | 08:14 | | 09:23 (29) | 08:17 | | 09:42 (28) | 08:59 | | 09:51 (28) |
| | 21:59 | | 20:57 | | | 19:38 | 24 | 08:34 (30) | 18:23 | 32 | 10:00 (1) | 16:22 | 101 | 11:32 (26) | 16:05 | 91 | 11:38 (26) |
| 22 | 05:23 | | 06:19 | | | 07:18 | | 08:09 (30) | 08:16 | | 09:23 (29) | 08:19 | | 09:41 (28) | 08:59 | | 09:52 (28) |
| | 21:57 | | 20:54 | | | 19:36 | 26 | 08:35 (30) | 18:20 | 34 | 10:02 (1) | 16:20 | 102 | 11:32 (26) | 16:05 | 91 | 11:39 (26) |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 08:08 (30) | 08:18 | | 09:22 (29) | 08:21 | | 09:41 (28) | 09:00 | | 09:52 (28) |
| | 21:56 | | 20:52 | | | 19:33 | 27 | 08:35 (30) | 18:18 | 35 | 10:03 (1) | 16:19 | 104 | 11:33 (26) | 16:06 | 91 | 11:39 (26) |
| 24 | 05:26 | | 06:23 | | 07:16 (43) | 07:21 | | 08:08 (30) | 08:20 | | 09:21 (29) | 08:23 | | 09:41 (28) | 09:00 | | 09:52 (28) |
| | 21:54 | | 20:49 | 9 | 07:25 (43) | 19:30 | 27 | 08:35 (30) | 18:16 | 38 | 10:05 (1) | 16:18 | 103 | 11:33 (26) | 16:07 | 91 | 11:39 (26) |
| 25 | 05:28 | | 06:25 | | 07:14 (43) | 07:23 | | 08:07 (30) | 07:22 | | 08:20 (29) | 08:25 | | 09:40 (28) | 09:00 | | 09:52 (28) |
| | 21:52 | | 20:47 | 13 | 07:27 (43) | 19:28 | 28 | 08:35 (30) | 17:13 | 39 | 09:06 (1) | 16:16 | 105 | 11:33 (26) | 16:07 | 93 | 11:40 (26) |
| 26 | 05:29 | | 06:27 | | 07:13 (43) | 07:25 | | 08:07 (30) | 07:24 | | 08:20 (29) | 08:27 | | 09:40 (28) | 09:01 | | 09:54 (28) |
| | 21:51 | | 20:44 | 16 | 07:29 (43) | 19:25 | 27 | 08:34 (30) | 17:11 | 39 | 09:08 (1) | 16:15 | 104 | 11:33 (26) | 16:08 | 92 | 11:41 (26) |
| 27 | 05:31 | | 06:28 | | 07:11 (43) | 07:27 | | 08:07 (30) | 07:26 | | 08:21 (29) | 08:28 | | 09:40 (28) | 09:01 | | 09:54 (28) |
| | 21:49 | | 20:42 | 18 | 07:29 (43) | 19:23 | 27 | 08:34 (30) | 17:09 | 42 | 10:00 (1) | 16:14 | 104 | 11:33 (26) | 16:09 | 94 | 11:42 (26) |
| 28 | 05:33 | | 06:30 | | 07:10 (43) | 07:29 | | 08:06 (30) | 07:29 | | 08:20 (29) | 08:30 | | 09:41 (28) | 09:01 | | 09:54 (28) |
| | 21:47 | | 20:40 | 19 | 07:29 (43) | 19:20 | 26 | 08:32 (30) | 17:07 | 45 | 09:58 (1) | 16:13 | 103 | 11:33 (26) | 16:10 | 93 | 11:42 (26) |
| 29 | 05:34 | | 06:32 | | 07:09 (43) | 07:31 | | 08:07 (30) | 07:31 | | 08:20 (29) | 08:32 | | 09:41 (28) | 09:01 | | 09:55 (28) |
| | 21:46 | | 20:37 | 21 | 07:30 (43) | 19:17 | 24 | 08:31 (30) | 17:04 | 47 | 09:56 (1) | 16:12 | 103 | 11:33 (26) | 16:11 | 94 | 11:43 (26) |
| 30 | 05:36 | | 06:34 | | 07:09 (43) | 07:33 | | 08:07 (30) | 07:33 | | 08:20 (29) | 08:34 | | 09:41 (28) | 09:01 | | 09:54 (28) |
| | 21:44 | | 20:35 | 21 | 07:30 (43) | 19:15 | 23 | 08:30 (30) | 17:02 | 69 | 11:10 (26) | 16:11 | 104 | 11:34 (26) | 16:11 | 95 | 11:43 (26) |
| 31 | 05:38 | | 06:36 | | 07:09 (43) | | | | 07:35 | | 08:22 (29) | | | | 09:01 | | 09:55 (28) |
| | 21:42 | | 20:32 | 21 | 07:30 (43) | | | | 17:00 | 83 | 11:14 (26) | | | | 16:13 | 95 | 11:44 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 138 | | | 418 | | | 700 | | | 2482 | | | 2953 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,98 | | | 0,78 | | | 0,43 | | | 0,44 | |
| Total reduction | | | | 0,45 | | | 0,35 | | | 0,21 | | | 0,06 | | | 0,05 | |
| Total, real | | | | 63 | | | 145 | | | 150 | | | 150 | | | 156 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:47 (29) | 08:28 | | 09:23 (2) | 07:27 | | 08:18 (30) | 07:08 | | 07:38 (43) | 05:55 | 05:02 |
| | 16:14 | 95 | 12:43 (26) | 17:08 | 23 | 10:10 (29) | 18:07 | 28 | 08:46 (30) | 20:10 | 23 | 08:01 (43) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:46 (29) | 08:26 | | 09:22 (2) | 07:24 | | 08:19 (30) | 07:05 | | 07:38 (43) | 05:53 | 05:01 |
| | 16:15 | 96 | 12:43 (26) | 17:10 | 20 | 10:09 (29) | 18:10 | 27 | 08:46 (30) | 20:12 | 23 | 08:01 (43) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:45 (29) | 08:24 | | 09:22 (2) | 07:22 | | 08:19 (30) | 07:03 | | 07:38 (43) | 05:51 | 05:00 |
| | 16:16 | 98 | 12:44 (26) | 17:12 | 16 | 10:07 (29) | 18:12 | 26 | 08:45 (30) | 20:14 | 22 | 08:00 (43) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:44 (29) | 08:22 | | 09:22 (2) | 07:19 | | 08:20 (30) | 07:00 | | 07:38 (43) | 05:49 | 04:59 |
| | 16:18 | 99 | 12:44 (26) | 17:15 | 9 | 10:04 (29) | 18:14 | 24 | 08:44 (30) | 20:16 | 22 | 08:00 (43) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:44 (29) | 08:20 | | 09:22 (2) | 07:17 | | 08:21 (30) | 06:58 | | 07:38 (43) | 05:46 | 04:58 |
| | 16:19 | 98 | 12:44 (26) | 17:17 | 1 | 09:23 (2) | 18:16 | 21 | 08:42 (30) | 20:18 | 20 | 07:58 (43) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:44 (29) | 08:18 | | 09:21 (2) | 07:15 | | 08:23 (30) | 06:55 | | 07:40 (43) | 05:44 | 04:57 |
| | 16:20 | 99 | 12:44 (26) | 17:19 | 2 | 09:23 (2) | 18:18 | 17 | 08:40 (30) | 20:20 | 17 | 07:57 (43) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:43 (29) | 08:16 | | | 07:12 | | 08:25 (30) | 06:53 | | 07:40 (43) | 05:42 | 04:56 |
| | 16:22 | 101 | 12:44 (26) | 17:21 | | | 18:20 | 12 | 08:37 (30) | 20:22 | 15 | 07:55 (43) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:43 (29) | 08:14 | | | 07:10 | | | 06:50 | | 07:43 (43) | 05:40 | 04:56 |
| | 16:23 | 102 | 12:44 (26) | 17:23 | | | 18:22 | | | 20:24 | 9 | 07:52 (43) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:43 (29) | 08:12 | | | 07:07 | | | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 104 | 12:45 (26) | 17:25 | | | 18:24 | | | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:43 (29) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 105 | 12:45 (26) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:43 (29) | 08:08 | | | 07:02 | | | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 105 | 12:44 (26) | 17:30 | | | 18:28 | | | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:42 (29) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 105 | 12:43 (26) | 17:32 | | | 18:30 | | | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:42 (29) | 08:04 | | | 06:57 | | | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 106 | 12:43 (26) | 17:34 | | | 18:32 | | | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:42 (29) | 08:02 | | | 06:54 | | | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 107 | 12:43 (26) | 17:36 | | | 18:34 | | | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:42 (29) | 08:00 | | | 06:52 | | | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 106 | 12:42 (26) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:42 (29) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 105 | 12:40 (26) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:42 (29) | 07:55 | | 08:30 (30) | 06:47 | | | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 104 | 12:39 (26) | 17:42 | 9 | 08:39 (30) | 18:40 | | | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:43 (29) | 07:53 | | 08:26 (30) | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 102 | 12:38 (26) | 17:44 | 15 | 08:41 (30) | 18:42 | | | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:42 (29) | 07:51 | | 08:24 (30) | 06:42 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 100 | 12:34 (26) | 17:47 | 19 | 08:43 (30) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:38 (2) | 07:48 | | 08:23 (30) | 06:39 | | | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 102 | 12:32 (1) | 17:49 | 22 | 08:45 (30) | 18:46 | | | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:34 (2) | 07:46 | | 08:21 (30) | 06:36 | | | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 106 | 12:32 (1) | 17:51 | 25 | 08:46 (30) | 18:48 | | | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:31 (2) | 07:44 | | 08:21 (30) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 109 | 12:32 (1) | 17:53 | 26 | 08:47 (30) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:30 (2) | 07:41 | | 08:19 (30) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 111 | 12:33 (1) | 17:55 | 28 | 08:47 (30) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:29 (2) | 07:39 | | 08:19 (30) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 112 | 12:33 (1) | 17:57 | 29 | 08:48 (30) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | 08:18 (30) | 06:26 | | 06:50 (43) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 114 | 12:33 (1) | 17:59 | 29 | 08:47 (30) | 18:56 | 4 | 06:54 (43) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | 08:19 (30) | 06:23 | | 06:48 (43) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 115 | 12:34 (1) | 18:01 | 29 | 08:48 (30) | 18:58 | 10 | 06:58 (43) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | 08:18 (30) | 06:21 | | 06:45 (43) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 115 | 12:34 (1) | 18:03 | 29 | 08:47 (30) | 19:00 | 14 | 06:59 (43) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | 08:18 (30) | 06:18 | | 06:43 (43) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 115 | 12:34 (1) | 18:05 | 29 | 08:47 (30) | 19:02 | 18 | 07:01 (43) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | | 07:40 (43) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 115 | 12:34 (1) | | | | 20:04 | 21 | 08:01 (43) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | | 07:40 (43) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 115 | 12:34 (1) | | | | 20:06 | 22 | 08:02 (43) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 07:39 (43) | | | | 05:03 | |
| | 17:06 | 113 | 12:33 (1) | | | | 20:08 | 22 | 08:01 (43) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 3279 | | | 360 | | | 266 | | | 151 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,31 | | | 0,85 | | | 0,94 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,17 | | | 0,26 | | | 0,32 | | | |
| Total, real | | 153 | | | 61 | | | 70 | | | 49 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | | 07:35 | | | 07:37 | | | 08:35 | | 09:25 (29) |
| | 22:18 | 21:40 | 20:30 | | | 19:12 | | | 16:58 | | | 16:10 | 104 | 12:26 (26) |
| 2 | 04:58 | 05:41 | 06:40 | | | 07:37 | | | 07:39 | | 08:50 (2) | 08:37 | | 09:25 (29) |
| | 22:18 | 21:38 | 20:27 | | | 19:10 | | | 16:56 | 1 | 08:51 (2) | 16:09 | 105 | 12:27 (26) |
| 3 | 04:58 | 05:43 | 06:42 | | | 07:39 | | | 07:41 | | 08:50 (2) | 08:39 | | 09:26 (29) |
| | 22:17 | 21:36 | 20:24 | | | 19:07 | | | 16:54 | 1 | 08:51 (2) | 16:08 | 104 | 12:28 (26) |
| 4 | 04:59 | 05:45 | 06:44 | | 07:40 (43) | 07:41 | | | 07:43 | | 08:51 (2) | 08:40 | | 09:28 (29) |
| | 22:17 | 21:34 | 20:22 | 9 | 07:49 (43) | 19:05 | | | 16:52 | 1 | 08:52 (2) | 16:08 | 102 | 12:29 (26) |
| 5 | 05:00 | 05:47 | 06:45 | | 07:38 (43) | 07:43 | | | 07:45 | | 08:51 (2) | 08:42 | | 09:28 (29) |
| | 22:16 | 21:32 | 20:19 | 14 | 07:52 (43) | 19:02 | | | 16:50 | 1 | 08:52 (2) | 16:07 | 101 | 12:29 (26) |
| 6 | 05:01 | 05:49 | 06:47 | | 07:36 (43) | 07:44 | | 09:03 (30) | 07:47 | | 08:51 (2) | 08:43 | | 09:30 (29) |
| | 22:16 | 21:30 | 20:17 | 17 | 07:53 (43) | 18:59 | 8 | 09:11 (30) | 16:48 | 2 | 08:53 (2) | 16:06 | 99 | 12:30 (26) |
| 7 | 05:02 | 05:51 | 06:49 | | 07:34 (43) | 07:46 | | 08:59 (30) | 07:49 | | 08:51 (2) | 08:44 | | 09:30 (29) |
| | 22:15 | 21:28 | 20:14 | 19 | 07:53 (43) | 18:57 | 15 | 09:14 (30) | 16:46 | 10 | 09:34 (29) | 16:06 | 98 | 12:30 (26) |
| 8 | 05:03 | 05:53 | 06:51 | | 07:33 (43) | 07:48 | | 08:57 (30) | 07:51 | | 08:53 (2) | 08:46 | | 09:32 (29) |
| | 22:14 | 21:26 | 20:12 | 21 | 07:54 (43) | 18:54 | 19 | 09:16 (30) | 16:44 | 16 | 09:38 (29) | 16:05 | 99 | 12:32 (26) |
| 9 | 05:04 | 05:54 | 06:53 | | 07:32 (43) | 07:50 | | 08:55 (30) | 07:53 | | 08:53 (2) | 08:47 | | 09:33 (29) |
| | 22:13 | 21:24 | 20:09 | 22 | 07:54 (43) | 18:52 | 23 | 09:18 (30) | 16:42 | 20 | 09:40 (29) | 16:05 | 98 | 12:32 (26) |
| 10 | 05:06 | 05:56 | 06:55 | | 07:31 (43) | 07:52 | | 08:54 (30) | 07:55 | | 08:53 (2) | 08:48 | | 09:35 (29) |
| | 22:12 | 21:22 | 20:07 | 23 | 07:54 (43) | 18:49 | 24 | 09:18 (30) | 16:40 | 24 | 09:41 (29) | 16:04 | 97 | 12:33 (26) |
| 11 | 05:07 | 05:58 | 06:57 | | 07:31 (43) | 07:54 | | 08:53 (30) | 07:57 | | 08:54 (2) | 08:50 | | 09:37 (29) |
| | 22:11 | 21:19 | 20:04 | 23 | 07:54 (43) | 18:47 | 26 | 09:19 (30) | 16:38 | 26 | 09:42 (29) | 16:04 | 95 | 12:33 (26) |
| 12 | 05:08 | 06:00 | 06:59 | | 07:30 (43) | 07:56 | | 08:52 (30) | 07:59 | | 08:56 (2) | 08:51 | | 11:04 (27) |
| | 22:10 | 21:17 | 20:01 | 23 | 07:53 (43) | 18:44 | 27 | 09:19 (30) | 16:36 | 28 | 09:44 (29) | 16:04 | 90 | 12:34 (26) |
| 13 | 05:09 | 06:02 | 07:01 | | 07:30 (43) | 07:58 | | 08:51 (30) | 08:01 | | 08:56 (2) | 08:52 | | 11:04 (27) |
| | 22:09 | 21:15 | 19:59 | 22 | 07:52 (43) | 18:42 | 28 | 09:19 (30) | 16:34 | 30 | 09:44 (29) | 16:04 | 90 | 12:34 (26) |
| 14 | 05:11 | 06:04 | 07:02 | | 07:31 (43) | 08:00 | | 08:51 (30) | 08:04 | | 08:57 (2) | 08:53 | | 10:42 (28) |
| | 22:08 | 21:13 | 19:56 | 20 | 07:51 (43) | 18:39 | 29 | 09:20 (30) | 16:33 | 31 | 09:45 (29) | 16:04 | 93 | 12:35 (26) |
| 15 | 05:12 | 06:06 | 07:04 | | 07:32 (43) | 08:02 | | 08:51 (30) | 08:06 | | 08:58 (2) | 08:54 | | 10:42 (28) |
| | 22:07 | 21:10 | 19:54 | 18 | 07:50 (43) | 18:37 | 29 | 09:20 (30) | 16:31 | 33 | 09:45 (29) | 16:04 | 96 | 12:36 (26) |
| 16 | 05:14 | 06:08 | 07:06 | | 07:34 (43) | 08:04 | | 08:51 (30) | 08:08 | | 09:00 (2) | 08:55 | | 10:40 (28) |
| | 22:06 | 21:08 | 19:51 | 15 | 07:49 (43) | 18:35 | 29 | 09:20 (30) | 16:29 | 34 | 09:47 (29) | 16:04 | 99 | 12:36 (26) |
| 17 | 05:15 | 06:09 | 07:08 | | 07:36 (43) | 08:06 | | 08:51 (30) | 08:10 | | 09:01 (2) | 08:56 | | 10:40 (28) |
| | 22:04 | 21:06 | 19:48 | 11 | 07:47 (43) | 18:32 | 28 | 09:19 (30) | 16:28 | 35 | 09:47 (29) | 16:04 | 101 | 12:36 (26) |
| 18 | 05:16 | 06:11 | 07:10 | | 07:38 (43) | 08:08 | | 08:51 (30) | 08:12 | | 09:03 (2) | 08:57 | | 10:41 (28) |
| | 22:03 | 21:04 | 19:46 | 6 | 07:44 (43) | 18:30 | 28 | 09:19 (30) | 16:26 | 37 | 09:47 (29) | 16:04 | 101 | 12:37 (26) |
| 19 | 05:18 | 06:13 | 07:12 | | | 08:10 | | 08:51 (30) | 08:13 | | 09:04 (2) | 08:57 | | 10:41 (28) |
| | 22:02 | 21:01 | 19:43 | | | 18:27 | 27 | 09:18 (30) | 16:25 | 39 | 09:47 (29) | 16:04 | 102 | 12:38 (26) |
| 20 | 05:19 | 06:15 | 07:14 | | | 08:12 | | 08:51 (30) | 08:15 | | 09:06 (2) | 08:58 | | 10:41 (28) |
| | 22:00 | 20:59 | 19:41 | | | 18:25 | 26 | 09:17 (30) | 16:23 | 41 | 09:47 (29) | 16:05 | 103 | 12:38 (26) |
| 21 | 05:21 | 06:17 | 07:16 | | | 08:14 | | 08:52 (30) | 08:17 | | 09:10 (2) | 08:59 | | 10:42 (28) |
| | 21:59 | 20:57 | 19:38 | | | 18:23 | 24 | 09:16 (30) | 16:22 | 38 | 09:48 (29) | 16:05 | 103 | 12:39 (26) |
| 22 | 05:23 | 06:19 | 07:18 | | | 08:16 | | 08:54 (30) | 08:19 | | 09:14 (2) | 08:59 | | 10:43 (28) |
| | 21:57 | 20:54 | 19:35 | | | 18:20 | 21 | 09:15 (30) | 16:20 | 34 | 09:48 (29) | 16:05 | 103 | 12:40 (26) |
| 23 | 05:24 | 06:21 | 07:19 | | | 08:18 | | 08:55 (30) | 08:21 | | 09:19 (29) | 09:00 | | 10:43 (28) |
| | 21:56 | 20:52 | 19:33 | | | 18:18 | 18 | 09:13 (30) | 16:19 | 33 | 12:10 (26) | 16:06 | 103 | 12:40 (26) |
| 24 | 05:26 | 06:23 | 07:21 | | | 08:20 | | 08:57 (30) | 08:23 | | 09:20 (29) | 09:00 | | 10:43 (28) |
| | 21:54 | 20:49 | 19:30 | | | 18:16 | 14 | 09:11 (30) | 16:18 | 41 | 12:15 (26) | 16:07 | 103 | 12:40 (26) |
| 25 | 05:28 | 06:25 | 07:23 | | | 07:22 | | 08:00 (30) | 08:25 | | 09:20 (29) | 09:00 | | 10:43 (28) |
| | 21:53 | 20:47 | 19:28 | | | 17:13 | 7 | 08:07 (30) | 16:16 | 45 | 12:17 (26) | 16:07 | 102 | 12:40 (26) |
| 26 | 05:29 | 06:27 | 07:25 | | | 07:24 | | | 08:27 | | 09:21 (29) | 09:01 | | 10:45 (28) |
| | 21:51 | 20:44 | 19:25 | | | 17:11 | | | 16:15 | 48 | 12:19 (26) | 16:08 | 101 | 12:41 (26) |
| 27 | 05:31 | 06:28 | 07:27 | | | 07:26 | | | 08:28 | | 09:21 (29) | 09:01 | | 10:46 (28) |
| | 21:49 | 20:42 | 19:23 | | | 17:09 | | | 16:14 | 51 | 12:21 (26) | 16:09 | 100 | 12:42 (26) |
| 28 | 05:33 | 06:30 | 07:29 | | | 07:29 | | | 08:30 | | 09:22 (29) | 09:01 | | 10:47 (28) |
| | 21:47 | 20:40 | 19:20 | | | 17:07 | | | 16:13 | 52 | 12:23 (26) | 16:10 | 97 | 12:42 (26) |
| 29 | 05:34 | 06:32 | 07:31 | | | 07:31 | | | 08:32 | | 09:23 (29) | 09:01 | | 10:49 (28) |
| | 21:46 | 20:37 | 19:17 | | | 17:04 | | | 16:12 | 53 | 12:24 (26) | 16:10 | 96 | 12:43 (26) |
| 30 | 05:36 | 06:34 | 07:33 | | | 07:33 | | | 08:34 | | 09:24 (29) | 09:01 | | 11:11 (27) |
| | 21:44 | 20:35 | 19:15 | | | 17:02 | | | 16:11 | 53 | 12:25 (26) | 16:11 | 91 | 12:42 (26) |
| 31 | 05:38 | 06:36 | | | | 07:35 | | | | | | 09:01 | | 11:13 (27) |
| | 21:42 | 20:32 | | | | 17:00 | | | | | | 16:12 | 90 | 12:43 (26) |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 263 | | | 450 | | | 858 | | | 3066 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,90 | | | 0,54 | | | 0,19 | |
| Total reduction | | | | 0,33 | | | 0,23 | | | 0,07 | | | 0,02 | |
| Total, real | | | | 85 | | | 102 | | | 60 | | | 66 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:52 (29) | 08:28 | | 08:57 (3) | 07:27 | | 08:02 (31) | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 146 | 14:50 (26) | 17:08 | 42 | 15:47 (1) | 18:07 | 64 | 09:39 (30) | 20:10 | | | 21:09 | 22:03 |
| 2 | 09:01 | | 10:52 (29) | 08:26 | | 08:55 (3) | 07:24 | | 08:03 (31) | 07:05 | | 07:36 (43) | 05:53 | 05:01 |
| | 16:15 | 145 | 14:50 (26) | 17:10 | 39 | 15:47 (1) | 18:10 | 61 | 09:38 (30) | 20:12 | 13 | 07:49 (43) | 21:11 | 22:04 |
| 3 | 09:01 | | 10:53 (29) | 08:24 | | 08:54 (3) | 07:22 | | 08:03 (31) | 07:03 | | 07:32 (43) | 05:51 | 05:00 |
| | 16:16 | 143 | 14:51 (26) | 17:12 | 32 | 15:48 (1) | 18:12 | 59 | 09:37 (30) | 20:14 | 18 | 07:50 (43) | 21:13 | 22:05 |
| 4 | 09:00 | | 10:53 (29) | 08:22 | | 08:54 (3) | 07:19 | | 08:04 (31) | 07:00 | | 07:31 (43) | 05:49 | 04:59 |
| | 16:18 | 142 | 14:51 (26) | 17:15 | 25 | 15:49 (1) | 18:14 | 55 | 09:36 (30) | 20:16 | 21 | 07:52 (43) | 21:15 | 22:06 |
| 5 | 09:00 | | 10:54 (29) | 08:20 | | 08:54 (3) | 07:17 | | 08:04 (31) | 06:58 | | 07:29 (43) | 05:46 | 04:58 |
| | 16:19 | 140 | 14:53 (26) | 17:17 | 25 | 15:50 (1) | 18:16 | 51 | 09:34 (30) | 20:18 | 24 | 07:53 (43) | 21:17 | 22:08 |
| 6 | 08:59 | | 10:54 (29) | 08:18 | | 08:54 (3) | 07:14 | | 08:07 (31) | 06:55 | | 07:28 (43) | 05:44 | 04:57 |
| | 16:20 | 132 | 14:53 (26) | 17:19 | 24 | 15:50 (1) | 18:18 | 43 | 09:33 (30) | 20:20 | 26 | 07:54 (43) | 21:19 | 22:09 |
| 7 | 08:59 | | 10:54 (29) | 08:16 | | 08:54 (3) | 07:12 | | 09:01 (30) | 06:53 | | 07:26 (43) | 05:42 | 04:56 |
| | 16:22 | 133 | 14:53 (26) | 17:21 | 24 | 15:51 (1) | 18:20 | 29 | 09:30 (30) | 20:22 | 28 | 07:54 (43) | 21:20 | 22:10 |
| 8 | 08:58 | | 10:55 (29) | 08:14 | | 08:54 (3) | 07:09 | | 09:02 (30) | 06:50 | | 07:26 (43) | 05:40 | 04:56 |
| | 16:23 | 134 | 14:54 (26) | 17:23 | 32 | 15:51 (1) | 18:22 | 25 | 09:27 (30) | 20:24 | 29 | 07:55 (43) | 21:22 | 22:11 |
| 9 | 08:58 | | 10:56 (29) | 08:12 | | 08:55 (3) | 07:07 | | 09:05 (30) | 06:48 | | 07:25 (43) | 05:38 | 04:55 |
| | 16:25 | 133 | 14:55 (26) | 17:25 | 34 | 15:51 (1) | 18:24 | 20 | 09:25 (30) | 20:25 | 30 | 07:55 (43) | 21:24 | 22:12 |
| 10 | 08:57 | | 10:57 (29) | 08:10 | | 08:56 (3) | 07:04 | | 09:09 (30) | 06:45 | | 07:24 (43) | 05:36 | 04:55 |
| | 16:26 | 134 | 14:56 (26) | 17:27 | 36 | 15:52 (1) | 18:26 | 10 | 09:19 (30) | 20:27 | 31 | 07:55 (43) | 21:26 | 22:13 |
| 11 | 08:56 | | 10:57 (29) | 08:08 | | 08:57 (3) | 07:02 | | | 06:43 | | 07:24 (43) | 05:34 | 04:54 |
| | 16:28 | 135 | 14:56 (26) | 17:29 | 37 | 15:52 (1) | 18:28 | | | 20:29 | 30 | 07:54 (43) | 21:28 | 22:14 |
| 12 | 08:55 | | 10:57 (29) | 08:06 | | 08:58 (3) | 06:59 | | | 06:40 | | 07:24 (43) | 05:32 | 04:54 |
| | 16:30 | 135 | 14:56 (26) | 17:32 | 36 | 09:34 (30) | 18:30 | | | 20:31 | 30 | 07:54 (43) | 21:30 | 22:14 |
| 13 | 08:54 | | 10:58 (29) | 08:04 | | 09:01 (3) | 06:57 | | | 06:38 | | 07:23 (43) | 05:30 | 04:53 |
| | 16:31 | 136 | 14:57 (26) | 17:34 | 35 | 09:36 (30) | 18:32 | | | 20:33 | 30 | 07:53 (43) | 21:32 | 22:15 |
| 14 | 08:53 | | 10:58 (29) | 08:02 | | 09:01 (30) | 06:54 | | | 06:35 | | 07:24 (43) | 05:29 | 04:53 |
| | 16:33 | 137 | 14:57 (26) | 17:36 | 36 | 09:37 (30) | 18:34 | | | 20:35 | 29 | 07:53 (43) | 21:34 | 22:16 |
| 15 | 08:52 | | 10:59 (29) | 07:59 | | 08:59 (30) | 06:52 | | | 06:33 | | 07:24 (43) | 05:27 | 04:53 |
| | 16:35 | 137 | 14:58 (26) | 17:38 | 39 | 09:38 (30) | 18:36 | | | 20:37 | 29 | 07:53 (43) | 21:35 | 22:16 |
| 16 | 08:51 | | 10:59 (29) | 07:57 | | 08:59 (30) | 06:49 | | | 06:30 | | 07:24 (43) | 05:25 | 04:52 |
| | 16:36 | 137 | 14:58 (26) | 17:40 | 40 | 09:39 (30) | 18:38 | | | 20:39 | 27 | 07:51 (43) | 21:37 | 22:17 |
| 17 | 08:50 | | 11:00 (29) | 07:55 | | 08:58 (30) | 06:47 | | | 06:28 | | 07:25 (43) | 05:23 | 04:52 |
| | 16:38 | 148 | 15:21 (1) | 17:42 | 42 | 09:40 (30) | 18:40 | | | 20:41 | 25 | 07:50 (43) | 21:39 | 22:18 |
| 18 | 08:49 | | 11:02 (29) | 07:53 | | 08:57 (30) | 06:44 | | | 06:25 | | 07:26 (43) | 05:21 | 04:52 |
| | 16:40 | 154 | 15:25 (1) | 17:44 | 43 | 09:40 (30) | 18:42 | | | 20:43 | 23 | 07:49 (43) | 21:41 | 22:18 |
| 19 | 08:48 | | 11:02 (29) | 07:51 | | 08:57 (30) | 06:41 | | | 06:23 | | 07:26 (43) | 05:20 | 04:52 |
| | 16:42 | 160 | 15:28 (1) | 17:47 | 44 | 09:41 (30) | 18:44 | | | 20:45 | 21 | 07:47 (43) | 21:42 | 22:18 |
| 20 | 08:47 | | 11:04 (29) | 07:48 | | 08:57 (30) | 06:39 | | | 06:21 | | 07:28 (43) | 05:18 | 04:52 |
| | 16:44 | 161 | 15:30 (1) | 17:49 | 44 | 09:41 (30) | 18:46 | | | 20:47 | 17 | 07:45 (43) | 21:44 | 22:19 |
| 21 | 08:45 | | 11:04 (29) | 07:46 | | 08:56 (30) | 06:36 | | | 06:18 | | 07:31 (43) | 05:16 | 04:52 |
| | 16:46 | 165 | 15:32 (1) | 17:51 | 45 | 09:41 (30) | 18:48 | | | 20:49 | 12 | 07:43 (43) | 21:46 | 22:19 |
| 22 | 08:44 | | 11:05 (29) | 07:44 | | 08:10 (31) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 168 | 15:34 (1) | 17:53 | 55 | 09:42 (30) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 11:07 (29) | 07:41 | | 08:07 (31) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 168 | 15:36 (1) | 17:55 | 59 | 09:41 (30) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 11:08 (29) | 07:39 | | 08:05 (31) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 168 | 15:37 (1) | 17:57 | 63 | 09:41 (30) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:39 | | 11:10 (29) | 07:36 | | 08:04 (31) | 06:26 | | | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 167 | 15:39 (1) | 17:59 | 64 | 09:41 (30) | 18:56 | | | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | 11:13 (29) | 07:34 | | 08:03 (31) | 06:23 | | | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 166 | 15:41 (1) | 18:01 | 66 | 09:41 (30) | 18:58 | | | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 11:16 (29) | 07:32 | | 08:02 (31) | 06:21 | | | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 164 | 15:42 (1) | 18:03 | 66 | 09:40 (30) | 19:00 | | | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 08:03 (31) | 06:18 | | | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 157 | 15:43 (1) | 18:05 | 65 | 09:40 (30) | 19:02 | | | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (3) | | | | 07:16 | | | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 161 | 15:44 (1) | | | | 20:04 | | | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (3) | | | | 07:13 | | | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 164 | 15:45 (1) | | | | 20:06 | | | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (3) | | | | 07:11 | | | | | | 05:03 | |
| | 17:06 | 166 | 15:46 (1) | | | | 20:08 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 4636 | | | 1192 | | | 417 | | | 493 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,33 | | | 0,80 | | | 0,83 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,16 | | | 0,24 | | | 0,33 | | | |
| Total, real | | 233 | | | 196 | | | 99 | | | 162 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:22 (43) | 07:35 | | | 07:37 | | 08:25 (3) | 08:35 | | 10:38 (29) |
| | 22:18 | | 21:40 | | | 20:30 | 31 | 07:53 (43) | 19:12 | | | 16:58 | 36 | 15:21 (1) | 16:10 | 135 | 14:37 (26) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:22 (43) | 07:37 | | | 07:39 | | 08:24 (3) | 08:37 | | 10:39 (29) |
| | 22:18 | | 21:38 | | | 20:27 | 31 | 07:53 (43) | 19:10 | | | 16:56 | 35 | 15:21 (1) | 16:09 | 134 | 14:38 (26) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:23 (43) | 07:39 | | | 07:41 | | 08:24 (3) | 08:38 | | 10:39 (29) |
| | 22:17 | | 21:36 | | | 20:24 | 30 | 07:53 (43) | 19:07 | | | 16:54 | 30 | 15:20 (1) | 16:08 | 133 | 14:38 (26) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:23 (43) | 07:41 | | 09:44 (30) | 07:43 | | 08:24 (3) | 08:40 | | 10:40 (29) |
| | 22:17 | | 21:34 | | | 20:22 | 29 | 07:52 (43) | 19:05 | 16 | 10:00 (30) | 16:52 | 24 | 15:21 (1) | 16:08 | 133 | 14:39 (26) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:23 (43) | 07:42 | | 09:41 (30) | 07:45 | | 08:24 (3) | 08:42 | | 10:39 (29) |
| | 22:16 | | 21:32 | | | 20:19 | 28 | 07:51 (43) | 19:02 | 22 | 10:03 (30) | 16:50 | 24 | 15:20 (1) | 16:07 | 134 | 14:39 (26) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:24 (43) | 07:44 | | 09:38 (30) | 07:47 | | 08:23 (3) | 08:43 | | 10:40 (29) |
| | 22:16 | | 21:30 | | | 20:17 | 26 | 07:50 (43) | 18:59 | 27 | 10:05 (30) | 16:48 | 25 | 15:19 (1) | 16:06 | 132 | 14:39 (26) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 07:24 (43) | 07:46 | | 08:43 (31) | 07:49 | | 08:23 (3) | 08:44 | | 10:40 (29) |
| | 22:15 | | 21:28 | | | 20:14 | 24 | 07:48 (43) | 18:57 | 39 | 10:07 (30) | 16:46 | 25 | 15:19 (1) | 16:06 | 140 | 14:39 (26) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:25 (43) | 07:48 | | 08:40 (31) | 07:51 | | 08:24 (3) | 08:46 | | 10:41 (29) |
| | 22:14 | | 21:26 | | | 20:12 | 22 | 07:47 (43) | 18:54 | 47 | 10:08 (30) | 16:44 | 34 | 15:19 (1) | 16:05 | 143 | 14:40 (26) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:26 (43) | 07:50 | | 08:39 (31) | 07:53 | | 08:26 (3) | 08:47 | | 10:41 (29) |
| | 22:13 | | 21:24 | | | 20:09 | 19 | 07:45 (43) | 18:52 | 52 | 10:09 (30) | 16:42 | 39 | 15:18 (1) | 16:05 | 143 | 14:39 (26) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 07:29 (43) | 07:52 | | 08:37 (31) | 07:55 | | 08:28 (3) | 08:48 | | 10:42 (29) |
| | 22:12 | | 21:22 | | | 20:07 | 13 | 07:42 (43) | 18:49 | 57 | 10:10 (30) | 16:40 | 41 | 15:17 (1) | 16:04 | 145 | 14:40 (26) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 07:34 (43) | 07:54 | | 08:36 (31) | 07:57 | | 08:30 (3) | 08:50 | | 10:42 (29) |
| | 22:11 | | 21:19 | | | 20:04 | 3 | 07:37 (43) | 18:47 | 61 | 10:11 (30) | 16:38 | 42 | 15:16 (1) | 16:04 | 146 | 14:40 (26) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:35 (31) | 07:59 | | 08:33 (3) | 08:51 | | 10:42 (29) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 63 | 10:11 (30) | 16:36 | 44 | 15:17 (1) | 16:04 | 147 | 14:40 (26) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:35 (31) | 08:01 | | 08:35 (3) | 08:52 | | 10:43 (29) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 65 | 10:12 (30) | 16:34 | 42 | 15:16 (1) | 16:04 | 146 | 14:40 (26) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:36 (31) | 08:03 | | 08:37 (3) | 08:53 | | 10:43 (29) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 65 | 10:13 (30) | 16:33 | 40 | 15:15 (1) | 16:04 | 147 | 14:41 (26) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:36 (31) | 08:06 | | 10:48 (29) | 08:54 | | 10:44 (29) |
| | 22:07 | | 21:10 | | | 19:54 | | | 18:37 | 65 | 10:13 (30) | 16:31 | 49 | 15:14 (1) | 16:04 | 147 | 14:41 (26) |
| 16 | 05:13 | | 06:08 | | | 07:06 | | | 08:04 | | 08:36 (31) | 08:08 | | 10:46 (29) | 08:55 | | 10:44 (29) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 65 | 10:13 (30) | 16:29 | 59 | 15:14 (1) | 16:04 | 147 | 14:41 (26) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | | 08:06 | | 08:36 (31) | 08:09 | | 10:44 (29) | 08:56 | | 10:45 (29) |
| | 22:04 | | 21:06 | | | 19:48 | | | 18:32 | 64 | 10:13 (30) | 16:28 | 62 | 15:12 (1) | 16:04 | 147 | 14:42 (26) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | | 08:08 | | 08:37 (31) | 08:11 | | 10:42 (29) | 08:57 | | 10:45 (29) |
| | 22:03 | | 21:04 | | | 19:46 | | | 18:30 | 62 | 10:13 (30) | 16:26 | 68 | 15:11 (1) | 16:04 | 147 | 14:42 (26) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | | 08:10 | | 08:39 (31) | 08:13 | | 10:41 (29) | 08:57 | | 10:46 (29) |
| | 22:02 | | 21:01 | | | 19:43 | | | 18:27 | 58 | 10:12 (30) | 16:25 | 76 | 15:10 (1) | 16:04 | 147 | 14:43 (26) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | | 08:12 | | 08:41 (31) | 08:15 | | 10:40 (29) | 08:58 | | 10:46 (29) |
| | 22:00 | | 20:59 | | | 19:41 | | | 18:25 | 53 | 10:12 (30) | 16:23 | 81 | 15:09 (1) | 16:05 | 147 | 14:43 (26) |
| 21 | 05:21 | | 06:17 | | 07:41 (43) | 07:16 | | | 08:14 | | 09:26 (30) | 08:17 | | 10:40 (29) | 08:59 | | 10:47 (29) |
| | 21:59 | | 20:56 | 1 | 07:42 (43) | 19:38 | | | 18:23 | 45 | 10:11 (30) | 16:22 | 89 | 15:08 (1) | 16:05 | 148 | 14:44 (26) |
| 22 | 05:23 | | 06:19 | | 07:34 (43) | 07:18 | | | 08:16 | | 09:27 (30) | 08:19 | | 10:40 (29) | 08:59 | | 10:47 (29) |
| | 21:57 | | 20:54 | 13 | 07:47 (43) | 19:35 | | | 18:20 | 45 | 10:12 (30) | 16:20 | 99 | 15:07 (1) | 16:05 | 147 | 14:44 (26) |
| 23 | 05:24 | | 06:21 | | 07:32 (43) | 07:19 | | | 08:18 | | 09:27 (30) | 08:21 | | 10:39 (29) | 09:00 | | 10:48 (29) |
| | 21:56 | | 20:52 | 17 | 07:49 (43) | 19:33 | | | 18:18 | 44 | 10:11 (30) | 16:19 | 98 | 15:05 (1) | 16:06 | 148 | 14:45 (26) |
| 24 | 05:26 | | 06:23 | | 07:30 (43) | 07:21 | | | 08:20 | | 09:28 (30) | 08:23 | | 10:39 (29) | 09:00 | | 10:48 (29) |
| | 21:54 | | 20:49 | 21 | 07:51 (43) | 19:30 | | | 18:16 | 42 | 10:10 (30) | 16:18 | 92 | 15:02 (1) | 16:07 | 147 | 14:45 (26) |
| 25 | 05:28 | | 06:25 | | 07:29 (43) | 07:23 | | | 07:22 | | 08:28 (30) | 08:25 | | 10:39 (29) | 09:00 | | 10:48 (29) |
| | 21:52 | | 20:47 | 23 | 07:52 (43) | 19:28 | | | 17:13 | 41 | 09:09 (30) | 16:16 | 86 | 14:59 (1) | 16:07 | 147 | 14:45 (26) |
| 26 | 05:29 | | 06:26 | | 07:28 (43) | 07:25 | | | 07:24 | | 08:28 (30) | 08:27 | | 10:38 (29) | 09:01 | | 10:50 (29) |
| | 21:51 | | 20:44 | 25 | 07:53 (43) | 19:25 | | | 17:11 | 40 | 09:08 (30) | 16:15 | 77 | 14:37 (26) | 16:08 | 148 | 14:47 (26) |
| 27 | 05:31 | | 06:28 | | 07:26 (43) | 07:27 | | | 07:26 | | 08:30 (30) | 08:28 | | 10:38 (29) | 09:01 | | 10:50 (29) |
| | 21:49 | | 20:42 | 27 | 07:53 (43) | 19:23 | | | 17:09 | 38 | 09:08 (30) | 16:14 | 78 | 14:37 (26) | 16:09 | 147 | 14:47 (26) |
| 28 | 05:33 | | 06:30 | | 07:25 (43) | 07:29 | | | 07:29 | | 08:31 (30) | 08:30 | | 10:39 (29) | 09:01 | | 10:50 (29) |
| | 21:47 | | 20:39 | 29 | 07:54 (43) | 19:20 | | | 17:07 | 35 | 09:06 (30) | 16:13 | 76 | 14:37 (26) | 16:10 | 148 | 14:48 (26) |
| 29 | 05:34 | | 06:32 | | 07:24 (43) | 07:31 | | | 07:31 | | 08:29 (3) | 08:32 | | 10:39 (29) | 09:01 | | 10:51 (29) |
| | 21:46 | | 20:37 | 30 | 07:54 (43) | 19:17 | | | 17:04 | 36 | 09:05 (30) | 16:12 | 79 | 14:38 (26) | 16:10 | 146 | 14:48 (26) |
| 30 | 05:36 | | 06:34 | | 07:24 (43) | 07:33 | | | 07:33 | | 08:27 (3) | 08:34 | | 10:39 (29) | 09:01 | | 10:50 (29) |
| | 21:44 | | 20:35 | 30 | 07:54 (43) | 19:15 | | | 17:02 | 36 | 09:03 (30) | 16:11 | 79 | 14:38 (26) | 16:11 | 146 | 14:48 (26) |
| 31 | 05:38 | | 06:36 | | 07:24 (43) | | | | 07:35 | | 08:27 (3) | | | | 09:01 | | 10:51 (29) |
| | 21:42 | | 20:32 | 30 | 07:54 (43) | | | | 17:00 | 36 | 15:22 (1) | | | | 16:12 | 147 | 14:49 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 246 | | | 256 | | | 1319 | | | 1729 | | | 4459 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,82 | | | 0,49 | | | 0,28 | |
| Total reduction | | | | 0,43 | | | 0,33 | | | 0,21 | | | 0,07 | | | 0,03 | |
| Total, real | | | | 106 | | | 85 | | | 280 | | | 113 | | | 142 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 12:00 (30) | 07:27 | | 07:53 (32) | 07:08 | | | 05:55 | | 07:32 (43) | 05:02 |
| | 16:14 | 141 | 15:01 (27) | 17:08 | 93 | 16:21 (26) | 18:07 | 10 | 08:03 (32) | 20:10 | | | 21:09 | 43 | 08:15 (43) | 22:03 |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 12:00 (30) | 07:24 | | 07:51 (32) | 07:05 | | | 05:53 | | 07:33 (43) | 05:01 |
| | 16:15 | 142 | 15:01 (27) | 17:10 | 93 | 16:21 (26) | 18:09 | 14 | 08:05 (32) | 20:12 | | | 21:11 | 40 | 08:13 (43) | 22:04 |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | 12:00 (30) | 07:22 | | 07:49 (32) | 07:03 | | 07:54 (43) | 05:51 | | 07:34 (43) | 05:00 |
| | 16:16 | 142 | 15:02 (27) | 17:12 | 94 | 16:22 (26) | 18:12 | 17 | 08:06 (32) | 20:14 | 13 | 08:07 (43) | 21:13 | 38 | 08:12 (43) | 22:05 |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | 09:01 (31) | 07:19 | | 07:48 (32) | 07:00 | | 07:50 (43) | 05:48 | | 07:35 (43) | 04:59 |
| | 16:18 | 145 | 15:02 (27) | 17:15 | 99 | 16:22 (26) | 18:14 | 20 | 08:08 (32) | 20:16 | 21 | 08:11 (43) | 21:15 | 36 | 08:11 (43) | 22:06 |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | 08:58 (31) | 07:17 | | 07:47 (32) | 06:58 | | 07:46 (43) | 05:46 | | 07:36 (43) | 04:58 |
| | 16:19 | 145 | 15:03 (27) | 17:17 | 106 | 16:22 (26) | 18:16 | 21 | 08:08 (32) | 20:18 | 27 | 08:13 (43) | 21:17 | 33 | 08:09 (43) | 22:08 |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | 08:56 (31) | 07:14 | | 07:47 (32) | 06:55 | | 07:44 (43) | 05:44 | | 07:37 (43) | 04:57 |
| | 16:20 | 145 | 15:03 (27) | 17:19 | 108 | 16:22 (26) | 18:18 | 21 | 08:08 (32) | 20:20 | 32 | 08:16 (43) | 21:19 | 31 | 08:08 (43) | 22:09 |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | 08:54 (31) | 07:12 | | 07:46 (32) | 06:53 | | 07:42 (43) | 05:42 | | 07:38 (43) | 04:56 |
| | 16:22 | 144 | 15:03 (27) | 17:21 | 111 | 16:21 (26) | 18:20 | 22 | 08:08 (32) | 20:22 | 35 | 08:17 (43) | 21:20 | 28 | 08:06 (43) | 22:10 |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | 08:53 (31) | 07:09 | | 07:45 (32) | 06:50 | | 07:40 (43) | 05:40 | | 07:40 (43) | 04:56 |
| | 16:23 | 146 | 15:03 (27) | 17:23 | 111 | 16:21 (26) | 18:22 | 22 | 08:07 (32) | 20:23 | 39 | 08:19 (43) | 21:22 | 23 | 08:03 (43) | 22:11 |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | 08:52 (31) | 07:07 | | 07:46 (32) | 06:48 | | 07:38 (43) | 05:38 | | 07:42 (43) | 04:55 |
| | 16:25 | 146 | 15:03 (27) | 17:25 | 111 | 16:21 (26) | 18:24 | 21 | 08:07 (32) | 20:25 | 41 | 08:19 (43) | 21:24 | 19 | 08:01 (43) | 22:12 |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | 08:52 (31) | 07:04 | | 07:46 (32) | 06:45 | | 07:37 (43) | 05:36 | | 07:45 (43) | 04:54 |
| | 16:26 | 144 | 15:04 (27) | 17:27 | 109 | 16:20 (26) | 18:26 | 20 | 08:06 (32) | 20:27 | 43 | 08:20 (43) | 21:26 | 12 | 07:57 (43) | 22:13 |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | 08:51 (31) | 07:02 | | 07:47 (32) | 06:43 | | 07:35 (43) | 05:34 | | | 04:54 |
| | 16:28 | 144 | 15:03 (27) | 17:29 | 108 | 16:20 (26) | 18:28 | 18 | 08:05 (32) | 20:29 | 45 | 08:20 (43) | 21:28 | | | 22:14 |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | 08:50 (31) | 06:59 | | 07:47 (32) | 06:40 | | 07:35 (43) | 05:32 | | | 04:54 |
| | 16:29 | 143 | 15:03 (27) | 17:32 | 104 | 16:17 (26) | 18:30 | 16 | 08:03 (32) | 20:31 | 46 | 08:21 (43) | 21:30 | | | 22:14 |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 08:50 (31) | 06:57 | | 07:48 (32) | 06:38 | | 07:33 (43) | 05:30 | | | 04:53 |
| | 16:31 | 143 | 15:04 (27) | 17:34 | 111 | 16:58 (1) | 18:32 | 13 | 08:01 (32) | 20:33 | 48 | 08:21 (43) | 21:32 | | | 22:15 |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 08:50 (31) | 06:54 | | 07:52 (32) | 06:35 | | 07:33 (43) | 05:28 | | | 04:53 |
| | 16:33 | 140 | 15:04 (27) | 17:36 | 97 | 17:01 (1) | 18:34 | 6 | 07:58 (32) | 20:35 | 49 | 08:22 (43) | 21:34 | | | 22:16 |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 08:50 (31) | 06:52 | | | 06:33 | | 07:32 (43) | 05:27 | | | 04:53 |
| | 16:35 | 139 | 15:04 (27) | 17:38 | 84 | 17:02 (1) | 18:36 | | | 20:37 | 50 | 08:22 (43) | 21:35 | | | 22:16 |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 08:50 (31) | 06:49 | | | 06:30 | | 07:31 (43) | 05:25 | | | 04:52 |
| | 16:36 | 136 | 15:03 (27) | 17:40 | 80 | 17:04 (1) | 18:38 | | | 20:39 | 51 | 08:22 (43) | 21:37 | | | 22:17 |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 08:51 (31) | 06:47 | | | 06:28 | | 07:31 (43) | 05:23 | | | 04:52 |
| | 16:38 | 134 | 15:03 (27) | 17:42 | 76 | 17:06 (1) | 18:40 | | | 20:41 | 51 | 08:22 (43) | 21:39 | | | 22:18 |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 08:50 (31) | 06:44 | | | 06:25 | | 07:31 (43) | 05:21 | | | 04:52 |
| | 16:40 | 137 | 15:38 (2) | 17:44 | 71 | 17:06 (1) | 18:42 | | | 20:43 | 52 | 08:23 (43) | 21:41 | | | 22:18 |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 08:51 (31) | 06:41 | | | 06:23 | | 07:30 (43) | 05:20 | | | 04:52 |
| | 16:42 | 142 | 15:41 (2) | 17:46 | 65 | 17:07 (1) | 18:44 | | | 20:45 | 52 | 08:22 (43) | 21:42 | | | 22:18 |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 08:52 (31) | 06:39 | | | 06:20 | | 07:30 (43) | 05:18 | | | 04:52 |
| | 16:44 | 136 | 15:44 (2) | 17:49 | 56 | 17:08 (1) | 18:46 | | | 20:47 | 52 | 08:22 (43) | 21:44 | | | 22:19 |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 08:53 (31) | 06:36 | | | 06:18 | | 07:30 (43) | 05:16 | | | 04:52 |
| | 16:46 | 125 | 15:46 (2) | 17:51 | 46 | 17:08 (1) | 18:48 | | | 20:49 | 52 | 08:22 (43) | 21:46 | | | 22:19 |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | 08:54 (31) | 06:34 | | | 06:16 | | 07:29 (43) | 05:15 | | | 04:52 |
| | 16:48 | 117 | 15:48 (2) | 17:53 | 23 | 12:35 (30) | 18:50 | | | 20:51 | 52 | 08:21 (43) | 21:48 | | | 22:19 |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | 08:55 (31) | 06:31 | | | 06:13 | | 07:29 (43) | 05:13 | | | 04:53 |
| | 16:50 | 117 | 15:50 (2) | 17:55 | 17 | 09:12 (31) | 18:52 | | | 20:53 | 51 | 08:20 (43) | 21:49 | | | 22:19 |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | 08:58 (31) | 06:29 | | | 06:11 | | 07:29 (43) | 05:12 | | | 04:53 |
| | 16:52 | 127 | 16:11 (26) | 17:57 | 12 | 09:10 (31) | 18:54 | | | 20:55 | 51 | 08:20 (43) | 21:51 | | | 22:19 |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | | 06:26 | | | 06:09 | | 07:30 (43) | 05:10 | | | 04:53 |
| | 16:54 | 132 | 16:13 (26) | 17:59 | | | 18:56 | | | 20:57 | 50 | 08:20 (43) | 21:52 | | | 22:19 |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | | 06:23 | | | 06:06 | | 07:29 (43) | 05:09 | | | 04:54 |
| | 16:56 | 133 | 16:15 (26) | 18:01 | | | 18:58 | | | 20:59 | 49 | 08:18 (43) | 21:54 | | | 22:19 |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | | 06:21 | | | 06:04 | | 07:30 (43) | 05:08 | | | 04:54 |
| | 16:58 | 132 | 16:17 (26) | 18:03 | | | 19:00 | | | 21:01 | 48 | 08:18 (43) | 21:55 | | | 22:19 |
| 28 | 08:35 | | 11:59 (30) | 07:29 | | | 06:18 | | | 06:02 | | 07:30 (43) | 05:06 | | | 04:55 |
| | 17:00 | 129 | 16:18 (26) | 18:05 | | | 19:02 | | | 21:03 | 47 | 08:17 (43) | 21:57 | | | 22:19 |
| 29 | 08:33 | | 11:59 (30) | | | | 07:16 | | | 05:59 | | 07:31 (43) | 05:05 | | | 04:55 |
| | 17:02 | 132 | 16:19 (26) | | | | 20:04 | | | 21:05 | 45 | 08:16 (43) | 21:58 | | | 22:19 |
| 30 | 08:31 | | 11:59 (30) | | | | 07:13 | | | 05:57 | | 07:31 (43) | 05:04 | | | 04:56 |
| | 17:04 | 134 | 16:20 (26) | | | | 20:06 | | | 21:07 | 44 | 08:15 (43) | 22:00 | | | 22:19 |
| 31 | 08:30 | | 11:59 (30) | | | | 07:11 | | | | | | 05:03 | | | |
| | 17:06 | 135 | 16:20 (26) | | | | 20:08 | | | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 4247 | | | 1985 | | | 241 | | | 1236 | | | 303 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,31 | | | 0,37 | | | 0,95 | | | 1,00 | | | 1,00 | | |
| Total reduction | | 0,04 | | | 0,07 | | | 0,25 | | | 0,31 | | | 0,40 | | |
| Total, real | | 188 | | | 141 | | | 61 | | | 380 | | | 122 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:34 (43) | 07:35 | | 08:27 (32) | 07:37 | | 08:21 (31) | 08:35 | | 09:32 (3) |
| | 22:18 | | 21:40 | | | 20:29 | 45 | 08:19 (43) | 19:12 | 15 | 08:42 (32) | 16:58 | 111 | 15:50 (26) | 16:10 | 144 | 14:45 (27) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:35 (43) | 07:37 | | 08:25 (32) | 07:39 | | 08:22 (31) | 08:37 | | 09:33 (3) |
| | 22:18 | | 21:38 | | | 20:27 | 43 | 08:18 (43) | 19:10 | 18 | 08:43 (32) | 16:56 | 111 | 15:50 (26) | 16:09 | 146 | 14:46 (27) |
| 3 | 04:58 | | 05:43 | | 07:54 (43) | 06:42 | | 07:36 (43) | 07:39 | | 08:24 (32) | 07:41 | | 08:23 (31) | 08:38 | | 09:33 (3) |
| | 22:17 | | 21:36 | 15 | 08:09 (43) | 20:24 | 41 | 08:17 (43) | 19:07 | 20 | 08:44 (32) | 16:54 | 111 | 15:51 (26) | 16:08 | 145 | 14:47 (27) |
| 4 | 04:59 | | 05:45 | | 07:52 (43) | 06:44 | | 07:37 (43) | 07:41 | | 08:23 (32) | 07:43 | | 08:24 (31) | 08:40 | | 09:34 (3) |
| | 22:17 | | 21:34 | 20 | 08:12 (43) | 20:22 | 39 | 08:16 (43) | 19:04 | 21 | 08:44 (32) | 16:52 | 111 | 15:52 (26) | 16:08 | 146 | 14:48 (27) |
| 5 | 05:00 | | 05:47 | | 07:50 (43) | 06:45 | | 07:39 (43) | 07:42 | | 08:22 (32) | 07:45 | | 08:26 (31) | 08:42 | | 09:34 (3) |
| | 22:16 | | 21:32 | 25 | 08:15 (43) | 20:19 | 35 | 08:14 (43) | 19:02 | 22 | 08:44 (32) | 16:50 | 110 | 15:52 (26) | 16:07 | 144 | 14:48 (27) |
| 6 | 05:01 | | 05:49 | | 07:47 (43) | 06:47 | | 07:39 (43) | 07:44 | | 08:22 (32) | 07:47 | | 08:28 (31) | 08:43 | | 09:35 (3) |
| | 22:15 | | 21:30 | 29 | 08:16 (43) | 20:17 | 32 | 08:11 (43) | 18:59 | 22 | 08:44 (32) | 16:48 | 106 | 15:52 (26) | 16:06 | 144 | 14:49 (27) |
| 7 | 05:02 | | 05:51 | | 07:46 (43) | 06:49 | | 07:41 (43) | 07:46 | | 08:22 (32) | 07:49 | | 08:31 (31) | 08:44 | | 09:35 (3) |
| | 22:15 | | 21:28 | 32 | 08:18 (43) | 20:14 | 28 | 08:09 (43) | 18:57 | 22 | 08:44 (32) | 16:46 | 100 | 15:52 (26) | 16:06 | 144 | 14:49 (27) |
| 8 | 05:03 | | 05:52 | | 07:45 (43) | 06:51 | | 07:44 (43) | 07:48 | | 08:22 (32) | 07:51 | | 11:31 (30) | 08:46 | | 09:36 (3) |
| | 22:14 | | 21:26 | 34 | 08:19 (43) | 20:12 | 22 | 08:06 (43) | 18:54 | 21 | 08:43 (32) | 16:44 | 93 | 15:52 (26) | 16:05 | 145 | 14:50 (27) |
| 9 | 05:04 | | 05:54 | | 07:43 (43) | 06:53 | | 07:48 (43) | 07:50 | | 08:22 (32) | 07:53 | | 11:31 (30) | 08:47 | | 09:36 (3) |
| | 22:13 | | 21:24 | 37 | 08:20 (43) | 20:09 | 13 | 08:01 (43) | 18:52 | 20 | 08:42 (32) | 16:42 | 93 | 15:52 (26) | 16:05 | 143 | 14:50 (27) |
| 10 | 05:06 | | 05:56 | | 07:42 (43) | 06:55 | | | 07:52 | | 08:22 (32) | 07:55 | | 11:30 (30) | 08:48 | | 09:37 (3) |
| | 22:12 | | 21:22 | 39 | 08:21 (43) | 20:07 | | | 18:49 | 19 | 08:41 (32) | 16:40 | 94 | 15:52 (26) | 16:04 | 142 | 14:51 (27) |
| 11 | 05:07 | | 05:58 | | 07:41 (43) | 06:57 | | | 07:54 | | 08:23 (32) | 07:57 | | 11:30 (30) | 08:50 | | 09:38 (3) |
| | 22:11 | | 21:19 | 41 | 08:22 (43) | 20:04 | | | 18:47 | 17 | 08:40 (32) | 16:38 | 93 | 15:51 (26) | 16:04 | 141 | 14:51 (27) |
| 12 | 05:08 | | 06:00 | | 07:40 (43) | 06:59 | | | 07:56 | | 08:25 (32) | 07:59 | | 11:31 (30) | 08:51 | | 09:38 (3) |
| | 22:10 | | 21:17 | 43 | 08:23 (43) | 20:01 | | | 18:44 | 13 | 08:38 (32) | 16:36 | 91 | 15:51 (26) | 16:04 | 141 | 14:51 (27) |
| 13 | 05:09 | | 06:02 | | 07:39 (43) | 07:01 | | | 07:58 | | 08:27 (32) | 08:01 | | 11:31 (30) | 08:52 | | 09:38 (3) |
| | 22:09 | | 21:15 | 44 | 08:23 (43) | 19:59 | | | 18:42 | 7 | 08:34 (32) | 16:34 | 92 | 15:51 (26) | 16:04 | 140 | 14:52 (27) |
| 14 | 05:11 | | 06:04 | | 07:38 (43) | 07:02 | | | 08:00 | | | 08:03 | | 11:31 (30) | 08:53 | | 09:39 (3) |
| | 22:08 | | 21:13 | 46 | 08:24 (43) | 19:56 | | | 18:39 | | | 16:33 | 91 | 15:50 (26) | 16:04 | 140 | 14:52 (27) |
| 15 | 05:12 | | 06:06 | | 07:37 (43) | 07:04 | | | 08:02 | | | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 22:07 | | 21:10 | 48 | 08:25 (43) | 19:54 | | | 18:37 | | | 16:31 | 98 | 15:49 (26) | 16:04 | 138 | 14:52 (27) |
| 16 | 05:13 | | 06:07 | | 07:37 (43) | 07:06 | | | 08:04 | | | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 22:06 | | 21:08 | 48 | 08:25 (43) | 19:51 | | | 18:35 | | | 16:29 | 99 | 15:48 (26) | 16:04 | 138 | 14:53 (27) |
| 17 | 05:15 | | 06:09 | | 07:37 (43) | 07:08 | | | 08:06 | | 09:33 (31) | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 22:04 | | 21:06 | 49 | 08:26 (43) | 19:48 | | | 18:32 | 5 | 09:38 (31) | 16:28 | 102 | 15:47 (26) | 16:04 | 137 | 14:54 (27) |
| 18 | 05:16 | | 06:11 | | 07:35 (43) | 07:10 | | | 08:08 | | 09:28 (31) | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 22:03 | | 21:04 | 50 | 08:25 (43) | 19:46 | | | 18:30 | 14 | 09:42 (31) | 16:26 | 100 | 15:45 (26) | 16:04 | 138 | 14:54 (27) |
| 19 | 05:18 | | 06:13 | | 07:35 (43) | 07:12 | | | 08:10 | | 09:26 (31) | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 22:02 | | 21:01 | 51 | 08:26 (43) | 19:43 | | | 18:27 | 18 | 09:44 (31) | 16:25 | 94 | 15:24 (2) | 16:04 | 137 | 14:55 (27) |
| 20 | 05:19 | | 06:15 | | 07:35 (43) | 07:14 | | | 08:12 | | 09:24 (31) | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 22:00 | | 20:59 | 51 | 08:26 (43) | 19:41 | | | 18:25 | 34 | 13:11 (30) | 16:23 | 99 | 15:23 (2) | 16:05 | 138 | 14:55 (27) |
| 21 | 05:21 | | 06:17 | | 07:35 (43) | 07:16 | | | 08:14 | | 09:23 (31) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:59 | | 20:56 | 51 | 08:26 (43) | 19:38 | | | 18:23 | 49 | 17:38 (1) | 16:22 | 115 | 15:22 (2) | 16:05 | 137 | 14:56 (27) |
| 22 | 05:23 | | 06:19 | | 07:33 (43) | 07:18 | | | 08:16 | | 09:22 (31) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:57 | | 20:54 | 52 | 08:25 (43) | 19:35 | | | 18:20 | 59 | 17:38 (1) | 16:20 | 137 | 15:21 (2) | 16:05 | 137 | 14:56 (27) |
| 23 | 05:24 | | 06:21 | | 07:33 (43) | 07:19 | | | 08:18 | | 09:21 (31) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 21:56 | | 20:52 | 53 | 08:26 (43) | 19:33 | | | 18:18 | 66 | 17:37 (1) | 16:19 | 142 | 15:19 (2) | 16:06 | 138 | 14:57 (27) |
| 24 | 05:26 | | 06:23 | | 07:33 (43) | 07:21 | | | 08:20 | | 09:21 (31) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:54 | | 20:49 | 52 | 08:25 (43) | 19:30 | | | 18:16 | 72 | 17:36 (1) | 16:18 | 139 | 15:16 (2) | 16:06 | 137 | 14:57 (27) |
| 25 | 05:27 | | 06:25 | | 07:33 (43) | 07:23 | | | 07:22 | | 08:20 (31) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:52 | | 20:47 | 52 | 08:25 (43) | 19:28 | | | 17:13 | 78 | 16:35 (1) | 16:16 | 134 | 14:41 (27) | 16:07 | 138 | 14:57 (27) |
| 26 | 05:29 | | 06:26 | | 07:34 (43) | 07:25 | | | 07:24 | | 08:19 (31) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 21:51 | | 20:44 | 51 | 08:25 (43) | 19:25 | | | 17:11 | 82 | 16:33 (1) | 16:15 | 136 | 14:42 (27) | 16:08 | 136 | 14:58 (27) |
| 27 | 05:31 | | 06:28 | | 07:33 (43) | 07:27 | | | 07:26 | | 08:20 (31) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:49 | | 20:42 | 51 | 08:24 (43) | 19:22 | | | 17:09 | 85 | 16:32 (1) | 16:14 | 138 | 14:43 (27) | 16:09 | 137 | 14:59 (27) |
| 28 | 05:33 | | 06:30 | | 07:33 (43) | 07:29 | | | 07:28 | | 08:20 (31) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:47 | | 20:39 | 50 | 08:23 (43) | 19:20 | | | 17:07 | 99 | 16:30 (1) | 16:13 | 141 | 14:44 (27) | 16:10 | 139 | 14:59 (27) |
| 29 | 05:34 | | 06:32 | | 07:34 (43) | 07:31 | | | 07:31 | | 08:20 (31) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 21:46 | | 20:37 | 49 | 08:23 (43) | 19:17 | | | 17:04 | 110 | 16:26 (1) | 16:12 | 143 | 14:45 (27) | 16:10 | 140 | 15:00 (27) |
| 30 | 05:36 | | 06:34 | | 07:34 (43) | 07:33 | | 08:29 (32) | 07:33 | | 08:20 (31) | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 21:44 | | 20:34 | 48 | 08:22 (43) | 19:15 | 11 | 08:40 (32) | 17:02 | 105 | 15:47 (26) | 16:11 | 144 | 14:46 (27) | 16:11 | 138 | 14:59 (27) |
| 31 | 05:38 | | 06:36 | | 07:35 (43) | | | | 07:35 | | 08:20 (31) | | | | 09:01 | | 09:47 (3) |
| | 21:42 | | 20:32 | 46 | 08:21 (43) | | | | 17:00 | 107 | 15:48 (26) | | | | 16:12 | 140 | 15:00 (27) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1257 | | | 309 | | | 1220 | | | 3368 | | | 4348 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,52 | | | 0,29 | | | 0,30 | |
| Total reduction | | | | 0,40 | | | 0,31 | | | 0,12 | | | 0,04 | | | 0,03 | |
| Total, real | | | | 506 | | | 95 | | | 152 | | | 121 | | | 138 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | | 08:33 (31) | 07:08 | | 07:02 (43) | 05:02 |
| | 16:14 | 87 | 15:07 (27) | 17:08 | 119 | 16:27 (26) | 18:07 | 88 | 12:48 (30) | 20:10 | | 07:53 (43) | 22:03 |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | | 08:35 (31) | 07:05 | | 07:02 (43) | 05:01 |
| | 16:15 | 88 | 15:07 (27) | 17:10 | 118 | 16:29 (26) | 18:09 | 82 | 12:47 (30) | 20:12 | | 07:52 (43) | 22:04 |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | | 08:36 (31) | 07:03 | | 07:02 (43) | 05:00 |
| | 16:16 | 91 | 15:08 (27) | 17:12 | 112 | 16:30 (26) | 18:12 | 75 | 12:45 (30) | 20:14 | | 07:52 (43) | 22:05 |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 11:38 (30) | 07:19 | | 08:40 (31) | 07:00 | | 07:02 (43) | 04:59 |
| | 16:18 | 98 | 15:08 (27) | 17:15 | 104 | 16:31 (26) | 18:14 | 64 | 12:43 (30) | 20:16 | | 07:52 (43) | 22:06 |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 11:38 (30) | 07:17 | | 11:49 (30) | 06:58 | | 07:01 (43) | 04:58 |
| | 16:19 | 108 | 15:10 (27) | 17:17 | 104 | 16:32 (26) | 18:16 | 51 | 12:40 (30) | 20:18 | | 07:52 (43) | 22:08 |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 11:38 (30) | 07:14 | | 11:52 (30) | 06:55 | | 07:01 (43) | 04:57 |
| | 16:20 | 113 | 15:10 (27) | 17:19 | 106 | 16:33 (26) | 18:18 | 45 | 12:37 (30) | 20:20 | | 07:51 (43) | 22:09 |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 11:37 (30) | 07:12 | | 07:38 (32) | 06:53 | | 07:02 (43) | 04:56 |
| | 16:22 | 118 | 15:10 (27) | 17:21 | 108 | 16:33 (26) | 18:20 | 48 | 12:33 (30) | 20:22 | | 07:51 (43) | 22:10 |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 11:37 (30) | 07:09 | | 07:35 (32) | 06:50 | | 07:02 (43) | 04:56 |
| | 16:23 | 122 | 15:10 (27) | 17:23 | 108 | 16:33 (26) | 18:22 | 44 | 12:28 (30) | 20:23 | | 07:50 (43) | 22:11 |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 11:37 (30) | 07:07 | | 07:34 (32) | 06:48 | | 07:02 (43) | 04:55 |
| | 16:25 | 128 | 15:11 (27) | 17:25 | 110 | 16:34 (26) | 18:24 | 32 | 12:21 (30) | 20:25 | | 07:50 (43) | 22:12 |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 11:37 (30) | 07:04 | | 07:32 (32) | 06:45 | | 07:02 (43) | 04:54 |
| | 16:26 | 131 | 15:12 (27) | 17:27 | 110 | 16:34 (26) | 18:26 | 19 | 07:51 (32) | 20:27 | | 07:49 (43) | 22:13 |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 11:37 (30) | 07:02 | | 07:32 (32) | 06:43 | | 07:03 (43) | 04:54 |
| | 16:28 | 133 | 15:11 (27) | 17:29 | 110 | 16:34 (26) | 18:28 | 20 | 07:52 (32) | 20:29 | | 07:49 (43) | 22:14 |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 11:37 (30) | 06:59 | | 07:30 (32) | 06:40 | | 07:03 (43) | 04:54 |
| | 16:29 | 138 | 15:12 (27) | 17:32 | 109 | 16:33 (26) | 18:30 | 22 | 07:52 (32) | 20:31 | | 07:49 (43) | 22:14 |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 08:41 (31) | 06:57 | | 07:30 (32) | 06:38 | | 07:03 (43) | 04:53 |
| | 16:31 | 139 | 15:12 (27) | 17:34 | 119 | 16:33 (26) | 18:32 | 22 | 07:52 (32) | 20:33 | | 07:48 (43) | 22:15 |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | 08:38 (31) | 06:54 | | 07:30 (32) | 06:35 | 07:28 (43) | 05:28 | 07:04 (43) | 04:53 |
| | 16:33 | 142 | 15:13 (27) | 17:36 | 125 | 16:33 (26) | 18:34 | 22 | 07:52 (32) | 20:35 | 6 07:34 (43) | 21:34 | 07:47 (43) | 22:16 |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | 08:36 (31) | 06:52 | | 07:30 (32) | 06:33 | 07:22 (43) | 05:27 | 07:05 (43) | 04:53 |
| | 16:35 | 144 | 15:13 (27) | 17:38 | 127 | 16:32 (26) | 18:36 | 21 | 07:51 (32) | 20:37 | 18 07:40 (43) | 21:35 | 07:47 (43) | 22:16 |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | 08:35 (31) | 06:49 | | 07:30 (32) | 06:30 | 07:18 (43) | 05:25 | 07:05 (43) | 04:52 |
| | 16:36 | 145 | 15:12 (27) | 17:40 | 127 | 16:31 (26) | 18:38 | 21 | 07:51 (32) | 20:39 | 24 07:42 (43) | 21:37 | 07:45 (43) | 22:17 |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | 08:34 (31) | 06:47 | | 07:31 (32) | 06:28 | 07:16 (43) | 05:23 | 07:06 (43) | 04:52 |
| | 16:38 | 147 | 15:13 (27) | 17:42 | 128 | 16:31 (26) | 18:40 | 18 | 07:49 (32) | 20:41 | 28 07:44 (43) | 21:39 | 07:45 (43) | 22:18 |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | 08:33 (31) | 06:44 | | 07:31 (32) | 06:25 | 07:14 (43) | 05:21 | 07:07 (43) | 04:52 |
| | 16:40 | 149 | 15:13 (27) | 17:44 | 126 | 16:28 (26) | 18:42 | 16 | 07:47 (32) | 20:43 | 32 07:46 (43) | 21:41 | 07:44 (43) | 22:18 |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | 08:32 (31) | 06:41 | | 07:33 (32) | 06:23 | 07:11 (43) | 05:20 | 07:08 (43) | 04:52 |
| | 16:42 | 148 | 15:13 (27) | 17:46 | 123 | 16:27 (26) | 18:44 | 13 | 07:46 (32) | 20:45 | 36 07:47 (43) | 21:42 | 07:43 (43) | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:32 (31) | 06:39 | | 07:36 (32) | 06:20 | 07:10 (43) | 05:18 | 07:08 (43) | 04:52 |
| | 16:44 | 147 | 15:13 (27) | 17:49 | 115 | 16:23 (26) | 18:46 | 5 | 07:41 (32) | 20:47 | 38 07:48 (43) | 21:44 | 07:42 (43) | 22:19 |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 08:31 (31) | 06:36 | | | 06:18 | 07:09 (43) | 05:16 | 07:10 (43) | 04:52 |
| | 16:46 | 147 | 15:12 (27) | 17:51 | 115 | 17:14 (1) | 18:48 | | | 20:49 | 41 07:50 (43) | 21:46 | 07:41 (43) | 22:19 |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 08:31 (31) | 06:34 | | | 06:16 | 07:07 (43) | 05:15 | 07:10 (43) | 04:52 |
| | 16:48 | 146 | 15:11 (27) | 17:53 | 112 | 17:17 (1) | 18:50 | | | 20:51 | 43 07:50 (43) | 21:48 | 07:39 (43) | 22:19 |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 08:31 (31) | 06:31 | | | 06:13 | 07:06 (43) | 05:13 | 07:12 (43) | 04:53 |
| | 16:50 | 144 | 15:11 (27) | 17:55 | 111 | 17:19 (1) | 18:52 | | | 20:53 | 45 07:51 (43) | 21:49 | 07:39 (43) | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:31 (31) | 06:29 | | | 06:11 | 07:06 (43) | 05:12 | 07:14 (43) | 04:53 |
| | 16:52 | 140 | 15:10 (27) | 17:57 | 110 | 17:21 (1) | 18:54 | | | 20:55 | 45 07:51 (43) | 21:51 | 07:37 (43) | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:31 (31) | 06:26 | | | 06:09 | 07:05 (43) | 05:10 | 07:15 (43) | 04:53 |
| | 16:54 | 134 | 15:08 (27) | 17:59 | 105 | 17:21 (1) | 18:56 | | | 20:57 | 47 07:52 (43) | 21:52 | 07:36 (43) | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:32 (31) | 06:23 | | | 06:06 | 07:03 (43) | 05:09 | 07:16 (43) | 04:54 |
| | 16:56 | 127 | 15:06 (27) | 18:01 | 103 | 17:23 (1) | 18:58 | | | 20:59 | 48 07:51 (43) | 21:54 | 07:34 (43) | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 08:32 (31) | 06:21 | | | 06:04 | 07:03 (43) | 05:08 | 07:19 (43) | 04:54 |
| | 16:58 | 115 | 14:03 (29) | 18:03 | 97 | 12:51 (30) | 19:00 | | | 21:01 | 49 07:52 (43) | 21:55 | 07:31 (43) | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 08:33 (31) | 06:18 | | | 06:02 | 07:03 (43) | 05:06 | 07:23 (43) | 04:55 |
| | 17:00 | 112 | 14:01 (29) | 18:05 | 93 | 12:50 (30) | 19:02 | | | 21:03 | 49 07:52 (43) | 21:57 | 5 07:28 (43) | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | 07:02 (43) | 05:05 | | 04:55 |
| | 17:02 | 99 | 13:55 (29) | | | | 20:04 | | | 21:05 | 50 07:52 (43) | 21:58 | | 22:19 |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | | | 05:57 | 07:02 (43) | 05:04 | | 04:56 |
| | 17:04 | 118 | 16:22 (26) | | | | 20:06 | | | 21:07 | 50 07:52 (43) | 22:00 | | 22:19 |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | | | | 05:03 | | |
| | 17:06 | 130 | 16:25 (26) | | | | 20:08 | | | | | 22:01 | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | | 520 |
| Total, worst case | | 3928 | | | 3154 | | | 728 | | | 649 | | 1067 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | 0,52 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,35 | | | 0,35 | | | 0,49 | | | 0,98 | | 0,98 | |
| Total reduction | | 0,05 | | | 0,07 | | | 0,14 | | | 0,32 | | 0,42 | |
| Total, real | | 205 | | | 226 | | | 99 | | | 207 | | 447 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 07:13 (43) | 06:38 | | | 07:35 | | 08:09 (32) | 07:37 | | 11:07 (30) | 08:35 | | 09:19 (3) |
| | 22:18 | | 21:40 | 46 | 07:59 (43) | 20:29 | | | 19:12 | 22 | 08:31 (32) | 16:58 | 110 | 16:04 (26) | 16:10 | 134 | 14:53 (27) |
| 2 | 04:58 | | 05:41 | | 07:13 (43) | 06:40 | | | 07:37 | | 08:09 (32) | 07:39 | | 11:07 (30) | 08:37 | | 09:20 (3) |
| | 22:18 | | 21:38 | 47 | 08:00 (43) | 20:27 | | | 19:10 | 22 | 08:31 (32) | 16:56 | 108 | 16:03 (26) | 16:09 | 131 | 14:54 (27) |
| 3 | 04:58 | | 05:43 | | 07:12 (43) | 06:42 | | | 07:39 | | 08:10 (32) | 07:41 | | 11:07 (30) | 08:38 | | 09:21 (3) |
| | 22:17 | | 21:36 | 48 | 08:00 (43) | 20:24 | | | 19:07 | 20 | 08:30 (32) | 16:54 | 108 | 16:03 (26) | 16:08 | 127 | 14:55 (27) |
| 4 | 04:59 | | 05:45 | | 07:12 (43) | 06:44 | | | 07:41 | | 08:10 (32) | 07:43 | | 11:08 (30) | 08:40 | | 09:22 (3) |
| | 22:17 | | 21:34 | 48 | 08:00 (43) | 20:22 | | | 19:04 | 19 | 08:29 (32) | 16:52 | 106 | 16:03 (26) | 16:08 | 123 | 14:55 (27) |
| 5 | 05:00 | | 05:47 | | 07:12 (43) | 06:45 | | | 07:42 | | 08:11 (32) | 07:45 | | 11:08 (30) | 08:42 | | 09:22 (3) |
| | 22:16 | | 21:32 | 49 | 08:01 (43) | 20:19 | | | 19:02 | 40 | 13:02 (30) | 16:50 | 105 | 16:02 (26) | 16:07 | 119 | 14:55 (27) |
| 6 | 05:01 | | 05:49 | | 07:11 (43) | 06:47 | | | 07:44 | | 08:13 (32) | 07:47 | | 11:08 (30) | 08:43 | | 09:24 (3) |
| | 22:15 | | 21:30 | 49 | 08:00 (43) | 20:17 | | | 18:59 | 46 | 13:07 (30) | 16:48 | 104 | 16:02 (26) | 16:06 | 113 | 14:56 (27) |
| 7 | 05:02 | | 05:51 | | 07:11 (43) | 06:49 | | | 07:46 | | 08:15 (32) | 07:49 | | 11:08 (30) | 08:44 | | 09:24 (3) |
| | 22:15 | | 21:28 | 50 | 08:01 (43) | 20:14 | | | 18:57 | 49 | 13:11 (30) | 16:46 | 105 | 16:01 (26) | 16:06 | 108 | 14:56 (27) |
| 8 | 05:03 | | 05:52 | | 07:11 (43) | 06:51 | | | 07:48 | | 12:26 (30) | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 22:14 | | 21:26 | 50 | 08:01 (43) | 20:12 | | | 18:54 | 48 | 13:14 (30) | 16:44 | 112 | 16:01 (26) | 16:05 | 97 | 14:56 (27) |
| 9 | 05:04 | | 05:54 | | 07:10 (43) | 06:53 | | | 07:50 | | 12:23 (30) | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 22:13 | | 21:24 | 51 | 08:01 (43) | 20:09 | | | 18:52 | 53 | 13:16 (30) | 16:42 | 119 | 15:59 (26) | 16:05 | 90 | 14:56 (27) |
| 10 | 05:06 | | 05:56 | | 07:10 (43) | 06:55 | | | 07:52 | | 09:12 (31) | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 22:12 | | 21:22 | 51 | 08:01 (43) | 20:07 | | | 18:49 | 70 | 13:18 (30) | 16:40 | 118 | 15:58 (26) | 16:04 | 88 | 14:57 (27) |
| 11 | 05:07 | | 05:58 | | 07:10 (43) | 06:57 | | | 07:54 | | 09:09 (31) | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 22:11 | | 21:19 | 51 | 08:01 (43) | 20:04 | | | 18:47 | 78 | 13:19 (30) | 16:38 | 115 | 15:56 (26) | 16:04 | 87 | 14:57 (27) |
| 12 | 05:08 | | 06:00 | | 07:10 (43) | 06:59 | | | 07:56 | | 09:07 (31) | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 22:10 | | 21:17 | 51 | 08:01 (43) | 20:01 | | | 18:44 | 86 | 13:21 (30) | 16:36 | 106 | 15:53 (26) | 16:04 | 86 | 14:58 (27) |
| 13 | 05:09 | | 06:02 | | 07:10 (43) | 07:01 | | | 07:58 | | 09:06 (31) | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 22:09 | | 21:15 | 50 | 08:00 (43) | 19:59 | | | 18:42 | 91 | 13:22 (30) | 16:34 | 100 | 13:28 (29) | 16:04 | 86 | 14:58 (27) |
| 14 | 05:11 | | 06:04 | | 07:10 (43) | 07:02 | | | 08:00 | | 09:05 (31) | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 22:08 | | 21:13 | 50 | 08:00 (43) | 19:56 | | | 18:39 | 94 | 13:23 (30) | 16:33 | 112 | 13:33 (29) | 16:04 | 83 | 14:58 (27) |
| 15 | 05:12 | | 06:06 | | 07:10 (43) | 07:04 | | | 08:02 | | 09:04 (31) | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 22:07 | | 21:10 | 50 | 08:00 (43) | 19:54 | | | 18:37 | 98 | 13:24 (30) | 16:31 | 115 | 13:35 (29) | 16:04 | 82 | 14:58 (27) |
| 16 | 05:13 | 07:30 (43) | 06:07 | | 07:11 (43) | 07:06 | | | 08:04 | | 09:04 (31) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 22:06 | 9 07:39 (43) | 21:08 | 48 | 07:59 (43) | 19:51 | | | 18:35 | 104 | 17:55 (1) | 16:29 | 126 | 14:39 (27) | 16:04 | 80 | 14:59 (27) |
| 17 | 05:15 | 07:27 (43) | 06:09 | | 07:11 (43) | 07:08 | | | 08:06 | | 09:03 (31) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 22:04 | 15 07:42 (43) | 21:06 | 48 | 07:59 (43) | 19:48 | | | 18:32 | 107 | 17:53 (1) | 16:28 | 135 | 14:42 (27) | 16:04 | 80 | 14:59 (27) |
| 18 | 05:16 | 07:25 (43) | 06:11 | | 07:11 (43) | 07:10 | | | 08:08 | | 09:02 (31) | 08:11 | | 09:14 (3) | 08:56 | | 09:36 (3) |
| | 22:03 | 19 07:44 (43) | 21:04 | 46 | 07:57 (43) | 19:46 | | | 18:30 | 109 | 17:51 (1) | 16:26 | 140 | 14:44 (27) | 16:04 | 78 | 15:00 (27) |
| 19 | 05:18 | 07:24 (43) | 06:13 | | 07:11 (43) | 07:12 | | | 08:10 | | 09:02 (31) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 22:02 | 22 07:46 (43) | 21:01 | 46 | 07:57 (43) | 19:43 | | | 18:27 | 110 | 17:49 (1) | 16:25 | 144 | 14:45 (27) | 16:04 | 77 | 15:01 (27) |
| 20 | 05:19 | 07:22 (43) | 06:15 | | 07:12 (43) | 07:14 | | | 08:12 | | 09:02 (31) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 22:00 | 26 07:48 (43) | 20:59 | 44 | 07:56 (43) | 19:41 | | | 18:25 | 114 | 17:47 (1) | 16:23 | 147 | 14:46 (27) | 16:05 | 75 | 15:00 (27) |
| 21 | 05:21 | 07:22 (43) | 06:17 | | 07:13 (43) | 07:16 | | | 08:14 | | 09:02 (31) | 08:17 | | 09:14 (3) | 08:59 | | 09:39 (3) |
| | 21:59 | 27 07:49 (43) | 20:56 | 42 | 07:55 (43) | 19:38 | | | 18:23 | 114 | 17:43 (1) | 16:22 | 147 | 14:48 (27) | 16:05 | 75 | 15:01 (27) |
| 22 | 05:23 | 07:20 (43) | 06:19 | | 07:13 (43) | 07:18 | | | 08:16 | | 09:03 (31) | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 21:57 | 30 07:50 (43) | 20:54 | 40 | 07:53 (43) | 19:35 | | | 18:20 | 117 | 16:55 (26) | 16:20 | 147 | 14:49 (27) | 16:05 | 75 | 15:01 (27) |
| 23 | 05:24 | 07:20 (43) | 06:21 | | 07:14 (43) | 07:19 | | | 08:18 | | 09:03 (31) | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 21:56 | 32 07:52 (43) | 20:52 | 38 | 07:52 (43) | 19:33 | | | 18:18 | 124 | 16:58 (26) | 16:19 | 148 | 14:50 (27) | 16:06 | 75 | 15:02 (27) |
| 24 | 05:26 | 07:18 (43) | 06:23 | | 07:15 (43) | 07:21 | | 08:18 (32) | 08:20 | | 09:03 (31) | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 21:54 | 35 07:53 (43) | 20:49 | 36 | 07:51 (43) | 19:30 | 10 | 08:28 (32) | 18:16 | 127 | 16:59 (26) | 16:18 | 149 | 14:50 (27) | 16:06 | 76 | 15:02 (27) |
| 25 | 05:27 | 07:18 (43) | 06:25 | | 07:17 (43) | 07:23 | | 08:15 (32) | 07:22 | | 08:04 (31) | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 21:52 | 36 07:54 (43) | 20:47 | 32 | 07:49 (43) | 19:28 | 15 | 08:30 (32) | 17:13 | 127 | 16:00 (26) | 16:16 | 146 | 14:51 (27) | 16:07 | 77 | 15:03 (27) |
| 26 | 05:29 | 07:17 (43) | 06:26 | | 07:19 (43) | 07:25 | | 08:14 (32) | 07:24 | | 08:05 (31) | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 21:51 | 38 07:55 (43) | 20:44 | 28 | 07:47 (43) | 19:25 | 18 | 08:32 (32) | 17:11 | 128 | 16:01 (26) | 16:15 | 145 | 14:51 (27) | 16:08 | 78 | 15:04 (27) |
| 27 | 05:31 | 07:16 (43) | 06:28 | | 07:20 (43) | 07:27 | | 08:12 (32) | 07:26 | | 08:07 (31) | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 21:49 | 40 07:56 (43) | 20:42 | 24 | 07:44 (43) | 19:22 | 19 | 08:31 (32) | 17:09 | 125 | 16:02 (26) | 16:14 | 144 | 14:52 (27) | 16:09 | 80 | 15:05 (27) |
| 28 | 05:33 | 07:15 (43) | 06:30 | | 07:23 (43) | 07:29 | | 08:11 (32) | 07:28 | | 08:08 (31) | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 21:47 | 41 07:56 (43) | 20:39 | 17 | 07:40 (43) | 19:20 | 21 | 08:32 (32) | 17:07 | 124 | 16:03 (26) | 16:13 | 143 | 14:53 (27) | 16:10 | 81 | 15:05 (27) |
| 29 | 05:34 | 07:15 (43) | 06:32 | | 07:29 (43) | 07:31 | | 08:10 (32) | 07:31 | | 08:11 (31) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 21:46 | 42 07:57 (43) | 20:37 | 5 | 07:34 (43) | 19:17 | 22 | 08:32 (32) | 17:04 | 120 | 16:03 (26) | 16:12 | 139 | 14:53 (27) | 16:10 | 84 | 15:06 (27) |
| 30 | 05:36 | 07:15 (43) | 06:34 | | | 07:33 | | 08:10 (32) | 07:33 | | 11:06 (30) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 21:44 | 43 07:58 (43) | 20:34 | | | 19:15 | 22 | 08:32 (32) | 17:02 | 110 | 16:03 (26) | 16:11 | 138 | 14:54 (27) | 16:11 | 84 | 15:05 (27) |
| 31 | 05:38 | 07:13 (43) | 06:36 | | | | | | 07:35 | | 11:06 (30) | | | | 09:01 | | 09:38 (3) |
| | 21:42 | 45 07:58 (43) | 20:32 | | | | | | 17:00 | 110 | 16:03 (26) | | | | 16:12 | 86 | 15:06 (27) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 500 | | 1235 | | | 127 | | | 2706 | | | 3781 | | | 2815 | |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | 0,98 | | | 0,97 | | | 0,37 | | | 0,33 | | | 0,39 | |
| Total reduction | | 0,39 | | 0,42 | | | 0,32 | | | 0,09 | | | 0,04 | | | 0,04 | |
| Total, real | | 197 | | 516 | | | 40 | | | 253 | | | 163 | | | 121 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | | 08:24 (31) | 07:08 | | | 05:55 | | 06:49 (43) | 05:02 | | 06:38 (43) |
| | 16:14 | 71 | 15:22 (27) | 17:08 | 137 | 15:32 (27) | 18:07 | 131 | 16:57 (2) | 20:10 | | | 21:09 | 33 | 07:22 (43) | 22:03 | 54 | 07:32 (43) |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | | 08:25 (31) | 07:05 | | | 05:53 | | 06:47 (43) | 05:01 | | 06:38 (43) |
| | 16:15 | 76 | 15:23 (27) | 17:10 | 130 | 15:30 (27) | 18:09 | 132 | 17:36 (1) | 20:12 | | | 21:11 | 37 | 07:24 (43) | 22:04 | 53 | 07:31 (43) |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | | 08:24 (31) | 07:03 | | | 05:51 | | 06:46 (43) | 05:00 | | 06:39 (43) |
| | 16:16 | 77 | 15:24 (27) | 17:12 | 118 | 14:37 (29) | 18:12 | 133 | 17:38 (1) | 20:14 | | | 21:13 | 39 | 07:25 (43) | 22:05 | 53 | 07:32 (43) |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | | 08:25 (31) | 07:00 | | | 05:48 | | 06:44 (43) | 04:59 | | 06:39 (43) |
| | 16:18 | 81 | 15:25 (27) | 17:15 | 113 | 14:35 (29) | 18:14 | 132 | 17:40 (1) | 20:16 | | | 21:15 | 42 | 07:26 (43) | 22:06 | 53 | 07:32 (43) |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | | 08:26 (31) | 06:58 | | | 05:46 | | 06:43 (43) | 04:58 | | 06:39 (43) |
| | 16:19 | 83 | 15:26 (27) | 17:17 | 105 | 14:33 (29) | 18:16 | 127 | 17:41 (1) | 20:18 | | | 21:17 | 44 | 07:27 (43) | 22:08 | 53 | 07:32 (43) |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | | 08:27 (31) | 06:55 | | | 05:44 | | 06:42 (43) | 04:57 | | 06:40 (43) |
| | 16:20 | 86 | 15:27 (27) | 17:19 | 91 | 14:29 (29) | 18:18 | 124 | 17:42 (1) | 20:20 | | | 21:18 | 45 | 07:27 (43) | 22:09 | 52 | 07:32 (43) |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | 12:23 (30) | 07:12 | | 08:28 (31) | 06:53 | | | 05:42 | | 06:41 (43) | 04:56 | | 06:40 (43) |
| | 16:22 | 89 | 15:28 (27) | 17:21 | 79 | 16:39 (26) | 18:20 | 121 | 17:43 (1) | 20:22 | | | 21:20 | 47 | 07:28 (43) | 22:10 | 52 | 07:32 (43) |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | 12:22 (30) | 07:09 | | 08:30 (31) | 06:50 | | | 05:40 | | 06:40 (43) | 04:56 | | 06:40 (43) |
| | 16:23 | 91 | 15:28 (27) | 17:23 | 92 | 16:44 (26) | 18:22 | 114 | 17:43 (1) | 20:23 | | | 21:22 | 49 | 07:29 (43) | 22:11 | 51 | 07:31 (43) |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | 12:22 (30) | 07:07 | | 08:33 (31) | 06:48 | | | 05:38 | | 06:39 (43) | 04:55 | | 06:41 (43) |
| | 16:25 | 93 | 15:29 (27) | 17:25 | 98 | 16:47 (26) | 18:24 | 106 | 17:43 (1) | 20:25 | | | 21:24 | 50 | 07:29 (43) | 22:12 | 51 | 07:32 (43) |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | 12:21 (30) | 07:04 | | 12:13 (30) | 06:45 | | | 05:36 | | 06:39 (43) | 04:54 | | 06:41 (43) |
| | 16:26 | 96 | 15:31 (27) | 17:27 | 103 | 16:49 (26) | 18:26 | 94 | 17:43 (1) | 20:27 | | | 21:26 | 50 | 07:29 (43) | 22:13 | 50 | 07:31 (43) |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | 12:20 (30) | 07:02 | | 07:29 (32) | 06:43 | | | 05:34 | | 06:39 (43) | 04:54 | | 06:41 (43) |
| | 16:28 | 98 | 15:31 (27) | 17:29 | 107 | 16:50 (26) | 18:28 | 103 | 17:44 (1) | 20:29 | | | 21:28 | 52 | 07:31 (43) | 22:14 | 51 | 07:32 (43) |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | 12:19 (30) | 06:59 | | 07:26 (32) | 06:40 | | | 05:32 | | 06:38 (43) | 04:54 | | 06:42 (43) |
| | 16:29 | 99 | 15:31 (27) | 17:32 | 110 | 16:50 (26) | 18:30 | 107 | 17:43 (1) | 20:31 | | | 21:30 | 53 | 07:31 (43) | 22:14 | 50 | 07:32 (43) |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | 12:18 (30) | 06:57 | | 07:24 (32) | 06:38 | | | 05:30 | | 06:37 (43) | 04:53 | | 06:43 (43) |
| | 16:31 | 101 | 15:32 (27) | 17:34 | 114 | 16:52 (26) | 18:32 | 106 | 13:42 (30) | 20:33 | | | 21:32 | 54 | 07:31 (43) | 22:15 | 49 | 07:32 (43) |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | 12:18 (30) | 06:54 | | 07:23 (32) | 06:35 | | | 05:28 | | 06:37 (43) | 04:53 | | 06:42 (43) |
| | 16:33 | 102 | 15:33 (27) | 17:36 | 115 | 16:52 (26) | 18:34 | 106 | 13:41 (30) | 20:35 | | | 21:34 | 54 | 07:31 (43) | 22:16 | 50 | 07:32 (43) |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | 12:17 (30) | 06:52 | | 07:22 (32) | 06:33 | | | 05:27 | | 06:37 (43) | 04:53 | | 06:43 (43) |
| | 16:35 | 105 | 15:34 (27) | 17:38 | 117 | 16:52 (26) | 18:36 | 106 | 13:40 (30) | 20:37 | | | 21:35 | 55 | 07:32 (43) | 22:16 | 49 | 07:32 (43) |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | 08:39 (31) | 06:49 | | 07:22 (32) | 06:30 | | | 05:25 | | 06:37 (43) | 04:52 | | 06:43 (43) |
| | 16:36 | 107 | 15:34 (27) | 17:40 | 125 | 16:53 (26) | 18:38 | 104 | 13:39 (30) | 20:39 | | | 21:37 | 54 | 07:31 (43) | 22:17 | 49 | 07:32 (43) |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | 08:35 (31) | 06:47 | | 07:21 (32) | 06:28 | | | 05:23 | | 06:37 (43) | 04:52 | | 06:43 (43) |
| | 16:38 | 106 | 15:35 (27) | 17:42 | 135 | 16:53 (26) | 18:40 | 100 | 13:36 (30) | 20:41 | | | 21:39 | 55 | 07:32 (43) | 22:18 | 49 | 07:32 (43) |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | 08:32 (31) | 06:44 | | 07:20 (32) | 06:25 | | | 05:21 | | 06:36 (43) | 04:52 | | 06:44 (43) |
| | 16:40 | 108 | 15:36 (27) | 17:44 | 142 | 16:53 (26) | 18:42 | 97 | 13:34 (30) | 20:43 | | | 21:41 | 56 | 07:32 (43) | 22:18 | 48 | 07:32 (43) |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | 08:30 (31) | 06:41 | | 07:20 (32) | 06:23 | | | 05:20 | | 06:37 (43) | 04:52 | | 06:44 (43) |
| | 16:42 | 109 | 15:36 (27) | 17:46 | 146 | 16:53 (26) | 18:44 | 93 | 13:32 (30) | 20:45 | | | 21:42 | 55 | 07:32 (43) | 22:18 | 48 | 07:32 (43) |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:29 (31) | 06:39 | | 07:20 (32) | 06:20 | | | 05:18 | | 06:36 (43) | 04:52 | | 06:44 (43) |
| | 16:44 | 109 | 15:36 (27) | 17:49 | 149 | 16:53 (26) | 18:46 | 87 | 13:30 (30) | 20:47 | | | 21:44 | 56 | 07:32 (43) | 22:19 | 48 | 07:32 (43) |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | 08:27 (31) | 06:36 | | 07:21 (32) | 06:18 | | | 05:16 | | 06:37 (43) | 04:52 | | 06:44 (43) |
| | 16:46 | 108 | 15:36 (27) | 17:51 | 150 | 16:52 (26) | 18:48 | 80 | 13:27 (30) | 20:49 | | | 21:46 | 55 | 07:32 (43) | 22:19 | 48 | 07:32 (43) |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 08:27 (31) | 06:34 | | 07:21 (32) | 06:16 | | | 05:15 | | 06:36 (43) | 04:52 | | 06:45 (43) |
| | 16:48 | 125 | 15:36 (27) | 17:53 | 151 | 16:55 (2) | 18:50 | 71 | 13:23 (30) | 20:51 | | | 21:47 | 56 | 07:32 (43) | 22:19 | 48 | 07:33 (43) |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 08:26 (31) | 06:31 | | 07:23 (32) | 06:13 | | | 05:13 | | 06:36 (43) | 04:53 | | 06:45 (43) |
| | 16:50 | 134 | 15:37 (27) | 17:55 | 152 | 16:55 (2) | 18:52 | 60 | 13:19 (30) | 20:53 | | | 21:49 | 56 | 07:32 (43) | 22:19 | 48 | 07:33 (43) |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:25 (31) | 06:29 | | 07:25 (32) | 06:11 | | | 05:12 | | 06:37 (43) | 04:53 | | 06:45 (43) |
| | 16:52 | 139 | 15:37 (27) | 17:57 | 151 | 16:56 (2) | 18:54 | 43 | 13:13 (30) | 20:55 | | | 21:51 | 55 | 07:32 (43) | 22:19 | 48 | 07:33 (43) |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:24 (31) | 06:26 | | 12:55 (30) | 06:09 | | | 05:10 | | 06:37 (43) | 04:53 | | 06:45 (43) |
| | 16:54 | 141 | 15:36 (27) | 17:59 | 149 | 16:56 (2) | 18:56 | 4 | 12:59 (30) | 20:57 | | | 21:52 | 56 | 07:33 (43) | 22:19 | 49 | 07:34 (43) |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:25 (31) | 06:23 | | | 06:06 | | | 05:09 | | 06:36 (43) | 04:54 | | 06:45 (43) |
| | 16:56 | 146 | 15:37 (27) | 18:01 | 142 | 16:57 (2) | 18:58 | | | 20:59 | | | 21:54 | 56 | 07:32 (43) | 22:19 | 49 | 07:34 (43) |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 08:24 (31) | 06:21 | | | 06:04 | | 07:01 (43) | 05:08 | | 06:37 (43) | 04:54 | | 06:46 (43) |
| | 16:58 | 147 | 15:37 (27) | 18:03 | 133 | 16:57 (2) | 19:00 | | | 21:01 | 9 | 07:10 (43) | 21:55 | 55 | 07:32 (43) | 22:19 | 49 | 07:35 (43) |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 08:24 (31) | 06:18 | | | 06:02 | | 06:56 (43) | 05:06 | | 06:37 (43) | 04:55 | | 06:45 (43) |
| | 17:00 | 146 | 15:36 (27) | 18:05 | 134 | 16:58 (2) | 19:02 | | | 21:03 | 19 | 07:15 (43) | 21:57 | 55 | 07:32 (43) | 22:19 | 50 | 07:35 (43) |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 06:53 (43) | 05:05 | | 06:37 (43) | 04:55 | | 06:46 (43) |
| | 17:02 | 146 | 15:35 (27) | | | | 20:04 | | | 21:05 | 25 | 07:18 (43) | 21:58 | 55 | 07:32 (43) | 22:19 | 49 | 07:35 (43) |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | | 05:57 | | 06:51 (43) | 05:04 | | 06:38 (43) | 04:56 | | 06:45 (43) |
| | 17:04 | 145 | 15:34 (27) | | | | 20:06 | | | 21:07 | 29 | 07:20 (43) | 22:00 | 54 | 07:32 (43) | 22:19 | 50 | 07:35 (43) |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | | | | 05:03 | | 06:38 (43) | | | |
| | 17:06 | 142 | 15:33 (27) | | | | 20:08 | | | | | | 22:01 | 54 | 07:32 (43) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3406 | | | 3488 | | | 2481 | | | 82 | | | 1587 | | | 1501 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,45 | | | 0,28 | | | 0,25 | | | 0,95 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,07 | | | 0,06 | | | 0,07 | | | 0,32 | | | 0,42 | | | 0,40 | |
| Total, real | | 238 | | | 204 | | | 181 | | | 26 | | | 673 | | | 595 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:46 (43) | 05:40 | | 06:49 (43) | 06:38 | | | 07:35 | | 08:04 (32) | 07:37 | | 11:51 (30) | 08:35 | | 09:21 (3) |
| | 22:18 | 50 | 07:36 (43) | 21:40 | 52 | 07:41 (43) | 20:29 | | | 19:12 | 106 | 14:22 (30) | 16:58 | 101 | 16:18 (26) | 16:10 | 97 | 15:13 (27) |
| 2 | 04:58 | | 06:46 (43) | 05:41 | | 06:49 (43) | 06:40 | | | 07:37 | | 08:06 (32) | 07:39 | | 11:51 (30) | 08:37 | | 09:22 (3) |
| | 22:18 | 50 | 07:36 (43) | 21:38 | 52 | 07:41 (43) | 20:27 | | | 19:10 | 105 | 18:22 (1) | 16:56 | 97 | 16:16 (26) | 16:09 | 96 | 15:13 (27) |
| 3 | 04:58 | | 06:46 (43) | 05:43 | | 06:49 (43) | 06:42 | | | 07:39 | | 08:09 (32) | 07:41 | | 11:52 (30) | 08:38 | | 09:23 (3) |
| | 22:17 | 51 | 07:37 (43) | 21:36 | 50 | 07:39 (43) | 20:24 | | | 19:07 | 100 | 18:21 (1) | 16:54 | 90 | 16:13 (26) | 16:08 | 93 | 15:13 (27) |
| 4 | 04:59 | | 06:46 (43) | 05:45 | | 06:50 (43) | 06:44 | | | 07:41 | | 09:13 (31) | 07:43 | | 11:54 (30) | 08:40 | | 09:24 (3) |
| | 22:17 | 51 | 07:37 (43) | 21:34 | 49 | 07:39 (43) | 20:22 | | | 19:04 | 101 | 18:21 (1) | 16:52 | 77 | 13:11 (30) | 16:08 | 91 | 15:13 (27) |
| 5 | 05:00 | | 06:46 (43) | 05:47 | | 06:51 (43) | 06:45 | | | 07:42 | | 09:08 (31) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | 51 | 07:37 (43) | 21:32 | 48 | 07:39 (43) | 20:19 | | | 19:02 | 112 | 18:20 (1) | 16:50 | 93 | 13:59 (29) | 16:07 | 89 | 15:13 (27) |
| 6 | 05:01 | | 06:46 (43) | 05:49 | | 06:51 (43) | 06:47 | | | 07:44 | | 09:05 (31) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | 51 | 07:37 (43) | 21:30 | 46 | 07:37 (43) | 20:17 | | | 18:59 | 118 | 18:19 (1) | 16:48 | 107 | 14:03 (29) | 16:06 | 86 | 15:13 (27) |
| 7 | 05:02 | | 06:46 (43) | 05:51 | | 06:52 (43) | 06:49 | | | 07:46 | | 09:03 (31) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | 52 | 07:38 (43) | 21:28 | 45 | 07:37 (43) | 20:14 | | | 18:57 | 121 | 18:18 (1) | 16:46 | 114 | 14:05 (29) | 16:06 | 84 | 15:12 (27) |
| 8 | 05:03 | | 06:46 (43) | 05:52 | | 06:53 (43) | 06:51 | | | 07:48 | | 09:01 (31) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | 52 | 07:38 (43) | 21:26 | 43 | 07:36 (43) | 20:12 | | | 18:54 | 127 | 18:17 (1) | 16:44 | 119 | 14:08 (29) | 16:05 | 81 | 15:13 (27) |
| 9 | 05:04 | | 06:46 (43) | 05:54 | | 06:53 (43) | 06:53 | | | 07:50 | | 09:00 (31) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | 52 | 07:38 (43) | 21:24 | 41 | 07:34 (43) | 20:09 | | | 18:52 | 129 | 18:15 (1) | 16:42 | 133 | 15:01 (27) | 16:05 | 77 | 15:12 (27) |
| 10 | 05:06 | | 06:46 (43) | 05:56 | | 06:54 (43) | 06:55 | | | 07:52 | | 08:59 (31) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | 53 | 07:39 (43) | 21:22 | 39 | 07:33 (43) | 20:07 | | | 18:49 | 132 | 18:13 (1) | 16:40 | 138 | 15:03 (27) | 16:04 | 76 | 15:13 (27) |
| 11 | 05:07 | | 06:47 (43) | 05:58 | | 06:56 (43) | 06:57 | | | 07:54 | | 08:58 (31) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | 53 | 07:40 (43) | 21:19 | 36 | 07:32 (43) | 20:04 | | | 18:47 | 133 | 18:11 (1) | 16:38 | 142 | 15:04 (27) | 16:04 | 72 | 15:13 (27) |
| 12 | 05:08 | | 06:46 (43) | 06:00 | | 06:58 (43) | 06:59 | | | 07:56 | | 08:57 (31) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | 54 | 07:40 (43) | 21:17 | 32 | 07:30 (43) | 20:01 | | | 18:44 | 134 | 18:08 (1) | 16:36 | 146 | 15:06 (27) | 16:04 | 69 | 15:12 (27) |
| 13 | 05:09 | | 06:46 (43) | 06:02 | | 06:59 (43) | 07:01 | | | 07:58 | | 08:57 (31) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | 54 | 07:40 (43) | 21:15 | 28 | 07:27 (43) | 19:59 | | | 18:42 | 131 | 17:30 (2) | 16:34 | 147 | 15:07 (27) | 16:04 | 65 | 15:12 (27) |
| 14 | 05:11 | | 06:46 (43) | 06:04 | | 07:01 (43) | 07:02 | | | 08:00 | | 08:56 (31) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | 54 | 07:40 (43) | 21:13 | 24 | 07:25 (43) | 19:56 | | | 18:39 | 134 | 17:30 (2) | 16:33 | 147 | 15:08 (27) | 16:04 | 63 | 15:12 (27) |
| 15 | 05:12 | | 06:46 (43) | 06:06 | | 07:05 (43) | 07:04 | | | 08:02 | | 08:57 (31) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | 54 | 07:40 (43) | 21:10 | 17 | 07:22 (43) | 19:54 | | | 18:37 | 138 | 17:30 (2) | 16:31 | 145 | 15:08 (27) | 16:04 | 60 | 15:12 (27) |
| 16 | 05:13 | | 06:46 (43) | 06:07 | | 07:12 (43) | 07:06 | | | 08:04 | | 08:57 (31) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | 55 | 07:41 (43) | 21:08 | 2 | 07:14 (43) | 19:51 | | | 18:35 | 145 | 17:29 (2) | 16:29 | 146 | 15:10 (27) | 16:04 | 56 | 15:12 (27) |
| 17 | 05:15 | | 06:46 (43) | 06:09 | | | 07:08 | | | 08:06 | | 08:57 (31) | 08:09 | | 09:14 (3) | 08:56 | | 13:45 (29) |
| | 22:04 | 55 | 07:41 (43) | 21:06 | | | 19:48 | | | 18:32 | 149 | 17:28 (2) | 16:28 | 141 | 15:10 (27) | 16:04 | 52 | 15:12 (27) |
| 18 | 05:16 | | 06:46 (43) | 06:11 | | | 07:10 | | | 08:08 | | 08:57 (31) | 08:11 | | 09:14 (3) | 08:56 | | 13:46 (29) |
| | 22:03 | 55 | 07:41 (43) | 21:04 | | | 19:46 | | | 18:30 | 151 | 17:27 (2) | 16:26 | 139 | 15:11 (27) | 16:04 | 50 | 15:12 (27) |
| 19 | 05:18 | | 06:46 (43) | 06:13 | | | 07:12 | | 08:12 (32) | 08:10 | | 08:57 (31) | 08:13 | | 09:14 (3) | 08:57 | | 13:46 (29) |
| | 22:02 | 56 | 07:42 (43) | 21:01 | | | 19:43 | 39 | 13:58 (30) | 18:27 | 152 | 17:26 (2) | 16:25 | 134 | 15:11 (27) | 16:04 | 51 | 15:13 (27) |
| 20 | 05:19 | | 06:46 (43) | 06:15 | | | 07:14 | | 08:09 (32) | 08:12 | | 08:57 (31) | 08:15 | | 09:14 (3) | 08:58 | | 13:46 (29) |
| | 22:00 | 56 | 07:42 (43) | 20:59 | | | 19:41 | 57 | 14:04 (30) | 18:25 | 152 | 17:25 (2) | 16:23 | 125 | 15:11 (27) | 16:05 | 50 | 15:12 (27) |
| 21 | 05:21 | | 06:47 (43) | 06:17 | | | 07:16 | | 08:07 (32) | 08:14 | | 08:58 (31) | 08:17 | | 09:15 (3) | 08:59 | | 13:47 (29) |
| | 21:59 | 55 | 07:42 (43) | 20:56 | | | 19:38 | 69 | 14:08 (30) | 18:23 | 149 | 17:22 (26) | 16:22 | 108 | 15:12 (27) | 16:05 | 50 | 15:13 (27) |
| 22 | 05:23 | | 06:46 (43) | 06:19 | | | 07:18 | | 08:06 (32) | 08:16 | | 09:00 (31) | 08:19 | | 09:15 (3) | 08:59 | | 13:47 (29) |
| | 21:57 | 56 | 07:42 (43) | 20:54 | | | 19:35 | 78 | 14:11 (30) | 18:20 | 148 | 17:23 (26) | 16:20 | 110 | 15:13 (27) | 16:05 | 50 | 15:13 (27) |
| 23 | 05:24 | | 06:47 (43) | 06:21 | | | 07:19 | | 08:05 (32) | 08:18 | | 09:01 (31) | 08:21 | | 09:16 (3) | 09:00 | | 13:48 (29) |
| | 21:56 | 56 | 07:43 (43) | 20:52 | | | 19:33 | 85 | 14:13 (30) | 18:18 | 145 | 17:23 (26) | 16:19 | 109 | 15:13 (27) | 16:06 | 50 | 15:14 (27) |
| 24 | 05:26 | | 06:47 (43) | 06:23 | | | 07:21 | | 08:04 (32) | 08:20 | | 09:03 (31) | 08:23 | | 09:16 (3) | 09:00 | | 13:48 (29) |
| | 21:54 | 55 | 07:42 (43) | 20:49 | | | 19:30 | 92 | 14:16 (30) | 18:16 | 139 | 17:23 (26) | 16:18 | 108 | 15:13 (27) | 16:06 | 51 | 15:15 (27) |
| 25 | 05:27 | | 06:47 (43) | 06:25 | | | 07:23 | | 08:04 (32) | 07:22 | | 08:05 (31) | 08:25 | | 09:17 (3) | 09:00 | | 13:49 (29) |
| | 21:52 | 56 | 07:43 (43) | 20:47 | | | 19:28 | 95 | 14:17 (30) | 17:13 | 134 | 16:23 (26) | 16:16 | 106 | 15:13 (27) | 16:07 | 50 | 15:15 (27) |
| 26 | 05:29 | | 06:47 (43) | 06:26 | | | 07:25 | | 08:03 (32) | 07:24 | | 11:46 (30) | 08:27 | | 09:17 (3) | 09:01 | | 13:50 (29) |
| | 21:51 | 55 | 07:42 (43) | 20:44 | | | 19:25 | 100 | 14:19 (30) | 17:11 | 119 | 16:22 (26) | 16:15 | 106 | 15:13 (27) | 16:08 | 51 | 15:17 (27) |
| 27 | 05:31 | | 06:47 (43) | 06:28 | | | 07:27 | | 08:02 (32) | 07:26 | | 11:47 (30) | 08:28 | | 09:18 (3) | 09:01 | | 13:50 (29) |
| | 21:49 | 55 | 07:42 (43) | 20:42 | | | 19:22 | 103 | 14:19 (30) | 17:09 | 119 | 16:23 (26) | 16:14 | 105 | 15:13 (27) | 16:09 | 53 | 15:18 (27) |
| 28 | 05:33 | | 06:47 (43) | 06:30 | | | 07:29 | | 08:02 (32) | 07:28 | | 11:48 (30) | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | 55 | 07:42 (43) | 20:39 | | | 19:20 | 105 | 14:20 (30) | 17:07 | 116 | 16:22 (26) | 16:13 | 102 | 15:13 (27) | 16:10 | 58 | 15:18 (27) |
| 29 | 05:34 | | 06:48 (43) | 06:32 | | | 07:31 | | 08:03 (32) | 07:31 | | 11:48 (30) | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | 54 | 07:42 (43) | 20:37 | | | 19:17 | 106 | 14:21 (30) | 17:04 | 113 | 16:21 (26) | 16:12 | 102 | 15:13 (27) | 16:10 | 62 | 15:19 (27) |
| 30 | 05:36 | | 06:48 (43) | 06:34 | | | 07:33 | | 08:03 (32) | 07:33 | | 11:49 (30) | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | 54 | 07:42 (43) | 20:34 | | | 19:15 | 107 | 14:22 (30) | 17:02 | 110 | 16:20 (26) | 16:11 | 100 | 15:14 (27) | 16:11 | 65 | 15:20 (27) |
| 31 | 05:38 | | 06:48 (43) | 06:36 | | | | | | 07:35 | | 11:49 (30) | | | | 09:01 | | 09:42 (3) |
| | 21:42 | 53 | 07:41 (43) | 20:32 | | | | | | 17:00 | 107 | 16:19 (26) | | | | 16:12 | 68 | 15:21 (27) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1663 | | | 604 | | | 1036 | | | 3969 | | | 3537 | | | 2066 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 0,28 | | | 0,27 | | | 0,37 | | | 0,45 | |
| Total reduction | | 0,40 | | | 0,42 | | | 0,10 | | | 0,07 | | | 0,05 | | | 0,05 | |
| Total, real | | 663 | | | 255 | | | 99 | | | 288 | | | 179 | | | 107 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | 13:19 (30) | 07:27 | | 08:54 (31) | 07:08 | | | 05:55 | | 06:59 (43) | 05:02 | | 06:51 (43) |
| | 16:14 | 81 | 15:27 (27) | 17:08 | 100 | 15:36 (27) | 18:07 | 91 | 17:35 (1) | 20:10 | | | 21:09 | 48 | 07:47 (43) | 22:03 | 62 | 07:53 (43) |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | 13:19 (30) | 07:24 | | 08:57 (31) | 07:05 | | | 05:53 | | 06:58 (43) | 05:01 | | 06:51 (43) |
| | 16:15 | 82 | 15:28 (27) | 17:10 | 88 | 14:50 (29) | 18:09 | 83 | 17:37 (1) | 20:12 | | | 21:11 | 50 | 07:48 (43) | 22:04 | 62 | 07:53 (43) |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | 13:18 (30) | 07:22 | | 13:21 (30) | 07:03 | | | 05:51 | | 06:57 (43) | 05:00 | | 06:52 (43) |
| | 16:16 | 85 | 15:29 (27) | 17:12 | 84 | 14:47 (29) | 18:12 | 68 | 17:37 (1) | 20:14 | | | 21:13 | 52 | 07:49 (43) | 22:05 | 62 | 07:54 (43) |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | 13:18 (30) | 07:19 | | 13:23 (30) | 07:00 | | | 05:48 | | 06:56 (43) | 04:59 | | 06:52 (43) |
| | 16:18 | 86 | 15:30 (27) | 17:15 | 72 | 14:30 (30) | 18:14 | 64 | 17:38 (1) | 20:16 | | | 21:15 | 54 | 07:50 (43) | 22:06 | 62 | 07:54 (43) |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | 13:17 (30) | 07:17 | | 13:24 (30) | 06:58 | | | 05:46 | | 06:55 (43) | 04:58 | | 06:52 (43) |
| | 16:19 | 89 | 15:32 (27) | 17:17 | 74 | 14:31 (30) | 18:16 | 60 | 14:24 (30) | 20:18 | | | 21:17 | 55 | 07:50 (43) | 22:08 | 61 | 07:53 (43) |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | 13:17 (30) | 07:14 | | 07:44 (32) | 06:55 | | | 05:44 | | 06:54 (43) | 04:57 | | 06:53 (43) |
| | 16:20 | 90 | 15:32 (27) | 17:19 | 80 | 16:42 (26) | 18:18 | 68 | 14:23 (30) | 20:20 | | | 21:18 | 57 | 07:51 (43) | 22:09 | 61 | 07:54 (43) |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | 09:01 (31) | 07:12 | | 07:41 (32) | 06:53 | | | 05:42 | | 06:53 (43) | 04:56 | | 06:53 (43) |
| | 16:22 | 92 | 15:33 (27) | 17:21 | 96 | 16:45 (26) | 18:20 | 68 | 14:20 (30) | 20:21 | | | 21:20 | 58 | 07:51 (43) | 22:10 | 60 | 07:53 (43) |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | 08:57 (31) | 07:09 | | 07:38 (32) | 06:50 | | | 05:40 | | 06:52 (43) | 04:56 | | 06:53 (43) |
| | 16:23 | 93 | 15:34 (27) | 17:23 | 108 | 16:47 (26) | 18:22 | 66 | 14:17 (30) | 20:23 | | | 21:22 | 60 | 07:52 (43) | 22:11 | 60 | 07:53 (43) |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | 08:55 (31) | 07:07 | | 07:38 (32) | 06:48 | | | 05:38 | | 06:52 (43) | 04:55 | | 06:54 (43) |
| | 16:25 | 94 | 15:35 (27) | 17:25 | 116 | 16:49 (26) | 18:24 | 63 | 14:15 (30) | 20:25 | | | 21:24 | 60 | 07:52 (43) | 22:12 | 59 | 07:53 (43) |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | 08:54 (31) | 07:04 | | 07:36 (32) | 06:45 | | | 05:36 | | 06:51 (43) | 04:54 | | 06:53 (43) |
| | 16:26 | 96 | 15:37 (27) | 17:27 | 123 | 16:50 (26) | 18:26 | 57 | 14:11 (30) | 20:27 | | | 21:26 | 61 | 07:52 (43) | 22:13 | 60 | 07:53 (43) |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 08:53 (31) | 07:02 | | 07:36 (32) | 06:43 | | | 05:34 | | 06:51 (43) | 04:54 | | 06:54 (43) |
| | 16:28 | 97 | 15:36 (27) | 17:29 | 129 | 16:51 (26) | 18:28 | 49 | 14:07 (30) | 20:29 | | | 21:28 | 62 | 07:53 (43) | 22:14 | 59 | 07:53 (43) |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 08:51 (31) | 06:59 | | 07:35 (32) | 06:40 | | | 05:32 | | 06:51 (43) | 04:54 | | 06:55 (43) |
| | 16:29 | 103 | 15:37 (27) | 17:32 | 136 | 16:51 (26) | 18:30 | 25 | 08:00 (32) | 20:31 | | | 21:30 | 62 | 07:53 (43) | 22:14 | 59 | 07:54 (43) |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 08:50 (31) | 06:57 | | 07:34 (32) | 06:38 | | | 05:30 | | 06:50 (43) | 04:53 | | 06:55 (43) |
| | 16:31 | 115 | 15:38 (27) | 17:34 | 136 | 16:52 (26) | 18:32 | 25 | 07:59 (32) | 20:33 | | | 21:32 | 63 | 07:53 (43) | 22:15 | 59 | 07:54 (43) |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 08:50 (31) | 06:54 | | 07:34 (32) | 06:35 | | | 05:28 | | 06:49 (43) | 04:53 | | 06:55 (43) |
| | 16:33 | 122 | 15:39 (27) | 17:36 | 136 | 16:52 (26) | 18:34 | 25 | 07:59 (32) | 20:35 | | | 21:34 | 64 | 07:53 (43) | 22:16 | 58 | 07:53 (43) |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 08:48 (31) | 06:52 | | 07:34 (32) | 06:33 | | | 05:27 | | 06:50 (43) | 04:53 | | 06:55 (43) |
| | 16:35 | 127 | 15:40 (27) | 17:38 | 140 | 16:52 (26) | 18:36 | 24 | 07:58 (32) | 20:37 | | | 21:35 | 64 | 07:54 (43) | 22:16 | 58 | 07:53 (43) |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 08:48 (31) | 06:49 | | 07:35 (32) | 06:30 | | | 05:25 | | 06:49 (43) | 04:52 | | 06:56 (43) |
| | 16:36 | 131 | 15:40 (27) | 17:40 | 141 | 16:52 (26) | 18:38 | 23 | 07:58 (32) | 20:39 | | | 21:37 | 65 | 07:54 (43) | 22:17 | 58 | 07:54 (43) |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 08:48 (31) | 06:47 | | 07:35 (32) | 06:28 | | | 05:23 | | 06:50 (43) | 04:52 | | 06:56 (43) |
| | 16:38 | 134 | 15:41 (27) | 17:42 | 141 | 16:53 (2) | 18:40 | 21 | 07:56 (32) | 20:41 | | | 21:39 | 64 | 07:54 (43) | 22:18 | 58 | 07:54 (43) |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 08:47 (31) | 06:44 | | 07:35 (32) | 06:25 | | | 05:21 | | 06:49 (43) | 04:52 | | 06:56 (43) |
| | 16:40 | 139 | 15:42 (27) | 17:44 | 142 | 16:53 (2) | 18:42 | 20 | 07:55 (32) | 20:43 | | | 21:41 | 65 | 07:54 (43) | 22:18 | 58 | 07:54 (43) |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 08:48 (31) | 06:41 | | 07:37 (32) | 06:23 | | | 05:20 | | 06:50 (43) | 04:52 | | 06:56 (43) |
| | 16:42 | 140 | 15:42 (27) | 17:46 | 141 | 16:54 (2) | 18:44 | 16 | 07:53 (32) | 20:45 | | | 21:42 | 64 | 07:54 (43) | 22:18 | 58 | 07:54 (43) |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 08:48 (31) | 06:39 | | 07:39 (32) | 06:20 | | | 05:18 | | 06:49 (43) | 04:52 | | 06:57 (43) |
| | 16:44 | 142 | 15:42 (27) | 17:49 | 139 | 16:55 (2) | 18:46 | 11 | 07:50 (32) | 20:47 | | | 21:44 | 65 | 07:54 (43) | 22:19 | 57 | 07:54 (43) |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 08:47 (31) | 06:36 | | | 06:18 | | | 05:16 | | 06:49 (43) | 04:52 | | 06:57 (43) |
| | 16:46 | 143 | 15:42 (27) | 17:51 | 136 | 16:55 (2) | 18:48 | | | 20:49 | | | 21:46 | 65 | 07:54 (43) | 22:19 | 57 | 07:54 (43) |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 08:48 (31) | 06:34 | | | 06:16 | | | 05:15 | | 06:49 (43) | 04:52 | | 06:58 (43) |
| | 16:48 | 143 | 15:42 (27) | 17:53 | 132 | 16:56 (2) | 18:50 | | | 20:51 | | | 21:47 | 65 | 07:54 (43) | 22:19 | 57 | 07:55 (43) |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 08:48 (31) | 06:31 | | | 06:13 | | 07:20 (43) | 05:13 | | 06:49 (43) | 04:53 | | 06:58 (43) |
| | 16:50 | 145 | 15:43 (27) | 17:55 | 125 | 16:56 (2) | 18:52 | | | 20:53 | 8 | 07:28 (43) | 21:49 | 65 | 07:54 (43) | 22:19 | 57 | 07:55 (43) |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 08:49 (31) | 06:29 | | | 06:11 | | 07:14 (43) | 05:12 | | 06:50 (43) | 04:53 | | 06:57 (43) |
| | 16:52 | 145 | 15:43 (27) | 17:57 | 115 | 16:57 (2) | 18:54 | | | 20:55 | 20 | 07:34 (43) | 21:51 | 64 | 07:54 (43) | 22:19 | 58 | 07:55 (43) |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 08:49 (31) | 06:26 | | | 06:09 | | 07:11 (43) | 05:10 | | 06:50 (43) | 04:53 | | 06:58 (43) |
| | 16:54 | 141 | 15:42 (27) | 17:59 | 107 | 16:56 (2) | 18:56 | | | 20:57 | 27 | 07:38 (43) | 21:52 | 64 | 07:54 (43) | 22:19 | 58 | 07:56 (43) |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 08:50 (31) | 06:23 | | | 06:06 | | 07:07 (43) | 05:09 | | 06:49 (43) | 04:54 | | 06:58 (43) |
| | 16:56 | 141 | 15:43 (27) | 18:01 | 115 | 17:30 (1) | 18:58 | | | 20:59 | 32 | 07:39 (43) | 21:54 | 64 | 07:53 (43) | 22:19 | 58 | 07:56 (43) |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 08:51 (31) | 06:21 | | | 06:04 | | 07:05 (43) | 05:08 | | 06:50 (43) | 04:54 | | 06:59 (43) |
| | 16:58 | 136 | 15:42 (27) | 18:03 | 104 | 17:32 (1) | 19:00 | | | 21:01 | 37 | 07:42 (43) | 21:55 | 64 | 07:54 (43) | 22:19 | 58 | 07:57 (43) |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 08:52 (31) | 06:18 | | | 06:02 | | 07:03 (43) | 05:06 | | 06:50 (43) | 04:55 | | 06:58 (43) |
| | 17:00 | 131 | 15:42 (27) | 18:05 | 98 | 17:34 (1) | 19:02 | | | 21:03 | 40 | 07:43 (43) | 21:57 | 64 | 07:54 (43) | 22:19 | 58 | 07:56 (43) |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | 07:01 (43) | 05:05 | | 06:50 (43) | 04:55 | | 06:59 (43) |
| | 17:02 | 125 | 15:41 (27) | | | | 20:04 | | | 21:05 | 44 | 07:45 (43) | 21:58 | 64 | 07:54 (43) | 22:19 | 58 | 07:57 (43) |
| 30 | 08:31 | | 13:20 (30) | | | | 07:13 | | | 05:57 | | 07:00 (43) | 05:04 | | 06:51 (43) | 04:56 | | 06:58 (43) |
| | 17:04 | 113 | 15:40 (27) | | | | 20:06 | | | 21:07 | 46 | 07:46 (43) | 22:00 | 63 | 07:54 (43) | 22:19 | 59 | 07:57 (43) |
| 31 | 08:30 | | 13:20 (30) | | | | 07:11 | | | | | | 05:03 | | 06:51 (43) | | | |
| | 17:06 | 107 | 15:38 (27) | | | | 20:08 | | | | | | 22:01 | 62 | 07:53 (43) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3608 | | | 3254 | | | 927 | | | 254 | | | 1897 | | | 1769 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,46 | | | 0,47 | | | 0,54 | | | 0,97 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,07 | | | 0,10 | | | 0,16 | | | 0,33 | | | 0,43 | | | 0,40 | |
| Total, real | | 260 | | | 326 | | | 147 | | | 84 | | | 820 | | | 714 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:58 (43) | 05:40 | | 07:01 (43) | 06:38 | | | 07:35 | | 08:14 (32) | 07:37 | | 08:24 (31) | 08:35 | | 09:41 (3) |
| | 22:18 | 59 07:57 (43) | 21:40 | 62 | 08:03 (43) | 20:29 | | | 08:39 (32) | | 25 16:58 (26) | 120 | 16:19 (26) | | 16:10 | 98 | 15:19 (27) |
| 2 | 04:58 | 06:59 (43) | 05:41 | | 07:02 (43) | 06:40 | | | 07:37 | | 08:14 (32) | 07:39 | | 08:25 (31) | 08:37 | | 09:42 (3) |
| | 22:18 | 59 07:58 (43) | 21:38 | 61 | 08:03 (43) | 20:27 | | | 19:10 | | 42 14:42 (30) | 116 | 16:18 (26) | | 16:09 | 97 | 15:19 (27) |
| 3 | 04:58 | 06:59 (43) | 05:43 | | 07:01 (43) | 06:42 | | | 07:39 | | 08:14 (32) | 07:41 | | 08:27 (31) | 08:38 | | 09:43 (3) |
| | 22:17 | 60 07:59 (43) | 21:36 | 61 | 08:02 (43) | 20:24 | | | 19:07 | | 53 14:47 (30) | 106 | 16:16 (26) | | 16:08 | 94 | 15:19 (27) |
| 4 | 04:59 | 06:59 (43) | 05:45 | | 07:02 (43) | 06:44 | | | 07:41 | | 08:14 (32) | 07:43 | | 08:33 (31) | 08:40 | | 09:44 (3) |
| | 22:17 | 60 07:59 (43) | 21:34 | 60 | 08:02 (43) | 20:22 | | | 19:04 | | 61 14:51 (30) | 91 | 16:15 (26) | | 16:08 | 93 | 15:19 (27) |
| 5 | 05:00 | 06:58 (43) | 05:47 | | 07:03 (43) | 06:45 | | | 07:42 | | 08:15 (32) | 07:45 | | 12:47 (30) | 08:41 | | 09:43 (3) |
| | 22:16 | 61 07:59 (43) | 21:32 | 59 | 08:02 (43) | 20:19 | | | 19:02 | | 65 14:53 (30) | 79 | 16:11 (26) | | 16:07 | 92 | 15:18 (27) |
| 6 | 05:01 | 06:59 (43) | 05:49 | | 07:03 (43) | 06:47 | | | 07:44 | | 08:16 (32) | 07:47 | | 12:47 (30) | 08:43 | | 09:44 (3) |
| | 22:15 | 60 07:59 (43) | 21:30 | 58 | 08:01 (43) | 20:17 | | | 18:59 | | 67 14:55 (30) | 74 | 16:48 | 14:01 (30) | 16:06 | 91 | 15:19 (27) |
| 7 | 05:02 | 06:59 (43) | 05:51 | | 07:03 (43) | 06:49 | | | 07:46 | | 08:17 (32) | 07:49 | | 12:47 (30) | 08:44 | | 09:44 (3) |
| | 22:15 | 60 07:59 (43) | 21:28 | 57 | 08:00 (43) | 20:14 | | | 18:57 | | 68 14:57 (30) | 73 | 16:46 | 14:00 (30) | 16:06 | 88 | 15:18 (27) |
| 8 | 05:03 | 06:59 (43) | 05:52 | | 07:04 (43) | 06:51 | | | 07:48 | | 08:20 (32) | 07:51 | | 12:49 (30) | 08:46 | | 09:45 (3) |
| | 22:14 | 61 08:00 (43) | 21:26 | 56 | 08:00 (43) | 20:12 | | | 18:54 | | 66 14:58 (30) | 84 | 16:44 | 14:19 (29) | 16:05 | 86 | 15:18 (27) |
| 9 | 05:04 | 06:59 (43) | 05:54 | | 07:04 (43) | 06:53 | | | 07:50 | | 13:58 (30) | 07:53 | | 12:49 (30) | 08:47 | | 09:45 (3) |
| | 22:13 | 61 08:00 (43) | 21:24 | 54 | 07:58 (43) | 20:09 | | | 18:52 | | 61 14:59 (30) | 89 | 16:42 | 14:21 (29) | 16:05 | 86 | 15:18 (27) |
| 10 | 05:06 | 06:59 (43) | 05:56 | | 07:05 (43) | 06:55 | | | 07:52 | | 13:56 (30) | 07:55 | | 12:50 (30) | 08:48 | | 09:47 (3) |
| | 22:12 | 61 08:00 (43) | 21:22 | 52 | 07:57 (43) | 20:07 | | | 18:49 | | 66 18:12 (1) | 102 | 16:40 | 15:07 (27) | 16:04 | 83 | 15:18 (27) |
| 11 | 05:07 | 06:59 (43) | 05:58 | | 07:06 (43) | 06:57 | | | 07:54 | | 09:33 (31) | 07:57 | | 12:51 (30) | 08:50 | | 09:47 (3) |
| | 22:11 | 63 08:02 (43) | 21:19 | 50 | 07:56 (43) | 20:04 | | | 18:47 | | 77 18:11 (1) | 108 | 16:38 | 15:09 (27) | 16:04 | 82 | 15:18 (27) |
| 12 | 05:08 | 06:59 (43) | 06:00 | | 07:08 (43) | 06:59 | | | 07:56 | | 09:29 (31) | 07:59 | | 12:52 (30) | 08:51 | | 09:47 (3) |
| | 22:10 | 63 08:02 (43) | 21:17 | 47 | 07:55 (43) | 20:01 | | | 18:44 | | 86 18:09 (1) | 113 | 16:36 | 15:12 (27) | 16:04 | 79 | 15:17 (27) |
| 13 | 05:09 | 06:59 (43) | 06:02 | | 07:08 (43) | 07:01 | | | 07:58 | | 09:26 (31) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | 63 08:02 (43) | 21:15 | 45 | 07:53 (43) | 19:59 | | | 18:42 | | 95 18:08 (1) | 126 | 16:34 | 15:13 (27) | 16:04 | 77 | 15:17 (27) |
| 14 | 05:11 | 06:59 (43) | 06:04 | | 07:09 (43) | 07:02 | | | 08:00 | | 09:24 (31) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | 63 08:02 (43) | 21:13 | 43 | 07:52 (43) | 19:56 | | | 18:39 | | 101 18:06 (1) | 132 | 16:33 | 15:14 (27) | 16:04 | 75 | 15:16 (27) |
| 15 | 05:12 | 06:59 (43) | 06:06 | | 07:11 (43) | 07:04 | | | 08:02 | | 09:23 (31) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | 63 08:02 (43) | 21:10 | 39 | 07:50 (43) | 19:54 | | | 18:37 | | 106 18:04 (1) | 136 | 16:31 | 15:14 (27) | 16:04 | 74 | 15:16 (27) |
| 16 | 05:13 | 06:59 (43) | 06:07 | | 07:13 (43) | 07:06 | | | 08:04 | | 09:22 (31) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | 64 08:03 (43) | 21:08 | 36 | 07:49 (43) | 19:51 | | | 18:35 | | 114 18:01 (1) | 141 | 16:29 | 15:16 (27) | 16:04 | 72 | 15:15 (27) |
| 17 | 05:15 | 06:59 (43) | 06:09 | | 07:15 (43) | 07:08 | | | 08:06 | | 09:21 (31) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | 64 08:03 (43) | 21:06 | 32 | 07:47 (43) | 19:48 | | | 18:32 | | 109 17:28 (2) | 141 | 16:28 | 15:16 (27) | 16:04 | 66 | 14:40 (29) |
| 18 | 05:16 | 06:59 (43) | 06:11 | | 07:17 (43) | 07:10 | | | 08:08 | | 09:20 (31) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | 64 08:03 (43) | 21:04 | 26 | 07:43 (43) | 19:46 | | | 18:30 | | 121 17:28 (2) | 145 | 16:26 | 15:17 (27) | 16:04 | 67 | 14:41 (29) |
| 19 | 05:18 | 06:59 (43) | 06:13 | | 07:20 (43) | 07:12 | | | 08:10 | | 09:19 (31) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | 65 08:04 (43) | 21:01 | 19 | 07:39 (43) | 19:43 | | | 18:27 | | 128 17:27 (2) | 145 | 16:25 | 15:17 (27) | 16:04 | 67 | 14:42 (29) |
| 20 | 05:19 | 06:59 (43) | 06:15 | | 07:28 (43) | 07:14 | | | 08:12 | | 09:18 (31) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | 65 08:04 (43) | 20:59 | 3 | 07:31 (43) | 19:41 | | | 18:25 | | 133 17:26 (2) | 143 | 16:23 | 15:17 (27) | 16:05 | 66 | 14:41 (29) |
| 21 | 05:21 | 07:00 (43) | 06:17 | | | 07:16 | | | 08:14 | | 09:18 (31) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | 64 08:04 (43) | 20:56 | | | 19:38 | | | 18:23 | | 137 17:25 (2) | 143 | 16:22 | 15:18 (27) | 16:05 | 66 | 14:42 (29) |
| 22 | 05:23 | 06:59 (43) | 06:19 | | | 07:18 | | | 08:16 | | 09:18 (31) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | 65 08:04 (43) | 20:54 | | | 19:35 | | | 18:20 | | 139 17:25 (2) | 143 | 16:20 | 15:19 (27) | 16:05 | 66 | 14:42 (29) |
| 23 | 05:24 | 07:00 (43) | 06:21 | | | 07:19 | | 08:24 (32) | 08:18 | | 09:18 (31) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | 65 08:05 (43) | 20:52 | | | 19:33 | 10 | 08:34 (32) | 18:18 | | 141 17:24 (2) | 139 | 16:19 | 15:19 (27) | 16:06 | 66 | 14:43 (29) |
| 24 | 05:26 | 06:59 (43) | 06:23 | | | 07:21 | | 08:21 (32) | 08:20 | | 09:18 (31) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | 65 08:04 (43) | 20:49 | | | 19:30 | 15 | 08:36 (32) | 18:16 | | 141 17:23 (2) | 140 | 16:18 | 15:19 (27) | 16:06 | 68 | 14:44 (29) |
| 25 | 05:27 | 07:00 (43) | 06:25 | | | 07:23 | | 08:20 (32) | 07:22 | | 08:18 (31) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | 65 08:05 (43) | 20:47 | | | 19:28 | 18 | 08:38 (32) | 17:13 | | 141 16:22 (26) | 134 | 16:16 | 15:19 (27) | 16:07 | 67 | 14:44 (29) |
| 26 | 05:29 | 07:00 (43) | 06:26 | | | 07:25 | | 08:18 (32) | 07:24 | | 08:18 (31) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | 64 08:04 (43) | 20:44 | | | 19:25 | 21 | 08:39 (32) | 17:11 | | 139 16:22 (26) | 132 | 16:15 | 15:19 (27) | 16:08 | 66 | 14:45 (29) |
| 27 | 05:31 | 07:00 (43) | 06:28 | | | 07:27 | | 08:16 (32) | 07:26 | | 08:19 (31) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | 64 08:04 (43) | 20:42 | | | 19:22 | 22 | 08:38 (32) | 17:09 | | 137 16:22 (26) | 127 | 16:14 | 15:19 (27) | 16:09 | 71 | 15:20 (27) |
| 28 | 05:33 | 07:00 (43) | 06:30 | | | 07:29 | | 08:15 (32) | 07:28 | | 08:19 (31) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | 64 08:04 (43) | 20:39 | | | 19:20 | 24 | 08:39 (32) | 17:07 | | 138 16:22 (26) | 122 | 16:13 | 15:19 (27) | 16:10 | 72 | 15:22 (27) |
| 29 | 05:34 | 07:00 (43) | 06:32 | | | 07:31 | | 08:14 (32) | 07:31 | | 08:20 (31) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | 64 08:04 (43) | 20:37 | | | 19:17 | 25 | 08:39 (32) | 17:04 | | 136 16:21 (26) | 114 | 16:12 | 15:19 (27) | 16:10 | 75 | 15:24 (27) |
| 30 | 05:36 | 07:01 (43) | 06:34 | | | 07:33 | | 08:14 (32) | 07:33 | | 08:21 (31) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | 63 08:04 (43) | 20:34 | | | 19:15 | 25 | 08:39 (32) | 17:02 | | 135 16:20 (26) | 105 | 16:11 | 15:19 (27) | 16:11 | 78 | 15:24 (27) |
| 31 | 05:38 | 07:00 (43) | 06:36 | | | | | | 07:35 | | 08:21 (31) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | 63 08:03 (43) | 20:32 | | | | | | 17:00 | | 128 16:19 (26) | | | | 16:12 | 78 | 15:25 (27) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1945 | | 920 | | | 160 | | | 3156 | | | 3564 | | | 2406 | |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,97 | | 0,97 | | | 0,97 | | | 0,50 | | | 0,43 | | | 0,49 | |
| Total reduction | | 0,41 | | 0,43 | | | 0,33 | | | 0,13 | | | 0,06 | | | 0,06 | |
| Total, real | | 790 | | 396 | | | 53 | | | 415 | | | 209 | | | 138 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 16:00 (39) | 07:27 | | | 07:08 | | 19:09 (28) | 05:55 | | 20:07 (29) | 05:02 | | |
| | 16:14 | | 17:08 | 26 | 16:26 (39) | 18:07 | | | 20:10 | 23 | 19:32 (28) | 21:09 | 24 | 20:31 (29) | 22:02 | | |
| 2 | 09:01 | | 08:26 | | 15:59 (39) | 07:24 | | | 07:05 | | 19:09 (28) | 05:53 | | 20:07 (29) | 05:01 | | |
| | 16:15 | | 17:10 | 27 | 16:26 (39) | 18:09 | | | 20:12 | 24 | 19:33 (28) | 21:11 | 24 | 20:31 (29) | 22:04 | | |
| 3 | 09:00 | | 08:24 | | 15:59 (39) | 07:22 | | | 07:03 | | 19:08 (28) | 05:51 | | 20:06 (29) | 05:00 | | |
| | 16:16 | | 17:12 | 28 | 16:27 (39) | 18:12 | | | 20:14 | 24 | 19:32 (28) | 21:13 | 26 | 20:32 (29) | 22:05 | | |
| 4 | 09:00 | | 08:22 | | 15:59 (39) | 07:19 | | | 07:00 | | 19:09 (28) | 05:48 | | 20:06 (29) | 04:59 | | |
| | 16:18 | | 17:15 | 29 | 16:28 (39) | 18:14 | | | 20:16 | 23 | 19:32 (28) | 21:15 | 26 | 20:32 (29) | 22:06 | | |
| 5 | 09:00 | | 08:20 | | 15:59 (39) | 07:17 | | | 06:58 | | 19:09 (28) | 05:46 | | 20:06 (29) | 04:58 | | |
| | 16:19 | | 17:17 | 29 | 16:28 (39) | 18:16 | | | 20:17 | 24 | 19:49 (27) | 21:16 | 26 | 20:32 (29) | 22:07 | | |
| 6 | 08:59 | | 08:18 | | 15:59 (39) | 07:14 | | | 06:55 | | 19:10 (28) | 05:44 | | 20:05 (29) | 04:57 | | |
| | 16:20 | | 17:19 | 29 | 16:28 (39) | 18:18 | | | 20:19 | 29 | 19:52 (27) | 21:18 | 27 | 20:32 (29) | 22:09 | | |
| 7 | 08:59 | | 08:16 | | 15:58 (39) | 07:12 | | | 06:53 | | 19:10 (28) | 05:42 | | 20:05 (29) | 04:56 | | 05:40 (5) |
| | 16:22 | | 17:21 | 30 | 16:28 (39) | 18:20 | | | 20:21 | 30 | 19:53 (27) | 21:20 | 26 | 20:31 (29) | 22:10 | 6 | 05:46 (5) |
| 8 | 08:58 | | 08:14 | | 15:59 (39) | 07:09 | | | 06:50 | | 19:12 (28) | 05:40 | | 20:05 (29) | 04:56 | | 05:37 (5) |
| | 16:23 | | 17:23 | 29 | 16:28 (39) | 18:22 | | | 20:23 | 31 | 19:56 (27) | 21:22 | 26 | 20:31 (29) | 22:11 | 10 | 05:47 (5) |
| 9 | 08:57 | | 08:12 | | 15:59 (39) | 07:07 | | | 06:48 | | 19:14 (28) | 05:38 | | 20:06 (29) | 04:55 | | 05:37 (5) |
| | 16:25 | | 17:25 | 29 | 16:28 (39) | 18:24 | | | 20:25 | 27 | 19:56 (27) | 21:24 | 24 | 20:30 (29) | 22:12 | 12 | 05:49 (5) |
| 10 | 08:57 | | 08:10 | | 16:00 (39) | 07:04 | | | 06:45 | | 19:37 (27) | 05:36 | | 20:06 (29) | 04:54 | | 05:35 (5) |
| | 16:26 | | 17:27 | 28 | 16:28 (39) | 18:26 | | | 20:27 | 20 | 19:57 (27) | 21:26 | 24 | 20:30 (29) | 22:13 | 15 | 05:50 (5) |
| 11 | 08:56 | | 08:08 | | 16:01 (39) | 07:02 | | | 06:43 | | 19:36 (27) | 05:34 | | 20:07 (29) | 04:54 | | 05:35 (5) |
| | 16:28 | | 17:29 | 26 | 16:27 (39) | 18:28 | | | 20:29 | 20 | 19:56 (27) | 21:28 | 25 | 20:56 (2) | 22:13 | 16 | 05:51 (5) |
| 12 | 08:55 | | 08:06 | | 16:01 (39) | 06:59 | | | 06:40 | | 07:05 (4) | 05:32 | | 20:07 (29) | 04:54 | | 05:35 (5) |
| | 16:29 | | 17:32 | 25 | 16:26 (39) | 18:30 | | | 20:31 | 26 | 19:56 (27) | 21:30 | 22 | 20:29 (29) | 22:14 | 10 | 05:52 (5) |
| 13 | 08:54 | | 08:04 | | 16:02 (39) | 06:57 | | | 06:38 | | 07:02 (4) | 05:30 | | 20:08 (29) | 04:53 | | 05:35 (5) |
| | 16:31 | | 17:34 | 24 | 16:26 (39) | 18:32 | | | 20:33 | 30 | 19:55 (27) | 21:32 | 20 | 20:28 (29) | 22:15 | 8 | 05:53 (5) |
| 14 | 08:53 | | 08:02 | | 16:04 (39) | 06:54 | | | 06:35 | | 07:00 (4) | 05:28 | | 20:09 (29) | 04:53 | | 05:34 (5) |
| | 16:33 | | 17:36 | 21 | 16:25 (39) | 18:34 | | | 20:35 | 32 | 19:55 (27) | 21:33 | 18 | 20:27 (29) | 22:16 | 8 | 05:53 (5) |
| 15 | 08:52 | | 07:59 | | 16:04 (39) | 06:52 | | | 06:33 | | 06:58 (4) | 05:27 | | 20:10 (29) | 04:53 | | 05:34 (5) |
| | 16:35 | | 17:38 | 18 | 16:22 (39) | 18:36 | | | 20:37 | 33 | 19:54 (27) | 21:35 | 16 | 20:26 (29) | 22:16 | 7 | 05:54 (5) |
| 16 | 08:51 | | 07:57 | | 16:07 (39) | 06:49 | | | 06:30 | | 06:55 (4) | 05:25 | | 20:11 (29) | 04:52 | | 05:34 (5) |
| | 16:36 | | 17:40 | 14 | 16:21 (39) | 18:38 | | | 20:39 | 35 | 19:53 (27) | 21:37 | 13 | 20:24 (29) | 22:17 | 7 | 05:55 (5) |
| 17 | 08:50 | | 07:55 | | 16:12 (39) | 06:47 | | | 06:28 | | 06:54 (4) | 05:23 | | 20:14 (29) | 04:52 | | 05:34 (5) |
| | 16:38 | | 17:42 | 5 | 16:17 (39) | 18:40 | | | 20:41 | 32 | 19:51 (27) | 21:39 | 9 | 20:23 (29) | 22:17 | 6 | 05:40 (5) |
| 18 | 08:49 | | 07:53 | | | 06:44 | | | 06:25 | | 06:53 (4) | 05:21 | | | 04:52 | | 05:34 (5) |
| | 16:40 | | 17:44 | | | 18:42 | | | 20:43 | 29 | 19:48 (27) | 21:41 | | | 22:18 | 6 | 05:40 (5) |
| 19 | 08:48 | | 07:50 | | | 06:41 | | | 06:23 | | 06:53 (4) | 05:20 | | 21:08 (2) | 04:52 | | 05:34 (5) |
| | 16:42 | | 17:46 | | | 18:44 | | | 20:45 | 21 | 07:14 (4) | 21:42 | 1 | 21:09 (2) | 22:18 | 6 | 05:40 (5) |
| 20 | 08:46 | | 07:48 | | | 06:39 | | | 06:20 | | 06:54 (4) | 05:18 | | | 04:52 | | 05:34 (5) |
| | 16:44 | | 17:49 | | | 18:46 | | | 20:47 | 19 | 07:13 (4) | 21:44 | | | 22:19 | 6 | 05:40 (5) |
| 21 | 08:45 | | 07:46 | | | 06:36 | | | 06:18 | | 06:54 (4) | 05:16 | | | 04:52 | | 05:34 (5) |
| | 16:46 | | 17:51 | | | 18:48 | | | 20:49 | 19 | 07:13 (4) | 21:46 | | | 22:19 | 6 | 05:40 (5) |
| 22 | 08:44 | | 07:43 | | | 06:34 | | | 06:16 | | 06:54 (4) | 05:15 | | | 04:52 | | 05:35 (5) |
| | 16:48 | | 17:53 | | | 18:50 | | | 20:51 | 17 | 07:11 (4) | 21:47 | | | 22:19 | 6 | 05:41 (5) |
| 23 | 08:42 | | 07:41 | | | 06:31 | | | 06:13 | | 06:55 (4) | 05:13 | | | 04:53 | | 05:35 (5) |
| | 16:50 | | 17:55 | | | 18:52 | | | 20:53 | 15 | 07:10 (4) | 21:49 | | | 22:19 | 6 | 05:41 (5) |
| 24 | 08:41 | | 07:39 | | | 06:29 | | | 06:11 | | 06:57 (4) | 05:12 | | | 04:53 | | 05:35 (5) |
| | 16:52 | | 17:57 | | | 18:54 | | | 20:55 | 12 | 07:09 (4) | 21:51 | | | 22:19 | 7 | 05:57 (5) |
| 25 | 08:39 | | 07:36 | | 16:10 (39) | 06:26 | | | 06:09 | | 06:59 (4) | 05:10 | | | 04:53 | | 05:36 (5) |
| | 16:54 | 2 | 17:59 | | 16:12 (39) | 18:56 | | | 20:57 | 7 | 07:06 (4) | 21:52 | | | 22:19 | 6 | 05:42 (5) |
| 26 | 08:38 | | 07:34 | | 16:05 (39) | 06:23 | | 18:17 (28) | 06:06 | | 20:14 (29) | 05:09 | | | 04:54 | | 05:36 (5) |
| | 16:56 | 11 | 18:01 | | 16:16 (39) | 18:58 | 12 | 18:29 (28) | 20:59 | 11 | 20:25 (29) | 21:54 | | | 22:19 | 7 | 05:57 (5) |
| 27 | 08:36 | | 07:32 | | 16:04 (39) | 06:21 | | 18:14 (28) | 06:04 | | 20:12 (29) | 05:08 | | | 04:54 | | 05:37 (5) |
| | 16:58 | 16 | 18:03 | | 16:20 (39) | 19:00 | 16 | 18:30 (28) | 21:01 | 15 | 20:27 (29) | 21:55 | | | 22:19 | 6 | 05:43 (5) |
| 28 | 08:35 | | 07:29 | | 16:03 (39) | 06:18 | | 18:13 (28) | 06:02 | | 20:10 (29) | 05:06 | | | 04:55 | | 05:37 (5) |
| | 17:00 | 18 | 18:05 | | 16:21 (39) | 19:02 | 19 | 18:32 (28) | 21:03 | 18 | 20:28 (29) | 21:57 | | | 22:19 | 7 | 05:57 (5) |
| 29 | 08:33 | | | | 16:02 (39) | 07:16 | | 19:11 (28) | 05:59 | | 20:09 (29) | 05:05 | | | 04:55 | | 05:38 (5) |
| | 17:02 | 21 | | | 16:23 (39) | 20:04 | 21 | 19:32 (28) | 21:05 | 21 | 20:30 (29) | 21:58 | | | 22:19 | 9 | 05:57 (5) |
| 30 | 08:31 | | | | 16:01 (39) | 07:13 | | 19:10 (28) | 05:57 | | 20:08 (29) | 05:04 | | | 04:56 | | 05:38 (5) |
| | 17:04 | 23 | | | 16:24 (39) | 20:06 | 22 | 19:32 (28) | 21:07 | 22 | 20:30 (29) | 22:00 | | | 22:18 | 10 | 05:56 (5) |
| 31 | 08:29 | | | | 16:00 (39) | 07:11 | | 19:10 (28) | | | | 05:03 | | | | | |
| | 17:06 | 25 | | | 16:25 (39) | 20:08 | 23 | 19:33 (28) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 116 | | | 417 | | | 113 | | | 689 | | | 377 | | | 193 |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 1,00 | | | 0,98 | | | 0,95 | | | 0,79 |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,38 | | | 0,48 | | | 0,37 |
| Total, real | | 15 | | | 75 | | | 38 | | | 260 | | | 180 | | | 72 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 (5) | 05:40 | | 20:17 (29) | 06:38 | | 19:35 (27) | 07:35 | | | 07:37 | | 15:29 (39) | 08:35 |
| | 22:18 | 13 | 05:56 (5) | 21:40 | 24 | 21:03 (2) | 20:29 | 20 | 19:55 (27) | 19:12 | | | 16:58 | 28 | 15:57 (39) | 16:10 |
| 2 | 04:58 | | 05:40 (5) | 05:41 | | 20:17 (29) | 06:40 | | 19:35 (27) | 07:37 | | | 07:39 | | 15:29 (39) | 08:37 |
| | 22:18 | 16 | 05:56 (5) | 21:38 | 24 | 20:41 (29) | 20:27 | 20 | 19:55 (27) | 19:10 | | | 16:56 | 28 | 15:57 (39) | 16:09 |
| 3 | 04:58 | | 05:42 (5) | 05:43 | | 20:16 (29) | 06:42 | | 19:13 (28) | 07:39 | | | 07:41 | | 15:28 (39) | 08:38 |
| | 22:17 | 13 | 05:55 (5) | 21:36 | 24 | 20:40 (29) | 20:24 | 26 | 19:54 (27) | 19:07 | | | 16:54 | 29 | 15:57 (39) | 16:08 |
| 4 | 04:59 | | 05:43 (5) | 05:45 | | 20:16 (29) | 06:43 | | 19:09 (28) | 07:40 | | | 07:43 | | 15:28 (39) | 08:40 |
| | 22:17 | 11 | 05:54 (5) | 21:34 | 25 | 20:41 (29) | 20:22 | 31 | 19:53 (27) | 19:04 | | | 16:52 | 29 | 15:57 (39) | 16:08 |
| 5 | 05:00 | | 05:44 (5) | 05:47 | | 20:16 (29) | 06:45 | | 19:07 (28) | 07:42 | | | 07:45 | | 15:29 (39) | 08:41 |
| | 22:16 | 8 | 05:52 (5) | 21:32 | 25 | 20:41 (29) | 20:19 | 30 | 19:50 (27) | 19:02 | | | 16:49 | 29 | 15:58 (39) | 16:07 |
| 6 | 05:01 | | 05:48 (5) | 05:49 | | 20:15 (29) | 06:47 | | 19:05 (28) | 07:44 | | | 07:47 | | 15:29 (39) | 08:43 |
| | 22:15 | 1 | 05:49 (5) | 21:30 | 26 | 20:41 (29) | 20:17 | 29 | 19:47 (27) | 18:59 | | | 16:47 | 29 | 15:58 (39) | 16:06 |
| 7 | 05:02 | | | 05:51 | | 20:15 (29) | 06:49 | | 19:04 (28) | 07:46 | | | 07:49 | | 15:29 (39) | 08:44 |
| | 22:15 | | | 21:28 | 26 | 20:41 (29) | 20:14 | 25 | 19:45 (27) | 18:57 | | | 16:46 | 28 | 15:57 (39) | 16:06 |
| 8 | 05:03 | | | 05:52 | | 20:15 (29) | 06:51 | | 19:03 (28) | 07:48 | | | 07:51 | | 15:30 (39) | 08:46 |
| | 22:14 | | | 21:26 | 26 | 20:41 (29) | 20:12 | 23 | 19:26 (28) | 18:54 | | | 16:44 | 28 | 15:58 (39) | 16:05 |
| 9 | 05:04 | | | 05:54 | | 20:14 (29) | 06:53 | | 19:02 (28) | 07:50 | | | 07:53 | | 15:30 (39) | 08:47 |
| | 22:13 | | | 21:24 | 26 | 20:40 (29) | 20:09 | 24 | 19:26 (28) | 18:52 | | | 16:42 | 27 | 15:57 (39) | 16:05 |
| 10 | 05:06 | | | 05:56 | | 20:15 (29) | 06:55 | | 19:02 (28) | 07:52 | | | 07:55 | | 15:30 (39) | 08:48 |
| | 22:12 | | | 21:21 | 25 | 20:40 (29) | 20:06 | 24 | 19:26 (28) | 18:49 | | | 16:40 | 26 | 15:56 (39) | 16:04 |
| 11 | 05:07 | | | 05:58 | | 20:15 (29) | 06:57 | | 19:02 (28) | 07:54 | | | 07:57 | | 15:31 (39) | 08:49 |
| | 22:11 | | | 21:19 | 25 | 20:40 (29) | 20:04 | 24 | 19:26 (28) | 18:47 | | | 16:38 | 25 | 15:56 (39) | 16:04 |
| 12 | 05:08 | | | 06:00 | | 20:16 (29) | 06:59 | | 19:01 (28) | 07:56 | | | 07:59 | | 15:33 (39) | 08:51 |
| | 22:10 | | | 21:17 | 23 | 20:39 (29) | 20:01 | 23 | 19:24 (28) | 18:44 | | | 16:36 | 23 | 15:56 (39) | 16:04 |
| 13 | 05:09 | | | 06:02 | | 20:16 (29) | 07:00 | | 19:01 (28) | 07:58 | | | 08:01 | | 15:34 (39) | 08:52 |
| | 22:09 | | | 21:15 | 22 | 20:38 (29) | 19:59 | 23 | 19:24 (28) | 18:42 | | | 16:34 | 20 | 15:54 (39) | 16:04 |
| 14 | 05:11 | | | 06:04 | | 20:17 (29) | 07:02 | | 19:02 (28) | 08:00 | | | 08:03 | | 15:35 (39) | 08:53 |
| | 22:08 | | | 21:13 | 20 | 20:37 (29) | 19:56 | 21 | 19:23 (28) | 18:39 | | | 16:33 | 18 | 15:53 (39) | 16:04 |
| 15 | 05:12 | | | 06:06 | | 20:18 (29) | 07:04 | | 19:02 (28) | 08:02 | | | 08:05 | | 15:36 (39) | 08:54 |
| | 22:07 | | | 21:10 | 18 | 20:36 (29) | 19:54 | 20 | 19:22 (28) | 18:37 | | | 16:31 | 15 | 15:51 (39) | 16:04 |
| 16 | 05:13 | | | 06:07 | | 20:20 (29) | 07:06 | | 19:03 (28) | 08:04 | | | 08:07 | | 15:39 (39) | 08:55 |
| | 22:05 | | | 21:08 | 14 | 20:34 (29) | 19:51 | 17 | 19:20 (28) | 18:34 | | | 16:29 | 11 | 15:50 (39) | 16:04 |
| 17 | 05:15 | | | 06:09 | | 20:22 (29) | 07:08 | | 19:05 (28) | 08:06 | | | 08:09 | | 15:44 (39) | 08:56 |
| | 22:04 | | | 21:06 | 9 | 20:31 (29) | 19:48 | 13 | 19:18 (28) | 18:32 | | | 16:28 | 1 | 15:45 (39) | 16:04 |
| 18 | 05:16 | | | 06:11 | | 07:04 (4) | 07:10 | | 19:07 (28) | 08:08 | | | 08:11 | | | 08:56 |
| | 22:03 | | | 21:03 | 8 | 07:12 (4) | 19:46 | 6 | 19:13 (28) | 18:30 | | | 16:26 | | | 16:04 |
| 19 | 05:18 | | | 06:13 | | 07:02 (4) | 07:12 | | | 08:10 | | | 08:13 | | | 08:57 |
| | 22:02 | | | 21:01 | 13 | 07:15 (4) | 19:43 | | | 18:27 | | | 16:25 | | | 16:04 |
| 20 | 05:19 | | | 06:15 | | 07:01 (4) | 07:14 | | | 08:12 | | | 08:15 | | | 08:58 |
| | 22:00 | | | 20:59 | 15 | 07:16 (4) | 19:41 | | | 18:25 | | | 16:23 | | | 16:05 |
| 21 | 05:21 | | | 06:17 | | 07:00 (4) | 07:16 | | | 08:14 | | | 08:17 | | | 08:58 |
| | 21:59 | | | 20:56 | 17 | 07:17 (4) | 19:38 | | | 18:23 | | | 16:22 | | | 16:05 |
| 22 | 05:23 | | 21:18 (2) | 06:19 | | 06:58 (4) | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 |
| | 21:57 | 1 | 21:19 (2) | 20:54 | 19 | 07:17 (4) | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 |
| 23 | 05:24 | | | 06:21 | | 06:57 (4) | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 |
| | 21:56 | | | 20:52 | 20 | 07:17 (4) | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 |
| 24 | 05:26 | | 21:18 (2) | 06:23 | | 06:57 (4) | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 |
| | 21:54 | 1 | 21:19 (2) | 20:49 | 20 | 07:17 (4) | 19:30 | | | 18:16 | | | 16:18 | | | 16:06 |
| 25 | 05:27 | | | 06:25 | | 06:57 (4) | 07:23 | | | 07:22 | | 15:39 (39) | 08:25 | | | 09:00 |
| | 21:52 | | | 20:47 | 29 | 19:52 (27) | 19:28 | | | 17:13 | 9 | 15:48 (39) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:26 (29) | 06:26 | | 06:57 (4) | 07:25 | | | 07:24 | | 15:36 (39) | 08:26 | | | 09:01 |
| | 21:51 | 5 | 20:31 (29) | 20:44 | 33 | 19:54 (27) | 19:25 | | | 17:11 | 15 | 15:51 (39) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 20:23 (29) | 06:28 | | 06:57 (4) | 07:27 | | | 07:26 | | 15:33 (39) | 08:28 | | | 09:01 |
| | 21:49 | 11 | 20:34 (29) | 20:42 | 34 | 19:54 (27) | 19:22 | | | 17:09 | 19 | 15:52 (39) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 20:21 (29) | 06:30 | | 06:59 (4) | 07:29 | | | 07:28 | | 15:33 (39) | 08:30 | | | 09:01 |
| | 21:47 | 14 | 20:35 (29) | 20:39 | 33 | 19:55 (27) | 19:20 | | | 17:06 | 21 | 15:54 (39) | 16:13 | | | 16:10 |
| 29 | 05:34 | | 20:20 (29) | 06:32 | | 07:01 (4) | 07:31 | | | 07:30 | | 15:31 (39) | 08:32 | | | 09:01 |
| | 21:45 | 17 | 20:37 (29) | 20:37 | 32 | 19:56 (27) | 19:17 | | | 17:04 | 24 | 15:55 (39) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 20:19 (29) | 06:34 | | 07:03 (4) | 07:33 | | | 07:33 | | 15:30 (39) | 08:33 | | | 09:01 |
| | 21:44 | 19 | 20:38 (29) | 20:34 | 30 | 19:56 (27) | 19:15 | | | 17:02 | 26 | 15:56 (39) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 20:18 (29) | 06:36 | | 07:05 (4) | | | | 07:35 | | 15:29 (39) | | | | 09:01 |
| | 21:42 | 21 | 20:39 (29) | 20:32 | 26 | 19:56 (27) | | | | 17:00 | 27 | 15:56 (39) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 151 | | | 711 | | | 399 | | | 141 | | | 394 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,88 | | | 0,96 | | | 1,00 | | | 0,76 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,48 | | | 0,39 | | | 0,23 | | | 0,12 | | |
| Total, real | | 63 | | | 344 | | | 154 | | | 32 | | | 46 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (42) | 08:28 | | 07:27 | | | 07:08 | | 07:50 (34) | 05:55 | | 19:59 (31) | 05:02 | | |
| | 16:14 | 16 | 09:55 (42) | 17:08 | | 18:07 | | | 20:10 | 41 | 19:15 (3) | 21:09 | 28 | 20:27 (31) | 22:02 | | |
| 2 | 09:01 | | 09:38 (42) | 08:26 | | 07:24 | | | 07:05 | | 07:50 (34) | 05:53 | | 19:59 (31) | 05:01 | | |
| | 16:15 | 17 | 09:55 (42) | 17:10 | | 18:09 | | | 20:12 | 41 | 19:15 (3) | 21:11 | 28 | 20:27 (31) | 22:04 | | |
| 3 | 09:00 | | 09:39 (42) | 08:24 | | 07:22 | | | 07:03 | | 07:49 (34) | 05:51 | | 19:58 (31) | 05:00 | | |
| | 16:16 | 18 | 09:57 (42) | 17:12 | | 18:11 | | | 20:13 | 41 | 19:15 (3) | 21:13 | 30 | 20:28 (31) | 22:05 | | |
| 4 | 09:00 | | 09:38 (42) | 08:22 | | 07:19 | | | 07:00 | | 07:49 (34) | 05:48 | | 19:58 (31) | 04:59 | | |
| | 16:17 | 19 | 09:57 (42) | 17:14 | | 18:14 | | | 20:15 | 41 | 19:15 (3) | 21:14 | 30 | 20:28 (31) | 22:06 | | |
| 5 | 09:00 | | 09:39 (42) | 08:20 | | 07:17 | | | 06:58 | | 07:45 (4) | 05:46 | | 19:57 (31) | 04:58 | | |
| | 16:19 | 19 | 09:58 (42) | 17:17 | | 18:16 | | | 20:17 | 44 | 19:15 (3) | 21:16 | 31 | 20:28 (31) | 22:07 | | |
| 6 | 08:59 | | 09:39 (42) | 08:18 | | 07:14 | | | 06:55 | | 07:40 (4) | 05:44 | | 19:57 (31) | 04:57 | | |
| | 16:20 | 20 | 09:59 (42) | 17:19 | | 18:18 | | | 20:19 | 47 | 19:15 (3) | 21:18 | 31 | 20:28 (31) | 22:08 | | |
| 7 | 08:59 | | 09:38 (42) | 08:16 | | 07:12 | | | 06:53 | | 07:36 (4) | 05:42 | | 19:57 (31) | 04:56 | | |
| | 16:22 | 22 | 10:00 (42) | 17:21 | | 18:20 | | | 20:21 | 50 | 19:15 (3) | 21:20 | 31 | 20:28 (31) | 22:10 | | |
| 8 | 08:58 | | 09:38 (42) | 08:14 | | 07:09 | | | 06:50 | | 07:34 (4) | 05:40 | | 19:57 (31) | 04:56 | | |
| | 16:23 | 22 | 10:00 (42) | 17:23 | | 18:22 | | | 20:23 | 49 | 19:15 (3) | 21:22 | 31 | 20:28 (31) | 22:11 | | |
| 9 | 08:57 | | 09:38 (42) | 08:12 | | 07:07 | | | 06:48 | | 07:31 (4) | 05:38 | | 19:57 (31) | 04:55 | | |
| | 16:25 | 23 | 10:01 (42) | 17:25 | | 18:24 | | | 20:25 | 49 | 19:15 (3) | 21:24 | 30 | 20:27 (31) | 22:12 | | |
| 10 | 08:57 | | 09:38 (42) | 08:10 | | 07:04 | | | 06:45 | | 07:30 (4) | 05:36 | | 19:57 (31) | 04:54 | | |
| | 16:26 | 23 | 10:01 (42) | 17:27 | | 18:26 | | | 20:27 | 43 | 19:15 (3) | 21:26 | 30 | 20:27 (31) | 22:12 | | |
| 11 | 08:56 | | 09:39 (42) | 08:08 | | 07:02 | | | 06:43 | | 07:28 (4) | 05:34 | | 19:57 (31) | 04:54 | | |
| | 16:28 | 23 | 10:02 (42) | 17:29 | | 18:28 | | | 20:29 | 40 | 08:08 (34) | 21:28 | 29 | 20:26 (31) | 22:13 | | |
| 12 | 08:55 | | 09:39 (42) | 08:06 | | 06:59 | | | 06:40 | | 07:27 (4) | 05:32 | | 19:58 (31) | 04:53 | | |
| | 16:29 | 24 | 10:03 (42) | 17:32 | | 18:30 | | | 20:31 | 41 | 08:08 (4) | 21:30 | 29 | 20:27 (31) | 22:14 | | |
| 13 | 08:54 | | 09:39 (42) | 08:04 | | 06:57 | | | 06:38 | | 07:25 (4) | 05:30 | | 19:58 (31) | 04:53 | | |
| | 16:31 | 25 | 10:04 (42) | 17:34 | | 18:32 | | | 20:33 | 43 | 08:08 (4) | 21:32 | 28 | 20:26 (31) | 22:15 | | |
| 14 | 08:53 | | 09:40 (42) | 08:02 | | 06:54 | | | 06:35 | | 07:24 (4) | 05:28 | | 19:58 (31) | 04:53 | | 05:51 (33) |
| | 16:33 | 24 | 10:04 (42) | 17:36 | | 18:34 | | | 20:35 | 45 | 08:09 (4) | 21:33 | 27 | 20:25 (31) | 22:16 | 5 | 05:56 (33) |
| 15 | 08:52 | | 09:40 (42) | 07:59 | | 06:52 | | | 06:33 | | | 05:27 | | 20:00 (31) | 04:52 | | 05:50 (33) |
| | 16:35 | 25 | 10:05 (42) | 17:38 | | 18:36 | | | 20:37 | | | 21:35 | 25 | 20:25 (31) | 22:16 | 8 | 05:58 (33) |
| 16 | 08:51 | | 09:40 (42) | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 20:00 (31) | 04:52 | | 05:50 (33) |
| | 16:36 | 25 | 10:05 (42) | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | 24 | 20:24 (31) | 22:17 | 9 | 05:59 (33) |
| 17 | 08:50 | | 09:40 (42) | 07:55 | | 06:46 | | | 06:28 | | | 05:23 | | 20:01 (31) | 04:52 | | 05:49 (33) |
| | 16:38 | 26 | 10:06 (42) | 17:42 | | 18:40 | | | 20:41 | | | 21:39 | 23 | 20:24 (31) | 22:17 | 11 | 06:00 (33) |
| 18 | 08:49 | | 09:40 (42) | 07:53 | | 06:44 | | | 06:25 | | | 05:21 | | 20:02 (31) | 04:52 | | 05:49 (33) |
| | 16:40 | 25 | 10:05 (42) | 17:44 | | 18:42 | | | 20:43 | | | 21:41 | 20 | 20:22 (31) | 22:18 | 11 | 06:00 (33) |
| 19 | 08:48 | | 09:41 (42) | 07:50 | | 06:41 | | | 06:23 | | | 05:20 | | 20:04 (31) | 04:52 | | 05:49 (33) |
| | 16:42 | 25 | 10:06 (42) | 17:46 | | 18:44 | | | 20:45 | | | 21:42 | 18 | 20:22 (31) | 22:18 | 12 | 06:01 (33) |
| 20 | 08:46 | | 09:41 (42) | 07:48 | | 06:39 | | | 06:20 | | | 05:18 | | 20:05 (31) | 04:52 | | 05:49 (33) |
| | 16:44 | 25 | 10:06 (42) | 17:49 | | 18:46 | | | 20:47 | | | 21:44 | 15 | 20:20 (31) | 22:19 | 12 | 06:01 (33) |
| 21 | 08:45 | | 09:42 (42) | 07:46 | | 06:36 | | | 06:18 | | | 05:16 | | 20:07 (31) | 04:52 | | 05:49 (33) |
| | 16:46 | 24 | 10:06 (42) | 17:51 | | 18:48 | | | 20:49 | | | 21:46 | 11 | 20:18 (31) | 22:19 | 12 | 06:01 (33) |
| 22 | 08:44 | | 09:42 (42) | 07:43 | | 06:34 | | | 06:16 | | | 05:15 | | 20:10 (31) | 04:52 | | 05:50 (33) |
| | 16:48 | 24 | 10:06 (42) | 17:53 | | 18:50 | | | 20:51 | | | 21:47 | 5 | 20:15 (31) | 22:19 | 12 | 06:02 (33) |
| 23 | 08:42 | | 09:44 (42) | 07:41 | | 06:31 | | 18:17 (3) | 06:13 | | | 05:13 | | | 04:53 | | 05:50 (33) |
| | 16:50 | 22 | 10:06 (42) | 17:55 | | 18:52 | 6 | 18:23 (3) | 20:53 | | | 21:49 | | | 22:19 | 12 | 06:02 (33) |
| 24 | 08:41 | | 09:44 (42) | 07:39 | | 06:28 | | 18:13 (3) | 06:11 | | | 05:12 | | | 04:53 | | 05:50 (33) |
| | 16:52 | 22 | 10:06 (42) | 17:57 | | 18:54 | 14 | 18:27 (3) | 20:55 | | | 21:51 | | | 22:19 | 11 | 06:01 (33) |
| 25 | 08:39 | | 09:45 (42) | 07:36 | | 06:26 | | 07:01 (34) | 06:09 | | 20:09 (31) | 05:10 | | | 04:53 | | 05:51 (33) |
| | 16:54 | 20 | 10:05 (42) | 17:59 | | 18:56 | 30 | 18:28 (3) | 20:57 | 8 | 20:17 (31) | 21:52 | | | 22:19 | 11 | 06:02 (33) |
| 26 | 08:38 | | 09:46 (42) | 07:34 | | 06:23 | | 06:58 (34) | 06:06 | | 20:06 (31) | 05:09 | | | 04:54 | | 05:51 (33) |
| | 16:56 | 18 | 10:04 (42) | 18:01 | | 18:58 | 40 | 18:31 (3) | 20:59 | 15 | 20:21 (31) | 21:54 | | | 22:19 | 10 | 06:01 (33) |
| 27 | 08:36 | | 09:48 (42) | 07:32 | | 06:21 | | 06:56 (34) | 06:04 | | 20:04 (31) | 05:08 | | | 04:54 | | 05:53 (33) |
| | 16:58 | 16 | 10:04 (42) | 18:03 | | 19:00 | 45 | 18:31 (3) | 21:01 | 19 | 20:23 (31) | 21:55 | | | 22:19 | 8 | 06:01 (33) |
| 28 | 08:35 | | 09:50 (42) | 07:29 | | 06:18 | | 06:54 (34) | 06:02 | | 20:02 (31) | 05:06 | | | 04:55 | | 05:54 (33) |
| | 17:00 | 12 | 10:02 (42) | 18:05 | | 19:02 | 49 | 18:31 (3) | 21:03 | 22 | 20:24 (31) | 21:57 | | | 22:19 | 6 | 06:00 (33) |
| 29 | 08:33 | | 09:53 (42) | | | 07:16 | | 07:53 (34) | 05:59 | | 20:01 (31) | 05:05 | | | 04:55 | | 05:57 (33) |
| | 17:02 | 7 | 10:00 (42) | | | 20:04 | 52 | 19:32 (3) | 21:05 | 24 | 20:25 (31) | 21:58 | | | 22:19 | 1 | 05:58 (33) |
| 30 | 08:31 | | | | | 07:13 | | 07:51 (34) | 05:57 | | 20:00 (31) | 05:04 | | | 04:56 | | |
| | 17:04 | | | | | 20:06 | 38 | 19:15 (3) | 21:07 | 26 | 20:26 (31) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | | | | 07:10 | | 07:51 (34) | | | | 05:03 | | | | | |
| | 17:06 | | | | | 20:08 | 39 | 19:15 (3) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 611 | | | | | 313 | | | 729 | | | 554 | | | 151 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | | | 1,00 | | | 0,99 | | | 0,95 | | | 0,81 | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,37 | | | 0,46 | | | 0,37 | |
| Total, real | | 67 | | | | | 100 | | | 268 | | | 257 | | | 56 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:52 (4) | 06:38 | | 07:27 (4) | 07:35 | 07:37 | | | 08:35 | | 09:21 (42) |
| | 22:18 | | | 21:40 | 35 | 20:37 (31) | 20:29 | 18 | 08:07 (34) | 19:12 | 16:58 | | | 16:10 | 23 | 09:44 (42) |
| 2 | 04:57 | | | 05:41 | | 07:50 (4) | 06:40 | | 07:28 (4) | 07:37 | 07:39 | | | 08:37 | | 09:21 (42) |
| | 22:18 | | | 21:38 | 40 | 20:37 (31) | 20:27 | 23 | 08:09 (34) | 19:09 | 16:56 | | | 16:09 | 24 | 09:45 (42) |
| 3 | 04:58 | | | 05:43 | | 07:50 (4) | 06:42 | | 07:29 (4) | 07:38 | 07:41 | | | 08:38 | | 09:22 (42) |
| | 22:17 | | | 21:36 | 43 | 20:37 (31) | 20:24 | 28 | 08:11 (34) | 19:07 | 16:54 | | | 16:08 | 23 | 09:45 (42) |
| 4 | 04:59 | | | 05:45 | | 07:49 (4) | 06:43 | | 07:31 (4) | 07:40 | 07:43 | | | 08:40 | | 09:22 (42) |
| | 22:17 | | | 21:34 | 47 | 20:38 (31) | 20:22 | 30 | 08:12 (34) | 19:04 | 16:51 | | | 16:07 | 22 | 09:44 (42) |
| 5 | 05:00 | | | 05:47 | | 07:48 (4) | 06:45 | | 07:33 (4) | 07:42 | 07:45 | | | 08:41 | | 09:23 (42) |
| | 22:16 | | | 21:32 | 50 | 20:38 (31) | 20:19 | 34 | 08:13 (34) | 19:02 | 16:49 | | | 16:07 | 22 | 09:45 (42) |
| 6 | 05:01 | | | 05:49 | | 07:46 (4) | 06:47 | | 07:35 (4) | 07:44 | 07:47 | | | 08:43 | | 09:25 (42) |
| | 22:15 | | | 21:30 | 53 | 20:37 (31) | 20:17 | 37 | 08:12 (34) | 18:59 | 16:47 | | | 16:06 | 20 | 09:45 (42) |
| 7 | 05:02 | | | 05:51 | | 07:44 (4) | 06:49 | | 07:40 (4) | 07:46 | 07:49 | | | 08:44 | | 09:25 (42) |
| | 22:15 | | | 21:28 | 55 | 20:37 (31) | 20:14 | 32 | 08:12 (34) | 18:57 | 16:45 | | | 16:06 | 20 | 09:45 (42) |
| 8 | 05:03 | | | 05:52 | | 07:43 (4) | 06:51 | | 07:44 (34) | 07:48 | 07:51 | | | 08:46 | | 09:26 (42) |
| | 22:14 | | | 21:26 | 58 | 20:37 (31) | 20:12 | 29 | 08:13 (34) | 18:54 | 16:44 | | | 16:05 | 19 | 09:45 (42) |
| 9 | 05:04 | | | 05:54 | | 07:40 (4) | 06:53 | | 07:43 (34) | 07:50 | 07:53 | | | 08:47 | | 09:27 (42) |
| | 22:13 | | | 21:24 | 61 | 20:36 (31) | 20:09 | 30 | 08:13 (34) | 18:52 | 16:42 | | | 16:05 | 18 | 09:45 (42) |
| 10 | 05:06 | | | 05:56 | | 07:38 (4) | 06:55 | | 07:43 (34) | 07:52 | 07:55 | | | 08:48 | | 09:28 (42) |
| | 22:12 | | | 21:21 | 63 | 20:36 (31) | 20:06 | 29 | 08:12 (34) | 18:49 | 16:40 | | | 16:04 | 17 | 09:45 (42) |
| 11 | 05:07 | | | 05:58 | | 07:35 (4) | 06:57 | | 07:42 (34) | 07:54 | 07:57 | | | 08:49 | | 09:29 (42) |
| | 22:11 | | | 21:19 | 67 | 20:36 (31) | 20:04 | 29 | 08:11 (34) | 18:47 | 16:38 | | | 16:04 | 16 | 09:45 (42) |
| 12 | 05:08 | | | 06:00 | | 07:32 (4) | 06:59 | | 07:42 (34) | 07:56 | 07:59 | | | 08:51 | | 09:29 (42) |
| | 22:10 | | | 21:17 | 69 | 20:35 (31) | 20:01 | 29 | 08:11 (34) | 18:44 | 16:36 | | | 16:04 | 16 | 09:45 (42) |
| 13 | 05:09 | | | 06:02 | | 07:29 (4) | 07:00 | | 07:42 (34) | 07:58 | 08:01 | | 09:24 (42) | 08:52 | | 09:30 (42) |
| | 22:09 | | | 21:15 | 69 | 20:33 (31) | 19:59 | 28 | 08:10 (34) | 18:42 | 16:34 | 8 | 09:32 (42) | 16:04 | 15 | 09:45 (42) |
| 14 | 05:11 | | | 06:04 | | 20:09 (31) | 07:02 | | 07:43 (34) | 08:00 | 08:03 | | 09:22 (42) | 08:53 | | 09:31 (42) |
| | 22:08 | | | 21:13 | 23 | 20:32 (31) | 19:56 | 27 | 19:22 (3) | 18:39 | 16:33 | 12 | 09:34 (42) | 16:04 | 14 | 09:45 (42) |
| 15 | 05:12 | | | 06:06 | | 20:10 (31) | 07:04 | | 07:44 (34) | 08:02 | 08:05 | | 09:20 (42) | 08:54 | | 09:32 (42) |
| | 22:07 | | | 21:10 | 21 | 20:31 (31) | 19:53 | 26 | 19:22 (3) | 18:37 | 16:31 | 16 | 09:36 (42) | 16:04 | 13 | 09:45 (42) |
| 16 | 05:13 | | | 06:07 | | 20:12 (31) | 07:06 | | 07:45 (34) | 08:04 | 08:07 | | 09:19 (42) | 08:55 | | 09:33 (42) |
| | 22:05 | | | 21:08 | 18 | 20:30 (31) | 19:51 | 23 | 19:21 (3) | 18:34 | 16:29 | 18 | 09:37 (42) | 16:04 | 12 | 09:45 (42) |
| 17 | 05:15 | | | 06:09 | | 20:13 (31) | 07:08 | | 07:46 (34) | 08:06 | 08:09 | | 09:19 (42) | 08:56 | | 09:34 (42) |
| | 22:04 | | | 21:06 | 14 | 20:27 (31) | 19:48 | 20 | 19:19 (3) | 18:32 | 16:28 | 20 | 09:39 (42) | 16:04 | 11 | 09:45 (42) |
| 18 | 05:16 | | | 06:11 | | 20:17 (31) | 07:10 | | 07:47 (34) | 08:08 | 08:11 | | 09:18 (42) | 08:56 | | 09:35 (42) |
| | 22:03 | | | 21:03 | 6 | 20:23 (31) | 19:46 | 16 | 19:16 (3) | 18:30 | 16:26 | 22 | 09:40 (42) | 16:04 | 11 | 09:46 (42) |
| 19 | 05:18 | | | 06:13 | | | 07:12 | | 07:52 (34) | 08:10 | 08:13 | | 09:18 (42) | 08:57 | | 09:36 (42) |
| | 22:01 | | | 21:01 | | | 19:43 | 7 | 19:14 (3) | 18:27 | 16:24 | 22 | 09:40 (42) | 16:04 | 10 | 09:46 (42) |
| 20 | 05:19 | | | 06:15 | | 07:25 (4) | 07:14 | | 19:02 (3) | 08:12 | 08:15 | | 09:17 (42) | 08:58 | | 09:36 (42) |
| | 22:00 | | | 20:59 | 1 | 07:26 (4) | 19:41 | 9 | 19:11 (3) | 18:25 | 16:23 | 24 | 09:41 (42) | 16:04 | 10 | 09:46 (42) |
| 21 | 05:21 | | | 06:17 | | 07:25 (4) | 07:16 | | | 08:14 | 08:17 | | 09:17 (42) | 08:58 | | 09:37 (42) |
| | 21:59 | | | 20:56 | 1 | 07:26 (4) | 19:38 | | | 18:22 | 16:22 | 24 | 09:41 (42) | 16:05 | 10 | 09:47 (42) |
| 22 | 05:22 | | 20:18 (31) | 06:19 | | 07:24 (4) | 07:17 | | | 08:16 | 08:19 | | 09:17 (42) | 08:59 | | 09:37 (42) |
| | 21:57 | 9 | 20:27 (31) | 20:54 | 1 | 07:25 (4) | 19:35 | | | 18:20 | 16:20 | 25 | 09:42 (42) | 16:05 | 10 | 09:47 (42) |
| 23 | 05:24 | | 20:16 (31) | 06:21 | | 07:24 (4) | 07:19 | | | 08:18 | 08:21 | | 09:18 (42) | 08:59 | | 09:38 (42) |
| | 21:56 | 14 | 20:30 (31) | 20:52 | 2 | 07:26 (4) | 19:33 | | | 18:18 | 16:19 | 25 | 09:43 (42) | 16:06 | 10 | 09:48 (42) |
| 24 | 05:26 | | 20:14 (31) | 06:23 | | 07:24 (4) | 07:21 | | | 08:20 | 08:23 | | 09:18 (42) | 09:00 | | 09:38 (42) |
| | 21:54 | 17 | 20:31 (31) | 20:49 | 2 | 07:26 (4) | 19:30 | | | 18:15 | 16:17 | 25 | 09:43 (42) | 16:06 | 10 | 09:48 (42) |
| 25 | 05:27 | | 20:14 (31) | 06:24 | | 07:24 (4) | 07:23 | | | 07:22 | 08:25 | | 09:18 (42) | 09:00 | | 09:38 (42) |
| | 21:52 | 18 | 20:32 (31) | 20:47 | 2 | 07:26 (4) | 19:28 | | | 17:13 | 16:16 | 26 | 09:44 (42) | 16:07 | 10 | 09:48 (42) |
| 26 | 05:29 | | 20:12 (31) | 06:26 | | 07:25 (4) | 07:25 | | | 07:24 | 08:26 | | 09:19 (42) | 09:00 | | 09:38 (42) |
| | 21:51 | 21 | 20:33 (31) | 20:44 | 2 | 07:27 (4) | 19:25 | | | 17:11 | 16:15 | 25 | 09:44 (42) | 16:08 | 11 | 09:49 (42) |
| 27 | 05:31 | | 20:11 (31) | 06:28 | | 07:24 (4) | 07:27 | | | 07:26 | 08:28 | | 09:19 (42) | 09:01 | | 09:38 (42) |
| | 21:49 | 23 | 20:34 (31) | 20:42 | 3 | 07:27 (4) | 19:22 | | | 17:09 | 16:14 | 25 | 09:44 (42) | 16:09 | 12 | 09:50 (42) |
| 28 | 05:33 | | 20:10 (31) | 06:30 | | 07:25 (4) | 07:29 | | | 07:28 | 08:30 | | 09:20 (42) | 09:01 | | 09:38 (42) |
| | 21:47 | 24 | 20:34 (31) | 20:39 | 2 | 07:27 (4) | 19:20 | | | 17:06 | 16:13 | 24 | 09:44 (42) | 16:09 | 12 | 09:50 (42) |
| 29 | 05:34 | | 20:10 (31) | 06:32 | | 07:25 (4) | 07:31 | | | 07:30 | 08:32 | | 09:20 (42) | 09:01 | | 09:38 (42) |
| | 21:45 | 26 | 20:36 (31) | 20:37 | 3 | 07:28 (4) | 19:17 | | | 17:04 | 16:12 | 25 | 09:45 (42) | 16:10 | 13 | 09:51 (42) |
| 30 | 05:36 | | 20:09 (31) | 06:34 | | 07:26 (4) | 07:33 | | | 07:32 | 08:33 | | 09:20 (42) | 09:01 | | 09:38 (42) |
| | 21:44 | 28 | 20:37 (31) | 20:34 | 3 | 07:29 (4) | 19:15 | | | 17:02 | 16:11 | 24 | 09:44 (42) | 16:11 | 14 | 09:52 (42) |
| 31 | 05:38 | | 20:08 (31) | 06:36 | | 07:27 (4) | | | | 07:35 | | | | 09:01 | | 09:38 (42) |
| | 21:42 | 28 | 20:36 (31) | 20:32 | 12 | 08:05 (34) | | | | 17:00 | | | | 16:12 | 16 | 09:54 (42) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | 208 | | | 826 | | | 504 | | | | 390 | | | 464 | | |
| Sun reduction | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | 0,95 | | | 0,97 | | | 1,00 | | | | 0,64 | | | 0,64 | | |
| Total reduction | 0,44 | | | 0,47 | | | 0,37 | | | | 0,10 | | | 0,08 | | |
| Total, real | 91 | | | 389 | | | 188 | | | | 37 | | | 38 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (42) | 08:28 | | 07:27 | | | 07:08 | | 07:32 (12) | 05:55 | | 20:14 (31) | 05:02 | | |
| | 16:14 | 22 | 10:07 (42) | 17:08 | | 18:07 | | | 20:10 | 7 | 07:39 (12) | 21:09 | 20 | 20:34 (31) | 22:02 | | |
| 2 | 09:01 | | 09:45 (42) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (12) | 05:53 | | 20:13 (31) | 05:01 | | |
| | 16:15 | 23 | 10:08 (42) | 17:10 | | 18:09 | | | 20:12 | 12 | 19:44 (3) | 21:11 | 22 | 20:35 (31) | 22:04 | | |
| 3 | 09:00 | | 09:45 (42) | 08:24 | | 07:22 | | | 07:03 | | 07:30 (12) | 05:51 | | 20:12 (31) | 05:00 | | |
| | 16:16 | 24 | 10:09 (42) | 17:12 | | 18:11 | | | 20:13 | 12 | 19:46 (3) | 21:13 | 24 | 20:36 (31) | 22:05 | | |
| 4 | 09:00 | | 09:45 (42) | 08:22 | | 07:19 | | | 07:00 | | 07:41 (34) | 05:48 | | 20:11 (31) | 04:59 | | |
| | 16:17 | 24 | 10:09 (42) | 17:14 | | 18:14 | | | 20:15 | 18 | 19:46 (3) | 21:14 | 25 | 20:36 (31) | 22:06 | | |
| 5 | 09:00 | | 09:46 (42) | 08:20 | | 07:17 | | | 06:58 | | 07:37 (34) | 05:46 | | 20:11 (31) | 04:58 | | |
| | 16:19 | 24 | 10:10 (42) | 17:17 | | 18:16 | | | 20:17 | 24 | 19:46 (3) | 21:16 | 25 | 20:36 (31) | 22:07 | | |
| 6 | 08:59 | | 09:46 (42) | 08:18 | | 07:14 | | | 06:55 | | 07:35 (34) | 05:44 | | 06:43 (4) | 04:57 | | |
| | 16:20 | 25 | 10:11 (42) | 17:19 | | 18:18 | | | 20:19 | 28 | 19:46 (3) | 21:18 | 29 | 20:37 (31) | 22:08 | | |
| 7 | 08:59 | | 09:46 (42) | 08:16 | | 07:12 | | | 06:53 | | 07:33 (34) | 05:42 | | 06:42 (4) | 04:56 | | |
| | 16:22 | 25 | 10:11 (42) | 17:21 | | 18:20 | | | 20:21 | 30 | 19:45 (3) | 21:20 | 30 | 20:37 (31) | 22:10 | | |
| 8 | 08:58 | | 09:46 (42) | 08:14 | | 07:09 | | | 06:50 | | 07:32 (34) | 05:40 | | 06:41 (4) | 04:56 | | |
| | 16:23 | 26 | 10:12 (42) | 17:23 | | 18:22 | | | 20:23 | 33 | 19:45 (3) | 21:22 | 30 | 20:36 (31) | 22:11 | | |
| 9 | 08:57 | | 09:46 (42) | 08:12 | | 07:07 | | | 06:48 | | 07:30 (34) | 05:38 | | 06:40 (4) | 04:55 | | |
| | 16:25 | 26 | 10:12 (42) | 17:25 | | 18:24 | | | 20:25 | 34 | 19:44 (3) | 21:24 | 31 | 20:36 (31) | 22:12 | | |
| 10 | 08:57 | | 09:46 (42) | 08:10 | | 07:04 | | | 06:45 | | 07:29 (34) | 05:36 | | 06:39 (4) | 04:54 | | |
| | 16:26 | 27 | 10:13 (42) | 17:27 | | 18:26 | | | 20:27 | 36 | 19:44 (3) | 21:26 | 32 | 20:36 (31) | 22:12 | | |
| 11 | 08:56 | | 09:46 (42) | 08:08 | | 07:02 | | | 06:42 | | 07:28 (34) | 05:34 | | 06:38 (4) | 04:54 | | |
| | 16:28 | 28 | 10:14 (42) | 17:29 | | 18:28 | | | 20:29 | 35 | 19:42 (3) | 21:28 | 62 | 20:35 (31) | 22:13 | | |
| 12 | 08:55 | | 09:46 (42) | 08:06 | | 06:59 | | | 06:40 | | 07:28 (34) | 05:32 | | 06:38 (4) | 04:53 | | |
| | 16:29 | 28 | 10:14 (42) | 17:31 | | 18:30 | | | 20:31 | 34 | 19:41 (3) | 21:30 | 62 | 20:36 (31) | 22:14 | | |
| 13 | 08:54 | | 09:47 (42) | 08:04 | | 06:57 | | | 06:38 | | 07:26 (34) | 05:30 | | 06:37 (4) | 04:53 | | |
| | 16:31 | 28 | 10:15 (42) | 17:34 | | 18:32 | | | 20:33 | 35 | 08:01 (34) | 21:32 | 62 | 20:35 (31) | 22:15 | | |
| 14 | 08:53 | | 09:47 (42) | 08:02 | | 06:54 | | | 06:35 | | 07:26 (34) | 05:28 | | 06:36 (4) | 04:53 | | |
| | 16:33 | 29 | 10:16 (42) | 17:36 | | 18:34 | | | 20:35 | 35 | 08:01 (34) | 21:33 | 62 | 20:34 (31) | 22:16 | | |
| 15 | 08:52 | | 09:48 (42) | 07:59 | | 06:52 | | | 06:33 | | 07:26 (34) | 05:27 | | 06:37 (4) | 04:52 | | 21:37 (43) |
| | 16:35 | 28 | 10:16 (42) | 17:38 | | 18:36 | | | 20:37 | 35 | 08:01 (34) | 21:35 | 60 | 20:34 (31) | 22:16 | 1 | 21:38 (43) |
| 16 | 08:51 | | 09:48 (42) | 07:57 | | 06:49 | | | 06:30 | | 07:26 (34) | 05:25 | | 06:36 (4) | 04:52 | | 21:36 (43) |
| | 16:36 | 28 | 10:16 (42) | 17:40 | | 18:38 | | | 20:39 | 34 | 08:00 (34) | 21:37 | 59 | 20:33 (31) | 22:17 | 3 | 21:39 (43) |
| 17 | 08:50 | | 09:48 (42) | 07:55 | | 06:46 | | | 06:28 | | 07:26 (34) | 05:23 | | 06:36 (4) | 04:52 | | 21:36 (43) |
| | 16:38 | 29 | 10:17 (42) | 17:42 | | 18:40 | | | 20:41 | 34 | 08:00 (34) | 21:39 | 58 | 20:33 (31) | 22:17 | 3 | 21:39 (43) |
| 18 | 08:49 | | 09:48 (42) | 07:53 | | 06:44 | | 07:08 (14) | 06:25 | | 07:25 (34) | 05:21 | | 06:35 (4) | 04:52 | | 21:36 (43) |
| | 16:40 | 28 | 10:16 (42) | 17:44 | | 18:42 | 2 | 07:10 (14) | 20:43 | 34 | 07:59 (34) | 21:41 | 56 | 20:31 (31) | 22:18 | 4 | 21:40 (43) |
| 19 | 08:48 | | 09:49 (42) | 07:50 | | 06:41 | | 07:06 (14) | 06:23 | | 07:26 (34) | 05:20 | | 06:35 (4) | 04:52 | | 21:36 (43) |
| | 16:42 | 28 | 10:17 (42) | 17:46 | | 18:44 | 4 | 07:10 (14) | 20:45 | 32 | 07:58 (34) | 21:42 | 55 | 20:31 (31) | 22:18 | 4 | 21:40 (43) |
| 20 | 08:46 | | 09:49 (42) | 07:48 | | 06:39 | | 07:03 (14) | 06:20 | | 07:26 (34) | 05:18 | | 06:35 (4) | 04:52 | | 21:36 (43) |
| | 16:44 | 28 | 10:17 (42) | 17:48 | | 18:46 | 6 | 07:09 (14) | 20:47 | 32 | 07:58 (34) | 21:44 | 51 | 20:29 (31) | 22:19 | 4 | 21:40 (43) |
| 21 | 08:45 | | 09:50 (42) | 07:46 | | 06:36 | | 07:01 (14) | 06:18 | | 07:26 (34) | 05:16 | | 06:51 (4) | 04:52 | | 21:36 (43) |
| | 16:46 | 27 | 10:17 (42) | 17:51 | | 18:48 | 7 | 07:08 (14) | 20:49 | 30 | 07:56 (34) | 21:46 | 30 | 20:27 (31) | 22:19 | 4 | 21:40 (43) |
| 22 | 08:44 | | 09:51 (42) | 07:43 | | 06:34 | | 07:01 (14) | 06:16 | | 07:27 (34) | 05:15 | | 06:54 (4) | 04:52 | | 21:37 (43) |
| | 16:48 | 26 | 10:17 (42) | 17:53 | | 18:50 | 4 | 07:05 (14) | 20:51 | 28 | 07:55 (34) | 21:47 | 45 | 07:39 (4) | 22:19 | 4 | 21:41 (43) |
| 23 | 08:42 | | 09:52 (42) | 07:41 | | 06:31 | | | 06:13 | | 07:28 (34) | 05:13 | | 06:57 (4) | 04:53 | | 21:37 (43) |
| | 16:50 | 25 | 10:17 (42) | 17:55 | | 18:52 | | | 20:53 | 26 | 07:54 (34) | 21:49 | 42 | 07:39 (4) | 22:19 | 4 | 21:41 (43) |
| 24 | 08:41 | | 09:52 (42) | 07:39 | | 06:28 | | | 06:11 | | 07:30 (34) | 05:12 | | 06:59 (4) | 04:53 | | 21:37 (43) |
| | 16:52 | 25 | 10:17 (42) | 17:57 | | 18:54 | | | 20:55 | 23 | 07:53 (34) | 21:51 | 41 | 07:40 (4) | 22:19 | 4 | 21:41 (43) |
| 25 | 08:39 | | 09:53 (42) | 07:36 | | 06:26 | | | 06:09 | | 07:30 (34) | 05:10 | | 07:00 (4) | 04:53 | | 21:38 (43) |
| | 16:54 | 23 | 10:16 (42) | 17:59 | | 18:56 | | | 20:57 | 20 | 07:50 (34) | 21:52 | 39 | 07:39 (4) | 22:19 | 3 | 21:41 (43) |
| 26 | 08:38 | | 09:54 (42) | 07:34 | | 06:23 | | | 06:06 | | 07:33 (34) | 05:09 | | 07:02 (4) | 04:54 | | 21:38 (43) |
| | 16:56 | 21 | 10:15 (42) | 18:01 | | 18:58 | | | 20:59 | 14 | 07:47 (34) | 21:54 | 37 | 07:39 (4) | 22:19 | 3 | 21:41 (43) |
| 27 | 08:36 | | 09:56 (42) | 07:32 | | 06:21 | | | 06:04 | | 07:36 (34) | 05:08 | | 07:03 (4) | 04:54 | | 21:40 (43) |
| | 16:58 | 19 | 10:15 (42) | 18:03 | | 19:00 | | | 21:01 | 8 | 07:44 (34) | 21:55 | 37 | 07:40 (4) | 22:19 | 1 | 21:41 (43) |
| 28 | 08:35 | | 09:58 (42) | 07:29 | | 06:18 | | | 06:02 | | 07:03 (4) | 05:06 | | 07:05 (4) | 04:55 | | |
| | 17:00 | 16 | 10:14 (42) | 18:05 | | 19:02 | | | 21:03 | 19 | 20:29 (31) | 21:57 | 35 | 07:40 (4) | 22:19 | | |
| 29 | 08:33 | | 10:00 (42) | | | 07:16 | | | 05:59 | | 06:58 (4) | 05:05 | | 07:06 (4) | 04:55 | | |
| | 17:02 | 12 | 10:12 (42) | | | 20:04 | | | 21:05 | 31 | 20:31 (31) | 21:58 | 34 | 07:40 (4) | 22:19 | | |
| 30 | 08:31 | | 10:04 (42) | | | 07:13 | | 07:37 (12) | 05:57 | | 06:54 (4) | 05:04 | | 07:07 (4) | 04:56 | | |
| | 17:04 | 4 | 10:08 (42) | | | 20:06 | 3 | 07:40 (12) | 21:07 | 31 | 20:33 (31) | 22:00 | 33 | 07:40 (4) | 22:18 | | |
| 31 | 08:29 | | | | | 07:10 | | 07:35 (12) | | | | 05:03 | | 07:08 (4) | | | |
| | 17:06 | | | | | 20:08 | 5 | 07:40 (12) | | | | 22:01 | 32 | 07:40 (4) | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 726 | | | | | 31 | | | 804 | | | 1260 | | | 42 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,61 | | | | | 1,00 | | | 0,99 | | | 0,95 | | | 0,78 | |
| Total reduction | | 0,10 | | | | | 0,31 | | | 0,36 | | | 0,45 | | | 0,35 | |
| Total, real | | 74 | | | | | 10 | | | 290 | | | 571 | | | 15 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 06:49 (4) | 06:38 | | 07:27 (34) | 07:35 | 07:37 | | | 08:35 | | 09:28 (42) |
| | 22:18 | | | 21:40 | 29 | 20:46 (31) | 20:29 | 32 | 07:59 (34) | 19:12 | 16:58 | | | 16:10 | 28 | 09:56 (42) |
| 2 | 04:57 | | | 05:41 | | 06:49 (4) | 06:40 | | 07:27 (34) | 07:37 | 07:39 | | | 08:37 | | 09:29 (42) |
| | 22:18 | | | 21:38 | 30 | 20:46 (31) | 20:27 | 32 | 07:59 (34) | 19:09 | 16:56 | | | 16:09 | 27 | 09:56 (42) |
| 3 | 04:58 | | | 05:43 | | 06:50 (4) | 06:42 | | 07:28 (34) | 07:38 | 07:41 | | | 08:38 | | 09:30 (42) |
| | 22:17 | | | 21:36 | 31 | 20:46 (31) | 20:24 | 30 | 07:58 (34) | 19:07 | 16:54 | | | 16:08 | 26 | 09:56 (42) |
| 4 | 04:59 | | | 05:45 | | 06:51 (4) | 06:43 | | 07:29 (34) | 07:40 | 07:43 | | | 08:40 | | 09:30 (42) |
| | 22:17 | | | 21:34 | 32 | 20:47 (31) | 20:22 | 28 | 07:57 (34) | 19:04 | 16:51 | | | 16:07 | 26 | 09:56 (42) |
| 5 | 05:00 | | | 05:47 | | 06:52 (4) | 06:45 | | 07:30 (34) | 07:42 | 07:45 | | | 08:41 | | 09:31 (42) |
| | 22:16 | | | 21:32 | 32 | 20:47 (31) | 20:19 | 25 | 07:55 (34) | 19:02 | 16:49 | | | 16:07 | 25 | 09:56 (42) |
| 6 | 05:01 | | | 05:49 | | 06:52 (4) | 06:47 | | 07:30 (34) | 07:44 | 07:47 | | | 08:43 | | 09:32 (42) |
| | 22:15 | | | 21:30 | 32 | 20:46 (31) | 20:17 | 23 | 07:53 (34) | 18:59 | 16:47 | | | 16:06 | 25 | 09:57 (42) |
| 7 | 05:02 | | | 05:51 | | 06:53 (4) | 06:49 | | 07:32 (34) | 07:46 | 07:49 | | | 08:44 | | 09:32 (42) |
| | 22:15 | | | 21:28 | 33 | 20:46 (31) | 20:14 | 18 | 07:50 (34) | 18:57 | 16:45 | | | 16:06 | 25 | 09:57 (42) |
| 8 | 05:03 | | | 05:52 | | 06:55 (4) | 06:51 | | 07:35 (34) | 07:48 | 07:51 | | | 08:46 | | 09:33 (42) |
| | 22:14 | | | 21:26 | 32 | 20:46 (31) | 20:12 | 12 | 07:47 (34) | 18:54 | 16:43 | | | 16:05 | 24 | 09:57 (42) |
| 9 | 05:04 | | | 05:54 | | 06:55 (4) | 06:53 | | 07:24 (12) | 07:50 | 07:53 | | | 08:47 | | 09:34 (42) |
| | 22:13 | | | 21:24 | 31 | 20:44 (31) | 20:09 | 6 | 07:30 (12) | 18:52 | 16:42 | | | 16:05 | 23 | 09:57 (42) |
| 10 | 05:06 | | | 05:56 | | 06:57 (4) | 06:55 | | 07:23 (12) | 07:52 | 07:55 | | | 08:48 | | 09:34 (42) |
| | 22:12 | | | 21:21 | 31 | 20:44 (31) | 20:06 | 9 | 07:32 (12) | 18:49 | 16:40 | | | 16:04 | 23 | 09:57 (42) |
| 11 | 05:07 | | | 05:58 | | 06:59 (4) | 06:57 | | 07:24 (12) | 07:54 | 07:57 | | | 08:49 | | 09:35 (42) |
| | 22:11 | | | 21:19 | 30 | 20:43 (31) | 20:04 | 7 | 07:31 (12) | 18:47 | 16:38 | | | 16:04 | 23 | 09:58 (42) |
| 12 | 05:08 | | | 06:00 | | 20:23 (31) | 06:59 | | 07:26 (12) | 07:56 | 07:59 | | 09:35 (42) | 08:51 | | 09:36 (42) |
| | 22:10 | | | 21:17 | 19 | 20:42 (31) | 20:01 | 5 | 07:31 (12) | 18:44 | 16:36 | 5 | 09:40 (42) | 16:04 | 22 | 09:58 (42) |
| 13 | 05:09 | | | 06:02 | | 20:23 (31) | 07:00 | | 07:28 (12) | 07:58 | 08:01 | | 09:31 (42) | 08:52 | | 09:36 (42) |
| | 22:09 | | | 21:15 | 17 | 20:40 (31) | 19:59 | 3 | 07:31 (12) | 18:42 | 16:34 | 13 | 09:44 (42) | 16:04 | 22 | 09:58 (42) |
| 14 | 05:11 | | | 06:04 | | 20:25 (31) | 07:02 | | | 08:00 | 08:03 | | 09:29 (42) | 08:53 | | 09:37 (42) |
| | 22:08 | | | 21:13 | 13 | 20:38 (31) | 19:56 | | | 18:39 | 16:33 | 17 | 09:46 (42) | 16:04 | 21 | 09:58 (42) |
| 15 | 05:12 | | | 06:06 | | 20:28 (31) | 07:04 | | | 08:02 | 08:05 | | 09:28 (42) | 08:54 | | 09:38 (42) |
| | 22:07 | | | 21:10 | 7 | 20:35 (31) | 19:53 | | | 18:37 | 16:31 | 19 | 09:47 (42) | 16:04 | 20 | 09:58 (42) |
| 16 | 05:13 | | | 06:07 | | 07:43 (34) | 07:06 | | | 08:04 | 08:07 | | 09:27 (42) | 08:55 | | 09:38 (42) |
| | 22:05 | | | 21:08 | 9 | 07:52 (34) | 19:51 | | | 18:34 | 16:29 | 21 | 09:48 (42) | 16:04 | 20 | 09:58 (42) |
| 17 | 05:15 | | | 06:09 | | 07:39 (34) | 07:08 | | | 08:06 | 08:09 | | 09:27 (42) | 08:55 | | 09:39 (42) |
| | 22:04 | | | 21:06 | 16 | 07:55 (34) | 19:48 | | | 18:32 | 16:28 | 23 | 09:50 (42) | 16:04 | 20 | 09:59 (42) |
| 18 | 05:16 | | | 06:11 | | 07:37 (34) | 07:10 | | | 08:08 | 08:11 | | 09:26 (42) | 08:56 | | 09:40 (42) |
| | 22:03 | | | 21:03 | 20 | 07:57 (34) | 19:46 | | | 18:30 | 16:26 | 25 | 09:51 (42) | 16:04 | 19 | 09:59 (42) |
| 19 | 05:18 | | | 06:13 | | 07:35 (34) | 07:12 | | | 08:10 | 08:13 | | 09:26 (42) | 08:57 | | 09:41 (42) |
| | 22:01 | | | 21:01 | 23 | 07:58 (34) | 19:43 | | | 18:27 | 16:24 | 25 | 09:51 (42) | 16:04 | 19 | 10:00 (42) |
| 20 | 05:19 | | | 06:15 | | 07:34 (34) | 07:14 | | | 08:12 | 08:15 | | 09:26 (42) | 08:58 | | 09:41 (42) |
| | 22:00 | | | 20:59 | 26 | 08:00 (34) | 19:41 | | | 18:25 | 16:23 | 26 | 09:52 (42) | 16:04 | 18 | 09:59 (42) |
| 21 | 05:21 | | | 06:17 | | 07:33 (34) | 07:15 | | | 08:14 | 08:17 | | 09:25 (42) | 08:58 | | 09:42 (42) |
| | 21:59 | | | 20:56 | 28 | 08:01 (34) | 19:38 | | | 18:22 | 16:22 | 27 | 09:52 (42) | 16:05 | 18 | 10:00 (42) |
| 22 | 05:22 | | | 06:19 | | 07:31 (34) | 07:17 | | 07:45 (14) | 08:16 | 08:19 | | 09:25 (42) | 08:59 | | 09:42 (42) |
| | 21:57 | | | 20:54 | 30 | 08:01 (34) | 19:35 | 7 | 07:52 (14) | 18:20 | 16:20 | 28 | 09:53 (42) | 16:05 | 18 | 10:00 (42) |
| 23 | 05:24 | | 06:45 (4) | 06:21 | | 07:30 (34) | 07:19 | | 07:47 (14) | 08:18 | 08:21 | | 09:26 (42) | 08:59 | | 09:43 (42) |
| | 21:56 | 10 | 20:38 (31) | 20:52 | 31 | 08:01 (34) | 19:33 | 6 | 07:53 (14) | 18:18 | 16:19 | 28 | 09:54 (42) | 16:06 | 18 | 10:01 (42) |
| 24 | 05:26 | | 06:45 (4) | 06:23 | | 07:29 (34) | 07:21 | | 07:49 (14) | 08:20 | 08:23 | | 09:26 (42) | 09:00 | | 09:43 (42) |
| | 21:54 | 16 | 20:40 (31) | 20:49 | 33 | 08:02 (34) | 19:30 | 5 | 07:54 (14) | 18:15 | 16:17 | 28 | 09:54 (42) | 16:06 | 19 | 10:02 (42) |
| 25 | 05:27 | | 06:46 (4) | 06:24 | | 07:29 (34) | 07:23 | | 07:51 (14) | 07:22 | 08:25 | | 09:26 (42) | 09:00 | | 09:43 (42) |
| | 21:52 | 19 | 20:42 (31) | 20:47 | 33 | 08:02 (34) | 19:28 | 2 | 07:53 (14) | 17:13 | 16:16 | 29 | 09:55 (42) | 16:07 | 19 | 10:02 (42) |
| 26 | 05:29 | | 06:46 (4) | 06:26 | | 07:29 (34) | 07:25 | | | 07:24 | 08:26 | | 09:27 (42) | 09:00 | | 09:43 (42) |
| | 21:51 | 21 | 20:42 (31) | 20:44 | 34 | 08:03 (34) | 19:25 | | | 17:11 | 16:15 | 28 | 09:55 (42) | 16:08 | 19 | 10:02 (42) |
| 27 | 05:31 | | 06:47 (4) | 06:28 | | 07:27 (34) | 07:27 | | | 07:26 | 08:28 | | 09:27 (42) | 09:01 | | 09:43 (42) |
| | 21:49 | 23 | 20:44 (31) | 20:42 | 35 | 08:02 (34) | 19:22 | | | 17:09 | 16:14 | 28 | 09:55 (42) | 16:09 | 20 | 10:03 (42) |
| 28 | 05:33 | | 06:46 (4) | 06:30 | | 07:27 (34) | 07:29 | | | 07:28 | 08:30 | | 09:27 (42) | 09:01 | | 09:44 (42) |
| | 21:47 | 25 | 20:44 (31) | 20:39 | 35 | 08:02 (34) | 19:20 | | | 17:06 | 16:13 | 29 | 09:56 (42) | 16:09 | 20 | 10:04 (42) |
| 29 | 05:34 | | 06:47 (4) | 06:32 | | 07:27 (34) | 07:31 | | | 07:30 | 08:32 | | 09:28 (42) | 09:01 | | 09:44 (42) |
| | 21:45 | 27 | 20:45 (31) | 20:37 | 35 | 08:02 (34) | 19:17 | | | 17:04 | 16:12 | 28 | 09:56 (42) | 16:10 | 20 | 10:04 (42) |
| 30 | 05:36 | | 06:48 (4) | 06:34 | | 07:27 (34) | 07:33 | | | 07:32 | 08:33 | | 09:28 (42) | 09:01 | | 09:44 (42) |
| | 21:44 | 28 | 20:46 (31) | 20:34 | 34 | 08:01 (34) | 19:15 | | | 17:02 | 16:11 | 27 | 09:55 (42) | 16:11 | 21 | 10:05 (42) |
| 31 | 05:38 | | 06:48 (4) | 06:36 | | 07:27 (34) | | | | 07:35 | | | | 09:01 | | 09:45 (42) |
| | 21:42 | 29 | 20:46 (31) | 20:32 | 34 | 08:01 (34) | | | | 17:00 | | | | 16:12 | 21 | 10:06 (42) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 198 | | | 855 | | | 250 | | | | 454 | | | 669 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,94 | | | 0,97 | | | 1,00 | | | | 0,61 | | | 0,61 | |
| Total reduction | | 0,42 | | | 0,46 | | | 0,37 | | | | 0,09 | | | 0,08 | |
| Total, real | | 84 | | | 395 | | | 91 | | | | 41 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (41) | 08:28 | | 09:32 (42) | 07:27 | 07:08 | | | 05:55 | | 06:53 (34) | 05:02 | | 20:37 (31) |
| | 16:14 | 22 | 10:08 (41) | 17:08 | 28 | 10:00 (42) | 18:07 | 20:10 | | | 21:09 | 32 | 07:25 (34) | 22:02 | 25 | 21:02 (31) |
| 2 | 09:01 | | 09:46 (41) | 08:26 | | 09:33 (42) | 07:24 | 07:05 | | | 05:53 | | 06:53 (34) | 05:01 | | 20:38 (31) |
| | 16:15 | 22 | 10:08 (41) | 17:10 | 26 | 09:59 (42) | 18:09 | 20:12 | | | 21:11 | 32 | 07:25 (34) | 22:04 | 24 | 21:02 (31) |
| 3 | 09:00 | | 09:47 (41) | 08:24 | | 09:34 (42) | 07:22 | 07:03 | | | 05:51 | | 06:53 (34) | 05:00 | | 20:39 (31) |
| | 16:16 | 22 | 10:09 (41) | 17:12 | 25 | 09:59 (42) | 18:11 | 20:13 | | | 21:13 | 31 | 07:24 (34) | 22:05 | 24 | 21:03 (31) |
| 4 | 09:00 | | 09:47 (41) | 08:22 | | 09:35 (42) | 07:19 | 07:00 | | 07:25 (12) | 05:48 | | 06:53 (34) | 04:59 | | 20:39 (31) |
| | 16:17 | 22 | 10:09 (41) | 17:14 | 23 | 09:58 (42) | 18:14 | 20:15 | 2 | 07:27 (12) | 21:14 | 31 | 07:24 (34) | 22:06 | 23 | 21:02 (31) |
| 5 | 09:00 | | 09:47 (41) | 08:20 | | 09:36 (42) | 07:17 | 06:58 | | 07:22 (12) | 05:46 | | 06:54 (34) | 04:58 | | 20:39 (31) |
| | 16:19 | 22 | 10:09 (41) | 17:17 | 21 | 09:57 (42) | 18:16 | 20:17 | 4 | 07:26 (12) | 21:16 | 29 | 07:23 (34) | 22:07 | 23 | 21:02 (31) |
| 6 | 08:59 | | 09:48 (41) | 08:18 | | 09:37 (42) | 07:14 | 06:55 | | 07:20 (12) | 05:44 | | 06:54 (34) | 04:57 | | 20:39 (31) |
| | 16:20 | 22 | 10:10 (41) | 17:19 | 18 | 09:55 (42) | 18:18 | 20:19 | 6 | 07:26 (12) | 21:18 | 28 | 07:22 (34) | 22:08 | 22 | 21:01 (31) |
| 7 | 08:59 | | 09:48 (41) | 08:16 | | 09:39 (42) | 07:12 | 06:53 | | 07:17 (12) | 05:42 | | 06:55 (34) | 04:56 | | 20:40 (31) |
| | 16:22 | 22 | 10:10 (41) | 17:21 | 14 | 09:53 (42) | 18:20 | 20:21 | 8 | 07:25 (12) | 21:20 | 26 | 07:21 (34) | 22:10 | 22 | 21:02 (31) |
| 8 | 08:58 | | 09:48 (41) | 08:14 | | 09:43 (42) | 07:09 | 06:50 | | 07:17 (12) | 05:40 | | 06:56 (34) | 04:56 | | 20:40 (31) |
| | 16:23 | 22 | 10:10 (41) | 17:23 | 7 | 09:50 (42) | 18:22 | 20:23 | 6 | 07:23 (12) | 21:22 | 24 | 07:20 (34) | 22:11 | 21 | 21:01 (31) |
| 9 | 08:57 | | 09:49 (41) | 08:12 | | | 07:07 | 06:48 | | 19:50 (3) | 05:38 | | 06:57 (34) | 04:55 | | 20:41 (31) |
| | 16:25 | 21 | 10:10 (41) | 17:25 | | | 18:24 | 20:25 | 7 | 19:57 (3) | 21:24 | 21 | 07:18 (34) | 22:12 | 21 | 21:02 (31) |
| 10 | 08:57 | | 09:49 (41) | 08:10 | | | 07:04 | 06:45 | | 19:48 (3) | 05:36 | | 06:58 (34) | 04:54 | | 20:41 (31) |
| | 16:26 | 21 | 10:10 (41) | 17:27 | | | 18:26 | 20:27 | 11 | 19:59 (3) | 21:26 | 19 | 07:17 (34) | 22:12 | 20 | 21:01 (31) |
| 11 | 08:56 | | 09:35 (42) | 08:08 | | | 07:02 | 06:42 | | 19:45 (3) | 05:34 | | 06:59 (34) | 04:54 | | 20:42 (31) |
| | 16:28 | 30 | 10:11 (41) | 17:29 | | | 18:28 | 20:29 | 16 | 20:01 (3) | 21:28 | 20 | 20:50 (31) | 22:13 | 19 | 21:01 (31) |
| 12 | 08:55 | | 09:34 (42) | 08:06 | | | 06:59 | 06:40 | | 19:44 (3) | 05:32 | | 07:02 (34) | 04:53 | | 20:43 (31) |
| | 16:29 | 32 | 10:11 (41) | 17:32 | | | 18:30 | 20:31 | 19 | 20:03 (3) | 21:30 | 22 | 20:54 (31) | 22:14 | 19 | 21:02 (31) |
| 13 | 08:54 | | 09:33 (42) | 08:04 | | | 06:57 | 06:38 | | 19:42 (3) | 05:30 | | 20:41 (31) | 04:53 | | 20:43 (31) |
| | 16:31 | 34 | 10:11 (41) | 17:34 | | | 18:32 | 20:33 | 22 | 20:04 (3) | 21:32 | 15 | 20:56 (31) | 22:15 | 18 | 21:01 (31) |
| 14 | 08:53 | | 09:33 (42) | 08:02 | | | 06:54 | 06:35 | | 19:42 (3) | 05:28 | | 20:40 (31) | 04:53 | | 20:43 (31) |
| | 16:33 | 35 | 10:11 (41) | 17:36 | | | 18:34 | 20:35 | 24 | 20:06 (3) | 21:33 | 17 | 20:57 (31) | 22:16 | 18 | 21:01 (31) |
| 15 | 08:52 | | 09:32 (42) | 07:59 | | | 06:52 | 06:33 | | 19:41 (3) | 05:27 | | 20:39 (31) | 04:52 | | 20:44 (31) |
| | 16:35 | 36 | 10:11 (41) | 17:38 | | | 18:36 | 20:37 | 25 | 20:06 (3) | 21:35 | 20 | 20:59 (31) | 22:16 | 17 | 21:01 (31) |
| 16 | 08:51 | | 09:31 (42) | 07:57 | | | 06:49 | 06:30 | | 19:40 (3) | 05:25 | | 20:38 (31) | 04:52 | | 20:45 (31) |
| | 16:36 | 37 | 10:10 (41) | 17:40 | | | 18:38 | 20:39 | 26 | 20:06 (3) | 21:37 | 21 | 20:59 (31) | 22:17 | 16 | 21:01 (31) |
| 17 | 08:50 | | 09:31 (42) | 07:55 | | | 06:46 | 06:28 | | 07:08 (34) | 05:23 | | 20:38 (31) | 04:52 | | 20:45 (31) |
| | 16:38 | 36 | 10:10 (41) | 17:42 | | | 18:40 | 20:41 | 33 | 20:06 (3) | 21:39 | 22 | 21:00 (31) | 22:17 | 16 | 21:01 (31) |
| 18 | 08:49 | | 09:30 (42) | 07:53 | | | 06:44 | 06:25 | | 07:03 (34) | 05:21 | | 20:37 (31) | 04:52 | | 20:45 (31) |
| | 16:40 | 36 | 10:09 (41) | 17:44 | | | 18:42 | 20:43 | 41 | 20:05 (3) | 21:41 | 23 | 21:00 (31) | 22:18 | 16 | 21:01 (31) |
| 19 | 08:48 | | 09:30 (42) | 07:50 | | | 06:41 | 06:23 | | 07:01 (34) | 05:20 | | 20:37 (31) | 04:52 | | 20:46 (31) |
| | 16:42 | 34 | 10:08 (41) | 17:46 | | | 18:44 | 20:45 | 45 | 20:05 (3) | 21:42 | 24 | 21:01 (31) | 22:18 | 15 | 21:01 (31) |
| 20 | 08:46 | | 09:29 (42) | 07:48 | | | 06:39 | 06:20 | | 07:00 (34) | 05:18 | | 20:36 (31) | 04:52 | | 20:46 (31) |
| | 16:44 | 27 | 09:56 (42) | 17:49 | | | 18:46 | 20:47 | 48 | 20:05 (3) | 21:44 | 25 | 21:01 (31) | 22:19 | 15 | 21:01 (31) |
| 21 | 08:45 | | 09:30 (42) | 07:46 | | | 06:36 | 06:18 | | 06:57 (34) | 05:16 | | 20:36 (31) | 04:52 | | 20:46 (31) |
| | 16:46 | 27 | 09:57 (42) | 17:51 | | | 18:48 | 20:49 | 49 | 20:03 (3) | 21:46 | 26 | 21:02 (31) | 22:19 | 15 | 21:01 (31) |
| 22 | 08:44 | | 09:29 (42) | 07:43 | | | 06:34 | 06:16 | | 06:56 (34) | 05:15 | | 20:36 (31) | 04:52 | | 20:47 (31) |
| | 16:48 | 28 | 09:57 (42) | 17:53 | | | 18:50 | 20:51 | 50 | 20:03 (3) | 21:47 | 26 | 21:02 (31) | 22:19 | 15 | 21:02 (31) |
| 23 | 08:42 | | 09:30 (42) | 07:41 | | | 06:31 | 06:13 | | 06:56 (34) | 05:13 | | 20:36 (31) | 04:53 | | 20:47 (31) |
| | 16:50 | 29 | 09:59 (42) | 17:55 | | | 18:52 | 20:53 | 49 | 20:02 (3) | 21:49 | 26 | 21:02 (31) | 22:19 | 15 | 21:02 (31) |
| 24 | 08:41 | | 09:30 (42) | 07:39 | | | 06:28 | 06:11 | | 06:55 (34) | 05:12 | | 20:36 (31) | 04:53 | | 20:47 (31) |
| | 16:52 | 29 | 09:59 (42) | 17:57 | | | 18:54 | 20:55 | 48 | 20:01 (3) | 21:51 | 27 | 21:03 (31) | 22:19 | 15 | 21:02 (31) |
| 25 | 08:39 | | 09:29 (42) | 07:36 | | | 06:26 | 06:09 | | 06:53 (34) | 05:10 | | 20:35 (31) | 04:53 | | 20:47 (31) |
| | 16:54 | 30 | 09:59 (42) | 17:59 | | | 18:56 | 20:57 | 46 | 19:58 (3) | 21:52 | 27 | 21:02 (31) | 22:19 | 16 | 21:03 (31) |
| 26 | 08:38 | | 09:29 (42) | 07:34 | | | 06:23 | 06:06 | | 06:53 (34) | 05:09 | | 20:36 (31) | 04:54 | | 20:47 (31) |
| | 16:56 | 30 | 09:59 (42) | 18:01 | | | 18:58 | 20:59 | 41 | 19:55 (3) | 21:54 | 26 | 21:02 (31) | 22:19 | 16 | 21:03 (31) |
| 27 | 08:36 | | 09:30 (42) | 07:32 | | | 06:21 | 06:04 | | 06:53 (34) | 05:08 | | 20:36 (31) | 04:54 | | 20:47 (31) |
| | 16:58 | 30 | 10:00 (42) | 18:03 | | | 19:00 | 21:01 | 33 | 07:26 (34) | 21:55 | 26 | 21:02 (31) | 22:19 | 17 | 21:04 (31) |
| 28 | 08:34 | | 09:31 (42) | 07:29 | | | 06:18 | 06:02 | | 06:53 (34) | 05:06 | | 20:36 (31) | 04:55 | | 20:47 (31) |
| | 17:00 | 29 | 10:00 (42) | 18:05 | | | 19:02 | 21:03 | 33 | 07:26 (34) | 21:57 | 27 | 21:03 (31) | 22:19 | 17 | 21:04 (31) |
| 29 | 08:33 | | 09:31 (42) | | | | 07:16 | 05:59 | | 06:53 (34) | 05:05 | | 20:37 (31) | 04:55 | | 20:47 (31) |
| | 17:02 | 29 | 10:00 (42) | | | | 20:04 | 21:05 | 33 | 07:26 (34) | 21:58 | 26 | 21:03 (31) | 22:19 | 18 | 21:05 (31) |
| 30 | 08:31 | | 09:31 (42) | | | | 07:13 | 05:57 | | 06:53 (34) | 05:04 | | 20:37 (31) | 04:56 | | 20:46 (31) |
| | 17:04 | 29 | 10:00 (42) | | | | 20:06 | 21:07 | 33 | 07:26 (34) | 22:00 | 26 | 21:03 (31) | 22:18 | 19 | 21:05 (31) |
| 31 | 08:29 | | 09:32 (42) | | | | 07:10 | | | | 05:03 | | 20:37 (31) | | | |
| | 17:06 | 28 | 10:00 (42) | | | | 20:08 | | | | 22:01 | 25 | 21:02 (31) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | 873 | | | 162 | | | | 758 | | | 770 | | | 557 | | |
| Sun reduction | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | | 0,48 | | |
| Oper. time red. | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | 0,65 | | | 0,68 | | | | 0,98 | | | 0,92 | | | 0,89 | | |
| Total reduction | 0,11 | | | 0,16 | | | | 0,36 | | | 0,44 | | | 0,40 | | |
| Total, real | 95 | | | 25 | | | | 272 | | | 341 | | | 222 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 20:47 (31) | 05:40 | | 07:12 (34) | 06:38 | | | 07:35 | 07:37 | | | 08:35 | | 09:17 (42) |
| | 22:18 | 18 | 21:05 (31) | 21:40 | 21 | 21:04 (31) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 30 | 09:53 (41) |
| 2 | 04:58 | | 20:47 (31) | 05:41 | | 07:09 (34) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:32 (41) |
| | 22:18 | 19 | 21:06 (31) | 21:38 | 17 | 07:26 (34) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 22 | 09:54 (41) |
| 3 | 04:58 | | 20:47 (31) | 05:43 | | 07:08 (34) | 06:42 | | | 07:38 | 07:41 | | 09:12 (42) | 08:38 | | 09:33 (41) |
| | 22:17 | 20 | 21:07 (31) | 21:36 | 20 | 07:28 (34) | 20:24 | | | 19:07 | 16:54 | 8 | 09:20 (42) | 16:08 | 21 | 09:54 (41) |
| 4 | 04:59 | | 20:46 (31) | 05:45 | | 07:07 (34) | 06:43 | | 07:14 (12) | 07:40 | 07:43 | | 09:08 (42) | 08:40 | | 09:32 (41) |
| | 22:17 | 21 | 21:07 (31) | 21:34 | 22 | 07:29 (34) | 20:22 | 6 | 07:20 (12) | 19:04 | 16:51 | 15 | 09:23 (42) | 16:07 | 22 | 09:54 (41) |
| 5 | 05:00 | | 20:46 (31) | 05:47 | | 07:06 (34) | 06:45 | | 07:14 (12) | 07:42 | 07:45 | | 09:07 (42) | 08:41 | | 09:33 (41) |
| | 22:16 | 21 | 21:07 (31) | 21:32 | 25 | 07:31 (34) | 20:19 | 8 | 07:22 (12) | 19:02 | 16:49 | 19 | 09:26 (42) | 16:07 | 22 | 09:55 (41) |
| 6 | 05:01 | | 20:46 (31) | 05:49 | | 07:04 (34) | 06:47 | | 07:15 (12) | 07:44 | 07:47 | | 09:06 (42) | 08:43 | | 09:34 (41) |
| | 22:15 | 22 | 21:08 (31) | 21:30 | 27 | 07:31 (34) | 20:17 | 6 | 07:21 (12) | 18:59 | 16:47 | 21 | 09:27 (42) | 16:06 | 22 | 09:56 (41) |
| 7 | 05:02 | | 20:46 (31) | 05:51 | | 07:04 (34) | 06:49 | | 07:17 (12) | 07:46 | 07:49 | | 09:04 (42) | 08:44 | | 09:34 (41) |
| | 22:15 | 22 | 21:08 (31) | 21:28 | 28 | 07:32 (34) | 20:14 | 5 | 07:22 (12) | 18:57 | 16:45 | 24 | 09:28 (42) | 16:06 | 22 | 09:56 (41) |
| 8 | 05:03 | | 20:46 (31) | 05:52 | | 07:03 (34) | 06:51 | | 07:19 (12) | 07:48 | 07:51 | | 09:03 (42) | 08:46 | | 09:35 (41) |
| | 22:14 | 23 | 21:09 (31) | 21:26 | 30 | 07:33 (34) | 20:12 | 2 | 07:21 (12) | 18:54 | 16:44 | 26 | 09:29 (42) | 16:05 | 22 | 09:57 (41) |
| 9 | 05:04 | | 20:45 (31) | 05:54 | | 07:02 (34) | 06:53 | | | 07:50 | 07:53 | | 09:04 (42) | 08:47 | | 09:35 (41) |
| | 22:13 | 24 | 21:09 (31) | 21:24 | 30 | 07:32 (34) | 20:09 | | | 18:52 | 16:42 | 26 | 09:30 (42) | 16:05 | 22 | 09:57 (41) |
| 10 | 05:06 | | 20:45 (31) | 05:56 | | 07:01 (34) | 06:55 | | | 07:52 | 07:55 | | 09:03 (42) | 08:48 | | 09:35 (41) |
| | 22:12 | 24 | 21:09 (31) | 21:21 | 32 | 07:33 (34) | 20:06 | | | 18:49 | 16:40 | 28 | 09:31 (42) | 16:04 | 22 | 09:57 (41) |
| 11 | 05:07 | | 20:46 (31) | 05:58 | | 07:01 (34) | 06:57 | | | 07:54 | 07:57 | | 09:02 (42) | 08:49 | | 09:36 (41) |
| | 22:11 | 25 | 21:11 (31) | 21:19 | 32 | 07:33 (34) | 20:04 | | | 18:47 | 16:38 | 29 | 09:31 (42) | 16:04 | 22 | 09:58 (41) |
| 12 | 05:08 | | 20:46 (31) | 06:00 | | 07:01 (34) | 06:59 | | | 07:56 | 07:59 | | 09:02 (42) | 08:51 | | 09:36 (41) |
| | 22:10 | 25 | 21:11 (31) | 21:17 | 33 | 07:34 (34) | 20:01 | | | 18:44 | 16:36 | 29 | 09:31 (42) | 16:04 | 22 | 09:58 (41) |
| 13 | 05:09 | | 20:46 (31) | 06:02 | | 07:00 (34) | 07:00 | | | 07:58 | 08:01 | | 09:03 (42) | 08:52 | | 09:37 (41) |
| | 22:09 | 25 | 21:11 (31) | 21:15 | 33 | 07:33 (34) | 19:59 | | | 18:42 | 16:34 | 29 | 09:32 (42) | 16:04 | 21 | 09:58 (41) |
| 14 | 05:11 | | 20:45 (31) | 06:04 | | 07:00 (34) | 07:02 | | | 08:00 | 08:03 | | 09:02 (42) | 08:53 | | 09:37 (41) |
| | 22:08 | 26 | 21:11 (31) | 21:13 | 33 | 07:33 (34) | 19:56 | | | 18:39 | 16:33 | 30 | 09:32 (42) | 16:04 | 22 | 09:59 (41) |
| 15 | 05:12 | | 20:45 (31) | 06:06 | | 07:00 (34) | 07:04 | | | 08:02 | 08:05 | | 09:02 (42) | 08:54 | | 09:37 (41) |
| | 22:07 | 26 | 21:11 (31) | 21:10 | 33 | 07:33 (34) | 19:53 | | | 18:37 | 16:31 | 30 | 09:32 (42) | 16:04 | 22 | 09:59 (41) |
| 16 | 05:13 | | 20:46 (31) | 06:07 | | 07:00 (34) | 07:06 | | | 08:04 | 08:07 | | 09:02 (42) | 08:55 | | 09:38 (41) |
| | 22:05 | 26 | 21:12 (31) | 21:08 | 33 | 07:33 (34) | 19:51 | | | 18:34 | 16:29 | 30 | 09:32 (42) | 16:04 | 21 | 09:59 (41) |
| 17 | 05:15 | | 20:45 (31) | 06:09 | | 07:00 (34) | 07:08 | | | 08:06 | 08:09 | | 09:03 (42) | 08:55 | | 09:39 (41) |
| | 22:04 | 27 | 21:12 (31) | 21:06 | 32 | 07:32 (34) | 19:48 | | | 18:32 | 16:28 | 30 | 09:33 (42) | 16:04 | 21 | 10:00 (41) |
| 18 | 05:16 | | 20:45 (31) | 06:11 | | 07:00 (34) | 07:10 | | | 08:08 | 08:11 | | 09:04 (42) | 08:56 | | 09:39 (41) |
| | 22:03 | 27 | 21:12 (31) | 21:03 | 31 | 07:31 (34) | 19:46 | | | 18:30 | 16:26 | 29 | 09:33 (42) | 16:04 | 22 | 10:01 (41) |
| 19 | 05:18 | | 20:46 (31) | 06:13 | | 07:01 (34) | 07:12 | | | 08:10 | 08:13 | | 09:04 (42) | 08:57 | | 09:40 (41) |
| | 22:01 | 26 | 21:12 (31) | 21:01 | 30 | 07:31 (34) | 19:43 | | | 18:27 | 16:24 | 29 | 09:33 (42) | 16:04 | 21 | 10:01 (41) |
| 20 | 05:19 | | 20:45 (31) | 06:15 | | 07:01 (34) | 07:14 | | | 08:12 | 08:15 | | 09:04 (42) | 08:58 | | 09:40 (41) |
| | 22:00 | 27 | 21:12 (31) | 20:59 | 29 | 07:30 (34) | 19:41 | | | 18:25 | 16:23 | 28 | 09:32 (42) | 16:04 | 21 | 10:01 (41) |
| 21 | 05:21 | | 20:46 (31) | 06:17 | | 07:02 (34) | 07:16 | | | 08:14 | 08:17 | | 09:05 (42) | 08:58 | | 09:41 (41) |
| | 21:59 | 26 | 21:12 (31) | 20:56 | 27 | 07:29 (34) | 19:38 | | | 18:22 | 16:22 | 27 | 09:32 (42) | 16:05 | 21 | 10:02 (41) |
| 22 | 05:22 | | 20:46 (31) | 06:19 | | 07:02 (34) | 07:17 | | | 08:16 | 08:19 | | 09:05 (42) | 08:59 | | 09:41 (41) |
| | 21:57 | 26 | 21:12 (31) | 20:54 | 25 | 07:27 (34) | 19:35 | | | 18:20 | 16:20 | 27 | 09:32 (42) | 16:05 | 21 | 10:02 (41) |
| 23 | 05:24 | | 20:47 (31) | 06:21 | | 07:03 (34) | 07:19 | | | 08:18 | 08:21 | | 09:07 (42) | 08:59 | | 09:42 (41) |
| | 21:55 | 25 | 21:12 (31) | 20:52 | 23 | 07:26 (34) | 19:33 | | | 18:18 | 16:19 | 34 | 09:45 (41) | 16:06 | 21 | 10:03 (41) |
| 24 | 05:26 | | 20:47 (31) | 06:23 | | 07:05 (34) | 07:21 | | | 08:20 | 08:23 | | 09:08 (42) | 09:00 | | 09:42 (41) |
| | 21:54 | 24 | 21:11 (31) | 20:49 | 19 | 07:24 (34) | 19:30 | | | 18:15 | 16:18 | 36 | 09:47 (41) | 16:06 | 21 | 10:03 (41) |
| 25 | 05:27 | | 20:47 (31) | 06:24 | | 07:07 (34) | 07:23 | | | 07:22 | 08:25 | | 09:09 (42) | 09:00 | | 09:42 (41) |
| | 21:52 | 25 | 21:12 (31) | 20:47 | 15 | 07:22 (34) | 19:28 | | | 17:13 | 16:16 | 37 | 09:48 (41) | 16:07 | 21 | 10:03 (41) |
| 26 | 05:29 | | 20:47 (31) | 06:26 | | 07:12 (34) | 07:25 | | | 07:24 | 08:26 | | 09:10 (42) | 09:00 | | 09:42 (41) |
| | 21:51 | 24 | 21:11 (31) | 20:44 | 7 | 20:09 (3) | 19:25 | | | 17:11 | 16:15 | 37 | 09:49 (41) | 16:08 | 22 | 10:04 (41) |
| 27 | 05:31 | | 20:48 (31) | 06:28 | | 20:07 (3) | 07:27 | | | 07:26 | 08:28 | | 09:11 (42) | 09:01 | | 09:43 (41) |
| | 21:49 | 22 | 21:10 (31) | 20:42 | 1 | 20:08 (3) | 19:22 | | | 17:09 | 16:14 | 37 | 09:50 (41) | 16:09 | 21 | 10:04 (41) |
| 28 | 05:33 | | 20:49 (31) | 06:30 | | 20:06 (3) | 07:29 | | | 07:28 | 08:30 | | 09:13 (42) | 09:01 | | 09:43 (41) |
| | 21:47 | 20 | 21:09 (31) | 20:39 | 1 | 20:07 (3) | 19:20 | | | 17:06 | 16:13 | 35 | 09:51 (41) | 16:09 | 22 | 10:05 (41) |
| 29 | 05:34 | | 20:50 (31) | 06:32 | | 20:05 (3) | 07:31 | | | 07:30 | 08:32 | | 09:14 (42) | 09:01 | | 09:44 (41) |
| | 21:45 | 19 | 21:09 (31) | 20:37 | 2 | 20:07 (3) | 19:17 | | | 17:04 | 16:12 | 34 | 09:52 (41) | 16:10 | 21 | 10:05 (41) |
| 30 | 05:36 | | 20:51 (31) | 06:34 | | 20:04 (3) | 07:33 | | | 07:32 | 08:33 | | 09:15 (42) | 09:01 | | 09:44 (41) |
| | 21:44 | 17 | 21:08 (31) | 20:34 | 1 | 20:05 (3) | 19:15 | | | 17:02 | 16:11 | 32 | 09:52 (41) | 16:11 | 22 | 10:06 (41) |
| 31 | 05:38 | | 07:15 (34) | 06:36 | | | | | | 07:35 | | | | 09:01 | | 09:45 (41) |
| | 21:42 | 19 | 21:06 (31) | 20:32 | | | | | | 17:00 | | | | 16:12 | 22 | 10:07 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 721 | | | 692 | | | 27 | | | | 796 | | | 677 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,89 | | | 0,97 | | | 0,99 | | | | 0,67 | | | 0,60 | |
| Total reduction | | 0,40 | | | 0,47 | | | 0,37 | | | | 0,10 | | | 0,08 | |
| Total, real | | 289 | | | 322 | | | 10 | | | | 78 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (42) | 08:28 | | 10:04 (42) | 07:27 | | | 07:08 | | 07:32 (12) | 05:55 | | 07:10 (34) | 05:02 | | |
| | 16:14 | 36 | 10:22 (41) | 17:08 | 5 | 10:09 (42) | 18:07 | | | 20:10 | 2 | 07:34 (12) | 21:09 | 39 | 20:36 (31) | 22:02 | | |
| 2 | 09:01 | | 09:46 (42) | 08:26 | | | 07:24 | | | 07:05 | | 07:30 (12) | 05:53 | | 07:11 (34) | 05:01 | | |
| | 16:15 | 36 | 10:22 (41) | 17:10 | | | 18:09 | | | 20:11 | 6 | 19:44 (3) | 21:11 | 42 | 20:38 (31) | 22:04 | | |
| 3 | 09:00 | | 09:46 (42) | 08:24 | | | 07:22 | | | 07:03 | | 07:27 (12) | 05:51 | | 07:12 (34) | 05:00 | | |
| | 16:16 | 36 | 10:22 (41) | 17:12 | | | 18:11 | | | 20:13 | 12 | 19:46 (3) | 21:13 | 44 | 20:40 (31) | 22:05 | | |
| 4 | 09:00 | | 09:46 (42) | 08:22 | | | 07:19 | | | 07:00 | | 07:25 (12) | 05:48 | | 07:13 (34) | 04:59 | | |
| | 16:17 | 36 | 10:22 (41) | 17:14 | | | 18:13 | | | 20:15 | 16 | 19:48 (3) | 21:14 | 44 | 20:41 (31) | 22:06 | | |
| 5 | 09:00 | | 09:45 (42) | 08:20 | | | 07:17 | | | 06:58 | | 07:23 (12) | 05:46 | | 07:14 (34) | 04:58 | | |
| | 16:19 | 37 | 10:22 (41) | 17:17 | | | 18:16 | | | 20:17 | 17 | 19:49 (3) | 21:16 | 43 | 20:42 (31) | 22:07 | | |
| 6 | 08:59 | | 09:46 (42) | 08:18 | | | 07:14 | | | 06:55 | | 07:25 (12) | 05:44 | | 07:16 (34) | 04:57 | | |
| | 16:20 | 37 | 10:23 (41) | 17:19 | | | 18:18 | | | 20:19 | 16 | 19:52 (3) | 21:18 | 41 | 20:43 (31) | 22:08 | | |
| 7 | 08:59 | | 09:46 (42) | 08:16 | | | 07:12 | | | 06:53 | | 19:40 (3) | 05:42 | | 07:18 (34) | 04:56 | | |
| | 16:22 | 36 | 10:22 (41) | 17:21 | | | 18:20 | | | 20:21 | 13 | 19:53 (3) | 21:20 | 37 | 20:43 (31) | 22:10 | | |
| 8 | 08:58 | | 09:46 (42) | 08:14 | | | 07:09 | | | 06:50 | | 19:40 (3) | 05:40 | | 07:21 (34) | 04:56 | | |
| | 16:23 | 36 | 10:22 (41) | 17:23 | | | 18:22 | | | 20:23 | 14 | 19:54 (3) | 21:22 | 30 | 20:43 (31) | 22:11 | | |
| 9 | 08:57 | | 09:46 (42) | 08:12 | | | 07:07 | | | 06:48 | | 19:40 (3) | 05:38 | | 20:18 (31) | 04:55 | | |
| | 16:25 | 36 | 10:22 (41) | 17:25 | | | 18:24 | | | 20:25 | 14 | 19:54 (3) | 21:24 | 25 | 20:43 (31) | 22:12 | | |
| 10 | 08:57 | | 09:46 (42) | 08:10 | | | 07:04 | | | 06:45 | | 19:40 (3) | 05:36 | | 20:18 (31) | 04:54 | | |
| | 16:26 | 35 | 10:21 (41) | 17:27 | | | 18:26 | | | 20:27 | 14 | 19:54 (3) | 21:26 | 25 | 20:43 (31) | 22:12 | | |
| 11 | 08:56 | | 09:46 (42) | 08:08 | | | 07:02 | | | 06:42 | | 07:27 (34) | 05:34 | | 20:18 (31) | 04:54 | | |
| | 16:28 | 34 | 10:20 (41) | 17:29 | | | 18:28 | | | 20:29 | 19 | 19:53 (3) | 21:28 | 25 | 20:43 (31) | 22:13 | | |
| 12 | 08:55 | | 09:46 (42) | 08:06 | | | 06:59 | | | 06:40 | | 07:22 (34) | 05:32 | | 20:18 (31) | 04:53 | | |
| | 16:29 | 33 | 10:19 (41) | 17:31 | | | 18:30 | | | 20:31 | 29 | 19:53 (3) | 21:30 | 26 | 20:44 (31) | 22:14 | | |
| 13 | 08:54 | | 09:47 (42) | 08:04 | | | 06:57 | | | 06:38 | | 07:19 (34) | 05:30 | | 20:18 (31) | 04:53 | | |
| | 16:31 | 29 | 10:16 (42) | 17:34 | | | 18:32 | | | 20:33 | 32 | 19:52 (3) | 21:32 | 25 | 20:43 (31) | 22:15 | | |
| 14 | 08:53 | | 09:47 (42) | 08:02 | | | 06:54 | | | 06:35 | | 07:17 (34) | 05:28 | | 20:18 (31) | 04:53 | | |
| | 16:33 | 30 | 10:17 (42) | 17:36 | | | 18:34 | | | 20:35 | 35 | 19:51 (3) | 21:33 | 25 | 20:43 (31) | 22:16 | | |
| 15 | 08:52 | | 09:48 (42) | 07:59 | | | 06:52 | | | 06:33 | | 07:16 (34) | 05:27 | | 20:19 (31) | 04:52 | | |
| | 16:35 | 29 | 10:17 (42) | 17:38 | | | 18:36 | | | 20:37 | 37 | 19:50 (3) | 21:35 | 24 | 20:43 (31) | 22:16 | | |
| 16 | 08:51 | | 09:47 (42) | 07:57 | | | 06:49 | | | 06:30 | | 07:14 (34) | 05:25 | | 20:19 (31) | 04:52 | | |
| | 16:36 | 30 | 10:17 (42) | 17:40 | | | 18:38 | | | 20:39 | 37 | 19:48 (3) | 21:37 | 23 | 20:42 (31) | 22:17 | | |
| 17 | 08:50 | | 09:48 (42) | 07:55 | | | 06:46 | | | 06:28 | | 07:13 (34) | 05:23 | | 20:20 (31) | 04:52 | | |
| | 16:38 | 30 | 10:18 (42) | 17:42 | | | 18:40 | | | 20:41 | 37 | 19:46 (3) | 21:39 | 22 | 20:42 (31) | 22:17 | | |
| 18 | 08:49 | | 09:48 (42) | 07:53 | | | 06:44 | | | 06:25 | | 07:11 (34) | 05:21 | | 06:29 (4) | 04:52 | | |
| | 16:40 | 30 | 10:18 (42) | 17:44 | | | 18:42 | | | 20:43 | 37 | 19:41 (3) | 21:41 | 37 | 20:41 (31) | 22:18 | | |
| 19 | 08:48 | | 09:48 (42) | 07:50 | | | 06:41 | | | 06:23 | | 07:11 (34) | 05:20 | | 06:26 (4) | 04:52 | | |
| | 16:42 | 31 | 10:19 (42) | 17:46 | | | 18:44 | | | 20:45 | 34 | 07:45 (34) | 21:42 | 43 | 20:41 (31) | 22:18 | | |
| 20 | 08:46 | | 09:48 (42) | 07:48 | | | 06:39 | | 07:03 (14) | 06:20 | | 07:10 (34) | 05:18 | | 06:23 (4) | 04:52 | | |
| | 16:44 | 30 | 10:18 (42) | 17:48 | | | 18:46 | 2 | 07:05 (14) | 20:47 | 35 | 07:45 (34) | 21:44 | 45 | 20:40 (31) | 22:19 | | |
| 21 | 08:45 | | 09:49 (42) | 07:46 | | | 06:36 | | 07:01 (14) | 06:18 | | 07:09 (34) | 05:16 | | 06:23 (4) | 04:52 | | |
| | 16:46 | 30 | 10:19 (42) | 17:51 | | | 18:48 | 4 | 07:05 (14) | 20:49 | 36 | 07:45 (34) | 21:46 | 29 | 20:39 (31) | 22:19 | | |
| 22 | 08:44 | | 09:50 (42) | 07:43 | | | 06:34 | | 06:58 (14) | 06:16 | | 07:09 (34) | 05:15 | | 06:23 (4) | 04:52 | | |
| | 16:48 | 29 | 10:19 (42) | 17:53 | | | 18:50 | 6 | 07:04 (14) | 20:51 | 36 | 07:45 (34) | 21:47 | 21 | 20:38 (31) | 22:19 | | |
| 23 | 08:42 | | 09:51 (42) | 07:41 | | | 06:31 | | 06:55 (14) | 06:13 | | 07:09 (34) | 05:13 | | 06:25 (4) | 04:53 | | |
| | 16:50 | 28 | 10:19 (42) | 17:55 | | | 18:52 | 7 | 07:02 (14) | 20:53 | 36 | 07:45 (34) | 21:49 | 14 | 20:37 (31) | 22:19 | | |
| 24 | 08:41 | | 09:51 (42) | 07:39 | | | 06:28 | | 06:56 (14) | 06:11 | | 07:09 (34) | 05:12 | | 20:28 (31) | 04:53 | | |
| | 16:52 | 28 | 10:19 (42) | 17:57 | | | 18:54 | 5 | 07:01 (14) | 20:55 | 36 | 07:45 (34) | 21:51 | 7 | 20:35 (31) | 22:19 | | |
| 25 | 08:39 | | 09:52 (42) | 07:36 | | | 06:26 | | | 06:09 | | 07:08 (34) | 05:10 | | | 04:53 | | |
| | 16:54 | 26 | 10:18 (42) | 17:59 | | | 18:56 | | | 20:57 | 36 | 07:44 (34) | 21:52 | | | 22:19 | | |
| 26 | 08:38 | | 09:52 (42) | 07:34 | | | 06:23 | | | 06:06 | | 07:08 (34) | 05:09 | | | 04:54 | | |
| | 16:56 | 26 | 10:18 (42) | 18:01 | | | 18:58 | | | 20:59 | 36 | 07:44 (34) | 21:54 | | | 22:19 | | |
| 27 | 08:36 | | 09:54 (42) | 07:32 | | | 06:21 | | | 06:04 | | 07:08 (34) | 05:08 | | | 04:54 | | |
| | 16:58 | 24 | 10:18 (42) | 18:03 | | | 19:00 | | | 21:01 | 36 | 07:44 (34) | 21:55 | | | 22:19 | | |
| 28 | 08:34 | | 09:55 (42) | 07:29 | | | 06:18 | | | 06:02 | | 07:09 (34) | 05:06 | | | 04:55 | | |
| | 17:00 | 22 | 10:17 (42) | 18:05 | | | 19:02 | | | 21:03 | 34 | 07:43 (34) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 09:56 (42) | | | | 07:16 | | | 05:59 | | 07:09 (34) | 05:05 | | | 04:55 | | |
| | 17:02 | 20 | 10:16 (42) | | | | 20:04 | | | 21:05 | 34 | 07:43 (34) | 21:58 | | | 22:19 | | |
| 30 | 08:31 | | 09:58 (42) | | | | 07:13 | | | 05:57 | | 07:10 (34) | 05:04 | | | 04:56 | | |
| | 17:04 | 17 | 10:15 (42) | | | | 20:06 | | | 21:07 | 32 | 07:42 (34) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | 10:00 (42) | | | | 07:10 | | | | | | 05:03 | | | | | |
| | 17:06 | 13 | 10:13 (42) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 930 | | | 5 | | | 24 | | | 808 | | | 736 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,60 | | | 0,61 | | | 1,00 | | | 0,99 | | | 0,94 | | | | |
| Total reduction | | 0,10 | | | 0,14 | | | 0,31 | | | 0,35 | | | 0,44 | | | | |
| Total, real | | 91 | | | 1 | | | 7 | | | 283 | | | 320 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:29 (31) | 06:38 | | 07:26 (34) | 07:35 | 07:37 | | | 08:35 | | 09:28 (42) |
| | 22:18 | | | 21:40 | 25 | 20:54 (31) | 20:29 | 5 | 07:31 (34) | 19:12 | 16:58 | | | 16:10 | 34 | 10:02 (41) |
| 2 | 04:57 | | | 05:41 | | 20:28 (31) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:29 (42) |
| | 22:18 | | | 21:38 | 25 | 20:53 (31) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 35 | 10:04 (41) |
| 3 | 04:58 | | | 05:43 | | 20:28 (31) | 06:42 | | | 07:38 | 07:41 | | | 08:38 | | 09:30 (42) |
| | 22:17 | | | 21:36 | 25 | 20:53 (31) | 20:24 | | | 19:07 | 16:54 | | | 16:08 | 36 | 10:06 (41) |
| 4 | 04:59 | | | 05:45 | | 20:29 (31) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:30 (42) |
| | 22:17 | | | 21:34 | 24 | 20:53 (31) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 36 | 10:06 (41) |
| 5 | 05:00 | | | 05:47 | | 07:30 (34) | 06:45 | | | 07:42 | 07:45 | | | 08:41 | | 09:31 (42) |
| | 22:16 | | | 21:32 | 34 | 20:53 (31) | 20:19 | | | 19:02 | 16:49 | | | 16:07 | 36 | 10:07 (41) |
| 6 | 05:01 | | | 05:49 | | 07:26 (34) | 06:47 | | 07:20 (12) | 07:44 | 07:47 | | | 08:43 | | 09:32 (42) |
| | 22:15 | | | 21:30 | 39 | 20:52 (31) | 20:17 | 4 | 07:24 (12) | 18:59 | 16:47 | | | 16:06 | 37 | 10:09 (41) |
| 7 | 05:02 | | | 05:51 | | 07:24 (34) | 06:49 | | 07:18 (12) | 07:46 | 07:49 | | | 08:44 | | 09:32 (42) |
| | 22:15 | | | 21:28 | 42 | 20:52 (31) | 20:14 | 8 | 07:26 (12) | 18:57 | 16:45 | | | 16:06 | 37 | 10:09 (41) |
| 8 | 05:03 | | | 05:52 | | 07:23 (34) | 06:51 | | 07:19 (12) | 07:48 | 07:51 | | | 08:46 | | 09:34 (42) |
| | 22:14 | | | 21:26 | 43 | 20:51 (31) | 20:12 | 8 | 07:27 (12) | 18:54 | 16:43 | | | 16:05 | 36 | 10:10 (41) |
| 9 | 05:04 | | | 05:54 | | 07:21 (34) | 06:53 | | 07:21 (12) | 07:50 | 07:53 | | | 08:47 | | 09:34 (42) |
| | 22:13 | | | 21:24 | 43 | 20:49 (31) | 20:09 | 7 | 07:28 (12) | 18:52 | 16:42 | | | 16:05 | 36 | 10:10 (41) |
| 10 | 05:06 | | | 05:56 | | 07:20 (34) | 06:55 | | 07:23 (12) | 07:52 | 07:55 | | 09:34 (42) | 08:48 | | 09:35 (42) |
| | 22:12 | | | 21:21 | 44 | 20:48 (31) | 20:06 | 5 | 07:28 (12) | 18:49 | 16:40 | 7 | 09:41 (42) | 16:04 | 36 | 10:11 (41) |
| 11 | 05:07 | | | 05:58 | | 07:19 (34) | 06:57 | | 07:24 (12) | 07:54 | 07:57 | | 09:31 (42) | 08:49 | | 09:36 (42) |
| | 22:11 | | | 21:19 | 42 | 20:46 (31) | 20:04 | 2 | 07:26 (12) | 18:47 | 16:38 | 13 | 09:44 (42) | 16:04 | 36 | 10:12 (41) |
| 12 | 05:08 | | | 06:00 | | 07:18 (34) | 06:59 | | | 07:56 | 07:59 | | 09:29 (42) | 08:51 | | 09:37 (42) |
| | 22:10 | | | 21:17 | 37 | 20:43 (31) | 20:01 | | | 18:44 | 16:36 | 17 | 09:46 (42) | 16:04 | 35 | 10:12 (41) |
| 13 | 05:09 | | | 06:02 | | 07:17 (34) | 07:00 | | | 07:58 | 08:01 | | 09:28 (42) | 08:52 | | 09:37 (42) |
| | 22:09 | | | 21:15 | 33 | 07:50 (34) | 19:59 | | | 18:42 | 16:34 | 20 | 09:48 (42) | 16:04 | 36 | 10:13 (41) |
| 14 | 05:11 | | | 06:04 | | 07:16 (34) | 07:02 | | | 08:00 | 08:03 | | 09:27 (42) | 08:53 | | 09:38 (42) |
| | 22:08 | | | 21:13 | 34 | 07:50 (34) | 19:56 | | | 18:39 | 16:33 | 22 | 09:49 (42) | 16:04 | 35 | 10:13 (41) |
| 15 | 05:12 | | | 06:05 | | 07:16 (34) | 07:04 | | | 08:02 | 08:05 | | 09:26 (42) | 08:54 | | 09:39 (42) |
| | 22:07 | | | 21:10 | 35 | 07:51 (34) | 19:53 | | | 18:37 | 16:31 | 24 | 09:50 (42) | 16:04 | 35 | 10:14 (41) |
| 16 | 05:13 | | | 06:07 | | 07:16 (34) | 07:06 | | | 08:04 | 08:07 | | 09:25 (42) | 08:55 | | 09:39 (42) |
| | 22:05 | | | 21:08 | 35 | 07:51 (34) | 19:51 | | | 18:34 | 16:29 | 26 | 09:51 (42) | 16:04 | 35 | 10:14 (41) |
| 17 | 05:15 | | | 06:09 | | 07:14 (34) | 07:08 | | | 08:06 | 08:09 | | 09:26 (42) | 08:55 | | 09:40 (42) |
| | 22:04 | | | 21:06 | 37 | 07:51 (34) | 19:48 | | | 18:32 | 16:28 | 26 | 09:52 (42) | 16:04 | 35 | 10:15 (41) |
| 18 | 05:16 | | | 06:11 | | 07:14 (34) | 07:10 | | | 08:08 | 08:11 | | 09:25 (42) | 08:56 | | 09:41 (42) |
| | 22:03 | | | 21:03 | 37 | 07:51 (34) | 19:46 | | | 18:30 | 16:26 | 28 | 09:53 (42) | 16:04 | 35 | 10:16 (41) |
| 19 | 05:18 | | 20:39 (31) | 06:13 | | 07:14 (34) | 07:12 | | 07:43 (14) | 08:10 | 08:13 | | 09:25 (42) | 08:57 | | 09:42 (42) |
| | 22:01 | 4 | 20:43 (31) | 21:01 | 37 | 07:51 (34) | 19:43 | 4 | 07:47 (14) | 18:27 | 16:24 | 28 | 09:53 (42) | 16:04 | 35 | 10:17 (41) |
| 20 | 05:19 | | 06:35 (4) | 06:15 | | 07:14 (34) | 07:14 | | 07:41 (14) | 08:12 | 08:15 | | 09:25 (42) | 08:58 | | 09:42 (42) |
| | 22:00 | 12 | 20:46 (31) | 20:59 | 37 | 07:51 (34) | 19:41 | 8 | 07:49 (14) | 18:25 | 16:23 | 29 | 09:54 (42) | 16:04 | 34 | 10:16 (41) |
| 21 | 05:21 | | 06:35 (4) | 06:17 | | 07:14 (34) | 07:15 | | 07:43 (14) | 08:14 | 08:17 | | 09:24 (42) | 08:58 | | 09:43 (42) |
| | 21:59 | 18 | 20:48 (31) | 20:56 | 37 | 07:51 (34) | 19:38 | 7 | 07:50 (14) | 18:22 | 16:22 | 30 | 09:54 (42) | 16:05 | 34 | 10:17 (41) |
| 22 | 05:22 | | 06:33 (4) | 06:19 | | 07:14 (34) | 07:17 | | 07:45 (14) | 08:16 | 08:19 | | 09:24 (42) | 08:59 | | 09:43 (42) |
| | 21:57 | 24 | 20:49 (31) | 20:54 | 36 | 07:50 (34) | 19:35 | 5 | 07:50 (14) | 18:20 | 16:20 | 30 | 09:54 (42) | 16:05 | 34 | 10:17 (41) |
| 23 | 05:24 | | 06:33 (4) | 06:21 | | 07:14 (34) | 07:19 | | 07:47 (14) | 08:18 | 08:21 | | 09:26 (42) | 08:59 | | 09:44 (42) |
| | 21:55 | 31 | 20:50 (31) | 20:52 | 35 | 07:49 (34) | 19:33 | 2 | 07:49 (14) | 18:18 | 16:19 | 30 | 09:56 (42) | 16:06 | 34 | 10:18 (41) |
| 24 | 05:26 | | 06:34 (4) | 06:23 | | 07:14 (34) | 07:21 | | | 08:20 | 08:23 | | 09:26 (42) | 09:00 | | 09:44 (42) |
| | 21:54 | 33 | 20:51 (31) | 20:49 | 35 | 07:49 (34) | 19:30 | | | 18:15 | 16:17 | 30 | 09:56 (42) | 16:06 | 34 | 10:18 (41) |
| 25 | 05:27 | | 06:37 (4) | 06:24 | | 07:15 (34) | 07:23 | | | 07:22 | 08:25 | | 09:26 (42) | 09:00 | | 09:44 (42) |
| | 21:52 | 33 | 20:52 (31) | 20:47 | 33 | 07:48 (34) | 19:28 | | | 17:13 | 16:16 | 30 | 09:56 (42) | 16:07 | 35 | 10:19 (41) |
| 26 | 05:29 | | 06:41 (4) | 06:26 | | 07:16 (34) | 07:25 | | | 07:24 | 08:26 | | 09:26 (42) | 09:00 | | 09:44 (42) |
| | 21:51 | 30 | 20:52 (31) | 20:44 | 31 | 07:47 (34) | 19:25 | | | 17:11 | 16:15 | 30 | 09:56 (42) | 16:08 | 35 | 10:19 (41) |
| 27 | 05:31 | | 20:30 (31) | 06:28 | | 07:16 (34) | 07:27 | | | 07:26 | 08:28 | | 09:27 (42) | 09:01 | | 09:44 (42) |
| | 21:49 | 23 | 20:53 (31) | 20:42 | 29 | 07:45 (34) | 19:22 | | | 17:09 | 16:14 | 29 | 09:56 (42) | 16:09 | 35 | 10:19 (41) |
| 28 | 05:33 | | 20:29 (31) | 06:30 | | 07:17 (34) | 07:29 | | | 07:28 | 08:30 | | 09:27 (42) | 09:01 | | 09:45 (42) |
| | 21:47 | 24 | 20:53 (31) | 20:39 | 27 | 07:44 (34) | 19:20 | | | 17:06 | 16:13 | 30 | 09:57 (42) | 16:09 | 35 | 10:20 (41) |
| 29 | 05:34 | | 20:29 (31) | 06:32 | | 07:18 (34) | 07:31 | | | 07:30 | 08:32 | | 09:28 (42) | 09:01 | | 09:45 (42) |
| | 21:45 | 24 | 20:53 (31) | 20:37 | 24 | 07:42 (34) | 19:17 | | | 17:04 | 16:12 | 29 | 09:57 (42) | 16:10 | 35 | 10:20 (41) |
| 30 | 05:36 | | 20:29 (31) | 06:34 | | 07:20 (34) | 07:33 | | | 07:32 | 08:33 | | 09:28 (42) | 09:01 | | 09:45 (42) |
| | 21:44 | 25 | 20:54 (31) | 20:34 | 20 | 07:40 (34) | 19:15 | | | 17:02 | 16:11 | 32 | 10:00 (41) | 16:11 | 36 | 10:21 (41) |
| 31 | 05:38 | | 20:29 (31) | 06:36 | | 07:22 (34) | | | | 07:35 | | | | 09:01 | | 09:45 (42) |
| | 21:42 | 25 | 20:54 (31) | 20:32 | 15 | 07:37 (34) | | | | 17:00 | | | | 16:12 | 36 | 10:21 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 306 | | | 1030 | | | 65 | | | | 540 | | | 1093 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,97 | | | 1,00 | | | | 0,61 | | | 0,58 | |
| Total reduction | | 0,40 | | | 0,45 | | | 0,35 | | | | 0,09 | | | 0,07 | |
| Total, real | | 123 | | | 465 | | | 23 | | | | 47 | | | 77 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 10:05 (42) | 08:28 | 07:27 | | 07:08 | | 05:55 | 07:01 (34) | 05:02 |
| | 16:14 32 | 10:37 (42) | 17:08 | 18:07 | | 20:10 | | 21:09 64 | 20:36 (31) | 22:02 |
| 2 | 09:01 | 10:05 (42) | 08:26 | 07:24 | | 07:05 | 07:30 (12) | 05:53 | 07:00 (34) | 05:01 |
| | 16:15 32 | 10:37 (42) | 17:10 | 18:09 | | 20:11 7 | 19:44 (3) | 21:11 66 | 20:36 (31) | 22:04 |
| 3 | 09:00 | 10:06 (42) | 08:24 | 07:22 | | 07:03 | 07:27 (12) | 05:51 | 07:00 (34) | 05:00 |
| | 16:16 32 | 10:38 (42) | 17:12 | 18:11 | | 20:13 12 | 19:46 (3) | 21:13 67 | 20:37 (31) | 22:05 |
| 4 | 09:00 | 10:05 (42) | 08:22 | 07:19 | | 07:00 | 07:25 (12) | 05:48 | 07:00 (34) | 04:59 |
| | 16:17 33 | 10:38 (42) | 17:14 | 18:13 | | 20:15 16 | 19:48 (3) | 21:14 68 | 20:37 (31) | 22:06 |
| 5 | 09:00 | 10:05 (42) | 08:20 | 07:17 | | 06:58 | 07:22 (12) | 05:46 | 07:00 (34) | 04:58 |
| | 16:19 33 | 10:38 (42) | 17:17 | 18:16 | | 20:17 19 | 19:49 (3) | 21:16 68 | 20:37 (31) | 22:07 |
| 6 | 08:59 | 10:06 (42) | 08:18 | 07:14 | | 06:55 | 07:21 (12) | 05:44 | 07:00 (34) | 04:57 |
| | 16:20 33 | 10:39 (42) | 17:19 | 18:18 | | 20:19 22 | 19:52 (3) | 21:18 67 | 20:36 (31) | 22:08 |
| 7 | 08:59 | 10:07 (42) | 08:16 | 07:12 | | 06:53 | 07:22 (12) | 05:42 | 07:00 (34) | 04:56 |
| | 16:22 32 | 10:39 (42) | 17:21 | 18:20 | | 20:21 19 | 19:53 (3) | 21:20 66 | 20:36 (31) | 22:10 |
| 8 | 08:58 | 10:07 (42) | 08:14 | 07:09 | | 06:50 | 19:40 (3) | 05:40 | 07:00 (34) | 04:56 |
| | 16:23 33 | 10:40 (42) | 17:23 | 18:22 | | 20:23 14 | 19:54 (3) | 21:22 65 | 20:35 (31) | 22:11 |
| 9 | 08:57 | 10:07 (42) | 08:12 | 07:07 | | 06:48 | 19:40 (3) | 05:38 | 07:00 (34) | 04:55 |
| | 16:25 33 | 10:40 (42) | 17:25 | 18:24 | | 20:25 13 | 19:53 (3) | 21:24 63 | 20:35 (31) | 22:12 |
| 10 | 08:57 | 10:08 (42) | 08:10 | 07:04 | | 06:45 | 19:40 (3) | 05:36 | 07:00 (34) | 04:54 |
| | 16:26 32 | 10:40 (42) | 17:27 | 18:26 | | 20:27 12 | 19:52 (3) | 21:26 61 | 20:34 (31) | 22:12 |
| 11 | 08:56 | 10:08 (42) | 08:08 | 07:02 | | 06:42 | 19:40 (3) | 05:34 | 07:00 (34) | 04:54 |
| | 16:28 33 | 10:41 (42) | 17:29 | 18:28 | | 20:29 11 | 19:51 (3) | 21:28 59 | 20:33 (31) | 22:13 |
| 12 | 08:55 | 10:09 (42) | 08:06 | 06:59 | | 06:40 | 19:40 (3) | 05:32 | 07:01 (34) | 04:53 |
| | 16:29 32 | 10:41 (42) | 17:31 | 18:30 | | 20:31 10 | 19:50 (3) | 21:30 55 | 20:32 (31) | 22:14 |
| 13 | 08:54 | 10:09 (42) | 08:04 | 06:57 | | 06:37 | 19:40 (3) | 05:30 | 07:02 (34) | 04:53 |
| | 16:31 33 | 10:42 (42) | 17:34 | 18:32 | | 20:33 8 | 19:48 (3) | 21:32 51 | 20:31 (31) | 22:15 |
| 14 | 08:53 | 10:10 (42) | 08:01 | 06:54 | | 06:35 | 19:40 (3) | 05:28 | 07:02 (34) | 04:53 |
| | 16:33 32 | 10:42 (42) | 17:36 | 18:34 | | 20:35 7 | 19:47 (3) | 21:33 45 | 20:28 (31) | 22:16 |
| 15 | 08:52 | 10:11 (42) | 07:59 | 06:52 | | 06:33 | 19:40 (3) | 05:27 | 07:03 (34) | 04:52 |
| | 16:35 31 | 10:42 (42) | 17:38 | 18:36 | | 20:37 3 | 19:43 (3) | 21:35 37 | 07:40 (34) | 22:16 |
| 16 | 08:51 | 10:11 (42) | 07:57 | 06:49 | | 06:30 | | 05:25 | 07:04 (34) | 04:52 |
| | 16:36 31 | 10:42 (42) | 17:40 | 18:38 | | 20:39 | | 21:37 35 | 07:39 (34) | 22:17 |
| 17 | 08:50 | 10:12 (42) | 07:55 | 06:46 | | 06:28 | 07:21 (34) | 05:23 | 07:05 (34) | 04:52 |
| | 16:38 30 | 10:42 (42) | 17:42 | 18:40 | | 20:41 10 | 07:31 (34) | 21:39 33 | 07:38 (34) | 22:17 |
| 18 | 08:49 | 10:12 (42) | 07:53 | 06:44 | | 06:25 | 07:16 (34) | 05:21 | 07:05 (34) | 04:52 |
| | 16:40 30 | 10:42 (42) | 17:44 | 18:42 | | 20:43 18 | 07:34 (34) | 21:40 32 | 07:37 (34) | 22:18 |
| 19 | 08:48 | 10:13 (42) | 07:50 | 06:41 | | 06:23 | 07:13 (34) | 05:20 | 07:06 (34) | 04:52 |
| | 16:42 29 | 10:42 (42) | 17:46 | 18:44 | | 20:45 24 | 07:37 (34) | 21:42 29 | 07:35 (34) | 22:18 |
| 20 | 08:46 | 10:13 (42) | 07:48 | 06:39 | 07:03 (14) | 06:20 | 07:11 (34) | 05:18 | 07:07 (34) | 04:52 |
| | 16:44 28 | 10:41 (42) | 17:48 | 18:46 3 | 07:06 (14) | 20:47 28 | 07:39 (34) | 21:44 28 | 07:35 (34) | 22:19 |
| 21 | 08:45 | 10:15 (42) | 07:46 | 06:36 | 07:01 (14) | 06:18 | 07:09 (34) | 05:16 | 07:09 (34) | 04:52 |
| | 16:46 26 | 10:41 (42) | 17:51 | 18:48 5 | 07:06 (14) | 20:49 31 | 07:40 (34) | 21:46 25 | 07:34 (34) | 22:19 |
| 22 | 08:44 | 10:15 (42) | 07:43 | 06:34 | 06:58 (14) | 06:16 | 07:07 (34) | 05:15 | 07:09 (34) | 04:52 |
| | 16:48 26 | 10:41 (42) | 17:53 | 18:50 7 | 07:05 (14) | 20:51 34 | 07:41 (34) | 21:47 23 | 07:32 (34) | 22:19 |
| 23 | 08:42 | 10:17 (42) | 07:41 | 06:31 | 06:55 (14) | 06:13 | 07:06 (34) | 05:13 | 07:11 (34) | 04:53 |
| | 16:50 24 | 10:41 (42) | 17:55 | 18:52 9 | 07:04 (14) | 20:53 36 | 07:42 (34) | 21:49 20 | 07:31 (34) | 22:19 |
| 24 | 08:41 | 10:18 (42) | 07:39 | 06:28 | 06:55 (14) | 06:11 | 07:05 (34) | 05:12 | 07:13 (34) | 04:53 |
| | 16:52 21 | 10:39 (42) | 17:57 | 18:54 8 | 07:03 (14) | 20:55 38 | 07:43 (34) | 21:51 16 | 07:29 (34) | 22:19 |
| 25 | 08:39 | 10:20 (42) | 07:36 | 06:26 | | 06:09 | 07:03 (34) | 05:10 | 07:15 (34) | 04:53 |
| | 16:54 18 | 10:38 (42) | 17:59 | 18:56 | | 20:57 40 | 07:43 (34) | 21:52 11 | 07:26 (34) | 22:19 |
| 26 | 08:38 | 10:21 (42) | 07:34 | 06:23 | | 06:06 | 07:03 (34) | 05:09 | | 04:54 |
| | 16:56 15 | 10:36 (42) | 18:01 | 18:58 | | 20:59 46 | 20:28 (31) | 21:54 | | 22:19 |
| 27 | 08:36 | 10:25 (42) | 07:31 | 06:21 | | 06:04 | 07:02 (34) | 05:08 | | 04:54 |
| | 16:58 9 | 10:34 (42) | 18:03 | 19:00 | | 21:01 52 | 20:30 (31) | 21:55 | | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | | 06:02 | 07:02 (34) | 05:06 | | 04:55 |
| | 17:00 | | 18:05 | 19:02 | | 21:03 57 | 20:32 (31) | 21:57 | | 22:19 |
| 29 | 08:33 | | | 07:16 | | 05:59 | 07:01 (34) | 05:05 | | 04:55 |
| | 17:02 | | | 20:04 | | 21:05 61 | 20:34 (31) | 21:58 | | 22:19 |
| 30 | 08:31 | | | 07:13 | | 05:57 | 07:01 (34) | 05:04 | | 04:56 |
| | 17:04 | | | 20:06 | | 21:07 64 | 20:36 (31) | 22:00 | | 22:18 |
| 31 | 08:29 | | | 07:10 | | | | 05:03 | | |
| | 17:06 | | | 20:08 | | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | | 520 |
| Total, worst case | | 773 | | | 32 | | 712 | | 1154 | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | 0,52 | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,53 | | | 1,00 | | 0,98 | | 0,97 | |
| Total reduction | | 0,08 | | | 0,30 | | 0,34 | | 0,45 | |
| Total, real | | 66 | | | 10 | | 246 | | 518 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:12 (34) | 06:38 | | | 07:35 | 07:37 | | | 08:35 | | 09:50 (42) |
| | 22:18 | | | 21:40 | 55 | 20:43 (31) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 33 | 10:23 (42) |
| 2 | 04:57 | | | 05:41 | | 07:10 (34) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:51 (42) |
| | 22:18 | | | 21:38 | 59 | 20:43 (31) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 32 | 10:23 (42) |
| 3 | 04:58 | | | 05:43 | | 07:10 (34) | 06:42 | | | 07:38 | 07:41 | | | 08:38 | | 09:51 (42) |
| | 22:17 | | | 21:36 | 62 | 20:44 (31) | 20:24 | | | 19:07 | 16:54 | | | 16:08 | 33 | 10:24 (42) |
| 4 | 04:59 | | | 05:45 | | 07:10 (34) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:51 (42) |
| | 22:17 | | | 21:34 | 64 | 20:45 (31) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 33 | 10:24 (42) |
| 5 | 05:00 | | | 05:47 | | 07:10 (34) | 06:45 | | 07:19 (12) | 07:42 | 07:45 | | | 08:41 | | 09:52 (42) |
| | 22:16 | | | 21:32 | 65 | 20:46 (31) | 20:19 | 6 | 07:25 (12) | 19:02 | 16:49 | | | 16:07 | 32 | 10:24 (42) |
| 6 | 05:01 | | | 05:49 | | 07:09 (34) | 06:47 | | 07:16 (12) | 07:44 | 07:47 | | | 08:43 | | 09:53 (42) |
| | 22:15 | | | 21:30 | 66 | 20:45 (31) | 20:17 | 10 | 07:26 (12) | 18:59 | 16:47 | | | 16:06 | 32 | 10:25 (42) |
| 7 | 05:02 | | | 05:51 | | 07:09 (34) | 06:49 | | 07:17 (12) | 07:46 | 07:49 | | | 08:44 | | 09:53 (42) |
| | 22:15 | | | 21:28 | 67 | 20:46 (31) | 20:14 | 10 | 07:27 (12) | 18:57 | 16:45 | | | 16:06 | 32 | 10:25 (42) |
| 8 | 05:03 | | | 05:52 | | 07:09 (34) | 06:51 | | 07:19 (12) | 07:48 | 07:51 | | | 08:46 | | 09:54 (42) |
| | 22:14 | | | 21:26 | 67 | 20:46 (31) | 20:12 | 8 | 07:27 (12) | 18:54 | 16:43 | | | 16:05 | 32 | 10:26 (42) |
| 9 | 05:04 | | | 05:54 | | 07:08 (34) | 06:53 | | 07:21 (12) | 07:50 | 07:53 | | | 08:47 | | 09:54 (42) |
| | 22:13 | | | 21:24 | 68 | 20:45 (31) | 20:09 | 6 | 07:27 (12) | 18:52 | 16:42 | | | 16:05 | 32 | 10:26 (42) |
| 10 | 05:06 | | | 05:56 | | 07:09 (34) | 06:55 | | 07:23 (12) | 07:52 | 07:55 | | | 08:48 | | 09:54 (42) |
| | 22:12 | | | 21:21 | 67 | 20:45 (31) | 20:06 | 3 | 07:26 (12) | 18:49 | 16:40 | | | 16:04 | 32 | 10:26 (42) |
| 11 | 05:07 | | | 05:58 | | 07:09 (34) | 06:57 | | | 07:54 | 07:57 | | | 08:49 | | 09:55 (42) |
| | 22:11 | | | 21:19 | 66 | 20:45 (31) | 20:04 | | | 18:47 | 16:38 | | | 16:04 | 32 | 10:27 (42) |
| 12 | 05:08 | | | 06:00 | | 07:09 (34) | 06:59 | | | 07:56 | 07:59 | | | 08:51 | | 09:55 (42) |
| | 22:10 | | | 21:17 | 65 | 20:44 (31) | 20:01 | | | 18:44 | 16:36 | | | 16:04 | 32 | 10:27 (41) |
| 13 | 05:09 | | | 06:02 | | 07:08 (34) | 07:00 | | | 07:58 | 08:01 | | | 08:52 | | 09:56 (42) |
| | 22:09 | | | 21:15 | 64 | 20:43 (31) | 19:59 | | | 18:42 | 16:34 | | | 16:04 | 32 | 10:28 (41) |
| 14 | 05:11 | | | 06:04 | | 07:09 (34) | 07:02 | | | 08:00 | 08:03 | | | 08:53 | | 09:56 (42) |
| | 22:08 | | | 21:13 | 59 | 20:41 (31) | 19:56 | | | 18:39 | 16:33 | | | 16:04 | 33 | 10:29 (41) |
| 15 | 05:12 | | | 06:05 | | 07:09 (34) | 07:04 | | | 08:02 | 08:05 | | 09:57 (42) | 08:54 | | 09:57 (42) |
| | 22:07 | | | 21:10 | 56 | 20:39 (31) | 19:53 | | | 18:37 | 16:31 | 9 | 10:06 (42) | 16:04 | 32 | 10:29 (41) |
| 16 | 05:13 | | | 06:07 | | 07:10 (34) | 07:06 | | | 08:04 | 08:07 | | 09:54 (42) | 08:55 | | 09:57 (42) |
| | 22:05 | | | 21:08 | 51 | 20:37 (31) | 19:51 | | | 18:34 | 16:29 | 15 | 10:09 (42) | 16:04 | 33 | 10:30 (41) |
| 17 | 05:15 | | | 06:09 | | 07:09 (34) | 07:08 | | | 08:06 | 08:09 | | 09:54 (42) | 08:55 | | 09:58 (42) |
| | 22:04 | | | 21:06 | 44 | 20:34 (31) | 19:48 | | | 18:32 | 16:28 | 18 | 10:12 (42) | 16:04 | 33 | 10:31 (41) |
| 18 | 05:16 | | 07:27 (34) | 06:11 | | 07:10 (34) | 07:10 | | | 08:08 | 08:11 | | 09:52 (42) | 08:56 | | 09:59 (42) |
| | 22:03 | 7 | 07:34 (34) | 21:03 | 39 | 07:49 (34) | 19:46 | | | 18:30 | 16:26 | 21 | 10:13 (42) | 16:04 | 33 | 10:32 (41) |
| 19 | 05:18 | | 07:24 (34) | 06:13 | | 07:11 (34) | 07:12 | | 07:42 (14) | 08:10 | 08:13 | | 09:51 (42) | 08:57 | | 09:59 (42) |
| | 22:01 | 14 | 07:38 (34) | 21:01 | 38 | 07:49 (34) | 19:43 | 7 | 07:49 (14) | 18:27 | 16:24 | 24 | 10:15 (42) | 16:04 | 33 | 10:32 (41) |
| 20 | 05:19 | | 07:22 (34) | 06:15 | | 07:12 (34) | 07:14 | | 07:41 (14) | 08:12 | 08:15 | | 09:50 (42) | 08:58 | | 09:59 (42) |
| | 22:00 | 18 | 07:40 (34) | 20:59 | 36 | 07:48 (34) | 19:40 | 9 | 07:50 (14) | 18:25 | 16:23 | 26 | 10:16 (42) | 16:04 | 33 | 10:32 (41) |
| 21 | 05:21 | | 07:21 (34) | 06:17 | | 07:13 (34) | 07:15 | | 07:43 (14) | 08:14 | 08:17 | | 09:50 (42) | 08:58 | | 10:00 (42) |
| | 21:59 | 21 | 07:42 (34) | 20:56 | 33 | 07:46 (34) | 19:38 | 8 | 07:51 (14) | 18:22 | 16:22 | 27 | 10:17 (42) | 16:05 | 33 | 10:33 (41) |
| 22 | 05:22 | | 07:19 (34) | 06:19 | | 07:14 (34) | 07:17 | | 07:45 (14) | 08:16 | 08:19 | | 09:49 (42) | 08:59 | | 10:00 (42) |
| | 21:57 | 24 | 07:43 (34) | 20:54 | 30 | 07:44 (34) | 19:35 | 6 | 07:51 (14) | 18:20 | 16:20 | 28 | 10:17 (42) | 16:05 | 33 | 10:33 (41) |
| 23 | 05:24 | | 07:19 (34) | 06:21 | | 07:15 (34) | 07:19 | | 07:47 (14) | 08:18 | 08:21 | | 09:50 (42) | 08:59 | | 10:01 (42) |
| | 21:55 | 26 | 07:45 (34) | 20:52 | 27 | 07:42 (34) | 19:33 | 3 | 07:50 (14) | 18:18 | 16:19 | 29 | 10:19 (42) | 16:06 | 33 | 10:34 (41) |
| 24 | 05:26 | | 07:17 (34) | 06:23 | | 07:17 (34) | 07:21 | | 07:49 (14) | 08:20 | 08:23 | | 09:50 (42) | 09:00 | | 10:01 (42) |
| | 21:54 | 29 | 07:46 (34) | 20:49 | 23 | 07:40 (34) | 19:30 | 1 | 07:50 (14) | 18:15 | 16:17 | 30 | 10:20 (42) | 16:06 | 33 | 10:34 (41) |
| 25 | 05:27 | | 07:17 (34) | 06:24 | | 07:20 (34) | 07:23 | | | 07:22 | 08:25 | | 09:50 (42) | 09:00 | | 10:01 (42) |
| | 21:52 | 30 | 07:47 (34) | 20:47 | 17 | 07:37 (34) | 19:28 | | | 17:13 | 16:16 | 30 | 10:20 (42) | 16:07 | 33 | 10:34 (41) |
| 26 | 05:29 | | 07:15 (34) | 06:26 | | 07:25 (34) | 07:25 | | | 07:24 | 08:26 | | 09:50 (42) | 09:00 | | 10:02 (42) |
| | 21:51 | 33 | 07:48 (34) | 20:44 | 8 | 07:33 (34) | 19:25 | | | 17:11 | 16:15 | 31 | 10:21 (42) | 16:08 | 33 | 10:35 (41) |
| 27 | 05:31 | | 07:15 (34) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | 09:50 (42) | 09:01 | | 10:02 (42) |
| | 21:49 | 34 | 07:49 (34) | 20:42 | | | 19:22 | | | 17:09 | 16:14 | 31 | 10:21 (42) | 16:09 | 33 | 10:35 (41) |
| 28 | 05:32 | | 07:14 (34) | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | 09:50 (42) | 09:01 | | 10:02 (42) |
| | 21:47 | 35 | 07:49 (34) | 20:39 | | | 19:20 | | | 17:06 | 16:13 | 32 | 10:22 (42) | 16:09 | 33 | 10:35 (41) |
| 29 | 05:34 | | 07:13 (34) | 06:32 | | | 07:31 | | | 07:30 | 08:32 | | 09:50 (42) | 09:01 | | 10:03 (42) |
| | 21:45 | 41 | 20:37 (31) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | 33 | 10:23 (42) | 16:10 | 32 | 10:35 (41) |
| 30 | 05:36 | | 07:13 (34) | 06:34 | | | 07:33 | | | 07:32 | 08:33 | | 09:50 (42) | 09:01 | | 10:03 (42) |
| | 21:43 | 48 | 20:40 (31) | 20:34 | | | 19:15 | | | 17:02 | 16:11 | 32 | 10:22 (42) | 16:11 | 33 | 10:36 (41) |
| 31 | 05:38 | | 07:12 (34) | 06:36 | | | | | | 07:35 | | | | 09:01 | | 10:04 (42) |
| | 21:42 | 53 | 20:41 (31) | 20:32 | | | | | | 17:00 | | | | 16:12 | 32 | 10:36 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 413 | | | 1296 | | | 77 | | | | 416 | | | 1010 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,97 | | | 1,00 | | | | 0,53 | | | 0,52 | |
| Total reduction | | 0,42 | | | 0,45 | | | 0,35 | | | | 0,07 | | | 0,06 | |
| Total, real | | 175 | | | 579 | | | 27 | | | | 31 | | | 63 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:03 (42) | 07:27 | | | 07:08 | | | 05:55 | | 06:31 (34) | 05:02 | | |
| | 16:14 | | | 17:08 | 20 | 09:23 (42) | 18:07 | | | 20:10 | | | 21:09 | 17 | 20:34 (3) | 22:02 | | |
| 2 | 09:01 | | | 08:26 | | 09:02 (42) | 07:24 | | | 07:05 | | | 05:53 | | 06:29 (34) | 05:01 | | |
| | 16:15 | | | 17:10 | 22 | 09:24 (42) | 18:09 | | | 20:12 | | | 21:11 | 20 | 20:34 (3) | 22:04 | | |
| 3 | 09:00 | | | 08:24 | | 09:01 (42) | 07:22 | | | 07:03 | | | 05:51 | | 06:28 (34) | 05:00 | | |
| | 16:16 | | | 17:12 | 25 | 09:26 (42) | 18:11 | | | 20:13 | | | 21:13 | 21 | 06:49 (34) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:01 (42) | 07:19 | | | 07:00 | | | 05:48 | | 06:27 (34) | 04:59 | | |
| | 16:17 | | | 17:14 | 26 | 09:27 (42) | 18:14 | | | 20:15 | | | 21:14 | 23 | 06:50 (34) | 22:06 | | |
| 5 | 09:00 | | 09:35 (41) | 08:20 | | 09:00 (42) | 07:17 | | | 06:58 | | | 05:46 | | 06:26 (34) | 04:58 | | |
| | 16:19 | 2 | 09:37 (41) | 17:17 | 28 | 09:28 (42) | 18:16 | | | 20:17 | | | 21:16 | 25 | 06:51 (34) | 22:07 | | |
| 6 | 08:59 | | 09:35 (41) | 08:18 | | 08:59 (42) | 07:14 | | | 06:55 | | | 05:44 | | 06:25 (34) | 04:57 | | |
| | 16:20 | 4 | 09:39 (41) | 17:19 | 28 | 09:27 (42) | 18:18 | | | 20:19 | | | 21:18 | 26 | 06:51 (34) | 22:08 | | |
| 7 | 08:59 | | 09:34 (41) | 08:16 | | 08:59 (42) | 07:12 | | | 06:53 | | | 05:42 | | 06:24 (34) | 04:56 | | 21:25 (31) |
| | 16:22 | 7 | 09:41 (41) | 17:21 | 29 | 09:28 (42) | 18:20 | | | 20:21 | | | 21:20 | 28 | 06:52 (34) | 22:10 | 2 | 21:27 (31) |
| 8 | 08:58 | | 09:33 (41) | 08:14 | | 08:59 (42) | 07:09 | | | 06:50 | | | 05:40 | | 06:24 (34) | 04:56 | | 21:22 (31) |
| | 16:23 | 9 | 09:42 (41) | 17:23 | 30 | 09:29 (42) | 18:22 | | | 20:23 | | | 21:22 | 28 | 06:52 (34) | 22:11 | 7 | 21:29 (31) |
| 9 | 08:57 | | 09:32 (41) | 08:12 | | 08:59 (42) | 07:07 | | | 06:48 | | | 05:38 | | 06:23 (34) | 04:55 | | 21:22 (31) |
| | 16:25 | 11 | 09:43 (41) | 17:25 | 30 | 09:29 (42) | 18:24 | | | 20:25 | | | 21:24 | 29 | 06:52 (34) | 22:12 | 9 | 21:31 (31) |
| 10 | 08:57 | | 09:31 (41) | 08:10 | | 08:59 (42) | 07:04 | | | 06:45 | | | 05:36 | | 06:23 (34) | 04:54 | | 21:21 (31) |
| | 16:26 | 13 | 09:44 (41) | 17:27 | 30 | 09:29 (42) | 18:26 | | | 20:27 | | | 21:26 | 29 | 06:52 (34) | 22:12 | 11 | 21:32 (31) |
| 11 | 08:56 | | 09:30 (41) | 08:08 | | 08:58 (42) | 07:02 | | | 06:43 | | | 05:34 | | 06:22 (34) | 04:54 | | 21:21 (31) |
| | 16:28 | 15 | 09:45 (41) | 17:29 | 31 | 09:29 (42) | 18:28 | | | 20:29 | | | 21:28 | 30 | 06:52 (34) | 22:13 | 12 | 21:33 (31) |
| 12 | 08:55 | | 09:29 (41) | 08:06 | | 08:59 (42) | 06:59 | | | 06:40 | | | 05:32 | | 06:23 (34) | 04:53 | | 21:21 (31) |
| | 16:29 | 17 | 09:46 (41) | 17:32 | 30 | 09:29 (42) | 18:30 | | | 20:31 | | | 21:30 | 29 | 06:52 (34) | 22:14 | 13 | 21:34 (31) |
| 13 | 08:54 | | 09:28 (41) | 08:04 | | 08:59 (42) | 06:57 | | | 06:38 | | | 05:30 | | 06:23 (34) | 04:53 | | 21:20 (31) |
| | 16:31 | 19 | 09:47 (41) | 17:34 | 30 | 09:29 (42) | 18:32 | | | 20:33 | | | 21:32 | 29 | 06:52 (34) | 22:15 | 14 | 21:34 (31) |
| 14 | 08:53 | | 09:28 (41) | 08:02 | | 09:00 (42) | 06:54 | | | 06:35 | | | 05:28 | | 06:23 (34) | 04:53 | | 21:20 (31) |
| | 16:33 | 20 | 09:48 (41) | 17:36 | 29 | 09:29 (42) | 18:34 | | | 20:35 | | | 21:33 | 29 | 06:52 (34) | 22:16 | 15 | 21:35 (31) |
| 15 | 08:52 | | 09:28 (41) | 07:59 | | 09:00 (42) | 06:52 | | | 06:33 | | | 05:27 | | 06:24 (34) | 04:52 | | 21:20 (31) |
| | 16:35 | 21 | 09:49 (41) | 17:38 | 27 | 09:27 (42) | 18:36 | | | 20:37 | | | 21:35 | 28 | 06:52 (34) | 22:16 | 15 | 21:35 (31) |
| 16 | 08:51 | | 09:28 (41) | 07:57 | | 09:01 (42) | 06:49 | | | 06:30 | | | 05:25 | | 06:23 (34) | 04:52 | | 21:20 (31) |
| | 16:36 | 21 | 09:49 (41) | 17:40 | 26 | 09:27 (42) | 18:38 | | | 20:39 | | | 21:37 | 28 | 06:51 (34) | 22:17 | 16 | 21:36 (31) |
| 17 | 08:50 | | 09:28 (41) | 07:55 | | 09:02 (42) | 06:46 | | | 06:28 | | | 05:23 | | 06:24 (34) | 04:52 | | 21:20 (31) |
| | 16:38 | 22 | 09:50 (41) | 17:42 | 24 | 09:26 (42) | 18:40 | | | 20:41 | | | 21:39 | 27 | 06:51 (34) | 22:17 | 16 | 21:36 (31) |
| 18 | 08:49 | | 09:28 (41) | 07:53 | | 09:03 (42) | 06:44 | | | 06:25 | | | 05:21 | | 06:24 (34) | 04:52 | | 21:20 (31) |
| | 16:40 | 22 | 09:50 (41) | 17:44 | 21 | 09:24 (42) | 18:42 | | | 20:43 | | | 21:41 | 27 | 06:51 (34) | 22:18 | 17 | 21:37 (31) |
| 19 | 08:48 | | 09:28 (41) | 07:50 | | 09:05 (42) | 06:41 | | | 06:23 | | | 05:20 | | 06:25 (34) | 04:52 | | 21:20 (31) |
| | 16:42 | 23 | 09:51 (41) | 17:46 | 18 | 09:23 (42) | 18:44 | | | 20:45 | | | 21:42 | 26 | 06:51 (34) | 22:18 | 17 | 21:37 (31) |
| 20 | 08:46 | | 09:28 (41) | 07:48 | | 09:07 (42) | 06:39 | | | 06:20 | | | 05:18 | | 06:25 (34) | 04:52 | | 21:20 (31) |
| | 16:44 | 23 | 09:51 (41) | 17:49 | 12 | 09:19 (42) | 18:46 | | | 20:47 | | | 21:44 | 24 | 06:49 (34) | 22:19 | 17 | 21:37 (31) |
| 21 | 08:45 | | 09:29 (41) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:27 (34) | 04:52 | | 21:20 (31) |
| | 16:46 | 23 | 09:52 (41) | 17:51 | | | 18:48 | | | 20:49 | | | 21:46 | 22 | 06:49 (34) | 22:19 | 17 | 21:37 (31) |
| 22 | 08:44 | | 09:29 (41) | 07:43 | | | 06:34 | | | 06:16 | | | 05:15 | | 06:27 (34) | 04:52 | | 21:21 (31) |
| | 16:48 | 22 | 09:51 (41) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 21 | 06:48 (34) | 22:19 | 17 | 21:38 (31) |
| 23 | 08:42 | | 09:30 (41) | 07:41 | | | 06:31 | | | 06:13 | | | 05:13 | | 06:28 (34) | 04:53 | | 21:21 (31) |
| | 16:50 | 22 | 09:52 (41) | 17:55 | | | 18:52 | | | 20:53 | | | 21:49 | 19 | 06:47 (34) | 22:19 | 17 | 21:38 (31) |
| 24 | 08:41 | | 09:30 (41) | 07:39 | | | 06:28 | | | 06:11 | | 20:17 (3) | 05:12 | | 06:29 (34) | 04:53 | | 21:21 (31) |
| | 16:52 | 22 | 09:52 (41) | 17:57 | | | 18:54 | | | 20:55 | 8 | 20:25 (3) | 21:51 | 18 | 06:47 (34) | 22:19 | 17 | 21:38 (31) |
| 25 | 08:39 | | 09:31 (41) | 07:36 | | | 06:26 | | | 06:09 | | 20:25 (3) | 05:10 | | 06:30 (34) | 04:53 | | 21:22 (31) |
| | 16:54 | 20 | 09:51 (41) | 17:59 | | | 18:56 | | | 20:57 | 1 | 20:26 (3) | 21:52 | 15 | 06:45 (34) | 22:19 | 16 | 21:38 (31) |
| 26 | 08:38 | | 09:31 (41) | 07:34 | | | 06:23 | | | 06:06 | | | 05:09 | | 06:31 (34) | 04:54 | | 21:22 (31) |
| | 16:56 | 20 | 09:51 (41) | 18:01 | | | 18:58 | | | 20:59 | | | 21:54 | 13 | 06:44 (34) | 22:19 | 16 | 21:38 (31) |
| 27 | 08:36 | | 09:33 (41) | 07:32 | | | 06:21 | | | 06:04 | | 20:29 (3) | 05:08 | | 06:33 (34) | 04:54 | | 21:23 (31) |
| | 16:58 | 18 | 09:51 (41) | 18:03 | | | 19:00 | | | 21:01 | 1 | 20:30 (3) | 21:55 | 9 | 06:42 (34) | 22:19 | 16 | 21:39 (31) |
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| | 17:00 | 16 | 09:50 (41) | 18:05 | | | 19:02 | | | 21:03 | 1 | 20:32 (3) | 21:57 | | | 22:19 | 15 | 21:38 (31) |
| 29 | 08:33 | | 09:11 (42) | | | | 07:16 | | | 05:59 | | 20:32 (3) | 05:05 | | | 04:55 | | 21:24 (31) |
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| 30 | 08:31 | | 09:07 (42) | | | | 07:13 | | | 05:57 | | 06:33 (34) | 05:04 | | | 04:56 | | 21:24 (31) |
| | 17:04 | 21 | 09:47 (41) | | | | 20:06 | | | 21:07 | 13 | 20:34 (3) | 22:00 | | | 22:18 | 13 | 21:37 (31) |
| 31 | 08:29 | | 09:05 (42) | | | | 07:10 | | | | | | 05:03 | | | | | |
| | 17:06 | 16 | 09:21 (42) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 465 | | | 516 | | | | | | 25 | | | 640 | | | 339 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,79 | | | | | | 0,94 | | | 0,93 | | | 0,80 | |
| Total reduction | | 0,12 | | | 0,19 | | | | | | 0,35 | | | 0,46 | | | 0,37 | |
| Total, real | | 55 | | | 95 | | | | | | 9 | | | 295 | | | 125 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:25 (31) | 05:40 | | 06:34 (34) | 06:38 | 07:35 | | | 07:37 | | 08:29 (42) | 08:35 | | 09:12 (41) |
| | 22:18 | 12 | 21:37 (31) | 21:40 | 29 | 07:03 (34) | 20:29 | 19:12 | | | 16:58 | 30 | 08:59 (42) | 16:10 | 15 | 09:27 (41) |
| 2 | 04:58 | | 21:26 (31) | 05:41 | | 06:33 (34) | 06:40 | 07:37 | | | 07:39 | | 08:28 (42) | 08:37 | | 09:14 (41) |
| | 22:18 | 11 | 21:37 (31) | 21:38 | 29 | 07:02 (34) | 20:27 | 19:10 | | | 16:56 | 31 | 08:59 (42) | 16:09 | 13 | 09:27 (41) |
| 3 | 04:58 | | 21:27 (31) | 05:43 | | 06:33 (34) | 06:42 | 07:38 | | | 07:41 | | 08:28 (42) | 08:38 | | 09:16 (41) |
| | 22:17 | 10 | 21:37 (31) | 21:36 | 29 | 07:02 (34) | 20:24 | 19:07 | | | 16:54 | 30 | 08:58 (42) | 16:08 | 11 | 09:27 (41) |
| 4 | 04:59 | | 21:27 (31) | 05:45 | | 06:34 (34) | 06:43 | 07:40 | | | 07:43 | | 08:28 (42) | 08:40 | | 09:17 (41) |
| | 22:17 | 8 | 21:35 (31) | 21:34 | 28 | 07:02 (34) | 20:22 | 19:04 | | | 16:51 | 30 | 08:58 (42) | 16:07 | 9 | 09:26 (41) |
| 5 | 05:00 | | 21:29 (31) | 05:47 | | 06:34 (34) | 06:45 | 07:42 | | | 07:45 | | 08:30 (42) | 08:41 | | 09:19 (41) |
| | 22:16 | 5 | 21:34 (31) | 21:32 | 28 | 07:02 (34) | 20:19 | 19:02 | | | 16:49 | 28 | 08:58 (42) | 16:07 | 7 | 09:26 (41) |
| 6 | 05:01 | | | 05:49 | | 06:34 (34) | 06:47 | 07:44 | | | 07:47 | | 08:30 (42) | 08:43 | | 09:21 (41) |
| | 22:15 | | | 21:30 | 27 | 07:01 (34) | 20:17 | 18:59 | | | 16:47 | 27 | 08:57 (42) | 16:06 | 5 | 09:26 (41) |
| 7 | 05:02 | | | 05:51 | | 06:35 (34) | 06:49 | 07:46 | | | 07:49 | | 08:31 (42) | 08:44 | | 09:22 (41) |
| | 22:15 | | | 21:28 | 26 | 07:01 (34) | 20:14 | 18:57 | | | 16:45 | 25 | 08:56 (42) | 16:06 | 2 | 09:24 (41) |
| 8 | 05:03 | | | 05:52 | | 06:35 (34) | 06:51 | 07:48 | | | 07:51 | | 08:31 (42) | 08:46 | | |
| | 22:14 | | | 21:26 | 25 | 07:00 (34) | 20:12 | 18:54 | | | 16:44 | 24 | 08:55 (42) | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 06:35 (34) | 06:53 | 07:50 | | | 07:53 | | 08:33 (42) | 08:47 | | |
| | 22:13 | | | 21:24 | 24 | 20:43 (3) | 20:09 | 18:52 | | | 16:42 | 22 | 08:55 (42) | 16:05 | | |
| 10 | 05:06 | | | 05:56 | | 06:37 (34) | 06:55 | 07:52 | | | 07:55 | | 08:34 (42) | 08:48 | | |
| | 22:12 | | | 21:21 | 22 | 20:43 (3) | 20:06 | 18:49 | | | 16:40 | 20 | 08:54 (42) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 06:38 (34) | 06:57 | 07:54 | | | 07:57 | | 08:36 (42) | 08:49 | | |
| | 22:11 | | | 21:19 | 19 | 20:43 (3) | 20:04 | 18:47 | | | 16:38 | 16 | 08:52 (42) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 06:40 (34) | 06:59 | 07:56 | | | 07:59 | | 08:38 (42) | 08:51 | | |
| | 22:10 | | | 21:17 | 17 | 20:43 (3) | 20:01 | 18:44 | | | 16:36 | 20 | 09:18 (41) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 06:42 (34) | 07:00 | 07:58 | | | 08:01 | | 09:08 (41) | 08:52 | | |
| | 22:09 | | | 21:15 | 10 | 20:41 (3) | 19:59 | 18:42 | | | 16:34 | 13 | 09:21 (41) | 16:04 | | |
| 14 | 05:11 | | | 06:04 | | 20:39 (3) | 07:02 | 08:00 | | | 08:03 | | 09:06 (41) | 08:53 | | |
| | 22:08 | | | 21:13 | 2 | 20:41 (3) | 19:56 | 18:39 | | | 16:33 | 16 | 09:22 (41) | 16:04 | | |
| 15 | 05:12 | | | 06:06 | | 20:38 (3) | 07:04 | 08:02 | | | 08:05 | | 09:05 (41) | 08:54 | | |
| | 22:07 | | | 21:10 | 1 | 20:39 (3) | 19:53 | 18:37 | | | 16:31 | 18 | 09:23 (41) | 16:04 | | |
| 16 | 05:13 | | 06:44 (34) | 06:07 | | | 07:06 | 08:04 | | | 08:07 | | 09:04 (41) | 08:55 | | |
| | 22:05 | 6 | 06:50 (34) | 21:08 | | | 19:51 | 18:34 | | | 16:29 | 20 | 09:24 (41) | 16:04 | | |
| 17 | 05:15 | | 06:42 (34) | 06:09 | | | 07:08 | 08:06 | | | 08:09 | | 09:05 (41) | 08:55 | | |
| | 22:04 | 11 | 06:53 (34) | 21:06 | | | 19:48 | 18:32 | | | 16:28 | 20 | 09:25 (41) | 16:04 | | |
| 18 | 05:16 | | 06:40 (34) | 06:11 | | 20:31 (3) | 07:10 | 08:08 | | | 08:11 | | 09:04 (41) | 08:56 | | |
| | 22:03 | 14 | 06:54 (34) | 21:03 | 1 | 20:32 (3) | 19:46 | 18:30 | | | 16:26 | 22 | 09:26 (41) | 16:04 | | |
| 19 | 05:18 | | 06:39 (34) | 06:13 | | 20:23 (3) | 07:12 | 08:10 | | | 08:13 | | 09:04 (41) | 08:57 | | |
| | 22:01 | 17 | 06:56 (34) | 21:01 | 7 | 20:30 (3) | 19:43 | 18:27 | | | 16:24 | 22 | 09:26 (41) | 16:04 | | |
| 20 | 05:19 | | 06:38 (34) | 06:15 | | | 07:14 | 08:12 | | | 08:15 | | 09:04 (41) | 08:58 | | |
| | 22:00 | 19 | 06:57 (34) | 20:59 | | | 19:41 | 18:25 | | | 16:23 | 22 | 09:26 (41) | 16:04 | | |
| 21 | 05:21 | | 06:38 (34) | 06:17 | | | 07:16 | 08:14 | | 09:41 (42) | 08:17 | | 09:04 (41) | 08:58 | | |
| | 21:59 | 20 | 06:58 (34) | 20:56 | | | 19:38 | 18:22 | 6 | 09:47 (42) | 16:22 | 23 | 09:27 (41) | 16:05 | | |
| 22 | 05:23 | | 06:37 (34) | 06:19 | | | 07:17 | 08:16 | | 09:36 (42) | 08:19 | | 09:04 (41) | 08:59 | | |
| | 21:57 | 22 | 06:59 (34) | 20:54 | | | 19:35 | 18:20 | 15 | 09:51 (42) | 16:20 | 23 | 09:27 (41) | 16:05 | | |
| 23 | 05:24 | | 06:37 (34) | 06:21 | | | 07:19 | 08:18 | | 09:35 (42) | 08:21 | | 09:05 (41) | 08:59 | | |
| | 21:55 | 23 | 07:00 (34) | 20:52 | | | 19:33 | 18:18 | 19 | 09:54 (42) | 16:19 | 23 | 09:28 (41) | 16:06 | | |
| 24 | 05:26 | | 06:36 (34) | 06:23 | | | 07:21 | 08:20 | | 09:33 (42) | 08:23 | | 09:06 (41) | 09:00 | | |
| | 21:54 | 24 | 07:00 (34) | 20:49 | | | 19:30 | 18:15 | 22 | 09:55 (42) | 16:18 | 22 | 09:28 (41) | 16:06 | | |
| 25 | 05:27 | | 06:36 (34) | 06:24 | | | 07:23 | 07:22 | | 08:32 (42) | 08:25 | | 09:06 (41) | 09:00 | | |
| | 21:52 | 25 | 07:01 (34) | 20:47 | | | 19:28 | 17:13 | 24 | 08:56 (42) | 16:16 | 22 | 09:28 (41) | 16:07 | | |
| 26 | 05:29 | | 06:35 (34) | 06:26 | | | 07:25 | 07:24 | | 08:30 (42) | 08:26 | | 09:07 (41) | 09:00 | | |
| | 21:51 | 26 | 07:01 (34) | 20:44 | | | 19:25 | 17:11 | 27 | 08:57 (42) | 16:15 | 21 | 09:28 (41) | 16:08 | | |
| 27 | 05:31 | | 06:35 (34) | 06:28 | | | 07:27 | 07:26 | | 08:29 (42) | 08:28 | | 09:07 (41) | 09:01 | | |
| | 21:49 | 27 | 07:02 (34) | 20:42 | | | 19:22 | 17:09 | 28 | 08:57 (42) | 16:14 | 21 | 09:28 (41) | 16:09 | | |
| 28 | 05:33 | | 06:34 (34) | 06:30 | | | 07:29 | 07:28 | | 08:29 (42) | 08:30 | | 09:08 (41) | 09:01 | | |
| | 21:47 | 28 | 07:02 (34) | 20:39 | | | 19:20 | 17:06 | 29 | 08:58 (42) | 16:13 | 20 | 09:28 (41) | 16:09 | | |
| 29 | 05:34 | | 06:34 (34) | 06:32 | | | 07:31 | 07:30 | | 08:29 (42) | 08:32 | | 09:09 (41) | 09:01 | | |
| | 21:45 | 28 | 07:02 (34) | 20:37 | | | 19:17 | 17:04 | 29 | 08:58 (42) | 16:12 | 19 | 09:28 (41) | 16:10 | | |
| 30 | 05:36 | | 06:34 (34) | 06:34 | | | 07:33 | 07:32 | | 08:28 (42) | 08:33 | | 09:10 (41) | 09:01 | | |
| | 21:44 | 29 | 07:03 (34) | 20:34 | | | 19:15 | 17:02 | 30 | 08:58 (42) | 16:11 | 17 | 09:27 (41) | 16:11 | | |
| 31 | 05:38 | | 06:33 (34) | 06:36 | | | | 07:35 | | 08:28 (42) | | | | 09:01 | | |
| | 21:42 | 29 | 07:02 (34) | 20:32 | | | | 17:00 | 30 | 08:58 (42) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 394 | | | 324 | | | | 259 | | | 667 | | | 62 | |
| Sun reduction | | 0,49 | | | 0,51 | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,93 | | | | 0,79 | | | 0,73 | | | 0,68 | |
| Total reduction | | 0,43 | | | 0,46 | | | | 0,23 | | | 0,11 | | | 0,09 | |
| Total, real | | 168 | | | 149 | | | | 60 | | | 73 | | | 5 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 17:11 (39) | 07:08 | | | 05:55 | | 06:36 (34) | 05:02 | | 05:51 (4) |
| | 16:14 | 17:08 | | | 18:07 | 19 | 17:30 (39) | 20:10 | | | 21:09 | 24 | 07:00 (34) | 22:02 | 1 | 05:52 (4) |
| 2 | 09:01 | 08:26 | | | 07:24 | | 17:12 (39) | 07:05 | | | 05:53 | | 06:36 (34) | 05:01 | | 05:51 (4) |
| | 16:15 | 17:10 | | | 18:09 | 18 | 17:30 (39) | 20:12 | | | 21:11 | 24 | 07:00 (34) | 22:04 | 1 | 05:52 (4) |
| 3 | 09:00 | 08:24 | | | 07:22 | | 17:12 (39) | 07:03 | | | 05:51 | | 06:36 (34) | 05:00 | | 05:52 (4) |
| | 16:16 | 17:12 | | | 18:11 | 17 | 17:29 (39) | 20:13 | | | 21:13 | 28 | 20:38 (3) | 22:05 | 1 | 05:53 (4) |
| 4 | 09:00 | 08:22 | | | 07:19 | | 17:14 (39) | 07:00 | | | 05:48 | | 06:36 (34) | 04:59 | | |
| | 16:18 | 17:14 | | | 18:14 | 14 | 17:28 (39) | 20:15 | | | 21:14 | 29 | 20:41 (3) | 22:06 | | |
| 5 | 09:00 | 08:20 | | | 07:17 | | 17:15 (39) | 06:58 | | | 05:46 | | 06:37 (34) | 04:58 | | 05:51 (4) |
| | 16:19 | 17:17 | | | 18:16 | 10 | 17:25 (39) | 20:17 | | | 21:16 | 26 | 20:42 (3) | 22:07 | 1 | 05:52 (4) |
| 6 | 08:59 | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 06:37 (34) | 04:57 | | 05:51 (4) |
| | 16:20 | 17:19 | | | 18:18 | | | 20:19 | | | 21:18 | 25 | 20:44 (3) | 22:08 | 1 | 05:52 (4) |
| 7 | 08:59 | 08:16 | | 08:46 (42) | 07:12 | | | 06:53 | | | 05:42 | | 06:38 (34) | 04:56 | | |
| | 16:22 | 17:21 | 9 | 08:55 (42) | 18:20 | | | 20:21 | | | 21:20 | 22 | 20:45 (3) | 22:10 | | |
| 8 | 08:58 | 08:14 | | 08:44 (42) | 07:09 | | | 06:50 | | | 05:40 | | 06:39 (34) | 04:56 | | |
| | 16:23 | 17:23 | 14 | 08:58 (42) | 18:22 | | | 20:23 | | | 21:22 | 19 | 20:46 (3) | 22:11 | | |
| 9 | 08:57 | 08:12 | | 08:42 (42) | 07:07 | | | 06:48 | | | 05:38 | | 06:40 (34) | 04:55 | | 05:52 (4) |
| | 16:25 | 17:25 | 18 | 09:00 (42) | 18:24 | | | 20:25 | | | 21:24 | 16 | 20:46 (3) | 22:12 | 1 | 05:53 (4) |
| 10 | 08:57 | 08:10 | | 08:41 (42) | 07:04 | | | 06:45 | | | 05:36 | | 06:41 (34) | 04:54 | | |
| | 16:26 | 17:27 | 21 | 09:02 (42) | 18:26 | | | 20:27 | | | 21:26 | 14 | 20:47 (3) | 22:12 | | |
| 11 | 08:56 | 08:08 | | 08:40 (42) | 07:02 | | | 06:43 | | | 05:34 | | 06:45 (34) | 04:54 | | 05:52 (4) |
| | 16:28 | 17:29 | 22 | 09:02 (42) | 18:28 | | | 20:29 | | | 21:28 | 5 | 20:47 (3) | 22:13 | 1 | 05:53 (4) |
| 12 | 08:55 | 08:06 | | 08:39 (42) | 06:59 | | | 06:40 | | | 05:32 | | 20:46 (3) | 04:53 | | |
| | 16:29 | 17:32 | 24 | 09:03 (42) | 18:30 | | | 20:31 | | | 21:30 | 2 | 20:48 (3) | 22:14 | | |
| 13 | 08:54 | 08:04 | | 08:39 (42) | 06:57 | | | 06:38 | | | 05:30 | | 20:47 (3) | 04:53 | | 05:52 (4) |
| | 16:31 | 17:34 | 25 | 09:04 (42) | 18:32 | | | 20:33 | | | 21:32 | 1 | 20:48 (3) | 22:15 | 1 | 05:53 (4) |
| 14 | 08:53 | 08:02 | | 08:39 (42) | 06:54 | | | 06:35 | | | 05:28 | | 20:47 (3) | 04:53 | | |
| | 16:33 | 17:36 | 26 | 09:05 (42) | 18:34 | | | 20:35 | | | 21:33 | 1 | 20:48 (3) | 22:16 | | |
| 15 | 08:52 | 07:59 | | 08:38 (42) | 06:52 | | | 06:33 | | | 05:27 | | 06:04 (4) | 04:53 | | |
| | 16:35 | 17:38 | 26 | 09:04 (42) | 18:36 | | | 20:37 | | | 21:35 | 8 | 20:49 (3) | 22:16 | | |
| 16 | 08:51 | 07:57 | | 08:38 (42) | 06:49 | | | 06:30 | | | 05:25 | | 06:00 (4) | 04:52 | | |
| | 16:36 | 17:40 | 27 | 09:05 (42) | 18:38 | | | 20:39 | | | 21:37 | 15 | 20:49 (3) | 22:17 | | |
| 17 | 08:50 | 07:55 | | 08:39 (42) | 06:46 | | | 06:28 | | | 05:23 | | 05:59 (4) | 04:52 | | |
| | 16:38 | 17:42 | 26 | 09:05 (42) | 18:40 | | | 20:41 | | | 21:39 | 6 | 06:05 (4) | 22:17 | | |
| 18 | 08:49 | 07:53 | | 08:38 (42) | 06:44 | | | 06:25 | | | 05:21 | | 05:57 (4) | 04:52 | | |
| | 16:40 | 17:44 | 26 | 09:04 (42) | 18:42 | | | 20:43 | | | 21:41 | 6 | 20:49 (3) | 22:18 | | |
| 19 | 08:48 | 07:50 | | 08:39 (42) | 06:41 | | | 06:23 | | | 05:20 | | 05:56 (4) | 04:52 | | |
| | 16:42 | 17:46 | 25 | 09:04 (42) | 18:44 | | | 20:45 | | | 21:42 | 4 | 06:00 (4) | 22:18 | | |
| 20 | 08:46 | 07:48 | | 08:39 (42) | 06:39 | | | 06:20 | | | 05:18 | | 05:55 (4) | 04:52 | | |
| | 16:44 | 17:49 | 24 | 09:03 (42) | 18:46 | | | 20:47 | | | 21:44 | 3 | 05:58 (4) | 22:19 | | |
| 21 | 08:45 | 07:46 | | 08:40 (42) | 06:36 | | | 06:18 | | | 05:16 | | 05:54 (4) | 04:52 | | |
| | 16:46 | 17:51 | 25 | 17:21 (39) | 18:48 | | | 20:49 | | | 21:46 | 4 | 05:58 (4) | 22:19 | | |
| 22 | 08:44 | 07:43 | | 08:42 (42) | 06:34 | | | 06:16 | | 06:46 (34) | 05:15 | | 05:53 (4) | 04:52 | | |
| | 16:48 | 17:53 | 27 | 17:24 (39) | 18:50 | | | 20:51 | 6 | 06:52 (34) | 21:47 | 3 | 05:56 (4) | 22:19 | | |
| 23 | 08:42 | 07:41 | | 08:42 (42) | 06:31 | | | 06:13 | | 06:43 (34) | 05:13 | | 05:53 (4) | 04:53 | | |
| | 16:50 | 17:55 | 29 | 17:26 (39) | 18:52 | | | 20:53 | 12 | 06:55 (34) | 21:49 | 3 | 05:56 (4) | 22:19 | | |
| 24 | 08:41 | 07:39 | | 08:45 (42) | 06:28 | | | 06:11 | | 06:41 (34) | 05:12 | | 05:53 (4) | 04:53 | | |
| | 16:52 | 17:57 | 27 | 17:28 (39) | 18:54 | | | 20:55 | 16 | 06:57 (34) | 21:51 | 2 | 05:55 (4) | 22:19 | | |
| 25 | 08:39 | 07:36 | | 17:12 (39) | 06:26 | | | 06:09 | | 06:40 (34) | 05:10 | | 05:53 (4) | 04:53 | | |
| | 16:54 | 17:59 | 18 | 17:30 (39) | 18:56 | | | 20:57 | 19 | 06:59 (34) | 21:52 | 2 | 05:55 (4) | 22:19 | | |
| 26 | 08:38 | 07:34 | | 17:12 (39) | 06:23 | | | 06:06 | | 06:38 (34) | 05:09 | | 05:52 (4) | 04:54 | | |
| | 16:56 | 18:01 | 20 | 17:32 (39) | 18:58 | | | 20:59 | 21 | 06:59 (34) | 21:54 | 2 | 05:54 (4) | 22:19 | | |
| 27 | 08:36 | 07:32 | | 17:11 (39) | 06:21 | | | 06:04 | | 06:37 (34) | 05:08 | | 05:51 (4) | 04:54 | | |
| | 16:58 | 18:03 | 20 | 17:31 (39) | 19:00 | | | 21:01 | 22 | 06:59 (34) | 21:55 | 2 | 05:53 (4) | 22:19 | | |
| 28 | 08:35 | 07:29 | | 17:11 (39) | 06:18 | | | 06:02 | | 06:37 (34) | 05:06 | | 05:51 (4) | 04:55 | | |
| | 17:00 | 18:05 | 20 | 17:31 (39) | 19:02 | | | 21:03 | 23 | 07:00 (34) | 21:57 | 2 | 05:53 (4) | 22:19 | | |
| 29 | 08:33 | | | | 07:16 | | | 05:59 | | 06:36 (34) | 05:05 | | 05:51 (4) | 04:55 | | |
| | 17:02 | | | | 20:04 | | | 21:05 | 24 | 07:00 (34) | 21:58 | 2 | 05:53 (4) | 22:19 | | |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | | 06:36 (34) | 05:04 | | 05:51 (4) | 04:56 | | |
| | 17:04 | | | | 20:06 | | | 21:07 | 24 | 07:00 (34) | 22:00 | 2 | 05:53 (4) | 22:18 | | |
| 31 | 08:29 | | | | 07:10 | | | | | | 05:03 | | 05:51 (4) | | | |
| | 17:06 | | | | 20:08 | | | | | | 22:01 | 1 | 05:52 (4) | | | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | 499 | | | 78 | | | 167 | | | 303 | | | 8 | |
| Sun reduction | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | 0,86 | | | 0,92 | | | 0,95 | | | 0,93 | | | 0,87 | |
| Total reduction | | | 0,21 | | | 0,31 | | | 0,37 | | | 0,48 | | | 0,41 | |
| Total, real | | | 105 | | | 24 | | | 62 | | | 144 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:56 (3) | 06:38 | 07:35 | | | 07:37 | | 08:11 (42) | 08:35 |
| | 22:18 | | | 21:40 | 2 | 20:58 (3) | 20:29 | 19:12 | | | 16:58 | 20 | 08:31 (42) | 16:10 |
| 2 | 04:58 | | | 05:41 | | 06:53 (34) | 06:40 | 07:37 | | | 07:39 | | 08:12 (42) | 08:37 |
| | 22:18 | | | 21:38 | 9 | 20:57 (3) | 20:27 | 19:10 | | | 16:56 | 18 | 08:30 (42) | 16:09 |
| 3 | 04:58 | | | 05:43 | | 06:51 (34) | 06:42 | 07:38 | | | 07:41 | | 08:14 (42) | 08:38 |
| | 22:17 | | | 21:36 | 15 | 20:57 (3) | 20:24 | 19:07 | | | 16:54 | 14 | 08:28 (42) | 16:08 |
| 4 | 04:59 | | | 05:45 | | 06:50 (34) | 06:43 | 07:40 | | | 07:43 | | 08:16 (42) | 08:40 |
| | 22:17 | | | 21:34 | 17 | 20:56 (3) | 20:22 | 19:04 | | | 16:51 | 8 | 08:24 (42) | 16:08 |
| 5 | 05:00 | | 05:57 (4) | 05:47 | | 06:49 (34) | 06:45 | 07:42 | | | 07:45 | | | 08:41 |
| | 22:16 | 1 | 05:58 (4) | 21:32 | 20 | 20:56 (3) | 20:19 | 19:02 | | | 16:49 | | | 16:07 |
| 6 | 05:01 | | | 05:49 | | 06:47 (34) | 06:47 | 07:44 | | | 07:47 | | | 08:43 |
| | 22:15 | | | 21:30 | 22 | 20:54 (3) | 20:17 | 18:59 | | | 16:47 | | | 16:06 |
| 7 | 05:02 | | | 05:51 | | 06:46 (34) | 06:49 | 07:46 | | | 07:49 | | | 08:44 |
| | 22:15 | | | 21:28 | 25 | 20:53 (3) | 20:14 | 18:57 | | | 16:45 | | | 16:06 |
| 8 | 05:03 | | 05:58 (4) | 05:52 | | 06:46 (34) | 06:51 | 07:48 | | 17:52 (39) | 07:51 | | | 08:46 |
| | 22:14 | 1 | 05:59 (4) | 21:26 | 26 | 20:51 (3) | 20:12 | 18:54 | 7 | 17:59 (39) | 16:44 | | | 16:05 |
| 9 | 05:04 | | 05:58 (4) | 05:54 | | 06:45 (34) | 06:53 | 07:50 | | 17:49 (39) | 07:53 | | | 08:47 |
| | 22:13 | 1 | 05:59 (4) | 21:24 | 29 | 20:48 (3) | 20:09 | 18:52 | 12 | 18:01 (39) | 16:42 | | | 16:05 |
| 10 | 05:06 | | 05:58 (4) | 05:56 | | 06:45 (34) | 06:55 | 07:52 | | 17:47 (39) | 07:55 | | | 08:48 |
| | 22:12 | 1 | 05:59 (4) | 21:21 | 26 | 20:45 (3) | 20:06 | 18:49 | 15 | 18:02 (39) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:59 (4) | 05:58 | | 06:44 (34) | 06:57 | 07:54 | | 17:45 (39) | 07:57 | | | 08:49 |
| | 22:11 | 2 | 06:01 (4) | 21:19 | 24 | 07:08 (34) | 20:04 | 18:47 | 18 | 18:03 (39) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 (4) | 06:00 | | 06:45 (34) | 06:59 | 07:56 | | 17:44 (39) | 07:59 | | | 08:51 |
| | 22:10 | 1 | 06:01 (4) | 21:17 | 24 | 07:09 (34) | 20:01 | 18:44 | 20 | 18:04 (39) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:00 (4) | 06:02 | | 06:44 (34) | 07:00 | 07:58 | | 17:44 (39) | 08:01 | | | 08:52 |
| | 22:09 | 1 | 06:01 (4) | 21:15 | 24 | 07:08 (34) | 19:59 | 18:42 | 20 | 18:04 (39) | 16:34 | | | 16:04 |
| 14 | 05:11 | | 06:00 (4) | 06:04 | | 06:44 (34) | 07:02 | 08:00 | | 17:43 (39) | 08:03 | | | 08:53 |
| | 22:08 | 1 | 06:01 (4) | 21:13 | 23 | 07:07 (34) | 19:56 | 18:39 | 21 | 18:04 (39) | 16:33 | | | 16:04 |
| 15 | 05:12 | | 06:00 (4) | 06:06 | | 06:44 (34) | 07:04 | 08:02 | | 17:43 (39) | 08:05 | | | 08:54 |
| | 22:07 | 1 | 06:01 (4) | 21:10 | 23 | 07:07 (34) | 19:54 | 18:37 | 20 | 18:03 (39) | 16:31 | | | 16:04 |
| 16 | 05:13 | | 06:01 (4) | 06:07 | | 06:45 (34) | 07:06 | 08:04 | | 17:44 (39) | 08:07 | | | 08:55 |
| | 22:05 | 2 | 06:03 (4) | 21:08 | 22 | 07:07 (34) | 19:51 | 18:34 | 20 | 18:04 (39) | 16:29 | | | 16:04 |
| 17 | 05:15 | | 06:01 (4) | 06:09 | | 06:45 (34) | 07:08 | 08:06 | | 09:19 (42) | 08:09 | | | 08:55 |
| | 22:04 | 2 | 06:03 (4) | 21:06 | 20 | 07:05 (34) | 19:48 | 18:32 | 24 | 18:01 (39) | 16:28 | | | 16:04 |
| 18 | 05:16 | | 06:01 (4) | 06:11 | | 06:46 (34) | 07:10 | 08:08 | | 09:15 (42) | 08:11 | | | 08:56 |
| | 22:03 | 2 | 06:03 (4) | 21:03 | 18 | 07:04 (34) | 19:46 | 18:30 | 28 | 17:59 (39) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:02 (4) | 06:13 | | 06:47 (34) | 07:12 | 08:10 | | 09:13 (42) | 08:13 | | | 08:57 |
| | 22:01 | 2 | 06:04 (4) | 21:01 | 16 | 07:03 (34) | 19:43 | 18:27 | 29 | 17:56 (39) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:02 (4) | 06:15 | | 06:49 (34) | 07:14 | 08:12 | | 09:11 (42) | 08:15 | | | 08:58 |
| | 22:00 | 3 | 06:05 (4) | 20:59 | 12 | 07:01 (34) | 19:41 | 18:25 | 28 | 17:54 (39) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:04 (4) | 06:17 | | 06:53 (34) | 07:16 | 08:14 | | 09:10 (42) | 08:17 | | | 08:58 |
| | 21:59 | 2 | 06:06 (4) | 20:56 | 4 | 06:57 (34) | 19:38 | 18:22 | 24 | 17:51 (39) | 16:22 | | | 16:05 |
| 22 | 05:23 | | 06:04 (4) | 06:19 | | | 07:17 | 08:16 | | 09:09 (42) | 08:19 | | | 08:59 |
| | 21:57 | 3 | 06:07 (4) | 20:54 | | | 19:35 | 18:20 | 24 | 09:33 (42) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:05 (4) | 06:21 | | | 07:19 | 08:18 | | 09:09 (42) | 08:21 | | | 08:59 |
| | 21:56 | 3 | 06:08 (4) | 20:52 | | | 19:33 | 18:18 | 25 | 09:34 (42) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:06 (4) | 06:23 | | | 07:21 | 08:20 | | 09:09 (42) | 08:23 | | | 09:00 |
| | 21:54 | 3 | 06:09 (4) | 20:49 | | | 19:30 | 18:15 | 25 | 09:34 (42) | 16:18 | | | 16:06 |
| 25 | 05:27 | | 06:07 (4) | 06:24 | | | 07:23 | 07:22 | | 08:08 (42) | 08:25 | | | 09:00 |
| | 21:52 | 5 | 21:00 (3) | 20:47 | | | 19:28 | 17:13 | 26 | 08:34 (42) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:08 (4) | 06:26 | | | 07:25 | 07:24 | | 08:08 (42) | 08:26 | | | 09:00 |
| | 21:51 | 5 | 06:13 (4) | 20:44 | | | 19:25 | 17:11 | 26 | 08:34 (42) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:10 (4) | 06:28 | | | 07:27 | 07:26 | | 08:08 (42) | 08:28 | | | 09:01 |
| | 21:49 | 9 | 21:00 (3) | 20:42 | | | 19:22 | 17:09 | 26 | 08:34 (42) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 06:12 (4) | 06:30 | | | 07:29 | 07:28 | | 08:09 (42) | 08:30 | | | 09:01 |
| | 21:47 | 12 | 20:59 (3) | 20:39 | | | 19:20 | 17:06 | 25 | 08:34 (42) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 20:58 (3) | 06:32 | | | 07:31 | 07:30 | | 08:09 (42) | 08:32 | | | 09:01 |
| | 21:45 | 1 | 20:59 (3) | 20:37 | | | 19:17 | 17:04 | 24 | 08:33 (42) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 20:58 (3) | 06:34 | | | 07:33 | 07:32 | | 08:09 (42) | 08:33 | | | 09:01 |
| | 21:44 | 1 | 20:59 (3) | 20:34 | | | 19:15 | 17:02 | 23 | 08:32 (42) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 20:57 (3) | 06:36 | | | | 07:35 | | 08:10 (42) | | | | 09:01 |
| | 21:42 | 1 | 20:58 (3) | 20:32 | | | | 17:00 | 21 | 08:31 (42) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 66 | | | 401 | | | | 531 | | | 60 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,87 | | | 0,95 | | | | 0,88 | | | 0,85 | | |
| Total reduction | | 0,42 | | | 0,48 | | | | 0,27 | | | 0,13 | | |
| Total, real | | 28 | | | 194 | | | | 141 | | | 8 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:58 (41) | 08:28 | | 09:43 (40) | 07:27 | 07:08 | | | 05:55 | | 06:32 (13) | 05:02 | | 21:11 (5) |
| | 16:14 | 81 | 13:42 (42) | 17:08 | 98 | 13:57 (42) | 18:07 | 20:09 | | | 21:09 | 6 | 06:38 (13) | 22:02 | 15 | 21:26 (5) |
| 2 | 09:01 | | 12:00 (41) | 08:26 | | 09:44 (40) | 07:24 | 07:05 | | | 05:53 | | 06:20 (12) | 05:01 | | 21:11 (5) |
| | 16:15 | 79 | 13:43 (42) | 17:10 | 94 | 13:56 (42) | 18:09 | 20:11 | | | 21:11 | 2 | 06:22 (12) | 22:04 | 16 | 21:27 (5) |
| 3 | 09:00 | | 12:01 (41) | 08:24 | | 09:45 (40) | 07:22 | 07:03 | | | 05:51 | | 06:18 (12) | 05:00 | | 21:11 (5) |
| | 16:16 | 79 | 13:45 (42) | 17:12 | 93 | 13:56 (42) | 18:11 | 20:13 | | | 21:12 | 6 | 06:24 (12) | 22:05 | 17 | 21:28 (5) |
| 4 | 09:00 | | 09:48 (40) | 08:22 | | 09:46 (40) | 07:19 | 07:00 | | | 05:48 | | 06:16 (12) | 04:59 | | 21:12 (5) |
| | 16:17 | 83 | 13:45 (42) | 17:14 | 90 | 13:56 (42) | 18:13 | 20:15 | | | 21:14 | 8 | 06:24 (12) | 22:06 | 17 | 21:29 (5) |
| 5 | 09:00 | | 09:46 (40) | 08:20 | | 09:47 (40) | 07:17 | 06:58 | | | 05:46 | | 06:14 (12) | 04:58 | | 21:11 (5) |
| | 16:19 | 85 | 13:45 (42) | 17:17 | 87 | 13:56 (42) | 18:16 | 20:17 | | | 21:16 | 11 | 06:25 (12) | 22:07 | 19 | 21:30 (5) |
| 6 | 08:59 | | 09:45 (40) | 08:18 | | 09:48 (40) | 07:14 | 06:55 | | | 05:44 | | 06:12 (12) | 04:57 | | 21:11 (5) |
| | 16:20 | 86 | 13:46 (42) | 17:19 | 82 | 13:54 (42) | 18:18 | 20:19 | | | 21:18 | 13 | 06:25 (12) | 22:08 | 20 | 21:31 (5) |
| 7 | 08:59 | | 09:44 (40) | 08:16 | | 09:50 (40) | 07:12 | 06:53 | | | 05:42 | | 06:10 (12) | 04:56 | | 21:12 (5) |
| | 16:22 | 87 | 13:47 (42) | 17:21 | 77 | 13:54 (42) | 18:20 | 20:21 | | | 21:20 | 15 | 06:25 (12) | 22:09 | 20 | 21:32 (5) |
| 8 | 08:58 | | 09:43 (40) | 08:14 | | 09:52 (40) | 07:09 | 06:50 | | | 05:40 | | 06:08 (12) | 04:56 | | 21:11 (5) |
| | 16:23 | 82 | 13:47 (42) | 17:23 | 71 | 13:53 (42) | 18:22 | 20:23 | | | 21:22 | 17 | 06:25 (12) | 22:10 | 22 | 21:33 (5) |
| 9 | 08:57 | | 09:43 (40) | 08:12 | | 09:56 (40) | 07:07 | 06:47 | | | 05:38 | | 06:07 (12) | 04:55 | | 21:12 (5) |
| | 16:25 | 81 | 13:48 (42) | 17:25 | 62 | 13:52 (42) | 18:24 | 20:25 | | | 21:24 | 18 | 06:25 (12) | 22:11 | 22 | 21:34 (5) |
| 10 | 08:57 | | 09:42 (40) | 08:10 | | 13:00 (42) | 07:04 | 06:45 | | 07:10 (14) | 05:36 | | 06:07 (12) | 04:54 | | 21:12 (5) |
| | 16:26 | 84 | 13:49 (42) | 17:27 | 52 | 13:52 (42) | 18:26 | 20:27 | 1 | 07:11 (14) | 21:26 | 17 | 06:24 (12) | 22:12 | 22 | 21:34 (5) |
| 11 | 08:56 | | 09:42 (40) | 08:08 | | 13:00 (42) | 07:02 | 06:42 | | 07:07 (14) | 05:34 | | 06:07 (12) | 04:54 | | 21:12 (5) |
| | 16:28 | 85 | 13:49 (42) | 17:29 | 50 | 13:50 (42) | 18:28 | 20:29 | 5 | 07:12 (14) | 21:28 | 17 | 06:24 (12) | 22:13 | 23 | 21:35 (5) |
| 12 | 08:55 | | 09:42 (40) | 08:06 | | 13:02 (42) | 06:59 | 06:40 | | 07:05 (14) | 05:32 | | 06:08 (12) | 04:53 | | 21:13 (5) |
| | 16:29 | 87 | 13:50 (42) | 17:31 | 47 | 13:49 (42) | 18:30 | 20:31 | 8 | 07:13 (14) | 21:30 | 16 | 06:24 (12) | 22:14 | 22 | 21:35 (5) |
| 13 | 08:54 | | 09:41 (40) | 08:04 | | 13:04 (42) | 06:57 | 06:37 | | 07:02 (14) | 05:30 | | 06:08 (12) | 04:53 | | 21:12 (5) |
| | 16:31 | 90 | 13:51 (42) | 17:34 | 43 | 13:47 (42) | 18:32 | 20:33 | 11 | 07:13 (14) | 21:31 | 15 | 06:23 (12) | 22:15 | 23 | 21:35 (5) |
| 14 | 08:53 | | 09:41 (40) | 08:01 | | 13:07 (42) | 06:54 | 06:35 | | 07:00 (14) | 05:28 | | 06:09 (12) | 04:53 | | 21:13 (5) |
| | 16:33 | 92 | 13:52 (42) | 17:36 | 39 | 13:46 (42) | 18:34 | 20:35 | 14 | 07:14 (14) | 21:33 | 13 | 06:22 (12) | 22:16 | 22 | 21:35 (5) |
| 15 | 08:52 | | 09:40 (40) | 07:59 | | 13:09 (42) | 06:52 | 06:33 | | 06:57 (14) | 05:27 | | 06:11 (12) | 04:52 | | 21:13 (5) |
| | 16:35 | 92 | 13:51 (42) | 17:38 | 34 | 13:43 (42) | 18:36 | 20:37 | 16 | 07:13 (14) | 21:35 | 10 | 06:21 (12) | 22:16 | 22 | 21:35 (5) |
| 16 | 08:51 | | 09:40 (40) | 07:57 | | 13:12 (42) | 06:49 | 06:30 | | 06:56 (14) | 05:25 | | 06:12 (12) | 04:52 | | 21:13 (5) |
| | 16:36 | 95 | 13:52 (42) | 17:40 | 28 | 13:40 (42) | 18:38 | 20:39 | 17 | 07:13 (14) | 21:37 | 7 | 06:19 (12) | 22:17 | 23 | 21:36 (5) |
| 17 | 08:50 | | 09:41 (40) | 07:55 | | 13:16 (42) | 06:46 | 06:28 | | 06:56 (14) | 05:23 | | | 04:52 | | 21:14 (5) |
| | 16:38 | 95 | 13:53 (42) | 17:42 | 19 | 13:35 (42) | 18:40 | 20:41 | 17 | 07:13 (14) | 21:39 | | | 22:17 | 22 | 21:36 (5) |
| 18 | 08:49 | | 09:40 (40) | 07:53 | | | 06:44 | 06:25 | | 06:56 (14) | 05:21 | | | 04:52 | | 21:14 (5) |
| | 16:40 | 97 | 13:53 (42) | 17:44 | | | 18:42 | 20:43 | 15 | 07:11 (14) | 21:40 | | | 22:18 | 22 | 21:36 (5) |
| 19 | 08:48 | | 09:40 (40) | 07:50 | | | 06:41 | 06:23 | | 06:57 (14) | 05:20 | | | 04:52 | | 21:14 (5) |
| | 16:42 | 98 | 13:54 (42) | 17:46 | | | 18:44 | 20:45 | 13 | 07:10 (14) | 21:42 | | | 22:18 | 22 | 21:36 (5) |
| 20 | 08:46 | | 09:40 (40) | 07:48 | | | 06:39 | 06:20 | | 06:59 (14) | 05:18 | | | 04:52 | | 21:14 (5) |
| | 16:44 | 98 | 13:54 (42) | 17:48 | | | 18:46 | 20:47 | 10 | 07:09 (14) | 21:44 | | | 22:18 | 22 | 21:36 (5) |
| 21 | 08:45 | | 09:40 (40) | 07:46 | | | 06:36 | 06:18 | | 07:01 (14) | 05:16 | | | 04:52 | | 21:14 (5) |
| | 16:46 | 101 | 13:55 (42) | 17:51 | | | 18:48 | 20:49 | 3 | 07:04 (14) | 21:46 | | | 22:19 | 22 | 21:36 (5) |
| 22 | 08:44 | | 09:40 (40) | 07:43 | | | 06:34 | 06:16 | | | 05:15 | | | 04:52 | | 21:15 (5) |
| | 16:48 | 101 | 13:55 (42) | 17:53 | | | 18:50 | 20:51 | | | 21:47 | | | 22:19 | 22 | 21:37 (5) |
| 23 | 08:42 | | 09:40 (40) | 07:41 | | | 06:31 | 06:13 | | 06:39 (13) | 05:13 | | | 04:53 | | 21:15 (5) |
| | 16:50 | 101 | 13:55 (42) | 17:55 | | | 18:52 | 20:53 | 3 | 06:42 (13) | 21:49 | | | 22:19 | 22 | 21:37 (5) |
| 24 | 08:41 | | 09:41 (40) | 07:39 | | | 06:28 | 06:11 | | 06:37 (13) | 05:12 | | | 04:53 | | 21:15 (5) |
| | 16:52 | 101 | 13:56 (42) | 17:57 | | | 18:54 | 20:55 | 6 | 06:43 (13) | 21:51 | | | 22:19 | 22 | 21:37 (5) |
| 25 | 08:39 | | 09:40 (40) | 07:36 | | | 06:26 | 06:08 | | 06:34 (13) | 05:10 | | 21:15 (5) | 04:53 | | 21:16 (5) |
| | 16:54 | 102 | 13:56 (42) | 17:59 | | | 18:56 | 20:57 | 8 | 06:42 (13) | 21:52 | 1 | 21:16 (5) | 22:19 | 22 | 21:38 (5) |
| 26 | 08:38 | | 09:40 (40) | 07:34 | | | 06:23 | 06:06 | | 06:32 (13) | 05:09 | | 21:14 (5) | 04:54 | | 21:15 (5) |
| | 16:56 | 102 | 13:56 (42) | 18:01 | | | 18:58 | 20:59 | 10 | 06:42 (13) | 21:54 | 4 | 21:18 (5) | 22:19 | 23 | 21:38 (5) |
| 27 | 08:36 | | 09:41 (40) | 07:31 | | | 06:21 | 06:04 | | 06:30 (13) | 05:08 | | 21:13 (5) | 04:54 | | 21:16 (5) |
| | 16:58 | 101 | 13:56 (42) | 18:03 | | | 19:00 | 21:01 | 12 | 06:42 (13) | 21:55 | 6 | 21:19 (5) | 22:19 | 23 | 21:39 (5) |
| 28 | 08:34 | | 09:42 (40) | 07:29 | | | 06:18 | 06:02 | | 06:28 (13) | 05:06 | | 21:13 (5) | 04:55 | | 21:16 (5) |
| | 17:00 | 100 | 13:57 (42) | 18:05 | | | 19:02 | 21:03 | 14 | 06:42 (13) | 21:57 | 8 | 21:21 (5) | 22:19 | 22 | 21:38 (5) |
| 29 | 08:33 | | 09:42 (40) | | | | 07:16 | 05:59 | | 06:29 (13) | 05:05 | | 21:12 (5) | 04:55 | | 21:16 (5) |
| | 17:02 | 100 | 13:57 (42) | | | | 20:04 | 21:05 | 12 | 06:41 (13) | 21:58 | 10 | 21:22 (5) | 22:19 | 23 | 21:39 (5) |
| 30 | 08:31 | | 09:42 (40) | | | | 07:13 | 05:57 | | 06:30 (13) | 05:04 | | 21:12 (5) | 04:56 | | 21:16 (5) |
| | 17:04 | 100 | 13:57 (42) | | | | 20:06 | 21:07 | 10 | 06:40 (13) | 22:00 | 12 | 21:24 (5) | 22:18 | 22 | 21:38 (5) |
| 31 | 08:29 | | 09:43 (40) | | | | 07:10 | | | | 05:03 | | 21:12 (5) | | | |
| | 17:06 | 98 | 13:57 (42) | | | | 20:07 | | | | 22:01 | 13 | 21:25 (5) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 2863 | | | 1066 | | | | 205 | | | 245 | | | 636 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,28 | | | 0,25 | | | | 0,97 | | | 0,89 | | | 0,82 | |
| Total reduction | | 0,04 | | | 0,05 | | | | 0,29 | | | 0,35 | | | 0,30 | |
| Total, real | | 110 | | | 50 | | | | 59 | | | 85 | | | 191 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 06:18 (12) | 06:38 | | 07:06 (14) | 07:35 | | | 07:37 | | 12:28 (42) | 08:35 | | 09:24 (40) |
| | 22:18 | | | 21:40 | 16 | 06:34 (12) | 20:29 | 5 | 07:11 (14) | 19:12 | | | 16:58 | 52 | 13:20 (42) | 16:10 | 86 | 13:31 (42) |
| 2 | 04:57 | | | 05:41 | | 06:17 (12) | 06:40 | | 07:08 (14) | 07:36 | | | 07:39 | | 09:25 (40) | 08:37 | | 09:25 (40) |
| | 22:18 | | | 21:38 | 17 | 06:34 (12) | 20:27 | 1 | 07:09 (14) | 19:09 | | | 16:56 | 63 | 13:22 (42) | 16:09 | 84 | 13:32 (42) |
| 3 | 04:58 | | 21:39 (5) | 05:43 | | 06:17 (12) | 06:41 | | | 07:38 | | | 07:41 | | 09:22 (40) | 08:38 | | 09:27 (40) |
| | 22:17 | 1 | 21:40 (5) | 21:36 | 18 | 06:35 (12) | 20:24 | | | 19:07 | | | 16:53 | 71 | 13:23 (42) | 16:08 | 81 | 13:32 (42) |
| 4 | 04:59 | | | 05:45 | | 06:17 (12) | 06:43 | | | 07:40 | | | 07:43 | | 09:19 (40) | 08:40 | | 09:27 (40) |
| | 22:16 | | | 21:34 | 18 | 06:35 (12) | 20:22 | | | 19:04 | | | 16:51 | 78 | 13:23 (42) | 16:07 | 82 | 13:32 (42) |
| 5 | 05:00 | | | 05:47 | | 06:18 (12) | 06:45 | | | 07:42 | | | 07:45 | | 09:18 (40) | 08:41 | | 09:29 (40) |
| | 22:16 | | | 21:32 | 16 | 06:34 (12) | 20:19 | | | 19:02 | | | 16:49 | 84 | 13:25 (42) | 16:07 | 87 | 13:32 (42) |
| 6 | 05:01 | | | 05:49 | | 06:20 (12) | 06:47 | | | 07:44 | | | 07:47 | | 09:17 (40) | 08:43 | | 09:31 (40) |
| | 22:15 | | | 21:30 | 14 | 06:34 (12) | 20:17 | | | 18:59 | | | 16:47 | 86 | 13:25 (42) | 16:06 | 87 | 13:33 (42) |
| 7 | 05:02 | | | 05:50 | | 06:22 (12) | 06:49 | | | 07:46 | | | 07:49 | | 09:16 (40) | 08:44 | | 09:33 (40) |
| | 22:14 | | | 21:28 | 12 | 06:34 (12) | 20:14 | | | 18:57 | | | 16:45 | 90 | 13:26 (42) | 16:06 | 86 | 13:32 (42) |
| 8 | 05:03 | | | 05:52 | | 06:24 (12) | 06:51 | | | 07:48 | | | 07:51 | | 09:15 (40) | 08:45 | | 09:36 (40) |
| | 22:14 | | | 21:26 | 10 | 06:34 (12) | 20:11 | | | 18:54 | | | 16:43 | 92 | 13:26 (42) | 16:05 | 83 | 13:33 (42) |
| 9 | 05:04 | | | 05:54 | | 06:25 (12) | 06:53 | | | 07:50 | | | 07:53 | | 09:15 (40) | 08:47 | | 11:50 (41) |
| | 22:13 | | | 21:23 | 8 | 06:33 (12) | 20:09 | | | 18:52 | | | 16:42 | 95 | 13:27 (42) | 16:05 | 78 | 13:33 (42) |
| 10 | 05:05 | | | 05:56 | | 06:27 (12) | 06:55 | | | 07:52 | | | 07:55 | | 09:14 (40) | 08:48 | | 11:49 (41) |
| | 22:12 | | | 21:21 | 5 | 06:32 (12) | 20:06 | | | 18:49 | | | 16:40 | 96 | 13:27 (42) | 16:04 | 80 | 13:33 (42) |
| 11 | 05:07 | | | 05:58 | | 06:29 (12) | 06:57 | | | 07:54 | | | 07:57 | | 09:14 (40) | 08:49 | | 11:49 (41) |
| | 22:11 | | | 21:19 | 1 | 06:30 (12) | 20:04 | | | 18:47 | | | 16:38 | 99 | 13:28 (42) | 16:04 | 81 | 13:33 (42) |
| 12 | 05:08 | | | 06:00 | | 06:39 (13) | 06:58 | | | 07:56 | | | 07:59 | | 09:13 (40) | 08:50 | | 11:49 (41) |
| | 22:10 | | | 21:17 | 8 | 06:47 (13) | 20:01 | | | 18:44 | | | 16:36 | 100 | 13:28 (42) | 16:04 | 81 | 13:34 (42) |
| 13 | 05:09 | | | 06:02 | | 06:37 (13) | 07:00 | | | 07:58 | | | 08:01 | | 09:14 (40) | 08:52 | | 11:49 (41) |
| | 22:09 | | | 21:15 | 11 | 06:48 (13) | 19:59 | | | 18:42 | | | 16:34 | 100 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 14 | 05:11 | | | 06:04 | | 06:36 (13) | 07:02 | | | 08:00 | | | 08:03 | | 09:14 (40) | 08:53 | | 11:49 (41) |
| | 22:08 | | | 21:12 | 13 | 06:49 (13) | 19:56 | | | 18:39 | | | 16:33 | 100 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 15 | 05:12 | | | 06:05 | | 06:36 (13) | 07:04 | | | 08:02 | | | 08:05 | | 09:13 (40) | 08:54 | | 11:49 (41) |
| | 22:07 | | | 21:10 | 13 | 06:49 (13) | 19:53 | | | 18:37 | | | 16:31 | 102 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 16 | 05:13 | | | 06:07 | | 06:38 (13) | 07:06 | | | 08:04 | | | 08:07 | | 09:13 (40) | 08:55 | | 11:49 (41) |
| | 22:05 | | | 21:08 | 12 | 06:50 (13) | 19:51 | | | 18:34 | | | 16:29 | 102 | 13:29 (42) | 16:04 | 82 | 13:34 (42) |
| 17 | 05:15 | | | 06:09 | | 06:39 (13) | 07:08 | | | 08:06 | | | 08:09 | | 09:14 (40) | 08:55 | | 11:50 (41) |
| | 22:04 | | | 21:06 | 10 | 06:49 (13) | 19:48 | | | 18:32 | | | 16:28 | 102 | 13:30 (42) | 16:04 | 82 | 13:35 (42) |
| 18 | 05:16 | | | 06:11 | | 06:41 (13) | 07:10 | | | 08:08 | | | 08:11 | | 09:15 (40) | 08:56 | | 11:50 (41) |
| | 22:03 | | | 21:03 | 8 | 06:49 (13) | 19:46 | | | 18:30 | | | 16:26 | 101 | 13:30 (42) | 16:04 | 84 | 13:36 (42) |
| 19 | 05:18 | | | 06:13 | | 06:43 (13) | 07:12 | | | 08:10 | | | 08:13 | | 09:15 (40) | 08:57 | | 11:50 (41) |
| | 22:01 | | | 21:01 | 6 | 06:49 (13) | 19:43 | | | 18:27 | | | 16:24 | 101 | 13:30 (42) | 16:04 | 83 | 13:35 (42) |
| 20 | 05:19 | | | 06:15 | | 06:45 (13) | 07:14 | | | 08:12 | | | 08:15 | | 09:15 (40) | 08:58 | | 11:51 (41) |
| | 22:00 | | | 20:59 | 3 | 06:48 (13) | 19:40 | | | 18:25 | | | 16:23 | 101 | 13:30 (42) | 16:04 | 83 | 13:36 (42) |
| 21 | 05:21 | | | 06:17 | | | 07:15 | | | 08:14 | | | 08:17 | | 09:15 (40) | 08:58 | | 11:52 (41) |
| | 21:58 | | | 20:56 | | | 19:38 | | | 18:22 | | | 16:21 | 101 | 13:30 (42) | 16:05 | 82 | 13:37 (42) |
| 22 | 05:22 | | | 06:19 | | 07:05 (14) | 07:17 | | | 08:16 | | | 08:19 | | 09:16 (40) | 08:59 | | 11:52 (41) |
| | 21:57 | | | 20:54 | 5 | 07:10 (14) | 19:35 | | | 18:20 | | | 16:20 | 99 | 13:30 (42) | 16:05 | 82 | 13:37 (42) |
| 23 | 05:24 | | | 06:21 | | 07:02 (14) | 07:19 | | | 08:18 | | | 08:21 | | 09:16 (40) | 08:59 | | 11:53 (41) |
| | 21:55 | | | 20:51 | 11 | 07:13 (14) | 19:33 | | | 18:18 | | | 16:19 | 98 | 13:30 (42) | 16:06 | 82 | 13:38 (42) |
| 24 | 05:26 | | | 06:23 | | 07:01 (14) | 07:21 | | | 08:20 | | 13:54 (42) | 08:23 | | 09:18 (40) | 09:00 | | 11:53 (41) |
| | 21:54 | | | 20:49 | 13 | 07:14 (14) | 19:30 | | | 18:15 | 5 | 13:59 (42) | 16:17 | 97 | 13:31 (42) | 16:06 | 83 | 13:38 (42) |
| 25 | 05:27 | | | 06:24 | | 07:00 (14) | 07:23 | | | 07:22 | | 12:45 (42) | 08:25 | | 09:19 (40) | 09:00 | | 11:53 (41) |
| | 21:52 | | | 20:47 | 15 | 07:15 (14) | 19:27 | | | 17:13 | 22 | 13:07 (42) | 16:16 | 95 | 13:31 (42) | 16:07 | 83 | 13:38 (42) |
| 26 | 05:29 | | | 06:26 | | 06:58 (14) | 07:25 | | | 07:24 | | 12:41 (42) | 08:26 | | 09:20 (40) | 09:00 | | 11:54 (41) |
| | 21:51 | | | 20:44 | 17 | 07:15 (14) | 19:25 | | | 17:11 | 29 | 13:10 (42) | 16:15 | 94 | 13:31 (42) | 16:08 | 82 | 13:39 (42) |
| 27 | 05:31 | | 06:25 (12) | 06:28 | | 06:57 (14) | 07:27 | | | 07:26 | | 12:37 (42) | 08:28 | | 09:20 (40) | 09:01 | | 11:54 (41) |
| | 21:49 | 2 | 06:27 (12) | 20:42 | 18 | 07:15 (14) | 19:22 | | | 17:09 | 36 | 13:13 (42) | 16:14 | 93 | 13:31 (42) | 16:09 | 82 | 13:39 (42) |
| 28 | 05:32 | | 06:22 (12) | 06:30 | | 06:59 (14) | 07:29 | | | 07:28 | | 12:36 (42) | 08:30 | | 09:21 (40) | 09:01 | | 11:55 (41) |
| | 21:47 | 8 | 06:30 (12) | 20:39 | 16 | 07:15 (14) | 19:20 | | | 17:06 | 40 | 13:16 (42) | 16:13 | 92 | 13:32 (42) | 16:09 | 82 | 13:40 (42) |
| 29 | 05:34 | | 06:20 (12) | 06:32 | | 07:01 (14) | 07:31 | | | 07:30 | | 12:33 (42) | 08:32 | | 09:21 (40) | 09:01 | | 11:56 (41) |
| | 21:45 | 12 | 06:32 (12) | 20:37 | 14 | 07:15 (14) | 19:17 | | | 17:04 | 44 | 13:17 (42) | 16:12 | 90 | 13:31 (42) | 16:10 | 82 | 13:41 (42) |
| 30 | 05:36 | | 06:19 (12) | 06:34 | | 07:03 (14) | 07:33 | | | 07:32 | | 12:32 (42) | 08:33 | | 09:23 (40) | 09:01 | | 11:57 (41) |
| | 21:43 | 13 | 06:32 (12) | 20:34 | 11 | 07:14 (14) | 19:15 | | | 17:02 | 46 | 13:18 (42) | 16:11 | 87 | 13:31 (42) | 16:11 | 81 | 13:41 (42) |
| 31 | 05:38 | | 06:18 (12) | 06:36 | | 07:04 (14) | | | | 07:34 | | 12:30 (42) | | | | 09:01 | | 11:58 (41) |
| | 21:42 | 15 | 06:33 (12) | 20:32 | 8 | 07:12 (14) | | | | 17:00 | 50 | 13:20 (42) | | | | 16:12 | 80 | 13:42 (42) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 51 | | | 347 | | | 6 | | | 272 | | | 2761 | | | 2557 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,90 | | | 0,94 | | | 0,98 | | | 0,15 | | | 0,30 | | | 0,17 | |
| Total reduction | | 0,33 | | | 0,37 | | | 0,29 | | | 0,04 | | | 0,04 | | | 0,02 | |
| Total, real | | 17 | | | 127 | | | 2 | | | 10 | | | 100 | | | 44 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:27 (15) | 08:27 | | 09:03 (37) | 07:26 | | | 07:08 | | 19:02 (40) | 05:55 | | 06:41 (7) | 05:02 |
| | 16:14 | 14 | 10:41 (15) | 17:08 | 21 | 09:24 (37) | 18:07 | | | 20:09 | 30 | 19:32 (40) | 21:08 | 2 | 06:43 (7) | 22:02 |
| 2 | 09:00 | | 10:29 (15) | 08:26 | | 09:02 (37) | 07:24 | | | 07:05 | | 19:02 (40) | 05:53 | | 06:40 (7) | 05:01 |
| | 16:15 | 12 | 10:41 (15) | 17:10 | 23 | 09:25 (37) | 18:09 | | | 20:11 | 31 | 19:33 (40) | 21:10 | 2 | 06:42 (7) | 22:03 |
| 3 | 09:00 | | 10:30 (15) | 08:24 | | 09:02 (37) | 07:22 | | | 07:03 | | 19:01 (40) | 05:50 | | 06:40 (7) | 05:00 |
| | 16:16 | 10 | 10:40 (15) | 17:12 | 23 | 09:25 (37) | 18:11 | | | 20:13 | 31 | 19:32 (40) | 21:12 | 1 | 06:41 (7) | 22:05 |
| 4 | 09:00 | | 10:32 (15) | 08:22 | | 09:01 (37) | 07:19 | | | 07:00 | | 19:00 (40) | 05:48 | | 06:39 (7) | 04:59 |
| | 16:17 | 8 | 10:40 (15) | 17:14 | 24 | 09:25 (37) | 18:13 | | | 20:15 | 31 | 19:31 (40) | 21:14 | 2 | 06:41 (7) | 22:06 |
| 5 | 08:59 | | 10:34 (15) | 08:20 | | 09:01 (37) | 07:17 | | | 06:57 | | 19:01 (40) | 05:46 | | 06:39 (7) | 04:58 |
| | 16:19 | 3 | 10:37 (15) | 17:16 | 24 | 09:25 (37) | 18:15 | | | 20:17 | 30 | 19:31 (40) | 21:16 | 1 | 06:40 (7) | 22:07 |
| 6 | 08:59 | | | 08:18 | | 09:02 (37) | 07:14 | | | 06:55 | | 19:00 (40) | 05:44 | | 06:40 (7) | 04:57 |
| | 16:20 | | | 17:19 | 23 | 09:25 (37) | 18:17 | | | 20:19 | 30 | 19:30 (40) | 21:18 | 1 | 06:41 (7) | 22:08 |
| 7 | 08:58 | | | 08:16 | | 09:02 (37) | 07:12 | | | 06:52 | | 19:01 (40) | 05:42 | | | 04:56 |
| | 16:21 | | | 17:21 | 24 | 09:26 (37) | 18:19 | | | 20:21 | 29 | 19:30 (40) | 21:20 | | | 22:09 |
| 8 | 08:58 | | | 08:14 | | 09:03 (37) | 07:09 | | | 06:50 | | 19:01 (40) | 05:40 | | | 04:56 |
| | 16:23 | | | 17:23 | 22 | 09:25 (37) | 18:22 | | | 20:23 | 27 | 19:28 (40) | 21:22 | | | 22:10 |
| 9 | 08:57 | | | 08:12 | | 09:03 (37) | 07:07 | | | 06:47 | | 19:02 (40) | 05:38 | | | 04:55 |
| | 16:24 | | | 17:25 | 22 | 09:25 (37) | 18:24 | | | 20:25 | 26 | 19:28 (40) | 21:24 | | | 22:11 |
| 10 | 08:56 | | | 08:10 | | 09:03 (37) | 07:04 | | | 06:45 | | 19:02 (40) | 05:36 | | | 04:54 |
| | 16:26 | | | 17:27 | 21 | 09:24 (37) | 18:26 | | | 20:27 | 24 | 19:26 (40) | 21:26 | | | 22:12 |
| 11 | 08:56 | | | 08:08 | | 09:05 (37) | 07:02 | | | 06:42 | | 19:04 (40) | 05:34 | | | 04:54 |
| | 16:28 | | | 17:29 | 18 | 09:23 (37) | 18:28 | | | 20:29 | 20 | 19:24 (40) | 21:28 | | | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:06 (37) | 06:59 | | | 06:40 | | 19:06 (40) | 05:32 | | | 04:53 |
| | 16:29 | | | 17:31 | 16 | 09:22 (37) | 18:30 | | | 20:31 | 17 | 19:23 (40) | 21:29 | | | 22:14 |
| 13 | 08:54 | | | 08:03 | | 09:08 (37) | 06:57 | | | 06:37 | | 19:08 (40) | 05:30 | | | 04:53 |
| | 16:31 | | | 17:33 | 12 | 09:20 (37) | 18:32 | | | 20:33 | 11 | 19:19 (40) | 21:31 | | | 22:15 |
| 14 | 08:53 | | | 08:01 | | 09:11 (37) | 06:54 | | 18:04 (41) | 06:35 | | | 05:28 | | | 04:53 |
| | 16:33 | | | 17:36 | 5 | 09:16 (37) | 18:34 | 3 | 18:07 (41) | 20:35 | | | 21:33 | | | 22:15 |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | 18:01 (41) | 06:32 | | | 05:26 | | | 04:52 |
| | 16:34 | | | 17:38 | | | 18:36 | 7 | 18:08 (41) | 20:37 | | | 21:35 | | | 22:16 |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | 17:59 (41) | 06:30 | | | 05:25 | | | 04:52 |
| | 16:36 | | | 17:40 | | | 18:38 | 11 | 18:10 (41) | 20:39 | | | 21:37 | | | 22:17 |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | 17:58 (41) | 06:27 | | | 05:23 | | | 04:52 |
| | 16:38 | | | 17:42 | | | 18:40 | 15 | 18:13 (41) | 20:41 | | | 21:39 | | | 22:17 |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | 17:57 (41) | 06:25 | | | 05:21 | | | 04:52 |
| | 16:40 | | | 17:44 | | | 18:42 | 17 | 18:14 (41) | 20:43 | | | 21:40 | | | 22:18 |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:57 (41) | 06:23 | | | 05:19 | | | 04:52 |
| | 16:42 | | | 17:46 | | | 18:44 | 20 | 18:17 (41) | 20:45 | | | 21:42 | | | 22:18 |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | 17:56 (41) | 06:20 | | 06:59 (7) | 05:18 | | | 04:52 |
| | 16:44 | | | 17:48 | | | 18:46 | 21 | 18:17 (41) | 20:47 | 10 | 07:09 (7) | 21:44 | | | 22:18 |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | 17:56 (41) | 06:18 | | 06:54 (7) | 05:16 | | | 04:52 |
| | 16:46 | | | 17:50 | | | 18:48 | 20 | 18:16 (41) | 20:49 | 18 | 07:12 (7) | 21:45 | | | 22:19 |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | 17:56 (41) | 06:15 | | 06:52 (7) | 05:15 | | | 04:52 |
| | 16:48 | | | 17:53 | | | 18:50 | 20 | 18:16 (41) | 20:51 | 23 | 07:15 (7) | 21:47 | | | 22:19 |
| 23 | 08:42 | | | 07:41 | | | 06:31 | | 17:56 (41) | 06:13 | | 06:50 (7) | 05:13 | | | 04:53 |
| | 16:50 | | | 17:55 | | | 18:52 | 18 | 18:14 (41) | 20:53 | 27 | 07:17 (7) | 21:49 | | | 22:19 |
| 24 | 08:41 | | | 07:38 | | | 06:28 | | 17:58 (41) | 06:11 | | 06:48 (7) | 05:12 | | | 04:53 |
| | 16:52 | | | 17:57 | | | 18:54 | 15 | 18:13 (41) | 20:55 | 30 | 07:18 (7) | 21:50 | | | 22:19 |
| 25 | 08:39 | | | 07:36 | | | 06:26 | | 17:59 (41) | 06:08 | | 06:46 (7) | 05:10 | | | 04:53 |
| | 16:54 | | | 17:59 | | | 18:56 | 21 | 18:24 (40) | 20:57 | 33 | 07:19 (7) | 21:52 | | | 22:19 |
| 26 | 08:37 | | | 07:34 | | | 06:23 | | 18:01 (41) | 06:06 | | 06:45 (7) | 05:09 | | | 04:54 |
| | 16:56 | | | 18:01 | | | 18:58 | 21 | 18:26 (40) | 20:59 | 35 | 07:20 (7) | 21:53 | | | 22:19 |
| 27 | 08:36 | | 09:07 (37) | 07:31 | | | 06:21 | | 18:09 (40) | 06:04 | | 06:44 (7) | 05:08 | | | 04:54 |
| | 16:58 | 10 | 09:17 (37) | 18:03 | | | 18:59 | 20 | 18:29 (40) | 21:01 | 37 | 07:21 (7) | 21:55 | | | 22:19 |
| 28 | 08:34 | | 09:05 (37) | 07:29 | | | 06:18 | | 18:06 (40) | 06:02 | | 06:43 (7) | 05:06 | | | 04:55 |
| | 17:00 | 14 | 09:19 (37) | 18:05 | | | 19:01 | 24 | 18:30 (40) | 21:03 | 22 | 07:21 (7) | 21:57 | | | 22:19 |
| 29 | 08:33 | | 09:05 (37) | | | | 07:15 | | 19:06 (40) | 05:59 | | 06:43 (7) | 05:05 | | | 04:55 |
| | 17:02 | 16 | 09:21 (37) | | | | 20:03 | 25 | 19:31 (40) | 21:05 | 15 | 07:22 (7) | 21:58 | | | 22:18 |
| 30 | 08:31 | | 09:04 (37) | | | | 07:13 | | 19:04 (40) | 05:57 | | 06:42 (7) | 05:04 | | | 04:56 |
| | 17:04 | 18 | 09:22 (37) | | | | 20:05 | 27 | 19:31 (40) | 21:06 | 11 | 07:23 (7) | 21:59 | | | 22:18 |
| 31 | 08:29 | | 09:03 (37) | | | | 07:10 | | 19:03 (40) | | | | 05:03 | | | |
| | 17:06 | 20 | 09:23 (37) | | | | 20:07 | 29 | 19:32 (40) | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 125 | | | 278 | | | 334 | | | 598 | | | 9 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,66 | | | 0,78 | | | 0,99 | | | 0,98 | | | 0,96 | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,32 | | | 0,36 | | | 0,46 | | |
| Total, real | | 14 | | | 49 | | | 105 | | | 215 | | | 4 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 19:03 (40) | 07:34 | | | 07:36 | | 08:33 (37) | 08:35 | | |
| | 22:18 | | 21:40 | | | 20:29 | 20 | 19:23 (40) | 19:12 | | | 16:58 | 21 | 08:54 (37) | 16:10 | | |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 19:01 (40) | 07:36 | | | 07:38 | | 08:33 (37) | 08:36 | | |
| | 22:17 | | 21:38 | | | 20:27 | 24 | 19:25 (40) | 19:09 | | | 16:55 | 22 | 08:55 (37) | 16:09 | | |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 19:00 (40) | 07:38 | | | 07:41 | | 08:32 (37) | 08:38 | | |
| | 22:17 | | 21:36 | | | 20:24 | 26 | 19:26 (40) | 19:07 | | | 16:53 | 23 | 08:55 (37) | 16:08 | | |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:59 (40) | 07:40 | | | 07:43 | | 08:32 (37) | 08:40 | | |
| | 22:16 | | 21:34 | | | 20:22 | 27 | 19:26 (40) | 19:04 | | | 16:51 | 23 | 08:55 (37) | 16:07 | | |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:57 (40) | 07:42 | | | 07:45 | | 08:31 (37) | 08:41 | | |
| | 22:16 | | 21:32 | | | 20:19 | 29 | 19:26 (40) | 19:02 | | | 16:49 | 24 | 08:55 (37) | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:49 (7) | 06:47 | | 18:56 (40) | 07:44 | | | 07:47 | | 08:32 (37) | 08:43 | | |
| | 22:15 | | 21:30 | 1 | 06:50 (7) | 20:16 | 30 | 19:26 (40) | 18:59 | | | 16:47 | 24 | 08:56 (37) | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 (7) | 06:49 | | 18:56 (40) | 07:46 | | | 07:49 | | 08:32 (37) | 08:44 | | 10:22 (15) |
| | 22:14 | | 21:28 | 1 | 06:50 (7) | 20:14 | 30 | 19:26 (40) | 18:57 | | | 16:45 | 24 | 08:56 (37) | 16:06 | 2 | 10:24 (15) |
| 8 | 05:03 | | 05:52 | | 06:50 (7) | 06:51 | | 18:56 (40) | 07:48 | | | 07:51 | | 08:32 (37) | 08:45 | | 10:19 (15) |
| | 22:14 | | 21:25 | 1 | 06:51 (7) | 20:11 | 30 | 19:26 (40) | 18:54 | | | 16:43 | 23 | 08:55 (37) | 16:05 | 8 | 10:27 (15) |
| 9 | 05:04 | | 05:54 | | 06:49 (7) | 06:53 | | 18:55 (40) | 07:50 | | | 07:53 | | 08:32 (37) | 08:47 | | 10:19 (15) |
| | 22:13 | | 21:23 | 1 | 06:50 (7) | 20:09 | 31 | 19:26 (40) | 18:52 | | | 16:41 | 23 | 08:55 (37) | 16:05 | 10 | 10:29 (15) |
| 10 | 05:05 | | 05:56 | | 06:49 (7) | 06:55 | | 18:54 (40) | 07:52 | | | 07:55 | | 08:34 (37) | 08:48 | | 10:18 (15) |
| | 22:12 | | 21:21 | 2 | 06:51 (7) | 20:06 | 31 | 19:25 (40) | 18:49 | | | 16:40 | 21 | 08:55 (37) | 16:04 | 12 | 10:30 (15) |
| 11 | 05:07 | | 05:58 | | 06:50 (7) | 06:56 | | 18:54 (40) | 07:54 | | | 07:57 | | 08:34 (37) | 08:49 | | 10:18 (15) |
| | 22:11 | | 21:19 | 1 | 06:51 (7) | 20:04 | 30 | 19:24 (40) | 18:47 | | | 16:38 | 20 | 08:54 (37) | 16:04 | 13 | 10:31 (15) |
| 12 | 05:08 | | 06:00 | | 06:49 (7) | 06:58 | | 18:55 (40) | 07:56 | | | 07:59 | | 08:35 (37) | 08:50 | | 10:18 (15) |
| | 22:10 | | 21:17 | 2 | 06:51 (7) | 20:01 | 29 | 19:24 (40) | 18:44 | | | 16:36 | 18 | 08:53 (37) | 16:04 | 15 | 10:33 (15) |
| 13 | 05:09 | | 06:02 | | 06:50 (7) | 07:00 | | 18:55 (40) | 07:58 | | | 08:01 | | 08:37 (37) | 08:51 | | 10:18 (15) |
| | 22:09 | | 21:15 | 2 | 06:52 (7) | 19:58 | 28 | 19:23 (40) | 18:42 | | | 16:34 | 16 | 08:53 (37) | 16:04 | 15 | 10:33 (15) |
| 14 | 05:11 | | 06:03 | | 06:50 (7) | 07:02 | | 18:56 (40) | 08:00 | | | 08:03 | | 08:38 (37) | 08:52 | | 10:18 (15) |
| | 22:08 | | 21:12 | 3 | 06:53 (7) | 19:56 | 26 | 19:22 (40) | 18:39 | | | 16:32 | 14 | 08:52 (37) | 16:03 | 16 | 10:34 (15) |
| 15 | 05:12 | | 06:05 | | 06:51 (7) | 07:04 | | 18:57 (40) | 08:02 | | | 08:05 | | 08:40 (37) | 08:53 | | 10:05 (16) |
| | 22:06 | | 21:10 | 3 | 06:54 (7) | 19:53 | 23 | 19:20 (40) | 18:37 | | | 16:31 | 9 | 08:49 (37) | 16:03 | 18 | 10:35 (15) |
| 16 | 05:13 | | 06:07 | | 06:52 (7) | 07:06 | | 18:57 (40) | 08:04 | | | 08:07 | | | 08:54 | | 10:04 (16) |
| | 22:05 | | 21:08 | 3 | 06:55 (7) | 19:51 | 21 | 19:18 (40) | 18:34 | | | 16:29 | | | 16:03 | 22 | 10:36 (15) |
| 17 | 05:15 | | 06:09 | | 06:52 (7) | 07:08 | | 18:51 (41) | 08:06 | | | 08:09 | | | 08:55 | | 10:04 (16) |
| | 22:04 | | 21:05 | 3 | 06:55 (7) | 19:48 | 20 | 19:15 (40) | 18:32 | | | 16:27 | | | 16:04 | 24 | 10:37 (15) |
| 18 | 05:16 | | 06:11 | | 06:53 (7) | 07:10 | | 18:47 (41) | 08:08 | | | 08:11 | | | 08:56 | | 10:04 (16) |
| | 22:03 | | 21:03 | 4 | 06:57 (7) | 19:46 | 22 | 19:12 (40) | 18:29 | | | 16:26 | | | 16:04 | 25 | 10:37 (15) |
| 19 | 05:18 | | 06:13 | | 06:54 (7) | 07:12 | | 18:45 (41) | 08:10 | | | 08:13 | | | 08:57 | | 10:04 (16) |
| | 22:01 | | 21:01 | 5 | 06:59 (7) | 19:43 | 15 | 19:00 (41) | 18:27 | | | 16:24 | | | 16:04 | 25 | 10:37 (15) |
| 20 | 05:19 | | 06:15 | | 06:56 (7) | 07:13 | | 18:43 (41) | 08:12 | | | 08:15 | | | 08:57 | | 10:04 (16) |
| | 22:00 | | 20:58 | 5 | 07:01 (7) | 19:40 | 18 | 19:01 (41) | 18:25 | | | 16:23 | | | 16:04 | 26 | 10:38 (15) |
| 21 | 05:21 | | 06:17 | | 06:57 (7) | 07:15 | | 18:42 (41) | 08:14 | | | 08:17 | | | 08:58 | | 10:04 (16) |
| | 21:58 | | 20:56 | 6 | 07:03 (7) | 19:38 | 19 | 19:01 (41) | 18:22 | | | 16:21 | | | 16:05 | 27 | 10:38 (15) |
| 22 | 05:22 | | 06:19 | | 06:59 (7) | 07:17 | | 18:41 (41) | 08:16 | | | 08:19 | | | 08:59 | | 10:05 (16) |
| | 21:57 | | 20:54 | 14 | 07:16 (7) | 19:35 | 20 | 19:01 (41) | 18:20 | | | 16:20 | | | 16:05 | 27 | 10:39 (15) |
| 23 | 05:24 | | 06:21 | | 07:04 (7) | 07:19 | | 18:41 (41) | 08:18 | | | 08:21 | | | 08:59 | | 10:05 (16) |
| | 21:55 | | 20:51 | 8 | 07:12 (7) | 19:33 | 20 | 19:01 (41) | 18:18 | | | 16:19 | | | 16:06 | 26 | 10:39 (15) |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 18:40 (41) | 08:20 | | | 08:23 | | | 09:00 | | 10:06 (16) |
| | 21:54 | | 20:49 | | | 19:30 | 20 | 19:00 (41) | 18:15 | | | 16:17 | | | 16:06 | 26 | 10:40 (15) |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 18:40 (41) | 07:22 | | | 08:24 | | | 09:00 | | 10:07 (16) |
| | 21:52 | | 20:46 | | | 19:27 | 18 | 18:58 (41) | 17:13 | | | 16:16 | | | 16:07 | 25 | 10:40 (15) |
| 26 | 05:29 | | 06:26 | | | 07:25 | | 18:40 (41) | 07:24 | | | 08:26 | | | 09:00 | | 10:08 (16) |
| | 21:50 | | 20:44 | | | 19:25 | 15 | 18:55 (41) | 17:11 | | | 16:15 | | | 16:08 | 23 | 10:40 (15) |
| 27 | 05:31 | | 06:28 | | | 07:27 | | 18:40 (41) | 07:26 | | | 08:28 | | | 09:00 | | 10:09 (16) |
| | 21:49 | | 20:42 | | | 19:22 | 13 | 18:53 (41) | 17:09 | | | 16:14 | | | 16:08 | 22 | 10:41 (15) |
| 28 | 05:32 | | 06:30 | | | 07:29 | | 18:41 (41) | 07:28 | | 08:39 (37) | 08:30 | | | 09:01 | | 10:10 (16) |
| | 21:47 | | 20:39 | | | 19:20 | 9 | 18:50 (41) | 17:06 | 8 | 08:47 (37) | 16:13 | | | 16:09 | 20 | 10:41 (15) |
| 29 | 05:34 | | 06:32 | | | 07:31 | | 18:43 (41) | 07:30 | | 08:37 (37) | 08:31 | | | 09:01 | | 10:25 (15) |
| | 21:45 | | 20:37 | | | 19:17 | 4 | 18:47 (41) | 17:04 | 13 | 08:50 (37) | 16:12 | | | 16:10 | 16 | 10:41 (15) |
| 30 | 05:36 | | 06:34 | | 19:09 (40) | 07:32 | | | 07:32 | | 08:35 (37) | 08:33 | | | 09:01 | | 10:26 (15) |
| | 21:43 | | 20:34 | 11 | 19:20 (40) | 19:14 | | | 17:02 | 17 | 08:52 (37) | 16:11 | | | 16:11 | 15 | 10:41 (15) |
| 31 | 05:38 | | 06:36 | | 19:05 (40) | | | | 07:34 | | 08:34 (37) | | | | 09:01 | | 10:27 (15) |
| | 21:41 | | 20:32 | 17 | 19:22 (40) | | | | 17:00 | 19 | 08:53 (37) | | | | 16:12 | 15 | 10:42 (15) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 93 | | | 648 | | | 57 | | | 305 | | | 473 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,97 | | | 1,00 | | | 0,78 | | | 0,78 | | | 0,48 | |
| Total reduction | | | | 0,47 | | | 0,37 | | | 0,22 | | | 0,11 | | | 0,06 | |
| Total, real | | | | 43 | | | 238 | | | 13 | | | 35 | | | 28 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 09:10 (37) | | 07:26 | | 07:08 | 19:00 (40) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 24 | 09:34 (37) | | 18:07 | | 20:09 | 30 | 19:30 (40) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | | 09:10 (37) | | 07:24 | | 07:05 | 19:01 (40) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 25 | 09:35 (37) | | 18:09 | | 20:11 | 29 | 19:30 (40) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 09:10 (37) | | 07:22 | | 07:03 | 19:00 (40) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 25 | 09:35 (37) | | 18:11 | | 20:13 | 29 | 19:29 (40) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:10 (37) | | 07:19 | | 07:00 | 19:00 (40) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 24 | 09:34 (37) | | 18:13 | | 20:15 | 28 | 19:28 (40) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 09:10 (37) | | 07:17 | | 06:57 | 19:00 (40) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 24 | 09:34 (37) | | 18:15 | | 20:17 | 28 | 19:28 (40) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | | 09:11 (37) | | 07:14 | | 06:55 | 19:00 (40) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 22 | 09:33 (37) | | 18:17 | | 20:19 | 26 | 19:26 (40) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | | 09:12 (37) | | 07:12 | | 06:52 | 19:01 (40) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 21 | 09:33 (37) | | 18:19 | | 20:21 | 24 | 19:25 (40) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | | 09:13 (37) | | 07:09 | | 06:50 | 19:02 (40) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 19 | 09:32 (37) | | 18:22 | | 20:23 | 21 | 19:23 (40) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | | 09:14 (37) | | 07:07 | | 06:47 | 19:04 (40) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | 18 | 09:32 (37) | | 18:24 | | 20:25 | 18 | 19:22 (40) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 09:15 (37) | | 07:04 | | 06:45 | 19:05 (40) | 05:36 | 04:54 |
| | 16:26 | | 17:27 | 14 | 09:29 (37) | | 18:26 | | 20:27 | 14 | 19:19 (40) | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 09:18 (37) | | 07:02 | | 06:42 | 19:10 (40) | 05:34 | 04:54 |
| | 16:28 | | 17:29 | 9 | 09:27 (37) | | 18:28 | | 20:29 | 4 | 19:14 (40) | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | | | 06:59 | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | | | 18:30 | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | | | 06:57 | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | | | 18:32 | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | | | 06:54 | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | | | 18:34 | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | | | 06:51 | | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | | | 18:36 | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | | | 06:49 | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | | | 18:38 | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | | | 06:46 | | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | | | 18:40 | | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | | | 06:44 | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | | | 18:42 | | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 07:50 | | | | 06:41 | | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | | | 18:44 | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | | | 06:39 | | 06:20 | | 07:02 (7) | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | | | 18:46 | | 20:47 | 10 | 07:12 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 07:46 | | | | 06:36 | | 06:18 | | 06:57 (7) | 05:16 | 04:52 |
| | 16:46 | | 17:50 | | | | 18:48 | | 20:49 | 19 | 07:16 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 07:43 | | | | 06:33 | | 06:15 | | 06:55 (7) | 05:15 | 04:52 |
| | 16:48 | | 17:53 | | | | 18:50 | | 20:51 | 24 | 07:19 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:15 (37) | 07:41 | | | 06:31 | | 06:13 | | 06:53 (7) | 05:13 | 04:53 |
| | 16:50 | 9 | 09:24 (37) | 17:55 | | | 18:52 | | 20:53 | 28 | 07:21 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:14 (37) | 07:38 | | | 06:28 | | 18:12 (40) | 06:11 | | 06:51 (7) | 05:12 | 04:53 |
| | 16:52 | 13 | 09:27 (37) | 17:57 | | | 18:54 | 12 | 18:24 (40) | 20:55 | 31 | 07:22 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:12 (37) | 07:36 | | | 06:26 | | 18:08 (40) | 06:08 | | 06:49 (7) | 05:10 | 04:53 |
| | 16:54 | 16 | 09:28 (37) | 17:59 | | | 18:56 | 18 | 18:26 (40) | 20:57 | 34 | 07:23 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:11 (37) | 07:34 | | | 06:23 | | 18:06 (40) | 06:06 | | 06:47 (7) | 05:09 | 04:54 |
| | 16:56 | 18 | 09:29 (37) | 18:01 | | | 18:57 | 21 | 18:27 (40) | 20:59 | 37 | 07:24 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:10 (37) | 07:31 | | | 06:21 | | 18:05 (40) | 06:04 | | 06:46 (7) | 05:08 | 04:54 |
| | 16:58 | 20 | 09:30 (37) | 18:03 | | | 18:59 | 24 | 18:29 (40) | 21:01 | 39 | 07:25 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:10 (37) | 07:29 | | | 06:18 | | 18:03 (40) | 06:02 | | 06:45 (7) | 05:06 | 04:55 |
| | 17:00 | 21 | 09:31 (37) | 18:05 | | | 19:01 | 26 | 18:29 (40) | 21:03 | 25 | 07:26 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:10 (37) | | | | 07:15 | | 19:03 (40) | 05:59 | | 06:45 (7) | 05:05 | 04:55 |
| | 17:02 | 23 | 09:33 (37) | | | | 20:03 | 27 | 19:30 (40) | 21:05 | 17 | 07:26 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:10 (37) | | | | 07:13 | | 19:01 (40) | 05:57 | | 06:44 (7) | 05:04 | 04:56 |
| | 17:04 | 23 | 09:33 (37) | | | | 20:05 | 29 | 19:30 (40) | 21:06 | 13 | 07:27 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | 09:10 (37) | | | | 07:10 | | 19:01 (40) | | | | 05:03 | |
| | 17:06 | 24 | 09:34 (37) | | | | 20:07 | 29 | 19:30 (40) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 167 | | | 225 | | | 186 | | | 528 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 1,00 | | | 0,98 | | | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,37 | | | |
| Total, real | | 22 | | | 40 | | | 61 | | | 195 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | 06:52 (7) | 06:38 | | 19:09 (40) | 07:34 | | | 07:36 | | 08:44 (37) | 08:35 | | |
| | 22:18 | 21:40 | | | 20:29 | 4 | 19:13 (40) | 19:12 | | | 16:58 | 15 | 08:59 (37) | 16:10 | | |
| 2 | 04:57 | 05:41 | | 06:53 (7) | 06:39 | | 19:04 (40) | 07:36 | | | 07:38 | | 08:43 (37) | 08:36 | | |
| | 22:17 | 21:38 | | | 20:27 | 14 | 19:18 (40) | 19:09 | | | 16:55 | 18 | 09:01 (37) | 16:09 | | |
| 3 | 04:58 | 05:43 | | 06:54 (7) | 06:41 | | 19:02 (40) | 07:38 | | | 07:41 | | 08:42 (37) | 08:38 | | |
| | 22:17 | 21:36 | | | 20:24 | 18 | 19:20 (40) | 19:07 | | | 16:53 | 20 | 09:02 (37) | 16:08 | | |
| 4 | 04:59 | 05:45 | | 06:54 (7) | 06:43 | | 19:00 (40) | 07:40 | | | 07:43 | | 08:41 (37) | 08:40 | | |
| | 22:16 | 21:34 | | | 20:22 | 21 | 19:21 (40) | 19:04 | | | 16:51 | 22 | 09:03 (37) | 16:07 | | |
| 5 | 05:00 | 05:47 | | 06:55 (7) | 06:45 | | 18:58 (40) | 07:42 | | | 07:45 | | 08:40 (37) | 08:41 | | |
| | 22:16 | 21:32 | | | 20:19 | 23 | 19:21 (40) | 19:02 | | | 16:49 | 23 | 09:03 (37) | 16:07 | | |
| 6 | 05:01 | 05:49 | | 06:55 (7) | 06:47 | | 18:56 (40) | 07:44 | | | 07:47 | | 08:41 (37) | 08:43 | | |
| | 22:15 | 21:30 | | | 20:16 | 26 | 19:22 (40) | 18:59 | | | 16:47 | 23 | 09:04 (37) | 16:06 | | |
| 7 | 05:02 | 05:50 | | 06:56 (7) | 06:49 | | 18:56 (40) | 07:46 | | | 07:49 | | 08:40 (37) | 08:44 | | |
| | 22:14 | 21:28 | | | 20:14 | 27 | 19:23 (40) | 18:57 | | | 16:45 | 25 | 09:05 (37) | 16:06 | | |
| 8 | 05:03 | 05:52 | | 06:56 (7) | 06:51 | | 18:55 (40) | 07:48 | | | 07:51 | | 08:40 (37) | 08:45 | | |
| | 22:14 | 21:25 | | | 20:11 | 28 | 19:23 (40) | 18:54 | | | 16:43 | 24 | 09:04 (37) | 16:05 | | |
| 9 | 05:04 | 05:54 | | 06:57 (7) | 06:53 | | 18:54 (40) | 07:50 | | | 07:53 | | 08:40 (37) | 08:47 | | |
| | 22:13 | 21:23 | | | 20:09 | 29 | 19:23 (40) | 18:52 | | | 16:41 | 24 | 09:04 (37) | 16:05 | | |
| 10 | 05:05 | 05:56 | | 06:57 (7) | 06:55 | | 18:53 (40) | 07:52 | | | 07:55 | | 08:41 (37) | 08:48 | | |
| | 22:12 | 21:21 | | | 20:06 | 29 | 19:22 (40) | 18:49 | | | 16:40 | 24 | 09:05 (37) | 16:04 | | |
| 11 | 05:07 | 05:58 | | 06:58 (7) | 06:56 | | 18:53 (40) | 07:54 | | | 07:57 | | 08:41 (37) | 08:49 | | |
| | 22:11 | 21:19 | | | 20:04 | 29 | 19:22 (40) | 18:47 | | | 16:38 | 24 | 09:05 (37) | 16:04 | | |
| 12 | 05:08 | 06:00 | | 06:58 (7) | 06:58 | | 18:53 (40) | 07:56 | | | 07:59 | | 08:41 (37) | 08:50 | | |
| | 22:10 | 21:17 | | | 20:01 | 29 | 19:22 (40) | 18:44 | | | 16:36 | 23 | 09:04 (37) | 16:04 | | |
| 13 | 05:09 | 06:02 | | 06:59 (7) | 07:00 | | 18:53 (40) | 07:58 | | | 08:01 | | 08:42 (37) | 08:51 | | |
| | 22:09 | 21:15 | | | 19:58 | 28 | 19:21 (40) | 18:42 | | | 16:34 | 23 | 09:05 (37) | 16:04 | | |
| 14 | 05:11 | 06:03 | | 06:52 (7) | 07:02 | | 18:53 (40) | 08:00 | | | 08:03 | | 08:43 (37) | 08:52 | | |
| | 22:08 | 21:12 | 1 | 06:53 (7) | 19:56 | 27 | 19:20 (40) | 18:39 | | | 16:32 | 21 | 09:04 (37) | 16:03 | | |
| 15 | 05:12 | 06:05 | | 06:53 (7) | 07:04 | | 18:53 (40) | 08:02 | | | 08:05 | | 08:43 (37) | 08:53 | | |
| | 22:06 | 21:10 | 1 | 06:54 (7) | 19:53 | 26 | 19:19 (40) | 18:37 | | | 16:31 | 20 | 09:03 (37) | 16:03 | | |
| 16 | 05:13 | 06:07 | | 06:54 (7) | 07:06 | | 18:53 (40) | 08:04 | | | 08:07 | | 08:44 (37) | 08:54 | | |
| | 22:05 | 21:08 | 1 | 06:55 (7) | 19:51 | 24 | 19:17 (40) | 18:34 | | | 16:29 | 18 | 09:02 (37) | 16:03 | | |
| 17 | 05:15 | 06:09 | | 06:54 (7) | 07:08 | | 18:54 (40) | 08:06 | | | 08:09 | | 08:45 (37) | 08:55 | | |
| | 22:04 | 21:05 | 1 | 06:55 (7) | 19:48 | 22 | 19:16 (40) | 18:32 | | | 16:27 | 16 | 09:01 (37) | 16:04 | | |
| 18 | 05:16 | 06:11 | | 06:55 (7) | 07:10 | | 18:55 (40) | 08:08 | | | 08:11 | | 08:48 (37) | 08:56 | | 10:39 (15) |
| | 22:03 | 21:03 | 2 | 06:57 (7) | 19:46 | 19 | 19:14 (40) | 18:29 | | | 16:26 | 13 | 09:01 (37) | 16:04 | 4 | 10:43 (15) |
| 19 | 05:18 | 06:13 | | 06:57 (7) | 07:12 | | 18:57 (40) | 08:10 | | | 08:13 | | 08:50 (37) | 08:57 | | 10:38 (15) |
| | 22:01 | 21:01 | 2 | 06:59 (7) | 19:43 | 15 | 19:12 (40) | 18:27 | | | 16:24 | 9 | 08:59 (37) | 16:04 | 5 | 10:43 (15) |
| 20 | 05:19 | 06:15 | | 06:59 (7) | 07:13 | | 19:01 (40) | 08:12 | | | 08:15 | | | 08:57 | | 10:38 (15) |
| | 22:00 | 20:58 | 2 | 07:01 (7) | 19:40 | 6 | 19:07 (40) | 18:25 | | | 16:23 | | | 16:04 | 6 | 10:44 (15) |
| 21 | 05:21 | 06:17 | | 07:00 (7) | 07:15 | | | 08:14 | | | 08:17 | | | 08:58 | | 10:38 (15) |
| | 21:58 | 20:56 | 3 | 07:03 (7) | 19:38 | | | 18:22 | | | 16:21 | | | 16:05 | 6 | 10:44 (15) |
| 22 | 05:22 | 06:19 | | 07:02 (7) | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 | | 10:39 (15) |
| | 21:57 | 20:54 | 11 | 07:16 (7) | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 | 6 | 10:45 (15) |
| 23 | 05:24 | 06:21 | | 07:07 (7) | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 | | 10:39 (15) |
| | 21:55 | 20:51 | 8 | 07:15 (7) | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 | 6 | 10:45 (15) |
| 24 | 05:26 | 06:22 | | | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 | | 10:41 (15) |
| | 21:54 | 20:49 | | | 19:30 | | | 18:15 | | | 16:17 | | | 16:06 | 5 | 10:46 (15) |
| 25 | 05:27 | 06:24 | | | 07:23 | | | 07:22 | | | 08:24 | | | 09:00 | | 10:42 (15) |
| | 21:52 | 20:46 | | | 19:27 | | | 17:13 | | | 16:16 | | | 16:07 | 4 | 10:46 (15) |
| 26 | 05:29 | 06:26 | | | 07:25 | | | 07:24 | | | 08:26 | | | 09:00 | | 10:43 (15) |
| | 21:50 | 20:44 | | | 19:25 | | | 17:11 | | | 16:15 | | | 16:08 | 2 | 10:45 (15) |
| 27 | 05:31 | 06:28 | | | 07:27 | | | 07:26 | | | 08:28 | | | 09:00 | | |
| | 21:49 | 20:42 | | | 19:22 | | | 17:08 | | | 16:14 | | | 16:08 | | |
| 28 | 05:32 | 06:30 | | | 07:29 | | | 07:28 | | | 08:30 | | | 09:01 | | |
| | 21:47 | 20:39 | | | 19:20 | | | 17:06 | | | 16:13 | | | 16:09 | | |
| 29 | 05:34 | 06:32 | | | 07:31 | | | 07:30 | | | 08:31 | | | 09:01 | | |
| | 21:45 | 20:37 | | | 19:17 | | | 17:04 | | | 16:12 | | | 16:10 | | |
| 30 | 05:36 | 06:34 | | | 07:32 | | | 07:32 | | | 08:33 | | | 09:01 | | |
| | 21:43 | 20:34 | | | 19:14 | | | 17:02 | | | 16:11 | | | 16:11 | | |
| 31 | 05:38 | 06:36 | | | | | | 07:34 | | 08:47 (37) | | | | 09:01 | | |
| | 21:41 | 20:32 | | | | | | 17:00 | 10 | 08:57 (37) | | | | 16:12 | | |
| Potential sun hours | 521 | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | 32 | | | 444 | | | 10 | | | 385 | | | 44 | |
| Sun reduction | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | 0,96 | | | 1,00 | | | 0,76 | | | 0,76 | | | 0,42 | |
| Total reduction | | | 0,47 | | | 0,38 | | | 0,22 | | | 0,11 | | | 0,05 | |
| Total, real | | | 15 | | | 168 | | | 2 | | | 44 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 09:13 (37) | | 07:26 | | 07:08 | 19:00 (40) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 25 | 09:38 (37) | | 18:07 | | 20:09 | 29 | 19:29 (40) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | | 09:13 (37) | | 07:24 | | 07:05 | 19:00 (40) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 25 | 09:38 (37) | | 18:09 | | 20:11 | 29 | 19:29 (40) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 09:14 (37) | | 07:22 | | 07:03 | 19:00 (40) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 24 | 09:38 (37) | | 18:11 | | 20:13 | 28 | 19:28 (40) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:13 (37) | | 07:19 | | 07:00 | 18:59 (40) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 24 | 09:37 (37) | | 18:13 | | 20:15 | 27 | 19:26 (40) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 09:14 (37) | | 07:17 | | 06:57 | 19:00 (40) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 23 | 09:37 (37) | | 18:15 | | 20:17 | 26 | 19:26 (40) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | | 09:15 (37) | | 07:14 | | 06:55 | 19:01 (40) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 21 | 09:36 (37) | | 18:17 | | 20:19 | 23 | 19:24 (40) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | | 09:16 (37) | | 07:12 | | 06:52 | 19:02 (40) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 20 | 09:36 (37) | | 18:19 | | 20:21 | 21 | 19:23 (40) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | | 09:17 (37) | | 07:09 | | 06:50 | 19:03 (40) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 18 | 09:35 (37) | | 18:22 | | 20:23 | 18 | 19:21 (40) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | | 09:19 (37) | | 07:07 | | 06:47 | 19:05 (40) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | 15 | 09:34 (37) | | 18:24 | | 20:25 | 14 | 19:19 (40) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 09:21 (37) | | 07:04 | | 06:45 | 19:09 (40) | 05:36 | 04:54 |
| | 16:26 | | 17:27 | 9 | 09:30 (37) | | 18:26 | | 20:27 | 5 | 19:14 (40) | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | | | 07:02 | | 06:42 | | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | | | 18:28 | | 20:29 | | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | | | 06:59 | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | | | 18:30 | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | | | 06:57 | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | | | 18:32 | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | | | 06:54 | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | | | 18:34 | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | | | 06:51 | | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | | | 18:36 | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | | | 06:49 | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | | | 18:38 | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | | | 06:46 | | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | | | 18:40 | | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | | | 06:44 | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | | | 18:42 | | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 07:50 | | | | 06:41 | | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | | | 18:44 | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | | | 06:39 | | 06:20 | | 07:04 (7) | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | | | 18:46 | | 20:47 | 9 | 07:13 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:19 (37) | 07:46 | | | 06:36 | | 06:18 | | 06:59 (7) | 05:16 | 04:52 |
| | 16:46 | 8 | 09:27 (37) | 17:50 | | | 18:48 | | 20:49 | 18 | 07:17 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:17 (37) | 07:43 | | | 06:33 | | 06:15 | | 06:56 (7) | 05:15 | 04:52 |
| | 16:48 | 12 | 09:29 (37) | 17:53 | | | 18:50 | | 20:51 | 24 | 07:20 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:15 (37) | 07:41 | | | 06:31 | | 18:12 (40) | 06:13 | | 06:54 (7) | 05:13 | 04:53 |
| | 16:50 | 16 | 09:31 (37) | 17:55 | | | 18:52 | 9 | 18:21 (40) | 20:53 | 28 | 07:22 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:15 (37) | 07:38 | | | 06:28 | | 18:09 (40) | 06:11 | | 06:52 (7) | 05:12 | 04:53 |
| | 16:51 | 18 | 09:33 (37) | 17:57 | | | 18:54 | 16 | 18:25 (40) | 20:55 | 32 | 07:24 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:14 (37) | 07:36 | | | 06:26 | | 18:07 (40) | 06:08 | | 06:50 (7) | 05:10 | 04:53 |
| | 16:54 | 20 | 09:34 (37) | 17:59 | | | 18:56 | 19 | 18:26 (40) | 20:57 | 34 | 07:24 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:14 (37) | 07:34 | | | 06:23 | | 18:04 (40) | 06:06 | | 06:48 (7) | 05:09 | 04:54 |
| | 16:56 | 20 | 09:34 (37) | 18:01 | | | 18:57 | 23 | 18:27 (40) | 20:59 | 38 | 07:26 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:13 (37) | 07:31 | | | 06:21 | | 18:04 (40) | 06:04 | | 06:47 (7) | 05:08 | 04:54 |
| | 16:58 | 22 | 09:35 (37) | 18:03 | | | 18:59 | 24 | 18:28 (40) | 21:01 | 40 | 07:27 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:13 (37) | 07:29 | | | 06:18 | | 18:02 (40) | 06:02 | | 06:46 (7) | 05:06 | 04:55 |
| | 17:00 | 23 | 09:36 (37) | 18:05 | | | 19:01 | 26 | 18:28 (40) | 21:03 | 25 | 07:27 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:13 (37) | | | | 07:15 | | 19:02 (40) | 05:59 | | 06:46 (7) | 05:05 | 04:55 |
| | 17:02 | 24 | 09:37 (37) | | | | 20:03 | 27 | 19:29 (40) | 21:05 | 18 | 07:28 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:13 (37) | | | | 07:13 | | 19:01 (40) | 05:57 | | 06:45 (7) | 05:04 | 04:56 |
| | 17:04 | 25 | 09:38 (37) | | | | 20:05 | 28 | 19:29 (40) | 21:06 | 14 | 07:29 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | 09:13 (37) | | | | 07:10 | | 19:01 (40) | | | | 05:03 | |
| | 17:06 | 25 | 09:38 (37) | | | | 20:07 | 28 | 19:29 (40) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | 213 | | | 204 | | | 200 | | | 500 | | | | |
| Sun reduction | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | 0,74 | | | 0,74 | | | 1,00 | | | 0,98 | | | | |
| Total reduction | 0,13 | | | 0,17 | | | 0,33 | | | 0,37 | | | | |
| Total, real | 27 | | | 36 | | | 65 | | | 184 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | September | | October | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | 06:38 | | 07:34 | 07:36 | | 08:35 |
| | 22:18 | 21:40 | | 20:29 | | 19:12 | 16:58 | 11 | 09:01 (37) | 16:10 |
| 2 | 04:57 | 05:41 | | 06:39 | | 19:08 (40) | 07:36 | | 08:49 (37) | 08:36 |
| | 22:17 | 21:38 | | 20:27 | 5 | 19:13 (40) | 19:09 | 16:55 | 15 | 09:04 (37) | 16:09 |
| 3 | 04:58 | 05:43 | | 06:41 | | 19:03 (40) | 07:38 | 07:41 | | 08:47 (37) | 08:38 |
| | 22:17 | 21:36 | | 20:24 | 14 | 19:17 (40) | 19:07 | 16:53 | 18 | 09:05 (37) | 16:08 |
| 4 | 04:59 | 05:45 | | 06:43 | | 19:01 (40) | 07:40 | 07:43 | | 08:46 (37) | 08:40 |
| | 22:16 | 21:34 | | 20:22 | 18 | 19:19 (40) | 19:04 | 16:51 | 20 | 09:06 (37) | 16:07 |
| 5 | 05:00 | 05:47 | | 06:45 | | 18:58 (40) | 07:42 | 07:45 | | 08:45 (37) | 08:41 |
| | 22:16 | 21:32 | | 20:19 | 21 | 19:19 (40) | 19:02 | 16:49 | 21 | 09:06 (37) | 16:07 |
| 6 | 05:01 | 05:49 | | 06:47 | | 18:57 (40) | 07:44 | 07:47 | | 08:45 (37) | 08:43 |
| | 22:15 | 21:30 | | 20:16 | 23 | 19:20 (40) | 18:59 | 16:47 | 23 | 09:08 (37) | 16:06 |
| 7 | 05:02 | 05:50 | | 06:49 | | 18:56 (40) | 07:46 | 07:49 | | 08:44 (37) | 08:44 |
| | 22:14 | 21:28 | | 20:14 | 25 | 19:21 (40) | 18:57 | 16:45 | 24 | 09:08 (37) | 16:06 |
| 8 | 05:03 | 05:52 | | 06:51 | | 18:55 (40) | 07:48 | 07:51 | | 08:44 (37) | 08:45 |
| | 22:14 | 21:25 | | 20:11 | 27 | 19:22 (40) | 18:54 | 16:43 | 24 | 09:08 (37) | 16:05 |
| 9 | 05:04 | 05:54 | | 06:53 | | 18:54 (40) | 07:50 | 07:53 | | 08:43 (37) | 08:47 |
| | 22:13 | 21:23 | | 20:09 | 28 | 19:22 (40) | 18:52 | 16:41 | 25 | 09:08 (37) | 16:05 |
| 10 | 05:05 | 05:56 | | 06:55 | | 18:52 (40) | 07:52 | 07:55 | | 08:44 (37) | 08:48 |
| | 22:12 | 21:21 | | 20:06 | 29 | 19:21 (40) | 18:49 | 16:40 | 25 | 09:09 (37) | 16:04 |
| 11 | 05:07 | 05:58 | | 06:56 | | 18:52 (40) | 07:54 | 07:57 | | 08:44 (37) | 08:49 |
| | 22:11 | 21:19 | | 20:04 | 29 | 19:21 (40) | 18:47 | 16:38 | 25 | 09:09 (37) | 16:04 |
| 12 | 05:08 | 06:00 | | 06:58 | | 18:52 (40) | 07:56 | 07:59 | | 08:44 (37) | 08:50 |
| | 22:10 | 21:17 | | 20:01 | 29 | 19:21 (40) | 18:44 | 16:36 | 24 | 09:08 (37) | 16:04 |
| 13 | 05:09 | 06:02 | | 07:00 | | 18:52 (40) | 07:58 | 08:01 | | 08:45 (37) | 08:51 |
| | 22:09 | 21:15 | | 19:58 | 28 | 19:20 (40) | 18:42 | 16:34 | 24 | 09:09 (37) | 16:04 |
| 14 | 05:11 | 06:03 | | 07:02 | | 18:52 (40) | 08:00 | 08:03 | | 08:45 (37) | 08:52 |
| | 22:08 | 21:12 | | 19:56 | 28 | 19:20 (40) | 18:39 | 16:32 | 24 | 09:09 (37) | 16:03 |
| 15 | 05:12 | 06:05 | | 07:04 | | 18:52 (40) | 08:02 | 08:05 | | 08:46 (37) | 08:53 |
| | 22:06 | 21:10 | | 19:53 | 27 | 19:19 (40) | 18:37 | 16:31 | 22 | 09:08 (37) | 16:03 |
| 16 | 05:13 | 06:07 | | 07:06 | | 18:52 (40) | 08:04 | 08:07 | | 08:47 (37) | 08:54 |
| | 22:05 | 21:08 | | 19:51 | 25 | 19:17 (40) | 18:34 | 16:29 | 20 | 09:07 (37) | 16:03 |
| 17 | 05:15 | 06:09 | | 07:08 | | 18:53 (40) | 08:06 | 08:09 | | 08:47 (37) | 08:55 |
| | 22:04 | 21:05 | | 19:48 | 23 | 19:16 (40) | 18:32 | 16:27 | 20 | 09:07 (37) | 16:04 |
| 18 | 05:16 | 06:11 | 06:56 (7) | 07:10 | | 18:54 (40) | 08:08 | 08:11 | | 08:49 (37) | 08:56 |
| | 22:03 | 21:03 | 1 | 06:57 (7) | 19:46 | 20 | 19:14 (40) | 18:29 | 16:26 | 18 | 09:07 (37) | 16:04 |
| 19 | 05:18 | 06:13 | 06:58 (7) | 07:12 | | 18:55 (40) | 08:10 | 08:13 | | 08:50 (37) | 08:57 |
| | 22:01 | 21:01 | 1 | 06:59 (7) | 19:43 | 17 | 19:12 (40) | 18:27 | 16:24 | 16 | 09:06 (37) | 16:04 |
| 20 | 05:19 | 06:15 | 07:00 (7) | 07:13 | | 18:58 (40) | 08:12 | 08:15 | | 08:52 (37) | 08:57 |
| | 22:00 | 20:58 | 1 | 07:01 (7) | 19:40 | 11 | 19:09 (40) | 18:25 | 16:23 | 12 | 09:04 (37) | 16:04 |
| 21 | 05:21 | 06:17 | 07:01 (7) | 07:15 | | | 08:14 | 08:17 | | 08:54 (37) | 08:58 |
| | 21:58 | 20:56 | 2 | 07:03 (7) | 19:38 | | | 18:22 | 16:21 | 8 | 09:02 (37) | 16:05 |
| 22 | 05:22 | 06:19 | 07:04 (7) | 07:17 | | | 08:16 | 08:19 | | | 08:59 |
| | 21:57 | 20:54 | 9 | 07:16 (7) | 19:35 | | | 18:20 | 16:20 | | | 16:05 |
| 23 | 05:24 | 06:21 | 07:09 (7) | 07:19 | | | 08:18 | 08:21 | | | 08:59 |
| | 21:55 | 20:51 | 7 | 07:16 (7) | 19:33 | | | 18:18 | 16:19 | | | 16:06 |
| 24 | 05:26 | 06:22 | | 07:21 | | | 08:20 | 08:23 | | | 09:00 |
| | 21:54 | 20:49 | | 19:30 | | | 18:15 | 16:17 | | | 16:06 |
| 25 | 05:27 | 06:24 | | 07:23 | | | 07:22 | 08:24 | | | 09:00 |
| | 21:52 | 20:46 | | 19:27 | | | 17:13 | 16:16 | | | 16:07 |
| 26 | 05:29 | 06:26 | | 07:25 | | | 07:24 | 08:26 | | | 09:00 |
| | 21:50 | 20:44 | | 19:25 | | | 17:11 | 16:15 | | | 16:08 |
| 27 | 05:31 | 06:28 | | 07:27 | | | 07:26 | 08:28 | | | 09:00 |
| | 21:49 | 20:42 | | 19:22 | | | 17:08 | 16:14 | | | 16:08 |
| 28 | 05:32 | 06:30 | | 07:29 | | | 07:28 | 08:30 | | | 09:01 |
| | 21:47 | 20:39 | | 19:20 | | | 17:06 | 16:13 | | | 16:09 |
| 29 | 05:34 | 06:32 | | 07:31 | | | 07:30 | 08:31 | | | 09:01 |
| | 21:45 | 20:37 | | 19:17 | | | 17:04 | 16:12 | | | 16:10 |
| 30 | 05:36 | 06:34 | | 07:32 | | | 07:32 | 08:33 | | | 09:01 |
| | 21:43 | 20:34 | | 19:14 | | | 17:02 | 16:11 | | | 16:11 |
| 31 | 05:38 | 06:36 | | | | | 07:34 | | | | 09:01 |
| | 21:41 | 20:32 | | | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | 465 | | 383 | | | 326 | 253 | | | 224 |
| Total, worst case | | | 21 | | 427 | | | | 419 | | |
| Sun reduction | | | 0,51 | | 0,40 | | | | 0,16 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | 1,00 | | |
| Wind dir. red. | | | 0,96 | | 1,00 | | | | 0,74 | | |
| Total reduction | | | 0,48 | | 0,38 | | | | 0,11 | | |
| Total, real | | | 10 | | 162 | | | | 47 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:17 (37) | 07:26 | | 07:08 | 18:59 (40) | 05:55 | 05:02 |
| | 16:14 | | 17:08 25 | 09:42 (37) | 18:07 | | 20:09 29 | 19:28 (40) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:17 (37) | 07:24 | | 07:05 | 19:00 (40) | 05:53 | 05:01 |
| | 16:15 | | 17:10 25 | 09:42 (37) | 18:09 | | 20:11 28 | 19:28 (40) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:18 (37) | 07:22 | | 07:03 | 19:00 (40) | 05:50 | 05:00 |
| | 16:16 | | 17:12 24 | 09:42 (37) | 18:11 | | 20:13 26 | 19:26 (40) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:18 (37) | 07:19 | | 07:00 | 19:00 (40) | 05:48 | 04:59 |
| | 16:17 | | 17:14 22 | 09:40 (37) | 18:13 | | 20:15 25 | 19:25 (40) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:19 (37) | 07:17 | | 06:57 | 19:01 (40) | 05:46 | 04:58 |
| | 16:19 | | 17:16 21 | 09:40 (37) | 18:15 | | 20:17 23 | 19:24 (40) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:20 (37) | 07:14 | | 06:55 | 19:01 (40) | 05:44 | 04:57 |
| | 16:20 | | 17:19 19 | 09:39 (37) | 18:17 | | 20:19 21 | 19:22 (40) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:21 (37) | 07:12 | | 06:52 | 19:03 (40) | 05:42 | 04:56 |
| | 16:21 | | 17:21 17 | 09:38 (37) | 18:19 | | 20:21 18 | 19:21 (40) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 09:23 (37) | 07:09 | | 06:50 | 19:04 (40) | 05:40 | 04:56 |
| | 16:23 | | 17:23 14 | 09:37 (37) | 18:22 | | 20:23 14 | 19:18 (40) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 09:26 (37) | 07:07 | | 06:47 | 19:08 (40) | 05:38 | 04:55 |
| | 16:24 | | 17:25 9 | 09:35 (37) | 18:24 | | 20:25 6 | 19:14 (40) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:23 (37) | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 7 | 09:30 (37) | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:20 (37) | 07:48 | | 06:39 | | 06:20 | 07:07 (7) | 05:18 | 04:52 |
| | 16:44 12 | 09:32 (37) | 17:48 | | 18:46 | | 20:47 7 | 07:14 (7) | 21:44 | 22:18 |
| 21 | 08:45 | 09:20 (37) | 07:46 | | 06:36 | | 06:18 | 07:00 (7) | 05:16 | 04:52 |
| | 16:46 14 | 09:34 (37) | 17:50 | | 18:48 | | 20:49 18 | 07:18 (7) | 21:45 | 22:19 |
| 22 | 08:43 | 09:18 (37) | 07:43 | | 06:33 | 18:16 (40) | 06:15 | 06:57 (7) | 05:15 | 04:52 |
| | 16:48 17 | 09:35 (37) | 17:53 | | 18:50 2 | 18:18 (40) | 20:51 24 | 07:21 (7) | 21:47 | 22:19 |
| 23 | 08:42 | 09:17 (37) | 07:41 | | 06:31 | 18:10 (40) | 06:13 | 06:55 (7) | 05:13 | 04:53 |
| | 16:50 19 | 09:36 (37) | 17:55 | | 18:52 13 | 18:23 (40) | 20:53 29 | 07:24 (7) | 21:49 | 22:19 |
| 24 | 08:41 | 09:18 (37) | 07:38 | | 06:28 | 18:08 (40) | 06:11 | 06:53 (7) | 05:12 | 04:53 |
| | 16:51 20 | 09:38 (37) | 17:57 | | 18:54 17 | 18:25 (40) | 20:55 33 | 07:26 (7) | 21:50 | 22:19 |
| 25 | 08:39 | 09:17 (37) | 07:36 | | 06:26 | 18:05 (40) | 06:08 | 06:51 (7) | 05:10 | 04:53 |
| | 16:54 22 | 09:39 (37) | 17:59 | | 18:56 21 | 18:26 (40) | 20:57 35 | 07:26 (7) | 21:52 | 22:19 |
| 26 | 08:37 | 09:16 (37) | 07:34 | | 06:23 | 18:03 (40) | 06:06 | 06:50 (7) | 05:09 | 04:54 |
| | 16:56 23 | 09:39 (37) | 18:01 | | 18:57 24 | 18:27 (40) | 20:59 37 | 07:27 (7) | 21:53 | 22:19 |
| 27 | 08:36 | 09:16 (37) | 07:31 | | 06:21 | 18:03 (40) | 06:04 | 06:48 (7) | 05:08 | 04:54 |
| | 16:58 24 | 09:40 (37) | 18:03 | | 18:59 25 | 18:28 (40) | 21:01 40 | 07:28 (7) | 21:55 | 22:19 |
| 28 | 08:34 | 09:16 (37) | 07:29 | | 06:18 | 18:01 (40) | 06:02 | 06:47 (7) | 05:06 | 04:55 |
| | 17:00 24 | 09:40 (37) | 18:05 | | 19:01 27 | 18:28 (40) | 21:03 26 | 07:29 (7) | 21:57 | 22:19 |
| 29 | 08:33 | 09:17 (37) | | | 07:15 | 19:01 (40) | 05:59 | 06:47 (7) | 05:05 | 04:55 |
| | 17:02 25 | 09:42 (37) | | | 20:03 28 | 19:29 (40) | 21:05 19 | 07:30 (7) | 21:58 | 22:18 |
| 30 | 08:31 | 09:17 (37) | | | 07:13 | 19:00 (40) | 05:57 | 06:46 (7) | 05:04 | 04:56 |
| | 17:04 25 | 09:42 (37) | | | 20:05 28 | 19:28 (40) | 21:06 15 | 07:31 (7) | 21:59 | 22:18 |
| 31 | 08:29 | 09:17 (37) | | | 07:10 | 19:00 (40) | | | 05:03 | |
| | 17:06 25 | 09:42 (37) | | | 20:07 28 | 19:28 (40) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 257 | | 176 | | 213 | | 473 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,73 | | 0,73 | | 1,00 | | 0,98 | | | |
| Total reduction | 0,13 | | 0,17 | | 0,32 | | 0,37 | | | |
| Total, real | 32 | | 30 | | 69 | | 174 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | | September | | | October | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | | 06:38 | | | 07:34 | 07:36 | | | 08:35 |
| | 22:18 | 21:40 | | | 20:29 | | | 19:12 | 16:58 | | | 16:10 |
| 2 | 04:57 | 05:41 | | | 06:39 | | | 07:36 | 07:38 | | 08:55 (37) | 08:36 |
| | 22:17 | 21:38 | | | 20:27 | | | 19:09 | 16:55 | 10 | 09:05 (37) | 16:09 |
| 3 | 04:58 | 05:43 | | | 06:41 | | 19:06 (40) | 07:38 | 07:41 | | 08:52 (37) | 08:38 |
| | 22:17 | 21:36 | | | 20:24 | 6 | 19:12 (40) | 19:07 | 16:53 | 15 | 09:07 (37) | 16:08 |
| 4 | 04:59 | 05:45 | | | 06:43 | | 19:02 (40) | 07:40 | 07:43 | | 08:51 (37) | 08:40 |
| | 22:16 | 21:34 | | | 20:22 | 14 | 19:16 (40) | 19:04 | 16:51 | 17 | 09:08 (37) | 16:07 |
| 5 | 05:00 | 05:47 | | | 06:45 | | 18:59 (40) | 07:42 | 07:45 | | 08:49 (37) | 08:41 |
| | 22:16 | 21:32 | | | 20:19 | 18 | 19:17 (40) | 19:02 | 16:49 | 20 | 09:09 (37) | 16:07 |
| 6 | 05:01 | 05:49 | | | 06:47 | | 18:57 (40) | 07:44 | 07:47 | | 08:49 (37) | 08:43 |
| | 22:15 | 21:30 | | | 20:16 | 21 | 19:18 (40) | 18:59 | 16:47 | 22 | 09:11 (37) | 16:06 |
| 7 | 05:02 | 05:50 | | | 06:49 | | 18:56 (40) | 07:46 | 07:49 | | 08:48 (37) | 08:44 |
| | 22:14 | 21:28 | | | 20:14 | 23 | 19:19 (40) | 18:57 | 16:45 | 23 | 09:11 (37) | 16:06 |
| 8 | 05:03 | 05:52 | | | 06:51 | | 18:55 (40) | 07:48 | 07:51 | | 08:48 (37) | 08:45 |
| | 22:14 | 21:25 | | | 20:11 | 25 | 19:20 (40) | 18:54 | 16:43 | 24 | 09:12 (37) | 16:05 |
| 9 | 05:04 | 05:54 | | | 06:53 | | 18:54 (40) | 07:50 | 07:53 | | 08:47 (37) | 08:47 |
| | 22:13 | 21:23 | | | 20:09 | 27 | 19:21 (40) | 18:52 | 16:41 | 25 | 09:12 (37) | 16:05 |
| 10 | 05:05 | 05:56 | | | 06:55 | | 18:52 (40) | 07:52 | 07:55 | | 08:48 (37) | 08:48 |
| | 22:12 | 21:21 | | | 20:06 | 28 | 19:20 (40) | 18:49 | 16:40 | 25 | 09:13 (37) | 16:04 |
| 11 | 05:07 | 05:58 | | | 06:56 | | 18:52 (40) | 07:54 | 07:57 | | 08:48 (37) | 08:49 |
| | 22:11 | 21:19 | | | 20:04 | 28 | 19:20 (40) | 18:47 | 16:38 | 25 | 09:13 (37) | 16:04 |
| 12 | 05:08 | 06:00 | | | 06:58 | | 18:51 (40) | 07:56 | 07:59 | | 08:47 (37) | 08:50 |
| | 22:10 | 21:17 | | | 20:01 | 29 | 19:20 (40) | 18:44 | 16:36 | 26 | 09:13 (37) | 16:04 |
| 13 | 05:09 | 06:02 | | | 07:00 | | 18:51 (40) | 07:58 | 08:01 | | 08:49 (37) | 08:51 |
| | 22:09 | 21:15 | | | 19:58 | 28 | 19:19 (40) | 18:42 | 16:34 | 24 | 09:13 (37) | 16:04 |
| 14 | 05:11 | 06:03 | | | 07:02 | | 18:51 (40) | 08:00 | 08:03 | | 08:49 (37) | 08:52 |
| | 22:08 | 21:12 | | | 19:56 | 28 | 19:19 (40) | 18:39 | 16:32 | 24 | 09:13 (37) | 16:03 |
| 15 | 05:12 | 06:05 | | | 07:04 | | 18:52 (40) | 08:02 | 08:05 | | 08:49 (37) | 08:53 |
| | 22:06 | 21:10 | | | 19:53 | 26 | 19:18 (40) | 18:37 | 16:31 | 24 | 09:13 (37) | 16:03 |
| 16 | 05:13 | 06:07 | | | 07:06 | | 18:51 (40) | 08:04 | 08:07 | | 08:49 (37) | 08:54 |
| | 22:05 | 21:08 | | | 19:51 | 26 | 19:17 (40) | 18:34 | 16:29 | 23 | 09:12 (37) | 16:03 |
| 17 | 05:15 | 06:09 | | | 07:08 | | 18:52 (40) | 08:06 | 08:09 | | 08:50 (37) | 08:55 |
| | 22:04 | 21:05 | | | 19:48 | 23 | 19:15 (40) | 18:32 | 16:27 | 22 | 09:12 (37) | 16:04 |
| 18 | 05:16 | 06:11 | | | 07:10 | | 18:52 (40) | 08:08 | 08:11 | | 08:52 (37) | 08:56 |
| | 22:03 | 21:03 | | | 19:46 | 22 | 19:14 (40) | 18:29 | 16:26 | 20 | 09:12 (37) | 16:04 |
| 19 | 05:18 | 06:13 | | | 07:12 | | 18:54 (40) | 08:10 | 08:13 | | 08:52 (37) | 08:57 |
| | 22:01 | 21:01 | | | 19:43 | 18 | 19:12 (40) | 18:27 | 16:24 | 19 | 09:11 (37) | 16:04 |
| 20 | 05:19 | 06:15 | | | 07:13 | | 18:56 (40) | 08:12 | 08:15 | | 08:53 (37) | 08:57 |
| | 22:00 | 20:58 | | | 19:40 | 14 | 19:10 (40) | 18:25 | 16:23 | 17 | 09:10 (37) | 16:04 |
| 21 | 05:21 | 06:17 | | 07:02 (7) | 07:15 | | 18:59 (40) | 08:14 | 08:17 | | 08:55 (37) | 08:58 |
| | 21:58 | 20:56 | 1 | 07:03 (7) | 19:38 | 7 | 19:06 (40) | 18:22 | 16:21 | 14 | 09:09 (37) | 16:05 |
| 22 | 05:22 | 06:19 | | 07:06 (7) | 07:17 | | | 08:16 | 08:19 | | 08:56 (37) | 08:59 |
| | 21:57 | 20:54 | 7 | 07:16 (7) | 19:35 | | | 18:20 | 16:20 | 12 | 09:08 (37) | 16:05 |
| 23 | 05:24 | 06:21 | | 07:12 (7) | 07:19 | | | 08:18 | 08:21 | | 08:59 (37) | 08:59 |
| | 21:55 | 20:51 | 4 | 07:16 (7) | 19:33 | | | 18:18 | 16:19 | 7 | 09:06 (37) | 16:06 |
| 24 | 05:26 | 06:22 | | | 07:21 | | | 08:20 | 08:23 | | | 09:00 |
| | 21:54 | 20:49 | | | 19:30 | | | 18:15 | 16:17 | | | 16:06 |
| 25 | 05:27 | 06:24 | | | 07:23 | | | 07:22 | 08:24 | | | 09:00 |
| | 21:52 | 20:46 | | | 19:27 | | | 17:13 | 16:16 | | | 16:07 |
| 26 | 05:29 | 06:26 | | | 07:25 | | | 07:24 | 08:26 | | | 09:00 |
| | 21:50 | 20:44 | | | 19:25 | | | 17:11 | 16:15 | | | 16:08 |
| 27 | 05:31 | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | | 09:00 |
| | 21:49 | 20:42 | | | 19:22 | | | 17:08 | 16:14 | | | 16:08 |
| 28 | 05:32 | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | | 09:01 |
| | 21:47 | 20:39 | | | 19:20 | | | 17:06 | 16:13 | | | 16:09 |
| 29 | 05:34 | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | | 09:01 |
| | 21:45 | 20:37 | | | 19:17 | | | 17:04 | 16:12 | | | 16:10 |
| 30 | 05:36 | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | | 09:01 |
| | 21:43 | 20:34 | | | 19:14 | | | 17:02 | 16:11 | | | 16:11 |
| 31 | 05:38 | 06:36 | | | | | | 07:34 | | | | 09:01 |
| | 21:41 | 20:32 | | | | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | 465 | | | 383 | | | 326 | 253 | | | 224 |
| Total, worst case | | | 12 | | | 411 | | | | 438 | | |
| Sun reduction | | | 0,51 | | | 0,40 | | | | 0,16 | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | 1,00 | | |
| Wind dir. red. | | | 0,97 | | | 1,00 | | | | 0,73 | | |
| Total reduction | | | 0,47 | | | 0,38 | | | | 0,11 | | |
| Total, real | | | 6 | | | 155 | | | | 48 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:37 (37) | 07:26 | | | 07:08 | | 18:56 (40) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 18 | 09:55 (37) | 18:07 | | | 20:09 | 21 | 19:17 (40) | 21:08 | 22:02 |
| 2 | 09:00 | | | 08:26 | | 09:39 (37) | 07:24 | | | 07:05 | | 18:58 (40) | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 15 | 09:54 (37) | 18:09 | | | 20:11 | 17 | 19:15 (40) | 21:10 | 22:03 |
| 3 | 09:00 | | | 08:24 | | 09:41 (37) | 07:22 | | | 07:03 | | 18:59 (40) | 05:50 | 05:00 |
| | 16:16 | | | 17:12 | 11 | 09:52 (37) | 18:11 | | | 20:13 | 13 | 19:12 (40) | 21:12 | 22:05 |
| 4 | 09:00 | | | 08:22 | | | 07:19 | | | 07:00 | | 19:03 (40) | 05:48 | 04:59 |
| | 16:17 | | | 17:14 | | | 18:13 | | | 20:15 | 5 | 19:08 (40) | 21:14 | 22:06 |
| 5 | 08:59 | | | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | 04:58 |
| | 16:19 | | | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | | 06:52 | | | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | | | 20:21 | | | 21:20 | 22:09 |
| 8 | 08:58 | | 09:37 (37) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 3 | 09:40 (37) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 22:10 |
| 9 | 08:57 | | 09:35 (37) | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | 04:55 |
| | 16:24 | 8 | 09:43 (37) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 22:11 |
| 10 | 08:56 | | 09:34 (37) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | 04:54 |
| | 16:26 | 11 | 09:45 (37) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 22:12 |
| 11 | 08:56 | | 09:33 (37) | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | 04:54 |
| | 16:28 | 14 | 09:47 (37) | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 22:13 |
| 12 | 08:55 | | 09:32 (37) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | 16 | 09:48 (37) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 09:32 (37) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | 17 | 09:49 (37) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 09:32 (37) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | 19 | 09:51 (37) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 09:31 (37) | 07:59 | | | 06:51 | | | 06:32 | | 07:21 (7) | 05:26 | 04:52 |
| | 16:34 | 20 | 09:51 (37) | 17:38 | | | 18:36 | | | 20:37 | 16 | 07:37 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:31 (37) | 07:57 | | | 06:49 | | | 06:30 | | 07:17 (7) | 05:25 | 04:52 |
| | 16:36 | 21 | 09:52 (37) | 17:40 | | | 18:38 | | | 20:39 | 24 | 07:41 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:31 (37) | 07:55 | | | 06:46 | | | 06:27 | | 07:14 (7) | 05:23 | 04:52 |
| | 16:38 | 22 | 09:53 (37) | 17:42 | | | 18:40 | | | 20:41 | 30 | 07:44 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:30 (37) | 07:52 | | | 06:44 | | | 06:25 | | 07:11 (7) | 05:21 | 04:52 |
| | 16:40 | 24 | 09:54 (37) | 17:44 | | | 18:42 | | | 20:43 | 34 | 07:45 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:31 (37) | 07:50 | | | 06:41 | | 18:05 (40) | 06:23 | | 07:10 (7) | 05:19 | 04:52 |
| | 16:42 | 24 | 09:55 (37) | 17:46 | | | 18:44 | 12 | 18:17 (40) | 20:45 | 37 | 07:47 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:30 (37) | 07:48 | | | 06:39 | | 18:02 (40) | 06:20 | | 07:08 (7) | 05:18 | 04:52 |
| | 16:44 | 25 | 09:55 (37) | 17:48 | | | 18:46 | 16 | 18:18 (40) | 20:47 | 41 | 07:49 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:31 (37) | 07:46 | | | 06:36 | | 17:59 (40) | 06:18 | | 07:06 (7) | 05:16 | 04:52 |
| | 16:46 | 25 | 09:56 (37) | 17:50 | | | 18:48 | 20 | 18:19 (40) | 20:49 | 43 | 07:49 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:31 (37) | 07:43 | | | 06:33 | | 17:58 (40) | 06:15 | | 07:05 (7) | 05:15 | 04:52 |
| | 16:48 | 25 | 09:56 (37) | 17:53 | | | 18:50 | 23 | 18:21 (40) | 20:51 | 45 | 07:50 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:31 (37) | 07:41 | | | 06:31 | | 17:57 (40) | 06:13 | | 07:04 (7) | 05:13 | 04:53 |
| | 16:50 | 25 | 09:56 (37) | 17:55 | | | 18:52 | 24 | 18:21 (40) | 20:53 | 47 | 07:51 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:32 (37) | 07:38 | | | 06:28 | | 17:56 (40) | 06:11 | | 07:03 (7) | 05:12 | 04:53 |
| | 16:51 | 25 | 09:57 (37) | 17:57 | | | 18:54 | 26 | 18:22 (40) | 20:55 | 49 | 07:52 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:32 (37) | 07:36 | | | 06:26 | | 17:55 (40) | 06:08 | | 07:01 (7) | 05:10 | 04:53 |
| | 16:53 | 25 | 09:57 (37) | 17:59 | | | 18:56 | 27 | 18:22 (40) | 20:57 | 51 | 07:52 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:32 (37) | 07:34 | | | 06:23 | | 17:54 (40) | 06:06 | | 07:01 (7) | 05:09 | 04:54 |
| | 16:56 | 25 | 09:57 (37) | 18:01 | | | 18:57 | 27 | 18:21 (40) | 20:59 | 52 | 07:53 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:32 (37) | 07:31 | | | 06:21 | | 17:55 (40) | 06:04 | | 07:00 (7) | 05:08 | 04:54 |
| | 16:58 | 25 | 09:57 (37) | 18:03 | | | 18:59 | 26 | 18:21 (40) | 21:01 | 53 | 07:53 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:33 (37) | 07:29 | | | 06:18 | | 17:54 (40) | 06:01 | | 07:14 (7) | 05:06 | 04:55 |
| | 17:00 | 23 | 09:56 (37) | 18:05 | | | 19:01 | 26 | 18:20 (40) | 21:03 | 40 | 07:54 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:34 (37) | | | | 07:15 | | 18:55 (40) | 05:59 | | 07:18 (7) | 05:05 | 04:55 |
| | 17:02 | 23 | 09:57 (37) | | | | 20:03 | 25 | 19:20 (40) | 21:05 | 36 | 07:54 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:35 (37) | | | | 07:13 | | 18:55 (40) | 05:57 | | 07:21 (7) | 05:04 | 04:56 |
| | 17:04 | 22 | 09:57 (37) | | | | 20:05 | 24 | 19:19 (40) | 21:06 | 33 | 07:54 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | 09:36 (37) | | | | 07:10 | | 18:56 (40) | | | | 05:03 | |
| | 17:06 | 20 | 09:56 (37) | | | | 20:07 | 22 | 19:18 (40) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | 487 | | | 44 | | | 298 | | | 687 | | | | |
| Sun reduction | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | 0,68 | | | 0,68 | | | 1,00 | | | 0,98 | | | | |
| Total reduction | 0,12 | | | 0,16 | | | 0,32 | | | 0,36 | | | | |
| Total, real | 56 | | | 7 | | | 95 | | | 250 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | | 09:15 (37) |
| | 22:18 | | 21:40 | | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | 14 | 09:29 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | | 09:17 (37) |
| | 22:17 | | 21:38 | | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | 11 | 09:28 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | | 09:19 (37) |
| | 22:17 | | 21:36 | | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | 8 | 09:27 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | | 07:40 | | 07:43 | | | 08:40 | | 09:21 (37) |
| | 22:16 | | 21:34 | | | 20:22 | | | 19:04 | | 16:51 | | | 16:07 | 4 | 09:25 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | | 07:42 | | 07:45 | | | 08:41 | | |
| | 22:16 | | 21:32 | | | 20:19 | | | 19:02 | | 16:49 | | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | |
| | 22:15 | | 21:30 | | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | | 06:49 | | | 07:46 | | 07:49 | | 09:16 (37) | 08:44 | | |
| | 22:14 | | 21:28 | | | 20:14 | | | 18:57 | | 16:45 | 1 | 09:17 (37) | 16:05 | | |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:59 (40) | 07:48 | | 07:51 | | 09:11 (37) | 08:45 | | |
| | 22:14 | | 21:25 | | | 20:11 | 3 | 19:02 (40) | 18:54 | | 16:43 | 11 | 09:22 (37) | 16:05 | | |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:54 (40) | 07:50 | | 07:53 | | 09:08 (37) | 08:47 | | |
| | 22:13 | | 21:23 | | | 20:09 | 12 | 19:06 (40) | 18:52 | | 16:41 | 16 | 09:24 (37) | 16:05 | | |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 18:50 (40) | 07:52 | | 07:55 | | 09:08 (37) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 17 | 19:07 (40) | 18:49 | | 16:40 | 18 | 09:26 (37) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 18:48 (40) | 07:54 | | 07:57 | | 09:07 (37) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 21 | 19:09 (40) | 18:47 | | 16:38 | 20 | 09:27 (37) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:47 (40) | 07:56 | | 07:59 | | 09:06 (37) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 23 | 19:10 (40) | 18:44 | | 16:36 | 21 | 09:27 (37) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:46 (40) | 07:58 | | 08:01 | | 09:06 (37) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:58 | 24 | 19:10 (40) | 18:42 | | 16:34 | 23 | 09:29 (37) | 16:04 | | |
| 14 | 05:11 | | 06:03 | | | 07:02 | | 18:45 (40) | 08:00 | | 08:03 | | 09:06 (37) | 08:52 | | |
| | 22:08 | | 21:12 | | | 19:56 | 26 | 19:11 (40) | 18:39 | | 16:32 | 23 | 09:29 (37) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:45 (40) | 08:02 | | 08:05 | | 09:05 (37) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 26 | 19:11 (40) | 18:37 | | 16:31 | 25 | 09:30 (37) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:43 (40) | 08:04 | | 08:07 | | 09:05 (37) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 27 | 19:10 (40) | 18:34 | | 16:29 | 25 | 09:30 (37) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:43 (40) | 08:06 | | 08:09 | | 09:05 (37) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 27 | 19:10 (40) | 18:32 | | 16:27 | 25 | 09:30 (37) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:43 (40) | 08:08 | | 08:11 | | 09:06 (37) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 26 | 19:09 (40) | 18:29 | | 16:26 | 25 | 09:31 (37) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:43 (40) | 08:10 | | 08:13 | | 09:06 (37) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 26 | 19:09 (40) | 18:27 | | 16:24 | 25 | 09:31 (37) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:43 (40) | 08:12 | | 08:15 | | 09:06 (37) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 25 | 19:08 (40) | 18:25 | | 16:23 | 25 | 09:31 (37) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:44 (40) | 08:14 | | 08:17 | | 09:06 (37) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 23 | 19:07 (40) | 18:22 | | 16:21 | 25 | 09:31 (37) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:13 (7) | 07:17 | | 18:45 (40) | 08:16 | | 08:19 | | 09:06 (37) | 08:59 | | |
| | 21:57 | | 20:54 | 3 | 07:16 (7) | 19:35 | 20 | 19:05 (40) | 18:20 | | 16:20 | 25 | 09:31 (37) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:12 (7) | 07:19 | | 18:46 (40) | 08:18 | | 08:21 | | 09:07 (37) | 08:59 | | |
| | 21:55 | | 20:51 | 6 | 07:18 (7) | 19:33 | 18 | 19:04 (40) | 18:18 | | 16:19 | 24 | 09:31 (37) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:14 (7) | 07:21 | | 18:47 (40) | 08:20 | | 08:23 | | 09:08 (37) | 09:00 | | |
| | 21:54 | | 20:49 | 6 | 07:20 (7) | 19:30 | 13 | 19:00 (40) | 18:15 | | 16:17 | 23 | 09:31 (37) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:15 (7) | 07:23 | | 18:50 (40) | 07:22 | | 08:24 | | 09:08 (37) | 09:00 | | |
| | 21:52 | | 20:46 | 8 | 07:23 (7) | 19:27 | 6 | 18:56 (40) | 17:13 | | 16:16 | 23 | 09:31 (37) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:17 (7) | 07:25 | | | 07:24 | | 08:26 | | 09:09 (37) | 09:00 | | |
| | 21:50 | | 20:44 | 6 | 07:23 (7) | 19:25 | | | 17:11 | | 16:15 | 21 | 09:30 (37) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:19 (7) | 07:27 | | | 07:26 | | 08:28 | | 09:10 (37) | 09:00 | | |
| | 21:49 | | 20:42 | 6 | 07:25 (7) | 19:22 | | | 17:08 | | 16:14 | 20 | 09:30 (37) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:23 (7) | 07:29 | | | 07:28 | | 08:30 | | 09:11 (37) | 09:01 | | |
| | 21:47 | | 20:39 | 4 | 07:27 (7) | 19:20 | | | 17:06 | | 16:13 | 19 | 09:30 (37) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | 09:12 (37) | 09:01 | | |
| | 21:45 | | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | 18 | 09:30 (37) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | 09:13 (37) | 09:01 | | |
| | 21:43 | | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | 16 | 09:29 (37) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | | | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 39 | | | 363 | | | | | 497 | | | 37 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | | 1,00 | | | | | 0,68 | | | 0,68 | |
| Total reduction | | | | 0,47 | | | 0,37 | | | | | 0,10 | | | 0,09 | |
| Total, real | | | | 19 | | | 134 | | | | | 50 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:42 (37) | 07:26 | | 07:08 | 18:55 (40) | 05:55 | 05:02 |
| | 16:14 | | 17:08 13 | 09:55 (37) | 18:07 | | 20:09 15 | 19:10 (40) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:45 (37) | 07:24 | | 07:05 | 18:59 (40) | 05:53 | 05:01 |
| | 16:15 | | 17:10 7 | 09:52 (37) | 18:09 | | 20:11 9 | 19:08 (40) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 05:50 | 05:00 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:57 | | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | | 21:16 | 22:07 |
| 6 | 08:59 | 09:38 (37) | 08:18 | | 07:14 | | 06:55 | | 05:44 | 04:57 |
| | 16:20 6 | 09:44 (37) | 17:19 | | 18:17 | | 20:19 | | 21:18 | 22:08 |
| 7 | 08:58 | 09:36 (37) | 08:16 | | 07:12 | | 06:52 | | 05:42 | 04:56 |
| | 16:21 10 | 09:46 (37) | 17:21 | | 18:19 | | 20:21 | | 21:20 | 22:09 |
| 8 | 08:58 | 09:35 (37) | 08:14 | | 07:09 | | 06:50 | | 05:40 | 04:56 |
| | 16:23 12 | 09:47 (37) | 17:23 | | 18:22 | | 20:23 | | 21:22 | 22:10 |
| 9 | 08:57 | 09:35 (37) | 08:12 | | 07:07 | | 06:47 | | 05:38 | 04:55 |
| | 16:24 14 | 09:49 (37) | 17:25 | | 18:24 | | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | 09:34 (37) | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 16 | 09:50 (37) | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | 09:34 (37) | 08:08 | | 07:02 | | 06:42 | 07:31 (7) | 05:34 | 04:54 |
| | 16:28 17 | 09:51 (37) | 17:29 | | 18:28 | | 20:29 17 | 07:48 (7) | 21:28 | 22:13 |
| 12 | 08:55 | 09:33 (37) | 08:06 | | 06:59 | | 06:40 | 07:27 (7) | 05:32 | 04:53 |
| | 16:29 19 | 09:52 (37) | 17:31 | | 18:30 | | 20:31 25 | 07:52 (7) | 21:29 | 22:14 |
| 13 | 08:54 | 09:33 (37) | 08:03 | | 06:56 | | 06:37 | 07:23 (7) | 05:30 | 04:53 |
| | 16:31 20 | 09:53 (37) | 17:33 | | 18:32 | | 20:33 30 | 07:53 (7) | 21:31 | 22:15 |
| 14 | 08:53 | 09:33 (37) | 08:01 | | 06:54 | | 06:35 | 07:21 (7) | 05:28 | 04:53 |
| | 16:33 21 | 09:54 (37) | 17:36 | | 18:34 | | 20:35 32 | 07:53 (7) | 21:33 | 22:15 |
| 15 | 08:52 | 09:33 (37) | 07:59 | | 06:51 | | 06:32 | 07:19 (7) | 05:26 | 04:52 |
| | 16:34 21 | 09:54 (37) | 17:38 | | 18:36 | | 20:37 33 | 07:52 (7) | 21:35 | 22:16 |
| 16 | 08:51 | 09:33 (37) | 07:57 | | 06:49 | | 06:30 | 07:17 (7) | 05:25 | 04:52 |
| | 16:36 23 | 09:56 (37) | 17:40 | | 18:38 | | 20:39 36 | 07:53 (7) | 21:37 | 22:17 |
| 17 | 08:50 | 09:33 (37) | 07:55 | | 06:46 | 18:03 (40) | 06:27 | 07:16 (7) | 05:23 | 04:52 |
| | 16:38 24 | 09:57 (37) | 17:42 | | 18:40 9 | 18:12 (40) | 20:41 37 | 07:53 (7) | 21:39 | 22:17 |
| 18 | 08:49 | 09:33 (37) | 07:52 | | 06:44 | 17:59 (40) | 06:25 | 07:14 (7) | 05:21 | 04:52 |
| | 16:40 24 | 09:57 (37) | 17:44 | | 18:42 15 | 18:14 (40) | 20:43 38 | 07:52 (7) | 21:40 | 22:18 |
| 19 | 08:47 | 09:33 (37) | 07:50 | | 06:41 | 17:58 (40) | 06:23 | 07:13 (7) | 05:19 | 04:52 |
| | 16:42 25 | 09:58 (37) | 17:46 | | 18:44 19 | 18:17 (40) | 20:45 40 | 07:53 (7) | 21:42 | 22:18 |
| 20 | 08:46 | 09:33 (37) | 07:48 | | 06:39 | 17:56 (40) | 06:20 | 07:12 (7) | 05:18 | 04:52 |
| | 16:44 25 | 09:58 (37) | 17:48 | | 18:46 21 | 18:17 (40) | 20:47 41 | 07:53 (7) | 21:44 | 22:18 |
| 21 | 08:45 | 09:34 (37) | 07:46 | | 06:36 | 17:54 (40) | 06:18 | 07:11 (7) | 05:16 | 04:52 |
| | 16:46 25 | 09:59 (37) | 17:50 | | 18:48 24 | 18:18 (40) | 20:49 42 | 07:53 (7) | 21:45 | 22:19 |
| 22 | 08:43 | 09:34 (37) | 07:43 | | 06:33 | 17:54 (40) | 06:15 | 07:10 (7) | 05:15 | 04:52 |
| | 16:48 25 | 09:59 (37) | 17:53 | | 18:50 25 | 18:19 (40) | 20:51 44 | 07:54 (7) | 21:47 | 22:19 |
| 23 | 08:42 | 09:33 (37) | 07:41 | | 06:31 | 17:52 (40) | 06:13 | 07:10 (7) | 05:13 | 04:53 |
| | 16:50 26 | 09:59 (37) | 17:55 | | 18:52 26 | 18:18 (40) | 20:53 44 | 07:54 (7) | 21:49 | 22:19 |
| 24 | 08:41 | 09:35 (37) | 07:38 | | 06:28 | 17:52 (40) | 06:11 | 07:09 (7) | 05:12 | 04:53 |
| | 16:51 24 | 09:59 (37) | 17:57 | | 18:54 27 | 18:19 (40) | 20:55 46 | 07:55 (7) | 21:50 | 22:19 |
| 25 | 08:39 | 09:35 (37) | 07:36 | | 06:26 | 17:52 (40) | 06:08 | 07:08 (7) | 05:10 | 04:53 |
| | 16:53 24 | 09:59 (37) | 17:59 | | 18:56 26 | 18:18 (40) | 20:57 47 | 07:55 (7) | 21:52 | 22:19 |
| 26 | 08:37 | 09:35 (37) | 07:34 | | 06:23 | 17:51 (40) | 06:06 | 07:07 (7) | 05:09 | 04:54 |
| | 16:56 24 | 09:59 (37) | 18:01 | | 18:57 26 | 18:17 (40) | 20:59 49 | 07:56 (7) | 21:53 | 22:19 |
| 27 | 08:36 | 09:36 (37) | 07:31 | | 06:21 | 17:51 (40) | 06:04 | 07:07 (7) | 05:08 | 04:54 |
| | 16:58 23 | 09:59 (37) | 18:03 | | 18:59 26 | 18:17 (40) | 21:01 50 | 07:57 (7) | 21:55 | 22:19 |
| 28 | 08:34 | 09:36 (37) | 07:29 | | 06:18 | 17:51 (40) | 06:01 | 07:14 (7) | 05:06 | 04:55 |
| | 17:00 22 | 09:58 (37) | 18:05 | | 19:01 25 | 18:16 (40) | 21:03 44 | 07:58 (7) | 21:57 | 22:19 |
| 29 | 08:33 | 09:38 (37) | | | 07:15 | 18:52 (40) | 05:59 | 07:18 (7) | 05:05 | 04:55 |
| | 17:02 20 | 09:58 (37) | | | 20:03 24 | 19:16 (40) | 21:05 41 | 07:59 (7) | 21:58 | 22:18 |
| 30 | 08:31 | 09:39 (37) | | | 07:13 | 18:53 (40) | 05:57 | 07:21 (7) | 05:04 | 04:56 |
| | 17:04 19 | 09:58 (37) | | | 20:05 21 | 19:14 (40) | 21:06 39 | 08:00 (7) | 21:59 | 22:18 |
| 31 | 08:29 | 09:40 (37) | | | 07:10 | 18:54 (40) | | | 05:03 | |
| | 17:06 17 | 09:57 (37) | | | 20:07 19 | 19:13 (40) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 526 | | 20 | | 333 | | 799 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,67 | | 0,67 | | 0,99 | | 0,99 | | | |
| Total reduction | 0,11 | | 0,15 | | 0,32 | | 0,37 | | | |
| Total, real | 60 | | 3 | | 106 | | 292 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:30 (7) | 07:34 | | 07:36 | | | 08:35 | | 09:16 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 4 | 07:34 (7) | 19:12 | | 16:58 | | | 16:10 | 17 | 09:33 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | | 09:17 (37) |
| | 22:17 | | 21:38 | | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | 16 | 09:33 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | | 09:19 (37) |
| | 22:17 | | 21:36 | | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | 14 | 09:33 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | | 07:40 | | 07:43 | | | 08:40 | | 09:19 (37) |
| | 22:16 | | 21:34 | | | 20:22 | | | 19:04 | | 16:51 | | | 16:07 | 12 | 09:31 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | | 07:42 | | 07:45 | | | 08:41 | | 09:21 (37) |
| | 22:16 | | 21:32 | | | 20:19 | | | 19:02 | | 16:49 | | | 16:07 | 10 | 09:31 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | 09:22 (37) |
| | 22:15 | | 21:30 | | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | 7 | 09:29 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | | 07:46 | | 07:49 | | | 08:44 | | |
| | 22:14 | | 21:28 | | | 20:14 | | | 18:57 | | 16:45 | | | 16:05 | | |
| 8 | 05:03 | | 05:52 | | | 06:51 | | | 07:48 | | 07:51 | | | 08:45 | | |
| | 22:14 | | 21:25 | | | 20:11 | | | 18:54 | | 16:43 | | | 16:05 | | |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | 07:53 | | 09:15 (37) | 08:47 | | |
| | 22:13 | | 21:23 | | | 20:09 | | | 18:52 | | 16:41 | 8 | 09:23 (37) | 16:05 | | |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 18:51 (40) | 07:52 | | 07:55 | | 09:13 (37) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 8 | 18:59 (40) | 18:49 | | 16:40 | 13 | 09:26 (37) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 18:48 (40) | 07:54 | | 07:57 | | 09:11 (37) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 14 | 19:02 (40) | 18:47 | | 16:38 | 17 | 09:28 (37) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:46 (40) | 07:56 | | 07:59 | | 09:10 (37) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 18 | 19:04 (40) | 18:44 | | 16:36 | 19 | 09:29 (37) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:44 (40) | 07:58 | | 08:01 | | 09:10 (37) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:58 | 21 | 19:05 (40) | 18:42 | | 16:34 | 20 | 09:30 (37) | 16:04 | | |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 18:43 (40) | 08:00 | | 08:03 | | 09:09 (37) | 08:52 | | |
| | 22:08 | | 21:12 | | | 19:56 | 23 | 19:06 (40) | 18:39 | | 16:32 | 22 | 09:31 (37) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:42 (40) | 08:02 | | 08:05 | | 09:08 (37) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 24 | 19:06 (40) | 18:37 | | 16:31 | 24 | 09:32 (37) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:40 (40) | 08:04 | | 08:07 | | 09:08 (37) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 26 | 19:06 (40) | 18:34 | | 16:29 | 24 | 09:32 (37) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:39 (40) | 08:06 | | 08:09 | | 09:08 (37) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 27 | 19:06 (40) | 18:32 | | 16:27 | 24 | 09:32 (37) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:39 (40) | 08:08 | | 08:11 | | 09:09 (37) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 27 | 19:06 (40) | 18:29 | | 16:26 | 24 | 09:33 (37) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:39 (40) | 08:10 | | 08:13 | | 09:08 (37) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 26 | 19:05 (40) | 18:27 | | 16:24 | 26 | 09:34 (37) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:39 (40) | 08:12 | | 08:15 | | 09:09 (37) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 26 | 19:05 (40) | 18:25 | | 16:23 | 25 | 09:34 (37) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:39 (40) | 08:14 | | 08:17 | | 09:09 (37) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 25 | 19:04 (40) | 18:22 | | 16:21 | 25 | 09:34 (37) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:15 (7) | 07:17 | | 18:39 (40) | 08:16 | | 08:19 | | 09:09 (37) | 08:59 | | |
| | 21:57 | | 20:54 | 1 | 07:16 (7) | 19:35 | 24 | 19:03 (40) | 18:20 | | 16:20 | 25 | 09:34 (37) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:16 (7) | 07:19 | | 18:40 (40) | 08:18 | | 08:21 | | 09:09 (37) | 08:59 | | |
| | 21:55 | | 20:51 | 2 | 07:18 (7) | 19:33 | 22 | 19:02 (40) | 18:18 | | 16:19 | 25 | 09:34 (37) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:17 (7) | 07:21 | | 18:40 (40) | 08:20 | | 08:23 | | 09:10 (37) | 09:00 | | |
| | 21:54 | | 20:49 | 3 | 07:20 (7) | 19:30 | 20 | 19:00 (40) | 18:15 | | 16:17 | 24 | 09:34 (37) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:18 (7) | 07:23 | | 18:41 (40) | 07:22 | | 08:24 | | 09:10 (37) | 09:00 | | |
| | 21:52 | | 20:46 | 5 | 07:23 (7) | 19:27 | 17 | 18:58 (40) | 17:13 | | 16:16 | 24 | 09:34 (37) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:18 (7) | 07:25 | | 18:44 (40) | 07:24 | | 08:26 | | 09:11 (37) | 09:00 | | |
| | 21:50 | | 20:44 | 5 | 07:23 (7) | 19:25 | 11 | 18:55 (40) | 17:11 | | 16:15 | 23 | 09:34 (37) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:19 (7) | 07:27 | | | 07:26 | | 08:28 | | 09:12 (37) | 09:00 | | |
| | 21:49 | | 20:42 | 6 | 07:25 (7) | 19:22 | | | 17:08 | | 16:14 | 22 | 09:34 (37) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:21 (7) | 07:29 | | | 07:28 | | 08:30 | | 09:13 (37) | 09:01 | | |
| | 21:47 | | 20:39 | 6 | 07:27 (7) | 19:20 | | | 17:06 | | 16:13 | 21 | 09:34 (37) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:22 (7) | 07:31 | | | 07:30 | | 08:31 | | 09:13 (37) | 09:01 | | |
| | 21:45 | | 20:37 | 7 | 07:29 (7) | 19:17 | | | 17:04 | | 16:12 | 20 | 09:33 (37) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:24 (7) | 07:32 | | | 07:32 | | 08:33 | | 09:15 (37) | 09:01 | | |
| | 21:43 | | 20:34 | 7 | 07:31 (7) | 19:14 | | | 17:02 | | 16:11 | 18 | 09:33 (37) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 07:26 (7) | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | 6 | 07:32 (7) | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 48 | | | 363 | | | | | 473 | | | 76 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | | | 0,67 | | | 0,67 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | | | 0,10 | | | 0,09 | |
| Total, real | | | | 23 | | | 134 | | | | | 47 | | | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:49 (37) | 07:26 | | | 07:08 | | 18:58 (40) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 4 | 09:53 (37) | 18:07 | | | 20:09 | 4 | 19:02 (40) | 21:08 | 22:02 |
| 2 | 09:00 | | | 08:26 | | | 07:24 | | | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | | | 18:09 | | | 20:11 | | | 21:10 | 22:03 |
| 3 | 09:00 | | 09:38 (37) | 08:24 | | | 07:22 | | | 07:03 | | | 05:50 | 05:00 |
| | 16:16 | 5 | 09:43 (37) | 17:12 | | | 18:11 | | | 20:13 | | | 21:12 | 22:05 |
| 4 | 09:00 | | 09:38 (37) | 08:22 | | | 07:19 | | | 07:00 | | | 05:48 | 04:59 |
| | 16:17 | 8 | 09:46 (37) | 17:14 | | | 18:13 | | | 20:15 | | | 21:14 | 22:06 |
| 5 | 08:59 | | 09:37 (37) | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | 04:58 |
| | 16:19 | 10 | 09:47 (37) | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 22:07 |
| 6 | 08:59 | | 09:37 (37) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | 12 | 09:49 (37) | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 22:08 |
| 7 | 08:58 | | 09:36 (37) | 08:16 | | | 07:12 | | | 06:52 | | 07:42 (7) | 05:42 | 04:56 |
| | 16:21 | 14 | 09:50 (37) | 17:21 | | | 18:19 | | | 20:21 | 12 | 07:54 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:36 (37) | 08:14 | | | 07:09 | | | 06:50 | | 07:36 (7) | 05:40 | 04:56 |
| | 16:23 | 15 | 09:51 (37) | 17:23 | | | 18:22 | | | 20:23 | 19 | 07:55 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:35 (37) | 08:12 | | | 07:07 | | | 06:47 | | 07:33 (7) | 05:38 | 04:55 |
| | 16:24 | 17 | 09:52 (37) | 17:25 | | | 18:24 | | | 20:25 | 22 | 07:55 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:35 (37) | 08:10 | | | 07:04 | | | 06:45 | | 07:30 (7) | 05:36 | 04:54 |
| | 16:26 | 18 | 09:53 (37) | 17:27 | | | 18:26 | | | 20:27 | 24 | 07:54 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:35 (37) | 08:08 | | | 07:02 | | | 06:42 | | 07:29 (7) | 05:34 | 04:54 |
| | 16:28 | 19 | 09:54 (37) | 17:29 | | | 18:28 | | | 20:29 | 25 | 07:54 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:35 (37) | 08:06 | | | 06:59 | | | 06:40 | | 07:27 (7) | 05:32 | 04:53 |
| | 16:29 | 20 | 09:55 (37) | 17:31 | | | 18:30 | | | 20:31 | 27 | 07:54 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:35 (37) | 08:03 | | | 06:56 | | | 06:37 | | 07:25 (7) | 05:30 | 04:53 |
| | 16:31 | 21 | 09:56 (37) | 17:33 | | | 18:32 | | | 20:33 | 28 | 07:53 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:35 (37) | 08:01 | | | 06:54 | | | 06:35 | | 07:24 (7) | 05:28 | 04:53 |
| | 16:33 | 22 | 09:57 (37) | 17:36 | | | 18:34 | | | 20:35 | 29 | 07:53 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:34 (37) | 07:59 | | | 06:51 | | | 06:32 | | 07:22 (7) | 05:26 | 04:52 |
| | 16:34 | 23 | 09:57 (37) | 17:38 | | | 18:36 | | | 20:37 | 30 | 07:52 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:35 (37) | 07:57 | | | 06:49 | | 17:58 (40) | 06:30 | | 07:21 (7) | 05:25 | 04:52 |
| | 16:36 | 23 | 09:58 (37) | 17:40 | | | 18:38 | 12 | 18:10 (40) | 20:39 | 32 | 07:53 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:35 (37) | 07:55 | | | 06:46 | | 17:56 (40) | 06:27 | | 07:20 (7) | 05:23 | 04:52 |
| | 16:38 | 24 | 09:59 (37) | 17:42 | | | 18:40 | 17 | 18:13 (40) | 20:41 | 33 | 07:53 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:35 (37) | 07:52 | | | 06:44 | | 17:54 (40) | 06:25 | | 07:19 (7) | 05:21 | 04:52 |
| | 16:40 | 24 | 09:59 (37) | 17:44 | | | 18:42 | 20 | 18:14 (40) | 20:43 | 33 | 07:52 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:35 (37) | 07:50 | | | 06:41 | | 17:53 (40) | 06:23 | | 07:18 (7) | 05:19 | 04:52 |
| | 16:42 | 25 | 10:00 (37) | 17:46 | | | 18:44 | 22 | 18:15 (40) | 20:45 | 35 | 07:53 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:35 (37) | 07:48 | | | 06:39 | | 17:51 (40) | 06:20 | | 07:18 (7) | 05:18 | 04:52 |
| | 16:44 | 25 | 10:00 (37) | 17:48 | | | 18:46 | 24 | 18:15 (40) | 20:47 | 35 | 07:53 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:36 (37) | 07:46 | | | 06:36 | | 17:50 (40) | 06:18 | | 07:16 (7) | 05:16 | 04:52 |
| | 16:46 | 25 | 10:01 (37) | 17:50 | | | 18:48 | 25 | 18:15 (40) | 20:49 | 37 | 07:53 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:36 (37) | 07:43 | | | 06:33 | | 17:50 (40) | 06:15 | | 07:16 (7) | 05:15 | 04:52 |
| | 16:48 | 25 | 10:01 (37) | 17:53 | | | 18:50 | 26 | 18:16 (40) | 20:51 | 38 | 07:54 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:36 (37) | 07:41 | | | 06:31 | | 17:49 (40) | 06:13 | | 07:16 (7) | 05:13 | 04:53 |
| | 16:49 | 25 | 10:01 (37) | 17:55 | | | 18:52 | 26 | 18:15 (40) | 20:53 | 38 | 07:54 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:37 (37) | 07:38 | | | 06:28 | | 17:49 (40) | 06:11 | | 07:16 (7) | 05:12 | 04:53 |
| | 16:51 | 24 | 10:01 (37) | 17:57 | | | 18:54 | 27 | 18:16 (40) | 20:55 | 39 | 07:55 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:38 (37) | 07:36 | | | 06:26 | | 17:49 (40) | 06:08 | | 07:15 (7) | 05:10 | 04:53 |
| | 16:53 | 23 | 10:01 (37) | 17:59 | | | 18:56 | 26 | 18:15 (40) | 20:57 | 40 | 07:55 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:38 (37) | 07:34 | | | 06:23 | | 17:48 (40) | 06:06 | | 07:15 (7) | 05:09 | 04:54 |
| | 16:56 | 22 | 10:00 (37) | 18:01 | | | 18:57 | 26 | 18:14 (40) | 20:59 | 41 | 07:56 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:39 (37) | 07:31 | | | 06:21 | | 17:49 (40) | 06:04 | | 07:15 (7) | 05:08 | 04:54 |
| | 16:58 | 21 | 10:00 (37) | 18:03 | | | 18:59 | 24 | 18:13 (40) | 21:01 | 42 | 07:57 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:40 (37) | 07:29 | | | 06:18 | | 17:49 (40) | 06:01 | | 07:15 (7) | 05:06 | 04:55 |
| | 17:00 | 19 | 09:59 (37) | 18:05 | | | 19:01 | 23 | 18:12 (40) | 21:03 | 43 | 07:58 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:42 (37) | | | | 07:15 | | 18:51 (40) | 05:59 | | 07:18 (7) | 05:05 | 04:55 |
| | 17:02 | 17 | 09:59 (37) | | | | 20:03 | 20 | 19:11 (40) | 21:05 | 41 | 07:59 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:43 (37) | | | | 07:13 | | 18:51 (40) | 05:57 | | 07:21 (7) | 05:04 | 04:56 |
| | 17:04 | 15 | 09:58 (37) | | | | 20:05 | 18 | 19:09 (40) | 21:06 | 39 | 08:00 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | 09:45 (37) | | | | 07:10 | | 18:54 (40) | | | | 05:03 | |
| | 17:06 | 11 | 09:56 (37) | | | | 20:07 | 13 | 19:07 (40) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 552 | | | 4 | | | 349 | | | 786 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,66 | | | 0,66 | | | 0,99 | | | 0,99 | | | |
| Total reduction | | 0,11 | | | 0,15 | | | 0,32 | | | 0,37 | | | |
| Total, real | | 62 | | | 1 | | | 110 | | | 288 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:28 (7) | 07:34 | | 07:36 | | | 08:35 | | 09:17 (37) |
| | 22:18 | | 21:40 | | | 20:29 | 6 | 07:34 (7) | 19:12 | | 16:58 | | | 16:10 | 19 | 09:36 (37) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:29 (7) | 07:36 | | 07:38 | | | 08:36 | | 09:18 (37) |
| | 22:17 | | 21:38 | | | 20:27 | 7 | 07:36 (7) | 19:09 | | 16:55 | | | 16:09 | 18 | 09:36 (37) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:31 (7) | 07:38 | | 07:41 | | | 08:38 | | 09:19 (37) |
| | 22:17 | | 21:36 | | | 20:24 | 9 | 07:40 (7) | 19:07 | | 16:53 | | | 16:08 | 17 | 09:36 (37) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:34 (7) | 07:40 | | 07:43 | | | 08:40 | | 09:20 (37) |
| | 22:16 | | 21:34 | | | 20:22 | 20 | 07:56 (7) | 19:04 | | 16:51 | | | 16:07 | 15 | 09:35 (37) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:38 (7) | 07:42 | | 07:45 | | | 08:41 | | 09:21 (37) |
| | 22:16 | | 21:32 | | | 20:19 | 13 | 07:51 (7) | 19:02 | | 16:49 | | | 16:07 | 14 | 09:35 (37) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | 09:22 (37) |
| | 22:15 | | 21:30 | | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | 12 | 09:34 (37) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | | 07:46 | | 07:49 | | | 08:44 | | 09:24 (37) |
| | 22:14 | | 21:28 | | | 20:14 | | | 18:57 | | 16:45 | | | 16:05 | 10 | 09:34 (37) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | | 07:48 | | 07:51 | | | 08:45 | | 09:25 (37) |
| | 22:14 | | 21:25 | | | 20:11 | | | 18:54 | | 16:43 | | | 16:05 | 8 | 09:33 (37) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | 07:53 | | | 08:47 | | 09:27 (37) |
| | 22:13 | | 21:23 | | | 20:09 | | | 18:52 | | 16:41 | | | 16:05 | 6 | 09:33 (37) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | | 07:52 | | 07:55 | | 09:19 (37) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | | | 18:49 | | 16:40 | 5 | 09:24 (37) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:56 | | | 07:54 | | 07:57 | | 09:16 (37) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | | | 18:47 | | 16:38 | 11 | 09:27 (37) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:46 (40) | 07:56 | | 07:59 | | 09:14 (37) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 12 | 18:58 (40) | 18:44 | | 16:36 | 15 | 09:29 (37) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:43 (40) | 07:58 | | 08:01 | | 09:13 (37) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:58 | 17 | 19:00 (40) | 18:42 | | 16:34 | 18 | 09:31 (37) | 16:04 | | |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 18:41 (40) | 08:00 | | 08:03 | | 09:12 (37) | 08:52 | | |
| | 22:08 | | 21:12 | | | 19:56 | 20 | 19:01 (40) | 18:39 | | 16:32 | 20 | 09:32 (37) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:40 (40) | 08:02 | | 08:05 | | 09:12 (37) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 22 | 19:02 (40) | 18:37 | | 16:31 | 21 | 09:33 (37) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:38 (40) | 08:04 | | 08:07 | | 09:11 (37) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 24 | 19:02 (40) | 18:34 | | 16:29 | 22 | 09:33 (37) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:37 (40) | 08:06 | | 08:09 | | 09:11 (37) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 25 | 19:02 (40) | 18:32 | | 16:27 | 23 | 09:34 (37) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:36 (40) | 08:08 | | 08:11 | | 09:11 (37) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 26 | 19:02 (40) | 18:29 | | 16:26 | 24 | 09:35 (37) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:36 (40) | 08:10 | | 08:13 | | 09:11 (37) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 26 | 19:02 (40) | 18:27 | | 16:24 | 25 | 09:36 (37) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:35 (40) | 08:12 | | 08:15 | | 09:11 (37) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 27 | 19:02 (40) | 18:25 | | 16:23 | 25 | 09:36 (37) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:35 (40) | 08:14 | | 08:17 | | 09:11 (37) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 27 | 19:02 (40) | 18:22 | | 16:21 | 25 | 09:36 (37) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | | 07:17 | | 18:35 (40) | 08:16 | | 08:19 | | 09:11 (37) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 26 | 19:01 (40) | 18:20 | | 16:20 | 25 | 09:36 (37) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:36 (40) | 08:18 | | 08:21 | | 09:11 (37) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 24 | 19:00 (40) | 18:18 | | 16:19 | 25 | 09:36 (37) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 18:35 (40) | 08:20 | | 08:23 | | 09:12 (37) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 23 | 18:58 (40) | 18:15 | | 16:17 | 24 | 09:36 (37) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 18:36 (40) | 07:22 | | 08:24 | | 09:12 (37) | 09:00 | | |
| | 21:52 | | 20:46 | | | 19:27 | 21 | 18:57 (40) | 17:13 | | 16:16 | 24 | 09:36 (37) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:22 (7) | 07:25 | | 18:37 (40) | 07:24 | | 08:26 | | 09:13 (37) | 09:00 | | |
| | 21:50 | | 20:44 | 1 | 07:23 (7) | 19:25 | 18 | 18:55 (40) | 17:11 | | 16:15 | 23 | 09:36 (37) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:23 (7) | 07:27 | | 18:39 (40) | 07:26 | | 08:28 | | 09:13 (37) | 09:00 | | |
| | 21:49 | | 20:42 | 2 | 07:25 (7) | 19:22 | 14 | 18:53 (40) | 17:08 | | 16:14 | 23 | 09:36 (37) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:24 (7) | 07:29 | | 18:43 (40) | 07:28 | | 08:30 | | 09:14 (37) | 09:01 | | |
| | 21:47 | | 20:39 | 3 | 07:27 (7) | 19:20 | 5 | 18:48 (40) | 17:06 | | 16:13 | 22 | 09:36 (37) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:25 (7) | 07:31 | | | 07:30 | | 08:31 | | 09:15 (37) | 09:01 | | |
| | 21:45 | | 20:37 | 4 | 07:29 (7) | 19:17 | | | 17:04 | | 16:12 | 21 | 09:36 (37) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:26 (7) | 07:32 | | | 07:32 | | 08:33 | | 09:16 (37) | 09:01 | | |
| | 21:43 | | 20:34 | 5 | 07:31 (7) | 19:14 | | | 17:02 | | 16:11 | 20 | 09:36 (37) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 07:26 (7) | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | 6 | 07:32 (7) | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 21 | | | 412 | | | | | 441 | | | 119 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | | | 0,66 | | | 0,66 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | | | 0,10 | | | 0,08 | |
| Total, real | | | | 10 | | | 151 | | | | | 43 | | | 10 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (37) | 08:27 | | 07:26 | | | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 10 | 09:48 (37) | 17:08 | | 18:07 | | | 20:09 | | | 21:08 | 22:02 |
| 2 | 09:00 | | 09:38 (37) | 08:26 | | 07:24 | | | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | 11 | 09:49 (37) | 17:10 | | 18:09 | | | 20:11 | | | 21:10 | 22:03 |
| 3 | 09:00 | | 09:37 (37) | 08:24 | | 07:22 | | | 07:03 | | 07:52 (7) | 05:50 | 05:00 |
| | 16:16 | 13 | 09:50 (37) | 17:12 | | 18:11 | | | 20:13 | 8 | 08:00 (7) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:38 (37) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (7) | 05:48 | 04:59 |
| | 16:17 | 14 | 09:52 (37) | 17:14 | | 18:13 | | | 20:15 | 12 | 07:58 (7) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:37 (37) | 08:20 | | 07:17 | | | 06:57 | | 07:43 (7) | 05:46 | 04:58 |
| | 16:19 | 15 | 09:52 (37) | 17:16 | | 18:15 | | | 20:17 | 15 | 07:58 (7) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:38 (37) | 08:18 | | 07:14 | | | 06:55 | | 07:40 (7) | 05:44 | 04:57 |
| | 16:20 | 16 | 09:54 (37) | 17:19 | | 18:17 | | | 20:19 | 17 | 07:57 (7) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:37 (37) | 08:16 | | 07:12 | | | 06:52 | | 07:39 (7) | 05:42 | 04:56 |
| | 16:21 | 18 | 09:55 (37) | 17:21 | | 18:19 | | | 20:21 | 17 | 07:56 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:37 (37) | 08:14 | | 07:09 | | | 06:50 | | 07:36 (7) | 05:40 | 04:56 |
| | 16:23 | 19 | 09:56 (37) | 17:23 | | 18:22 | | | 20:23 | 19 | 07:55 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:37 (37) | 08:12 | | 07:07 | | | 06:47 | | 07:35 (7) | 05:38 | 04:55 |
| | 16:24 | 19 | 09:56 (37) | 17:25 | | 18:24 | | | 20:25 | 20 | 07:55 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:37 (37) | 08:10 | | 07:04 | | | 06:45 | | 07:33 (7) | 05:36 | 04:54 |
| | 16:26 | 20 | 09:57 (37) | 17:27 | | 18:26 | | | 20:27 | 21 | 07:54 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:37 (37) | 08:08 | | 07:02 | | | 06:42 | | 07:32 (7) | 05:34 | 04:54 |
| | 16:28 | 21 | 09:58 (37) | 17:29 | | 18:28 | | | 20:29 | 22 | 07:54 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:37 (37) | 08:06 | | 06:59 | | | 06:40 | | 07:31 (7) | 05:32 | 04:53 |
| | 16:29 | 22 | 09:59 (37) | 17:31 | | 18:30 | | | 20:31 | 23 | 07:54 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:37 (37) | 08:03 | | 06:56 | | | 06:37 | | 07:30 (7) | 05:30 | 04:53 |
| | 16:31 | 23 | 10:00 (37) | 17:33 | | 18:32 | | | 20:33 | 23 | 07:53 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:37 (37) | 08:01 | | 06:54 | | 17:58 (40) | 06:35 | | 07:29 (7) | 05:28 | 04:53 |
| | 16:33 | 24 | 10:01 (37) | 17:36 | | 18:34 | 8 | 18:06 (40) | 20:35 | 24 | 07:53 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:37 (37) | 07:59 | | 06:51 | | 17:54 (40) | 06:32 | | 07:28 (7) | 05:26 | 04:52 |
| | 16:34 | 24 | 10:01 (37) | 17:38 | | 18:36 | 14 | 18:08 (40) | 20:37 | 24 | 07:52 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:37 (37) | 07:57 | | 06:49 | | 17:51 (40) | 06:30 | | 07:27 (7) | 05:25 | 04:52 |
| | 16:36 | 24 | 10:01 (37) | 17:40 | | 18:38 | 19 | 18:10 (40) | 20:39 | 26 | 07:53 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:38 (37) | 07:55 | | 06:46 | | 17:50 (40) | 06:27 | | 07:27 (7) | 05:23 | 04:52 |
| | 16:38 | 24 | 10:02 (37) | 17:42 | | 18:40 | 21 | 18:11 (40) | 20:41 | 26 | 07:53 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:38 (37) | 07:52 | | 06:44 | | 17:48 (40) | 06:25 | | 07:26 (7) | 05:21 | 04:52 |
| | 16:40 | 24 | 10:02 (37) | 17:44 | | 18:42 | 24 | 18:12 (40) | 20:43 | 26 | 07:52 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:38 (37) | 07:50 | | 06:41 | | 17:48 (40) | 06:23 | | 07:26 (7) | 05:19 | 04:52 |
| | 16:42 | 25 | 10:03 (37) | 17:46 | | 18:44 | 25 | 18:13 (40) | 20:45 | 27 | 07:53 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:38 (37) | 07:48 | | 06:39 | | 17:47 (40) | 06:20 | | 07:26 (7) | 05:18 | 04:52 |
| | 16:44 | 25 | 10:03 (37) | 17:48 | | 18:46 | 26 | 18:13 (40) | 20:47 | 27 | 07:53 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:39 (37) | 07:46 | | 06:36 | | 17:46 (40) | 06:18 | | 07:25 (7) | 05:16 | 04:52 |
| | 16:46 | 24 | 10:03 (37) | 17:50 | | 18:48 | 26 | 18:12 (40) | 20:49 | 28 | 07:53 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:39 (37) | 07:43 | | 06:33 | | 17:46 (40) | 06:15 | | 07:25 (7) | 05:15 | 04:52 |
| | 16:48 | 24 | 10:03 (37) | 17:53 | | 18:50 | 27 | 18:13 (40) | 20:51 | 29 | 07:54 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (37) | 07:41 | | 06:31 | | 17:45 (40) | 06:13 | | 07:25 (7) | 05:13 | 04:53 |
| | 16:49 | 23 | 10:03 (37) | 17:55 | | 18:52 | 27 | 18:12 (40) | 20:53 | 29 | 07:54 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (37) | 07:38 | | 06:28 | | 17:46 (40) | 06:11 | | 07:25 (7) | 05:12 | 04:53 |
| | 16:51 | 22 | 10:03 (37) | 17:57 | | 18:54 | 26 | 18:12 (40) | 20:55 | 30 | 07:55 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:41 (37) | 07:36 | | 06:26 | | 17:46 (40) | 06:08 | | 07:24 (7) | 05:10 | 04:53 |
| | 16:53 | 22 | 10:03 (37) | 17:59 | | 18:56 | 24 | 18:10 (40) | 20:57 | 31 | 07:55 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:42 (37) | 07:34 | | 06:23 | | 17:46 (40) | 06:06 | | 07:24 (7) | 05:09 | 04:54 |
| | 16:56 | 20 | 10:02 (37) | 18:01 | | 18:57 | 23 | 18:09 (40) | 20:59 | 32 | 07:56 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:43 (37) | 07:31 | | 06:21 | | 17:47 (40) | 06:04 | | 07:24 (7) | 05:08 | 04:54 |
| | 16:58 | 18 | 10:01 (37) | 18:03 | | 18:59 | 21 | 18:08 (40) | 21:01 | 33 | 07:57 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:44 (37) | 07:29 | | 06:18 | | 17:48 (40) | 06:01 | | 07:25 (7) | 05:06 | 04:55 |
| | 17:00 | 16 | 10:00 (37) | 18:05 | | 19:01 | 18 | 18:06 (40) | 21:03 | 33 | 07:58 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:47 (37) | | | 07:15 | | 18:50 (40) | 05:59 | | 07:25 (7) | 05:05 | 04:55 |
| | 17:02 | 13 | 10:00 (37) | | | 20:03 | 15 | 19:05 (40) | 21:05 | 34 | 07:59 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:49 (37) | | | 07:13 | | 18:53 (40) | 05:57 | | 07:26 (7) | 05:04 | 04:56 |
| | 17:04 | 9 | 09:58 (37) | | | 20:05 | 8 | 19:01 (40) | 21:06 | 34 | 08:00 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 582 | | | | | 352 | | | 690 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,65 | | | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | | 0,31 | | | 0,37 | | | |
| Total, real | | 64 | | | | | 110 | | | 252 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | | 06:38 | | 07:31 (7) | 07:34 | 07:36 | | | 08:35 | | 09:19 (37) |
| | 22:18 | 21:40 | | | 20:29 | 4 | 08:08 (7) | 19:12 | 16:58 | | | 16:10 | 21 | 09:40 (37) |
| 2 | 04:57 | 05:41 | | | 06:39 | | 07:32 (7) | 07:36 | 07:38 | | | 08:36 | | 09:20 (37) |
| | 22:17 | 21:38 | | | 20:27 | 8 | 08:08 (7) | 19:09 | 16:55 | | | 16:09 | 20 | 09:40 (37) |
| 3 | 04:58 | 05:43 | | | 06:41 | | 07:33 (7) | 07:38 | 07:41 | | | 08:38 | | 09:21 (37) |
| | 22:17 | 21:36 | | | 20:24 | 15 | 08:08 (7) | 19:07 | 16:53 | | | 16:08 | 20 | 09:41 (37) |
| 4 | 04:59 | 05:45 | | | 06:43 | | 07:34 (7) | 07:40 | 07:43 | | | 08:40 | | 09:21 (37) |
| | 22:16 | 21:34 | | | 20:22 | 32 | 08:08 (7) | 19:04 | 16:51 | | | 16:07 | 19 | 09:40 (37) |
| 5 | 05:00 | 05:47 | | | 06:45 | | 07:35 (7) | 07:42 | 07:45 | | | 08:41 | | 09:22 (37) |
| | 22:16 | 21:32 | | | 20:19 | 32 | 08:07 (7) | 19:02 | 16:49 | | | 16:07 | 18 | 09:40 (37) |
| 6 | 05:01 | 05:49 | | | 06:47 | | 07:36 (7) | 07:44 | 07:47 | | | 08:43 | | 09:23 (37) |
| | 22:15 | 21:30 | | | 20:16 | 31 | 08:07 (7) | 18:59 | 16:47 | | | 16:06 | 16 | 09:39 (37) |
| 7 | 05:02 | 05:50 | | | 06:49 | | 07:38 (7) | 07:46 | 07:49 | | | 08:44 | | 09:24 (37) |
| | 22:14 | 21:28 | | | 20:14 | 29 | 08:07 (7) | 18:57 | 16:45 | | | 16:05 | 16 | 09:40 (37) |
| 8 | 05:03 | 05:52 | | | 06:51 | | 07:41 (7) | 07:48 | 07:51 | | | 08:45 | | 09:25 (37) |
| | 22:14 | 21:25 | | | 20:11 | 23 | 08:04 (7) | 18:54 | 16:43 | | | 16:05 | 14 | 09:39 (37) |
| 9 | 05:04 | 05:54 | | | 06:53 | | 07:45 (7) | 07:50 | 07:53 | | | 08:47 | | 09:26 (37) |
| | 22:13 | 21:23 | | | 20:09 | 15 | 08:00 (7) | 18:52 | 16:41 | | | 16:05 | 13 | 09:39 (37) |
| 10 | 05:05 | 05:56 | | | 06:55 | | | 07:52 | 07:55 | | | 08:48 | | 09:27 (37) |
| | 22:12 | 21:21 | | | 20:06 | | | 18:49 | 16:40 | | | 16:04 | 12 | 09:39 (37) |
| 11 | 05:07 | 05:58 | | | 06:56 | | | 07:54 | 07:57 | | | 08:49 | | 09:28 (37) |
| | 22:11 | 21:19 | | | 20:04 | | | 18:47 | 16:38 | | | 16:04 | 10 | 09:38 (37) |
| 12 | 05:08 | 06:00 | | | 06:58 | | | 07:56 | 07:59 | | 09:20 (37) | 08:50 | | 09:30 (37) |
| | 22:10 | 21:17 | | | 20:01 | | | 18:44 | 16:36 | 9 | 09:29 (37) | 16:04 | 8 | 09:38 (37) |
| 13 | 05:09 | 06:02 | | | 07:00 | | 18:45 (40) | 07:58 | 08:01 | | 09:19 (37) | 08:51 | | 09:32 (37) |
| | 22:09 | 21:15 | | | 19:58 | 6 | 18:51 (40) | 18:42 | 16:34 | 13 | 09:32 (37) | 16:04 | 6 | 09:38 (37) |
| 14 | 05:10 | 06:03 | | | 07:02 | | 18:41 (40) | 08:00 | 08:03 | | 09:17 (37) | 08:52 | | 09:33 (37) |
| | 22:08 | 21:12 | | | 19:56 | 13 | 18:54 (40) | 18:39 | 16:32 | 16 | 09:33 (37) | 16:03 | 3 | 09:36 (37) |
| 15 | 05:12 | 06:05 | | | 07:04 | | 18:38 (40) | 08:02 | 08:05 | | 09:16 (37) | 08:53 | | |
| | 22:06 | 21:10 | | | 19:53 | 18 | 18:56 (40) | 18:37 | 16:31 | 18 | 09:34 (37) | 16:03 | | |
| 16 | 05:13 | 06:07 | | | 07:06 | | 18:36 (40) | 08:04 | 08:07 | | 09:15 (37) | 08:54 | | |
| | 22:05 | 21:08 | | | 19:51 | 20 | 18:56 (40) | 18:34 | 16:29 | 20 | 09:35 (37) | 16:03 | | |
| 17 | 05:15 | 06:09 | | | 07:08 | | 18:34 (40) | 08:06 | 08:09 | | 09:14 (37) | 08:55 | | |
| | 22:04 | 21:05 | | | 19:48 | 23 | 18:57 (40) | 18:32 | 16:27 | 22 | 09:36 (37) | 16:04 | | |
| 18 | 05:16 | 06:11 | | | 07:10 | | 18:33 (40) | 08:08 | 08:11 | | 09:15 (37) | 08:56 | | |
| | 22:03 | 21:03 | | | 19:46 | 25 | 18:58 (40) | 18:29 | 16:26 | 22 | 09:37 (37) | 16:04 | | |
| 19 | 05:18 | 06:13 | | | 07:12 | | 18:33 (40) | 08:10 | 08:13 | | 09:15 (37) | 08:57 | | |
| | 22:01 | 21:01 | | | 19:43 | 25 | 18:58 (40) | 18:27 | 16:24 | 23 | 09:38 (37) | 16:04 | | |
| 20 | 05:19 | 06:15 | | | 07:13 | | 18:32 (40) | 08:12 | 08:15 | | 09:14 (37) | 08:57 | | |
| | 22:00 | 20:58 | | | 19:40 | 26 | 18:58 (40) | 18:25 | 16:23 | 24 | 09:38 (37) | 16:04 | | |
| 21 | 05:21 | 06:17 | | | 07:15 | | 18:32 (40) | 08:14 | 08:17 | | 09:14 (37) | 08:58 | | |
| | 21:58 | 20:56 | | | 19:38 | 26 | 18:58 (40) | 18:22 | 16:21 | 24 | 09:38 (37) | 16:05 | | |
| 22 | 05:22 | 06:19 | | | 07:17 | | 18:31 (40) | 08:16 | 08:19 | | 09:14 (37) | 08:59 | | |
| | 21:57 | 20:54 | | | 19:35 | 27 | 18:58 (40) | 18:20 | 16:20 | 25 | 09:39 (37) | 16:05 | | |
| 23 | 05:24 | 06:21 | | | 07:19 | | 18:31 (40) | 08:18 | 08:21 | | 09:14 (37) | 08:59 | | |
| | 21:55 | 20:51 | | | 19:33 | 26 | 18:57 (40) | 18:18 | 16:19 | 25 | 09:39 (37) | 16:06 | | |
| 24 | 05:26 | 06:22 | | | 07:21 | | 18:30 (40) | 08:20 | 08:23 | | 09:15 (37) | 09:00 | | |
| | 21:54 | 20:49 | | | 19:30 | 26 | 18:56 (40) | 18:15 | 16:17 | 24 | 09:39 (37) | 16:06 | | |
| 25 | 05:27 | 06:24 | | | 07:23 | | 18:31 (40) | 07:22 | 08:24 | | 09:15 (37) | 09:00 | | |
| | 21:52 | 20:46 | | | 19:27 | 24 | 18:55 (40) | 17:13 | 16:16 | 24 | 09:39 (37) | 16:07 | | |
| 26 | 05:29 | 06:26 | | | 07:25 | | 18:31 (40) | 07:24 | 08:26 | | 09:15 (37) | 09:00 | | |
| | 21:50 | 20:44 | | | 19:25 | 23 | 18:54 (40) | 17:11 | 16:15 | 24 | 09:39 (37) | 16:08 | | |
| 27 | 05:31 | 06:28 | | | 07:27 | | 18:32 (40) | 07:26 | 08:28 | | 09:16 (37) | 09:00 | | |
| | 21:49 | 20:42 | | | 19:22 | 20 | 18:52 (40) | 17:08 | 16:14 | 24 | 09:40 (37) | 16:08 | | |
| 28 | 05:32 | 06:30 | | | 07:29 | | 18:34 (40) | 07:28 | 08:30 | | 09:16 (37) | 09:01 | | |
| | 21:47 | 20:39 | | | 19:20 | 16 | 18:50 (40) | 17:06 | 16:13 | 24 | 09:40 (37) | 16:09 | | |
| 29 | 05:34 | 06:32 | | | 07:31 | | 18:36 (40) | 07:30 | 08:31 | | 09:17 (37) | 09:01 | | |
| | 21:45 | 20:37 | | | 19:17 | 11 | 18:47 (40) | 17:04 | 16:12 | 23 | 09:40 (37) | 16:10 | | |
| 30 | 05:36 | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | 09:18 (37) | 09:01 | | 09:40 (37) |
| | 21:43 | 20:34 | | | 19:14 | | | 17:02 | 16:11 | 22 | 09:40 (37) | 16:11 | 5 | 09:45 (37) |
| 31 | 05:38 | 06:36 | | 07:30 (7) | | | | 07:34 | | | | 09:01 | | 09:39 (37) |
| | 21:41 | 20:32 | 2 | 07:32 (7) | | | | 17:00 | | | | 16:12 | 8 | 09:47 (37) |
| Potential sun hours | 521 | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | | 2 | | | 544 | | | | 406 | | | 209 | |
| Sun reduction | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | 1,00 | | | 0,99 | | | | 0,65 | | | 0,65 | |
| Total reduction | | | 0,48 | | | 0,37 | | | | 0,10 | | | 0,08 | |
| Total, real | | | 1 | | | 199 | | | | 39 | | | 17 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (37) | 08:27 | | 07:26 | | | 07:08 | | 07:54 (7) | 05:55 | 05:02 |
| | 16:14 | 14 | 09:52 (37) | 17:08 | | 18:07 | | | 20:09 | 8 | 08:02 (7) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:39 (37) | 08:26 | | 07:24 | | | 07:05 | | 07:51 (7) | 05:53 | 05:01 |
| | 16:15 | 15 | 09:54 (37) | 17:10 | | 18:09 | | | 20:11 | 11 | 08:02 (7) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:38 (37) | 08:24 | | 07:22 | | | 07:03 | | 07:48 (7) | 05:50 | 05:00 |
| | 16:16 | 16 | 09:54 (37) | 17:12 | | 18:11 | | | 20:13 | 12 | 08:00 (7) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:39 (37) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (7) | 05:48 | 04:59 |
| | 16:17 | 17 | 09:56 (37) | 17:14 | | 18:13 | | | 20:15 | 12 | 07:58 (7) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:38 (37) | 08:20 | | 07:17 | | | 06:57 | | 07:45 (7) | 05:46 | 04:58 |
| | 16:19 | 18 | 09:56 (37) | 17:16 | | 18:15 | | | 20:17 | 13 | 07:58 (7) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:39 (37) | 08:18 | | 07:14 | | | 06:55 | | 07:43 (7) | 05:44 | 04:57 |
| | 16:20 | 19 | 09:58 (37) | 17:19 | | 18:17 | | | 20:19 | 14 | 07:57 (7) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:39 (37) | 08:16 | | 07:12 | | | 06:52 | | 07:42 (7) | 05:42 | 04:56 |
| | 16:21 | 19 | 09:58 (37) | 17:21 | | 18:19 | | | 20:21 | 14 | 07:56 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:39 (37) | 08:14 | | 07:09 | | | 06:50 | | 07:40 (7) | 05:40 | 04:56 |
| | 16:23 | 20 | 09:59 (37) | 17:23 | | 18:22 | | | 20:23 | 15 | 07:55 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:38 (37) | 08:12 | | 07:07 | | | 06:47 | | 07:39 (7) | 05:38 | 04:55 |
| | 16:24 | 22 | 10:00 (37) | 17:25 | | 18:24 | | | 20:25 | 16 | 07:55 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:38 (37) | 08:10 | | 07:04 | | | 06:45 | | 07:38 (7) | 05:36 | 04:54 |
| | 16:26 | 22 | 10:00 (37) | 17:27 | | 18:26 | | | 20:27 | 16 | 07:54 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:39 (37) | 08:08 | | 07:02 | | | 06:42 | | 07:37 (7) | 05:34 | 04:54 |
| | 16:28 | 22 | 10:01 (37) | 17:29 | | 18:28 | | | 20:29 | 17 | 07:54 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:39 (37) | 08:06 | | 06:59 | | | 06:40 | | 07:37 (7) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:02 (37) | 17:31 | | 18:30 | | | 20:31 | 17 | 07:54 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:39 (37) | 08:03 | | 06:56 | | 17:52 (40) | 06:37 | | 07:36 (7) | 05:30 | 04:53 |
| | 16:31 | 23 | 10:02 (37) | 17:33 | | 18:32 | 12 | 18:04 (40) | 20:33 | 17 | 07:53 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:40 (37) | 08:01 | | 06:54 | | 17:50 (40) | 06:35 | | 07:35 (7) | 05:28 | 04:53 |
| | 16:33 | 23 | 10:03 (37) | 17:36 | | 18:34 | 17 | 18:07 (40) | 20:35 | 18 | 07:53 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:39 (37) | 07:59 | | 06:51 | | 17:48 (40) | 06:32 | | 07:34 (7) | 05:26 | 04:52 |
| | 16:34 | 24 | 10:03 (37) | 17:38 | | 18:36 | 20 | 18:08 (40) | 20:37 | 18 | 07:52 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:40 (37) | 07:57 | | 06:49 | | 17:46 (40) | 06:30 | | 07:34 (7) | 05:25 | 04:52 |
| | 16:36 | 24 | 10:04 (37) | 17:40 | | 18:38 | 22 | 18:08 (40) | 20:39 | 19 | 07:53 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:40 (37) | 07:55 | | 06:46 | | 17:45 (40) | 06:27 | | 07:34 (7) | 05:23 | 04:52 |
| | 16:38 | 25 | 10:05 (37) | 17:42 | | 18:40 | 25 | 18:10 (40) | 20:41 | 19 | 07:53 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:40 (37) | 07:52 | | 06:44 | | 17:44 (40) | 06:25 | | 07:33 (7) | 05:21 | 04:52 |
| | 16:40 | 24 | 10:04 (37) | 17:44 | | 18:42 | 25 | 18:09 (40) | 20:43 | 19 | 07:52 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:41 (37) | 07:50 | | 06:41 | | 17:44 (40) | 06:23 | | 07:33 (7) | 05:19 | 04:52 |
| | 16:42 | 24 | 10:05 (37) | 17:46 | | 18:44 | 26 | 18:10 (40) | 20:45 | 20 | 07:53 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:41 (37) | 07:48 | | 06:39 | | 17:43 (40) | 06:20 | | 07:34 (7) | 05:18 | 04:52 |
| | 16:44 | 24 | 10:05 (37) | 17:48 | | 18:46 | 27 | 18:10 (40) | 20:47 | 19 | 07:53 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:42 (37) | 07:46 | | 06:36 | | 17:42 (40) | 06:18 | | 07:33 (7) | 05:16 | 04:52 |
| | 16:46 | 23 | 10:05 (37) | 17:50 | | 18:48 | 27 | 18:09 (40) | 20:49 | 20 | 07:53 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:42 (37) | 07:43 | | 06:33 | | 17:43 (40) | 06:15 | | 07:33 (7) | 05:15 | 04:52 |
| | 16:48 | 23 | 10:05 (37) | 17:53 | | 18:50 | 26 | 18:09 (40) | 20:51 | 21 | 07:54 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:43 (37) | 07:41 | | 06:31 | | 17:43 (40) | 06:13 | | 07:34 (7) | 05:13 | 04:53 |
| | 16:49 | 21 | 10:04 (37) | 17:55 | | 18:52 | 25 | 18:08 (40) | 20:53 | 20 | 07:54 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:44 (37) | 07:38 | | 06:28 | | 17:44 (40) | 06:11 | | 07:34 (7) | 05:12 | 04:53 |
| | 16:51 | 21 | 10:05 (37) | 17:57 | | 18:54 | 24 | 18:08 (40) | 20:55 | 21 | 07:55 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:45 (37) | 07:36 | | 06:26 | | 17:44 (40) | 06:08 | | 07:34 (7) | 05:10 | 04:53 |
| | 16:53 | 19 | 10:04 (37) | 17:59 | | 18:56 | 22 | 18:06 (40) | 20:57 | 21 | 07:55 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:46 (37) | 07:34 | | 06:23 | | 17:44 (40) | 06:06 | | 07:34 (7) | 05:09 | 04:54 |
| | 16:56 | 17 | 10:03 (37) | 18:01 | | 18:57 | 20 | 18:04 (40) | 20:59 | 22 | 07:56 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:47 (37) | 07:31 | | 06:21 | | 17:46 (40) | 06:04 | | 07:35 (7) | 05:08 | 04:54 |
| | 16:58 | 15 | 10:02 (37) | 18:03 | | 18:59 | 17 | 18:03 (40) | 21:01 | 22 | 07:57 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:49 (37) | 07:29 | | 06:18 | | 17:48 (40) | 06:01 | | 07:35 (7) | 05:06 | 04:55 |
| | 17:00 | 11 | 10:00 (37) | 18:05 | | 19:01 | 12 | 18:00 (40) | 21:03 | 23 | 07:58 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:53 (37) | | | 07:15 | | | 05:59 | | 07:36 (7) | 05:05 | 04:55 |
| | 17:02 | 5 | 09:58 (37) | | | 20:03 | | | 21:05 | 23 | 07:59 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:04 (7) | 05:57 | | 07:37 (7) | 05:04 | 04:56 |
| | 17:04 | | | | | 20:05 | 7 | 08:11 (7) | 21:06 | 23 | 08:00 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 07:58 (7) | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | 19 | 08:17 (7) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 573 | | | | | 373 | | | 530 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,64 | | | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | | 0,31 | | | 0,36 | | | |
| Total, real | | 61 | | | | | 116 | | | 193 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (7) | 07:34 | | 18:35 (40) | 07:36 | | | 08:35 | | 09:21 (37) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (7) | 19:12 | 6 | 18:41 (40) | 16:58 | | | 16:10 | 22 | 09:43 (37) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (7) | 07:36 | | | 07:38 | | | 08:36 | | 09:22 (37) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (7) | 19:09 | | | 16:55 | | | 16:09 | 21 | 09:43 (37) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:37 (7) | 07:38 | | | 07:41 | | | 08:38 | | 09:23 (37) |
| | 22:17 | | 21:36 | | 20:24 | 11 | 08:08 (7) | 19:07 | | | 16:53 | | | 16:08 | 21 | 09:44 (37) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:38 (7) | 07:40 | | | 07:43 | | | 08:40 | | 09:23 (37) |
| | 22:16 | | 21:34 | | 20:22 | 28 | 08:08 (7) | 19:04 | | | 16:51 | | | 16:07 | 20 | 09:43 (37) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:38 (7) | 07:42 | | | 07:45 | | | 08:41 | | 09:24 (37) |
| | 22:16 | | 21:32 | | 20:19 | 29 | 08:07 (7) | 19:02 | | | 16:49 | | | 16:07 | 19 | 09:43 (37) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:39 (7) | 07:44 | | | 07:47 | | | 08:43 | | 09:24 (37) |
| | 22:15 | | 21:30 | | 20:16 | 28 | 08:07 (7) | 18:59 | | | 16:47 | | | 16:06 | 19 | 09:43 (37) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:40 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:25 (37) |
| | 22:14 | | 21:28 | | 20:14 | 27 | 08:07 (7) | 18:57 | | | 16:45 | | | 16:05 | 18 | 09:43 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:41 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:26 (37) |
| | 22:14 | | 21:25 | | 20:11 | 26 | 08:07 (7) | 18:54 | | | 16:43 | | | 16:05 | 17 | 09:43 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:42 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:27 (37) |
| | 22:13 | | 21:23 | | 20:09 | 25 | 08:07 (7) | 18:52 | | | 16:41 | | | 16:05 | 16 | 09:43 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:43 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:28 (37) |
| | 22:12 | | 21:21 | | 20:06 | 23 | 08:06 (7) | 18:49 | | | 16:40 | | | 16:04 | 15 | 09:43 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:46 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:29 (37) |
| | 22:11 | | 21:19 | | 20:04 | 21 | 08:07 (7) | 18:47 | | | 16:38 | | | 16:04 | 14 | 09:43 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:49 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:30 (37) |
| | 22:10 | | 21:17 | | 20:01 | 18 | 08:07 (7) | 18:44 | | | 16:36 | | | 16:04 | 13 | 09:43 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:54 (7) | 07:58 | | | 08:01 | | 09:24 (37) | 08:51 | | 09:31 (37) |
| | 22:09 | | 21:15 | | 19:58 | 10 | 08:04 (7) | 18:42 | | | 16:34 | 7 | 09:31 (37) | 16:04 | 12 | 09:43 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | 09:22 (37) | 08:52 | | 09:32 (37) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | 11 | 09:33 (37) | 16:03 | 11 | 09:43 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:39 (40) | 08:02 | | | 08:05 | | 09:20 (37) | 08:53 | | 09:33 (37) |
| | 22:06 | | 21:10 | | 19:53 | 11 | 18:50 (40) | 18:37 | | | 16:31 | 15 | 09:35 (37) | 16:03 | 10 | 09:43 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:35 (40) | 08:04 | | | 08:07 | | 09:19 (37) | 08:54 | | 09:34 (37) |
| | 22:05 | | 21:08 | | 19:51 | 16 | 18:51 (40) | 18:34 | | | 16:29 | 17 | 09:36 (37) | 16:03 | 9 | 09:43 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:33 (40) | 08:06 | | | 08:09 | | 09:18 (37) | 08:55 | | 09:35 (37) |
| | 22:04 | | 21:05 | | 19:48 | 19 | 18:52 (40) | 18:32 | | | 16:27 | 19 | 09:37 (37) | 16:04 | 8 | 09:43 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:31 (40) | 08:08 | | | 08:11 | | 09:18 (37) | 08:56 | | 09:36 (37) |
| | 22:03 | | 21:03 | | 19:46 | 22 | 18:53 (40) | 18:29 | | | 16:26 | 21 | 09:39 (37) | 16:04 | 7 | 09:43 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:30 (40) | 08:10 | | | 08:13 | | 09:18 (37) | 08:57 | | 09:36 (37) |
| | 22:01 | | 21:01 | | 19:43 | 24 | 18:54 (40) | 18:27 | | | 16:24 | 21 | 09:39 (37) | 16:04 | 7 | 09:43 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:29 (40) | 08:12 | | | 08:15 | | 09:17 (37) | 08:57 | | 09:37 (37) |
| | 22:00 | | 20:58 | | 19:40 | 25 | 18:54 (40) | 18:25 | | | 16:23 | 23 | 09:40 (37) | 16:04 | 6 | 09:43 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:29 (40) | 08:14 | | | 08:17 | | 09:17 (37) | 08:58 | | 09:37 (37) |
| | 21:58 | | 20:56 | | 19:38 | 26 | 18:55 (40) | 18:22 | | | 16:21 | 23 | 09:40 (37) | 16:05 | 6 | 09:43 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:28 (40) | 08:16 | | | 08:19 | | 09:17 (37) | 08:59 | | 09:38 (37) |
| | 21:57 | | 20:54 | | 19:35 | 27 | 18:55 (40) | 18:20 | | | 16:20 | 24 | 09:41 (37) | 16:05 | 6 | 09:44 (37) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:28 (40) | 08:18 | | | 08:21 | | 09:17 (37) | 08:59 | | 09:38 (37) |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:54 (40) | 18:18 | | | 16:19 | 24 | 09:41 (37) | 16:06 | 6 | 09:44 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:27 (40) | 08:20 | | | 08:23 | | 09:17 (37) | 09:00 | | 09:39 (37) |
| | 21:54 | | 20:49 | | 19:30 | 26 | 18:53 (40) | 18:15 | | | 16:17 | 24 | 09:41 (37) | 16:06 | 6 | 09:45 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:27 (40) | 07:22 | | | 08:24 | | 09:17 (37) | 09:00 | | 09:39 (37) |
| | 21:52 | | 20:46 | | 19:27 | 25 | 18:52 (40) | 17:13 | | | 16:16 | 25 | 09:42 (37) | 16:07 | 7 | 09:46 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:27 (40) | 07:24 | | | 08:26 | | 09:18 (37) | 09:00 | | 09:39 (37) |
| | 21:50 | | 20:44 | | 19:25 | 25 | 18:52 (40) | 17:11 | | | 16:15 | 24 | 09:42 (37) | 16:08 | 8 | 09:47 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:28 (40) | 07:26 | | | 08:28 | | 09:18 (37) | 09:00 | | 09:39 (37) |
| | 21:49 | | 20:42 | | 19:22 | 23 | 18:51 (40) | 17:08 | | | 16:14 | 24 | 09:42 (37) | 16:08 | 8 | 09:47 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:28 (40) | 07:28 | | | 08:30 | | 09:19 (37) | 09:01 | | 09:39 (37) |
| | 21:47 | | 20:39 | | 19:20 | 21 | 18:49 (40) | 17:06 | | | 16:13 | 23 | 09:42 (37) | 16:09 | 9 | 09:48 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:29 (40) | 07:30 | | | 08:31 | | 09:19 (37) | 09:01 | | 09:39 (37) |
| | 21:45 | | 20:37 | | 19:17 | 18 | 18:47 (40) | 17:04 | | | 16:12 | 24 | 09:43 (37) | 16:10 | 10 | 09:49 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:31 (40) | 07:32 | | | 08:33 | | 09:20 (37) | 09:01 | | 09:39 (37) |
| | 21:43 | | 20:34 | | 19:14 | 14 | 18:45 (40) | 17:02 | | | 16:11 | 23 | 09:43 (37) | 16:11 | 12 | 09:51 (37) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:39 (37) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 13 | 09:52 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 599 | | | 6 | | | 372 | | | 376 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | 0,99 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 217 | | | 2 | | | 35 | | | 30 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (37) | 08:27 | 07:26 | | | 07:08 | | 07:54 (7) | 05:55 | 05:02 |
| | 16:14 | 17 | 09:56 (37) | 17:08 | 18:07 | | | 20:09 | 8 | 08:02 (7) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:40 (37) | 08:26 | 07:24 | | | 07:05 | | 07:53 (7) | 05:53 | 05:01 |
| | 16:15 | 18 | 09:58 (37) | 17:10 | 18:09 | | | 20:11 | 9 | 08:02 (7) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:39 (37) | 08:24 | 07:22 | | | 07:03 | | 07:51 (7) | 05:50 | 05:00 |
| | 16:16 | 19 | 09:58 (37) | 17:12 | 18:11 | | | 20:13 | 9 | 08:00 (7) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:40 (37) | 08:22 | 07:19 | | | 07:00 | | 07:50 (7) | 05:48 | 04:59 |
| | 16:17 | 19 | 09:59 (37) | 17:14 | 18:13 | | | 20:15 | 8 | 07:58 (7) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:40 (37) | 08:20 | 07:17 | | | 06:57 | | 07:49 (7) | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (37) | 17:16 | 18:15 | | | 20:17 | 9 | 07:58 (7) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:41 (37) | 08:18 | 07:14 | | | 06:55 | | 07:48 (7) | 05:44 | 04:57 |
| | 16:20 | 20 | 10:01 (37) | 17:19 | 18:17 | | | 20:19 | 9 | 07:57 (7) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:40 (37) | 08:16 | 07:12 | | | 06:52 | | 07:47 (7) | 05:42 | 04:56 |
| | 16:21 | 21 | 10:01 (37) | 17:21 | 18:19 | | | 20:21 | 9 | 07:56 (7) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:40 (37) | 08:14 | 07:09 | | | 06:50 | | 07:46 (7) | 05:40 | 04:55 |
| | 16:23 | 22 | 10:02 (37) | 17:23 | 18:22 | | | 20:23 | 9 | 07:55 (7) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:40 (37) | 08:12 | 07:07 | | | 06:47 | | 07:46 (7) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:03 (37) | 17:25 | 18:24 | | | 20:25 | 9 | 07:55 (7) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:41 (37) | 08:10 | 07:04 | | | 06:45 | | 07:44 (7) | 05:36 | 04:54 |
| | 16:26 | 22 | 10:03 (37) | 17:27 | 18:26 | | | 20:27 | 10 | 07:54 (7) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:41 (37) | 08:08 | 07:02 | | 17:51 (40) | 06:42 | | 07:44 (7) | 05:34 | 04:54 |
| | 16:28 | 23 | 10:04 (37) | 17:29 | 18:28 | 8 | 17:59 (40) | 20:29 | 10 | 07:54 (7) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:41 (37) | 08:06 | 06:59 | | 17:48 (40) | 06:40 | | 07:44 (7) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:04 (37) | 17:31 | 18:30 | 14 | 18:02 (40) | 20:31 | 10 | 07:54 (7) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:41 (37) | 08:03 | 06:56 | | 17:45 (40) | 06:37 | | 07:43 (7) | 05:30 | 04:53 |
| | 16:31 | 24 | 10:05 (37) | 17:33 | 18:32 | 19 | 18:04 (40) | 20:33 | 10 | 07:53 (7) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:42 (37) | 08:01 | 06:54 | | 17:44 (40) | 06:35 | | 07:44 (7) | 05:28 | 04:53 |
| | 16:33 | 24 | 10:06 (37) | 17:36 | 18:34 | 22 | 18:06 (40) | 20:35 | 9 | 07:53 (7) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:42 (37) | 07:59 | 06:51 | | 17:43 (40) | 06:32 | | 07:43 (7) | 05:26 | 04:52 |
| | 16:34 | 24 | 10:06 (37) | 17:38 | 18:36 | 23 | 18:06 (40) | 20:37 | 9 | 07:52 (7) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:42 (37) | 07:57 | 06:49 | | 17:41 (40) | 06:30 | | 07:43 (7) | 05:25 | 04:52 |
| | 16:36 | 24 | 10:06 (37) | 17:40 | 18:38 | 25 | 18:06 (40) | 20:39 | 10 | 07:53 (7) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:43 (37) | 07:55 | 06:46 | | 17:41 (40) | 06:27 | | 07:43 (7) | 05:23 | 04:52 |
| | 16:38 | 24 | 10:07 (37) | 17:42 | 18:40 | 26 | 18:07 (40) | 20:41 | 10 | 07:53 (7) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:43 (37) | 07:52 | 06:44 | | 17:40 (40) | 06:25 | | 07:43 (7) | 05:21 | 04:52 |
| | 16:40 | 23 | 10:06 (37) | 17:44 | 18:42 | 26 | 18:06 (40) | 20:43 | 9 | 07:52 (7) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:44 (37) | 07:50 | 06:41 | | 17:40 (40) | 06:23 | | 07:43 (7) | 05:19 | 04:52 |
| | 16:42 | 23 | 10:07 (37) | 17:46 | 18:44 | 27 | 18:07 (40) | 20:45 | 10 | 07:53 (7) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:44 (37) | 07:48 | 06:39 | | 17:40 (40) | 06:20 | | 07:44 (7) | 05:18 | 04:52 |
| | 16:44 | 23 | 10:07 (37) | 17:48 | 18:46 | 26 | 18:06 (40) | 20:47 | 9 | 07:53 (7) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:45 (37) | 07:46 | 06:36 | | 17:39 (40) | 06:18 | | 07:43 (7) | 05:16 | 04:52 |
| | 16:46 | 22 | 10:07 (37) | 17:50 | 18:48 | 26 | 18:05 (40) | 20:49 | 10 | 07:53 (7) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:46 (37) | 07:43 | 06:33 | | 17:40 (40) | 06:15 | | 07:44 (7) | 05:15 | 04:52 |
| | 16:48 | 21 | 10:07 (37) | 17:53 | 18:50 | 25 | 18:05 (40) | 20:51 | 10 | 07:54 (7) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:46 (37) | 07:41 | 06:31 | | 17:40 (40) | 06:13 | | 07:45 (7) | 05:13 | 04:53 |
| | 16:49 | 20 | 10:06 (37) | 17:55 | 18:52 | 23 | 18:03 (40) | 20:53 | 9 | 07:54 (7) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:48 (37) | 07:38 | 06:28 | | 17:42 (40) | 06:11 | | 07:46 (7) | 05:12 | 04:53 |
| | 16:51 | 18 | 10:06 (37) | 17:57 | 18:54 | 21 | 18:03 (40) | 20:55 | 9 | 07:55 (7) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:49 (37) | 07:36 | 06:26 | | 17:42 (40) | 06:08 | | 07:46 (7) | 05:10 | 04:53 |
| | 16:53 | 16 | 10:05 (37) | 17:59 | 18:56 | 19 | 18:01 (40) | 20:57 | 9 | 07:55 (7) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:50 (37) | 07:34 | 06:23 | | 17:44 (40) | 06:06 | | 07:47 (7) | 05:09 | 04:54 |
| | 16:56 | 14 | 10:04 (37) | 18:01 | 18:57 | 14 | 17:58 (40) | 20:59 | 9 | 07:56 (7) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:52 (37) | 07:31 | 06:21 | | 07:08 (7) | 06:04 | | 07:48 (7) | 05:07 | 04:54 |
| | 16:58 | 10 | 10:02 (37) | 18:03 | 18:59 | 26 | 17:55 (40) | 21:01 | 9 | 07:57 (7) | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:04 (7) | 06:01 | | 07:49 (7) | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 25 | 07:29 (7) | 21:03 | 9 | 07:58 (7) | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:01 (7) | 05:59 | | 07:50 (7) | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 31 | 08:32 (7) | 21:05 | 9 | 07:59 (7) | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 07:58 (7) | 05:57 | | 07:52 (7) | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 35 | 08:33 (7) | 21:06 | 8 | 08:00 (7) | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 07:57 (7) | | | | 05:03 | |
| | 17:06 | | | | 20:07 | 39 | 08:36 (7) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 557 | | | | 500 | | | 276 | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,63 | | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | 0,31 | | | 0,36 | | | |
| Total, real | | 59 | | | | 155 | | | 100 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (7) | 07:34 | | 18:26 (40) | 07:36 | | | 08:35 | | 09:23 (37) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (7) | 19:12 | 16 | 18:42 (40) | 16:58 | | | 16:10 | 23 | 09:46 (37) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (7) | 07:36 | | 18:28 (40) | 07:38 | | | 08:36 | | 09:24 (37) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (7) | 19:09 | 12 | 18:40 (40) | 16:55 | | | 16:09 | 22 | 09:46 (37) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 08:00 (7) | 07:38 | | | 07:41 | | | 08:38 | | 09:25 (37) |
| | 22:17 | | 21:36 | | 20:24 | 8 | 08:08 (7) | 19:07 | | | 16:53 | | | 16:08 | 22 | 09:47 (37) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:44 (7) | 07:40 | | | 07:43 | | | 08:40 | | 09:24 (37) |
| | 22:16 | | 21:34 | | 20:22 | 22 | 08:08 (7) | 19:04 | | | 16:51 | | | 16:07 | 22 | 09:46 (37) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 (7) | 07:42 | | | 07:45 | | | 08:41 | | 09:25 (37) |
| | 22:16 | | 21:32 | | 20:19 | 24 | 08:07 (7) | 19:02 | | | 16:49 | | | 16:07 | 22 | 09:47 (37) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 (7) | 07:44 | | | 07:47 | | | 08:43 | | 09:26 (37) |
| | 22:15 | | 21:30 | | 20:16 | 23 | 08:07 (7) | 18:59 | | | 16:47 | | | 16:06 | 20 | 09:46 (37) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:44 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:27 (37) |
| | 22:14 | | 21:28 | | 20:14 | 23 | 08:07 (7) | 18:57 | | | 16:45 | | | 16:05 | 20 | 09:47 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:45 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:27 (37) |
| | 22:14 | | 21:25 | | 20:11 | 22 | 08:07 (7) | 18:54 | | | 16:43 | | | 16:05 | 19 | 09:46 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:46 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:28 (37) |
| | 22:13 | | 21:23 | | 20:09 | 21 | 08:07 (7) | 18:52 | | | 16:41 | | | 16:05 | 19 | 09:47 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:45 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:29 (37) |
| | 22:12 | | 21:21 | | 20:06 | 21 | 08:06 (7) | 18:49 | | | 16:40 | | | 16:04 | 18 | 09:47 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:47 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:30 (37) |
| | 22:11 | | 21:19 | | 20:04 | 20 | 08:07 (7) | 18:47 | | | 16:38 | | | 16:04 | 17 | 09:47 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:48 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:31 (37) |
| | 22:10 | | 21:17 | | 20:01 | 19 | 08:07 (7) | 18:44 | | | 16:36 | | | 16:04 | 16 | 09:47 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:49 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:32 (37) |
| | 22:09 | | 21:15 | | 19:58 | 19 | 08:08 (7) | 18:42 | | | 16:34 | | | 16:04 | 15 | 09:47 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 07:51 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:32 (37) |
| | 22:08 | | 21:12 | | 19:56 | 17 | 08:08 (7) | 18:39 | | | 16:32 | | | 16:03 | 15 | 09:47 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 07:53 (7) | 08:02 | | | 08:05 | | 09:25 (37) | 08:53 | | 09:33 (37) |
| | 22:06 | | 21:10 | | 19:53 | 16 | 08:09 (7) | 18:37 | | | 16:31 | 10 | 09:35 (37) | 16:03 | 14 | 09:47 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 07:56 (7) | 08:04 | | | 08:07 | | 09:23 (37) | 08:54 | | 09:34 (37) |
| | 22:05 | | 21:08 | | 19:51 | 18 | 18:42 (40) | 18:34 | | | 16:29 | 14 | 09:37 (37) | 16:03 | 14 | 09:48 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:01 (7) | 08:06 | | | 08:09 | | 09:22 (37) | 08:55 | | 09:35 (37) |
| | 22:04 | | 21:05 | | 19:48 | 21 | 18:46 (40) | 18:32 | | | 16:27 | 16 | 09:38 (37) | 16:04 | 13 | 09:48 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:30 (40) | 08:08 | | | 08:11 | | 09:22 (37) | 08:56 | | 09:36 (37) |
| | 22:03 | | 21:03 | | 19:46 | 18 | 18:48 (40) | 18:29 | | | 16:26 | 18 | 09:40 (37) | 16:04 | 12 | 09:48 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:28 (40) | 08:10 | | | 08:13 | | 09:21 (37) | 08:57 | | 09:35 (37) |
| | 22:01 | | 21:01 | | 19:43 | 21 | 18:49 (40) | 18:27 | | | 16:24 | 20 | 09:41 (37) | 16:04 | 13 | 09:48 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:27 (40) | 08:12 | | | 08:15 | | 09:21 (37) | 08:57 | | 09:36 (37) |
| | 22:00 | | 20:58 | | 19:40 | 23 | 18:50 (40) | 18:25 | | | 16:23 | 21 | 09:42 (37) | 16:04 | 13 | 09:49 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:26 (40) | 08:14 | | | 08:17 | | 09:20 (37) | 08:58 | | 09:36 (37) |
| | 21:58 | | 20:56 | | 19:38 | 24 | 18:50 (40) | 18:22 | | | 16:21 | 22 | 09:42 (37) | 16:05 | 12 | 09:48 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:25 (40) | 08:16 | | | 08:19 | | 09:20 (37) | 08:59 | | 09:37 (37) |
| | 21:57 | | 20:54 | | 19:35 | 26 | 18:51 (40) | 18:20 | | | 16:20 | 23 | 09:43 (37) | 16:05 | 12 | 09:49 (37) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:25 (40) | 08:18 | | | 08:21 | | 09:20 (37) | 08:59 | | 09:37 (37) |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:51 (40) | 18:18 | | | 16:19 | 23 | 09:43 (37) | 16:06 | 13 | 09:50 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:23 (40) | 08:20 | | | 08:23 | | 09:20 (37) | 09:00 | | 09:38 (37) |
| | 21:54 | | 20:49 | | 19:30 | 27 | 18:50 (40) | 18:15 | | | 16:17 | 24 | 09:44 (37) | 16:06 | 13 | 09:51 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:23 (40) | 07:22 | | | 08:24 | | 09:20 (37) | 09:00 | | 09:39 (37) |
| | 21:52 | | 20:46 | | 19:27 | 26 | 18:49 (40) | 17:13 | | | 16:16 | 24 | 09:44 (37) | 16:07 | 12 | 09:51 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:23 (40) | 07:24 | | | 08:26 | | 09:20 (37) | 09:00 | | 09:39 (37) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:49 (40) | 17:11 | | | 16:15 | 24 | 09:44 (37) | 16:08 | 13 | 09:52 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:23 (40) | 07:26 | | | 08:28 | | 09:21 (37) | 09:00 | | 09:39 (37) |
| | 21:49 | | 20:42 | | 19:22 | 25 | 18:48 (40) | 17:08 | | | 16:14 | 24 | 09:45 (37) | 16:08 | 13 | 09:52 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:23 (40) | 07:28 | | | 08:30 | | 09:21 (37) | 09:01 | | 09:39 (37) |
| | 21:47 | | 20:39 | | 19:20 | 24 | 18:47 (40) | 17:06 | | | 16:13 | 24 | 09:45 (37) | 16:09 | 14 | 09:53 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:24 (40) | 07:30 | | | 08:31 | | 09:22 (37) | 09:01 | | 09:39 (37) |
| | 21:45 | | 20:37 | | 19:17 | 22 | 18:46 (40) | 17:04 | | | 16:12 | 23 | 09:45 (37) | 16:10 | 15 | 09:54 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:25 (40) | 07:32 | | | 08:33 | | 09:22 (37) | 09:01 | | 09:39 (37) |
| | 21:43 | | 20:34 | | 19:14 | 20 | 18:45 (40) | 17:02 | | | 16:11 | 24 | 09:46 (37) | 16:11 | 16 | 09:55 (37) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:40 (37) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 16 | 09:56 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 607 | | | 28 | | | 334 | | | 498 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 219 | | | 8 | | | 31 | | | 39 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:41 (37) | 08:27 | 07:26 | | 07:08 | 07:59 (7) | 05:55 | 05:02 |
| | 16:14 | 19 10:00 (37) | 17:08 | 18:07 | | 20:09 | 3 08:02 (7) | 21:08 | 22:02 |
| 2 | 09:00 | 09:41 (37) | 08:26 | 07:24 | | 07:05 | 07:59 (7) | 05:53 | 05:01 |
| | 16:15 | 20 10:01 (37) | 17:10 | 18:09 | | 20:11 | 3 08:02 (7) | 21:10 | 22:03 |
| 3 | 09:00 | 09:41 (37) | 08:24 | 07:22 | | 07:03 | 07:57 (7) | 05:50 | 05:00 |
| | 16:16 | 20 10:01 (37) | 17:12 | 18:11 | | 20:13 | 3 08:00 (7) | 21:12 | 22:05 |
| 4 | 09:00 | 09:42 (37) | 08:22 | 07:19 | | 07:00 | 07:56 (7) | 05:48 | 04:59 |
| | 16:17 | 20 10:02 (37) | 17:14 | 18:13 | | 20:15 | 2 07:58 (7) | 21:14 | 22:06 |
| 5 | 08:59 | 09:42 (37) | 08:20 | 07:17 | | 06:57 | 07:56 (7) | 05:46 | 04:58 |
| | 16:19 | 21 10:03 (37) | 17:16 | 18:15 | | 20:17 | 2 07:58 (7) | 21:16 | 22:07 |
| 6 | 08:59 | 09:42 (37) | 08:18 | 07:14 | | 06:55 | 07:55 (7) | 05:44 | 04:57 |
| | 16:20 | 22 10:04 (37) | 17:19 | 18:17 | | 20:19 | 2 07:57 (7) | 21:18 | 22:08 |
| 7 | 08:58 | 09:42 (37) | 08:16 | 07:12 | | 06:52 | 07:55 (7) | 05:42 | 04:56 |
| | 16:21 | 22 10:04 (37) | 17:21 | 18:19 | | 20:21 | 1 07:56 (7) | 21:20 | 22:09 |
| 8 | 08:58 | 09:42 (37) | 08:14 | 07:09 | | 06:50 | 07:54 (7) | 05:40 | 04:55 |
| | 16:23 | 23 10:05 (37) | 17:23 | 18:22 | | 20:23 | 1 07:55 (7) | 21:22 | 22:10 |
| 9 | 08:57 | 09:43 (37) | 08:12 | 07:07 | 17:50 (40) | 06:47 | 07:54 (7) | 05:38 | 04:55 |
| | 16:24 | 22 10:05 (37) | 17:25 | 18:24 | 3 17:53 (40) | 20:25 | 1 07:55 (7) | 21:24 | 22:11 |
| 10 | 08:56 | 09:43 (37) | 08:10 | 07:04 | 17:46 (40) | 06:45 | 07:53 (7) | 05:36 | 04:54 |
| | 16:26 | 23 10:06 (37) | 17:27 | 18:26 | 12 17:58 (40) | 20:27 | 1 07:54 (7) | 21:26 | 22:12 |
| 11 | 08:56 | 09:43 (37) | 08:08 | 07:02 | 17:43 (40) | 06:42 | 07:53 (7) | 05:34 | 04:54 |
| | 16:28 | 23 10:06 (37) | 17:29 | 18:28 | 17 18:00 (40) | 20:29 | 1 07:54 (7) | 21:28 | 22:13 |
| 12 | 08:55 | 09:43 (37) | 08:06 | 06:59 | 17:41 (40) | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 24 10:07 (37) | 17:31 | 18:30 | 21 18:02 (40) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 09:44 (37) | 08:03 | 06:56 | 17:40 (40) | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 24 10:08 (37) | 17:33 | 18:32 | 22 18:02 (40) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 09:45 (37) | 08:01 | 06:54 | 17:39 (40) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 23 10:08 (37) | 17:36 | 18:34 | 24 18:03 (40) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 09:44 (37) | 07:59 | 06:51 | 17:38 (40) | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 24 10:08 (37) | 17:38 | 18:36 | 25 18:03 (40) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:45 (37) | 07:57 | 06:49 | 17:37 (40) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 23 10:08 (37) | 17:40 | 18:38 | 26 18:03 (40) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:46 (37) | 07:55 | 06:46 | 17:37 (40) | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 23 10:09 (37) | 17:42 | 18:40 | 26 18:03 (40) | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | 09:46 (37) | 07:52 | 06:44 | 17:36 (40) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 22 10:08 (37) | 17:44 | 18:42 | 27 18:03 (40) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:47 (37) | 07:50 | 06:41 | 17:37 (40) | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 22 10:09 (37) | 17:46 | 18:44 | 26 18:03 (40) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:47 (37) | 07:48 | 06:39 | 17:37 (40) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 21 10:08 (37) | 17:48 | 18:46 | 25 18:02 (40) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 09:49 (37) | 07:46 | 06:36 | 17:37 (40) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 20 10:09 (37) | 17:50 | 18:48 | 23 18:00 (40) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 09:49 (37) | 07:43 | 06:33 | 07:25 (7) | 06:15 | | 05:15 | 04:52 |
| | 16:48 | 19 10:08 (37) | 17:53 | 18:50 | 27 18:00 (40) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:50 (37) | 07:41 | 06:31 | 07:17 (7) | 06:13 | | 05:13 | 04:53 |
| | 16:49 | 17 10:07 (37) | 17:55 | 18:52 | 38 17:58 (40) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:52 (37) | 07:38 | 06:28 | 07:14 (7) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 15 10:07 (37) | 17:57 | 18:54 | 41 17:56 (40) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:54 (37) | 07:36 | 06:26 | 07:11 (7) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 11 10:05 (37) | 17:59 | 18:56 | 41 17:53 (40) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:56 (37) | 07:34 | 06:23 | 07:08 (7) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 6 10:02 (37) | 18:01 | 18:57 | 35 07:43 (7) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | | 07:31 | 06:21 | 07:07 (7) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | | 18:03 | 18:59 | 38 07:45 (7) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:04 (7) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | | 18:05 | 19:01 | 42 07:46 (7) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:03 (7) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 45 08:48 (7) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | 08:01 (7) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 47 08:48 (7) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | 08:01 (7) | | | 05:03 | |
| | 17:06 | | | 20:07 | 48 08:49 (7) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 529 | | | 679 | | 20 | | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,63 | | | 0,99 | | 1,00 | | |
| Total reduction | | 0,10 | | | 0,31 | | 0,36 | | |
| Total, real | | 55 | | | 210 | | 7 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (7) | | 07:34 | | 18:20 (40) | | 07:36 | | 08:35 | | 09:25 (37) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (7) | | 19:12 | 21 | 18:41 (40) | | 16:58 | | 16:10 | 24 | 09:49 (37) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (7) | | 07:36 | | 18:21 (40) | | 07:38 | | 08:36 | | 09:26 (37) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (7) | | 19:09 | 19 | 18:40 (40) | | 16:55 | | 16:09 | 23 | 09:49 (37) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 08:00 (7) | | 07:38 | | 18:22 (40) | | 07:41 | | 08:38 | | 09:27 (37) |
| | 22:17 | | 21:36 | | 20:24 | 8 | 08:08 (7) | | 19:07 | 15 | 18:37 (40) | | 16:53 | | 16:08 | 23 | 09:50 (37) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:52 (7) | | 07:40 | | 18:25 (40) | | 07:43 | | 08:40 | | 09:27 (37) |
| | 22:16 | | 21:34 | | 20:22 | 16 | 08:08 (7) | | 19:04 | 9 | 18:34 (40) | | 16:51 | | 16:07 | 22 | 09:49 (37) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:51 (7) | | 07:42 | | | | 07:45 | | 08:41 | | 09:27 (37) |
| | 22:16 | | 21:32 | | 20:19 | 16 | 08:07 (7) | | 19:02 | | | | 16:49 | | 16:07 | 23 | 09:50 (37) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:51 (7) | | 07:44 | | | | 07:47 | | 08:43 | | 09:28 (37) |
| | 22:15 | | 21:30 | | 20:16 | 16 | 08:07 (7) | | 18:59 | | | | 16:47 | | 16:06 | 21 | 09:49 (37) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:51 (7) | | 07:46 | | | | 07:49 | | 08:44 | | 09:29 (37) |
| | 22:14 | | 21:28 | | 20:14 | 16 | 08:07 (7) | | 18:57 | | | | 16:45 | | 16:05 | 21 | 09:50 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:51 (7) | | 07:48 | | | | 07:51 | | 08:45 | | 09:29 (37) |
| | 22:14 | | 21:25 | | 20:11 | 16 | 08:07 (7) | | 18:54 | | | | 16:43 | | 16:05 | 20 | 09:49 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:51 (7) | | 07:50 | | | | 07:53 | | 08:47 | | 09:30 (37) |
| | 22:13 | | 21:23 | | 20:09 | 16 | 08:07 (7) | | 18:52 | | | | 16:41 | | 16:05 | 20 | 09:50 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:51 (7) | | 07:52 | | | | 07:55 | | 08:48 | | 09:30 (37) |
| | 22:12 | | 21:21 | | 20:06 | 15 | 08:06 (7) | | 18:49 | | | | 16:40 | | 16:04 | 20 | 09:50 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:51 (7) | | 07:54 | | | | 07:57 | | 08:49 | | 09:32 (37) |
| | 22:11 | | 21:19 | | 20:04 | 16 | 08:07 (7) | | 18:47 | | | | 16:38 | | 16:04 | 19 | 09:51 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:52 (7) | | 07:56 | | | | 07:59 | | 08:50 | | 09:32 (37) |
| | 22:10 | | 21:17 | | 20:01 | 15 | 08:07 (7) | | 18:44 | | | | 16:36 | | 16:04 | 19 | 09:51 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:53 (7) | | 07:58 | | | | 08:01 | | 08:51 | | 09:33 (37) |
| | 22:09 | | 21:15 | | 19:58 | 15 | 08:08 (7) | | 18:42 | | | | 16:34 | | 16:04 | 18 | 09:51 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 07:53 (7) | | 08:00 | | | | 08:03 | | 08:52 | | 09:33 (37) |
| | 22:08 | | 21:12 | | 19:56 | 15 | 08:08 (7) | | 18:39 | | | | 16:32 | | 16:03 | 18 | 09:51 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 07:54 (7) | | 08:02 | | | | 08:05 | | 08:53 | | 09:34 (37) |
| | 22:06 | | 21:10 | | 19:53 | 15 | 08:09 (7) | | 18:37 | | | | 16:31 | | 16:03 | 17 | 09:51 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 07:55 (7) | | 08:04 | | | | 08:07 | 09:29 (37) | 08:54 | | 09:35 (37) |
| | 22:05 | | 21:08 | | 19:51 | 14 | 08:09 (7) | | 18:34 | | | | 16:29 | 6 09:35 (37) | 16:03 | 17 | 09:52 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 07:56 (7) | | 08:06 | | | | 08:09 | 09:27 (37) | 08:55 | | 09:36 (37) |
| | 22:04 | | 21:05 | | 19:48 | 14 | 08:10 (7) | | 18:32 | | | | 16:27 | 11 09:38 (37) | 16:04 | 16 | 09:52 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 07:58 (7) | | 08:08 | | | | 08:11 | 09:26 (37) | 08:56 | | 09:36 (37) |
| | 22:03 | | 21:03 | | 19:46 | 21 | 18:39 (40) | | 18:29 | | | | 16:26 | 15 09:41 (37) | 16:04 | 16 | 09:52 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:00 (7) | | 08:10 | | | | 08:13 | 09:25 (37) | 08:57 | | 09:36 (37) |
| | 22:01 | | 21:01 | | 19:43 | 26 | 18:42 (40) | | 18:27 | | | | 16:24 | 17 09:42 (37) | 16:04 | 16 | 09:52 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:03 (7) | | 08:12 | | | | 08:15 | 09:24 (37) | 08:57 | | 09:37 (37) |
| | 22:00 | | 20:58 | | 19:40 | 29 | 18:44 (40) | | 18:25 | | | | 16:23 | 19 09:43 (37) | 16:04 | 16 | 09:53 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:08 (7) | | 08:14 | | | | 08:17 | 09:24 (37) | 08:58 | | 09:37 (37) |
| | 21:58 | | 20:56 | | 19:38 | 28 | 18:45 (40) | | 18:22 | | | | 16:21 | 20 09:44 (37) | 16:05 | 16 | 09:53 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:23 (40) | | 08:16 | | | | 08:19 | 09:23 (37) | 08:59 | | 09:38 (37) |
| | 21:57 | | 20:54 | | 19:35 | 23 | 18:46 (40) | | 18:20 | | | | 16:20 | 21 09:44 (37) | 16:05 | 16 | 09:54 (37) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:22 (40) | | 08:18 | | | | 08:21 | 09:23 (37) | 08:59 | | 09:38 (37) |
| | 21:55 | | 20:51 | | 19:33 | 24 | 18:46 (40) | | 18:18 | | | | 16:19 | 22 09:45 (37) | 16:06 | 16 | 09:54 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:20 (40) | | 08:20 | | | | 08:23 | 09:23 (37) | 09:00 | | 09:39 (37) |
| | 21:54 | | 20:49 | | 19:30 | 25 | 18:45 (40) | | 18:15 | | | | 16:17 | 22 09:45 (37) | 16:06 | 16 | 09:55 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:19 (40) | | 07:22 | | | | 08:24 | 09:23 (37) | 09:00 | | 09:39 (37) |
| | 21:52 | | 20:46 | | 19:27 | 26 | 18:45 (40) | | 17:13 | | | | 16:16 | 23 09:46 (37) | 16:07 | 16 | 09:55 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:19 (40) | | 07:24 | | | | 08:26 | 09:23 (37) | 09:00 | | 09:40 (37) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:45 (40) | | 17:11 | | | | 16:15 | 23 09:46 (37) | 16:08 | 16 | 09:56 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:19 (40) | | 07:26 | | | | 08:28 | 09:23 (37) | 09:00 | | 09:40 (37) |
| | 21:49 | | 20:42 | | 19:22 | 26 | 18:45 (40) | | 17:08 | | | | 16:14 | 24 09:47 (37) | 16:08 | 16 | 09:56 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:19 (40) | | 07:28 | | | | 08:30 | 09:24 (37) | 09:01 | | 09:40 (37) |
| | 21:47 | | 20:39 | | 19:20 | 25 | 18:44 (40) | | 17:06 | | | | 16:13 | 23 09:47 (37) | 16:09 | 17 | 09:57 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:19 (40) | | 07:30 | | | | 08:31 | 09:24 (37) | 09:01 | | 09:40 (37) |
| | 21:45 | | 20:37 | | 19:17 | 25 | 18:44 (40) | | 17:04 | | | | 16:12 | 24 09:48 (37) | 16:10 | 18 | 09:58 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:19 (40) | | 07:32 | | | | 08:33 | 09:25 (37) | 09:01 | | 09:41 (37) |
| | 21:43 | | 20:34 | | 19:14 | 24 | 18:43 (40) | | 17:02 | | | | 16:11 | 23 09:48 (37) | 16:11 | 18 | 09:59 (37) |
| 31 | 05:38 | | 06:36 | | | | | | 07:34 | | | | | | 09:01 | | 09:41 (37) |
| | 21:41 | | 20:32 | | | | | | 17:00 | | | | | | 16:12 | 19 | 10:00 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | | | 326 | | | | 253 | | 224 | | |
| Total, worst case | | | | | | 556 | | 64 | | | | 293 | | | | 573 | |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 | | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 | | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | 0,98 | | | | 0,63 | | | | 0,63 | |
| Total reduction | | | | | | 0,36 | | 0,28 | | | | 0,09 | | | | 0,08 | |
| Total, real | | | | | | 199 | | 18 | | | | 26 | | | | 44 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:43 (37) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 20 | 10:03 (37) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:43 (37) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 21 | 10:04 (37) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:43 (37) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 21 | 10:04 (37) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:44 (37) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 22 | 10:06 (37) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:44 (37) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 22 | 10:06 (37) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:45 (37) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 22 | 10:07 (37) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:45 (37) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 23 | 10:08 (37) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:45 (37) | 08:14 | 07:09 | | 17:43 (40) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:08 (37) | 17:23 | 18:22 | 11 | 17:54 (40) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:45 (37) | 08:12 | 07:07 | | 17:40 (40) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:08 (37) | 17:25 | 18:24 | 15 | 17:55 (40) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:46 (37) | 08:10 | 07:04 | | 17:38 (40) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:09 (37) | 17:27 | 18:26 | 20 | 17:58 (40) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:46 (37) | 08:08 | 07:02 | | 17:37 (40) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:09 (37) | 17:29 | 18:28 | 21 | 17:58 (40) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:46 (37) | 08:06 | 06:59 | | 17:36 (40) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 24 | 10:10 (37) | 17:31 | 18:30 | 24 | 18:00 (40) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:47 (37) | 08:03 | 06:56 | | 17:35 (40) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 23 | 10:10 (37) | 17:33 | 18:32 | 25 | 18:00 (40) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:48 (37) | 08:01 | 06:54 | | 17:35 (40) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 23 | 10:11 (37) | 17:36 | 18:34 | 25 | 18:00 (40) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:47 (37) | 07:59 | 06:51 | | 17:34 (40) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 23 | 10:10 (37) | 17:38 | 18:36 | 26 | 18:00 (40) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:48 (37) | 07:57 | 06:49 | | 17:33 (40) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 23 | 10:11 (37) | 17:40 | 18:38 | 26 | 17:59 (40) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:49 (37) | 07:55 | 06:46 | | 17:33 (40) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 22 | 10:11 (37) | 17:42 | 18:40 | 26 | 17:59 (40) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:49 (37) | 07:52 | 06:44 | | 07:34 (7) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 21 | 10:10 (37) | 17:44 | 18:42 | 33 | 17:58 (40) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:51 (37) | 07:50 | 06:41 | | 07:28 (7) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 20 | 10:11 (37) | 17:46 | 18:44 | 44 | 17:58 (40) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:51 (37) | 07:48 | 06:39 | | 07:24 (7) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 19 | 10:10 (37) | 17:48 | 18:46 | 49 | 17:56 (40) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:53 (37) | 07:46 | 06:36 | | 07:21 (7) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17 | 10:10 (37) | 17:50 | 18:48 | 52 | 17:55 (40) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:54 (37) | 07:43 | 06:33 | | 07:19 (7) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 15 | 10:09 (37) | 17:53 | 18:50 | 52 | 17:53 (40) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:55 (37) | 07:41 | 06:31 | | 07:17 (7) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 12 | 10:07 (37) | 17:55 | 18:52 | 50 | 17:50 (40) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:58 (37) | 07:38 | 06:28 | | 07:15 (7) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 8 | 10:06 (37) | 17:57 | 18:54 | 42 | 07:57 (7) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:13 (7) | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 45 | 07:58 (7) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | 06:23 | | 07:12 (7) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 46 | 07:58 (7) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:11 (7) | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 48 | 07:59 (7) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:09 (7) | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 50 | 07:59 (7) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:09 (7) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 51 | 09:00 (7) | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:08 (7) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 52 | 09:00 (7) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:07 (7) | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:01 (7) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 493 | | | | 887 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,31 | | | | |
| Total, real | | 50 | | | | 274 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (7) | 07:34 | | 18:15 (40) | 07:36 | | | 08:35 | | 09:28 (37) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (7) | 19:12 | 24 | 18:39 (40) | 16:58 | | | 16:10 | 23 | 09:51 (37) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (7) | 07:36 | | 18:15 (40) | 07:38 | | | 08:36 | | 09:29 (37) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (7) | 19:09 | 23 | 18:38 (40) | 16:55 | | | 16:09 | 23 | 09:52 (37) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 08:02 (7) | 07:38 | | 18:16 (40) | 07:41 | | | 08:38 | | 09:29 (37) |
| | 22:17 | | 21:36 | | 20:24 | 6 | 08:08 (7) | 19:07 | 20 | 18:36 (40) | 16:53 | | | 16:08 | 23 | 09:52 (37) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 08:02 (7) | 07:40 | | 18:17 (40) | 07:43 | | | 08:40 | | 09:29 (37) |
| | 22:16 | | 21:34 | | 20:22 | 6 | 08:08 (7) | 19:04 | 18 | 18:35 (40) | 16:51 | | | 16:07 | 23 | 09:52 (37) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 08:00 (7) | 07:42 | | 18:19 (40) | 07:45 | | | 08:41 | | 09:30 (37) |
| | 22:16 | | 21:32 | | 20:19 | 7 | 08:07 (7) | 19:02 | 13 | 18:32 (40) | 16:49 | | | 16:07 | 23 | 09:53 (37) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 08:00 (7) | 07:44 | | 18:22 (40) | 07:47 | | | 08:43 | | 09:30 (37) |
| | 22:15 | | 21:30 | | 20:16 | 7 | 08:07 (7) | 18:59 | 6 | 18:28 (40) | 16:47 | | | 16:06 | 22 | 09:52 (37) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 08:00 (7) | 07:46 | | | 07:49 | | | 08:44 | | 09:31 (37) |
| | 22:14 | | 21:28 | | 20:14 | 7 | 08:07 (7) | 18:57 | | | 16:45 | | | 16:05 | 22 | 09:53 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 08:00 (7) | 07:48 | | | 07:51 | | | 08:45 | | 09:31 (37) |
| | 22:14 | | 21:25 | | 20:11 | 7 | 08:07 (7) | 18:54 | | | 16:43 | | | 16:05 | 22 | 09:53 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 08:00 (7) | 07:50 | | | 07:53 | | | 08:47 | | 09:32 (37) |
| | 22:13 | | 21:23 | | 20:09 | 7 | 08:07 (7) | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:54 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:59 (7) | 07:52 | | | 07:55 | | | 08:48 | | 09:32 (37) |
| | 22:12 | | 21:21 | | 20:06 | 7 | 08:06 (7) | 18:49 | | | 16:40 | | | 16:04 | 22 | 09:54 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:59 (7) | 07:54 | | | 07:57 | | | 08:49 | | 09:34 (37) |
| | 22:11 | | 21:19 | | 20:04 | 8 | 08:07 (7) | 18:47 | | | 16:38 | | | 16:04 | 20 | 09:54 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:59 (7) | 07:56 | | | 07:59 | | | 08:50 | | 09:34 (37) |
| | 22:10 | | 21:17 | | 20:01 | 8 | 08:07 (7) | 18:44 | | | 16:36 | | | 16:04 | 20 | 09:54 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:59 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:35 (37) |
| | 22:09 | | 21:15 | | 19:58 | 9 | 08:08 (7) | 18:42 | | | 16:34 | | | 16:04 | 20 | 09:55 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 07:59 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:35 (37) |
| | 22:08 | | 21:12 | | 19:56 | 9 | 08:08 (7) | 18:39 | | | 16:32 | | | 16:03 | 20 | 09:55 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:00 (7) | 08:02 | | | 08:05 | | | 08:53 | | 09:36 (37) |
| | 22:06 | | 21:10 | | 19:53 | 9 | 08:09 (7) | 18:37 | | | 16:31 | | | 16:03 | 19 | 09:55 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 07:59 (7) | 08:04 | | | 08:07 | | | 08:54 | | 09:36 (37) |
| | 22:05 | | 21:08 | | 19:51 | 10 | 08:09 (7) | 18:34 | | | 16:29 | | | 16:03 | 19 | 09:55 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:00 (7) | 08:06 | | | 08:09 | | | 08:55 | | 09:37 (37) |
| | 22:04 | | 21:05 | | 19:48 | 10 | 08:10 (7) | 18:32 | | | 16:27 | | | 16:04 | 19 | 09:56 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:01 (7) | 08:08 | | | 08:11 | | 09:32 (37) | 08:56 | | 09:38 (37) |
| | 22:03 | | 21:03 | | 19:46 | 10 | 08:11 (7) | 18:29 | | | 16:26 | 8 | 09:40 (37) | 16:04 | 18 | 09:56 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:02 (7) | 08:10 | | | 08:13 | | 09:30 (37) | 08:57 | | 09:38 (37) |
| | 22:01 | | 21:01 | | 19:43 | 10 | 08:12 (7) | 18:27 | | | 16:24 | 12 | 09:42 (37) | 16:04 | 18 | 09:56 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:03 (7) | 08:12 | | | 08:15 | | 09:29 (37) | 08:57 | | 09:39 (37) |
| | 22:00 | | 20:58 | | 19:40 | 21 | 18:36 (40) | 18:25 | | | 16:23 | 15 | 09:44 (37) | 16:04 | 18 | 09:57 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:04 (7) | 08:14 | | | 08:17 | | 09:28 (37) | 08:58 | | 09:39 (37) |
| | 21:58 | | 20:56 | | 19:38 | 26 | 18:38 (40) | 18:22 | | | 16:21 | 17 | 09:45 (37) | 16:05 | 18 | 09:57 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:06 (7) | 08:16 | | | 08:19 | | 09:27 (37) | 08:59 | | 09:40 (37) |
| | 21:57 | | 20:54 | | 19:35 | 30 | 18:40 (40) | 18:20 | | | 16:20 | 19 | 09:46 (37) | 16:05 | 18 | 09:58 (37) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:08 (7) | 08:18 | | | 08:21 | | 09:27 (37) | 08:59 | | 09:40 (37) |
| | 21:55 | | 20:51 | | 19:33 | 34 | 18:41 (40) | 18:18 | | | 16:19 | 20 | 09:47 (37) | 16:06 | 18 | 09:58 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:10 (7) | 08:20 | | | 08:23 | | 09:27 (37) | 09:00 | | 09:41 (37) |
| | 21:54 | | 20:49 | | 19:30 | 35 | 18:40 (40) | 18:15 | | | 16:17 | 20 | 09:47 (37) | 16:06 | 18 | 09:59 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 08:14 (7) | 07:22 | | | 08:24 | | 09:26 (37) | 09:00 | | 09:41 (37) |
| | 21:52 | | 20:46 | | 19:27 | 38 | 18:41 (40) | 17:13 | | | 16:16 | 22 | 09:48 (37) | 16:07 | 18 | 09:59 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:15 (40) | 07:24 | | | 08:26 | | 09:26 (37) | 09:00 | | 09:41 (37) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:41 (40) | 17:11 | | | 16:15 | 23 | 09:49 (37) | 16:08 | 19 | 10:00 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:15 (40) | 07:26 | | | 08:28 | | 09:27 (37) | 09:00 | | 09:41 (37) |
| | 21:49 | | 20:42 | | 19:22 | 26 | 18:41 (40) | 17:08 | | | 16:14 | 22 | 09:49 (37) | 16:08 | 19 | 10:00 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:14 (40) | 07:28 | | | 08:30 | | 09:27 (37) | 09:01 | | 09:42 (37) |
| | 21:47 | | 20:39 | | 19:20 | 27 | 18:41 (40) | 17:06 | | | 16:13 | 23 | 09:50 (37) | 16:09 | 19 | 10:01 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:14 (40) | 07:30 | | | 08:31 | | 09:27 (37) | 09:01 | | 09:42 (37) |
| | 21:45 | | 20:37 | | 19:17 | 26 | 18:40 (40) | 17:04 | | | 16:12 | 23 | 09:50 (37) | 16:10 | 19 | 10:01 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:14 (40) | 07:32 | | | 08:33 | | 09:27 (37) | 09:01 | | 09:42 (37) |
| | 21:43 | | 20:34 | | 19:14 | 26 | 18:40 (40) | 17:02 | | | 16:11 | 24 | 09:51 (37) | 16:11 | 20 | 10:02 (37) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:43 (37) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 20 | 10:03 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 457 | | | 104 | | | 248 | | | 622 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,98 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | | | 0,36 | | | 0,27 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 163 | | | 29 | | | 22 | | | 48 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (37) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 21 | 10:06 (37) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:45 (37) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 22 | 10:07 (37) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:45 (37) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 22 | 10:07 (37) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:46 (37) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 22 | 10:08 (37) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:46 (37) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 23 | 10:09 (37) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:47 (37) | 08:18 | 07:14 | | 17:40 (40) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 23 | 10:10 (37) | 17:19 | 18:17 | 9 | 17:49 (40) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:47 (37) | 08:16 | 07:12 | | 17:37 (40) | 06:52 | 05:42 | 04:56 |
| | 16:21 | 23 | 10:10 (37) | 17:21 | 18:19 | 15 | 17:52 (40) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:47 (37) | 08:14 | 07:09 | | 17:35 (40) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:10 (37) | 17:23 | 18:22 | 19 | 17:54 (40) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:48 (37) | 08:12 | 07:07 | | 17:33 (40) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:11 (37) | 17:25 | 18:24 | 21 | 17:54 (40) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:48 (37) | 08:10 | 07:04 | | 17:32 (40) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:11 (37) | 17:27 | 18:26 | 24 | 17:56 (40) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:49 (37) | 08:08 | 07:02 | | 17:31 (40) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 22 | 10:11 (37) | 17:29 | 18:28 | 25 | 17:56 (40) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:49 (37) | 08:06 | 06:59 | | 17:31 (40) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 23 | 10:12 (37) | 17:31 | 18:30 | 25 | 17:56 (40) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:50 (37) | 08:03 | 06:56 | | 17:30 (40) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 22 | 10:12 (37) | 17:33 | 18:32 | 26 | 17:56 (40) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:51 (37) | 08:01 | 06:54 | | 07:42 (7) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 22 | 10:13 (37) | 17:36 | 18:34 | 39 | 17:56 (40) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:51 (37) | 07:59 | 06:51 | | 07:37 (7) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 21 | 10:12 (37) | 17:38 | 18:36 | 48 | 17:56 (40) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (37) | 07:57 | 06:49 | | 07:33 (7) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 20 | 10:12 (37) | 17:40 | 18:38 | 54 | 17:55 (40) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (37) | 07:55 | 06:46 | | 07:31 (7) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 20 | 10:13 (37) | 17:42 | 18:40 | 57 | 17:54 (40) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:53 (37) | 07:52 | 06:44 | | 07:29 (7) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 19 | 10:12 (37) | 17:44 | 18:42 | 59 | 17:53 (40) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:55 (37) | 07:50 | 06:41 | | 07:27 (7) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 17 | 10:12 (37) | 17:46 | 18:44 | 60 | 17:52 (40) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:55 (37) | 07:48 | 06:39 | | 07:25 (7) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 16 | 10:11 (37) | 17:48 | 18:46 | 60 | 17:50 (40) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:57 (37) | 07:46 | 06:36 | | 07:23 (7) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 13 | 10:10 (37) | 17:50 | 18:48 | 58 | 17:47 (40) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:59 (37) | 07:43 | 06:33 | | 07:23 (7) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 10 | 10:09 (37) | 17:53 | 18:50 | 49 | 17:42 (40) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 10:02 (37) | 07:41 | 06:31 | | 07:21 (7) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 3 | 10:05 (37) | 17:55 | 18:52 | 49 | 08:10 (7) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | 07:21 (7) | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | 50 | 08:11 (7) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:19 (7) | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 52 | 08:11 (7) | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | 06:23 | | 07:18 (7) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 52 | 08:10 (7) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:18 (7) | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 53 | 08:11 (7) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:17 (7) | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 53 | 08:10 (7) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:17 (7) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 54 | 09:11 (7) | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:16 (7) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 54 | 09:10 (7) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:16 (7) | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:10 (7) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 453 | | | | 1119 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,31 | | | | |
| Total, real | | 46 | | | | 345 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 18:10 (40) | 07:36 | | | 08:35 | | 09:31 (37) |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 26 | 18:36 (40) | 16:58 | | | 16:10 | 23 | 09:54 (37) |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 18:10 (40) | 07:38 | | | 08:36 | | 09:31 (37) |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 25 | 18:35 (40) | 16:55 | | | 16:09 | 23 | 09:54 (37) |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 18:10 (40) | 07:41 | | | 08:38 | | 09:32 (37) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 24 | 18:34 (40) | 16:53 | | | 16:08 | 23 | 09:55 (37) |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 18:10 (40) | 07:43 | | | 08:40 | | 09:32 (37) |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | 23 | 18:33 (40) | 16:51 | | | 16:07 | 22 | 09:54 (37) |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 18:11 (40) | 07:45 | | | 08:41 | | 09:32 (37) |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 21 | 18:32 (40) | 16:49 | | | 16:07 | 23 | 09:55 (37) |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 18:12 (40) | 07:47 | | | 08:43 | | 09:32 (37) |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | 17 | 18:29 (40) | 16:47 | | | 16:06 | 23 | 09:55 (37) |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | 18:14 (40) | 07:49 | | | 08:44 | | 09:33 (37) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | 13 | 18:27 (40) | 16:45 | | | 16:05 | 23 | 09:56 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 18:18 (40) | 07:51 | | | 08:45 | | 09:33 (37) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | 4 | 18:22 (40) | 16:43 | | | 16:05 | 23 | 09:56 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (37) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:56 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:35 (37) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 21 | 09:56 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:36 (37) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 21 | 09:57 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:36 (37) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 21 | 09:57 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 08:07 (7) | 07:58 | | | 08:01 | | | 08:51 | | 09:37 (37) |
| | 22:09 | | 21:15 | | 19:58 | 1 | 08:08 (7) | 18:42 | | | 16:34 | | | 16:04 | 21 | 09:58 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:07 (7) | 08:00 | | | 08:03 | | | 08:52 | | 09:37 (37) |
| | 22:08 | | 21:12 | | 19:56 | 1 | 08:08 (7) | 18:39 | | | 16:32 | | | 16:03 | 21 | 09:58 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:07 (7) | 08:02 | | | 08:05 | | | 08:53 | | 09:38 (37) |
| | 22:06 | | 21:10 | | 19:53 | 2 | 08:09 (7) | 18:37 | | | 16:31 | | | 16:03 | 20 | 09:58 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:06 (7) | 08:04 | | | 08:07 | | | 08:54 | | 09:38 (37) |
| | 22:05 | | 21:08 | | 19:51 | 3 | 08:09 (7) | 18:34 | | | 16:29 | | | 16:03 | 21 | 09:59 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 (7) | 08:06 | | | 08:09 | | | 08:55 | | 09:39 (37) |
| | 22:04 | | 21:05 | | 19:48 | 4 | 08:10 (7) | 18:32 | | | 16:27 | | | 16:04 | 20 | 09:59 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:07 (7) | 08:08 | | | 08:11 | | | 08:56 | | 09:40 (37) |
| | 22:03 | | 21:03 | | 19:46 | 4 | 08:11 (7) | 18:29 | | | 16:26 | | | 16:04 | 20 | 10:00 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:07 (7) | 08:10 | | | 08:13 | | 09:37 (37) | 08:57 | | 09:39 (37) |
| | 22:01 | | 21:01 | | 19:43 | 5 | 08:12 (7) | 18:27 | | | 16:24 | 3 | 09:40 (37) | 16:04 | 20 | 09:59 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:08 (7) | 08:12 | | | 08:15 | | 09:34 (37) | 08:57 | | 09:40 (37) |
| | 22:00 | | 20:58 | | 19:40 | 6 | 08:14 (7) | 18:25 | | | 16:23 | 10 | 09:44 (37) | 16:04 | 20 | 10:00 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:08 (7) | 08:14 | | | 08:17 | | 09:32 (37) | 08:58 | | 09:41 (37) |
| | 21:58 | | 20:56 | | 19:38 | 7 | 08:15 (7) | 18:22 | | | 16:21 | 13 | 09:45 (37) | 16:05 | 20 | 10:01 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:09 (7) | 08:16 | | | 08:19 | | 09:31 (37) | 08:59 | | 09:41 (37) |
| | 21:57 | | 20:54 | | 19:35 | 19 | 18:32 (40) | 18:20 | | | 16:20 | 16 | 09:47 (37) | 16:05 | 20 | 10:01 (37) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 08:10 (7) | 08:18 | | | 08:21 | | 09:31 (37) | 08:59 | | 09:41 (37) |
| | 21:55 | | 20:51 | | 19:33 | 28 | 18:34 (40) | 18:18 | | | 16:19 | 17 | 09:48 (37) | 16:06 | 20 | 10:01 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:10 (7) | 08:20 | | | 08:23 | | 09:30 (37) | 09:00 | | 09:42 (37) |
| | 21:54 | | 20:49 | | 19:30 | 35 | 18:34 (40) | 18:15 | | | 16:17 | 19 | 09:49 (37) | 16:06 | 20 | 10:02 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 08:11 (7) | 07:22 | | | 08:24 | | 09:30 (37) | 09:00 | | 09:43 (37) |
| | 21:52 | | 20:46 | | 19:27 | 46 | 18:35 (40) | 17:13 | | | 16:16 | 20 | 09:50 (37) | 16:07 | 20 | 10:03 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 08:12 (7) | 07:24 | | | 08:26 | | 09:30 (37) | 09:00 | | 09:43 (37) |
| | 21:50 | | 20:44 | | 19:25 | 59 | 18:36 (40) | 17:11 | | | 16:15 | 20 | 09:50 (37) | 16:08 | 20 | 10:03 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 08:14 (7) | 07:26 | | | 08:28 | | 09:30 (37) | 09:00 | | 09:43 (37) |
| | 21:49 | | 20:42 | | 19:22 | 55 | 18:36 (40) | 17:08 | | | 16:14 | 21 | 09:51 (37) | 16:08 | 20 | 10:03 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 08:17 (7) | 07:28 | | | 08:30 | | 09:30 (37) | 09:01 | | 09:43 (37) |
| | 21:47 | | 20:39 | | 19:20 | 49 | 18:36 (40) | 17:06 | | | 16:13 | 22 | 09:52 (37) | 16:09 | 21 | 10:04 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 08:20 (7) | 07:30 | | | 08:31 | | 09:30 (37) | 09:01 | | 09:44 (37) |
| | 21:45 | | 20:37 | | 19:17 | 43 | 18:36 (40) | 17:04 | | | 16:12 | 22 | 09:52 (37) | 16:10 | 21 | 10:05 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:10 (40) | 07:32 | | | 08:33 | | 09:30 (37) | 09:01 | | 09:44 (37) |
| | 21:43 | | 20:34 | | 19:14 | 26 | 18:36 (40) | 17:02 | | | 16:11 | 23 | 09:53 (37) | 16:11 | 21 | 10:05 (37) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:45 (37) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 393 | | | 153 | | | 206 | | | 655 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,98 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | | | 0,36 | | | 0,27 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 140 | | | 42 | | | 18 | | | 50 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (37) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 23 | 10:13 (37) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:51 (37) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 23 | 10:14 (37) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:51 (37) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 23 | 10:14 (37) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:52 (37) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 23 | 10:15 (37) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:52 (37) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 23 | 10:15 (37) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:53 (37) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 24 | 10:17 (37) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:53 (37) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 24 | 10:17 (37) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:53 (37) | 08:14 | 07:09 | | 17:45 (40) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 24 | 10:17 (37) | 17:23 | 18:22 | 9 | 17:54 (40) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:54 (37) | 08:12 | 07:07 | | 17:41 (40) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:17 (37) | 17:25 | 18:24 | 14 | 17:55 (40) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:54 (37) | 08:10 | 07:04 | | 17:40 (40) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 24 | 10:18 (37) | 17:27 | 18:26 | 18 | 17:58 (40) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:55 (37) | 08:08 | 07:02 | | 17:38 (40) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:18 (37) | 17:29 | 18:28 | 21 | 17:59 (40) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:55 (37) | 08:06 | 06:59 | | 17:38 (40) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 23 | 10:18 (37) | 17:31 | 18:30 | 22 | 18:00 (40) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:56 (37) | 08:03 | 06:56 | | 17:36 (40) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 22 | 10:18 (37) | 17:33 | 18:32 | 24 | 18:00 (40) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:57 (37) | 08:01 | 06:54 | | 17:36 (40) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 22 | 10:19 (37) | 17:36 | 18:34 | 25 | 18:01 (40) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:57 (37) | 07:59 | 06:51 | | 17:35 (40) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 21 | 10:18 (37) | 17:38 | 18:36 | 26 | 18:01 (40) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:58 (37) | 07:57 | 06:49 | | 17:35 (40) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 20 | 10:18 (37) | 17:40 | 18:38 | 25 | 18:00 (40) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:59 (37) | 07:55 | 06:46 | | 07:39 (7) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 19 | 10:18 (37) | 17:42 | 18:40 | 41 | 18:00 (40) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 10:00 (37) | 07:52 | 06:44 | | 07:34 (7) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17 | 10:17 (37) | 17:44 | 18:42 | 49 | 17:59 (40) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 10:01 (37) | 07:50 | 06:41 | | 07:31 (7) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 16 | 10:17 (37) | 17:46 | 18:44 | 53 | 17:58 (40) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 10:02 (37) | 07:48 | 06:39 | | 07:28 (7) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 14 | 10:16 (37) | 17:48 | 18:46 | 57 | 17:57 (40) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 10:05 (37) | 07:46 | 06:36 | | 07:26 (7) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 10 | 10:15 (37) | 17:50 | 18:48 | 57 | 17:55 (40) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 10:08 (37) | 07:43 | 06:33 | | 07:24 (7) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 4 | 10:12 (37) | 17:53 | 18:50 | 57 | 17:53 (40) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | 06:31 | | 07:22 (7) | 06:13 | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | 18:52 | 53 | 17:49 (40) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | 07:21 (7) | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | 49 | 08:10 (7) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:19 (7) | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 51 | 08:10 (7) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | 06:23 | | 07:17 (7) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 53 | 08:10 (7) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:17 (7) | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 54 | 08:11 (7) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:15 (7) | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 56 | 08:11 (7) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:15 (7) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 57 | 09:12 (7) | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:14 (7) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 58 | 09:12 (7) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:14 (7) | | 05:03 | |
| | 17:06 | | | | 20:07 | 58 | 09:12 (7) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 445 | | | | 987 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,59 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,31 | | | | |
| Total, real | | 43 | | | | 301 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:38 | | 07:34 | | 18:16 (40) | 07:36 | 08:35 | 09:37 (37) |
| | 22:18 | 21:40 | 20:29 | | 19:12 | 24 | 18:40 (40) | 16:58 | 16:10 | 23 10:00 (37) |
| 2 | 04:57 | 05:41 | 06:39 | | 07:36 | | 18:17 (40) | 07:38 | 08:36 | 09:37 (37) |
| | 22:17 | 21:38 | 20:27 | | 19:09 | 22 | 18:39 (40) | 16:55 | 16:09 | 24 10:01 (37) |
| 3 | 04:58 | 05:43 | 06:41 | | 07:38 | | 18:17 (40) | 07:41 | 08:38 | 09:38 (37) |
| | 22:17 | 21:36 | 20:24 | | 19:07 | 20 | 18:37 (40) | 16:53 | 16:08 | 23 10:01 (37) |
| 4 | 04:59 | 05:45 | 06:43 | | 07:40 | | 18:19 (40) | 07:43 | 08:40 | 09:37 (37) |
| | 22:16 | 21:34 | 20:22 | | 19:04 | 16 | 18:35 (40) | 16:51 | 16:07 | 24 10:01 (37) |
| 5 | 05:00 | 05:47 | 06:45 | 08:06 (7) | 07:42 | | 18:20 (40) | 07:45 | 08:41 | 09:38 (37) |
| | 22:16 | 21:32 | 20:19 | 1 08:07 (7) | 19:02 | 12 | 18:32 (40) | 16:49 | 16:07 | 24 10:02 (37) |
| 6 | 05:01 | 05:49 | 06:47 | 08:06 (7) | 07:44 | | 18:24 (40) | 07:47 | 08:43 | 09:38 (37) |
| | 22:15 | 21:30 | 20:16 | 1 08:07 (7) | 18:59 | 5 | 18:29 (40) | 16:47 | 16:06 | 24 10:02 (37) |
| 7 | 05:02 | 05:50 | 06:49 | 08:06 (7) | 07:46 | | | 07:49 | 08:44 | 09:39 (37) |
| | 22:14 | 21:28 | 20:14 | 1 08:07 (7) | 18:57 | | | 16:45 | 16:05 | 24 10:03 (37) |
| 8 | 05:03 | 05:52 | 06:51 | 08:06 (7) | 07:48 | | | 07:51 | 08:45 | 09:39 (37) |
| | 22:14 | 21:25 | 20:11 | 1 08:07 (7) | 18:54 | | | 16:43 | 16:05 | 23 10:02 (37) |
| 9 | 05:04 | 05:54 | 06:53 | 08:06 (7) | 07:50 | | | 07:53 | 08:47 | 09:40 (37) |
| | 22:13 | 21:23 | 20:09 | 1 08:07 (7) | 18:52 | | | 16:41 | 16:05 | 23 10:03 (37) |
| 10 | 05:05 | 05:56 | 06:55 | 08:05 (7) | 07:52 | | | 07:55 | 08:48 | 09:40 (37) |
| | 22:12 | 21:21 | 20:06 | 1 08:06 (7) | 18:49 | | | 16:40 | 16:04 | 23 10:03 (37) |
| 11 | 05:07 | 05:58 | 06:56 | 08:05 (7) | 07:54 | | | 07:57 | 08:49 | 09:41 (37) |
| | 22:11 | 21:19 | 20:04 | 2 08:07 (7) | 18:47 | | | 16:38 | 16:04 | 24 10:05 (37) |
| 12 | 05:08 | 06:00 | 06:58 | 08:05 (7) | 07:56 | | | 07:59 | 08:50 | 09:41 (37) |
| | 22:10 | 21:17 | 20:01 | 2 08:07 (7) | 18:44 | | | 16:36 | 16:04 | 24 10:05 (37) |
| 13 | 05:09 | 06:02 | 07:00 | 08:05 (7) | 07:58 | | | 08:01 | 08:51 | 09:42 (37) |
| | 22:09 | 21:15 | 19:58 | 3 08:08 (7) | 18:42 | | | 16:34 | 16:04 | 23 10:05 (37) |
| 14 | 05:10 | 06:03 | 07:02 | 08:05 (7) | 08:00 | | | 08:03 | 08:52 | 09:42 (37) |
| | 22:08 | 21:12 | 19:56 | 3 08:08 (7) | 18:39 | | | 16:32 | 16:03 | 23 10:05 (37) |
| 15 | 05:12 | 06:05 | 07:04 | 08:06 (7) | 08:02 | | | 08:05 | 08:53 | 09:43 (37) |
| | 22:06 | 21:10 | 19:53 | 3 08:09 (7) | 18:37 | | | 16:31 | 16:03 | 22 10:05 (37) |
| 16 | 05:13 | 06:07 | 07:06 | 08:05 (7) | 08:04 | | | 08:07 | 08:54 | 09:43 (37) |
| | 22:05 | 21:08 | 19:51 | 4 08:09 (7) | 18:34 | | | 16:29 | 16:03 | 23 10:06 (37) |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 (7) | 08:06 | | | 08:09 | 08:55 | 09:44 (37) |
| | 22:04 | 21:05 | 19:48 | 4 08:10 (7) | 18:32 | | | 16:27 | 16:04 | 22 10:06 (37) |
| 18 | 05:16 | 06:11 | 07:10 | 08:06 (7) | 08:08 | | | 08:11 | 08:56 | 09:45 (37) |
| | 22:03 | 21:03 | 19:46 | 5 08:11 (7) | 18:29 | | | 16:26 | 16:04 | 22 10:07 (37) |
| 19 | 05:18 | 06:13 | 07:12 | 08:07 (7) | 08:10 | | | 08:13 | 08:57 | 09:45 (37) |
| | 22:01 | 21:01 | 19:43 | 5 08:12 (7) | 18:27 | | | 16:24 | 16:04 | 22 10:07 (37) |
| 20 | 05:19 | 06:15 | 07:13 | 08:08 (7) | 08:12 | | | 08:15 | 09:43 (37) | 08:57 | 09:45 (37) |
| | 22:00 | 20:58 | 19:40 | 8 18:33 (40) | 18:25 | | | 16:23 | 4 09:47 (37) | 16:04 | 23 10:08 (37) |
| 21 | 05:21 | 06:17 | 07:15 | 08:09 (7) | 08:14 | | | 08:17 | 09:40 (37) | 08:58 | 09:45 (37) |
| | 21:58 | 20:56 | 19:38 | 18 18:38 (40) | 18:22 | | | 16:21 | 10 09:50 (37) | 16:05 | 22 10:07 (37) |
| 22 | 05:22 | 06:19 | 07:17 | 08:11 (7) | 08:16 | | | 08:19 | 09:39 (37) | 08:59 | 09:46 (37) |
| | 21:57 | 20:54 | 19:35 | 23 18:40 (40) | 18:20 | | | 16:20 | 13 09:52 (37) | 16:05 | 22 10:08 (37) |
| 23 | 05:24 | 06:20 | 07:19 | 08:12 (7) | 08:18 | | | 08:21 | 09:38 (37) | 08:59 | 09:46 (37) |
| | 21:55 | 20:51 | 19:33 | 28 18:41 (40) | 18:18 | | | 16:19 | 15 09:53 (37) | 16:06 | 22 10:08 (37) |
| 24 | 05:26 | 06:22 | 07:21 | 08:13 (7) | 08:20 | | | 08:23 | 09:37 (37) | 09:00 | 09:47 (37) |
| | 21:54 | 20:49 | 19:30 | 31 18:41 (40) | 18:15 | | | 16:17 | 17 09:54 (37) | 16:06 | 23 10:10 (37) |
| 25 | 05:27 | 06:24 | 07:23 | 08:16 (7) | 07:22 | | | 08:24 | 09:36 (37) | 09:00 | 09:48 (37) |
| | 21:52 | 20:46 | 19:27 | 36 18:41 (40) | 17:13 | | | 16:16 | 19 09:55 (37) | 16:07 | 22 10:10 (37) |
| 26 | 05:29 | 06:26 | 07:25 | 08:19 (7) | 07:24 | | | 08:26 | 09:36 (37) | 09:00 | 09:48 (37) |
| | 21:50 | 20:44 | 19:25 | 45 18:42 (40) | 17:11 | | | 16:15 | 20 09:56 (37) | 16:08 | 22 10:10 (37) |
| 27 | 05:31 | 06:28 | 07:27 | 08:27 (7) | 07:26 | | | 08:28 | 09:36 (37) | 09:00 | 09:48 (37) |
| | 21:49 | 20:42 | 19:22 | 29 18:42 (40) | 17:08 | | | 16:14 | 21 09:57 (37) | 16:08 | 23 10:11 (37) |
| 28 | 05:32 | 06:30 | 07:29 | 18:16 (40) | 07:28 | | | 08:30 | 09:36 (37) | 09:01 | 09:49 (37) |
| | 21:47 | 20:39 | 19:20 | 25 18:41 (40) | 17:06 | | | 16:13 | 22 09:58 (37) | 16:09 | 22 10:11 (37) |
| 29 | 05:34 | 06:32 | 07:31 | 18:16 (40) | 07:30 | | | 08:31 | 09:36 (37) | 09:01 | 09:49 (37) |
| | 21:45 | 20:37 | 19:17 | 25 18:41 (40) | 17:04 | | | 16:12 | 23 09:59 (37) | 16:10 | 23 10:12 (37) |
| 30 | 05:36 | 06:34 | 07:32 | 18:16 (40) | 07:32 | | | 08:33 | 09:36 (37) | 09:01 | 09:50 (37) |
| | 21:43 | 20:34 | 19:14 | 25 18:41 (40) | 17:02 | | | 16:11 | 23 09:59 (37) | 16:11 | 23 10:13 (37) |
| 31 | 05:38 | 06:36 | | | 07:34 | | | | | 09:01 | 09:50 (37) |
| | 21:41 | 20:32 | | | 17:00 | | | | | 16:12 | 23 10:13 (37) |
| Potential sun hours | 521 | 465 | 383 | | 326 | | | 253 | | 224 | |
| Total, worst case | | | | 330 | | 99 | | 187 | | 710 | |
| Sun reduction | | | | 0,40 | | 0,31 | | 0,16 | | 0,14 | |
| Oper. time red. | | | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | 0,97 | | 0,59 | | 0,59 | |
| Total reduction | | | | 0,35 | | 0,27 | | 0,08 | | 0,07 | |
| Total, real | | | | 116 | | 27 | | 16 | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:24 (37) | 07:26 | | | 07:08 | | 19:03 (40) | 05:55 | | | 05:02 | | |
| | 16:14 | | | 17:08 | 25 | 09:49 (37) | 18:07 | | | 20:09 | 27 | 19:30 (40) | 21:08 | | | 22:02 | | |
| 2 | 09:00 | | | 08:26 | | 09:24 (37) | 07:24 | | | 07:05 | | 19:03 (40) | 05:53 | | 06:40 (7) | 05:01 | | |
| | 16:15 | | | 17:10 | 25 | 09:49 (37) | 18:09 | | | 20:11 | 27 | 19:30 (40) | 21:10 | 2 | 06:42 (7) | 22:03 | | |
| 3 | 09:00 | | | 08:24 | | 09:25 (37) | 07:22 | | | 07:03 | | 19:03 (40) | 05:50 | | 06:39 (7) | 05:00 | | |
| | 16:16 | | | 17:12 | 24 | 09:49 (37) | 18:11 | | | 20:13 | 26 | 19:29 (40) | 21:12 | 2 | 06:41 (7) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:25 (37) | 07:19 | | | 07:00 | | 19:03 (40) | 05:48 | | 06:38 (7) | 04:59 | | |
| | 16:17 | | | 17:14 | 22 | 09:47 (37) | 18:13 | | | 20:15 | 24 | 19:27 (40) | 21:14 | 3 | 06:41 (7) | 22:06 | | |
| 5 | 08:59 | | | 08:20 | | 09:26 (37) | 07:17 | | | 06:57 | | 19:04 (40) | 05:46 | | 06:37 (7) | 04:58 | | |
| | 16:19 | | | 17:16 | 20 | 09:46 (37) | 18:15 | | | 20:17 | 23 | 19:27 (40) | 21:16 | 3 | 06:40 (7) | 22:07 | | |
| 6 | 08:59 | | | 08:18 | | 09:28 (37) | 07:14 | | | 06:55 | | 19:04 (40) | 05:44 | | 06:37 (7) | 04:57 | | |
| | 16:20 | | | 17:19 | 17 | 09:45 (37) | 18:17 | | | 20:19 | 21 | 19:25 (40) | 21:18 | 4 | 06:41 (7) | 22:08 | | |
| 7 | 08:58 | | | 08:16 | | 09:30 (37) | 07:12 | | | 06:52 | | 19:06 (40) | 05:42 | | 06:36 (7) | 04:56 | | |
| | 16:21 | | | 17:21 | 14 | 09:44 (37) | 18:19 | | | 20:21 | 17 | 19:23 (40) | 21:20 | 4 | 06:40 (7) | 22:09 | | |
| 8 | 08:58 | | | 08:14 | | 09:32 (37) | 07:09 | | | 06:50 | | 19:08 (40) | 05:40 | | 06:35 (7) | 04:56 | | |
| | 16:23 | | | 17:23 | 9 | 09:41 (37) | 18:22 | | | 20:23 | 12 | 19:20 (40) | 21:22 | 4 | 06:39 (7) | 22:10 | | |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | | 06:47 | | 19:13 (40) | 05:38 | | 06:35 (7) | 04:55 | | |
| | 16:24 | | | 17:25 | | | 18:24 | | | 20:25 | 3 | 19:16 (40) | 21:24 | 3 | 06:38 (7) | 22:11 | | |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:34 (7) | 04:54 | | |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 3 | 06:37 (7) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:33 (7) | 04:54 | | |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 3 | 06:36 (7) | 22:13 | | |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:34 (7) | 04:53 | | |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 2 | 06:36 (7) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:33 (7) | 04:53 | | |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 2 | 06:35 (7) | 22:15 | | |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:32 (7) | 04:53 | | |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 2 | 06:34 (7) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:33 (7) | 04:52 | | |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 1 | 06:34 (7) | 22:16 | | |
| 16 | 08:51 | | 09:28 (37) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:32 (7) | 04:52 | | |
| | 16:36 | 8 | 09:36 (37) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 2 | 06:34 (7) | 22:17 | | |
| 17 | 08:50 | | 09:27 (37) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:32 (7) | 04:52 | | |
| | 16:38 | 12 | 09:39 (37) | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 1 | 06:33 (7) | 22:17 | | |
| 18 | 08:49 | | 09:25 (37) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:32 (7) | 04:52 | | |
| | 16:40 | 15 | 09:40 (37) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 1 | 06:33 (7) | 22:18 | | |
| 19 | 08:47 | | 09:25 (37) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | | 04:52 | | |
| | 16:42 | 17 | 09:42 (37) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | | | 22:18 | | |
| 20 | 08:46 | | 09:24 (37) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | | 04:52 | | |
| | 16:44 | 19 | 09:43 (37) | 17:48 | | | 18:46 | | | 20:47 | | | 21:44 | | | 22:18 | | |
| 21 | 08:45 | | 09:24 (37) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | | 04:52 | | |
| | 16:46 | 20 | 09:44 (37) | 17:50 | | | 18:48 | | | 20:49 | | | 21:45 | | | 22:19 | | |
| 22 | 08:43 | | 09:23 (37) | 07:43 | | | 06:33 | | | 06:15 | | | 05:15 | | | 04:52 | | |
| | 16:48 | 22 | 09:45 (37) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | | | 22:19 | | |
| 23 | 08:42 | | 09:22 (37) | 07:41 | | | 06:31 | | 18:16 (40) | 06:13 | | | 05:13 | | | 04:53 | | |
| | 16:50 | 23 | 09:45 (37) | 17:55 | | | 18:52 | 7 | 18:23 (40) | 20:53 | | | 21:49 | | | 22:19 | | |
| 24 | 08:41 | | 09:23 (37) | 07:38 | | | 06:28 | | 18:12 (40) | 06:11 | | | 05:12 | | | 04:53 | | |
| | 16:51 | 24 | 09:47 (37) | 17:57 | | | 18:54 | 15 | 18:27 (40) | 20:55 | | | 21:50 | | | 22:19 | | |
| 25 | 08:39 | | 09:22 (37) | 07:36 | | | 06:26 | | 18:09 (40) | 06:08 | | | 05:10 | | | 04:53 | | |
| | 16:53 | 25 | 09:47 (37) | 17:59 | | | 18:56 | 19 | 18:28 (40) | 20:57 | | | 21:52 | | | 22:19 | | |
| 26 | 08:37 | | 09:22 (37) | 07:34 | | | 06:23 | | 18:07 (40) | 06:06 | | 06:56 (7) | 05:09 | | | 04:54 | | |
| | 16:56 | 26 | 09:48 (37) | 18:01 | | | 18:57 | 22 | 18:29 (40) | 20:59 | 12 | 07:08 (7) | 21:53 | | | 22:19 | | |
| 27 | 08:36 | | 09:22 (37) | 07:31 | | | 06:21 | | 18:07 (40) | 06:04 | | 06:51 (7) | 05:08 | | | 04:54 | | |
| | 16:58 | 26 | 09:48 (37) | 18:03 | | | 18:59 | 23 | 18:30 (40) | 21:01 | 21 | 07:12 (7) | 21:55 | | | 22:19 | | |
| 28 | 08:34 | | 09:22 (37) | 07:29 | | | 06:18 | | 18:05 (40) | 06:02 | | 06:49 (7) | 05:06 | | | 04:55 | | |
| | 17:00 | 26 | 09:48 (37) | 18:05 | | | 19:01 | 25 | 18:30 (40) | 21:03 | 10 | 07:15 (7) | 21:56 | | | 22:19 | | |
| 29 | 08:33 | | 09:23 (37) | | | | 07:15 | | 19:05 (40) | 05:59 | | 06:46 (7) | 05:05 | | | 04:55 | | |
| | 17:02 | 26 | 09:49 (37) | | | | 20:03 | 26 | 19:31 (40) | 21:05 | 8 | 06:54 (7) | 21:58 | | | 22:18 | | |
| 30 | 08:31 | | 09:23 (37) | | | | 07:13 | | 19:04 (40) | 05:57 | | 06:44 (7) | 05:04 | | | 04:56 | | |
| | 17:04 | 26 | 09:49 (37) | | | | 20:05 | 26 | 19:30 (40) | 21:06 | 7 | 06:51 (7) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:23 (37) | | | | 07:10 | | 19:04 (40) | | | | 05:03 | | | | | |
| | 17:06 | 26 | 09:49 (37) | | | | 20:07 | 27 | 19:31 (40) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 341 | | | 156 | | | 190 | | | 238 | | | 42 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,71 | | | 0,71 | | | 1,00 | | | 0,99 | | | 0,95 | | | | |
| Total reduction | | 0,12 | | | 0,16 | | | 0,32 | | | 0,37 | | | 0,46 | | | | |
| Total, real | | 41 | | | 26 | | | 61 | | | 87 | | | 19 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:44 (7) | 06:38 | | 07:34 | 07:36 | | 08:35 |
| | 22:18 | | 21:40 3 | 06:47 (7) | 20:29 | | 19:12 | 16:58 | | 16:10 |
| 2 | 04:57 | | 05:41 | 06:44 (7) | 06:39 | | 07:36 | 07:38 | | 08:36 |
| | 22:17 | | 21:38 2 | 06:46 (7) | 20:27 | | 19:09 | 16:55 | | 16:09 |
| 3 | 04:58 | | 05:43 | 06:44 (7) | 06:41 | 19:11 (40) | 07:38 | 07:41 | 09:02 (37) | 08:38 |
| | 22:17 | | 21:36 3 | 06:47 (7) | 20:24 3 | 19:14 (40) | 19:07 | 16:53 9 | 09:11 (37) | 16:08 |
| 4 | 04:59 | | 05:45 | 06:45 (7) | 06:43 | 19:06 (40) | 07:40 | 07:43 | 08:59 (37) | 08:40 |
| | 22:16 | | 21:34 3 | 06:48 (7) | 20:22 12 | 19:18 (40) | 19:04 | 16:51 15 | 09:14 (37) | 16:07 |
| 5 | 05:00 | | 05:47 | 06:45 (7) | 06:45 | 19:02 (40) | 07:42 | 07:45 | 08:57 (37) | 08:41 |
| | 22:16 | | 21:32 3 | 06:48 (7) | 20:19 17 | 19:19 (40) | 19:02 | 16:49 18 | 09:15 (37) | 16:07 |
| 6 | 05:01 | | 05:49 | 06:46 (7) | 06:47 | 19:01 (40) | 07:44 | 07:47 | 08:57 (37) | 08:43 |
| | 22:15 | | 21:30 4 | 06:50 (7) | 20:16 20 | 19:21 (40) | 18:59 | 16:47 20 | 09:17 (37) | 16:06 |
| 7 | 05:02 | | 05:50 | 06:47 (7) | 06:49 | 18:59 (40) | 07:46 | 07:49 | 08:56 (37) | 08:44 |
| | 22:14 | | 21:28 3 | 06:50 (7) | 20:14 23 | 19:22 (40) | 18:57 | 16:45 22 | 09:18 (37) | 16:06 |
| 8 | 05:03 | | 05:52 | 06:48 (7) | 06:51 | 18:58 (40) | 07:48 | 07:51 | 08:55 (37) | 08:45 |
| | 22:14 | | 21:25 3 | 06:51 (7) | 20:11 24 | 19:22 (40) | 18:54 | 16:43 23 | 09:18 (37) | 16:05 |
| 9 | 05:04 | | 05:54 | 06:48 (7) | 06:53 | 18:57 (40) | 07:50 | 07:53 | 08:54 (37) | 08:47 |
| | 22:13 | | 21:23 2 | 06:50 (7) | 20:09 26 | 19:23 (40) | 18:52 | 16:41 25 | 09:19 (37) | 16:05 |
| 10 | 05:05 | | 05:56 | 06:49 (7) | 06:55 | 18:56 (40) | 07:52 | 07:55 | 08:55 (37) | 08:48 |
| | 22:12 | | 21:21 2 | 06:51 (7) | 20:06 26 | 19:22 (40) | 18:49 | 16:40 25 | 09:20 (37) | 16:04 |
| 11 | 05:07 | | 05:58 | 06:50 (7) | 06:56 | 18:55 (40) | 07:54 | 07:57 | 08:54 (37) | 08:49 |
| | 22:11 | | 21:19 1 | 06:51 (7) | 20:04 27 | 19:22 (40) | 18:47 | 16:38 26 | 09:20 (37) | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 18:55 (40) | 07:56 | 07:59 | 08:54 (37) | 08:50 |
| | 22:10 | | 21:17 | | 20:01 27 | 19:22 (40) | 18:44 | 16:36 26 | 09:20 (37) | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 18:55 (40) | 07:58 | 08:01 | 08:54 (37) | 08:51 |
| | 22:09 | | 21:15 | | 19:58 27 | 19:22 (40) | 18:42 | 16:34 26 | 09:20 (37) | 16:04 |
| 14 | 05:11 | | 06:03 | | 07:02 | 18:55 (40) | 08:00 | 08:03 | 08:55 (37) | 08:52 |
| | 22:08 | | 21:12 | | 19:56 26 | 19:21 (40) | 18:39 | 16:32 26 | 09:21 (37) | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | 18:55 (40) | 08:02 | 08:05 | 08:55 (37) | 08:53 |
| | 22:06 | | 21:10 | | 19:53 25 | 19:20 (40) | 18:37 | 16:31 26 | 09:21 (37) | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | 18:55 (40) | 08:04 | 08:07 | 08:55 (37) | 08:54 |
| | 22:05 | | 21:08 | | 19:51 24 | 19:19 (40) | 18:34 | 16:29 26 | 09:21 (37) | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | 18:56 (40) | 08:06 | 08:09 | 08:55 (37) | 08:55 |
| | 22:04 | | 21:05 | | 19:48 21 | 19:17 (40) | 18:32 | 16:27 25 | 09:20 (37) | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 18:57 (40) | 08:08 | 08:11 | 08:57 (37) | 08:56 |
| | 22:03 | | 21:03 | | 19:46 19 | 19:16 (40) | 18:29 | 16:26 24 | 09:21 (37) | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 18:58 (40) | 08:10 | 08:13 | 08:57 (37) | 08:57 |
| | 22:01 | | 21:01 | | 19:43 16 | 19:14 (40) | 18:27 | 16:24 23 | 09:20 (37) | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | 19:01 (40) | 08:12 | 08:15 | 08:58 (37) | 08:57 |
| | 22:00 | | 20:58 | | 19:40 9 | 19:10 (40) | 18:25 | 16:23 22 | 09:20 (37) | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:59 (37) | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 20 | 09:19 (37) | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 09:00 (37) | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 19 | 09:19 (37) | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 09:01 (37) | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 17 | 09:18 (37) | 16:06 |
| 24 | 05:26 | 06:42 (7) | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:02 (37) | 09:00 |
| | 21:54 1 | 06:43 (7) | 20:49 | | 19:30 | | 18:15 | 16:17 15 | 09:17 (37) | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:04 (37) | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | | 17:13 | 16:16 12 | 09:16 (37) | 16:07 |
| 26 | 05:29 | 06:42 (7) | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:06 (37) | 09:00 |
| | 21:50 1 | 06:43 (7) | 20:44 | | 19:25 | | 17:11 | 16:15 8 | 09:14 (37) | 16:08 |
| 27 | 05:31 | 06:43 (7) | 06:28 | | 07:27 | | 07:26 | 08:28 | | 09:00 |
| | 21:49 1 | 06:44 (7) | 20:42 | | 19:22 | | 17:08 | 16:14 | | 16:08 |
| 28 | 05:32 | 06:43 (7) | 06:30 | | 07:29 | | 07:28 | 08:30 | | 09:01 |
| | 21:47 1 | 06:44 (7) | 20:39 | | 19:20 | | 17:06 | 16:13 | | 16:09 |
| 29 | 05:34 | 06:43 (7) | 06:32 | | 07:31 | | 07:30 | 08:31 | | 09:01 |
| | 21:45 2 | 06:45 (7) | 20:37 | | 19:17 | | 17:04 | 16:12 | | 16:10 |
| 30 | 05:36 | 06:43 (7) | 06:34 | | 07:32 | | 07:32 | 08:33 | | 09:01 |
| | 21:43 2 | 06:45 (7) | 20:34 | | 19:14 | | 17:02 | 16:11 | | 16:11 |
| 31 | 05:38 | 06:43 (7) | 06:36 | | | | 07:34 | | | 09:01 |
| | 21:41 3 | 06:46 (7) | 20:32 | | | | 17:00 | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | | 224 |
| Total, worst case | 11 | | 29 | | 372 | | | 498 | | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | | 0,16 | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | 0,95 | | 0,95 | | 1,00 | | | 0,71 | | |
| Total reduction | 0,43 | | 0,46 | | 0,37 | | | 0,11 | | |
| Total, real | 5 | | 13 | | 139 | | | 53 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:31 (37) | 07:26 | | | 07:08 | | 19:03 (40) | 05:55 | | | 05:02 | | |
| | 16:14 | | | 17:08 | 24 | 09:55 (37) | 18:07 | | | 20:09 | 26 | 19:29 (40) | 21:08 | | | 22:02 | | |
| 2 | 09:00 | | | 08:26 | | 09:31 (37) | 07:24 | | | 07:05 | | 19:04 (40) | 05:53 | | | 05:01 | | |
| | 16:15 | | | 17:10 | 23 | 09:54 (37) | 18:09 | | | 20:11 | 25 | 19:29 (40) | 21:10 | | | 22:03 | | |
| 3 | 09:00 | | | 08:24 | | 09:32 (37) | 07:22 | | | 07:03 | | 19:04 (40) | 05:50 | | | 05:00 | | |
| | 16:16 | | | 17:12 | 22 | 09:54 (37) | 18:11 | | | 20:13 | 24 | 19:28 (40) | 21:12 | | | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:33 (37) | 07:19 | | | 07:00 | | 19:04 (40) | 05:48 | | 06:39 (7) | 04:59 | | |
| | 16:17 | | | 17:14 | 19 | 09:52 (37) | 18:13 | | | 20:15 | 22 | 19:26 (40) | 21:14 | 2 | 06:41 (7) | 22:06 | | |
| 5 | 08:59 | | | 08:20 | | 09:34 (37) | 07:17 | | | 06:57 | | 19:05 (40) | 05:46 | | 06:38 (7) | 04:58 | | |
| | 16:19 | | | 17:16 | 17 | 09:51 (37) | 18:15 | | | 20:17 | 20 | 19:25 (40) | 21:16 | 2 | 06:40 (7) | 22:07 | | |
| 6 | 08:59 | | | 08:18 | | 09:37 (37) | 07:14 | | | 06:55 | | 19:06 (40) | 05:44 | | 06:38 (7) | 04:57 | | |
| | 16:20 | | | 17:19 | 12 | 09:49 (37) | 18:17 | | | 20:19 | 17 | 19:23 (40) | 21:18 | 3 | 06:41 (7) | 22:08 | | |
| 7 | 08:58 | | | 08:16 | | 09:41 (37) | 07:12 | | | 06:52 | | 19:08 (40) | 05:42 | | 06:37 (7) | 04:56 | | |
| | 16:21 | | | 17:21 | 3 | 09:44 (37) | 18:19 | | | 20:21 | 13 | 19:21 (40) | 21:20 | 3 | 06:40 (7) | 22:09 | | |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | | 06:50 | | 19:12 (40) | 05:40 | | 06:36 (7) | 04:56 | | |
| | 16:23 | | | 17:23 | | | 18:22 | | | 20:23 | 4 | 19:16 (40) | 21:22 | 3 | 06:39 (7) | 22:10 | | |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | | 06:35 (7) | 04:55 | | |
| | 16:24 | | | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 3 | 06:38 (7) | 22:11 | | |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:34 (7) | 04:54 | | |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 3 | 06:37 (7) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:33 (7) | 04:54 | | |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 3 | 06:36 (7) | 22:13 | | |
| 12 | 08:55 | | 09:35 (37) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:33 (7) | 04:53 | | |
| | 16:29 | 3 | 09:38 (37) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 3 | 06:36 (7) | 22:14 | | |
| 13 | 08:54 | | 09:33 (37) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:32 (7) | 04:53 | | |
| | 16:31 | 9 | 09:42 (37) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 3 | 06:35 (7) | 22:15 | | |
| 14 | 08:53 | | 09:32 (37) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:31 (7) | 04:53 | | |
| | 16:33 | 12 | 09:44 (37) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 3 | 06:34 (7) | 22:15 | | |
| 15 | 08:52 | | 09:30 (37) | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:32 (7) | 04:52 | | |
| | 16:34 | 15 | 09:45 (37) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 2 | 06:34 (7) | 22:16 | | |
| 16 | 08:51 | | 09:30 (37) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:31 (7) | 04:52 | | |
| | 16:36 | 17 | 09:47 (37) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 3 | 06:34 (7) | 22:17 | | |
| 17 | 08:50 | | 09:29 (37) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:30 (7) | 04:52 | | |
| | 16:38 | 20 | 09:49 (37) | 17:42 | | | 18:40 | | | 20:41 | | | 21:38 | 3 | 06:33 (7) | 22:17 | | |
| 18 | 08:49 | | 09:28 (37) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:30 (7) | 04:52 | | |
| | 16:40 | 21 | 09:49 (37) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 3 | 06:33 (7) | 22:18 | | |
| 19 | 08:47 | | 09:29 (37) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:30 (7) | 04:52 | | |
| | 16:42 | 22 | 09:51 (37) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 2 | 06:32 (7) | 22:18 | | |
| 20 | 08:46 | | 09:28 (37) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | 06:30 (7) | 04:52 | | |
| | 16:44 | 23 | 09:51 (37) | 17:48 | | | 18:46 | | | 20:47 | | | 21:44 | 2 | 06:32 (7) | 22:18 | | |
| 21 | 08:45 | | 09:28 (37) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:30 (7) | 04:52 | | |
| | 16:46 | 24 | 09:52 (37) | 17:50 | | | 18:48 | | | 20:49 | | | 21:45 | 2 | 06:32 (7) | 22:19 | | |
| 22 | 08:43 | | 09:28 (37) | 07:43 | | | 06:33 | | | 06:15 | | | 05:15 | | 06:30 (7) | 04:52 | | |
| | 16:48 | 25 | 09:53 (37) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 1 | 06:31 (7) | 22:19 | | |
| 23 | 08:42 | | 09:27 (37) | 07:41 | | | 06:31 | | 18:14 (40) | 06:13 | | | 05:13 | | 06:30 (7) | 04:53 | | |
| | 16:50 | 26 | 09:53 (37) | 17:55 | | | 18:52 | 10 | 18:24 (40) | 20:53 | | | 21:49 | 1 | 06:31 (7) | 22:19 | | |
| 24 | 08:41 | | 09:28 (37) | 07:38 | | | 06:28 | | 18:11 (40) | 06:11 | | | 05:12 | | 06:30 (7) | 04:53 | | |
| | 16:51 | 26 | 09:54 (37) | 17:57 | | | 18:54 | 16 | 18:27 (40) | 20:55 | | | 21:50 | 2 | 06:32 (7) | 22:19 | | |
| 25 | 08:39 | | 09:28 (37) | 07:36 | | | 06:26 | | 18:09 (40) | 06:08 | | | 05:10 | | 06:29 (7) | 04:53 | | |
| | 16:53 | 26 | 09:54 (37) | 17:59 | | | 18:56 | 19 | 18:28 (40) | 20:57 | | | 21:52 | 2 | 06:31 (7) | 22:19 | | |
| 26 | 08:37 | | 09:28 (37) | 07:34 | | | 06:23 | | 18:07 (40) | 06:06 | | | 05:09 | | 06:30 (7) | 04:54 | | |
| | 16:56 | 27 | 09:55 (37) | 18:01 | | | 18:57 | 22 | 18:29 (40) | 20:59 | | | 21:53 | 1 | 06:31 (7) | 22:19 | | |
| 27 | 08:36 | | 09:28 (37) | 07:31 | | | 06:21 | | 18:06 (40) | 06:04 | | | 05:08 | | 06:30 (7) | 04:54 | | |
| | 16:58 | 27 | 09:55 (37) | 18:03 | | | 18:59 | 24 | 18:30 (40) | 21:01 | | | 21:55 | 1 | 06:31 (7) | 22:19 | | |
| 28 | 08:34 | | 09:28 (37) | 07:29 | | | 06:18 | | 18:05 (40) | 06:01 | | 06:56 (7) | 05:06 | | 06:30 (7) | 04:55 | | |
| | 17:00 | 27 | 09:55 (37) | 18:05 | | | 19:01 | 25 | 18:30 (40) | 21:03 | 2 | 06:58 (7) | 21:56 | 1 | 06:31 (7) | 22:19 | | |
| 29 | 08:33 | | 09:29 (37) | | | | 07:15 | | 19:05 (40) | 05:59 | | 06:51 (7) | 05:05 | | 06:30 (7) | 04:55 | | |
| | 17:02 | 27 | 09:56 (37) | | | | 20:03 | 25 | 19:30 (40) | 21:05 | 3 | 06:54 (7) | 21:58 | 1 | 06:31 (7) | 22:18 | | |
| 30 | 08:31 | | 09:29 (37) | | | | 07:13 | | 19:04 (40) | 05:57 | | 06:48 (7) | 05:04 | | | 04:56 | | |
| | 17:04 | 26 | 09:55 (37) | | | | 20:05 | 26 | 19:30 (40) | 21:06 | 3 | 06:51 (7) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:30 (37) | | | | 07:10 | | 19:04 (40) | | | | 05:03 | | | | | |
| | 17:06 | 25 | 09:55 (37) | | | | 20:07 | 26 | 19:30 (40) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 428 | | | 120 | | | 193 | | | 159 | | | 58 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,69 | | | 0,69 | | | 1,00 | | | 1,00 | | | 0,95 | | | | |
| Total reduction | | 0,12 | | | 0,16 | | | 0,32 | | | 0,37 | | | 0,46 | | | | |
| Total, real | | 50 | | | 19 | | | 61 | | | 58 | | | 26 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:43 (7) | 06:38 | | 07:34 | | 07:36 | | 08:35 |
| | 22:18 | | 21:40 | 4 | 06:47 (7) | 20:29 | | 19:12 | | 16:58 | | 16:10 |
| 2 | 04:57 | | 05:41 | | 06:43 (7) | 06:39 | | 07:36 | | 07:38 | | 08:36 |
| | 22:17 | | 21:38 | 3 | 06:46 (7) | 20:27 | | 19:09 | | 16:55 | | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:44 (7) | 06:41 | | 07:38 | | 07:41 | | 08:38 |
| | 22:17 | | 21:36 | 3 | 06:47 (7) | 20:24 | | 19:07 | | 16:53 | | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:45 (7) | 06:43 | 19:10 (40) | 07:40 | | 07:43 | 09:10 (37) | 08:40 |
| | 22:16 | | 21:34 | 3 | 06:48 (7) | 20:22 | 4 19:14 (40) | 19:04 | | 16:51 | 5 09:15 (37) | 16:07 |
| 5 | 05:00 | | 05:47 | | 06:45 (7) | 06:45 | 19:04 (40) | 07:42 | | 07:45 | 09:06 (37) | 08:41 |
| | 22:16 | | 21:32 | 3 | 06:48 (7) | 20:19 | 13 19:17 (40) | 19:02 | | 16:49 | 13 09:19 (37) | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:46 (7) | 06:47 | 19:02 (40) | 07:44 | | 07:47 | 09:05 (37) | 08:43 |
| | 22:15 | | 21:30 | 4 | 06:50 (7) | 20:16 | 17 19:19 (40) | 18:59 | | 16:47 | 16 09:21 (37) | 16:06 |
| 7 | 05:02 | | 05:50 | | 06:47 (7) | 06:49 | 19:00 (40) | 07:46 | | 07:49 | 09:03 (37) | 08:44 |
| | 22:14 | | 21:28 | 3 | 06:50 (7) | 20:14 | 20 19:20 (40) | 18:57 | | 16:45 | 20 09:23 (37) | 16:06 |
| 8 | 05:03 | | 05:52 | | 06:49 (7) | 06:51 | 18:59 (40) | 07:48 | | 07:51 | 09:02 (37) | 08:45 |
| | 22:14 | | 21:25 | 2 | 06:51 (7) | 20:11 | 22 19:21 (40) | 18:54 | | 16:43 | 22 09:24 (37) | 16:05 |
| 9 | 05:04 | | 05:54 | | 06:49 (7) | 06:53 | 18:58 (40) | 07:50 | | 07:53 | 09:01 (37) | 08:47 |
| | 22:13 | | 21:23 | 1 | 06:50 (7) | 20:09 | 24 19:22 (40) | 18:52 | | 16:41 | 23 09:24 (37) | 16:05 |
| 10 | 05:05 | | 05:56 | | | 06:55 | 18:56 (40) | 07:52 | | 07:55 | 09:01 (37) | 08:48 |
| | 22:12 | | 21:21 | | | 20:06 | 25 19:21 (40) | 18:49 | | 16:40 | 25 09:26 (37) | 16:04 |
| 11 | 05:07 | | 05:58 | | | 06:56 | 18:56 (40) | 07:54 | | 07:57 | 09:01 (37) | 08:49 |
| | 22:11 | | 21:19 | | | 20:04 | 25 19:21 (40) | 18:47 | | 16:38 | 25 09:26 (37) | 16:04 |
| 12 | 05:08 | 06:39 (7) | 06:00 | | | 06:58 | 18:55 (40) | 07:56 | | 07:59 | 09:00 (37) | 08:50 |
| | 22:10 | 1 06:40 (7) | 21:17 | | | 20:01 | 26 19:21 (40) | 18:44 | | 16:36 | 26 09:26 (37) | 16:04 |
| 13 | 05:09 | 06:39 (7) | 06:02 | | | 07:00 | 18:55 (40) | 07:58 | | 08:01 | 09:00 (37) | 08:51 |
| | 22:09 | 1 06:40 (7) | 21:15 | | | 19:58 | 26 19:21 (40) | 18:42 | | 16:34 | 27 09:27 (37) | 16:04 |
| 14 | 05:11 | 06:39 (7) | 06:03 | | | 07:02 | 18:55 (40) | 08:00 | | 08:03 | 09:01 (37) | 08:52 |
| | 22:08 | 1 06:40 (7) | 21:12 | | | 19:56 | 26 19:21 (40) | 18:39 | | 16:32 | 27 09:28 (37) | 16:03 |
| 15 | 05:12 | | 06:05 | | | 07:04 | 18:55 (40) | 08:02 | | 08:05 | 09:01 (37) | 08:53 |
| | 22:06 | | 21:10 | | | 19:53 | 25 19:20 (40) | 18:37 | | 16:31 | 27 09:28 (37) | 16:03 |
| 16 | 05:13 | | 06:07 | | | 07:06 | 18:55 (40) | 08:04 | | 08:07 | 09:01 (37) | 08:54 |
| | 22:05 | | 21:08 | | | 19:51 | 23 19:18 (40) | 18:34 | | 16:29 | 27 09:28 (37) | 16:03 |
| 17 | 05:15 | 06:39 (7) | 06:09 | | | 07:08 | 18:55 (40) | 08:06 | | 08:09 | 09:01 (37) | 08:55 |
| | 22:04 | 1 06:40 (7) | 21:05 | | | 19:48 | 22 19:17 (40) | 18:32 | | 16:27 | 26 09:27 (37) | 16:04 |
| 18 | 05:16 | 06:39 (7) | 06:11 | | | 07:10 | 18:56 (40) | 08:08 | | 08:11 | 09:02 (37) | 08:56 |
| | 22:03 | 1 06:40 (7) | 21:03 | | | 19:46 | 20 19:16 (40) | 18:29 | | 16:26 | 26 09:28 (37) | 16:04 |
| 19 | 05:18 | 06:40 (7) | 06:13 | | | 07:12 | 18:57 (40) | 08:10 | | 08:13 | 09:02 (37) | 08:57 |
| | 22:01 | 1 06:41 (7) | 21:01 | | | 19:43 | 17 19:14 (40) | 18:27 | | 16:24 | 26 09:28 (37) | 16:04 |
| 20 | 05:19 | 06:40 (7) | 06:15 | | | 07:13 | 19:00 (40) | 08:12 | | 08:15 | 09:03 (37) | 08:57 |
| | 22:00 | 1 06:41 (7) | 20:58 | | | 19:40 | 11 19:11 (40) | 18:25 | | 16:23 | 25 09:28 (37) | 16:04 |
| 21 | 05:21 | 06:39 (7) | 06:17 | | | 07:15 | | 08:14 | | 08:17 | 09:03 (37) | 08:58 |
| | 21:58 | 2 06:41 (7) | 20:56 | | | 19:38 | | 18:22 | | 16:21 | 24 09:27 (37) | 16:05 |
| 22 | 05:22 | 06:40 (7) | 06:19 | | | 07:17 | | 08:16 | | 08:19 | 09:04 (37) | 08:59 |
| | 21:57 | 2 06:42 (7) | 20:54 | | | 19:35 | | 18:20 | | 16:20 | 23 09:27 (37) | 16:05 |
| 23 | 05:24 | 06:40 (7) | 06:21 | | | 07:19 | | 08:18 | | 08:21 | 09:05 (37) | 08:59 |
| | 21:55 | 2 06:42 (7) | 20:51 | | | 19:33 | | 18:18 | | 16:19 | 22 09:27 (37) | 16:06 |
| 24 | 05:26 | 06:40 (7) | 06:22 | | | 07:21 | | 08:20 | | 08:23 | 09:05 (37) | 09:00 |
| | 21:54 | 3 06:43 (7) | 20:49 | | | 19:30 | | 18:15 | | 16:17 | 21 09:26 (37) | 16:06 |
| 25 | 05:27 | 06:40 (7) | 06:24 | | | 07:23 | | 07:22 | | 08:24 | 09:06 (37) | 09:00 |
| | 21:52 | 2 06:42 (7) | 20:46 | | | 19:27 | | 17:13 | | 16:16 | 20 09:26 (37) | 16:07 |
| 26 | 05:29 | 06:41 (7) | 06:26 | | | 07:25 | | 07:24 | | 08:26 | 09:08 (37) | 09:00 |
| | 21:50 | 2 06:43 (7) | 20:44 | | | 19:25 | | 17:11 | | 16:15 | 17 09:25 (37) | 16:08 |
| 27 | 05:31 | 06:42 (7) | 06:28 | | | 07:27 | | 07:26 | | 08:28 | 09:09 (37) | 09:00 |
| | 21:49 | 2 06:44 (7) | 20:42 | | | 19:22 | | 17:08 | | 16:14 | 15 09:24 (37) | 16:08 |
| 28 | 05:32 | 06:41 (7) | 06:30 | | | 07:29 | | 07:28 | | 08:30 | 09:11 (37) | 09:01 |
| | 21:47 | 3 06:44 (7) | 20:39 | | | 19:20 | | 17:06 | | 16:13 | 12 09:23 (37) | 16:09 |
| 29 | 05:34 | 06:42 (7) | 06:32 | | | 07:31 | | 07:30 | | 08:31 | 09:13 (37) | 09:01 |
| | 21:45 | 3 06:45 (7) | 20:37 | | | 19:17 | | 17:04 | | 16:12 | 9 09:22 (37) | 16:10 |
| 30 | 05:36 | 06:42 (7) | 06:34 | | | 07:32 | | 07:32 | | 08:33 | 09:16 (37) | 09:01 |
| | 21:43 | 3 06:45 (7) | 20:34 | | | 19:14 | | 17:02 | | 16:11 | 4 09:20 (37) | 16:11 |
| 31 | 05:38 | 06:43 (7) | 06:36 | | | | | 07:34 | | | | 09:01 |
| | 21:41 | 3 06:46 (7) | 20:32 | | | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | | 465 | | | 383 | | 326 | | 253 | | 224 |
| Total, worst case | | 34 | | 26 | | | 346 | | | | 553 | |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | | 0,16 | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | | 1,00 | |
| Wind dir. red. | | 0,95 | | 0,95 | | | 1,00 | | | | 0,69 | |
| Total reduction | | 0,43 | | 0,46 | | | 0,37 | | | | 0,10 | |
| Total, real | | 15 | | 12 | | | 128 | | | | 56 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | 08:26 | | 07:24 | | 07:05 | 05:53 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 17:44 (40) | 07:00 | 05:48 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | 1 | 17:45 (40) | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | | 17:41 (40) | 06:57 | 05:46 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | 7 | 17:48 (40) | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 17:39 (40) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | 10 | 17:49 (40) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 10:11 (7) | 07:12 | | 17:38 (40) | 06:52 | 05:42 | 04:56 |
| | 16:21 | 17:21 | 2 10:13 (7) | 18:19 | 14 | 17:52 (40) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 10:01 (7) | 07:09 | | 17:36 (40) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 17:23 | 23 10:24 (7) | 18:21 | 18 | 17:54 (40) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 09:57 (7) | 07:07 | | 17:35 (40) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 17:25 | 32 10:29 (7) | 18:24 | 20 | 17:55 (40) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 | 09:53 (7) | 07:04 | | 17:35 (40) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 17:27 | 39 10:32 (7) | 18:26 | 21 | 17:56 (40) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 09:50 (7) | 07:02 | | 17:35 (40) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 45 10:35 (7) | 18:28 | 20 | 17:55 (40) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | | 06:59 | | 17:35 (40) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 17:31 | | 18:30 | 20 | 17:55 (40) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 | | 06:56 | | 17:35 (40) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 17:33 | | 18:32 | 19 | 17:54 (40) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | | 06:54 | | 17:36 (40) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 17:36 | | 18:34 | 18 | 17:54 (40) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | | 06:51 | | 17:37 (40) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 17:38 | | 18:36 | 15 | 17:52 (40) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | | 06:49 | | 09:36 (7) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 | | 18:38 | 91 | 17:49 (40) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 06:46 | | 09:35 (7) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 17:42 | | 18:40 | 81 | 10:56 (7) | 20:41 | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 | | 06:44 | | 09:33 (7) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | | 18:42 | 82 | 10:55 (7) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | | 06:41 | | 09:32 (7) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 17:46 | | 18:44 | 82 | 10:54 (7) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | | 06:39 | | 09:30 (7) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | | 18:46 | 83 | 10:53 (7) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | | 06:36 | | 09:28 (7) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:50 | | 18:48 | 84 | 10:52 (7) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 | | 06:33 | | 09:26 (7) | 06:15 | 05:15 | 04:52 |
| | 16:47 | 17:53 | | 18:50 | 85 | 10:51 (7) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | | 06:31 | | 09:23 (7) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 17:55 | | 18:52 | 86 | 10:49 (7) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 | 09:29 (7) | 06:28 | | 09:21 (7) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 17:57 | 1 09:30 (7) | 18:54 | 88 | 10:49 (7) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 09:29 (7) | 06:26 | | 09:19 (7) | 06:08 | 05:10 | 04:53 |
| | 16:53 | 17:59 | 1 09:30 (7) | 18:55 | 88 | 10:47 (7) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 | 09:27 (7) | 06:23 | | 09:18 (7) | 06:06 | 05:09 | 04:54 |
| | 16:55 | 18:01 | 3 09:30 (7) | 18:57 | 87 | 10:45 (7) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 | 09:27 (7) | 06:21 | | 09:19 (7) | 06:04 | 05:07 | 04:54 |
| | 16:58 | 18:03 | 3 09:30 (7) | 18:59 | 85 | 10:44 (7) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 09:25 (7) | 06:18 | | 09:20 (7) | 06:01 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 5 09:30 (7) | 19:01 | 82 | 10:42 (7) | 21:03 | 21:56 | 22:19 |
| 29 | 08:33 | | | 07:15 | | 10:21 (7) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 79 | 11:40 (7) | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | | 10:21 (7) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 77 | 11:38 (7) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | | 10:22 (7) | | 05:03 | |
| | 17:06 | | | 20:07 | 74 | 11:36 (7) | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 154 | | 1517 | | | | |
| Sun reduction | | | 0,25 | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | 0,69 | | 0,72 | | | | |
| Total reduction | | | 0,17 | | 0,25 | | | | |
| Total, real | | | 26 | | 373 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 18:15 (40) | 07:36 | | 09:23 (7) | 08:35 | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 19 | 18:34 (40) | 16:58 | 38 | 10:01 (7) | 16:10 | |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 18:14 (40) | 07:38 | | 09:27 (7) | 08:36 | |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 20 | 18:34 (40) | 16:55 | 31 | 09:58 (7) | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 18:13 (40) | 07:40 | | 09:32 (7) | 08:38 | |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 21 | 18:34 (40) | 16:53 | 21 | 09:53 (7) | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 18:13 (40) | 07:43 | | | 08:40 | |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | 21 | 18:34 (40) | 16:51 | | | 16:07 | |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 18:13 (40) | 07:45 | | | 08:41 | |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 19 | 18:32 (40) | 16:49 | | | 16:07 | |
| 6 | 05:01 | | 05:48 | | 06:47 | | | 07:44 | | 18:14 (40) | 07:47 | | | 08:43 | |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | 15 | 18:29 (40) | 16:47 | | | 16:06 | |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | 18:14 (40) | 07:49 | | | 08:44 | |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | 13 | 18:27 (40) | 16:45 | | | 16:05 | |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 18:15 (40) | 07:51 | | | 08:45 | |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | 9 | 18:24 (40) | 16:43 | | | 16:05 | |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 18:17 (40) | 07:53 | | | 08:47 | |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | 5 | 18:22 (40) | 16:41 | | | 16:05 | |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | | 08:01 | | | 08:51 | |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | | | 16:34 | | | 16:04 | |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | | 08:52 | |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | | | 16:03 | |
| 15 | 05:12 | | 06:05 | | 07:04 | | | 08:02 | | | 08:05 | | | 08:53 | |
| | 22:06 | | 21:10 | | 19:53 | | | 18:37 | | | 16:31 | | | 16:03 | |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | | 08:07 | | | 08:54 | |
| | 22:05 | | 21:08 | | 19:51 | | | 18:34 | | | 16:29 | | | 16:03 | |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | | 08:09 | | | 08:55 | |
| | 22:04 | | 21:05 | | 19:48 | | | 18:32 | | | 16:27 | | | 16:04 | |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | | 08:11 | | | 08:56 | |
| | 22:03 | | 21:03 | | 19:45 | | | 18:29 | | | 16:26 | | | 16:04 | |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | | 08:13 | | | 08:57 | |
| | 22:01 | | 21:01 | | 19:43 | | | 18:27 | | | 16:24 | | | 16:04 | |
| 20 | 05:19 | | 06:15 | | 07:13 | | | 08:12 | | 10:08 (7) | 08:15 | | | 08:57 | |
| | 22:00 | | 20:58 | | 19:40 | | | 18:25 | 3 | 10:11 (7) | 16:23 | | | 16:04 | |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | 10:06 (7) | 08:17 | | | 08:58 | |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | 6 | 10:12 (7) | 16:21 | | | 16:05 | |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 10:05 (7) | 08:19 | | | 08:59 | |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | 8 | 10:13 (7) | 16:20 | | | 16:05 | |
| 23 | 05:24 | | 06:20 | | 07:19 | | | 08:18 | | 10:06 (7) | 08:21 | | | 08:59 | |
| | 21:55 | | 20:51 | | 19:33 | | | 18:18 | 9 | 10:15 (7) | 16:19 | | | 16:06 | |
| 24 | 05:26 | | 06:22 | | 07:21 | | | 08:20 | | 10:08 (7) | 08:23 | | | 09:00 | |
| | 21:54 | | 20:49 | | 19:30 | | | 18:15 | 10 | 10:18 (7) | 16:17 | | | 16:06 | |
| 25 | 05:27 | | 06:24 | | 07:23 | | | 07:22 | | 09:09 (7) | 08:24 | | | 09:00 | |
| | 21:52 | | 20:46 | | 19:27 | | | 17:13 | 13 | 10:17 (7) | 16:16 | | | 16:07 | |
| 26 | 05:29 | | 06:26 | | 07:25 | | | 07:24 | | 09:10 (7) | 08:26 | | | 09:00 | |
| | 21:50 | | 20:44 | | 19:25 | | | 17:11 | 15 | 10:15 (7) | 16:15 | | | 16:08 | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:21 (40) | 07:26 | | 09:12 (7) | 08:28 | | | 09:00 | |
| | 21:49 | | 20:42 | | 19:22 | 9 | 18:30 (40) | 17:08 | 17 | 10:13 (7) | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:19 (40) | 07:28 | | 09:13 (7) | 08:30 | | | 09:01 | |
| | 21:47 | | 20:39 | | 19:20 | 13 | 18:32 (40) | 17:06 | 21 | 10:11 (7) | 16:13 | | | 16:09 | |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:17 (40) | 07:30 | | 09:16 (7) | 08:31 | | | 09:01 | |
| | 21:45 | | 20:37 | | 19:17 | 16 | 18:33 (40) | 17:04 | 25 | 10:09 (7) | 16:12 | | | 16:10 | |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:15 (40) | 07:32 | | 09:18 (7) | 08:33 | | | 09:01 | |
| | 21:43 | | 20:34 | | 19:14 | 19 | 18:34 (40) | 17:02 | 33 | 10:07 (7) | 16:11 | | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | 09:20 (7) | | | | 09:01 | |
| | 21:41 | | 20:32 | | | | | 17:00 | 44 | 10:04 (7) | | | | 16:12 | |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | |
| Total, worst case | | | | | | 57 | | | 346 | | | 90 | | | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | | | | | 0,97 | | | 0,80 | | | 0,69 | | | |
| Total reduction | | | | | | 0,38 | | | 0,25 | | | 0,11 | | | |
| Total, real | | | | | | 22 | | | 85 | | | 10 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:20 (37) | 08:27 | | | 07:26 | | 08:39 (7) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 10:33 (37) | 17:08 | | | 18:07 | 22 | 17:39 (40) | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 10:22 (37) | 08:26 | | | 07:24 | | 08:38 (7) | 07:05 | 05:53 | 05:00 |
| | 16:15 | 12 | 10:34 (37) | 17:10 | | | 18:09 | 23 | 17:39 (40) | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 10:22 (37) | 08:24 | | | 07:22 | | 08:38 (7) | 07:03 | 05:50 | 05:00 |
| | 16:16 | 11 | 10:33 (37) | 17:12 | | | 18:11 | 24 | 17:40 (40) | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 10:24 (37) | 08:22 | | | 07:19 | | 08:37 (7) | 07:00 | 05:48 | 04:59 |
| | 16:17 | 9 | 10:33 (37) | 17:14 | | | 18:13 | 24 | 17:39 (40) | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 10:25 (37) | 08:20 | | | 07:17 | | 17:16 (40) | 06:57 | 05:46 | 04:58 |
| | 16:19 | 7 | 10:32 (37) | 17:16 | | | 18:15 | 24 | 17:40 (40) | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | 17:16 (40) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | 23 | 17:39 (40) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | 17:17 (40) | 06:52 | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | 22 | 17:39 (40) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | 17:17 (40) | 06:50 | 05:40 | 04:55 |
| | 16:23 | | | 17:23 | | | 18:21 | 21 | 17:38 (40) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | 17:17 (40) | 06:47 | 05:38 | 04:55 |
| | 16:24 | | | 17:25 | | | 18:24 | 19 | 17:36 (40) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | 17:19 (40) | 06:45 | 05:36 | 04:54 |
| | 16:26 | | | 17:27 | | | 18:26 | 16 | 17:35 (40) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | 17:20 (40) | 06:42 | 05:34 | 04:54 |
| | 16:28 | | | 17:29 | | | 18:28 | 12 | 17:32 (40) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:03 (7) | 06:59 | | 17:26 (40) | 06:40 | 05:32 | 04:53 |
| | 16:29 | | | 17:31 | 12 | 09:15 (7) | 18:30 | 1 | 17:27 (40) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | | 08:03 | | 08:59 (7) | 06:56 | | | 06:37 | 05:30 | 04:53 |
| | 16:31 | | | 17:33 | 21 | 09:20 (7) | 18:32 | | | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | | 08:01 | | 08:55 (7) | 06:54 | | | 06:35 | 05:28 | 04:53 |
| | 16:33 | | | 17:36 | 27 | 09:22 (7) | 18:34 | | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | | 07:59 | | 08:53 (7) | 06:51 | | | 06:32 | 05:26 | 04:52 |
| | 16:34 | | | 17:38 | 32 | 09:25 (7) | 18:36 | | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | | 07:57 | | 08:51 (7) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | | | 17:40 | 36 | 09:27 (7) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | 08:49 (7) | 06:46 | | | 06:27 | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | 39 | 09:28 (7) | 18:40 | | | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | | 07:52 | | 08:48 (7) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | 42 | 09:30 (7) | 18:42 | | | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | | 07:50 | | 08:47 (7) | 06:41 | | | 06:23 | 05:19 | 04:52 |
| | 16:42 | | | 17:46 | 43 | 09:30 (7) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | | 07:48 | | 08:45 (7) | 06:39 | | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | | 17:48 | 45 | 09:30 (7) | 18:46 | | | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | | 07:46 | | 08:44 (7) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | | | 17:50 | 46 | 09:30 (7) | 18:48 | | | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | | 07:43 | | 08:43 (7) | 06:33 | | | 06:15 | 05:15 | 04:52 |
| | 16:48 | | | 17:53 | 47 | 09:30 (7) | 18:50 | | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | 08:42 (7) | 06:31 | | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | 48 | 09:30 (7) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | 08:41 (7) | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 49 | 09:30 (7) | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 08:41 (7) | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 52 | 17:30 (40) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | | 08:39 (7) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | | 18:01 | 61 | 17:32 (40) | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 08:39 (7) | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 65 | 17:35 (40) | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 08:38 (7) | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 69 | 17:36 (40) | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 52 | | | 734 | | | 231 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,49 | | | 0,84 | | | 0,94 | | | | |
| Total reduction | | 0,08 | | | 0,20 | | | 0,30 | | | | |
| Total, real | | 4 | | | 144 | | | 70 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 07:34 | | | 07:36 | | 08:35 | | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | 16:10 | | |
| 2 | 04:57 | | 05:41 | | 06:39 | | 07:36 | | 18:01 (40) | 07:38 | | 08:36 | | |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 9 | 18:10 (40) | 16:55 | | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:38 | | 17:58 (40) | 07:41 | | 08:38 | | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 14 | 18:12 (40) | 16:53 | | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:40 | | 17:56 (40) | 07:43 | | 08:40 | | |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 17 | 18:13 (40) | 16:51 | | 16:07 | | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 17:54 (40) | 07:45 | | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 20 | 18:14 (40) | 16:49 | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 17:53 (40) | 07:47 | | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | | 18:59 | 22 | 18:15 (40) | 16:47 | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:46 | | 17:52 (40) | 07:49 | | 08:44 | | 10:13 (37) |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 23 | 18:15 (40) | 16:45 | | 16:05 | 6 | 10:19 (37) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:52 (40) | 07:51 | | 08:45 | | 10:11 (37) |
| | 22:14 | | 21:25 | | 20:11 | | 18:54 | 23 | 18:15 (40) | 16:43 | | 16:05 | 9 | 10:20 (37) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 17:51 (40) | 07:53 | | 08:47 | | 10:11 (37) |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 24 | 18:15 (40) | 16:41 | | 16:05 | 11 | 10:22 (37) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:52 | | 09:12 (7) | 07:55 | | 08:48 | | 10:11 (37) |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 24 | 18:14 (40) | 16:40 | | 16:04 | 12 | 10:23 (37) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:54 | | 09:12 (7) | 07:57 | | 08:49 | | 10:11 (37) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 24 | 18:14 (40) | 16:38 | | 16:04 | 13 | 10:24 (37) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:56 | | 09:12 (7) | 07:59 | | 08:50 | | 10:11 (37) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 23 | 18:13 (40) | 16:36 | | 16:04 | 14 | 10:25 (37) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:58 | | 09:12 (7) | 08:01 | | 08:51 | | 10:11 (37) |
| | 22:09 | | 21:15 | | 19:58 | | 18:42 | 20 | 18:11 (40) | 16:34 | | 16:04 | 15 | 10:26 (37) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | | 09:12 (7) | 08:03 | | 08:52 | | 10:11 (37) |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 17 | 18:08 (40) | 16:32 | | 16:03 | 15 | 10:26 (37) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | | 09:12 (7) | 08:05 | | 08:53 | | 10:11 (37) |
| | 22:06 | | 21:10 | | 19:53 | | 18:37 | 14 | 18:06 (40) | 16:31 | | 16:03 | 16 | 10:27 (37) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 09:12 (7) | 08:07 | | 08:54 | | 10:12 (37) |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 9 | 18:03 (40) | 16:29 | | 16:03 | 16 | 10:28 (37) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 09:12 (7) | 08:09 | | 08:55 | | 10:12 (37) |
| | 22:04 | | 21:05 | | 19:48 | | 18:32 | 3 | 09:15 (7) | 16:27 | | 16:04 | 17 | 10:29 (37) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 09:13 (7) | 08:11 | | 08:56 | | 10:13 (37) |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 3 | 09:16 (7) | 16:26 | | 16:04 | 16 | 10:29 (37) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 09:14 (7) | 08:13 | | 08:57 | | 10:12 (37) |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 3 | 09:17 (7) | 16:24 | | 16:04 | 17 | 10:29 (37) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | | 09:14 (7) | 08:15 | | 08:57 | | 10:13 (37) |
| | 22:00 | | 20:58 | | 19:40 | | 18:25 | 4 | 09:18 (7) | 16:23 | | 16:04 | 17 | 10:30 (37) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | | 09:15 (7) | 08:17 | | 08:58 | | 10:14 (37) |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 4 | 09:19 (7) | 16:21 | | 16:05 | 17 | 10:31 (37) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | | 09:15 (7) | 08:19 | | 08:59 | | 10:14 (37) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 5 | 09:20 (7) | 16:20 | | 16:05 | 17 | 10:31 (37) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 08:18 | | 09:16 (7) | 08:21 | | 08:59 | | 10:14 (37) |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 5 | 09:21 (7) | 16:19 | | 16:06 | 17 | 10:31 (37) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | | 09:18 (7) | 08:23 | | 09:00 | | 10:15 (37) |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 6 | 09:24 (7) | 16:17 | | 16:06 | 17 | 10:32 (37) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | | 08:20 (7) | 08:24 | | 09:00 | | 10:16 (37) |
| | 21:52 | | 20:46 | | 19:27 | | 17:13 | 6 | 08:26 (7) | 16:16 | | 16:07 | 16 | 10:32 (37) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 08:21 (7) | 08:26 | | 09:00 | | 10:16 (37) |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 7 | 08:28 (7) | 16:15 | | 16:08 | 17 | 10:33 (37) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 08:23 (7) | 08:28 | | 09:00 | | 10:16 (37) |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 11 | 08:54 (7) | 16:14 | | 16:08 | 17 | 10:33 (37) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 07:28 | | 08:25 (7) | 08:30 | | 09:01 | | 10:17 (37) |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 19 | 08:51 (7) | 16:13 | | 16:09 | 16 | 10:33 (37) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:30 | | 08:29 (7) | 08:31 | | 09:01 | | 10:18 (37) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 19 | 08:48 (7) | 16:12 | | 16:10 | 15 | 10:33 (37) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 07:32 | | 08:34 (7) | 08:33 | | 09:01 | | 10:19 (37) |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 9 | 08:43 (7) | 16:11 | | 16:11 | 15 | 10:34 (37) |
| 31 | 05:38 | | 06:36 | | | | 07:34 | | | | | 09:01 | | 10:20 (37) |
| | 21:41 | | 20:32 | | | | 17:00 | | | | | 16:12 | 14 | 10:34 (37) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 | | |
| Total, worst case | | | | | | | | 387 | | | | | 372 | |
| Sun reduction | | | | | | | | 0,31 | | | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,91 | | | | | 0,49 | |
| Total reduction | | | | | | | | 0,26 | | | | | 0,06 | |
| Total, real | | | | | | | | 102 | | | | | 23 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 08:59 (25) | 07:26 | | 17:22 (19) | 07:07 | | | 05:55 | | | 05:01 | | 20:06 (21) |
| | 16:13 | | | 17:08 | 57 | 16:21 (8) | 18:07 | 17 | 17:39 (19) | 20:09 | | | 21:08 | | | 22:02 | 38 | 20:44 (21) |
| 2 | 09:00 | | | 08:25 | | 08:58 (25) | 07:24 | | 17:21 (19) | 07:05 | | | 05:52 | | 20:17 (21) | 05:00 | | 20:06 (21) |
| | 16:15 | | | 17:10 | 60 | 16:21 (8) | 18:09 | 20 | 17:41 (19) | 20:11 | | | 21:10 | 14 | 20:31 (21) | 22:03 | 38 | 20:44 (21) |
| 3 | 09:00 | | | 08:23 | | 08:58 (25) | 07:21 | | 17:21 (19) | 07:02 | | | 05:50 | | 20:14 (21) | 04:59 | | 20:06 (21) |
| | 16:16 | | | 17:12 | 63 | 16:39 (20) | 18:11 | 22 | 17:43 (19) | 20:13 | | | 21:12 | 19 | 20:33 (21) | 22:04 | 38 | 20:44 (21) |
| 4 | 08:59 | | | 08:22 | | 08:58 (25) | 07:19 | | 17:20 (19) | 07:00 | | 19:38 (18) | 05:48 | | 20:12 (21) | 04:58 | | 20:07 (21) |
| | 16:17 | | | 17:14 | 68 | 16:41 (20) | 18:13 | 23 | 17:43 (19) | 20:15 | 9 | 19:47 (18) | 21:14 | 23 | 20:35 (21) | 22:06 | 36 | 20:43 (21) |
| 5 | 08:59 | | | 08:20 | | 08:58 (25) | 07:16 | | 17:20 (19) | 06:57 | | 19:36 (18) | 05:46 | | 20:10 (21) | 04:58 | | 20:08 (21) |
| | 16:18 | | | 17:16 | 70 | 16:44 (20) | 18:15 | 22 | 17:42 (19) | 20:17 | 13 | 19:49 (18) | 21:16 | 27 | 20:37 (21) | 22:07 | 36 | 20:44 (21) |
| 6 | 08:59 | | | 08:18 | | 08:58 (25) | 07:14 | | 17:20 (19) | 06:55 | | 19:34 (18) | 05:44 | | 20:09 (21) | 04:57 | | 20:08 (21) |
| | 16:20 | | | 17:18 | 74 | 16:46 (20) | 18:17 | 22 | 17:42 (19) | 20:19 | 17 | 19:51 (18) | 21:18 | 29 | 20:38 (21) | 22:08 | 36 | 20:44 (21) |
| 7 | 08:58 | | | 08:16 | | 08:59 (25) | 07:11 | | 17:20 (19) | 06:52 | | 19:33 (18) | 05:42 | | 20:07 (21) | 04:56 | | 20:09 (21) |
| | 16:21 | | | 17:20 | 77 | 16:49 (20) | 18:19 | 26 | 17:46 (22) | 20:21 | 20 | 19:53 (18) | 21:20 | 32 | 20:39 (21) | 22:09 | 35 | 20:44 (21) |
| 8 | 08:57 | | | 08:14 | | 08:59 (25) | 07:09 | | 17:21 (19) | 06:50 | | 19:31 (18) | 05:40 | | 20:07 (21) | 04:55 | | 20:09 (21) |
| | 16:23 | | | 17:23 | 78 | 16:51 (20) | 18:21 | 29 | 17:50 (22) | 20:23 | 24 | 19:55 (18) | 21:22 | 34 | 20:41 (21) | 22:10 | 35 | 20:44 (21) |
| 9 | 08:57 | | | 08:12 | | 08:59 (25) | 07:06 | | 17:22 (19) | 06:47 | | 19:30 (18) | 05:38 | | 20:06 (21) | 04:55 | | 20:09 (21) |
| | 16:24 | | | 17:25 | 80 | 16:53 (20) | 18:23 | 30 | 17:52 (22) | 20:25 | 26 | 19:56 (18) | 21:24 | 35 | 20:41 (21) | 22:11 | 34 | 20:43 (21) |
| 10 | 08:56 | | | 08:10 | | 08:59 (25) | 07:04 | | 17:24 (19) | 06:45 | | 19:29 (18) | 05:36 | | 20:05 (21) | 04:54 | | 20:10 (21) |
| | 16:26 | | | 17:27 | 79 | 16:54 (20) | 18:25 | 30 | 17:54 (22) | 20:27 | 26 | 19:55 (18) | 21:25 | 37 | 20:42 (21) | 22:12 | 33 | 20:43 (21) |
| 11 | 08:55 | | | 08:07 | | 09:00 (25) | 07:01 | | 17:27 (22) | 06:42 | | 19:29 (18) | 05:34 | | 20:04 (21) | 04:54 | | 20:11 (21) |
| | 16:27 | | | 17:29 | 75 | 16:54 (20) | 18:27 | 28 | 17:55 (22) | 20:29 | 27 | 19:56 (18) | 21:27 | 38 | 20:42 (21) | 22:13 | 33 | 20:44 (21) |
| 12 | 08:55 | | | 08:05 | | 09:01 (25) | 06:59 | | 17:25 (22) | 06:40 | | 19:28 (18) | 05:32 | | 20:04 (21) | 04:53 | | 20:10 (21) |
| | 16:29 | | | 17:31 | 73 | 16:54 (20) | 18:29 | 30 | 17:55 (22) | 20:31 | 27 | 19:55 (18) | 21:29 | 38 | 20:42 (21) | 22:14 | 33 | 20:43 (21) |
| 13 | 08:54 | | | 08:03 | | 09:02 (25) | 06:56 | | 17:25 (22) | 06:37 | | 19:28 (18) | 05:30 | | 20:04 (21) | 04:53 | | 20:11 (21) |
| | 16:31 | | | 17:33 | 66 | 16:53 (20) | 18:31 | 32 | 17:57 (22) | 20:33 | 27 | 19:55 (18) | 21:31 | 39 | 20:43 (21) | 22:14 | 32 | 20:43 (21) |
| 14 | 08:53 | | | 08:01 | | 09:03 (25) | 06:54 | | 17:23 (22) | 06:35 | | 19:29 (18) | 05:28 | | 20:03 (21) | 04:52 | | 20:12 (21) |
| | 16:32 | | | 17:35 | 59 | 16:52 (20) | 18:33 | 34 | 17:57 (22) | 20:35 | 26 | 19:55 (18) | 21:33 | 41 | 20:44 (21) | 22:15 | 31 | 20:43 (21) |
| 15 | 08:52 | | | 07:59 | | 09:06 (25) | 06:51 | | 17:23 (22) | 06:32 | | 19:28 (18) | 05:26 | | 20:03 (21) | 04:52 | | 20:12 (21) |
| | 16:34 | | | 17:38 | 49 | 16:51 (20) | 18:35 | 34 | 17:57 (22) | 20:37 | 26 | 19:54 (18) | 21:35 | 40 | 20:43 (21) | 22:16 | 32 | 20:44 (21) |
| 16 | 08:51 | | | 07:57 | | 09:08 (25) | 06:49 | | 17:22 (22) | 06:30 | | 19:29 (18) | 05:24 | | 20:03 (21) | 04:52 | | 20:13 (21) |
| | 16:36 | | | 17:40 | 35 | 16:49 (20) | 18:37 | 35 | 17:57 (22) | 20:39 | 24 | 19:53 (18) | 21:36 | 41 | 20:44 (21) | 22:16 | 31 | 20:44 (21) |
| 17 | 08:49 | | | 07:54 | | 16:01 (8) | 06:46 | | 17:22 (22) | 06:27 | | 19:29 (18) | 05:23 | | 20:02 (21) | 04:52 | | 20:13 (21) |
| | 16:38 | | | 17:42 | 10 | 16:11 (8) | 18:39 | 36 | 17:58 (22) | 20:41 | 23 | 19:52 (18) | 21:38 | 42 | 20:44 (21) | 22:17 | 31 | 20:44 (21) |
| 18 | 08:48 | | | 07:52 | | | 06:43 | | 17:22 (22) | 06:25 | | 19:30 (18) | 05:21 | | 20:03 (21) | 04:52 | | 20:13 (21) |
| | 16:40 | | | 17:44 | | | 18:41 | 35 | 17:57 (22) | 20:43 | 21 | 19:51 (18) | 21:40 | 42 | 20:45 (21) | 22:17 | 31 | 20:44 (21) |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:21 (22) | 06:22 | | 19:31 (18) | 05:19 | | 20:02 (21) | 04:52 | | 20:14 (21) |
| | 16:42 | | | 17:46 | | | 18:43 | 35 | 17:56 (22) | 20:45 | 19 | 19:50 (18) | 21:42 | 42 | 20:44 (21) | 22:18 | 30 | 20:44 (21) |
| 20 | 08:46 | | | 07:48 | | | 06:38 | | 17:22 (22) | 06:20 | | 19:32 (18) | 05:18 | | 20:03 (21) | 04:52 | | 20:14 (21) |
| | 16:43 | | | 17:48 | | | 18:45 | 34 | 17:56 (22) | 20:47 | 15 | 19:47 (18) | 21:43 | 42 | 20:45 (21) | 22:18 | 30 | 20:44 (21) |
| 21 | 08:45 | | | 07:45 | | | 06:36 | | 17:21 (22) | 06:18 | | 19:35 (18) | 05:16 | | 20:02 (21) | 04:52 | | 20:14 (21) |
| | 16:45 | | | 17:50 | | | 18:47 | 34 | 17:55 (22) | 20:49 | 9 | 19:44 (18) | 21:45 | 42 | 20:44 (21) | 22:18 | 30 | 20:44 (21) |
| 22 | 08:43 | | 15:58 (8) | 07:43 | | | 06:33 | | 17:22 (22) | 06:15 | | | 05:14 | | 20:03 (21) | 04:52 | | 20:14 (21) |
| | 16:47 | 10 | 16:08 (8) | 17:52 | | | 18:49 | 33 | 17:55 (22) | 20:50 | | | 21:47 | 42 | 20:45 (21) | 22:18 | 30 | 20:44 (21) |
| 23 | 08:42 | | 15:55 (8) | 07:41 | | | 06:31 | | 17:22 (22) | 06:13 | | | 05:13 | | 20:03 (21) | 04:52 | | 20:15 (21) |
| | 16:49 | 15 | 16:10 (8) | 17:54 | | | 18:51 | 32 | 17:54 (22) | 20:52 | | | 21:48 | 42 | 20:45 (21) | 22:19 | 30 | 20:45 (21) |
| 24 | 08:40 | | 15:54 (8) | 07:38 | | | 06:28 | | 17:22 (22) | 06:11 | | | 05:11 | | 20:03 (21) | 04:53 | | 20:14 (21) |
| | 16:51 | 18 | 16:12 (8) | 17:57 | | | 18:53 | 30 | 17:52 (22) | 20:54 | | | 21:50 | 41 | 20:44 (21) | 22:19 | 31 | 20:45 (21) |
| 25 | 08:39 | | 15:53 (8) | 07:36 | | | 06:25 | | 17:24 (22) | 06:08 | | | 05:10 | | 20:03 (21) | 04:53 | | 20:14 (21) |
| | 16:53 | 22 | 16:15 (8) | 17:59 | | | 18:55 | 27 | 17:51 (22) | 20:56 | | | 21:52 | 42 | 20:45 (21) | 22:19 | 31 | 20:45 (21) |
| 26 | 08:37 | | 09:08 (25) | 07:33 | | 17:26 (19) | 06:23 | | 17:25 (22) | 06:06 | | | 05:09 | | 20:04 (21) | 04:53 | | 20:15 (21) |
| | 16:55 | 32 | 16:16 (8) | 18:01 | 6 | 17:32 (19) | 18:57 | 24 | 17:49 (22) | 20:58 | | | 21:53 | 41 | 20:45 (21) | 22:19 | 31 | 20:46 (21) |
| 27 | 08:36 | | 09:06 (25) | 07:31 | | 17:25 (19) | 06:20 | | 17:27 (22) | 06:04 | | | 05:07 | | 20:04 (21) | 04:54 | | 20:14 (21) |
| | 16:57 | 38 | 16:17 (8) | 18:03 | 10 | 17:35 (19) | 18:59 | 20 | 17:47 (22) | 21:00 | | | 21:55 | 41 | 20:45 (21) | 22:19 | 32 | 20:46 (21) |
| 28 | 08:34 | | 09:04 (25) | 07:29 | | 17:23 (19) | 06:18 | | 17:29 (22) | 06:01 | | | 05:06 | | 20:04 (21) | 04:54 | | 20:15 (21) |
| | 16:59 | 44 | 16:18 (8) | 18:05 | 13 | 17:36 (19) | 19:01 | 15 | 17:44 (22) | 21:02 | | | 21:56 | 41 | 20:45 (21) | 22:18 | 32 | 20:47 (21) |
| 29 | 08:32 | | 09:02 (25) | | | | 07:15 | | 18:34 (22) | 05:59 | | | 05:05 | | 20:05 (21) | 04:55 | | 20:14 (21) |
| | 17:01 | 48 | 16:19 (8) | | | | 20:03 | 4 | 18:38 (22) | 21:04 | | | 21:58 | 40 | 20:45 (21) | 22:18 | 32 | 20:46 (21) |
| 30 | 08:31 | | 09:00 (25) | | | | 07:13 | | | 05:57 | | | 05:04 | | 20:05 (21) | 04:56 | | 20:15 (21) |
| | 17:04 | 52 | 16:19 (8) | | | | 20:05 | | | 21:06 | | | 21:59 | 40 | 20:45 (21) | 22:18 | 32 | 20:47 (21) |
| 31 | 08:29 | | 08:59 (25) | | | | 07:10 | | | | | | 05:02 | | 20:05 (21) | | | |
| | 17:06 | 55 | 16:20 (8) | | | | 20:07 | | | | | | 22:00 | 40 | 20:45 (21) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 334 | | | 1102 | | | 793 | | | 379 | | | 1107 | | | 984 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,75 | | | 0,77 | | | 0,96 | | | 0,99 | | | 0,93 | | | 0,93 | |
| Total reduction | | 0,13 | | | 0,19 | | | 0,32 | | | 0,38 | | | 0,47 | | | 0,44 | |
| Total, real | | 44 | | | 205 | | | 256 | | | 145 | | | 520 | | | 432 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | 20:15 (21) | 05:39 | | 20:14 (21) | 06:37 | | 19:28 (18) | 07:34 | | 18:05 (22) | 07:36 | | 08:29 (25) | 08:35 |
| | 22:17 | 33 | 20:48 (21) | 21:39 | 39 | 20:53 (21) | 20:29 | 27 | 19:55 (18) | 19:12 | 31 | 18:36 (22) | 16:57 | 47 | 16:24 (20) | 16:10 |
| 2 | 04:57 | | 20:14 (21) | 05:41 | | 20:15 (21) | 06:39 | | 19:28 (18) | 07:36 | | 18:06 (22) | 07:38 | | 08:28 (25) | 08:36 |
| | 22:17 | 33 | 20:47 (21) | 21:37 | 37 | 20:52 (21) | 20:26 | 26 | 19:54 (18) | 19:09 | 28 | 18:34 (22) | 16:55 | 46 | 16:22 (20) | 16:09 |
| 3 | 04:58 | | 20:14 (21) | 05:43 | | 20:16 (21) | 06:41 | | 19:28 (18) | 07:38 | | 18:04 (19) | 07:40 | | 08:29 (25) | 08:38 |
| | 22:17 | 34 | 20:48 (21) | 21:35 | 36 | 20:52 (21) | 20:24 | 26 | 19:54 (18) | 19:07 | 29 | 18:33 (22) | 16:53 | 44 | 16:21 (20) | 16:08 |
| 4 | 04:59 | | 20:14 (21) | 05:45 | | 20:16 (21) | 06:43 | | 19:28 (18) | 07:40 | | 18:01 (19) | 07:42 | | 08:28 (25) | 08:39 |
| | 22:16 | 35 | 20:49 (21) | 21:33 | 34 | 20:50 (21) | 20:21 | 24 | 19:52 (18) | 19:04 | 30 | 18:31 (22) | 16:51 | 42 | 16:18 (20) | 16:07 |
| 5 | 05:00 | | 20:14 (21) | 05:46 | | 20:17 (21) | 06:45 | | 19:29 (18) | 07:42 | | 17:59 (19) | 07:44 | | 08:28 (25) | 08:41 |
| | 22:15 | 35 | 20:49 (21) | 21:31 | 33 | 20:50 (21) | 20:19 | 20 | 19:49 (18) | 19:01 | 30 | 18:29 (22) | 16:49 | 40 | 16:16 (20) | 16:06 |
| 6 | 05:01 | | 20:14 (21) | 05:48 | | 20:18 (21) | 06:47 | | 19:30 (18) | 07:44 | | 17:58 (19) | 07:46 | | 08:28 (25) | 08:42 |
| | 22:15 | 36 | 20:50 (21) | 21:29 | 31 | 20:49 (21) | 20:16 | 17 | 19:47 (18) | 18:59 | 27 | 18:25 (22) | 16:47 | 36 | 16:13 (20) | 16:06 |
| 7 | 05:02 | | 20:14 (21) | 05:50 | | 20:19 (21) | 06:49 | | 19:31 (18) | 07:46 | | 17:57 (19) | 07:48 | | 08:29 (25) | 08:44 |
| | 22:14 | 36 | 20:50 (21) | 21:27 | 29 | 20:48 (21) | 20:14 | 14 | 19:45 (18) | 18:56 | 21 | 18:18 (19) | 16:45 | 34 | 16:12 (20) | 16:05 |
| 8 | 05:03 | | 20:14 (21) | 05:52 | | 20:20 (21) | 06:51 | | 19:33 (18) | 07:48 | | 17:56 (19) | 07:51 | | 08:29 (25) | 08:45 |
| | 22:13 | 37 | 20:51 (21) | 21:25 | 26 | 20:46 (21) | 20:11 | 9 | 19:42 (18) | 18:54 | 22 | 18:18 (19) | 16:43 | 28 | 16:09 (20) | 16:05 |
| 9 | 05:04 | | 20:14 (21) | 05:54 | | 20:22 (21) | 06:52 | | | 07:50 | | 17:55 (19) | 07:53 | | 08:29 (25) | 08:46 |
| | 22:12 | 37 | 20:51 (21) | 21:23 | 22 | 20:44 (21) | 20:09 | | | 18:51 | 23 | 18:18 (19) | 16:41 | 27 | 15:52 (8) | 16:04 |
| 10 | 05:05 | | 20:14 (21) | 05:56 | | 20:24 (21) | 06:54 | | | 07:52 | | 17:55 (19) | 07:55 | | 08:30 (25) | 08:48 |
| | 22:11 | 37 | 20:51 (21) | 21:21 | 18 | 20:42 (21) | 20:06 | | | 18:49 | 23 | 18:18 (19) | 16:39 | 26 | 15:51 (8) | 16:04 |
| 11 | 05:06 | | 20:13 (21) | 05:58 | | 20:27 (21) | 06:56 | | | 07:54 | | 17:55 (19) | 07:57 | | 08:31 (25) | 08:49 |
| | 22:11 | 39 | 20:52 (21) | 21:19 | 11 | 20:38 (21) | 20:03 | | | 18:46 | 21 | 18:16 (19) | 16:38 | 26 | 15:52 (8) | 16:04 |
| 12 | 05:08 | | 20:13 (21) | 05:59 | | | 06:58 | | | 07:56 | | 17:55 (19) | 07:59 | | 08:32 (25) | 08:50 |
| | 22:09 | 39 | 20:52 (21) | 21:17 | | | 20:01 | | | 18:44 | 19 | 18:14 (19) | 16:36 | 24 | 15:51 (8) | 16:04 |
| 13 | 05:09 | | 20:14 (21) | 06:01 | | | 07:00 | | | 07:58 | | 17:56 (19) | 08:01 | | 08:34 (25) | 08:51 |
| | 22:08 | 39 | 20:53 (21) | 21:14 | | | 19:58 | | | 18:41 | 15 | 18:11 (19) | 16:34 | 21 | 15:50 (8) | 16:03 |
| 14 | 05:10 | | 20:13 (21) | 06:03 | | | 07:02 | | | 08:00 | | 17:56 (19) | 08:03 | | 08:36 (25) | 08:52 |
| | 22:07 | 40 | 20:53 (21) | 21:12 | | | 19:56 | | | 18:39 | 12 | 18:08 (19) | 16:32 | 19 | 15:50 (8) | 16:03 |
| 15 | 05:12 | | 20:13 (21) | 06:05 | | | 07:04 | | 18:19 (22) | 08:02 | | 17:57 (19) | 08:05 | | 08:39 (25) | 08:53 |
| | 22:06 | 40 | 20:53 (21) | 21:10 | | | 19:53 | 14 | 18:33 (22) | 18:36 | 9 | 18:06 (19) | 16:30 | 15 | 15:50 (8) | 16:03 |
| 16 | 05:13 | | 20:13 (21) | 06:07 | | | 07:06 | | 18:16 (22) | 08:04 | | 17:59 (19) | 08:07 | | 08:41 (25) | 08:54 |
| | 22:05 | 40 | 20:53 (21) | 21:08 | | | 19:50 | 19 | 18:35 (22) | 18:34 | 4 | 18:03 (19) | 16:29 | 12 | 15:49 (8) | 16:03 |
| 17 | 05:15 | | 20:13 (21) | 06:09 | | | 07:08 | | 18:14 (22) | 08:06 | | | 08:09 | | 15:43 (8) | 08:55 |
| | 22:04 | 41 | 20:54 (21) | 21:05 | | | 19:48 | 23 | 18:37 (22) | 18:32 | | | 16:27 | 5 | 15:48 (8) | 16:03 |
| 18 | 05:16 | | 20:13 (21) | 06:11 | | | 07:09 | | 18:12 (22) | 08:08 | | | 08:11 | | 15:28 (8) | 08:56 |
| | 22:02 | 41 | 20:54 (21) | 21:03 | | | 19:45 | 26 | 18:38 (22) | 18:29 | | | 16:26 | 6 | 15:46 (8) | 16:04 |
| 19 | 05:17 | | 20:12 (21) | 06:13 | | | 07:11 | | 18:10 (22) | 08:10 | | | 08:13 | | 15:29 (8) | 08:56 |
| | 22:01 | 42 | 20:54 (21) | 21:01 | | | 19:43 | 29 | 18:39 (22) | 18:27 | | | 16:24 | 13 | 15:44 (8) | 16:04 |
| 20 | 05:19 | | 20:13 (21) | 06:15 | | | 07:13 | | 18:09 (22) | 08:12 | | | 08:15 | | 15:33 (8) | 08:57 |
| | 21:59 | 42 | 20:55 (21) | 20:58 | | | 19:40 | 31 | 18:40 (22) | 18:24 | | | 16:23 | 10 | 15:43 (8) | 16:04 |
| 21 | 05:21 | | 20:12 (21) | 06:16 | | | 07:15 | | 18:08 (22) | 08:14 | | | 08:17 | | | 08:58 |
| | 21:58 | 42 | 20:54 (21) | 20:56 | | | 19:37 | 32 | 18:40 (22) | 18:22 | | | 16:21 | | | 16:05 |
| 22 | 05:22 | | 20:13 (21) | 06:18 | | 19:39 (18) | 07:17 | | 18:06 (22) | 08:16 | | | 08:18 | | | 08:58 |
| | 21:57 | 42 | 20:55 (21) | 20:53 | 11 | 19:50 (18) | 19:35 | 34 | 18:40 (22) | 18:20 | | | 16:20 | | | 16:05 |
| 23 | 05:24 | | 20:13 (21) | 06:20 | | 19:37 (18) | 07:19 | | 18:05 (22) | 08:18 | | | 08:20 | | | 08:59 |
| | 21:55 | 42 | 20:55 (21) | 20:51 | 15 | 19:52 (18) | 19:32 | 35 | 18:40 (22) | 18:17 | | | 16:18 | | | 16:06 |
| 24 | 05:25 | | 20:13 (21) | 06:22 | | 19:35 (18) | 07:21 | | 18:05 (22) | 08:20 | | | 08:22 | | | 08:59 |
| | 21:53 | 42 | 20:55 (21) | 20:49 | 19 | 19:54 (18) | 19:30 | 35 | 18:40 (22) | 18:15 | | | 16:17 | | | 16:06 |
| 25 | 05:27 | | 20:13 (21) | 06:24 | | 19:32 (18) | 07:23 | | 18:04 (22) | 07:22 | | 15:30 (8) | 08:24 | | | 09:00 |
| | 21:52 | 42 | 20:55 (21) | 20:46 | 22 | 19:54 (18) | 19:27 | 36 | 18:40 (22) | 17:13 | 17 | 16:16 (20) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:13 (21) | 06:26 | | 19:31 (18) | 07:25 | | 18:04 (22) | 07:24 | | 08:37 (25) | 08:26 | | | 09:00 |
| | 21:50 | 42 | 20:55 (21) | 20:44 | 24 | 19:55 (18) | 19:25 | 35 | 18:39 (22) | 17:11 | 40 | 16:20 (20) | 16:15 | | | 16:07 |
| 27 | 05:30 | | 20:13 (21) | 06:28 | | 19:31 (18) | 07:26 | | 18:04 (22) | 07:26 | | 08:34 (25) | 08:28 | | | 09:00 |
| | 21:48 | 41 | 20:54 (21) | 20:41 | 24 | 19:55 (18) | 19:22 | 35 | 18:39 (22) | 17:08 | 53 | 16:21 (20) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 20:13 (21) | 06:30 | | 19:30 (18) | 07:28 | | 18:04 (22) | 07:28 | | 08:32 (25) | 08:29 | | | 09:00 |
| | 21:47 | 42 | 20:55 (21) | 20:39 | 26 | 19:56 (18) | 19:19 | 34 | 18:38 (22) | 17:06 | 62 | 16:22 (20) | 16:12 | | | 16:09 |
| 29 | 05:34 | | 20:14 (21) | 06:32 | | 19:29 (18) | 07:30 | | 18:04 (22) | 07:30 | | 08:31 (25) | 08:31 | | | 09:00 |
| | 21:45 | 41 | 20:55 (21) | 20:36 | 27 | 19:56 (18) | 19:17 | 34 | 18:38 (22) | 17:04 | 67 | 16:22 (20) | 16:11 | | | 16:10 |
| 30 | 05:36 | | 20:14 (21) | 06:34 | | 19:28 (18) | 07:32 | | 18:04 (22) | 07:32 | | 08:31 (25) | 08:33 | | | 09:00 |
| | 21:43 | 40 | 20:54 (21) | 20:34 | 27 | 19:55 (18) | 19:14 | 33 | 18:37 (22) | 17:02 | 71 | 16:24 (20) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:14 (21) | 06:35 | | 19:28 (18) | | | | 07:34 | | 08:30 (25) | | | | 09:00 |
| | 21:41 | 40 | 20:54 (21) | 20:31 | 27 | 19:55 (18) | | | | 16:59 | 46 | 16:24 (20) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 1212 | | | 538 | | | 648 | | | 700 | | | 521 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,93 | | | 0,96 | | | 0,98 | | | 0,86 | | | 0,79 | | |
| Total reduction | | 0,44 | | | 0,48 | | | 0,38 | | | 0,26 | | | 0,12 | | |
| Total, real | | 535 | | | 259 | | | 246 | | | 182 | | | 64 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 09:18 (25) | 07:26 | | 09:08 (25) | 07:07 | | | 05:55 | | 20:14 (18) | 05:01 | | 20:46 (21) |
| | 16:13 | | | 17:08 | 27 | 09:45 (25) | 18:07 | 54 | 17:39 (8) | 20:09 | | | 21:08 | 1 | 20:15 (18) | 22:02 | 18 | 21:04 (21) |
| 2 | 09:00 | | | 08:25 | | 09:17 (25) | 07:24 | | 09:09 (25) | 07:05 | | | 05:52 | | | 05:00 | | 20:46 (21) |
| | 16:15 | | | 17:10 | 30 | 09:47 (25) | 18:09 | 57 | 17:41 (20) | 20:11 | | | 21:10 | | | 22:03 | 18 | 21:04 (21) |
| 3 | 09:00 | | | 08:23 | | 09:15 (25) | 07:21 | | 09:10 (25) | 07:02 | | 19:40 (22) | 05:50 | | | 04:59 | | 20:47 (21) |
| | 16:16 | | | 17:12 | 34 | 09:49 (25) | 18:11 | 58 | 17:43 (20) | 20:13 | 6 | 19:46 (22) | 21:12 | | | 22:04 | 16 | 21:03 (21) |
| 4 | 08:59 | | | 08:21 | | 09:14 (25) | 07:19 | | 09:11 (25) | 07:00 | | 19:37 (22) | 05:48 | | | 04:58 | | 20:47 (21) |
| | 16:17 | | | 17:14 | 37 | 09:51 (25) | 18:13 | 58 | 17:45 (20) | 20:15 | 10 | 19:47 (22) | 21:14 | | | 22:06 | 15 | 21:02 (21) |
| 5 | 08:59 | | | 08:20 | | 09:13 (25) | 07:16 | | 09:12 (25) | 06:57 | | 19:35 (22) | 05:46 | | | 04:58 | | 20:49 (21) |
| | 16:18 | | | 17:16 | 39 | 09:52 (25) | 18:15 | 59 | 17:47 (20) | 20:17 | 14 | 19:49 (22) | 21:16 | | | 22:07 | 14 | 21:03 (21) |
| 6 | 08:59 | | | 08:18 | | 09:12 (25) | 07:14 | | 09:14 (25) | 06:55 | | 19:34 (22) | 05:44 | | | 04:57 | | 20:49 (21) |
| | 16:20 | | | 17:18 | 42 | 09:54 (25) | 18:17 | 57 | 17:49 (20) | 20:19 | 17 | 19:51 (22) | 21:18 | | | 22:08 | 13 | 21:02 (21) |
| 7 | 08:58 | | | 08:16 | | 09:11 (25) | 07:11 | | 09:16 (25) | 06:52 | | 19:33 (22) | 05:42 | | | 04:56 | | 20:50 (21) |
| | 16:21 | | | 17:20 | 44 | 09:55 (25) | 18:19 | 54 | 17:50 (20) | 20:21 | 20 | 19:53 (22) | 21:20 | | | 22:09 | 11 | 21:01 (21) |
| 8 | 08:57 | | | 08:14 | | 09:10 (25) | 07:09 | | 09:20 (25) | 06:50 | | 19:32 (22) | 05:40 | | | 04:55 | | 20:52 (21) |
| | 16:23 | | | 17:23 | 46 | 09:56 (25) | 18:21 | 47 | 17:50 (20) | 20:23 | 23 | 19:55 (22) | 21:22 | | | 22:10 | 8 | 21:00 (21) |
| 9 | 08:57 | | | 08:12 | | 09:09 (25) | 07:06 | | 17:21 (8) | 06:47 | | 19:32 (22) | 05:38 | | | 04:55 | | 20:52 (21) |
| | 16:24 | | | 17:25 | 47 | 09:56 (25) | 18:23 | 27 | 17:48 (20) | 20:25 | 23 | 19:55 (22) | 21:23 | | | 22:11 | 7 | 20:59 (21) |
| 10 | 08:56 | | | 08:10 | | 09:08 (25) | 07:04 | | 17:21 (8) | 06:45 | | 19:31 (22) | 05:36 | | 20:48 (21) | 04:54 | | 20:55 (21) |
| | 16:26 | | | 17:27 | 49 | 09:57 (25) | 18:25 | 27 | 17:48 (8) | 20:27 | 23 | 19:54 (22) | 21:25 | 5 | 20:53 (21) | 22:12 | 3 | 20:58 (21) |
| 11 | 08:55 | | | 08:07 | | 09:08 (25) | 07:01 | | 17:21 (8) | 06:42 | | 19:31 (22) | 05:34 | | 20:46 (21) | 04:54 | | |
| | 16:27 | | | 17:29 | 50 | 09:58 (25) | 18:27 | 26 | 17:47 (8) | 20:29 | 23 | 19:54 (22) | 21:27 | 8 | 20:54 (21) | 22:13 | | |
| 12 | 08:54 | | | 08:05 | | 09:08 (25) | 06:59 | | 17:20 (8) | 06:40 | | 19:30 (22) | 05:32 | | 20:44 (21) | 04:53 | | |
| | 16:29 | | | 17:31 | 51 | 09:59 (25) | 18:29 | 26 | 17:46 (8) | 20:31 | 23 | 19:53 (22) | 21:29 | 12 | 20:56 (21) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | 09:06 (25) | 06:56 | | 17:21 (8) | 06:37 | | 19:31 (22) | 05:30 | | 20:44 (21) | 04:53 | | |
| | 16:31 | | | 17:33 | 53 | 09:59 (25) | 18:31 | 24 | 17:45 (8) | 20:33 | 22 | 19:53 (22) | 21:31 | 14 | 20:58 (21) | 22:14 | | |
| 14 | 08:53 | | | 08:01 | | 09:06 (25) | 06:54 | | 17:22 (8) | 06:35 | | 19:31 (22) | 05:28 | | 20:43 (21) | 04:52 | | |
| | 16:32 | | | 17:35 | 54 | 10:00 (25) | 18:33 | 22 | 17:44 (8) | 20:35 | 20 | 19:51 (22) | 21:33 | 17 | 21:00 (21) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | 09:06 (25) | 06:51 | | 17:23 (8) | 06:32 | | 19:32 (22) | 05:26 | | 20:42 (21) | 04:52 | | |
| | 16:34 | | | 17:37 | 54 | 10:00 (25) | 18:35 | 20 | 17:43 (8) | 20:37 | 18 | 19:50 (22) | 21:35 | 19 | 21:01 (21) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | 09:05 (25) | 06:49 | | 17:25 (8) | 06:30 | | 19:34 (22) | 05:24 | | 20:42 (21) | 04:52 | | |
| | 16:36 | | | 17:40 | 55 | 10:00 (25) | 18:37 | 15 | 17:40 (8) | 20:39 | 15 | 19:49 (22) | 21:36 | 21 | 21:03 (21) | 22:16 | | |
| 17 | 08:49 | | | 07:54 | | 09:05 (25) | 06:46 | | 17:27 (8) | 06:27 | | 19:35 (22) | 05:23 | | 20:42 (21) | 04:52 | | |
| | 16:38 | | | 17:42 | 55 | 10:00 (25) | 18:39 | 10 | 17:37 (8) | 20:41 | 11 | 19:46 (22) | 21:38 | 22 | 21:04 (21) | 22:17 | | |
| 18 | 08:48 | | | 07:52 | | 09:06 (25) | 06:43 | | | 06:25 | | | 05:21 | | 20:42 (21) | 04:52 | | |
| | 16:40 | | | 17:44 | 55 | 10:01 (25) | 18:41 | | | 20:43 | | | 21:40 | 24 | 21:06 (21) | 22:17 | | |
| 19 | 08:47 | | | 07:50 | | 09:05 (25) | 06:41 | | | 06:22 | | 20:11 (18) | 05:19 | | 20:41 (21) | 04:52 | | |
| | 16:42 | | | 17:46 | 55 | 10:00 (25) | 18:43 | | | 20:45 | 5 | 20:16 (18) | 21:42 | 24 | 21:05 (21) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | 09:05 (25) | 06:38 | | 18:15 (19) | 06:20 | | 20:09 (18) | 05:18 | | 20:42 (21) | 04:52 | | |
| | 16:43 | | | 17:48 | 56 | 10:01 (25) | 18:45 | 3 | 18:18 (19) | 20:47 | 8 | 20:17 (18) | 21:43 | 24 | 21:06 (21) | 22:18 | | |
| 21 | 08:44 | | | 07:45 | | 09:05 (25) | 06:36 | | 18:13 (19) | 06:18 | | 20:08 (18) | 05:16 | | 20:41 (21) | 04:52 | | |
| | 16:45 | | | 17:50 | 55 | 10:00 (25) | 18:47 | 7 | 18:20 (19) | 20:48 | 11 | 20:19 (18) | 21:45 | 24 | 21:05 (21) | 22:18 | | |
| 22 | 08:43 | | | 07:43 | | 09:05 (25) | 06:33 | | 18:13 (19) | 06:15 | | 20:08 (18) | 05:14 | | 20:41 (21) | 04:52 | | |
| | 16:47 | | | 17:52 | 55 | 10:00 (25) | 18:49 | 9 | 18:22 (19) | 20:50 | 13 | 20:21 (18) | 21:47 | 25 | 21:06 (21) | 22:18 | | |
| 23 | 08:42 | | | 07:41 | | 09:06 (25) | 06:31 | | 18:12 (19) | 06:13 | | 20:08 (18) | 05:13 | | 20:42 (21) | 04:52 | | |
| | 16:49 | | | 17:54 | 54 | 10:00 (25) | 18:51 | 12 | 18:24 (19) | 20:52 | 15 | 20:23 (18) | 21:48 | 24 | 21:06 (21) | 22:19 | | |
| 24 | 08:40 | | | 07:38 | | 09:05 (25) | 06:28 | | 18:11 (19) | 06:10 | | 20:07 (18) | 05:11 | | 20:41 (21) | 04:53 | | |
| | 16:51 | | | 17:56 | 54 | 09:59 (25) | 18:53 | 15 | 18:26 (19) | 20:54 | 17 | 20:24 (18) | 21:50 | 24 | 21:05 (21) | 22:19 | | |
| 25 | 08:39 | | | 07:36 | | 09:06 (25) | 06:25 | | 18:12 (19) | 06:08 | | 20:07 (18) | 05:10 | | 20:42 (21) | 04:53 | | |
| | 16:53 | | | 17:59 | 53 | 09:59 (25) | 18:55 | 16 | 18:28 (19) | 20:56 | 18 | 20:25 (18) | 21:52 | 24 | 21:06 (21) | 22:19 | | |
| 26 | 08:37 | | | 07:33 | | 09:06 (25) | 06:23 | | 18:11 (19) | 06:06 | | 20:07 (18) | 05:09 | | 20:42 (21) | 04:53 | | |
| | 16:55 | | | 18:01 | 51 | 09:57 (25) | 18:57 | 16 | 18:27 (19) | 20:58 | 18 | 20:25 (18) | 21:53 | 24 | 21:06 (21) | 22:19 | | |
| 27 | 08:36 | | | 07:31 | | 09:07 (25) | 06:20 | | 18:12 (19) | 06:04 | | 20:08 (18) | 05:07 | | 20:43 (21) | 04:54 | | |
| | 16:57 | | | 18:03 | 50 | 09:57 (25) | 18:59 | 15 | 18:27 (19) | 21:00 | 16 | 20:24 (18) | 21:55 | 23 | 21:06 (21) | 22:18 | | |
| 28 | 08:34 | | | 07:29 | | 09:07 (25) | 06:18 | | 18:13 (19) | 06:01 | | 20:08 (18) | 05:06 | | 20:44 (21) | 04:54 | | |
| | 16:59 | | | 18:05 | 48 | 09:55 (25) | 19:01 | 12 | 18:25 (19) | 21:02 | 16 | 20:24 (18) | 21:56 | 21 | 21:05 (21) | 22:18 | | |
| 29 | 08:32 | | | | | | 07:15 | | 19:15 (19) | 05:59 | | 20:09 (18) | 05:05 | | 20:44 (21) | 04:55 | | |
| | 17:01 | | | | | | 20:03 | 6 | 19:21 (19) | 21:04 | 12 | 20:21 (18) | 21:58 | 21 | 21:05 (21) | 22:18 | | |
| 30 | 08:31 | | 09:24 (25) | | | | 07:13 | | | 05:57 | | 20:10 (18) | 05:04 | | 20:45 (21) | 04:56 | | |
| | 17:04 | 15 | 09:39 (25) | | | | 20:05 | | | 21:06 | 10 | 20:20 (18) | 21:59 | 20 | 21:05 (21) | 22:18 | | |
| 31 | 08:29 | | 09:21 (25) | | | | 07:10 | | | | | | 05:02 | | 20:45 (21) | | | |
| | 17:06 | 21 | 09:42 (25) | | | | 20:07 | | | | | | 22:00 | 20 | 21:05 (21) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 36 | | | 1353 | | | 752 | | | 427 | | | 441 | | | 123 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 0,90 | | | 0,98 | | | 0,88 | | | 0,88 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,30 | | | 0,38 | | | 0,45 | | | 0,42 | |
| Total, real | | 5 | | | 246 | | | 225 | | | 162 | | | 197 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | | 05:39 | | 20:55 (21) | 06:37 | | 19:30 (22) | 07:34 | | 18:01 (8) | 07:36 | | 08:38 (25) | 08:34 |
| | 22:17 | | | 21:39 | 11 | 21:06 (21) | 20:29 | 23 | 19:53 (22) | 19:12 | 24 | 18:25 (8) | 16:57 | 49 | 09:27 (25) | 16:10 |
| 2 | 04:57 | | | 05:41 | | 20:57 (21) | 06:39 | | 19:30 (22) | 07:36 | | 18:00 (8) | 07:38 | | 08:38 (25) | 08:36 |
| | 22:17 | | | 21:37 | 7 | 21:04 (21) | 20:26 | 23 | 19:53 (22) | 19:09 | 26 | 18:26 (8) | 16:55 | 48 | 09:26 (25) | 16:09 |
| 3 | 04:58 | | 20:58 (21) | 05:43 | | 20:59 (21) | 06:41 | | 19:30 (22) | 07:38 | | 17:59 (8) | 07:40 | | 08:40 (25) | 08:38 |
| | 22:17 | 6 | 21:04 (21) | 21:35 | 4 | 21:03 (21) | 20:24 | 23 | 19:53 (22) | 19:06 | 27 | 18:26 (8) | 16:53 | 46 | 09:26 (25) | 16:08 |
| 4 | 04:59 | | 20:57 (21) | 05:45 | | | 06:43 | | 19:29 (22) | 07:40 | | 17:59 (8) | 07:42 | | 08:41 (25) | 08:39 |
| | 22:16 | 8 | 21:05 (21) | 21:33 | | | 20:21 | 23 | 19:52 (22) | 19:04 | 26 | 18:25 (20) | 16:51 | 43 | 09:24 (25) | 16:07 |
| 5 | 05:00 | | 20:57 (21) | 05:46 | | | 06:45 | | 19:29 (22) | 07:42 | | 09:59 (25) | 07:44 | | 08:42 (25) | 08:41 |
| | 22:15 | 10 | 21:07 (21) | 21:31 | | | 20:19 | 20 | 19:49 (22) | 19:01 | 41 | 18:26 (20) | 16:49 | 41 | 09:23 (25) | 16:06 |
| 6 | 05:01 | | 20:56 (21) | 05:48 | | | 06:47 | | 19:30 (22) | 07:44 | | 09:54 (25) | 07:46 | | 08:43 (25) | 08:42 |
| | 22:15 | 12 | 21:08 (21) | 21:29 | | | 20:16 | 17 | 19:47 (22) | 18:59 | 51 | 18:26 (20) | 16:47 | 39 | 09:22 (25) | 16:06 |
| 7 | 05:02 | | 20:56 (21) | 05:50 | | | 06:49 | | 19:30 (22) | 07:46 | | 09:51 (25) | 07:48 | | 08:45 (25) | 08:44 |
| | 22:14 | 13 | 21:09 (21) | 21:27 | | | 20:14 | 15 | 19:45 (22) | 18:56 | 57 | 18:26 (20) | 16:45 | 36 | 09:21 (25) | 16:05 |
| 8 | 05:03 | | 20:55 (21) | 05:52 | | | 06:51 | | 19:32 (22) | 07:48 | | 09:49 (25) | 07:51 | | 08:46 (25) | 08:45 |
| | 22:13 | 14 | 21:09 (21) | 21:25 | | | 20:11 | 10 | 19:42 (22) | 18:54 | 58 | 18:24 (20) | 16:43 | 34 | 09:20 (25) | 16:05 |
| 9 | 05:04 | | 20:54 (21) | 05:54 | | | 06:52 | | 19:33 (22) | 07:50 | | 09:47 (25) | 07:53 | | 08:48 (25) | 08:46 |
| | 22:12 | 16 | 21:10 (21) | 21:23 | | | 20:08 | 6 | 19:39 (22) | 18:51 | 60 | 18:22 (20) | 16:41 | 30 | 09:18 (25) | 16:04 |
| 10 | 05:05 | | 20:54 (21) | 05:56 | | | 06:54 | | | 07:52 | | 09:45 (25) | 07:55 | | 08:50 (25) | 08:48 |
| | 22:11 | 17 | 21:11 (21) | 21:21 | | | 20:06 | | | 18:49 | 59 | 18:19 (20) | 16:39 | 25 | 09:15 (25) | 16:04 |
| 11 | 05:06 | | 20:53 (21) | 05:58 | | | 06:56 | | | 07:54 | | 09:44 (25) | 07:57 | | 08:53 (25) | 08:49 |
| | 22:10 | 18 | 21:11 (21) | 21:19 | | | 20:03 | | | 18:46 | 57 | 18:16 (20) | 16:37 | 21 | 09:14 (25) | 16:04 |
| 12 | 05:08 | | 20:53 (21) | 05:59 | | 20:21 (18) | 06:58 | | | 07:56 | | 09:42 (25) | 07:59 | | 08:56 (25) | 08:50 |
| | 22:09 | 19 | 21:12 (21) | 21:16 | 5 | 20:26 (18) | 20:01 | | | 18:44 | 56 | 18:14 (20) | 16:36 | 14 | 09:10 (25) | 16:03 |
| 13 | 05:09 | | 20:53 (21) | 06:01 | | 20:18 (18) | 07:00 | | | 07:58 | | 09:41 (25) | 08:01 | | | 08:51 |
| | 22:08 | 20 | 21:13 (21) | 21:14 | 11 | 20:29 (18) | 19:58 | | | 18:41 | 47 | 10:28 (25) | 16:34 | | | 16:03 |
| 14 | 05:10 | | 20:53 (21) | 06:03 | | 20:17 (18) | 07:02 | | 19:07 (19) | 07:59 | | 09:40 (25) | 08:03 | | | 08:52 |
| | 22:07 | 21 | 21:14 (21) | 21:12 | 13 | 20:30 (18) | 19:56 | 5 | 19:12 (19) | 18:39 | 49 | 10:29 (25) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 20:52 (21) | 06:05 | | 20:16 (18) | 07:04 | | 19:03 (19) | 08:01 | | 09:39 (25) | 08:05 | | | 08:53 |
| | 22:06 | 22 | 21:14 (21) | 21:10 | 15 | 20:31 (18) | 19:53 | 11 | 19:14 (19) | 18:36 | 50 | 10:29 (25) | 16:30 | | | 16:03 |
| 16 | 05:13 | | 20:52 (21) | 06:07 | | 20:14 (18) | 07:06 | | 19:01 (19) | 08:03 | | 09:38 (25) | 08:07 | | | 08:54 |
| | 22:05 | 22 | 21:14 (21) | 21:07 | 17 | 20:31 (18) | 19:50 | 14 | 19:15 (19) | 18:34 | 52 | 10:30 (25) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 20:52 (21) | 06:09 | | 20:13 (18) | 07:07 | | 19:00 (19) | 08:05 | | 09:37 (25) | 08:09 | | | 08:55 |
| | 22:04 | 23 | 21:15 (21) | 21:05 | 19 | 20:32 (18) | 19:48 | 16 | 19:16 (19) | 18:32 | 53 | 10:30 (25) | 16:27 | | | 16:03 |
| 18 | 05:16 | | 20:52 (21) | 06:11 | | 20:13 (18) | 07:09 | | 18:59 (19) | 08:07 | | 09:36 (25) | 08:11 | | | 08:56 |
| | 22:02 | 23 | 21:15 (21) | 21:03 | 19 | 20:32 (18) | 19:45 | 17 | 19:16 (19) | 18:29 | 54 | 10:30 (25) | 16:26 | | | 16:04 |
| 19 | 05:17 | | 20:51 (21) | 06:13 | | 20:13 (18) | 07:11 | | 18:59 (19) | 08:09 | | 09:36 (25) | 08:13 | | | 08:56 |
| | 22:01 | 24 | 21:15 (21) | 21:01 | 17 | 20:30 (18) | 19:43 | 15 | 19:14 (19) | 18:27 | 54 | 10:30 (25) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 20:52 (21) | 06:15 | | 20:12 (18) | 07:13 | | 18:58 (19) | 08:12 | | 09:36 (25) | 08:15 | | | 08:57 |
| | 21:59 | 24 | 21:16 (21) | 20:58 | 15 | 20:27 (18) | 19:40 | 13 | 19:11 (19) | 18:24 | 55 | 10:31 (25) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 20:51 (21) | 06:16 | | 20:12 (18) | 07:15 | | 18:58 (19) | 08:14 | | 09:36 (25) | 08:17 | | | 08:58 |
| | 21:58 | 25 | 21:16 (21) | 20:56 | 13 | 20:25 (18) | 19:37 | 11 | 19:09 (19) | 18:22 | 55 | 10:31 (25) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 20:52 (21) | 06:18 | | 20:13 (18) | 07:17 | | 18:58 (19) | 08:16 | | 09:35 (25) | 08:18 | | | 08:58 |
| | 21:56 | 24 | 21:16 (21) | 20:53 | 10 | 20:23 (18) | 19:35 | 7 | 19:05 (19) | 18:20 | 56 | 10:31 (25) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 20:51 (21) | 06:20 | | 20:14 (18) | 07:19 | | 18:59 (19) | 08:18 | | 09:35 (25) | 08:20 | | | 08:59 |
| | 21:55 | 25 | 21:16 (21) | 20:51 | 7 | 20:21 (18) | 19:32 | 4 | 19:03 (19) | 18:17 | 56 | 10:31 (25) | 16:18 | | | 16:06 |
| 24 | 05:25 | | 20:52 (21) | 06:22 | | 20:15 (18) | 07:21 | | | 08:20 | | 09:35 (25) | 08:22 | | | 08:59 |
| | 21:53 | 24 | 21:16 (21) | 20:49 | 4 | 20:19 (18) | 19:30 | | | 18:15 | 55 | 10:30 (25) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 20:52 (21) | 06:24 | | 19:42 (22) | 07:23 | | | 07:22 | | 08:35 (25) | 08:24 | | | 09:00 |
| | 21:52 | 24 | 21:16 (21) | 20:46 | 3 | 19:45 (22) | 19:27 | | | 17:13 | 55 | 09:30 (25) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:52 (21) | 06:26 | | 19:38 (22) | 07:25 | | 18:11 (8) | 07:24 | | 08:36 (25) | 08:26 | | | 09:00 |
| | 21:50 | 24 | 21:16 (21) | 20:44 | 11 | 19:49 (22) | 19:24 | 7 | 18:18 (8) | 17:10 | 54 | 09:30 (25) | 16:15 | | | 16:07 |
| 27 | 05:30 | | 20:52 (21) | 06:28 | | 19:35 (22) | 07:26 | | 18:07 (8) | 07:26 | | 08:36 (25) | 08:28 | | | 09:00 |
| | 21:48 | 22 | 21:14 (21) | 20:41 | 16 | 19:51 (22) | 19:22 | 14 | 18:21 (8) | 17:08 | 54 | 09:30 (25) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 20:53 (21) | 06:30 | | 19:34 (22) | 07:28 | | 18:05 (8) | 07:28 | | 08:36 (25) | 08:29 | | | 09:00 |
| | 21:47 | 20 | 21:13 (21) | 20:39 | 18 | 19:52 (22) | 19:19 | 18 | 18:23 (8) | 17:06 | 53 | 09:29 (25) | 16:12 | | | 16:09 |
| 29 | 05:34 | | 20:54 (21) | 06:32 | | 19:32 (22) | 07:30 | | 18:03 (8) | 07:30 | | 08:36 (25) | 08:31 | | | 09:00 |
| | 21:45 | 18 | 21:12 (21) | 20:36 | 20 | 19:52 (22) | 19:17 | 21 | 18:24 (8) | 17:04 | 52 | 09:28 (25) | 16:11 | | | 16:10 |
| 30 | 05:36 | | 20:54 (21) | 06:34 | | 19:31 (22) | 07:32 | | 18:02 (8) | 07:32 | | 08:37 (25) | 08:33 | | | 09:00 |
| | 21:43 | 15 | 21:09 (21) | 20:34 | 22 | 19:53 (22) | 19:14 | 23 | 18:25 (8) | 17:02 | 52 | 09:29 (25) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:55 (21) | 06:35 | | 19:30 (22) | | | | 07:34 | | 08:38 (25) | | | | 09:00 |
| | 21:41 | 13 | 21:08 (21) | 20:31 | 23 | 19:53 (22) | | | | 16:59 | 50 | 09:28 (25) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 546 | | | 300 | | | 356 | | | 1548 | | | 426 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,88 | | | 0,97 | | | 0,99 | | | 0,80 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,49 | | | 0,38 | | | 0,24 | | | 0,12 | | |
| Total, real | | 229 | | | 146 | | | 136 | | | 372 | | | 50 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | | 07:08 | | 07:32 (10) | 05:55 | | | 05:02 | | 05:37 (9) |
| | 16:14 | 17:08 | 18:07 | | | 20:10 | 29 | 08:01 (6) | 21:09 | | | 22:02 | 20 | 05:57 (9) |
| 2 | 09:01 | 08:26 | 07:24 | | | 07:05 | | 07:30 (10) | 05:53 | | | 05:01 | | 05:37 (9) |
| | 16:15 | 17:10 | 18:10 | | | 20:12 | 31 | 08:01 (6) | 21:11 | | | 22:04 | 22 | 05:59 (9) |
| 3 | 09:00 | 08:24 | 07:22 | | | 07:03 | | 07:27 (10) | 05:51 | | | 05:00 | | 05:36 (9) |
| | 16:16 | 17:13 | 18:12 | | | 20:14 | 32 | 07:59 (6) | 21:13 | | | 22:05 | 24 | 06:00 (9) |
| 4 | 09:00 | 08:22 | 07:19 | | | 07:00 | | 07:26 (10) | 05:49 | | | 04:59 | | 05:36 (9) |
| | 16:18 | 17:15 | 18:14 | | | 20:16 | 32 | 07:58 (6) | 21:14 | | | 22:06 | 24 | 06:00 (9) |
| 5 | 09:00 | 08:20 | 07:17 | | | 06:58 | | 07:24 (10) | 05:46 | | | 04:58 | | 05:35 (9) |
| | 16:19 | 17:17 | 18:16 | | | 20:17 | 31 | 07:55 (6) | 21:16 | | | 22:07 | 26 | 06:01 (9) |
| 6 | 08:59 | 08:18 | 07:14 | | | 06:55 | | 07:24 (10) | 05:44 | | | 04:57 | | 05:35 (9) |
| | 16:20 | 17:19 | 18:18 | | | 20:19 | 27 | 07:51 (10) | 21:18 | | | 22:08 | 27 | 06:02 (9) |
| 7 | 08:59 | 08:16 | 07:12 | | | 06:53 | | 07:23 (10) | 05:42 | | | 04:57 | | 05:35 (9) |
| | 16:22 | 17:21 | 18:20 | | | 20:21 | 28 | 07:51 (10) | 21:20 | | | 22:09 | 27 | 06:02 (9) |
| 8 | 08:58 | 08:14 | 07:09 | | | 06:50 | | 07:23 (10) | 05:40 | | | 04:56 | | 05:35 (9) |
| | 16:23 | 17:23 | 18:22 | | | 20:23 | 28 | 07:51 (10) | 21:22 | | | 22:10 | 28 | 06:03 (9) |
| 9 | 08:57 | 08:12 | 07:07 | | | 06:48 | | 07:22 (10) | 05:38 | | | 04:55 | | 05:34 (9) |
| | 16:25 | 17:25 | 18:24 | | | 20:25 | 28 | 07:50 (10) | 21:24 | | | 22:11 | 29 | 06:03 (9) |
| 10 | 08:57 | 08:10 | 07:04 | | | 06:45 | | 07:22 (10) | 05:36 | | | 04:55 | | 05:35 (9) |
| | 16:26 | 17:27 | 18:26 | | | 20:27 | 28 | 07:50 (10) | 21:26 | | | 22:12 | 29 | 06:04 (9) |
| 11 | 08:56 | 08:08 | 07:02 | | | 06:43 | | 07:22 (10) | 05:34 | | | 04:54 | | 05:34 (9) |
| | 16:28 | 17:30 | 18:28 | | | 20:29 | 27 | 07:49 (10) | 21:28 | | | 22:13 | 30 | 06:04 (9) |
| 12 | 08:55 | 08:06 | 06:59 | | | 06:40 | | 07:22 (10) | 05:32 | | | 04:54 | | 05:34 (9) |
| | 16:30 | 17:32 | 18:30 | | | 20:31 | 27 | 07:49 (10) | 21:30 | | | 22:14 | 31 | 06:05 (9) |
| 13 | 08:54 | 08:04 | 06:57 | | | 06:38 | | 07:22 (10) | 05:30 | | | 04:53 | | 05:35 (9) |
| | 16:31 | 17:34 | 18:32 | | | 20:33 | 25 | 07:47 (10) | 21:31 | | | 22:15 | 30 | 06:05 (9) |
| 14 | 08:53 | 08:02 | 06:54 | | | 06:35 | | 07:23 (10) | 05:29 | | | 04:53 | | 05:34 (9) |
| | 16:33 | 17:36 | 18:34 | | | 20:35 | 23 | 07:46 (10) | 21:33 | | | 22:16 | 31 | 06:05 (9) |
| 15 | 08:52 | 07:59 | 06:52 | | | 06:33 | | 07:24 (10) | 05:27 | | | 04:53 | | 05:34 (9) |
| | 16:35 | 17:38 | 18:36 | | | 20:37 | 21 | 07:45 (10) | 21:35 | | | 22:16 | 31 | 06:05 (9) |
| 16 | 08:51 | 07:57 | 06:49 | | | 06:30 | | 06:55 (11) | 05:25 | | | 04:53 | | 05:34 (9) |
| | 16:37 | 17:40 | 18:38 | | | 20:39 | 20 | 07:43 (10) | 21:37 | | | 22:17 | 32 | 06:06 (9) |
| 17 | 08:50 | 07:55 | 06:47 | | | 06:28 | | 06:53 (11) | 05:23 | | | 04:52 | | 05:35 (9) |
| | 16:38 | 17:42 | 18:40 | | | 20:41 | 21 | 07:41 (10) | 21:39 | | | 22:17 | 31 | 06:06 (9) |
| 18 | 08:49 | 07:53 | 06:44 | | | 06:25 | | 06:51 (11) | 05:22 | | | 04:52 | | 05:35 (9) |
| | 16:40 | 17:44 | 18:42 | | | 20:43 | 18 | 07:38 (10) | 21:40 | | | 22:18 | 31 | 06:06 (9) |
| 19 | 08:48 | 07:50 | 06:41 | | | 06:23 | | 06:48 (11) | 05:20 | | | 04:52 | | 05:35 (9) |
| | 16:42 | 17:47 | 18:44 | | | 20:45 | 13 | 07:01 (11) | 21:42 | | | 22:18 | 32 | 06:07 (9) |
| 20 | 08:46 | 07:48 | 06:39 | | | 06:21 | | 06:46 (11) | 05:18 | | | 04:52 | | 05:35 (9) |
| | 16:44 | 17:49 | 18:46 | | | 20:47 | 16 | 07:02 (11) | 21:44 | | | 22:18 | 32 | 06:07 (9) |
| 21 | 08:45 | 07:46 | 06:36 | | | 06:18 | | 06:44 (11) | 05:17 | | | 04:52 | | 05:36 (9) |
| | 16:46 | 17:51 | 18:48 | | | 20:49 | 19 | 07:03 (11) | 21:46 | | | 22:19 | 32 | 06:08 (9) |
| 22 | 08:44 | 07:43 | 06:34 | | | 06:16 | | 06:41 (11) | 05:15 | | | 04:53 | | 05:36 (9) |
| | 16:48 | 17:53 | 18:50 | | | 20:51 | 21 | 07:02 (11) | 21:47 | | | 22:19 | 32 | 06:08 (9) |
| 23 | 08:42 | 07:41 | 06:31 | | | 06:13 | | 06:41 (11) | 05:14 | | | 04:53 | | 05:36 (9) |
| | 16:50 | 17:55 | 18:52 | | | 20:53 | 21 | 07:02 (11) | 21:49 | | | 22:19 | 32 | 06:08 (9) |
| 24 | 08:41 | 07:39 | 06:29 | | 06:53 (6) | 06:11 | | 06:41 (11) | 05:12 | | | 04:53 | | 05:36 (9) |
| | 16:52 | 17:57 | 18:54 | 7 | 07:00 (6) | 20:55 | 21 | 07:02 (11) | 21:51 | | | 22:19 | 32 | 06:08 (9) |
| 25 | 08:39 | 07:36 | 06:26 | | 06:50 (6) | 06:09 | | 06:41 (11) | 05:11 | | | 04:54 | | 05:37 (9) |
| | 16:54 | 17:59 | 18:56 | 11 | 07:01 (6) | 20:57 | 21 | 07:02 (11) | 21:52 | | | 22:19 | 31 | 06:08 (9) |
| 26 | 08:38 | 07:34 | 06:23 | | 06:48 (6) | 06:06 | | 06:41 (11) | 05:09 | | | 04:54 | | 05:36 (9) |
| | 16:56 | 18:01 | 18:58 | 15 | 07:03 (6) | 20:59 | 19 | 07:00 (11) | 21:54 | | | 22:19 | 32 | 06:08 (9) |
| 27 | 08:36 | 07:32 | 06:21 | | 06:45 (6) | 06:04 | | 06:41 (11) | 05:08 | | | 04:54 | | 05:37 (9) |
| | 16:58 | 18:03 | 19:00 | 18 | 07:03 (6) | 21:01 | 19 | 07:00 (11) | 21:55 | | | 22:19 | 32 | 06:09 (9) |
| 28 | 08:34 | 07:29 | 06:18 | | 06:43 (6) | 06:02 | | 06:42 (11) | 05:07 | | 05:43 (9) | 04:55 | | 05:37 (9) |
| | 17:00 | 18:05 | 19:02 | 20 | 07:03 (6) | 21:03 | 17 | 06:59 (11) | 21:57 | 8 | 05:51 (9) | 22:19 | 31 | 06:08 (9) |
| 29 | 08:33 | | 07:16 | | 07:41 (6) | 06:00 | | 06:44 (11) | 05:05 | | 05:41 (9) | 04:56 | | 05:38 (9) |
| | 17:02 | | 20:04 | 22 | 08:03 (6) | 21:05 | 13 | 06:57 (11) | 21:58 | 13 | 05:54 (9) | 22:19 | 31 | 06:09 (9) |
| 30 | 08:31 | | 07:13 | | 07:41 (6) | 05:57 | | 06:45 (11) | 05:04 | | 05:39 (9) | 04:56 | | 05:39 (9) |
| | 17:04 | | 20:06 | 21 | 08:02 (6) | 21:07 | 10 | 06:55 (11) | 22:00 | 16 | 05:55 (9) | 22:18 | 30 | 06:09 (9) |
| 31 | 08:29 | | 07:11 | | 07:35 (10) | | | | 05:03 | | 05:38 (9) | | | |
| | 17:06 | | 20:08 | 27 | 08:02 (6) | | | | 22:01 | 18 | 05:56 (9) | | | |
| Potential sun hours | 242 | 269 | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | 141 | | | 686 | | | 55 | | | 882 | |
| Sun reduction | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,81 | | | 0,81 | |
| Total reduction | | | | 0,34 | | | 0,39 | | | 0,42 | | | 0,40 | |
| Total, real | | | | 48 | | | 268 | | | 23 | | | 350 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:38 (9) | 05:40 | | 06:38 | 07:21 (10) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 30 | 06:08 (9) | 21:40 | | 20:29 | 27 | 07:48 (10) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | | 05:39 (9) | 05:42 | | 06:40 | 07:20 (10) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 30 | 06:09 (9) | 21:38 | | 20:27 | 28 | 07:48 (10) | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 | | 05:40 (9) | 05:43 | | 06:42 | 07:20 (10) | 07:39 | 07:41 | 08:38 |
| | 22:17 | 29 | 06:09 (9) | 21:36 | | 20:24 | 28 | 07:48 (10) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | | 05:40 (9) | 05:45 | | 06:44 | 07:20 (10) | 07:40 | 07:43 | 08:40 |
| | 22:16 | 29 | 06:09 (9) | 21:34 | | 20:22 | 28 | 07:48 (10) | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 | | 05:41 (9) | 05:47 | | 06:45 | 07:20 (10) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 28 | 06:09 (9) | 21:32 | | 20:19 | 28 | 07:48 (10) | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | | 05:41 (9) | 05:49 | | 06:47 | 07:19 (10) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 27 | 06:08 (9) | 21:30 | | 20:17 | 27 | 07:46 (10) | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | | 05:41 (9) | 05:51 | | 06:49 | 07:19 (10) | 07:46 | 07:49 | 08:44 |
| | 22:14 | 26 | 06:07 (9) | 21:28 | | 20:14 | 31 | 07:50 (6) | 18:57 | 16:46 | 16:06 |
| 8 | 05:04 | | 05:42 (9) | 05:53 | | 06:51 | 07:20 (10) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 25 | 06:07 (9) | 21:26 | | 20:12 | 32 | 07:52 (6) | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | | 05:44 (9) | 05:54 | | 06:53 | 07:21 (10) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 24 | 06:08 (9) | 21:24 | | 20:09 | 32 | 07:53 (6) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | | 05:44 (9) | 05:56 | | 06:55 | 07:23 (10) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 23 | 06:07 (9) | 21:21 | | 20:06 | 31 | 07:54 (6) | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 | | 05:45 (9) | 05:58 | | 06:57 | 07:25 (10) | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21 | 06:06 (9) | 21:19 | | 20:04 | 30 | 07:55 (6) | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 05:46 (9) | 06:00 | 06:56 (11) | 06:59 | 07:26 (10) | 07:56 | 07:59 | 08:50 |
| | 22:10 | 19 | 06:05 (9) | 21:17 | 5 | 07:01 (11) | 20:01 | 28 | 07:54 (6) | 18:44 | 16:36 | 16:04 |
| 13 | 05:10 | | 05:47 (9) | 06:02 | 06:53 (11) | 07:01 | 07:32 (6) | 07:58 | 08:01 | 08:52 |
| | 22:09 | 17 | 06:04 (9) | 21:15 | 11 | 07:04 (11) | 19:59 | 22 | 07:54 (6) | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 05:48 (9) | 06:04 | 06:51 (11) | 07:02 | 07:32 (6) | 08:00 | 08:03 | 08:53 |
| | 22:08 | 15 | 06:03 (9) | 21:13 | 14 | 07:05 (11) | 19:56 | 21 | 07:53 (6) | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | | 05:51 (9) | 06:06 | 06:50 (11) | 07:04 | 07:32 (6) | 08:02 | 08:05 | 08:54 |
| | 22:07 | 11 | 06:02 (9) | 21:10 | 16 | 07:06 (11) | 19:54 | 21 | 07:53 (6) | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | | 05:54 (9) | 06:08 | 06:49 (11) | 07:06 | 07:34 (6) | 08:04 | 08:07 | 08:55 |
| | 22:05 | 5 | 05:59 (9) | 21:08 | 18 | 07:07 (11) | 19:51 | 18 | 07:52 (6) | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | | | 06:09 | 06:48 (11) | 07:08 | 07:36 (6) | 08:06 | 08:09 | 08:55 |
| | 22:04 | | | 21:06 | 20 | 07:08 (11) | 19:48 | 15 | 07:51 (6) | 18:32 | 16:28 | 16:04 |
| 18 | 05:17 | | | 06:11 | 06:47 (11) | 07:10 | 07:37 (6) | 08:08 | 08:11 | 08:56 |
| | 22:03 | | | 21:03 | 20 | 07:07 (11) | 19:46 | 12 | 07:49 (6) | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | | 06:13 | 06:47 (11) | 07:12 | 07:39 (6) | 08:10 | 08:13 | 08:57 |
| | 22:01 | | | 21:01 | 21 | 07:08 (11) | 19:43 | 8 | 07:47 (6) | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | | | 06:15 | 06:46 (11) | 07:14 | 07:41 (6) | 08:12 | 08:15 | 08:58 |
| | 22:00 | | | 20:59 | 22 | 07:08 (11) | 19:41 | 3 | 07:44 (6) | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | | | 06:17 | 06:47 (11) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | | 20:56 | 21 | 07:08 (11) | 19:38 | | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | | | 06:19 | 06:49 (11) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | | 20:54 | 18 | 07:07 (11) | 19:35 | | | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | | | 06:21 | 06:50 (11) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | | 20:52 | 16 | 07:06 (11) | 19:33 | | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | | 06:23 | 06:52 (11) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | | 20:49 | 13 | 07:05 (11) | 19:30 | | | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | | | 06:25 | 06:54 (11) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | | 20:47 | 19 | 07:41 (10) | 19:28 | | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | | 06:27 | 06:56 (11) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | | 20:44 | 21 | 07:44 (10) | 19:25 | | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | | 06:28 | 06:57 (11) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | | 20:42 | 21 | 07:45 (10) | 19:22 | | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | | 06:30 | 07:25 (10) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | | 20:39 | 21 | 07:46 (10) | 19:20 | | | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | | | 06:32 | 07:24 (10) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | | 20:37 | 23 | 07:47 (10) | 19:17 | | | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | | | 06:34 | 07:23 (10) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | | 20:34 | 25 | 07:48 (10) | 19:15 | | | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | | | 06:36 | 07:22 (10) | | | 07:35 | | 09:01 |
| | 21:42 | | | 20:32 | 27 | 07:49 (10) | | | | 17:00 | | 16:13 |
| Potential sun hours | 521 | | | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | 359 | | | 372 | | 470 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | 0,40 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,81 | | | 0,98 | | 1,00 | | | |
| Total reduction | | 0,40 | | | 0,51 | | 0,40 | | | |
| Total, real | | 143 | | | 188 | | 187 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 06:23 (6) | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 28 | 06:51 (35) | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 06:22 (6) | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 29 | 06:51 (35) | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 06:21 (6) | 05:00 | 04:59 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:12 29 | 06:50 (35) | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 06:21 (6) | 04:59 | 04:59 | 05:45 06:29 (6) | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 28 | 06:49 (35) | 22:06 | 22:16 | 21:34 1 06:30 (6) | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 06:20 (6) | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 28 | 06:48 (6) | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 06:20 (6) | 04:57 | 05:01 | 05:49 06:29 (6) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 28 | 06:48 (6) | 22:08 | 22:15 | 21:30 5 06:52 (35) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 06:19 (6) | 04:57 | 05:02 | 05:51 06:29 (6) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 29 | 06:48 (6) | 22:09 | 22:14 | 21:28 11 06:55 (35) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 06:19 (6) | 04:56 | 05:04 | 05:53 06:30 (6) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 29 | 06:48 (6) | 22:10 | 22:14 | 21:26 14 06:57 (35) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 06:19 (6) | 04:55 | 05:05 | 05:54 06:30 (6) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 29 | 06:48 (6) | 22:11 | 22:13 | 21:23 18 06:59 (35) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 06:19 (6) | 04:55 | 05:06 | 05:56 06:30 (6) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 29 | 06:48 (6) | 22:12 | 22:12 | 21:21 19 06:58 (35) | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 06:20 (6) | 04:54 | 05:07 | 05:58 06:31 (6) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 28 | 06:48 (6) | 22:13 | 22:11 | 21:19 20 06:59 (35) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 06:20 (6) | 04:54 | 05:08 | 06:00 06:32 (6) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 28 | 06:48 (6) | 22:14 | 22:10 | 21:17 21 07:00 (35) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 06:20 (6) | 04:53 | 05:10 | 06:02 06:33 (6) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 27 | 06:47 (6) | 22:15 | 22:09 | 21:15 23 07:00 (35) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 06:21 (6) | 04:53 | 05:11 | 06:04 06:34 (6) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 26 | 06:47 (6) | 22:15 | 22:08 | 21:13 23 06:59 (35) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 06:21 (6) | 04:53 | 05:12 | 06:06 06:36 (6) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 25 | 06:46 (6) | 22:16 | 22:07 | 21:10 23 06:59 (35) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 06:21 (6) | 04:53 | 05:14 | 06:08 06:40 (6) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 24 | 06:45 (6) | 22:17 | 22:05 | 21:08 19 06:59 (35) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 06:22 (6) | 04:52 | 05:15 | 06:09 06:40 (35) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 23 | 06:45 (6) | 22:17 | 22:04 | 21:06 19 06:59 (35) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 06:23 (6) | 04:52 | 05:17 | 06:11 06:41 (35) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 21 | 06:44 (6) | 22:18 | 22:03 | 21:03 16 06:57 (35) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 06:24 (6) | 04:52 | 05:18 | 06:13 06:43 (35) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 19 | 06:43 (6) | 22:18 | 22:01 | 21:01 13 06:56 (35) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 06:25 (6) | 04:52 | 05:20 | 06:15 06:45 (35) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 17 | 06:42 (6) | 22:18 | 22:00 | 20:59 9 06:54 (35) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 06:27 (6) | 04:52 | 05:21 06:40 (6) | 06:17 06:47 (35) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 14 | 06:41 (6) | 22:19 | 21:58 8 06:48 (6) | 20:56 5 06:52 (35) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 06:41 (35) | 05:15 | 06:28 (6) | 04:53 | 05:23 | 06:37 (6) | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 6 06:47 (35) | 21:47 10 | 06:38 (6) | 22:19 | 21:57 13 06:50 (6) | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39 (35) | 05:14 | 06:31 (6) | 04:53 | 05:24 | 06:36 (6) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 10 06:49 (35) | 21:49 4 | 06:35 (6) | 22:19 | 21:55 16 06:52 (6) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 06:37 (35) | 05:12 | | 04:53 | 05:26 | 06:35 (6) | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 13 06:50 (35) | 21:50 | | 22:19 | 21:54 17 06:52 (6) | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 06:35 (35) | 05:11 | | 04:54 | 05:28 | 06:34 (6) | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 16 06:51 (35) | 21:52 | | 22:19 | 21:52 20 06:54 (6) | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:33 (35) | 05:09 | | 04:54 | 05:29 | 06:33 (6) | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 18 06:51 (35) | 21:54 | | 22:19 | 21:51 21 06:54 (6) | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 06:31 (6) | 05:08 | | 04:54 | 05:31 | 06:32 (6) | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 20 06:51 (35) | 21:55 | | 22:19 | 21:49 24 06:56 (6) | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 06:28 (6) | 05:07 | | 04:55 | 05:33 | 06:31 (6) | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 24 06:52 (35) | 21:57 | | 22:19 | 21:47 25 06:56 (6) | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 06:26 (6) | 05:05 | | 04:56 | 05:34 | 06:31 (6) | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 26 06:52 (35) | 21:58 | | 22:19 | 21:45 26 06:57 (6) | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 06:24 (6) | 05:04 | | 04:56 | 05:36 | 06:31 (6) | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 28 06:52 (35) | 22:00 | | 22:18 | 21:43 27 06:58 (6) | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | | 05:38 | 06:30 (6) | 06:36 | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 27 06:57 (6) | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | 161 | 552 | | 224 | | 259 | | | | |
| Sun reduction | | | | 0,39 | 0,52 | | 0,49 | | 0,51 | | | | |
| Oper. time red. | | | | 1,00 | 1,00 | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | | | | 0,94 | 0,93 | | 0,93 | | 0,95 | | | | |
| Total reduction | | | | 0,37 | 0,48 | | 0,45 | | 0,49 | | | | |
| Total, real | | | | 60 | 266 | | 101 | | 126 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | | June | | July | | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | | 05:02 | | 04:57 | | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | | 22:02 | 24 | 06:01 (6) | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | | 05:01 | | 05:38 (6) | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | | 22:04 | 24 | 06:02 (6) | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | | 05:00 | | 05:37 (6) | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | | 22:05 | 25 | 06:02 (6) | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | | 04:59 | | 05:37 (6) | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | | 22:06 | 25 | 06:02 (6) | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | | 04:58 | | 05:37 (6) | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | | 22:07 | 25 | 06:02 (6) | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | | 04:57 | | 05:38 (6) | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | | 22:08 | 25 | 06:03 (6) | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | | 04:57 | | 05:38 (6) | 05:02 | 05:43 (6) | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | | 22:09 | 25 | 06:03 (6) | 22:14 | 1 05:44 (6) | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | | 04:56 | | 05:38 (6) | 05:04 | | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | | 22:10 | 26 | 06:04 (6) | 22:14 | | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | | 04:55 | | 05:38 (6) | 05:05 | | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | | 22:11 | 25 | 06:03 (6) | 22:13 | | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | | 04:55 | | 05:39 (6) | 05:06 | 05:45 (6) | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | | 22:12 | 25 | 06:04 (6) | 22:12 | 1 05:46 (6) | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | | 04:54 | | 05:38 (6) | 05:07 | 05:45 (6) | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | | 22:13 | 25 | 06:03 (6) | 22:11 | 1 05:46 (6) | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | | 04:54 | | 05:39 (6) | 05:08 | 05:45 (6) | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | | 22:14 | 25 | 06:04 (6) | 22:10 | 1 05:46 (6) | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | | 04:53 | | 05:39 (6) | 05:10 | 05:45 (6) | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | | 22:15 | 25 | 06:04 (6) | 22:09 | 2 05:47 (6) | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | | 04:53 | | 05:40 (6) | 05:11 | 05:46 (6) | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | | 22:15 | 25 | 06:05 (6) | 22:08 | 1 05:47 (6) | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | | 04:53 | | 05:39 (6) | 05:12 | 05:47 (6) | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | | 22:16 | 25 | 06:04 (6) | 22:07 | 1 05:48 (6) | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | | 04:53 | | 05:39 (6) | 05:14 | | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | | 22:17 | 25 | 06:04 (6) | 22:05 | | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | | 04:52 | | 05:40 (6) | 05:15 | | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | | 22:17 | 25 | 06:05 (6) | 22:04 | | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | | 04:52 | | 05:40 (6) | 05:17 | | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | | 22:18 | 25 | 06:05 (6) | 22:03 | | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | | 04:52 | | 05:40 (6) | 05:18 | | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | | 22:18 | 25 | 06:05 (6) | 22:01 | | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 05:48 (6) | 04:52 | | 05:40 (6) | 05:20 | | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 3 05:51 (6) | 22:18 | 25 | 06:05 (6) | 22:00 | | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 05:47 (6) | 04:53 | | 05:41 (6) | 05:21 | | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 7 05:54 (6) | 22:19 | 25 | 06:06 (6) | 21:58 | | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 05:46 (6) | 04:53 | | 05:41 (6) | 05:23 | | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 10 05:56 (6) | 22:19 | 25 | 06:06 (6) | 21:57 | | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 05:44 (6) | 04:53 | | 05:41 (6) | 05:24 | 05:58 (6) | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 12 05:56 (6) | 22:19 | 25 | 06:06 (6) | 21:55 | 5 06:03 (6) | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 05:43 (6) | 04:53 | | 05:41 (6) | 05:26 | | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 14 05:57 (6) | 22:19 | 25 | 06:06 (6) | 21:54 | | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 05:42 (6) | 04:54 | | 05:42 (6) | 05:28 | | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 17 05:59 (6) | 22:19 | 25 | 06:07 (6) | 21:52 | | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 05:41 (6) | 04:54 | | 05:41 (6) | 05:29 | | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 18 05:59 (6) | 22:19 | 25 | 06:06 (6) | 21:50 | | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 05:39 (6) | 04:55 | | 05:42 (6) | 05:31 | | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 20 05:59 (6) | 22:19 | 25 | 06:07 (6) | 21:49 | | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 05:38 (6) | 04:55 | | 05:42 (6) | 05:33 | | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22 06:00 (6) | 22:19 | 25 | 06:07 (6) | 21:47 | | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 05:37 (6) | 04:56 | | 05:42 (6) | 05:34 | | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 23 06:00 (6) | 22:19 | 26 | 06:08 (6) | 21:45 | | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 05:37 (6) | 04:56 | | 05:43 (6) | 05:36 | | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 24 06:01 (6) | 22:18 | 25 | 06:08 (6) | 21:43 | | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | 05:37 (6) | | | | 05:38 | | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | 24 06:01 (6) | | | | 21:42 | | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | | 520 | | | 521 | | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | 194 | | 750 | | 13 | | | | | | |
| Sun reduction | | | | | | 0,52 | | 0,48 | | 0,49 | | | | | | |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | 1,00 | | | | | | |
| Wind dir. red. | | | | | | 0,83 | | 0,83 | | 0,83 | | | | | | |
| Total reduction | | | | | | 0,43 | | 0,40 | | 0,40 | | | | | | |
| Total, real | | | | | | 83 | | 301 | | 5 | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 11:50 (35) | 07:27 | | 11:54 (35) | 07:08 | | 18:30 (11) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 121 | 16:02 (6) | 18:07 | 116 | 17:35 (10) | 20:09 | 65 | 19:42 (9) | 21:09 | 22:02 |
| 2 | 09:00 | | | 08:26 | | 11:49 (35) | 07:24 | | 11:55 (35) | 07:05 | | 18:30 (11) | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 125 | 16:03 (6) | 18:09 | 106 | 17:36 (10) | 20:11 | 67 | 19:44 (9) | 21:10 | 22:04 |
| 3 | 09:00 | | 12:13 (35) | 08:24 | | 11:49 (35) | 07:22 | | 11:56 (35) | 07:03 | | 18:30 (11) | 05:51 | 05:00 |
| | 16:16 | 9 | 12:22 (35) | 17:12 | 125 | 16:03 (6) | 18:11 | 88 | 17:35 (10) | 20:13 | 68 | 19:45 (9) | 21:12 | 22:05 |
| 4 | 09:00 | | 12:11 (35) | 08:22 | | 11:49 (35) | 07:19 | | 11:58 (35) | 07:00 | | 18:30 (11) | 05:48 | 04:59 |
| | 16:18 | 15 | 12:26 (35) | 17:14 | 127 | 16:04 (6) | 18:14 | 84 | 17:35 (10) | 20:15 | 70 | 19:46 (9) | 21:14 | 22:06 |
| 5 | 08:59 | | 12:08 (35) | 08:20 | | 11:48 (35) | 07:17 | | 12:00 (35) | 06:58 | | 18:29 (11) | 05:46 | 04:58 |
| | 16:19 | 20 | 12:28 (35) | 17:17 | 129 | 16:04 (6) | 18:16 | 80 | 17:35 (10) | 20:17 | 70 | 19:45 (9) | 21:16 | 22:07 |
| 6 | 08:59 | | 12:08 (35) | 08:18 | | 11:48 (35) | 07:14 | | 12:02 (35) | 06:55 | | 18:30 (11) | 05:44 | 04:57 |
| | 16:20 | 23 | 12:31 (35) | 17:19 | 131 | 16:05 (6) | 18:18 | 73 | 17:34 (10) | 20:19 | 69 | 19:45 (9) | 21:18 | 22:08 |
| 7 | 08:58 | | 12:06 (35) | 08:16 | | 11:47 (35) | 07:12 | | 12:06 (35) | 06:53 | | 18:29 (11) | 05:42 | 04:56 |
| | 16:22 | 27 | 12:33 (35) | 17:21 | 133 | 16:05 (6) | 18:20 | 66 | 17:34 (10) | 20:21 | 68 | 19:44 (9) | 21:20 | 22:09 |
| 8 | 08:58 | | 12:05 (35) | 08:14 | | 11:47 (35) | 07:09 | | 12:10 (35) | 06:50 | | 18:30 (11) | 05:40 | 04:56 |
| | 16:23 | 30 | 12:35 (35) | 17:23 | 134 | 16:06 (6) | 18:22 | 55 | 17:33 (10) | 20:23 | 64 | 19:43 (9) | 21:22 | 22:10 |
| 9 | 08:57 | | 12:04 (35) | 08:12 | | 11:47 (35) | 07:07 | | 12:18 (35) | 06:48 | | 18:30 (11) | 05:38 | 04:55 |
| | 16:25 | 32 | 12:36 (35) | 17:25 | 136 | 16:07 (6) | 18:24 | 37 | 17:32 (10) | 20:25 | 62 | 19:42 (9) | 21:24 | 22:11 |
| 10 | 08:57 | | 12:03 (35) | 08:10 | | 11:48 (35) | 07:04 | | 17:08 (10) | 06:45 | | 18:31 (11) | 05:36 | 04:55 |
| | 16:26 | 35 | 12:38 (35) | 17:27 | 135 | 16:07 (6) | 18:26 | 23 | 17:31 (10) | 20:27 | 57 | 19:40 (9) | 21:26 | 22:12 |
| 11 | 08:56 | | 12:02 (35) | 08:08 | | 11:47 (35) | 07:02 | | 17:09 (10) | 06:43 | | 18:31 (11) | 05:34 | 04:54 |
| | 16:28 | 38 | 12:40 (35) | 17:29 | 137 | 16:07 (6) | 18:28 | 20 | 17:29 (10) | 20:29 | 53 | 19:38 (9) | 21:28 | 22:13 |
| 12 | 08:55 | | 12:01 (35) | 08:06 | | 11:47 (35) | 06:59 | | 17:11 (10) | 06:40 | | 18:32 (11) | 05:32 | 04:54 |
| | 16:30 | 41 | 12:42 (35) | 17:32 | 137 | 16:07 (6) | 18:30 | 16 | 17:27 (10) | 20:31 | 43 | 19:34 (9) | 21:30 | 22:14 |
| 13 | 08:54 | | 12:00 (35) | 08:04 | | 11:47 (35) | 06:57 | | 17:14 (10) | 06:38 | | 18:33 (11) | 05:30 | 04:53 |
| | 16:31 | 43 | 12:43 (35) | 17:34 | 136 | 16:07 (6) | 18:32 | 9 | 17:23 (10) | 20:33 | 35 | 19:08 (11) | 21:31 | 22:15 |
| 14 | 08:53 | | 12:00 (35) | 08:01 | | 11:46 (35) | 06:54 | | | 06:35 | | 18:34 (11) | 05:28 | 04:53 |
| | 16:33 | 45 | 12:45 (35) | 17:36 | 138 | 16:07 (6) | 18:34 | | | 20:35 | 33 | 19:07 (11) | 21:33 | 22:15 |
| 15 | 08:52 | | 11:58 (35) | 07:59 | | 11:47 (35) | 06:52 | | | 06:33 | | 18:36 (11) | 05:27 | 04:53 |
| | 16:35 | 48 | 12:46 (35) | 17:38 | 136 | 16:07 (6) | 18:36 | | | 20:37 | 29 | 19:05 (11) | 21:35 | 22:16 |
| 16 | 08:51 | | 11:58 (35) | 07:57 | | 11:47 (35) | 06:49 | | | 06:30 | | 18:37 (11) | 05:25 | 04:52 |
| | 16:36 | 50 | 12:48 (35) | 17:40 | 136 | 16:07 (6) | 18:38 | | | 20:39 | 26 | 19:03 (11) | 21:37 | 22:17 |
| 17 | 08:50 | | 11:58 (35) | 07:55 | | 11:47 (35) | 06:46 | | | 06:28 | | 18:40 (11) | 05:23 | 04:52 |
| | 16:38 | 51 | 12:49 (35) | 17:42 | 134 | 16:06 (6) | 18:40 | | | 20:41 | 20 | 19:00 (11) | 21:39 | 22:17 |
| 18 | 08:49 | | 11:56 (35) | 07:53 | | 11:47 (35) | 06:44 | | | 06:25 | | 18:43 (11) | 05:21 | 04:52 |
| | 16:40 | 54 | 12:50 (35) | 17:44 | 133 | 16:06 (6) | 18:42 | | | 20:43 | 13 | 18:56 (11) | 21:40 | 22:18 |
| 19 | 08:48 | | 11:56 (35) | 07:50 | | 11:48 (35) | 06:41 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 56 | 12:52 (35) | 17:46 | 132 | 16:06 (6) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 11:55 (35) | 07:48 | | 11:48 (35) | 06:39 | | 17:49 (11) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | 58 | 12:53 (35) | 17:49 | 130 | 16:05 (6) | 18:46 | 17 | 18:06 (11) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | 11:55 (35) | 07:46 | | 11:48 (35) | 06:36 | | 17:46 (11) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 69 | 15:41 (6) | 17:51 | 127 | 16:04 (6) | 18:48 | 23 | 18:09 (11) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 11:54 (35) | 07:43 | | 11:48 (35) | 06:34 | | 17:43 (11) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 78 | 15:45 (6) | 17:53 | 125 | 16:03 (6) | 18:50 | 28 | 18:11 (11) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | 11:53 (35) | 07:41 | | 11:49 (35) | 06:31 | | 17:40 (11) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 85 | 15:47 (6) | 17:55 | 130 | 17:26 (10) | 18:52 | 32 | 18:12 (11) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 11:53 (35) | 07:39 | | 11:49 (35) | 06:28 | | 17:39 (11) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 91 | 15:50 (6) | 17:57 | 133 | 17:28 (10) | 18:54 | 35 | 18:14 (11) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | 11:52 (35) | 07:36 | | 11:50 (35) | 06:26 | | 17:37 (11) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 97 | 15:52 (6) | 17:59 | 132 | 17:30 (10) | 18:56 | 38 | 18:15 (11) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | 11:52 (35) | 07:34 | | 11:51 (35) | 06:23 | | 17:36 (11) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 100 | 15:54 (6) | 18:01 | 132 | 17:33 (10) | 18:58 | 40 | 18:16 (11) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 11:51 (35) | 07:31 | | 11:52 (35) | 06:21 | | 17:34 (11) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 105 | 15:55 (6) | 18:03 | 128 | 17:34 (10) | 19:00 | 42 | 18:16 (11) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | 11:51 (35) | 07:29 | | 11:53 (35) | 06:18 | | 17:33 (11) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 109 | 15:57 (6) | 18:05 | 123 | 17:35 (10) | 19:02 | 43 | 18:16 (11) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 11:51 (35) | | | | 07:16 | | 18:33 (11) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | 112 | 15:58 (6) | | | | 20:04 | 50 | 19:36 (9) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 11:50 (35) | | | | 07:13 | | 18:31 (11) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 116 | 16:00 (6) | | | | 20:06 | 57 | 19:38 (9) | 21:07 | | | 21:59 | 22:18 |
| 31 | 08:29 | | 11:50 (35) | | | | 07:10 | | 18:31 (11) | | | | 05:03 | |
| | 17:06 | 118 | 16:01 (6) | | | | 20:08 | 60 | 19:40 (9) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 1755 | | | 3675 | | | 1238 | | | 912 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,21 | | | 0,34 | | | 0,67 | | | 0,99 | | | |
| Total reduction | | 0,03 | | | 0,07 | | | 0,19 | | | 0,33 | | | |
| Total, real | | 56 | | | 258 | | | 239 | | | 304 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut downShadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 18:30 (11) | 07:35 | | 17:51 (10) | 07:37 | | 11:16 (35) | 08:35 | | 11:44 (35) |
| | 22:18 | | 21:40 | | 20:29 | 53 | 19:37 (9) | 19:12 | 14 | 18:05 (10) | 16:58 | 136 | 15:36 (6) | 16:10 | 38 | 12:22 (35) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 18:29 (11) | 07:36 | | 17:49 (10) | 07:39 | | 11:17 (35) | 08:37 | | 11:46 (35) |
| | 22:17 | | 21:38 | | 20:27 | 57 | 19:38 (9) | 19:09 | 18 | 18:07 (10) | 16:56 | 135 | 15:36 (6) | 16:09 | 35 | 12:21 (35) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 18:28 (11) | 07:38 | | 17:47 (10) | 07:41 | | 11:17 (35) | 08:38 | | 11:48 (35) |
| | 22:17 | | 21:36 | | 20:24 | 62 | 19:40 (9) | 19:07 | 21 | 18:08 (10) | 16:54 | 134 | 15:36 (6) | 16:08 | 33 | 12:21 (35) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 18:27 (11) | 07:40 | | 17:45 (10) | 07:43 | | 11:17 (35) | 08:40 | | 11:49 (35) |
| | 22:16 | | 21:34 | | 20:22 | 64 | 19:40 (9) | 19:04 | 24 | 18:09 (10) | 16:52 | 132 | 15:35 (6) | 16:08 | 30 | 12:19 (35) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 18:27 (11) | 07:42 | | 12:50 (35) | 07:45 | | 11:18 (35) | 08:41 | | 11:51 (35) |
| | 22:16 | | 21:32 | | 20:19 | 67 | 19:41 (9) | 19:02 | 48 | 18:10 (10) | 16:49 | 131 | 15:35 (6) | 16:07 | 27 | 12:18 (35) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 18:25 (11) | 07:44 | | 12:44 (35) | 07:47 | | 11:18 (35) | 08:43 | | 11:54 (35) |
| | 22:15 | | 21:30 | | 20:17 | 69 | 19:40 (9) | 18:59 | 61 | 18:10 (10) | 16:47 | 130 | 15:35 (6) | 16:06 | 23 | 12:17 (35) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 18:24 (11) | 07:46 | | 12:40 (35) | 07:49 | | 11:19 (35) | 08:44 | | 11:55 (35) |
| | 22:14 | | 21:28 | | 20:14 | 70 | 19:40 (9) | 18:57 | 70 | 18:10 (10) | 16:46 | 128 | 15:34 (6) | 16:06 | 20 | 12:15 (35) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 18:24 (11) | 07:48 | | 12:37 (35) | 07:51 | | 11:19 (35) | 08:45 | | 11:59 (35) |
| | 22:14 | | 21:26 | | 20:11 | 70 | 19:40 (9) | 18:54 | 76 | 18:10 (10) | 16:44 | 125 | 15:33 (6) | 16:05 | 15 | 12:14 (35) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 18:24 (11) | 07:50 | | 12:34 (35) | 07:53 | | 11:20 (35) | 08:47 | | 12:02 (35) |
| | 22:13 | | 21:23 | | 20:09 | 70 | 19:40 (9) | 18:52 | 82 | 18:10 (10) | 16:42 | 123 | 15:33 (6) | 16:05 | 9 | 12:11 (35) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 18:24 (11) | 07:52 | | 12:32 (35) | 07:55 | | 11:20 (35) | 08:48 | | |
| | 22:12 | | 21:21 | | 20:06 | 67 | 19:38 (9) | 18:49 | 86 | 18:10 (10) | 16:40 | 121 | 15:32 (6) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 18:23 (11) | 07:54 | | 12:30 (35) | 07:57 | | 11:21 (35) | 08:49 | | |
| | 22:11 | | 21:19 | | 20:04 | 64 | 19:34 (9) | 18:47 | 94 | 18:09 (10) | 16:38 | 117 | 15:31 (6) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 18:23 (11) | 07:56 | | 12:28 (35) | 07:59 | | 11:21 (35) | 08:50 | | |
| | 22:10 | | 21:17 | | 20:01 | 61 | 19:32 (9) | 18:44 | 110 | 18:09 (10) | 16:36 | 115 | 15:30 (6) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | 07:00 | | 18:23 (11) | 07:58 | | 12:26 (35) | 08:01 | | 11:23 (35) | 08:51 | | |
| | 22:09 | | 21:15 | | 19:59 | 56 | 19:29 (9) | 18:42 | 119 | 18:08 (10) | 16:34 | 112 | 15:30 (6) | 16:04 | | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 18:23 (11) | 08:00 | | 12:25 (35) | 08:03 | | 11:23 (35) | 08:53 | | |
| | 22:08 | | 21:12 | | 19:56 | 51 | 19:27 (9) | 18:39 | 126 | 18:07 (10) | 16:33 | 109 | 15:29 (6) | 16:04 | | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 18:23 (11) | 08:02 | | 12:23 (35) | 08:05 | | 11:24 (35) | 08:54 | | |
| | 22:07 | | 21:10 | | 19:53 | 45 | 19:24 (9) | 18:37 | 129 | 18:05 (10) | 16:31 | 105 | 15:28 (6) | 16:04 | | |
| 16 | 05:14 | | 06:07 | | 07:06 | | 18:24 (11) | 08:04 | | 12:22 (35) | 08:07 | | 11:25 (35) | 08:54 | | |
| | 22:05 | | 21:08 | | 19:51 | 42 | 19:06 (11) | 18:34 | 131 | 18:03 (10) | 16:29 | 99 | 15:26 (6) | 16:04 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:23 (11) | 08:06 | | 12:22 (35) | 08:09 | | 11:26 (35) | 08:55 | | |
| | 22:04 | | 21:06 | | 19:48 | 41 | 19:04 (11) | 18:32 | 133 | 18:02 (10) | 16:28 | 97 | 15:26 (6) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:24 (11) | 08:08 | | 12:21 (35) | 08:11 | | 11:27 (35) | 08:56 | | |
| | 22:03 | | 21:03 | | 19:46 | 38 | 19:02 (11) | 18:30 | 132 | 17:59 (10) | 16:26 | 91 | 15:24 (6) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:25 (11) | 08:10 | | 12:20 (35) | 08:13 | | 11:28 (35) | 08:57 | | |
| | 22:01 | | 21:01 | | 19:43 | 36 | 19:01 (11) | 18:27 | 126 | 17:55 (10) | 16:25 | 85 | 15:22 (6) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | 07:14 | | 18:26 (11) | 08:12 | | 12:19 (35) | 08:15 | | 11:29 (35) | 08:58 | | |
| | 22:00 | | 20:59 | | 19:40 | 33 | 18:59 (11) | 18:25 | 79 | 13:38 (35) | 16:23 | 78 | 15:20 (6) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:28 (11) | 08:14 | | 12:18 (35) | 08:17 | | 11:30 (35) | 08:58 | | |
| | 21:58 | | 20:56 | | 19:38 | 29 | 18:57 (11) | 18:22 | 80 | 13:38 (35) | 16:22 | 69 | 15:16 (6) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | 07:17 | | 18:30 (11) | 08:16 | | 12:18 (35) | 08:19 | | 11:31 (35) | 08:59 | | |
| | 21:57 | | 20:54 | | 19:35 | 25 | 18:55 (11) | 18:20 | 80 | 13:38 (35) | 16:20 | 58 | 12:29 (35) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:32 (11) | 08:18 | | 12:17 (35) | 08:21 | | 11:32 (35) | 08:59 | | |
| | 21:55 | | 20:51 | | 19:33 | 20 | 18:52 (11) | 18:18 | 81 | 13:38 (35) | 16:19 | 56 | 12:28 (35) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 18:37 (11) | 08:20 | | 12:18 (35) | 08:23 | | 11:33 (35) | 09:00 | | |
| | 21:54 | | 20:49 | | 19:30 | 9 | 18:46 (11) | 18:15 | 81 | 13:39 (35) | 16:18 | 54 | 12:27 (35) | 16:07 | | |
| 25 | 05:28 | | 06:24 | | 18:46 (11) | | | 07:23 | | 11:17 (35) | 08:24 | | 11:36 (35) | 09:00 | | |
| | 21:52 | | 20:47 | 14 | 19:00 (11) | | | 19:28 | | 12:39 (35) | 16:16 | 51 | 12:27 (35) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 18:43 (11) | | | 07:25 | | 11:17 (35) | 08:26 | | 11:37 (35) | 09:00 | | |
| | 21:50 | | 20:44 | 20 | 19:03 (11) | | | 19:25 | | 12:39 (35) | 16:15 | 50 | 12:27 (35) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 18:39 (11) | | | 07:27 | | 11:16 (35) | 08:28 | | 11:38 (35) | 09:01 | | |
| | 21:49 | | 20:42 | 26 | 19:05 (11) | | | 19:22 | | 12:38 (35) | 16:14 | 48 | 12:26 (35) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 18:37 (11) | | | 07:29 | | 11:16 (35) | 08:30 | | 11:39 (35) | 09:01 | | |
| | 21:47 | | 20:39 | 29 | 19:06 (11) | | | 19:20 | | 12:38 (35) | 16:13 | 45 | 12:24 (35) | 16:10 | | |
| 29 | 05:34 | | 06:32 | | 18:35 (11) | | | 07:31 | | 11:17 (35) | 08:32 | | 11:40 (35) | 09:01 | | |
| | 21:45 | | 20:37 | 33 | 19:08 (11) | | | 19:17 | | 12:39 (35) | 16:12 | 43 | 12:23 (35) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 18:34 (11) | | | 07:33 | | 11:16 (35) | 08:33 | | 11:42 (35) | 09:01 | | |
| | 21:43 | | 20:34 | 35 | 19:09 (11) | | | 19:15 | | 12:39 (35) | 16:11 | 41 | 12:23 (35) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 18:32 (11) | | | | | 11:16 (35) | | | | 09:01 | | |
| | 21:42 | | 20:32 | 44 | 19:35 (9) | | | | | 15:36 (6) | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | |
| Total, worst case | | | | 201 | | | 1203 | | | 2577 | | | 2818 | | | 230 |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,30 | | | 0,27 | | | 0,10 |
| Total reduction | | | | 0,44 | | | 0,34 | | | 0,08 | | | 0,04 | | | 0,01 |
| Total, real | | | | 88 | | | 403 | | | 202 | | | 102 | | | 3 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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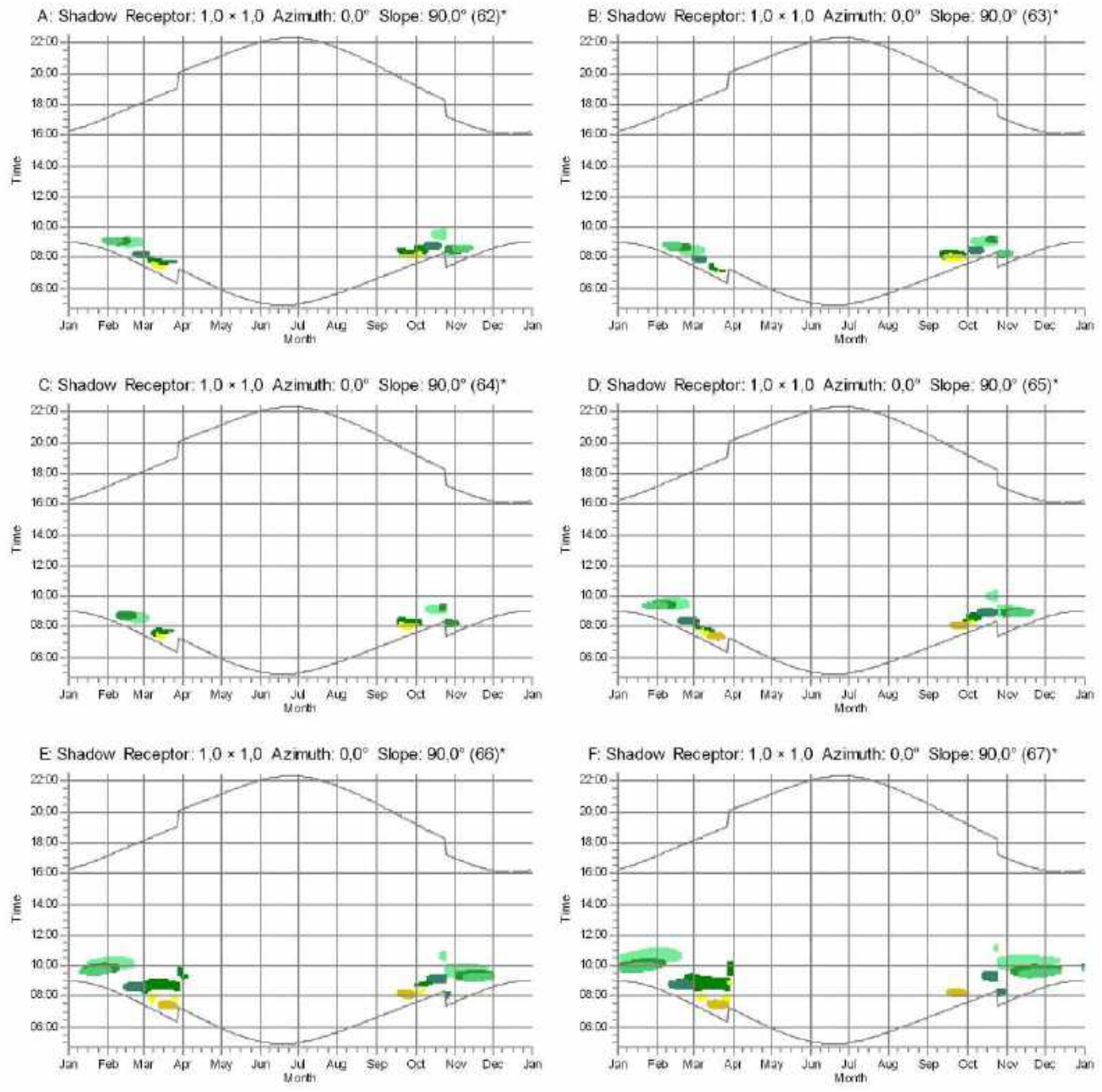
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down




* Results reduced by flicker curtailment

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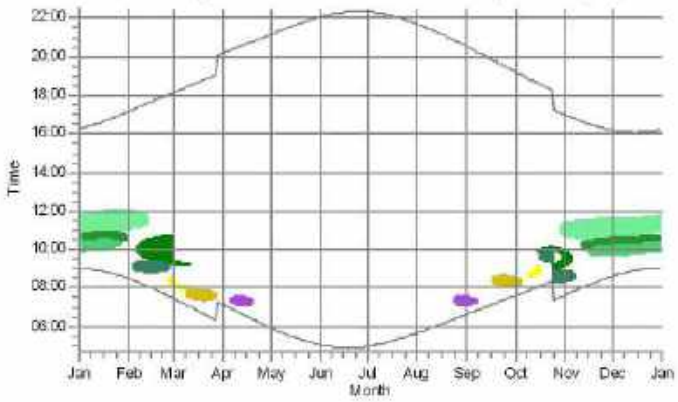
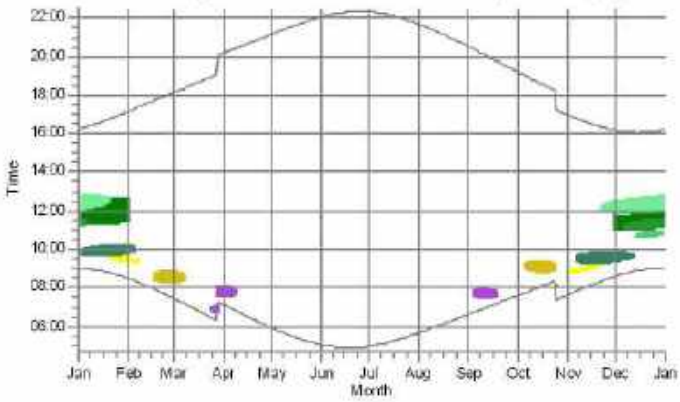
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down

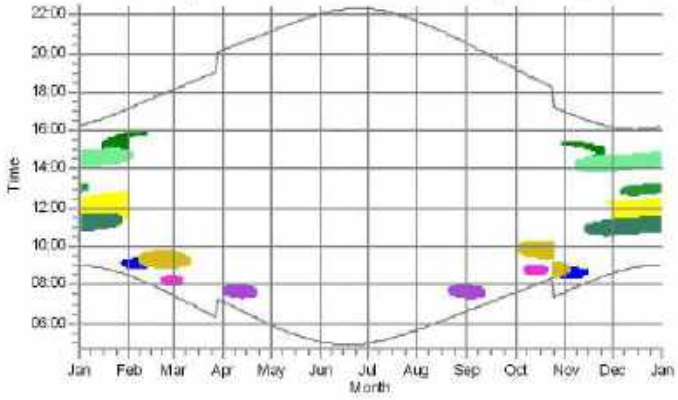
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*



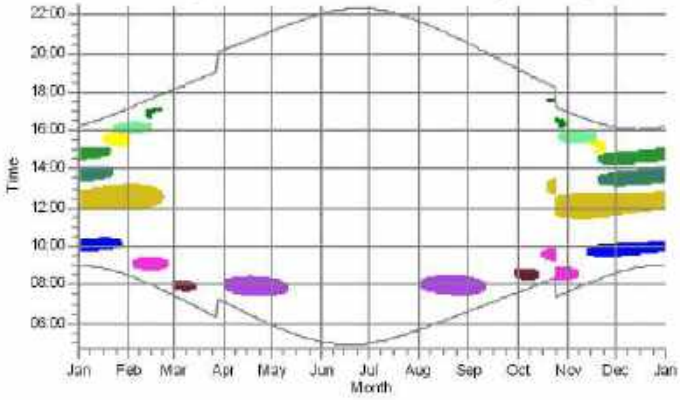

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*



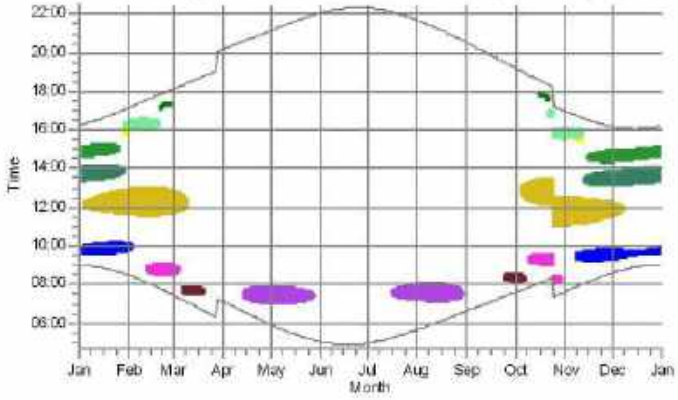

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*



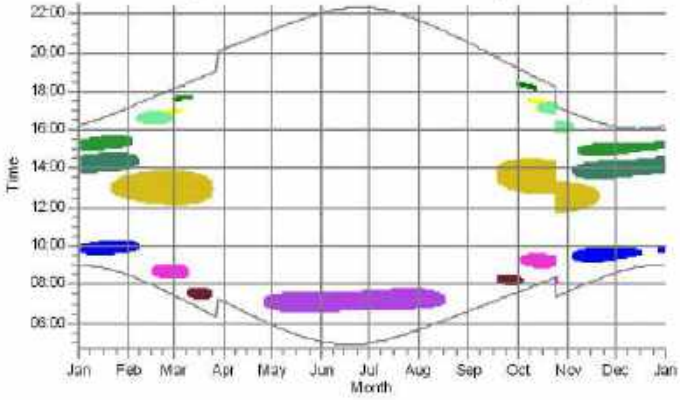

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
43: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

* Results reduced by flicker curtailment

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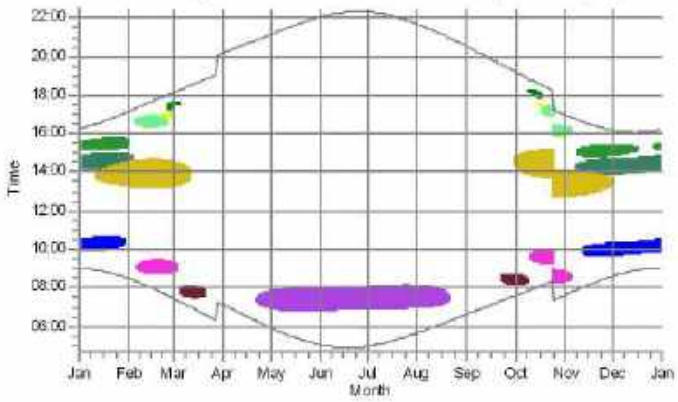
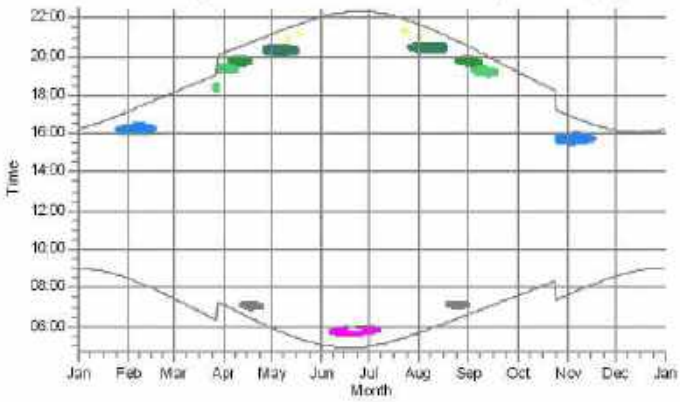
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138 shut down

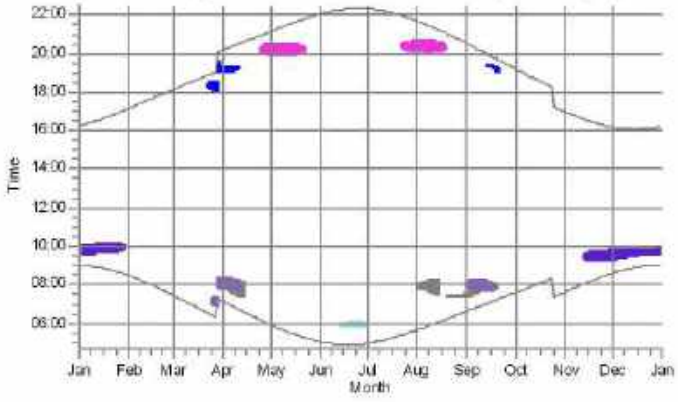
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*



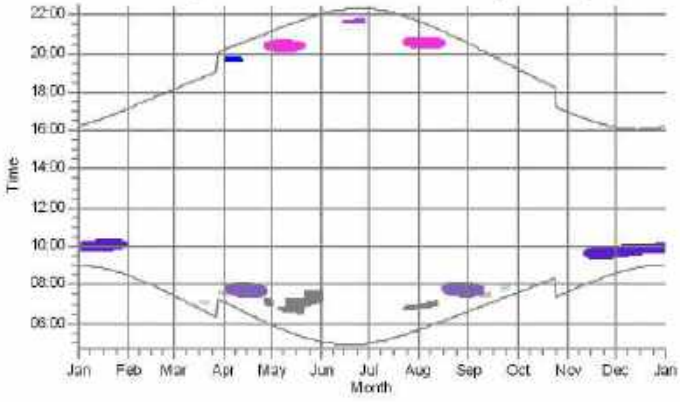

N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*



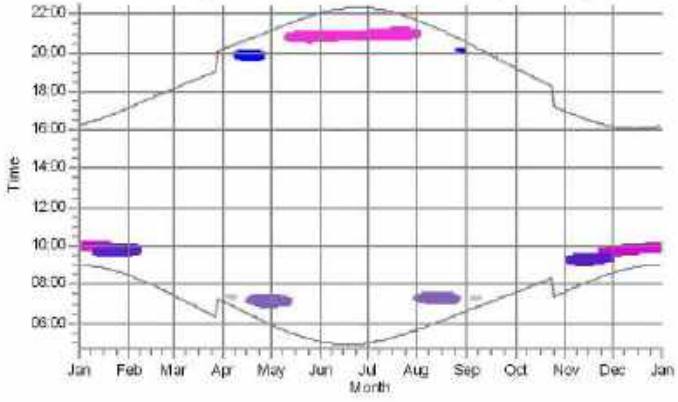

O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*



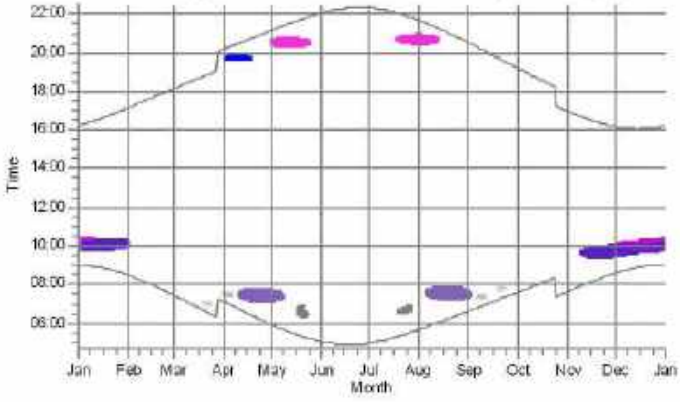

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*




Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*




R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)
34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
43: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

* Results reduced by flicker curtailment

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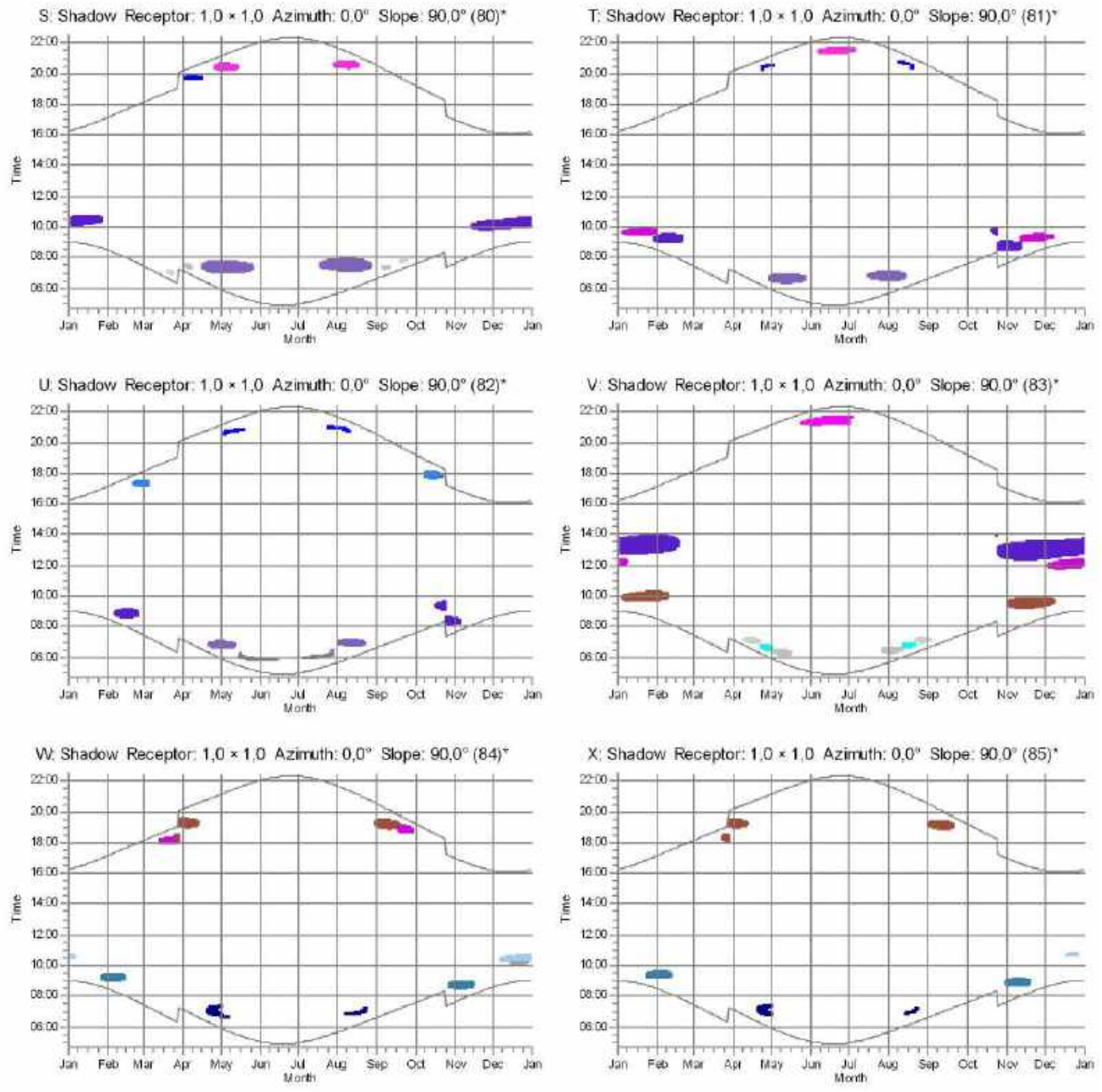
# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down




* Results reduced by flicker curtailment

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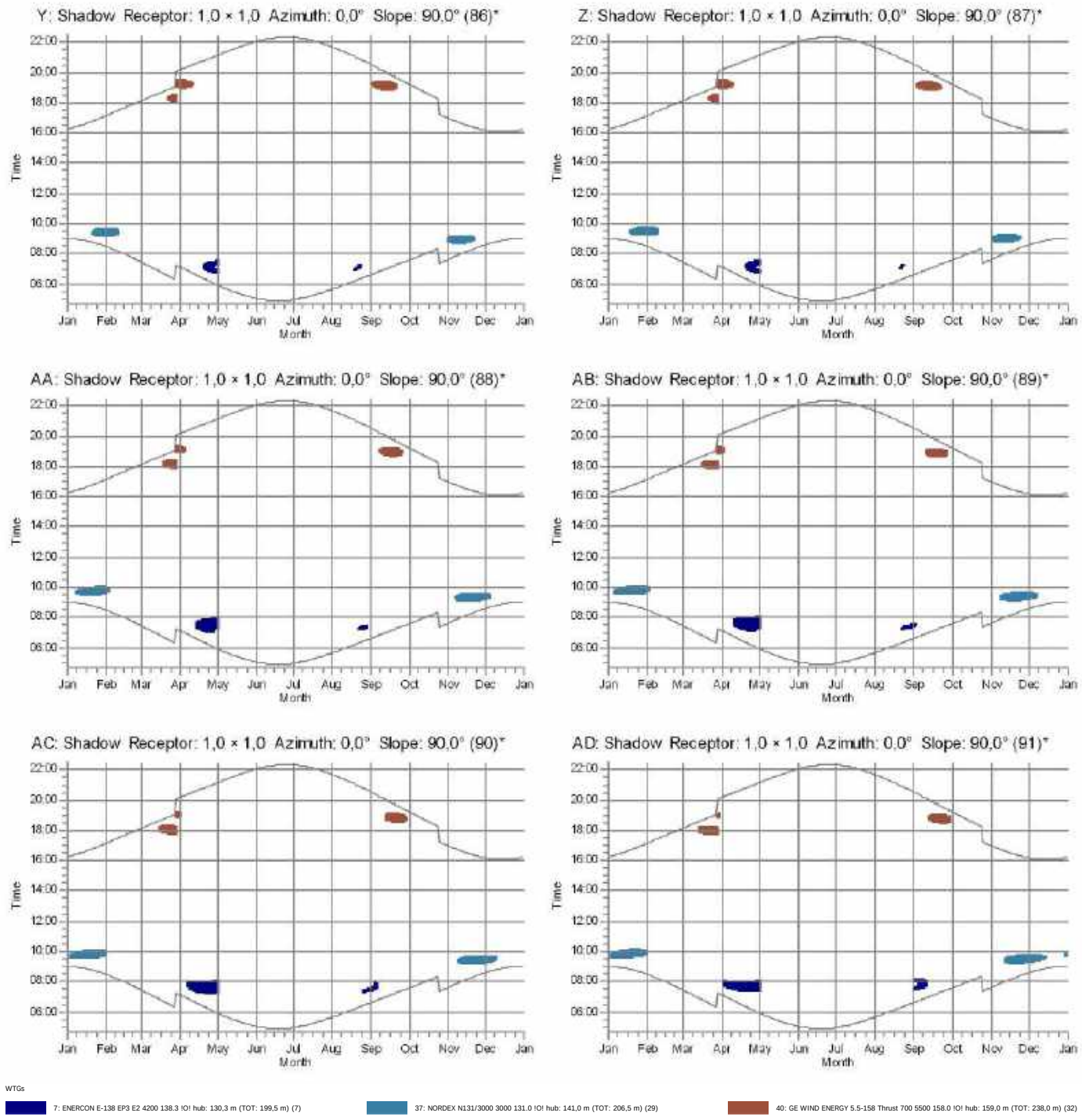
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down

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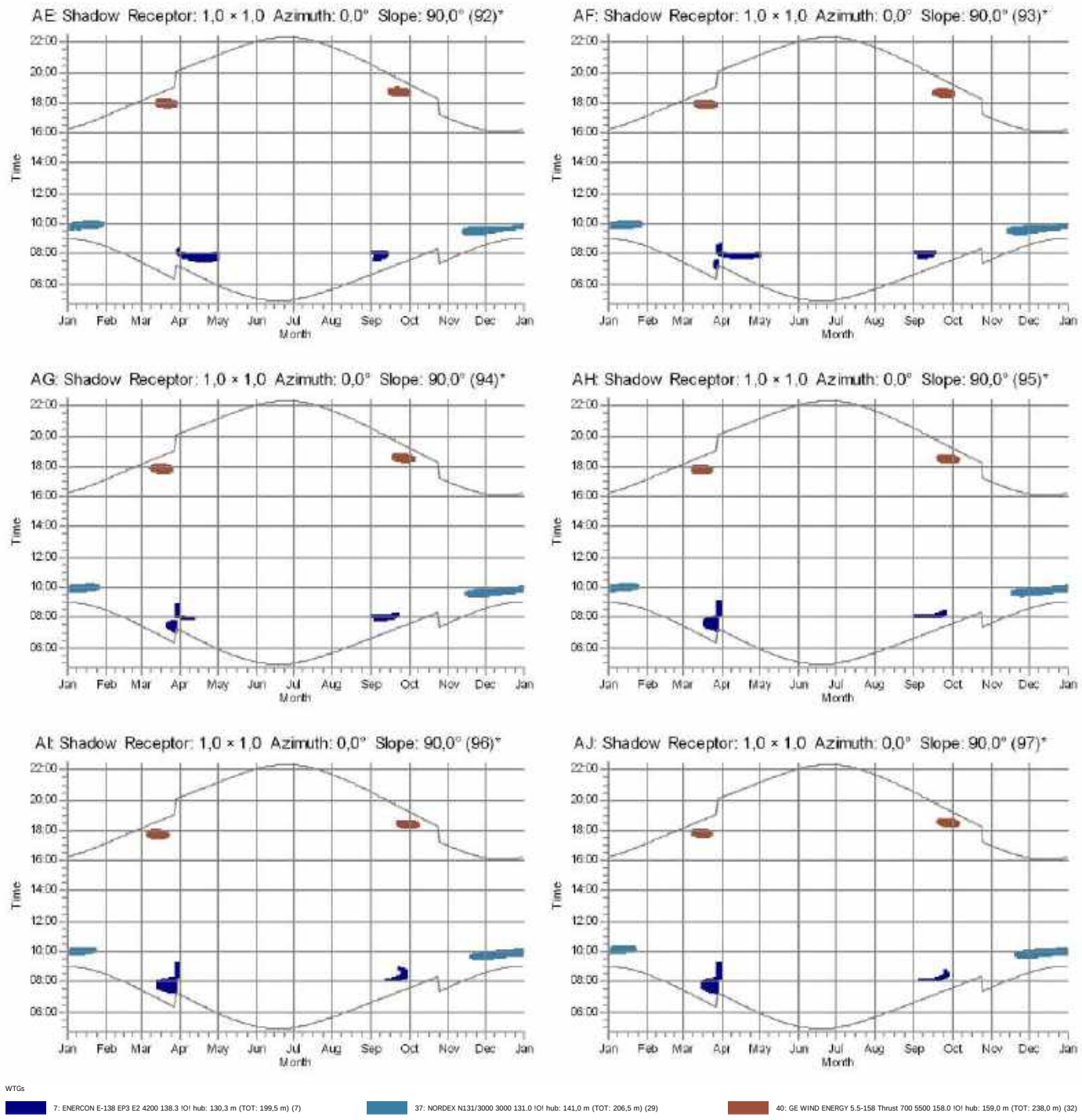
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down




* Results reduced by flicker curtailment

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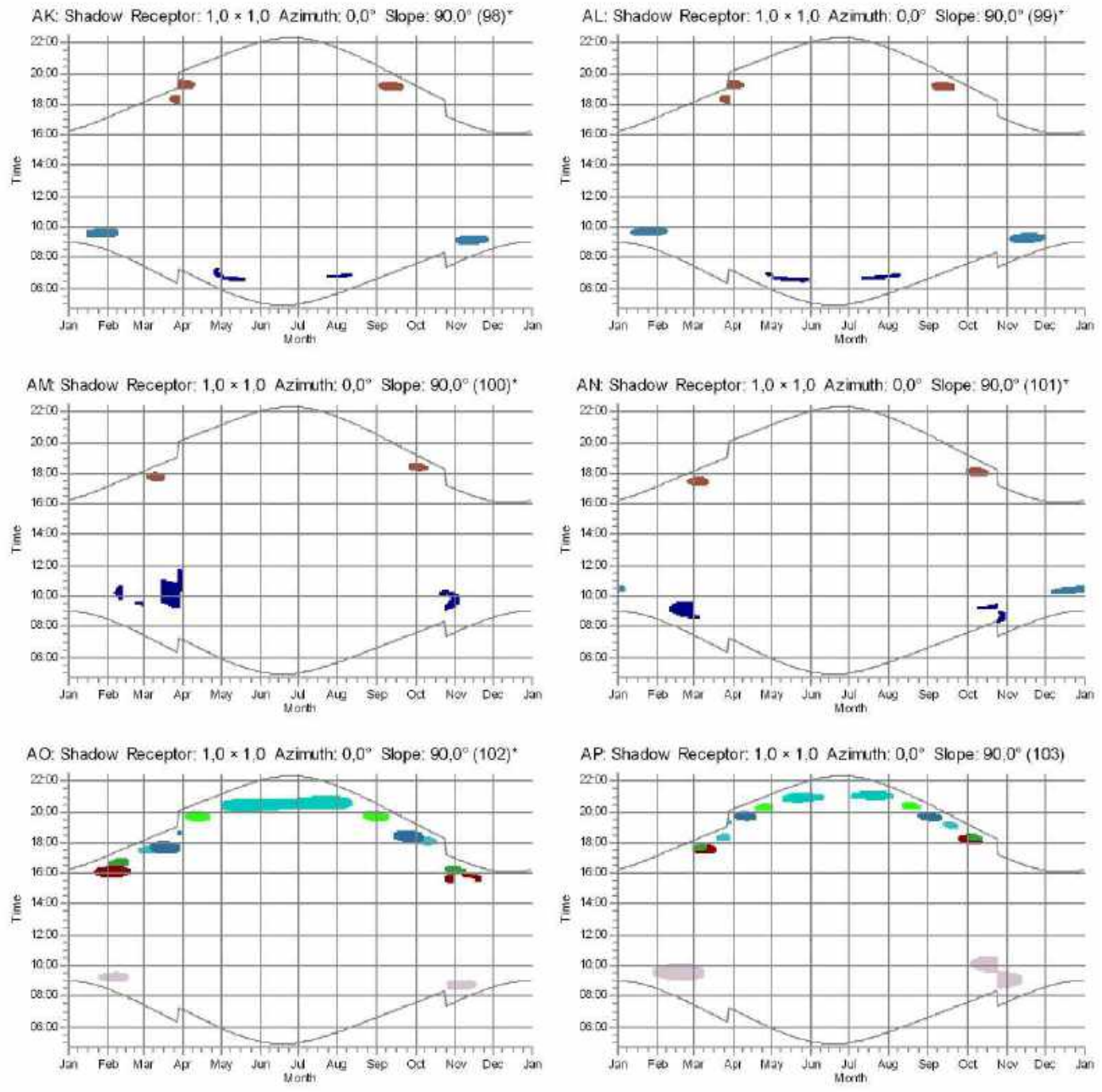
# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down




* Results reduced by flicker curtailment

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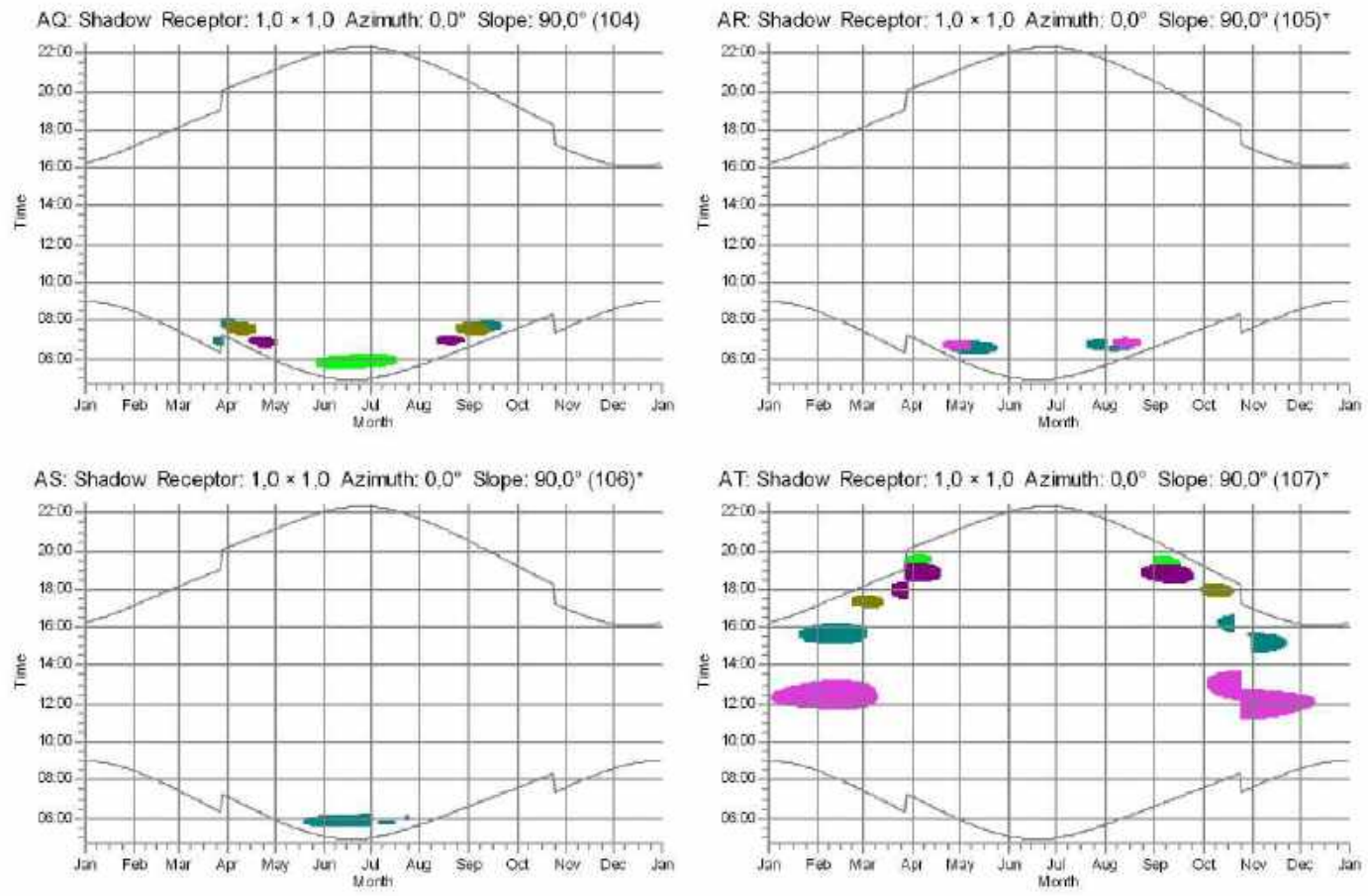
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)
9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)
10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)
11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)
35: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

* Results reduced by flicker curtailment

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62<br>16:14 | 08:28 15:43-15:47/4<br>17:08 | 07:27 17:33-17:35/2<br>18:07 08:17-09:19/62 | 07:08 09:08-09:17/9<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:20-12:22/62<br>16:15 | 08:26 15:44-15:47/3<br>17:10 | 07:24 17:35-17:37/2<br>18:10 08:05-09:18/73 | 07:05 09:11-09:18/7<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:20-12:23/63<br>16:16 | 08:24 15:45-15:48/3<br>17:12 | 07:22 17:35-17:38/3 08:00-08:08/8<br>18:12 08:18-09:17/59 | 07:03 09:15-09:18/3<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:20-12:23/63<br>16:18 | 08:22 15:46-15:49/3<br>17:15 | 07:19 17:37-17:40/3 07:58-08:04/6<br>18:14 08:23-09:17/54 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:21-12:24/63<br>16:19 | 08:20 15:47-15:50/3<br>17:17 | 07:17 17:38-17:41/3 07:48-08:00/12<br>18:16 08:26-09:15/49 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:08 |
| 6 | 08:59 11:21-12:25/64<br>16:20 | 08:18 15:48-15:50/2<br>17:19 | 07:15 17:40-17:42/2 07:45-07:58/13<br>18:18 08:28-09:15/47 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57<br>22:09 |
| 7 | 08:59 11:21-12:25/64<br>16:22 | 08:16 15:49-15:51/2<br>17:21 09:54-10:08/14 | 07:12 17:40-17:43/3 07:42-07:55/13<br>18:20 08:29-09:14/45 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:21-12:25/64<br>16:23 | 08:14 15:49-15:51/2<br>17:23 09:47-10:13/26 | 07:10 17:41-17:43/2 07:39-07:53/14<br>18:22 08:30-09:13/43 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:22-12:27/65<br>16:25 | 08:12 15:50-15:51/1<br>17:25 09:44-10:17/33 | 07:07 17:42-17:43/1 07:33-07:52/19<br>18:24 08:32-09:13/41 | 06:48<br>20:26 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:22-12:28/66<br>16:26 | 08:10 15:51-15:52/1<br>17:27 09:41-10:20/39 | 07:04 17:42-17:43/1 07:29-07:50/21<br>18:26 08:32-09:12/40 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:22-12:28/66<br>16:28 | 08:08 15:51-15:52/1<br>17:30 09:39-10:23/44 | 07:02 17:43-17:44/1 07:27-07:50/23<br>18:28 08:34-09:12/38 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:22-12:28/66<br>16:30 | 08:06 09:36-10:25/49<br>17:32 | 06:59 17:42-17:43/1 07:25-07:48/23<br>18:30 08:34-09:11/37 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:22-12:29/67<br>16:31 | 08:04 16:46-16:58/12<br>17:34 09:34-10:27/53 | 06:57 08:35-09:11/36<br>18:32 07:24-07:48/24 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:22-12:29/67<br>16:33 | 08:02 16:55-17:01/6 09:32-10:29/57<br>17:36 16:43-16:44/1 | 06:54 08:35-09:10/35<br>18:34 07:22-07:47/25 | 06:35<br>20:35 | 05:29<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:23-12:30/67<br>16:35 | 08:00 16:58-17:02/4<br>17:38 09:30-10:30/60 | 06:52 08:34-09:09/35 07:18-07:24/6<br>18:36 07:30-07:46/16 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:22-12:30/68<br>16:36 | 07:57 17:01-17:04/3<br>17:40 09:29-10:32/63 | 06:49 08:35-09:09/34 07:16-07:20/4<br>18:38 07:35-07:46/11 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 15:09-15:21/12<br>16:38 11:23-12:31/68 | 07:55 17:03-17:06/3<br>17:42 09:28-10:34/66 | 06:47 08:34-09:09/35 07:13-07:16/3<br>18:40 07:37-07:45/8 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:07-15:25/18<br>16:40 11:24-12:32/68 | 07:53 17:04-17:06/2<br>17:44 09:26-10:35/69 | 06:44 08:35-09:09/34 07:12-07:15/3<br>18:42 07:39-07:45/6 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:04-15:28/24<br>16:42 11:23-12:32/69 | 07:51 17:05-17:07/2<br>17:47 09:25-10:36/71 | 06:42 08:34-09:08/34 07:11-07:13/2<br>18:44 07:40-07:44/4 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:03-15:30/27<br>16:44 11:24-12:32/68 | 07:48 17:07-17:08/1<br>17:49 09:24-10:38/74 | 06:39 08:33-09:08/35 07:09-07:11/2<br>18:46 07:41-07:44/3 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:01-15:32/31<br>16:46 11:24-12:32/68 | 07:46 17:07-17:14/7<br>17:51 09:22-10:38/76 | 06:36 08:33-09:08/35 07:09-07:10/1<br>18:48 07:42-07:44/2 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 14:59-15:34/35<br>16:48 11:24-12:32/68 | 07:44 17:12-17:17/5 08:50-09:09/19<br>17:53 09:22-10:39/77 | 06:34 08:32-09:08/36 07:08-07:09/1<br>18:50 07:42-07:44/2 | 06:16<br>20:51 | 05:15<br>21:48 | 04:53<br>22:19 |
| 23 | 08:42 14:59-15:36/37<br>16:50 11:25-12:33/68 | 07:41 17:15-17:19/4 08:45-09:13/28<br>17:55 09:20-10:40/80 | 06:31 08:32-09:08/36 07:08-07:09/1<br>18:52 07:43-07:44/1 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 14:57-15:37/40<br>16:52 11:25-12:33/68 | 07:39 17:17-17:21/4 08:42-09:16/34<br>17:57 09:20-10:41/81 | 06:29 08:31-09:08/37<br>18:54 07:42-07:44/2 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 14:56-15:39/43<br>16:54 11:25-12:33/68 | 07:36 17:18-17:21/3<br>17:59 08:39-10:41/122 | 06:26 08:29-09:08/39 07:42-07:44/2<br>18:56 07:06-07:07/1 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 14:56-15:41/45<br>16:56 11:26-12:34/68 | 07:34 17:20-17:30/10<br>18:01 08:29-10:42/133 | 06:23 08:28-09:08/40<br>18:58 07:42-07:45/3 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 14:55-15:42/47<br>16:58 11:26-12:34/68 | 07:32 17:28-17:32/4<br>18:03 08:23-10:42/139 | 06:21 08:27-09:08/41<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 14:54-15:43/49<br>17:00 11:27-12:34/67 | 07:29 17:31-17:34/3<br>18:05 08:20-10:43/143 | 06:18 08:26-09:09/43<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 14:54-15:44/50<br>17:02 11:27-12:34/67 | | 07:16 09:24-10:09/45<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 14:53-15:45/52<br>17:04 11:27-12:34/67 | | 07:13 09:22-10:10/48<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 14:52-15:46/54<br>17:06 11:28-12:33/65 | | 07:11 09:19-10:09/50<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 1749 | 1625 | 19 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 08:03-08:44/41 | 07:37 15:20-15:21/1 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 09:11-09:49/38 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 18:21-18:22/1 | 07:39 15:19-15:21/2 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-08:44/40 | 16:56 09:14-09:46/32 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 18:20-18:21/1 | 07:41 15:19-15:20/1 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-08:45/39 | 16:54 09:17-09:42/25 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 18:19-18:21/2 | 07:43 15:19-15:21/2 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-08:45/37 | 16:52 09:25-09:36/11 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 18:18-18:20/2 | 07:45 15:18-15:20/2 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-08:46/30 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 18:17-18:19/2 | 07:47 15:17-15:19/2 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-08:47/30 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 18:16-18:18/2 | 07:49 15:16-15:19/3 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:19-08:48/29 | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 18:14-18:17/3 | 07:51 15:16-15:19/3 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:21-08:49/28 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 18:12-18:15/3 08:26-08:30/4 | 07:53 15:15-15:18/3 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:31-08:50/19 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 08:07-08:18/11 | 07:52 18:10-18:13/3 | 07:55 15:14-15:17/3 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 | 18:49 08:33-08:52/19 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 08:04-08:21/17 | 07:54 18:09-18:11/2 | 07:57 15:12-15:16/4 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:35-08:54/19 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 08:02-08:23/21 | 07:56 18:07-18:09/2 08:41-08:46/5 | 07:59 15:12-15:17/5 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:49-08:56/7 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 07:59-08:23/24 | 07:58 18:05-18:08/3 | 08:01 15:11-15:16/5 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:51-09:00/9 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 07:58-08:24/26 | 08:00 18:02-18:06/4 | 08:03 15:09-15:15/6 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 | 18:39 08:54-09:07/13 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 07:57-08:25/28 | 08:02 17:59-18:04/5 | 08:06 15:08-15:14/6 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:58-09:08/10 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 07:56-08:25/29 | 08:04 17:52-18:01/9 09:05-09:08/3 | 08:08 15:07-15:14/7 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 | 18:35 09:52-09:55/3 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 07:55-08:26/31 | 08:06 17:50-17:53/3 | 08:10 15:06-15:12/6 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 08:31-08:34/3 | 18:32 09:51-09:56/5 | 16:28 14:30-14:31/1 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-08:33/38 | 08:08 17:48-17:51/3 | 08:11 15:04-15:11/7 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-09:57/6 | 16:26 14:31-14:33/2 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-08:31/37 | 08:10 17:45-17:49/4 | 08:13 15:01-15:10/9 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:52-09:57/5 | 16:25 14:33-14:36/3 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-08:30/37 | 08:12 17:41-17:47/6 | 08:15 14:59-15:09/10 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:52-09:59/7 | 16:23 14:34-14:38/4 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 07:53-08:29/36 | 08:14 17:37-17:43/6 | 08:17 14:56-15:08/12 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 | 18:23 09:53-10:00/7 | 16:22 14:37-14:44/7 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 07:53-08:29/36 | 08:16 17:37-17:38/1 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 | 18:20 09:55-10:02/7 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 07:54-08:28/34 | 08:18 17:35-17:37/2 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 | 18:18 09:56-10:03/7 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 07:54-08:28/34 | 08:20 17:34-17:36/2 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 | 18:16 09:56-10:05/9 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 07:55-08:28/33 | 07:22 16:32-16:35/3 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 | 17:13 08:57-09:06/9 | 16:16 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 07:56-08:27/31 | 07:24 16:30-16:33/3 | 08:27 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 | 17:11 08:59-09:08/9 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 07:57-08:27/30 | 07:26 16:28-16:32/4 09:01-09:12/11 | 08:28 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:59-10:00/1 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 07:59-08:27/28 | 07:29 16:24-16:30/6 09:56-09:58/2 | 08:30 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 | 17:07 16:13-16:15/2 09:02-09:14/12 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 08:01-08:26/25 | 07:31 16:16-16:26/10 09:04-09:17/13 | 08:32 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 | 17:04 09:52-09:56/4 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 08:03-08:27/24 | 07:33 09:47-09:54/7 | 08:34 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 | 17:02 09:06-09:21/15 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 15:21-15:22/1 09:09-09:29/20 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 09:41-09:52/11 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 613 | 652 | 304 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:57-16:06/9<br>17:08 09:23-09:25/2 | 07:27 16:56-16:57/1<br>18:07 08:07-08:13/6 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:59-16:08/9<br>17:10 09:22-09:24/2 | 07:24 16:57-16:58/1<br>18:10 08:05-08:10/5 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 16:02-16:10/8<br>17:12 09:22-09:24/2 | 07:22 16:57-16:58/1<br>18:12 08:03-08:07/4 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 16:05-16:12/7<br>17:15 09:22-09:23/1 | 07:19 16:57-16:58/1<br>18:14 08:02-08:06/4 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 16:07-16:13/6<br>17:17 09:22-09:23/1 | 07:17 07:51-08:04/13<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 16:10-16:15/5<br>17:19 09:21-09:23/2 | 07:14 07:47-08:03/16<br>18:18 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 16:10-16:15/5<br>17:21 | 07:12 07:41-08:01/20<br>18:20 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 16:12-16:17/5<br>17:23 | 07:09 07:47-07:59/12<br>18:22 07:35-07:40/5 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 16:14-16:18/4<br>17:25 | 07:07 07:52-07:59/7<br>18:24 07:32-07:36/4 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 16:15-16:19/4<br>17:27 | 07:04 07:54-07:57/3<br>18:26 07:29-07:33/4 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14<br>17:29 16:17-16:20/3 | 07:02 07:56-07:57/1<br>18:28 07:27-07:32/5 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:32-16:43/11 16:17-16:20/3<br>17:32 16:22-16:28/6 | 06:59 07:24-07:30/6<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 16:39-16:46/7<br>17:34 16:18-16:21/3 | 06:57 07:22-07:29/7<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 16:42-16:48/6<br>17:36 | 06:54 07:19-07:27/8<br>18:34 | 06:35<br>20:35 | 05:29<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 16:44-16:49/5<br>17:38 | 06:52 07:16-07:26/10<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 16:47-16:51/4<br>17:40 | 06:49 07:21-07:26/5<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 16:49-16:53/4<br>17:42 | 06:47 07:24-07:25/1<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 16:49-16:53/4<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 16:51-16:54/3<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 21:08-21:09/1<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 16:53-16:55/2<br>17:49 | 06:39 07:03-07:04/1<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 16:53-16:55/2<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 16:54-16:56/2<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 16:54-16:56/2<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 16:55-16:57/2<br>17:57 | 06:29 07:53-07:54/1<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 16:55-16:56/1<br>17:59 | 06:26 07:51-07:54/3<br>18:56 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 16:56-16:57/1<br>18:01 | 06:23 07:50-07:55/5<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 16:56-16:57/1<br>18:03 08:13-08:28/15 | 06:21 07:47-07:56/9<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 16:56-16:58/2<br>18:05 08:10-08:32/22 | 06:18 07:44-07:57/13<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 197 | 189 | 0 | 3 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:03/1<br>21:40 | 06:38<br>20:30 | 07:35 08:02-08:14/12<br>19:12 | 07:37 15:45-15:48/3<br>16:58 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 08:04-08:15/11<br>19:10 | 07:39 15:43-15:47/4<br>16:56 08:50-08:51/1 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 08:06-08:16/10<br>19:07 | 07:41 15:42-15:46/4<br>16:54 08:50-08:51/1 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 08:08-08:17/9<br>19:05 | 07:43 15:41-15:46/5<br>16:52 08:51-08:52/1 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 08:10-08:19/9<br>19:02 | 07:45 15:39-15:44/5<br>16:50 08:51-08:52/1 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 08:14-08:21/7<br>18:59 | 07:47 15:37-15:43/6<br>16:48 08:51-08:53/2 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:23/3<br>18:57 | 07:49 15:34-15:41/7<br>16:46 08:51-08:53/2 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 17:32-17:33/1<br>18:54 | 07:51 15:33-15:41/8<br>16:44 08:53-08:55/2 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 15:29-15:39/10<br>16:42 08:53-08:55/2 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 17:31-17:32/1<br>18:49 08:36-08:41/5 | 07:55 15:28-15:36/8<br>16:40 08:53-08:56/3 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:30-17:31/1<br>18:47 08:38-08:42/4 | 07:57 15:27-15:34/7<br>16:38 08:54-08:57/3 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:29-17:31/2<br>18:44 08:39-08:45/6 | 07:59 15:27-15:31/4<br>16:36 08:56-08:59/3 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:29-17:30/1<br>18:42 08:41-08:48/7 | 08:01 15:26-15:29/3<br>16:34 08:56-09:00/4 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02 07:59-08:04/5<br>19:56 | 08:00 17:28-17:30/2 08:44-08:55/11<br>18:39 09:00-09:04/4 | 08:03 15:25-15:28/3<br>16:33 08:57-09:01/4 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04 07:55-08:07/12<br>19:54 | 08:02 17:29-17:30/1<br>18:37 08:48-09:00/12 | 08:05 15:23-15:27/4<br>16:31 08:58-09:03/5 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06 07:53-08:09/16<br>19:51 | 08:04 17:28-17:29/1<br>18:35 | 08:07 15:23-15:27/4<br>16:29 09:00-09:05/5 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 07:51-08:10/19<br>19:48 | 08:06 17:27-17:28/1<br>18:32 | 08:09 15:21-15:26/5 09:01-09:07/6<br>16:28 09:30-09:31/1 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 07:50-08:11/21<br>19:46 | 08:08 17:26-17:28/2<br>18:30 | 08:11 15:19-15:25/6 09:03-09:10/7<br>16:26 09:27-09:29/2 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 07:48-08:10/22<br>19:43 | 08:10 17:25-17:27/2<br>18:27 | 08:13 15:17-15:24/7 09:24-09:28/4<br>16:25 14:53-14:54/1 09:04-09:13/9 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 07:48-08:11/23<br>19:41 | 08:12 17:24-17:26/2<br>18:25 | 08:15 15:15-15:23/8 09:06-09:26/20<br>16:23 14:54-14:57/3 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 07:47-08:10/23<br>19:38 | 08:14 17:23-17:25/2<br>18:23 | 08:17 15:12-15:22/10 11:02-11:03/1<br>16:22 14:57-15:02/5 09:10-09:25/15 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 21:18-21:19/1<br>21:57 | 06:19<br>20:54 | 07:18 07:47-08:10/23<br>19:35 | 08:16 17:23-17:25/2<br>18:20 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-11:03/1 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 07:47-08:09/22<br>19:33 | 08:18 17:21-17:24/3<br>18:18 | 08:21 15:01-15:19/18<br>16:19 11:03-11:04/1 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 21:18-21:19/1<br>21:54 | 06:23<br>20:49 | 07:21 07:49-08:08/19<br>19:30 | 08:20 17:19-17:23/4<br>18:16 | 08:23 15:05-15:16/11<br>16:18 11:03-11:05/2 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23 07:51-08:08/17<br>19:28 | 07:22 16:18-16:22/4<br>17:13 | 08:25 11:04-11:06/2<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 07:53-08:08/15<br>19:25 | 07:24 16:16-16:20/4<br>17:11 | 08:27 11:05-11:06/1<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 07:55-08:08/13<br>19:23 | 07:26 16:14-16:19/5<br>17:09 | 08:28 11:05-11:07/2<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 07:57-08:08/11<br>19:20 | 07:29 16:11-16:17/6<br>17:07 | 08:30 11:06-11:08/2<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34<br>21:46 | 06:32<br>20:37 | 07:31 07:58-08:07/9<br>19:17 | 07:31 16:07-16:15/8<br>17:04 15:48-15:52/4 | 08:32 12:14-12:15/1<br>16:12 11:07-11:09/2 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:35 | 07:33 08:00-08:08/8<br>19:15 | 07:33 15:52-16:12/20<br>17:02 15:46-15:49/3 | 08:34 12:14-12:15/1<br>16:11 11:08-11:10/2 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | <br><br> | 07:35 15:56-16:08/12<br>17:00 15:45-15:48/3 | <br><br> | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2 | 1 | 278 | 207 | 309 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:10/25<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:15/12<br>20:10 | 05:55 20:33-20:34/1<br>21:09 | 05:02<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:40-19:44/4<br>20:12 19:03-19:15/12 | 05:53 20:33-20:34/1<br>21:11 | 05:01<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:40-19:46/6<br>20:14 19:03-19:15/12 | 05:51 20:34-20:38/4<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:40-19:48/8<br>20:16 19:04-19:15/11 | 05:48 20:35-20:41/6<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:40-19:49/9<br>20:18 19:03-19:15/12 | 05:46 20:38-20:42/4<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:40-19:52/12<br>20:19 19:05-19:15/10 | 05:44 20:40-20:44/4<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:40-19:53/13<br>20:21 19:05-19:15/10 | 05:42 20:42-20:45/3<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:40-19:54/14<br>20:23 19:07-19:15/8 | 05:40 20:43-20:46/3<br>21:22 | 04:56<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:40-19:57/17<br>20:25 19:08-19:15/7 | 05:38 20:44-20:46/2<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:40-19:59/19<br>20:27 19:13-19:15/2 | 05:36 20:44-20:47/3<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:40-20:01/21<br>20:29 | 05:34 20:45-20:47/2<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:40-20:03/23<br>20:31 | 05:32 20:46-20:48/2<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:40-20:04/24<br>20:33 | 05:30 20:47-20:48/1<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:40-20:06/26<br>20:35 | 05:28 20:47-20:48/1<br>21:33 | 04:53<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:40-20:06/26<br>20:37 | 05:27 20:48-20:49/1<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:40-20:06/26<br>20:39 | 05:25 20:48-20:49/1<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:40-20:06/26<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:48-20:49/1<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:25-20:26/1<br>20:57 19:44-19:58/14 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 19:46-19:55/9<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:29-20:30/1<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:31-20:32/1<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:32-20:33/1<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:15/11<br>20:06 | 05:57 20:32-20:34/2<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:15/11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 352 | 159 | 568 | 40 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:56-20:58/2<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41 20:55-20:57/2<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 20:54-20:57/3<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45 20:54-20:56/2<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47 20:53-20:56/3<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 20:51-20:54/3<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51 20:49-20:53/4<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 20:47-20:51/4<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 20:42-20:48/6<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 20:42-20:45/3<br>21:21 | 06:55<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 20:42-20:43/1<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 20:41-20:43/2<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 20:40-20:41/1<br>21:15 | 07:00<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 20:39-20:41/2<br>21:13 | 07:02 19:21-19:22/1<br>19:56 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06 20:38-20:39/1<br>21:10 | 07:04 19:20-19:22/2<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 19:19-19:21/2<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 19:17-19:19/2<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 20:31-20:32/1<br>21:03 | 07:10 19:14-19:16/2<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13 20:23-20:30/7<br>21:01 | 07:12 19:10-19:14/4<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:59-21:00/1<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26 20:08-20:09/1<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:59-21:00/1<br>21:49 | 06:28 20:07-20:08/1<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:58-20:59/1<br>21:47 | 06:30 20:06-20:07/1<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:58-20:59/1<br>21:45 | 06:32 20:05-20:07/2<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:58-20:59/1<br>21:44 | 06:34 20:04-20:05/1<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:57-20:58/1<br>21:42 | 06:36<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 6 | 53 | 22 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| Day in month | | |
|---|---|---|
| | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | 05:51-05:52/1 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | | 05:01 | 05:51-05:52/1 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | | 05:00 | 05:52-05:53/1 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | | 04:59 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | | 04:58 | 05:51-05:52/1 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-06:45/2 | 04:57 | 05:51-05:52/1 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-06:45/3 | 04:56 | |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-06:45/4 | 04:56 | |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-06:45/5 | 04:55 | 05:52-05:53/1 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-06:45/6 | 04:54 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:15/37 | 04:54 | 05:52-05:53/1 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:15/37 | 04:53 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:15/38 | 04:53 | 05:52-05:53/1 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:15/39 | 04:53 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 06:58-07:14/16 | 05:27 | 06:04-06:11/7 | 04:52 | |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | 06:37-07:15/38 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 06:55-07:14/19 | 05:25 | 06:00-06:14/14 | 04:52 | |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 06:36-07:15/39 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 06:54-07:14/20 | 05:23 | 05:59-06:05/6 | 04:52 | |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 06:36-07:15/39 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 06:53-07:14/21 | 05:21 | 05:57-06:02/5 | 04:52 | |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 06:29-07:15/46 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 06:53-07:14/21 | 05:20 | 05:56-06:00/4 | 04:52 | |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 06:26-07:15/49 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 06:54-07:13/19 | 05:18 | 05:55-05:58/3 | 04:52 | |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 06:23-07:15/52 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 06:54-07:13/19 | 05:16 | 05:54-05:58/4 06:23-06:34/11 | 04:52 | |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 06:51-07:15/24 | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:54-07:11/17 | 05:15 | 05:53-05:56/3 06:54-07:39/45 | 04:52 | |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 06:23-06:30/7 | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:55-07:10/15 | 05:13 | 05:53-05:56/3 06:57-07:39/42 | 04:53 | |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 06:25-06:28/3 | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 06:57-07:09/12 | 05:12 | 05:53-05:55/2 | 04:53 | |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 06:59-07:40/41 | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:59-07:06/7 | 05:10 | 05:53-05:55/2 | 04:53 | |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 07:00-07:39/39 | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 05:52-05:54/2 | 04:54 | |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 07:02-07:39/37 | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 05:51-05:53/2 | 04:54 | |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 07:03-07:40/37 | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-05:53/2 | 04:55 | |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 07:05-07:40/35 | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:15/17 | 05:05 | 05:51-05:53/2 | 04:55 | |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 07:06-07:40/34 | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-07:07/13 | 05:04 | 05:51-05:53/2 | 04:56 | |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 07:07-07:40/33 | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-05:52/1 | | |
| | 17:06 | | 20:08 | | | 22:01 | 07:08-07:40/32 | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 577 | | 918 | | 8 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 06:49-06:53/4 | 06:38 | 07:27-07:31/4 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | 07:52-07:58/6 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:49-06:53/4 | 06:40 | 07:28-07:33/5 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | 07:50-08:00/10 | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:50-06:55/5 | 06:41 | 07:29-07:35/6 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | 07:50-08:03/13 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:51-06:56/5 | 06:43 | 07:31-07:37/6 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | 07:49-08:05/16 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:57-05:58/1 | 05:47 | 06:52-06:57/5 | 06:45 | 07:33-07:41/8 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | 07:48-08:07/19 | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:52-06:58/6 | 06:47 | 07:49-07:54/5 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | 07:46-08:08/22 | 20:17 | 07:35-07:48/13 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:53-07:00/7 | 06:49 | 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | 07:44-08:09/25 | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:58-05:59/1 | 05:52 | 06:55-07:01/6 | 06:51 | | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | 07:43-08:11/28 | 20:12 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:58-05:59/1 | 05:54 | 06:55-07:02/7 | 06:53 | | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | 07:40-08:11/31 | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | 05:58-05:59/1 | 05:56 | 06:57-07:05/8 | 06:55 | | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | 07:38-08:12/34 | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:59-06:01/2 | 05:58 | 06:59-07:08/9 | 06:57 | | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | 07:35-08:13/38 | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00-06:01/1 | 06:00 | 07:32-08:14/42 | 06:58 | | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:00-06:01/1 | 06:02 | 07:29-08:13/44 | 07:00 | | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:00-06:01/1 | 06:04 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:00-06:01/1 | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:01-06:03/2 | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:01-06:03/2 | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:01-06:03/2 | 06:11 | 07:04-07:12/8 | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:02-06:04/2 | 06:13 | 07:02-07:15/13 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:02-06:05/3 | 06:15 | 07:25-07:26/1 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 06:35-06:37/2 | 20:59 | 07:01-07:16/15 | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:04-06:06/2 | 06:17 | 07:25-07:26/1 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 06:35-06:40/5 | 20:56 | 07:00-07:17/17 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:04-06:07/3 | 06:19 | 07:24-07:25/1 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 06:33-06:42/9 | 20:54 | 06:58-07:17/19 | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:05-06:08/3 | 06:21 | 07:24-07:26/2 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 06:33-06:47/14 | 20:52 | 06:57-07:17/20 | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:06-06:09/3 | 06:23 | 07:24-07:26/2 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 06:34-06:48/14 | 20:49 | 06:57-07:17/20 | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:07-06:11/4 | 06:24 | 07:24-07:26/2 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 06:37-06:49/12 | 20:47 | 06:57-07:17/20 | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:08-06:13/5 | 06:26 | 07:25-07:27/2 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 06:41-06:49/8 | 20:44 | 06:57-07:17/20 | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:25-06:26/1 06:47-06:50/3 | 06:28 | 07:24-07:27/3 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 06:10-06:17/7 | 20:42 | 06:57-07:16/19 | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:12-06:23/11 | 06:30 | 07:25-07:27/2 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 06:46-06:50/4 | 20:39 | 06:59-07:15/16 | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:47-06:51/4 | 06:32 | 07:25-07:28/3 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | 07:01-07:14/13 | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-06:52/4 | 06:34 | 07:26-07:29/3 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | 07:03-07:13/10 | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-06:52/4 | 06:36 | 07:27-07:31/4 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | 07:05-07:11/6 | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 143 | | 636 | | 56 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 21:11-21:26/15 | 04:57 05:52-05:56/4 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 05:39-05:48/9 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 21:11-21:27/16 | 04:57 05:40-05:56/16 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 21:11-21:28/17 | 04:58 21:39-21:40/1 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 21:12-21:29/17 | 04:59 05:43-05:54/11 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 21:11-21:30/19 | 05:00 05:44-05:52/8 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 21:11-21:31/20 | 05:01 05:48-05:49/1 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 21:12-21:32/20 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 21:11-21:33/22 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 21:12-21:34/22 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 21:12-21:34/22 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 05:35-05:43/8 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:50-05:52/2 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 05:35-05:42/7 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:52-05:53/1 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 05:34-05:41/7 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:52-05:53/1 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 05:34-05:40/6 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:53-05:54/1 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 05:34-05:40/6 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:54-05:55/1 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:40/6 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:40/6 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:40/6 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:40/6 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:40/6 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:41/6 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:41/6 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 05:35-05:41/6 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:56-05:57/1 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:42/6 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 05:36-05:42/6 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:56-05:57/1 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:43/6 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 05:37-05:43/6 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:56-05:57/1 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 05:38-05:45/7 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:55-05:57/2 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 05:38-05:46/8 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:54-05:56/2 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 54 | 829 | 63 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 15:16-16:02/46 | 07:27 | 15:28-15:51/23 | 07:08 | 07:41-08:01/20 | 05:55 | 06:23-06:46/23 | 05:02 | 05:37-06:01/24 |
| | 16:14 | | 17:08 | | 18:07 | | 20:10 | | 21:09 | | 22:02 | |
| 2 | 09:00 | | 08:26 | 15:15-16:03/48 | 07:24 | 15:33-15:47/14 | 07:05 | 07:41-08:01/20 | 05:53 | 06:22-06:47/25 | 05:01 | 05:38-06:02/24 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | | 21:10 | | 22:04 | |
| 3 | 09:00 | | 08:24 | 15:15-16:03/48 | 07:22 | | 07:03 | 07:42-07:59/17 | 05:51 | 06:21-06:48/27 | 05:00 | 05:37-06:02/25 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | | 22:05 | |
| 4 | 09:00 | | 08:22 | 15:15-16:04/49 | 07:19 | | 07:00 | 07:43-07:58/15 | 05:49 | 06:21-06:48/27 | 04:59 | 05:37-06:02/25 |
| | 16:18 | | 17:15 | | 18:14 | | 20:15 | | 21:14 | | 22:06 | |
| 5 | 08:59 | | 08:20 | 15:13-16:04/51 | 07:17 | | 06:58 | 07:44-07:55/11 | 05:46 | 06:20-06:48/28 | 04:58 | 05:37-06:02/25 |
| | 16:19 | | 17:17 | | 18:16 | | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | | 08:18 | 15:13-16:05/52 | 07:14 | | 06:55 | | 05:44 | 06:20-06:48/28 | 04:57 | 05:38-06:03/25 |
| | 16:20 | | 17:19 | | 18:18 | | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:58 | | 08:16 | 15:13-16:05/52 | 07:12 | | 06:53 | | 05:42 | 06:19-06:48/29 | 04:56 | 05:38-06:03/25 |
| | 16:22 | | 17:21 | | 18:20 | | 20:21 | | 21:20 | | 22:09 | |
| 8 | 08:58 | | 08:14 | 15:13-16:06/53 | 07:09 | | 06:50 | | 05:40 | 06:19-06:48/29 | 04:56 | 05:38-06:04/26 |
| | 16:23 | | 17:23 | | 18:22 | | 20:23 | | 21:22 | | 22:10 | |
| 9 | 08:57 | | 08:12 | 15:13-16:07/54 | 07:07 | | 06:48 | | 05:38 | 06:19-06:48/29 | 04:55 | 05:38-06:03/25 |
| | 16:25 | | 17:25 | | 18:24 | | 20:25 | | 21:24 | | 22:11 | |
| 10 | 08:57 | | 08:10 | 15:13-16:07/54 | 07:04 | | 06:45 | | 05:36 | 06:19-06:48/29 | 04:55 | 05:39-06:04/25 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | | 08:08 | 15:12-16:07/55 | 07:02 | | 06:43 | | 05:34 | 06:20-06:48/28 | 04:54 | 05:38-06:03/25 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | | 08:06 | 15:12-16:07/55 | 06:59 | | 06:40 | | 05:32 | 06:20-06:48/28 | 04:54 | 05:39-06:04/25 |
| | 16:30 | | 17:32 | | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | | 08:04 | 15:13-16:07/54 | 06:57 | | 06:38 | | 05:30 | 06:20-06:47/27 | 04:53 | 05:39-06:04/25 |
| | 16:31 | | 17:34 | | 18:32 | | 20:33 | | 21:31 | | 22:15 | |
| 14 | 08:53 | | 08:01 | 15:12-16:07/55 | 06:54 | | 06:35 | | 05:29 | 06:21-06:47/26 | 04:53 | 05:40-06:05/25 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | | 22:15 | |
| 15 | 08:52 | | 07:59 | 15:13-16:07/54 | 06:52 | | 06:33 | | 05:27 | 06:21-06:46/25 | 04:53 | 05:39-06:04/25 |
| | 16:35 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | | 22:16 | |
| 16 | 08:51 | | 07:57 | 15:13-16:07/54 | 06:49 | | 06:30 | | 05:25 | 06:21-06:45/24 | 04:52 | 05:39-06:04/25 |
| | 16:37 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | | 22:17 | |
| 17 | 08:50 | | 07:55 | 15:13-16:06/53 | 06:46 | | 06:28 | | 05:23 | 06:22-06:45/23 | 04:52 | 05:40-06:05/25 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | | 22:17 | |
| 18 | 08:49 | | 07:53 | 15:14-16:06/52 | 06:44 | | 06:25 | | 05:21 | 06:23-06:44/21 | 04:52 | 05:40-06:05/25 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | | 22:18 | |
| 19 | 08:48 | | 07:50 | 15:14-16:06/52 | 06:41 | | 06:23 | | 05:20 | 06:24-06:43/19 | 04:52 | 05:40-06:05/25 |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 | | 22:18 | |
| 20 | 08:46 | | 07:48 | 15:14-16:05/51 | 06:39 | | 06:20 | | 05:18 | 05:48-05:51/3 | 04:52 | 05:40-06:05/25 |
| | 16:44 | | 17:49 | | 18:46 | | 20:47 | | 21:44 | 06:25-06:42/17 | 22:18 | |
| 21 | 08:45 | 15:31-15:41/10 | 07:46 | 15:16-16:04/48 | 06:36 | | 06:18 | | 05:17 | 05:47-05:54/7 | 04:52 | 05:41-06:06/25 |
| | 16:46 | | 17:51 | | 18:48 | | 20:49 | | 21:46 | 06:27-06:41/14 | 22:19 | |
| 22 | 08:44 | 15:28-15:45/17 | 07:43 | 15:16-16:03/47 | 06:34 | | 06:16 | | 05:15 | 05:46-05:56/10 | 04:53 | 05:41-06:06/25 |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 | | 21:47 | 06:28-06:38/10 | 22:19 | |
| 23 | 08:42 | 15:25-15:47/22 | 07:41 | 15:17-16:02/45 | 06:31 | | 06:13 | | 05:13 | 05:44-05:56/12 | 04:53 | 05:41-06:06/25 |
| | 16:50 | | 17:55 | | 18:52 | | 20:53 | | 21:49 | 06:31-06:35/4 | 22:19 | |
| 24 | 08:41 | 15:24-15:50/26 | 07:39 | 15:18-16:01/43 | 06:28 | 06:53-07:00/7 | 06:11 | | 05:12 | 05:43-05:57/14 | 04:53 | 05:41-06:06/25 |
| | 16:52 | | 17:57 | | 18:54 | | 20:55 | | 21:50 | | 22:19 | |
| 25 | 08:39 | 15:22-15:52/30 | 07:36 | 15:20-16:00/40 | 06:26 | 06:50-07:01/11 | 06:09 | | 05:11 | 05:42-05:59/17 | 04:53 | 05:42-06:07/25 |
| | 16:54 | | 17:59 | | 18:56 | | 20:57 | | 21:52 | | 22:19 | |
| 26 | 08:38 | 15:21-15:54/33 | 07:34 | 15:22-15:59/37 | 06:23 | 06:48-07:03/15 | 06:06 | | 05:09 | 05:41-05:59/18 | 04:54 | 05:41-06:06/25 |
| | 16:56 | | 18:01 | | 18:58 | | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 15:19-15:55/36 | 07:31 | 15:23-15:56/33 | 06:21 | 06:45-07:03/18 | 06:04 | 06:31-06:39/8 | 05:08 | 05:39-05:59/20 | 04:54 | 05:42-06:07/25 |
| | 16:58 | | 18:03 | | 19:00 | | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 15:19-15:57/38 | 07:29 | 15:26-15:55/29 | 06:18 | 06:43-07:03/20 | 06:02 | 06:28-06:42/14 | 05:07 | 05:38-06:00/22 | 04:55 | 05:42-06:07/25 |
| | 17:00 | | 18:05 | | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | 15:18-15:58/40 | | | 07:16 | 07:41-08:03/22 | 05:59 | 06:26-06:44/18 | 05:05 | 05:37-06:00/23 | 04:56 | 05:42-06:08/26 |
| | 17:02 | | | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | 15:17-16:00/43 | | | 07:13 | 07:41-08:02/21 | 05:57 | 06:24-06:45/21 | 05:04 | 05:37-06:01/24 | 04:56 | 05:43-06:08/25 |
| | 17:04 | | | | 20:06 | | 21:07 | | 21:59 | | 22:18 | |
| 31 | 08:29 | 15:17-16:01/44 | | | 07:10 | 07:41-08:02/21 | | | 05:03 | 05:37-06:01/24 | | |
| | 17:06 | | | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | | 339 | | 1364 | | 172 | | 144 | | 734 | | 750 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | 14:42-15:36/54 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | 16:58 | | 16:10 |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 07:39 | 14:42-15:36/54 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:10 | | 16:56 | | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:38 | | 07:41 | 14:43-15:36/53 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | 16:54 | | 16:08 |
| 4 | 04:59 | | 05:45 | 06:29-06:30/1 | 06:43 | | 07:40 | | 07:43 | 14:43-15:35/52 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | | 16:52 | | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 07:45 | 14:44-15:35/51 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | 16:50 | | 16:07 |
| 6 | 05:01 | | 05:49 | 06:29-06:30/1 | 06:47 | | 07:44 | | 07:47 | 14:44-15:35/51 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | | 16:48 | | 16:06 |
| 7 | 05:02 | 05:43-05:44/1 | 05:51 | 06:29-06:30/1 | 06:49 | 07:40-07:50/10 | 07:46 | | 07:49 | 14:44-15:34/50 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:52 | 06:30-06:31/1 | 06:51 | 07:37-07:52/15 | 07:48 | | 07:51 | 14:45-15:33/48 | 08:45 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | 06:30-06:32/2 | 06:53 | 07:36-07:53/17 | 07:50 | | 07:53 | 14:46-15:33/47 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | | 16:42 | | 16:05 |
| 10 | 05:06 | 05:45-05:46/1 | 05:56 | 06:30-06:32/2 | 06:55 | 07:35-07:54/19 | 07:52 | | 07:55 | 14:47-15:32/45 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | | 16:40 | | 16:05 |
| 11 | 05:07 | 05:45-05:46/1 | 05:58 | 06:31-06:33/2 | 06:57 | 07:34-07:55/21 | 07:54 | 16:11-16:16/5 | 07:57 | 14:48-15:31/43 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | 16:38 | | 16:04 |
| 12 | 05:08 | 05:45-05:46/1 | 06:00 | 06:32-06:34/2 | 06:59 | 07:32-07:54/22 | 07:56 | 16:04-16:22/18 | 07:59 | 14:48-15:30/42 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | 16:36 | | 16:04 |
| 13 | 05:09 | 05:45-05:47/2 | 06:02 | 06:33-06:36/3 | 07:00 | 07:32-07:54/22 | 07:58 | 16:00-16:25/25 | 08:01 | 14:50-15:30/40 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | | 16:34 | | 16:04 |
| 14 | 05:11 | 05:46-05:47/1 | 06:04 | 06:34-06:37/3 | 07:02 | 07:32-07:53/21 | 08:00 | 15:57-16:28/31 | 08:03 | 14:51-15:29/38 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | | 16:33 | | 16:04 |
| 15 | 05:12 | 05:47-05:48/1 | 06:06 | 06:48-06:49/1 | 07:04 | 07:32-07:53/21 | 08:02 | 15:54-16:29/35 | 08:05 | 14:52-15:28/36 | 08:54 |
| | 22:07 | | 21:10 | 06:36-06:41/5 | 19:53 | | 18:37 | | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:07 | 06:40-06:45/5 | 07:06 | 07:34-07:52/18 | 08:04 | 15:52-16:30/38 | 08:07 | 14:54-15:26/32 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | 07:36-07:51/15 | 08:06 | 15:51-16:32/41 | 08:09 | 14:56-15:26/30 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 07:37-07:49/12 | 08:08 | 15:49-16:33/44 | 08:11 | 14:58-15:24/26 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 07:39-07:47/8 | 08:10 | 15:48-16:34/46 | 08:13 | 15:00-15:22/22 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | | 16:25 | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:14 | 07:41-07:44/3 | 08:12 | | 08:15 | 15:03-15:20/17 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | | 16:23 | | 16:05 |
| 21 | 05:21 | 06:40-06:48/8 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 15:06-15:16/10 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:23 | | 16:22 | | 16:05 |
| 22 | 05:23 | 06:37-06:50/13 | 06:19 | | 07:17 | | 08:16 | | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | | 16:20 | | 16:05 |
| 23 | 05:24 | 05:58-06:03/5 | 06:21 | | 07:19 | | 08:18 | | 08:21 | | 08:59 |
| | 21:55 | 06:36-06:52/16 | 20:51 | | 19:33 | | 18:18 | | 16:19 | | 16:06 |
| 24 | 05:26 | 06:35-06:52/17 | 06:23 | | 07:21 | | 08:20 | | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | | 16:18 | | 16:07 |
| 25 | 05:28 | 06:34-06:54/20 | 06:25 | | 07:23 | | 07:22 | | 08:24 | | 09:00 |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | | 16:16 | | 16:07 |
| 26 | 05:29 | 06:33-06:54/21 | 06:26 | | 07:25 | | 07:24 | | 08:26 | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | | 16:15 | | 16:08 |
| 27 | 05:31 | 06:32-06:56/24 | 06:28 | | 07:27 | | 07:26 | | 08:28 | | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | | 16:14 | | 16:09 |
| 28 | 05:33 | 06:31-06:56/25 | 06:30 | | 07:29 | | 07:28 | | 08:30 | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | | 16:13 | | 16:10 |
| 29 | 05:34 | 06:31-06:57/26 | 06:32 | | 07:31 | | 07:30 | | 08:32 | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | | 16:12 | | 16:11 |
| 30 | 05:36 | 06:31-06:58/27 | 06:34 | | 07:33 | | 07:32 | 15:36-15:37/1 | 08:33 | | 09:01 |
| | 21:43 | | 20:34 | | 19:15 | | 17:02 | | 16:11 | | 16:12 |
| 31 | 05:38 | 06:30-06:57/27 | 06:36 | | | | 07:34 | 15:35-15:36/1 | | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 |
| Sum of minutes with flicker | 237 | | 29 | | 224 | | 285 | | 841 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 08:39-08:40/1 | 07:08 07:54-08:02/8 | 05:55 06:41-06:43/2 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | 08:25 | 07:24 08:38-08:39/1 | 07:05 07:51-08:02/11 | 05:53 06:40-06:42/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | 07:22 08:38-08:39/1 | 07:03 07:48-08:00/12 | 05:50 06:39-06:41/2 | 05:00 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 08:37-08:38/1 | 07:00 07:46-07:58/12 | 05:48 06:38-06:41/3 | 04:59 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 07:43-07:58/15 | 05:46 06:37-06:40/3 | 04:58 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 07:40-07:57/17 | 05:44 06:37-06:41/4 | 04:57 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 10:11-10:13/2 | 07:12 | 06:52 07:39-07:56/17 | 05:42 06:36-06:40/4 | 04:56 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 10:01-10:24/23 | 07:09 | 06:50 07:36-07:55/19 | 05:40 06:35-06:39/4 | 04:55 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 09:57-10:29/32 | 07:07 | 06:47 07:33-07:55/22 | 05:38 06:35-06:38/3 | 04:55 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 09:53-10:32/39 | 07:04 | 06:45 07:30-07:54/24 | 05:36 06:34-06:37/3 | 04:54 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 09:50-10:35/45 | 07:02 | 06:42 07:29-07:54/25 | 05:34 06:33-06:36/3 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 09:03-09:15/12 | 06:59 | 06:40 07:27-07:54/27 | 05:32 06:33-06:36/3 | 04:53 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 08:59-09:20/21 | 06:56 | 06:37 07:23-07:53/30 | 05:30 06:32-06:35/3 | 04:53 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 08:55-09:22/27 | 06:54 07:42-07:55/13 | 06:35 07:21-07:53/32 | 05:28 06:31-06:34/3 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 08:53-09:25/32 | 06:51 07:37-07:59/22 | 06:32 07:19-07:52/33 | 05:26 06:32-06:34/2 | 04:52 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 08:51-09:27/36 | 06:49 09:36-10:56/80 | 06:30 07:17-07:53/36 | 05:25 06:31-06:34/3 | 04:52 |
| | 16:36 | 17:40 | 18:38 07:33-08:01/28 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 08:49-09:28/39 | 06:46 09:35-10:56/81 | 06:27 07:14-07:53/39 | 05:23 06:30-06:33/3 | 04:52 |
| | 16:38 | 17:42 | 18:40 07:31-08:04/33 | 20:41 | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 08:48-09:30/42 | 06:44 09:33-10:55/82 | 06:25 07:11-07:52/41 | 05:21 06:30-06:33/3 | 04:52 |
| | 16:40 | 17:44 | 18:42 07:29-08:05/36 | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 08:47-09:30/43 | 06:41 09:32-10:54/82 | 06:23 07:10-07:53/43 | 05:19 06:30-06:32/2 | 04:52 |
| | 16:42 | 17:46 | 18:44 07:27-08:07/40 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 08:45-09:30/45 | 06:39 09:30-10:53/83 | 06:20 06:59-07:53/54 | 05:18 06:30-06:32/2 | 04:52 |
| | 16:44 | 17:48 | 18:46 07:24-08:08/44 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:45 08:44-09:30/46 | 06:36 09:28-10:52/84 | 06:18 06:54-07:53/59 | 05:16 06:30-06:32/2 | 04:52 |
| | 16:46 | 17:50 | 18:48 07:21-08:08/47 | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 08:43-09:30/47 | 06:33 09:26-10:51/85 | 06:15 06:52-07:54/62 | 05:15 06:30-06:31/1 | 04:52 |
| | 16:47 | 17:53 | 18:50 07:19-08:10/51 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 08:42-09:30/48 | 06:31 09:23-10:49/86 | 06:13 06:50-07:54/64 | 05:13 06:30-06:31/1 | 04:52 |
| | 16:49 | 17:55 | 18:52 07:17-08:10/53 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 08:41-09:30/49 | 06:28 09:21-10:49/88 | 06:11 06:48-07:55/67 | 05:12 06:30-06:32/2 | 04:53 |
| | 16:51 | 17:57 | 18:54 07:14-08:11/57 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 08:41-09:30/49 | 06:26 09:19-10:47/88 | 06:08 06:46-07:55/69 | 05:10 06:29-06:31/2 | 04:53 |
| | 16:53 | 17:59 | 18:55 07:11-08:11/60 | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 08:39-09:30/51 | 06:23 09:18-10:45/87 | 06:06 06:45-07:56/71 | 05:09 06:30-06:31/1 | 04:54 |
| | 16:55 | 18:01 | 18:57 07:08-08:10/62 | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 08:39-09:30/51 | 06:21 09:19-10:44/85 | 06:04 06:44-07:57/73 | 05:07 06:30-06:31/1 | 04:54 |
| | 16:58 | 18:03 | 18:59 07:07-08:11/64 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 08:38-09:30/52 | 06:18 09:20-10:42/82 | 06:01 06:43-06:58/15 | 05:06 06:30-06:31/1 | 04:55 |
| | 17:00 | 18:05 | 19:01 07:04-08:11/67 | 21:03 07:14-07:58/44 | 21:56 | 22:19 |
| 29 | 08:33 | | 07:15 10:21-11:40/79 | 05:59 06:43-06:54/11 | 05:05 06:30-06:31/1 | 04:55 |
| | 17:02 | | 20:03 08:01-09:12/71 | 21:04 07:18-07:59/41 | 21:58 | 22:18 |
| 30 | 08:31 | | 07:13 10:21-11:38/77 | 05:57 06:42-06:51/9 | 05:04 | 04:56 |
| | 17:04 | | 20:05 07:58-09:12/74 | 21:06 07:21-08:00/39 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 10:22-11:36/74 | | 05:03 | |
| | 17:06 | | 20:07 07:57-09:12/75 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 831 | 2224 | 1141 | 69 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:39 06:43-06:47/4<br>21:39 | 06:38 08:07-08:08/1<br>20:29 07:28-07:34/6 | 07:34<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57<br>22:17 | 05:41 06:43-06:46/3<br>21:38 | 06:39 08:04-08:08/4<br>20:27 07:29-07:36/7 | 07:36<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 06:44-06:47/3<br>21:36 | 06:41 08:00-08:08/8<br>20:24 07:31-07:40/9 | 07:38<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45 06:45-06:48/3<br>21:34 | 06:43 07:51-08:08/17<br>20:22 07:34-07:49/15 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00<br>22:16 | 05:47 06:45-06:48/3<br>21:32 | 06:45 07:35-08:07/32<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01<br>22:15 | 05:48 06:46-06:50/4<br>21:30 | 06:47 07:36-08:07/31<br>20:16 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02<br>22:14 | 05:50 06:47-06:50/3<br>21:27 | 06:49 07:38-08:07/29<br>20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03<br>22:13 | 05:52 06:48-06:51/3<br>21:25 | 06:51 07:41-08:07/26<br>20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 06:48-06:50/2<br>21:23 | 06:53 07:42-08:07/25<br>20:09 | 07:50<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05<br>22:12 | 05:56 06:49-06:51/2<br>21:21 | 06:55 07:43-08:06/23<br>20:06 | 07:52 09:12-09:13/1<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:50-06:51/1<br>21:19 | 06:56 07:46-08:07/21<br>20:04 | 07:54 09:12-09:13/1<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-06:40/1<br>22:10 | 06:00 06:49-06:51/2<br>21:17 | 06:58 07:48-08:07/19<br>20:01 | 07:56 09:12-09:13/1<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-06:40/1<br>22:09 | 06:02 06:50-06:52/2<br>21:15 | 07:00 07:49-08:08/19<br>19:58 | 07:58 09:12-09:13/1<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-06:40/1<br>22:08 | 06:03 06:50-06:53/3<br>21:12 | 07:02 07:51-08:08/17<br>19:56 | 08:00 09:12-09:13/1<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12<br>22:06 | 06:05 06:51-06:54/3<br>21:10 | 07:04 07:53-08:09/16<br>19:53 | 08:02 09:12-09:14/2<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13<br>22:05 | 06:07 06:52-06:55/3<br>21:08 | 07:06 07:55-08:09/14<br>19:51 | 08:04 09:12-09:14/2<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-06:40/1<br>22:04 | 06:09 06:52-06:55/3<br>21:05 | 07:08 07:56-08:10/14<br>19:48 | 08:06 09:12-09:15/3<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-06:40/1<br>22:03 | 06:11 06:53-06:57/4<br>21:03 | 07:10 07:58-08:11/13<br>19:45 | 08:08 09:13-09:16/3<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-06:41/1<br>22:01 | 06:13 06:54-06:59/5<br>21:01 | 07:11 08:00-08:12/12<br>19:43 | 08:10 09:14-09:17/3<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-06:41/1<br>22:00 | 06:15 06:56-07:01/5<br>20:58 | 07:13 08:03-08:14/11<br>19:40 | 08:12 09:14-09:18/4<br>18:25 10:08-10:11/3 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-06:41/2<br>21:58 | 06:17 06:57-07:03/6<br>20:56 | 07:15 08:04-08:15/11<br>19:38 | 08:14 09:15-09:19/4<br>18:22 10:06-10:12/6 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-06:42/2<br>21:57 | 06:19 07:13-07:16/3<br>20:54 06:59-07:10/11 | 07:17 08:06-08:17/11<br>19:35 | 08:16 09:15-09:20/5<br>18:20 10:05-10:13/8 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-06:42/2<br>21:55 | 06:20 07:04-07:18/14<br>20:51 | 07:19 08:08-08:20/12<br>19:32 08:51-08:53/2 | 08:18 09:16-09:21/5<br>18:18 10:06-10:15/9 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-06:43/3<br>21:54 | 06:22 07:14-07:20/6<br>20:49 | 07:21 08:10-08:22/12<br>19:30 08:46-08:50/4 | 08:20 09:18-09:24/6<br>18:15 10:08-10:18/10 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-06:42/2<br>21:52 | 06:24 07:15-07:23/8<br>20:46 | 07:23 08:41-08:49/8<br>19:27 08:11-08:27/16 | 07:22 08:20-08:26/6 09:09-09:20/11<br>17:13 10:15-10:17/2 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-06:43/2<br>21:50 | 06:26 07:17-07:23/6<br>20:44 | 07:25 08:12-08:47/35<br>19:25 | 07:24 08:21-08:28/7 09:10-09:22/12<br>17:11 10:12-10:15/3 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-06:44/2<br>21:49 | 06:28 07:19-07:25/6<br>20:42 | 07:27 08:14-08:44/30<br>19:22 | 07:26 08:52-08:54/2 10:09-10:13/4<br>17:08 08:23-08:32/9 09:12-09:25/13 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-06:44/3<br>21:47 | 06:30 07:21-07:27/6<br>20:39 | 07:29 08:17-08:41/24<br>19:20 | 07:28 08:45-08:51/6 10:05-10:11/6<br>17:06 08:25-08:38/13 09:13-09:28/15 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-06:45/3<br>21:45 | 06:32 07:22-07:29/7<br>20:37 | 07:31 08:20-08:37/17<br>19:17 | 07:30 08:29-08:48/19 09:16-09:33/17<br>17:04 10:01-10:09/8 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-06:45/3<br>21:43 | 06:34 07:24-07:31/7<br>20:34 | 07:32<br>19:14 | 07:32 08:34-08:43/9 09:18-09:39/21<br>17:02 09:55-10:07/12 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-06:46/3<br>21:41 | 06:36 07:26-07:32/6<br>20:32 | <br> | 07:34 09:20-10:04/44<br>17:00 | <br> | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 34 | 147 | 571 | 317 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:52-15:53/1 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:51-15:52/1 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:50-15:51/1 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:50-15:52/2 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:49-15:51/2 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:48-15:50/2 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:47-15:50/3 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:47-15:50/3 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:45-15:49/4 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:43-15:48/5 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:41-15:46/5 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 15:28-15:29/1 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:36-15:44/8 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 15:29-15:34/5 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 405 | 53 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 19:24-19:42/18 | 05:55 | 05:02 05:37-05:57/20 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 19:24-19:44/20 | 05:53 | 05:01 05:37-05:59/22 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 19:23-19:45/22 | 05:51 | 05:00 05:36-06:00/24 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:23-19:46/23 | 05:49 | 04:59 05:36-06:00/24 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 19:22-19:45/23 | 05:46 | 04:58 05:35-06:01/26 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:22-19:45/23 | 05:44 | 04:57 05:35-06:02/27 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 19:22-19:44/22 | 05:42 | 04:57 05:35-06:02/27 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:23-19:43/20 | 05:40 | 04:56 05:35-06:03/28 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 19:23-19:42/19 | 05:38 | 04:55 05:34-06:03/29 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 19:24-19:40/16 | 05:36 | 04:55 05:35-06:04/29 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 19:25-19:38/13 | 05:34 | 04:54 05:34-06:04/30 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 19:29-19:34/5 | 05:32 | 04:54 05:34-06:05/31 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 05:35-06:05/30 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 05:34-06:05/31 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 05:34-06:05/31 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 05:34-06:06/32 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 05:35-06:06/31 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 05:35-06:06/31 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 05:35-06:07/32 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 05:35-06:07/32 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 05:36-06:08/32 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 05:36-06:08/32 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 05:36-06:08/32 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 05:36-06:08/32 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 05:37-06:08/31 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 05:36-06:08/32 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 05:37-06:09/32 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 05:43-05:51/8 | 04:55 05:37-06:08/31 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 19:30-19:36/6 | 06:00 | 05:05 05:41-05:54/13 | 04:56 05:38-06:09/31 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 19:27-19:38/11 | 05:57 | 05:04 05:39-05:55/16 | 04:56 05:39-06:09/30 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:11 19:26-19:40/14 | | 05:03 05:38-05:56/18 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 0 | 31 | 224 | 55 | 882 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:38-06:08/30 | 05:40 | 06:38 19:24-19:37/13 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:39-06:09/30 | 05:42 | 06:40 19:22-19:38/16 | 07:37 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:40-06:09/29 | 05:43 | 06:42 19:21-19:40/19 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:40-06:09/29 | 05:45 | 06:44 19:20-19:40/20 | 07:40 | 07:43 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:41-06:09/28 | 05:47 | 06:45 19:19-19:41/22 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:41-06:08/27 | 05:49 | 06:47 19:17-19:40/23 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:41-06:07/26 | 05:51 | 06:49 19:17-19:40/23 | 07:46 | 07:49 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:42-06:07/25 | 05:53 | 06:51 19:17-19:40/23 | 07:48 | 07:51 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:44-06:08/24 | 05:54 | 06:53 19:17-19:40/23 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:44-06:07/23 | 05:56 | 06:55 19:17-19:38/21 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:06/21 | 05:58 | 06:57 19:16-19:34/18 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:46-06:05/19 | 06:00 | 06:59 19:17-19:32/15 | 07:56 | 07:59 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:47-06:04/17 | 06:02 | 07:00 19:18-19:29/11 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:48-06:03/15 | 06:04 | 07:02 19:20-19:27/7 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:51-06:02/11 | 06:06 | 07:04 19:23-19:24/1 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:54-05:59/5 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 19:29-19:35/6 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 359 | 6 | 255 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 17:07-17:35/28 | 07:08 07:32-07:46/14 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 17:07-17:36/29 | 07:05 07:30-07:48/18 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 17:06-17:35/29 | 07:03 07:27-07:49/22 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 17:06-17:35/29 | 07:00 07:26-07:50/24 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 17:06-17:35/29 | 06:58 07:24-07:50/26 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 17:06-17:34/28 | 06:55 07:24-07:51/27 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 17:06-17:34/28 | 06:53 07:23-07:51/28 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 17:06-17:33/27 | 06:50 07:23-07:51/28 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 17:07-17:32/25 | 06:48 07:22-07:50/28 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 17:08-17:31/23 | 06:45 07:22-07:50/28 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 17:09-17:29/20 | 06:43 07:22-07:49/27 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 17:11-17:27/16 | 06:40 07:22-07:49/27 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:14-17:23/9 | 06:38 07:22-07:47/25 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:23-07:46/23 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 07:24-07:45/21 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:25-07:43/18 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 07:27-07:41/14 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 07:30-07:38/8 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 17:18-17:26/8 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 17:14-17:28/14 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:54 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 17:11-17:33/22 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 17:09-17:34/25 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 17:09-17:35/26 | 06:18 | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:10 07:35-07:44/9 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 113 | 329 | 406 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | | 06:38 | 07:21-07:48/27 | 07:35 | 17:51-18:05/14 | 07:37 | 08:35 |
| | 22:18 | 21:40 | | 20:29 | | 19:12 | | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | | 06:40 | 07:20-07:48/28 | 07:37 | 17:49-18:07/18 | 07:39 | 08:37 |
| | 22:17 | 21:38 | | 20:27 | | 19:10 | | 16:56 | 16:09 |
| 3 | 04:59 | 05:43 | | 06:42 | 07:20-07:48/28 | 07:38 | 17:47-18:08/21 | 07:41 | 08:38 |
| | 22:17 | 21:36 | | 20:24 | | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | | 06:43 | 07:20-07:48/28 | 07:40 | 17:45-18:09/24 | 07:43 | 08:40 |
| | 22:16 | 21:34 | | 20:22 | | 19:04 | | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | | 06:45 | 07:20-07:48/28 | 07:42 | 17:44-18:10/26 | 07:45 | 08:41 |
| | 22:16 | 21:32 | | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | | 06:47 | 07:19-07:46/27 | 07:44 | 17:43-18:10/27 | 07:47 | 08:43 |
| | 22:15 | 21:30 | | 20:17 | | 18:59 | | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | | 06:49 | 07:19-07:45/26 | 07:46 | 17:42-18:10/28 | 07:49 | 08:44 |
| | 22:14 | 21:28 | | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | | 06:51 | 07:20-07:44/24 | 07:48 | 17:41-18:10/29 | 07:51 | 08:45 |
| | 22:14 | 21:26 | | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | | 06:53 | 07:21-07:43/22 | 07:50 | 17:41-18:10/29 | 07:53 | 08:47 |
| | 22:13 | 21:23 | | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | | 06:55 | 07:23-07:42/19 | 07:52 | 17:41-18:10/29 | 07:55 | 08:48 |
| | 22:12 | 21:21 | | 20:06 | | 18:49 | | 16:40 | 16:05 |
| 11 | 05:07 | 05:58 | | 06:57 | 07:25-07:40/15 | 07:54 | 17:40-18:09/29 | 07:57 | 08:49 |
| | 22:11 | 21:19 | | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | | 06:59 | 07:26-07:36/10 | 07:56 | 17:40-18:09/29 | 07:59 | 08:50 |
| | 22:10 | 21:17 | | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | | 07:00 | | 07:58 | 17:41-18:08/27 | 08:01 | 08:52 |
| | 22:09 | 21:15 | | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | | 07:02 | | 08:00 | 17:41-18:07/26 | 08:03 | 08:53 |
| | 22:08 | 21:12 | | 19:56 | | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | | 07:04 | | 08:02 | 17:42-18:05/23 | 08:05 | 08:54 |
| | 22:07 | 21:10 | | 19:53 | | 18:37 | | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | | 07:06 | | 08:04 | 17:43-18:03/20 | 08:07 | 08:54 |
| | 22:05 | 21:08 | | 19:51 | | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | | 07:08 | | 08:06 | 17:45-18:02/17 | 08:09 | 08:55 |
| | 22:04 | 21:06 | | 19:48 | | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | | 07:10 | | 08:08 | 17:47-17:59/12 | 08:11 | 08:56 |
| | 22:03 | 21:03 | | 19:46 | | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | | 07:12 | | 08:10 | 17:52-17:55/3 | 08:13 | 08:57 |
| | 22:01 | 21:01 | | 19:43 | | 18:27 | | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | | 07:14 | | 08:12 | | 08:15 | 08:58 |
| | 22:00 | 20:59 | | 19:41 | | 18:25 | | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 08:58 |
| | 21:58 | 20:56 | | 19:38 | | 18:23 | | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | | 07:17 | | 08:16 | | 08:19 | 08:59 |
| | 21:57 | 20:54 | | 19:35 | | 18:20 | | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | | 07:19 | | 08:18 | | 08:21 | 08:59 |
| | 21:55 | 20:51 | | 19:33 | | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | | 07:21 | | 08:20 | | 08:23 | 09:00 |
| | 21:54 | 20:49 | | 19:30 | | 18:16 | | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:32-07:41/9 | 07:23 | | 07:22 | | 08:25 | 09:00 |
| | 21:52 | 20:47 | | 19:28 | | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:29-07:44/15 | 07:25 | | 07:24 | | 08:26 | 09:00 |
| | 21:50 | 20:44 | | 19:25 | | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:26-07:45/19 | 07:27 | | 07:26 | | 08:28 | 09:01 |
| | 21:49 | 20:42 | | 19:22 | | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:25-07:46/21 | 07:29 | | 07:28 | | 08:30 | 09:01 |
| | 21:47 | 20:39 | | 19:20 | | 17:07 | | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:24-07:47/23 | 07:31 | | 07:30 | | 08:32 | 09:01 |
| | 21:45 | 20:37 | | 19:17 | | 17:04 | | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:23-07:48/25 | 07:33 | 17:56-18:00/4 | 07:32 | | 08:33 | 09:01 |
| | 21:43 | 20:34 | | 19:15 | | 17:02 | | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 | 07:22-07:49/27 | | | 07:34 | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | | | 16:13 |
| Potential sun hours | 521 | 465 | | 383 | | 326 | | 253 | 224 |
| Sum of minutes with flicker | 0 | 139 | | 286 | | 431 | | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 18:30-19:17/47 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 18:30-19:10/40 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 18:30-19:17/47 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 18:29-19:10/41 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 18:30-19:16/46 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 18:28-19:11/43 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 18:30-19:17/47 | 05:49 | 04:59 | 04:59 | 05:45 | 06:43 18:27-19:11/44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 18:29-19:16/47 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 18:27-19:12/45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 18:30-19:16/46 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 18:25-19:11/46 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 18:29-19:15/46 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 18:24-19:11/47 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 18:30-19:14/44 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 18:24-19:11/47 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 18:30-19:13/43 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 18:24-19:11/47 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 18:31-19:12/41 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 18:24-19:10/46 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 18:31-19:11/40 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 18:23-19:09/46 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 18:32-19:10/38 | 05:32 | 04:54 | 05:08 | 06:00 06:56-07:01/5 | 06:59 18:23-19:09/46 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 18:33-19:08/35 | 05:30 | 04:53 | 05:09 | 06:02 06:53-07:04/11 | 07:00 18:23-19:08/45 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 18:34-19:07/33 | 05:29 | 04:53 | 05:11 | 06:04 06:51-07:05/14 | 07:02 18:23-19:07/44 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 18:36-19:05/29 | 05:27 | 04:53 | 05:12 | 06:06 06:50-07:06/16 | 07:04 18:23-19:07/44 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 18:37-19:03/26 | 05:25 | 04:52 | 05:14 | 06:07 06:49-07:07/18 | 07:06 18:24-19:06/42 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 06:55-06:57/2 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 18:40-19:00/20 | 05:23 | 04:52 | 05:15 | 06:09 06:48-07:08/20 | 07:08 18:23-19:04/41 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 06:53-07:00/7 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 18:43-18:56/13 | 05:21 | 04:52 | 05:16 | 06:11 06:47-07:07/20 | 07:10 18:24-19:02/38 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 06:51-07:01/10 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:48-07:01/13 | 05:20 | 04:52 | 05:18 | 06:13 06:47-07:08/21 | 07:12 18:25-19:01/36 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 17:49-18:06/17 | 06:20 06:46-07:02/16 | 05:18 | 04:52 | 05:19 | 06:15 06:46-07:08/22 | 07:14 18:26-18:59/33 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 17:46-18:09/23 | 06:18 06:44-07:03/19 | 05:16 | 04:52 | 05:21 | 06:17 06:47-07:08/21 | 07:16 18:28-18:57/29 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 17:43-18:11/28 | 06:16 06:41-07:02/21 | 05:15 | 04:53 | 05:23 | 06:19 06:49-07:07/18 | 07:17 18:30-18:55/25 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:40-18:12/32 | 06:13 06:41-07:02/21 | 05:13 | 04:53 | 05:24 | 06:21 06:50-07:06/16 | 07:19 18:32-18:52/20 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 17:39-18:14/35 | 06:11 06:41-07:02/21 | 05:12 | 04:53 | 05:26 | 06:23 06:52-07:05/13 | 07:21 18:37-18:46/9 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 17:37-18:15/38 | 06:09 06:41-07:02/21 | 05:11 | 04:53 | 05:28 | 06:25 18:46-19:00/14 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 06:54-07:04/10 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 17:36-18:16/40 | 06:06 06:41-07:00/19 | 05:09 | 04:54 | 05:29 | 06:26 18:43-19:03/20 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 06:56-07:02/6 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 17:34-18:16/42 | 06:04 06:41-07:00/19 | 05:08 | 04:54 | 05:31 | 06:28 18:39-19:05/26 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 06:57-06:59/2 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 17:33-18:16/43 | 06:02 06:42-06:59/17 | 05:06 | 04:55 | 05:33 | 06:30 18:37-19:06/29 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 18:33-19:17/44 | 05:59 06:44-06:57/13 | 05:05 | 04:56 | 05:34 | 06:32 18:35-19:08/33 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 18:31-19:17/46 | 05:57 06:45-06:55/10 | 05:04 | 04:56 | 05:36 | 06:34 18:34-19:09/35 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 18:31-19:17/46 | | 05:03 | | 05:38 | 06:36 18:32-19:10/38 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 434 | 917 | 0 | 0 | 0 | 428 | 944 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 07:32-07:39/7 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 07:30-07:38/8 | 05:53 06:20-06:22/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 07:27-07:36/9 | 05:50 06:18-06:24/6 | 05:00 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 07:25-07:33/8 | 05:48 06:16-06:24/8 | 04:59 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 07:22-07:32/10 | 05:46 06:14-06:25/11 | 04:58 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 07:20-07:31/11 | 05:44 06:12-06:25/13 | 04:57 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 07:17-07:28/11 | 05:42 06:10-06:25/15 | 04:56 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 07:17-07:23/6 | 05:40 06:08-06:25/17 | 04:55 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 06:07-06:25/18 | 04:55 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 06:07-06:24/17 | 04:54 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 06:07-06:24/17 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 06:08-06:24/16 | 04:53 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 06:08-06:23/15 | 04:53 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 06:09-06:22/13 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 06:11-06:21/10 | 04:52 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 06:12-06:19/7 | 04:52 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 07:37-07:40/3 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:05 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:10 07:35-07:40/5 | | 05:03 | |
| | 17:06 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 0 | 8 | 70 | 185 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:18-06:34/16 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:17-06:34/17 | 06:39 | | 07:36 | 07:39 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:17-06:35/18 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:17-06:35/18 | 06:43 | 07:14-07:20/6 | 07:40 | 07:43 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:18-06:34/16 | 06:45 | 07:14-07:25/11 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:20-06:34/14 | 06:47 | 07:15-07:26/11 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:22-06:34/12 | 06:49 | 07:17-07:27/10 | 07:46 | 07:49 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 05:03 | | 05:52 | 06:24-06:34/10 | 06:51 | 07:19-07:27/8 | 07:48 | 07:51 | 08:45 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:25-06:33/8 | 06:53 | 07:21-07:30/9 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:27-06:32/5 | 06:55 | 07:23-07:32/9 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:29-06:30/1 | 06:56 | 07:24-07:31/7 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 07:26-07:31/5 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 07:28-07:31/3 | 07:58 | 08:01 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 21:52 | | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:25-06:27/2 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:22-06:30/8 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:20-06:32/12 | 06:32 | | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:19-06:32/13 | 06:34 | | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:18-06:33/15 | 06:36 | | | | 07:34 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 50 | | 135 | | 79 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 06:32-06:38/6 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 06:39-06:47/8 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 06:37-06:48/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 06:36-06:49/13 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 06:36-06:49/13 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 06:38-06:50/12 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 06:39-06:49/10 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 06:41-06:49/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 06:43-06:49/6 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 06:45-06:48/3 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39-06:42/3 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 06:37-06:43/6 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:34-06:42/8 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:32-06:42/10 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:30-06:42/12 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:28-06:42/14 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:29-06:41/12 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:30-06:40/10 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 75 | 6 | 0 | 0 | 84 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 07:06-07:11/5 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 07:08-07:09/1 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 07:10-07:11/1 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:07-07:12/5 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05-07:13/8 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 07:02-07:13/11 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:00-07:14/14 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 06:57-07:13/16 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:56-07:13/17 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 06:56-07:13/17 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:08-07:10/2 | 06:25 06:56-07:11/15 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:06-07:10/4 | 06:23 06:57-07:10/13 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 07:42-07:49/7 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:03-07:09/6 | 06:20 06:59-07:09/10 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 07:41-07:50/9 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:01-07:08/7 | 06:18 07:01-07:04/3 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 07:43-07:51/8 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 06:58-07:05/7 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 07:05-07:10/5 | 07:17 07:45-07:52/7 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 06:55-07:04/9 | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 07:02-07:13/11 | 07:19 07:47-07:53/6 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 06:55-07:03/8 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 07:01-07:14/13 | 07:21 07:49-07:54/5 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 07:00-07:15/15 | 07:23 07:51-07:53/2 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 06:58-07:15/17 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 06:57-07:15/18 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 06:59-07:15/16 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 07:01-07:15/14 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 07:03-07:14/11 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 07:04-07:12/8 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 43 | 130 | 0 | 0 | 0 | 128 | 50 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:27-10:41/14 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 10:29-10:41/12 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 10:30-10:40/10 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 10:32-10:40/8 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 10:34-10:37/3 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | 10:22-10:24/2 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | 10:19-10:27/8 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | 10:19-10:29/10 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | 10:18-10:30/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | 10:18-10:31/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | 10:18-10:33/15 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | 10:18-10:33/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | 10:18-10:34/16 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:18-10:35/17 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:18-10:36/18 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:19-10:37/18 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:39-10:43/4 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | 10:19-10:37/18 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:38-10:43/5 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | 10:19-10:37/18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:20-10:44/24 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:19-10:44/25 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:20-10:45/25 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:21-10:45/24 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:41-10:46/5 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | 10:22-10:40/18 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:42-10:46/4 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | 10:22-10:40/18 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:43-10:45/2 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | 10:23-10:40/17 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:23-10:41/18 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 | 10:24-10:41/17 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | 10:25-10:41/16 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | 10:26-10:41/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | 10:27-10:42/15 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 | 08:24 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:05-10:06/1 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:04-10:08/4 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:04-10:10/6 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:04-10:11/7 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:04-10:11/7 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:04-10:12/8 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:04-10:12/8 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:05-10:13/8 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:05-10:13/8 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:06-10:14/8 |
| | 16:52 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:07-10:14/7 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:08-10:14/6 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:09-10:13/4 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 | 10:10-10:13/3 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:14 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 18 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 20:14-20:15/1 | 05:01 | 04:56 | 05:39 | 06:37 19:28-19:55/27 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:28-19:54/26 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:28-19:54/26 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:38-19:47/9 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:28-19:52/24 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:36-19:49/13 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:31-19:45/14 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:31-19:55/24 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:33-19:42/9 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 19:30-19:56/26 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 19:29-19:55/26 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 | 06:42 19:29-19:56/27 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 19:28-19:55/27 | 05:32 | 04:53 | 05:08 | 06:00 20:21-20:26/5 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 19:28-19:55/27 | 05:30 | 04:53 | 05:09 | 06:01 20:18-20:29/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 19:29-19:55/26 | 05:28 | 04:52 | 05:10 | 06:03 20:17-20:30/13 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 19:28-19:54/26 | 05:26 | 04:52 | 05:12 | 06:05 20:16-20:31/15 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 19:29-19:53/24 | 05:24 | 04:52 | 05:13 | 06:07 20:14-20:31/17 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 19:29-19:52/23 | 05:23 | 04:52 | 05:15 | 06:09 20:13-20:32/19 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 19:30-19:51/21 | 05:21 | 04:52 | 05:16 | 06:11 20:13-20:32/19 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 20:11-20:16/5 | 05:19 | 04:52 | 05:18 | 06:13 20:13-20:30/17 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 19:31-19:50/19 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 20:09-20:17/8 | 05:18 | 04:52 | 05:19 | 06:15 20:12-20:27/15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 19:32-19:47/15 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 20:08-20:19/11 | 05:16 | 04:52 | 05:21 | 06:17 20:12-20:25/13 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 19:35-19:44/9 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 20:08-20:21/13 | 05:15 | 04:52 | 05:22 | 06:18 20:13-20:23/10 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 19:39-19:50/11 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 20:08-20:23/15 | 05:13 | 04:52 | 05:24 | 06:20 20:14-20:21/7 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 19:37-19:52/15 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 20:07-20:24/17 | 05:12 | 04:53 | 05:25 | 06:22 20:15-20:19/4 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 19:35-19:54/19 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 20:07-20:25/18 | 05:10 | 04:53 | 05:27 | 06:24 19:32-19:54/22 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 20:07-20:25/18 | 05:09 | 04:53 | 05:29 | 06:26 19:31-19:55/24 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 20:08-20:24/16 | 05:07 | 04:54 | 05:31 | 06:28 19:31-19:55/24 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 20:08-20:24/16 | 05:06 | 04:54 | 05:32 | 06:30 19:30-19:56/26 | 07:28 | 07:28 | 08:30 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 20:09-20:21/12 | 05:05 | 04:55 | 05:34 | 06:32 19:29-19:56/27 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:10-20:20/10 | 05:04 | 04:56 | 05:36 | 06:34 19:28-19:55/27 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:28-19:55/27 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 538 | 1 | 0 | 0 | 387 | 163 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 19 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 17:22-17:39/17 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:21-17:41/20 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 17:21-17:43/22 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:04-18:14/10 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 17:20-17:43/23 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:01-18:16/15 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 17:20-17:42/22 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 17:59-18:17/18 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 17:20-17:42/22 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 17:58-18:17/19 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:20-17:41/21 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:18/21 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:21-17:40/19 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 17:56-18:18/22 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:22-17:38/16 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 17:55-18:18/23 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:24-17:37/13 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 17:55-18:18/23 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 17:27-17:33/6 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 17:55-18:16/21 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 17:55-18:14/19 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 17:56-18:11/15 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 19:07-19:12/5 | 08:00 17:56-18:08/12 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 19:03-19:14/11 | 08:02 17:57-18:06/9 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 19:01-19:15/14 | 08:04 17:59-18:03/4 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 19:00-19:16/16 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:59-19:16/17 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:59-19:14/15 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 18:15-18:18/3 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:58-19:11/13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 18:13-18:20/7 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:58-19:09/11 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 18:13-18:22/9 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:58-19:05/7 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:12-18:24/12 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:59-19:03/4 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 18:11-18:26/15 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:12-18:28/16 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 17:26-17:32/6 | 06:23 18:11-18:27/16 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 17:25-17:35/10 | 06:20 18:12-18:27/15 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 17:23-17:36/13 | 06:18 18:13-18:25/12 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 19:15-19:21/6 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 29 | 312 | 0 | 0 | 0 | 0 | 0 | 113 | 231 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 20 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 16:03-16:24/21 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:37-17:41/4 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 16:03-16:22/19 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 16:37-16:39/2 | 07:21 17:36-17:43/7 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:18-18:23/5 | 07:40 16:04-16:21/17 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:22 16:35-16:41/6 | 07:19 17:35-17:45/10 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:15-18:25/10 | 07:42 16:04-16:18/14 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 16:35-16:44/9 | 07:16 17:34-17:47/13 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:12-18:26/14 | 07:44 16:04-16:16/12 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 16:34-16:46/12 | 07:14 17:35-17:49/14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 18:11-18:26/15 | 07:46 16:05-16:13/8 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 16:34-16:49/15 | 07:11 17:34-17:50/16 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 18:10-18:26/16 | 07:49 16:06-16:12/6 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 16:34-16:51/17 | 07:09 17:35-17:50/15 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 18:10-18:24/14 | 07:51 16:08-16:09/1 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 16:33-16:53/20 | 07:06 17:36-17:48/12 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 18:10-18:22/12 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 16:33-16:54/21 | 07:04 17:39-17:46/7 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 18:10-18:19/9 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 16:34-16:54/20 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 18:11-18:16/5 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 16:34-16:54/20 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 18:11-18:14/3 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 16:34-16:53/19 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 16:36-16:52/16 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 16:37-16:51/14 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 16:38-16:49/11 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:55 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 16:11-16:16/5 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 16:08-16:20/12 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 16:06-16:21/15 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 16:05-16:22/17 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 16:04-16:22/18 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 16:04-16:24/20 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 16:03-16:24/21 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 202 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 98 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 21 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 20:46-21:04/18 | 04:56 20:15-20:48/33 | 05:39 20:55-21:06/11 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 20:06-20:44/38 | 22:18 | 21:39 20:14-20:53/39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 20:17-20:31/14 | 05:00 20:46-21:04/18 | 04:57 20:14-20:47/33 | 05:41 20:57-21:04/7 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 20:06-20:44/38 | 22:17 | 21:37 20:15-20:52/37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 20:14-20:33/19 | 04:59 20:47-21:03/16 | 04:58 20:58-21:04/6 | 05:43 20:59-21:03/4 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 20:06-20:44/38 | 22:17 20:14-20:48/34 | 21:35 20:16-20:52/36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 20:12-20:35/23 | 04:58 20:47-21:02/15 | 04:59 20:57-21:05/8 | 05:45 20:16-20:50/34 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 20:07-20:43/36 | 22:16 20:14-20:49/35 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 20:10-20:37/27 | 04:58 20:49-21:03/14 | 05:00 20:57-21:07/10 | 05:47 20:17-20:50/33 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 20:08-20:44/36 | 22:15 20:14-20:49/35 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 20:09-20:38/29 | 04:57 20:49-21:02/13 | 05:01 20:56-21:08/12 | 05:48 20:18-20:49/31 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 20:08-20:44/36 | 22:15 20:14-20:50/36 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 20:07-20:39/32 | 04:56 20:50-21:01/11 | 05:02 20:56-21:09/13 | 05:50 20:19-20:48/29 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 20:09-20:44/35 | 22:14 20:14-20:50/36 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 20:07-20:41/34 | 04:55 20:52-21:00/8 | 05:03 20:55-21:09/14 | 05:52 20:20-20:46/26 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 20:09-20:44/35 | 22:13 20:14-20:51/37 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 20:06-20:41/35 | 04:55 20:52-20:59/7 | 05:04 20:54-21:10/16 | 05:54 20:22-20:44/22 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 20:09-20:43/34 | 22:12 20:14-20:51/37 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 20:48-20:53/5 | 04:54 20:55-20:58/3 | 05:05 20:54-21:11/17 | 05:56 20:24-20:42/18 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 20:05-20:42/37 | 22:12 20:10-20:43/33 | 22:12 20:14-20:51/37 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 20:46-20:54/8 | 04:54 20:11-20:44/33 | 05:06 20:53-21:11/18 | 05:58 20:27-20:38/11 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 20:04-20:42/38 | 22:13 | 22:11 20:13-20:52/39 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 20:44-20:56/12 | 04:53 20:10-20:43/33 | 05:08 20:53-21:12/19 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 20:04-20:42/38 | 22:14 | 22:10 20:13-20:52/39 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 20:44-20:58/14 | 04:53 20:11-20:43/32 | 05:09 20:14-21:13/59 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 20:04-20:43/39 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 20:03-21:00/57 | 04:52 20:12-20:43/31 | 05:10 20:13-21:14/61 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 20:03-21:01/58 | 04:52 20:12-20:44/32 | 05:12 20:13-21:14/61 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 20:03-21:03/60 | 04:52 20:13-20:44/31 | 05:13 20:13-21:14/61 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 20:02-21:04/62 | 04:52 20:13-20:44/31 | 05:15 20:13-21:15/62 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 20:03-21:06/63 | 04:52 20:13-20:44/31 | 05:16 20:13-21:15/62 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:18 20:12-21:15/63 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:19 20:13-21:16/63 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:21 20:12-21:16/64 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:14 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:22 20:13-21:16/63 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 20:03-21:06/63 | 04:52 20:15-20:45/30 | 05:24 20:13-21:16/63 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:11 20:03-21:05/62 | 04:53 20:14-20:45/31 | 05:25 20:13-21:16/63 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 20:03-21:06/63 | 04:53 20:14-20:45/31 | 05:27 20:13-21:16/63 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 20:04-21:06/62 | 04:53 20:15-20:46/31 | 05:29 20:13-21:16/63 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 20:04-21:06/62 | 04:54 20:14-20:46/32 | 05:30 20:13-21:14/61 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 20:04-21:05/61 | 04:54 20:15-20:47/32 | 05:32 20:13-21:13/60 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 20:05-21:05/60 | 04:55 20:14-20:46/32 | 05:34 20:14-21:12/58 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 20:05-21:05/60 | 04:56 20:15-20:47/32 | 05:36 20:14-21:09/55 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:02 20:05-21:05/60 | | 05:37 20:55-21:08/13 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 20:14-20:54/40 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 1509 | 1107 | 1722 | 338 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 22 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 19:30-19:53/23 | 07:34 18:05-18:36/31 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:30-19:53/23 | 07:36 18:06-18:34/28 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 19:40-19:46/6 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:30-19:53/23 | 07:38 18:07-18:33/26 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:37-19:47/10 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:29-19:52/23 | 07:40 18:08-18:31/23 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:35-19:49/14 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 18:10-18:29/19 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 18:12-18:25/13 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:38-17:46/8 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:30-19:45/15 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:34-17:50/16 | 06:50 19:32-19:55/23 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:32-19:42/10 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:31-17:52/21 | 06:47 19:32-19:55/23 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 19:33-19:39/6 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:29-17:54/25 | 06:45 19:31-19:54/23 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 17:27-17:55/28 | 06:42 19:31-19:54/23 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 17:25-17:55/30 | 06:40 19:30-19:53/23 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 17:25-17:57/32 | 06:37 19:31-19:53/22 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 17:23-17:57/34 | 06:35 19:31-19:51/20 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 17:23-17:57/34 | 06:32 19:32-19:50/18 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 18:19-18:33/14 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 17:22-17:57/35 | 06:30 19:34-19:49/15 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 18:16-18:35/19 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 17:22-17:58/36 | 06:27 19:35-19:46/11 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 18:14-18:37/23 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 17:22-17:57/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:12-18:38/26 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 17:21-17:56/35 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:10-18:39/29 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 17:22-17:56/34 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:09-18:40/31 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 17:21-17:55/34 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:08-18:40/32 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 17:22-17:55/33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:06-18:40/34 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:22-17:54/32 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:05-18:40/35 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 17:22-17:52/30 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 18:05-18:40/35 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 17:24-17:51/27 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 19:42-19:45/3 | 07:23 18:04-18:40/36 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 17:25-17:49/24 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 19:38-19:49/11 | 07:25 18:04-18:39/35 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 17:27-17:47/20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 19:35-19:51/16 | 07:27 18:04-18:39/35 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 17:29-17:44/15 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 19:34-19:52/18 | 07:28 18:04-18:38/34 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 18:34-18:38/4 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 19:32-19:52/20 | 07:30 18:04-18:38/34 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 19:31-19:53/22 | 07:32 18:04-18:37/33 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:30-19:53/23 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 622 | 268 | 0 | 0 | 0 | 113 | 645 | 140 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 23 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 225 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 24 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:50 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:05 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:09 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:26 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 25 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 08:59-09:45/46 | 07:26 09:08-09:55/47 | 07:07 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 | 07:34 | 07:36 08:29-09:27/58 | 08:34 |
| | 16:13 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 08:58-09:47/49 | 07:24 09:09-09:53/44 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:28-09:26/58 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 08:58-09:49/51 | 07:21 09:10-09:52/42 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:29-09:26/57 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:06 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 08:58-09:51/53 | 07:19 09:11-09:49/38 | 07:00 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:28-09:24/56 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 08:58-09:52/54 | 07:16 09:12-09:47/35 | 06:57 | 05:46 | 04:58 | 05:00 | 05:46 | 06:45 | 07:42 09:59-10:11/12 | 07:44 08:28-09:23/55 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:06 |
| 6 | 08:59 | 08:18 08:58-09:54/56 | 07:14 09:14-09:45/31 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 09:54-10:16/22 | 07:46 08:28-09:22/54 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 08:59-09:55/56 | 07:11 09:16-09:41/25 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 09:51-10:19/28 | 07:48 08:29-09:21/52 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 08:59-09:56/57 | 07:09 09:20-09:38/18 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 09:49-10:22/33 | 07:50 08:29-09:20/51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 08:59-09:56/57 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 09:47-10:24/37 | 07:53 08:29-09:18/49 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:08 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 08:59-09:57/58 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 09:45-10:25/40 | 07:55 08:30-09:15/45 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 09:00-09:58/58 | 07:01 | 06:42 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 09:44-10:26/42 | 07:57 08:31-09:14/43 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:37 | 16:04 |
| 12 | 08:54 | 08:05 09:01-09:59/58 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 05:59 | 06:58 | 07:56 09:42-10:27/45 | 07:59 08:56-09:10/14 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 08:32-08:54/22 | 16:03 |
| 13 | 08:54 | 08:03 09:02-09:59/57 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:57 09:41-10:28/47 | 08:01 08:34-08:53/19 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 09:03-10:00/57 | 06:54 | 06:35 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 07:59 09:40-10:29/49 | 08:03 08:36-08:52/16 | 08:52 |
| | 16:32 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 09:06-10:00/54 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 09:39-10:29/50 | 08:05 08:39-08:51/12 | 08:53 |
| | 16:34 | 17:37 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:30 | 16:03 |
| 16 | 08:51 | 07:57 09:05-10:00/55 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 09:38-10:30/52 | 08:07 08:41-08:49/8 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 09:05-10:00/55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:07 | 08:05 09:37-10:30/53 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 09:06-10:01/55 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 09:36-10:30/54 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 09:05-10:00/55 | 06:41 | 06:22 | 05:19 | 04:52 | 05:17 | 06:13 | 07:11 | 08:09 09:36-10:30/54 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:44 | 21:42 | 22:18 | 22:01 | 21:00 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:47 09:05-10:01/56 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:11 09:36-10:31/55 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 09:05-10:00/55 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:16 | 07:15 | 08:13 09:36-10:31/55 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 09:05-10:00/55 | 06:33 | 06:15 | 05:14 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 09:35-10:31/56 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 09:06-10:00/54 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 09:35-10:31/56 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 09:05-09:59/54 | 06:28 | 06:10 | 05:11 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 09:35-10:30/55 | 08:22 | 08:59 |
| | 16:51 | 17:56 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 09:06-09:59/53 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 08:35-09:30/55 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 09:08-09:16/8 | 07:33 09:06-09:57/51 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 08:36-09:30/54 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:24 | 17:10 | 16:15 | 16:07 |
| 27 | 08:36 09:06-09:18/12 | 07:31 09:07-09:57/50 | 06:20 | 06:04 | 05:07 | 04:54 | 05:30 | 06:28 | 07:26 | 07:26 08:34-09:30/56 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 09:04-09:20/16 | 07:29 09:07-09:55/48 | 06:18 | 06:01 | 05:06 | 04:54 | 05:32 | 06:30 | 07:28 | 07:28 08:32-09:29/57 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:12 | 16:09 |
| 29 | 08:32 09:02-09:21/19 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:31-09:28/57 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 09:24-09:39/15 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:31-09:29/58 | 08:33 | 09:00 |
| | 17:04 09:00-09:22/22 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:10 | 16:11 |
| 31 | 08:29 08:59-09:42/43 | | 07:10 | | 05:02 | | 05:37 | 06:35 | | 07:34 08:30-09:28/58 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 16:59 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 135 | 1517 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 1290 | 669 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:14-14:50/36 10:59-11:45/46 | 08:28 15:55-16:27/32 11:07-11:56/49 09:16-09:39/23 | 07:27 08:14-08:44/30 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:05-12:43/38 10:25-10:32/7 | 17:08 14:32-14:53/21 09:45-11:03/78 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:14-14:50/36 10:58-11:45/47 | 08:26 15:55-16:29/34 11:07-11:56/49 09:15-09:41/26 | 07:24 08:14-08:43/29 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:06-12:43/37 10:23-10:34/11 | 17:10 14:35-14:51/16 09:45-11:03/78 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:15-14:51/36 10:59-11:46/47 | 08:24 15:55-16:30/35 11:08-11:56/48 09:14-09:42/28 | 07:22 08:14-08:41/27 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:07-12:44/37 10:22-10:36/14 | 17:12 14:39-14:47/8 09:45-11:03/78 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:14-14:51/37 10:59-11:46/47 | 08:22 15:55-16:31/36 09:45-11:04/79 | 07:19 08:15-08:41/26 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:07-12:44/37 10:21-10:37/16 | 17:15 11:09-11:55/46 09:13-09:43/30 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:15-14:53/38 11:00-11:48/48 | 08:20 15:55-16:32/37 09:45-11:03/78 | 07:17 08:15-08:39/24 | 06:58 | 05:46 | 04:58 |
| | 16:19 12:08-12:44/36 10:20-10:40/20 | 17:17 11:10-11:54/44 09:13-09:44/31 | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 14:15-14:53/38 11:00-11:48/48 | 08:18 16:37-16:42/5 11:12-11:53/41 | 07:15 08:17-08:38/21 | 06:55 | 05:44 | 04:57 |
| | 16:20 12:09-12:44/35 10:19-10:41/22 | 17:19 15:56-16:33/37 09:12-11:03/111 | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 14:15-14:53/38 10:59-11:48/49 | 08:16 15:55-16:45/50 09:12-11:03/111 | 07:12 08:18-08:36/18 | 06:53 | 05:42 | 04:56 |
| | 16:22 12:09-12:44/35 10:19-10:42/23 | 17:21 11:13-11:52/39 08:55-09:05/10 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:15-14:54/39 10:59-11:49/50 | 08:14 15:56-16:47/51 09:11-11:02/111 | 07:10 08:20-08:34/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 12:10-12:44/34 10:18-10:44/26 | 17:23 11:14-11:50/36 08:52-09:07/15 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:17-14:55/38 11:00-11:51/51 | 08:12 15:57-16:49/52 09:11-11:02/111 | 07:07 08:24-08:29/5 | 06:48 | 05:38 | 04:55 |
| | 16:25 12:12-12:45/33 10:18-10:46/28 | 17:25 11:16-11:49/33 08:50-09:09/19 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:17-14:56/39 11:01-11:51/50 | 08:10 15:58-16:50/52 08:49-11:01/132 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 12:13-12:45/32 10:18-10:47/29 | 17:27 11:18-11:47/29 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:17-14:56/39 11:01-11:52/51 | 08:08 15:59-16:51/52 08:48-11:01/133 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 12:14-12:44/30 10:17-10:48/31 | 17:30 11:21-11:44/23 | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 14:17-14:56/39 11:00-11:52/52 | 08:06 16:00-16:51/51 08:46-10:59/133 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 12:14-12:43/29 10:16-10:49/33 | 17:32 11:24-11:39/15 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:17-14:57/40 11:00-11:52/52 | 08:04 16:02-16:52/50 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 12:15-12:43/28 10:15-10:50/35 | 17:34 08:46-10:58/132 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:17-14:57/40 11:01-11:53/52 | 08:02 16:06-16:52/46 08:46-09:47/61 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 12:17-12:43/26 10:15-10:51/36 | 17:36 09:48-10:57/69 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:18-14:58/40 11:01-11:54/53 | 08:00 16:07-16:52/45 08:45-09:46/61 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 12:18-12:42/24 10:15-10:53/38 | 17:38 09:48-10:54/66 08:33-08:38/5 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:18-14:58/40 11:01-11:54/53 09:58-10:07/9 | 07:57 16:08-16:53/45 08:45-09:46/61 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 12:19-12:40/21 10:14-10:53/39 | 17:40 09:50-10:53/63 08:28-08:41/13 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:19-14:58/39 11:01-11:55/54 09:56-10:10/14 | 07:55 16:09-16:53/44 09:51-10:24/33 08:27-08:44/17 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 12:22-12:39/17 10:14-10:54/40 | 17:42 10:27-10:50/23 08:45-09:46/61 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:19-14:59/40 11:02-11:56/54 09:54-10:13/19 | 07:53 16:10-16:53/43 09:52-10:22/30 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 12:25-12:38/13 10:14-10:56/42 | 17:44 10:30-10:46/16 08:24-09:45/81 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:19-14:59/40 11:01-11:55/54 | 07:51 16:13-16:53/40 08:24-09:44/80 | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 12:29-12:34/5 09:52-10:56/64 | 17:47 09:54-10:20/26 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:20-14:59/39 09:52-10:58/66 | 07:48 16:26-16:53/27 09:57-10:18/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:02-11:56/54 | 17:49 16:17-16:23/6 08:22-09:44/82 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:20-14:59/39 09:50-10:58/68 | 07:46 16:26-16:52/26 09:15-09:42/27 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 11:02-11:56/54 | 17:51 10:00-10:13/13 08:20-09:14/54 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:21-14:59/38 09:49-10:58/69 | 07:44 16:27-16:51/24 08:18-09:14/56 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:02-11:56/54 | 17:53 09:16-09:40/24 | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:22-14:59/37 09:49-11:00/71 | 07:41 16:27-16:50/23 08:17-09:12/55 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:03-11:57/54 | 17:55 09:18-09:38/20 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 16:02-16:11/9 11:03-11:57/54 | 07:39 16:29-16:49/20 08:16-09:12/56 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 14:22-14:59/37 09:48-11:00/72 | 17:57 09:21-09:35/14 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 15:59-16:13/14 11:03-11:57/54 | 07:36 16:30-16:46/16 08:48-09:10/22 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 14:23-14:58/35 09:47-11:00/73 | 17:59 08:15-08:47/32 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:59-16:15/16 11:04-11:58/54 | 07:34 16:33-16:44/11 08:50-09:08/18 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:24-14:59/35 09:47-11:02/75 | 18:01 08:15-08:47/32 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:58-16:17/19 11:04-11:58/54 | 07:32 08:14-08:46/32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 14:25-14:58/33 09:47-11:02/75 | 18:03 08:52-09:05/13 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:57-16:18/21 11:05-11:58/53 | 07:29 08:14-08:45/31 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 14:26-14:58/32 09:46-11:02/76 | 18:05 08:57-09:00/3 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:56-16:19/23 11:05-11:57/52 09:23-09:31/8 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 14:27-14:57/30 09:46-11:03/77 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:56-16:22/26 11:06-11:57/51 09:20-09:35/15 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 14:29-14:56/27 09:45-11:03/78 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:55-16:25/30 11:06-11:57/51 09:18-09:37/19 | | 07:11 | | 05:03 | |
| | 17:06 14:30-14:54/24 09:45-11:03/78 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4956 | 4405 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:30 | 07:35<br>19:12 | 07:37 15:27-16:19/52 08:19-10:31/132<br>16:58 10:47-11:17/30 | 08:35 13:58-14:37/39 10:42-11:33/51<br>16:10 11:56-12:26/30 09:59-10:31/32 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 15:26-16:18/52 08:40-10:31/111<br>16:56 10:45-11:18/33 08:20-08:39/19 | 08:37 13:59-14:38/39 10:43-11:33/50<br>16:09 11:55-12:27/32 10:00-10:29/29 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 15:25-16:16/51 08:40-10:32/112<br>16:54 10:43-11:20/37 08:22-08:36/14 | 08:38 14:00-14:38/38 10:44-11:34/50<br>16:08 11:55-12:28/33 10:01-10:29/28 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41<br>19:05 | 07:43 15:26-16:15/49 08:42-10:33/111<br>16:52 10:43-11:22/39 08:26-08:34/8 | 08:40 14:01-14:39/38 10:45-11:34/49<br>16:08 11:55-12:29/34 10:03-10:29/26 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:43 08:58-09:09/11<br>19:02 | 07:45 16:07-16:11/4 10:41-11:23/42<br>16:50 15:25-16:02/37 08:42-10:33/111 | 08:42 14:00-14:39/39 10:45-11:34/49<br>16:07 11:54-12:29/35 10:04-10:27/23 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 08:55-09:11/16<br>18:59 | 07:47 15:25-16:02/37 09:15-10:33/78<br>16:48 10:40-11:24/44 08:42-09:14/32 | 08:43 14:01-14:39/38 10:46-11:34/48<br>16:06 11:55-12:30/35 10:05-10:27/22 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 08:53-09:13/20<br>18:57 | 07:49 15:25-16:01/36 09:15-10:33/78<br>16:46 10:39-11:25/46 08:43-09:13/30 | 08:44 14:01-14:39/38 10:46-11:34/48<br>16:06 11:54-12:30/36 10:06-10:26/20 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48 08:51-09:14/23<br>18:54 | 07:51 15:26-16:01/35 10:39-11:26/47 08:45-09:13/28<br>16:44 14:09-14:18/9 09:16-10:34/78 | 08:46 14:03-14:40/37 10:47-11:34/47<br>16:05 11:55-12:32/37 10:09-10:26/17 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 08:50-09:15/25<br>18:52 | 07:53 15:26-15:59/33 10:38-11:27/49 08:46-09:11/25<br>16:42 14:05-14:22/17 09:16-10:34/78 | 08:47 14:03-14:39/36 10:47-11:34/47<br>16:05 11:55-12:32/37 10:10-10:24/14 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 08:49-09:15/26<br>18:49 | 07:55 15:26-15:58/32 10:37-11:27/50 08:47-09:10/23<br>16:40 14:03-14:24/21 09:16-10:34/78 | 08:48 14:04-14:40/36 10:48-11:35/47<br>16:05 11:56-12:33/37 10:13-10:24/11 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 08:48-09:15/27<br>18:47 | 07:57 15:26-15:56/30 10:37-11:28/51 08:49-09:08/19<br>16:38 14:01-14:25/24 09:16-10:34/78 | 08:50 14:04-14:40/36 10:49-11:35/46<br>16:04 11:56-12:33/37 10:15-10:22/7 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 08:47-09:16/29<br>18:44 | 07:59 15:27-15:53/26 10:37-11:29/52 08:52-09:07/15<br>16:36 14:00-14:28/28 09:17-10:35/78 | 08:51 14:05-14:40/35 10:49-11:35/46<br>16:04 11:56-12:34/38 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 08:48-09:18/30<br>18:42 | 08:01 15:28-15:51/23 10:37-11:29/52 08:55-09:03/8<br>16:34 13:59-14:29/30 09:18-10:35/77 | 08:52 14:05-14:40/35 10:50-11:35/45<br>16:04 11:56-12:34/38 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 08:47-09:19/32<br>18:39 09:27-09:36/9 | 08:03 15:29-15:50/21 10:37-11:30/53<br>16:33 13:58-14:29/31 09:18-10:34/76 | 08:53 14:06-14:41/35 10:50-11:35/45<br>16:04 11:56-12:35/39 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 17:08-17:13/5 09:24-09:39/15<br>18:37 08:47-09:19/32 | 08:06 15:30-15:49/19 10:36-11:30/54<br>16:31 13:57-14:30/33 09:19-10:34/75 | 08:54 14:06-14:41/35 10:52-11:36/44<br>16:04 11:57-12:36/39 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04 17:04-17:17/13 09:21-09:41/20<br>18:35 08:47-09:19/32 | 08:08 15:32-15:48/16 10:37-11:31/54<br>16:29 13:57-14:32/35 09:20-10:35/75 | 08:55 14:07-14:41/34 10:52-11:36/44<br>16:04 11:57-12:36/39 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 17:01-17:19/18 08:47-09:42/55<br>18:32 09:55-10:04/9 | 08:09 15:33-15:47/14 10:37-11:31/54<br>16:28 13:57-14:32/35 09:21-10:34/73 | 08:56 14:08-14:42/34 10:52-11:36/44<br>16:04 11:57-12:36/39 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 16:59-17:20/21 08:48-09:43/55<br>18:30 09:51-10:07/16 | 08:11 15:36-15:45/9 10:37-11:31/54<br>16:26 13:56-14:33/37 09:22-10:34/72 | 08:56 14:08-14:42/34 10:53-11:37/44<br>16:04 11:58-12:37/39 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 16:58-17:21/23 08:48-09:44/56<br>18:27 09:48-10:10/22 | 08:13 13:56-14:33/37 09:23-10:34/71<br>16:25 10:37-11:31/54 | 08:57 14:09-14:43/34 10:54-11:37/43<br>16:04 11:59-12:38/39 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 16:57-17:22/25 08:49-09:44/55<br>18:25 09:46-10:11/25 | 08:15 13:56-14:34/38 09:24-10:33/69<br>16:23 10:37-11:31/54 | 08:58 14:09-14:43/34 10:54-11:37/43<br>16:05 11:58-12:38/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:57 | 07:16<br>19:38 | 08:14 16:56-17:22/26 08:50-10:12/82<br>18:23 10:29-10:45/16 | 08:17 13:56-14:35/39 09:26-10:34/68<br>16:22 10:38-11:32/54 | 08:59 14:10-14:44/34 10:55-11:38/43<br>16:05 11:59-12:39/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 16:56-17:23/27 10:27-10:49/22<br>18:20 16:46-16:55/9 08:53-10:14/81 | 08:19 13:56-14:35/39 09:28-10:34/66<br>16:20 10:38-11:32/54 | 08:59 14:10-14:44/34 10:56-11:39/43<br>16:05 12:00-12:40/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 16:42-17:23/41 10:24-10:51/27<br>18:18 11:05-11:12/7 08:54-10:15/81 | 08:21 13:56-14:36/40 10:38-11:33/55<br>16:19 12:06-12:10/4 09:29-10:33/64 | 09:00 14:11-14:45/34 10:56-11:39/43<br>16:06 12:00-12:40/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 16:40-17:23/43 10:22-10:53/31<br>18:16 10:59-11:18/19 08:55-10:15/80 | 08:23 13:56-14:36/40 10:39-11:33/54 09:31-09:50/19<br>16:18 12:02-12:15/13 09:51-10:33/42 | 09:00 14:11-14:45/34 10:56-11:39/43<br>16:07 12:01-12:40/39 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 15:38-16:23/45 09:20-09:54/34 07:56-08:12/16<br>17:13 09:56-10:21/25 08:14-09:16/62 | 08:25 13:57-14:36/39 10:39-11:33/54 09:34-09:49/15<br>16:16 12:00-12:17/17 09:52-10:33/41 | 09:00 14:11-14:45/34 10:56-11:40/44<br>16:07 12:01-12:40/39 |
| 26 | 05:29<br>21:51 | 06:27<br>20:44 | 07:25<br>19:25 | 07:24 15:37-16:22/45 08:14-09:16/62<br>17:11 09:19-10:23/64 07:59-08:10/11 | 08:27 13:57-14:37/40 10:40-11:33/53 09:37-09:46/9<br>16:15 11:58-12:19/21 09:53-10:32/39 | 09:01 14:12-14:47/35 10:57-11:41/44<br>16:08 12:02-12:41/39 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:23 | 07:26 15:37-16:23/46 08:15-09:17/62<br>17:09 09:19-10:25/66 | 08:28 13:57-14:37/40 10:40-11:33/53<br>16:14 11:57-12:21/24 09:54-10:32/38 | 09:01 14:13-14:47/34 10:57-11:42/45<br>16:09 12:03-12:42/39 |
| 28 | 05:33<br>21:47 | 06:30<br>20:40 | 07:29<br>19:20 | 07:29 15:35-16:22/47 08:15-09:17/62<br>17:07 09:18-10:27/69 | 08:30 13:58-14:37/39 10:41-11:33/52<br>16:13 11:57-12:23/26 09:55-10:31/36 | 09:01 14:13-14:48/35 10:58-11:42/44<br>16:10 12:03-12:42/39 |
| 29 | 05:34<br>21:46 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 15:31-16:21/50<br>17:04 08:16-10:28/132 | 08:32 13:58-14:38/40 10:41-11:33/52<br>16:12 11:56-12:24/28 09:57-10:31/34 | 09:01 14:13-14:48/35 10:58-11:43/45<br>16:11 12:04-12:43/39 |
| 30 | 05:36<br>21:44 | 06:34<br>20:35 | 07:33<br>19:15 | 07:33 15:29-16:20/51 08:16-10:29/133<br>17:02 10:53-11:10/17 | 08:34 13:59-14:38/39 10:42-11:34/52<br>16:11 11:56-12:25/29 09:58-10:31/33 | 09:01 14:13-14:48/35 10:58-11:43/45<br>16:11 12:04-12:42/38 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 15:28-16:19/51 08:18-10:30/132<br>17:00 10:50-11:14/24 | | 09:01 14:13-14:49/36 10:58-11:44/46<br>16:13 12:04-12:43/39 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 2643 | 5426 | 3912 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:33-15:27/54 11:14-11:29/15 09:53-10:02/9 | 08:28 15:16-15:36/20 08:57-09:07/10 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:53-13:10/17 10:13-10:45/32 | 17:08 09:10-10:20/70 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:33-15:28/55 11:15-11:29/14 09:51-10:03/12 | 08:26 15:19-15:30/11 08:55-09:09/14 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:53-13:09/16 10:12-10:45/33 | 17:10 09:10-10:19/69 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:34-15:29/55 11:17-11:29/12 09:51-10:04/13 | 08:24 08:54-10:18/84 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:55-13:09/14 10:13-10:47/34 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:34-15:30/56 11:18-11:27/9 09:50-10:05/15 | 08:22 08:53-10:17/84 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:56-13:08/12 10:13-10:47/34 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:35-15:32/57 11:21-11:26/5 09:50-10:07/17 | 08:20 08:53-10:15/82 | 07:17 | 06:58 19:46-19:49/3 | 05:46 | 04:58 |
| | 16:19 12:59-13:07/8 10:14-10:48/34 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:35-15:32/57 09:50-10:08/18 | 08:18 10:04-10:12/8 08:52-09:37/45 | 07:14 | 06:55 19:42-19:52/10 | 05:44 | 04:57 |
| | 16:20 10:14-10:48/34 | 17:19 09:38-10:00/22 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:36-15:33/57 09:49-10:09/20 | 08:16 09:40-09:59/19 | 07:12 | 06:53 19:40-19:53/13 | 05:42 | 04:56 |
| | 16:22 10:14-10:48/34 | 17:21 08:52-09:37/45 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:36-15:34/58 09:49-10:10/21 | 08:14 09:41-09:56/15 08:42-08:45/3 | 07:09 | 06:50 19:39-19:56/17 | 05:40 | 04:56 |
| | 16:23 10:14-10:49/35 | 17:23 08:51-09:35/44 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:37-15:35/58 09:49-10:12/23 | 08:12 09:44-09:53/9 08:40-08:49/9 | 07:07 | 06:48 19:37-19:56/19 | 05:38 | 04:55 |
| | 16:25 10:15-10:50/35 | 17:25 08:51-09:35/44 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:38-15:37/59 09:49-10:13/24 | 08:10 08:52-09:34/42 | 07:04 | 06:45 19:37-19:57/20 | 05:36 | 04:55 |
| | 16:26 10:16-10:51/35 | 17:27 08:38-08:51/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:38-15:36/58 09:49-10:14/25 | 08:08 08:36-09:33/57 | 07:02 | 06:43 19:36-19:56/20 | 05:34 | 04:54 |
| | 16:28 10:16-10:51/35 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 14:39-15:37/58 09:48-10:14/26 | 08:06 09:16-09:31/15 | 06:59 | 06:40 19:36-19:56/20 | 05:32 | 04:54 |
| | 16:30 10:15-10:51/36 | 17:32 08:33-09:14/41 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:40-15:38/58 09:48-10:15/27 | 08:04 09:19-09:29/10 | 06:57 | 06:38 19:35-19:55/20 | 05:30 | 04:53 |
| | 16:31 10:16-10:51/35 09:38-09:47/9 | 17:34 08:32-09:13/41 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:41-15:39/58 09:37-10:16/39 | 08:02 08:31-09:13/42 | 06:54 | 06:35 19:36-19:55/19 | 05:29 | 04:53 |
| | 16:33 10:17-10:52/35 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:42-15:40/58 | 07:59 08:31-08:54/23 | 06:52 | 06:33 19:37-19:54/17 | 05:27 | 04:53 |
| | 16:35 09:36-10:52/76 | 17:38 08:55-09:12/17 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:43-15:40/57 | 07:57 08:29-08:53/24 | 06:49 | 06:30 19:37-19:53/16 | 05:25 | 04:52 |
| | 16:37 09:35-10:52/77 | 17:40 08:56-09:10/14 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:44-15:41/57 | 07:55 08:29-08:54/25 | 06:47 | 06:28 19:39-19:51/12 | 05:23 | 04:52 |
| | 16:38 09:34-10:53/79 | 17:42 08:59-09:07/8 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:46-15:42/56 | 07:53 08:29-08:52/23 | 06:44 | 06:25 19:40-19:48/8 | 05:21 | 04:52 |
| | 16:40 09:34-10:53/79 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:47-15:42/55 | 07:50 08:29-08:52/23 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:33-10:53/80 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:48-15:42/54 | 07:48 08:30-08:51/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 09:33-10:53/80 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:49-15:42/53 | 07:46 08:30-08:49/19 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:33-10:53/80 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:49-15:42/53 | 07:44 08:31-08:49/18 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:32-10:52/80 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 14:51-15:43/52 | 07:41 08:31-08:47/16 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:32-10:52/80 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:53-15:43/50 09:32-10:22/50 | 07:39 08:33-08:46/13 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 10:23-10:52/29 09:17-09:25/8 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:55-15:42/47 09:32-10:21/49 | 07:36 08:36-08:42/6 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 10:23-10:51/28 09:15-09:28/13 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:09-15:43/34 10:25-10:51/26 09:14-09:30/16 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:58-15:06/8 09:33-10:22/49 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:10-15:42/32 09:32-10:22/50 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:26-10:50/24 09:13-09:31/18 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:11-15:42/31 09:12-10:22/70 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 10:28-10:49/21 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:11-15:41/30 09:11-10:22/71 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 10:30-10:47/17 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:13-15:40/27 09:11-10:21/70 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 10:32-10:44/12 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:14-15:38/24 | | 07:11 | | 05:03 | |
| | 17:06 09:10-10:21/71 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3880 | 1218 | 0 | 214 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 19:35-19:55/20 | 07:35 | 07:37 08:21-09:04/43 | 08:35 14:20-15:19/59 09:31-09:56/25 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 08:08-08:20/12 | 16:10 09:57-10:32/35 |
| 2 | 04:58 | 05:42 | 06:40 19:35-19:55/20 | 07:37 | 07:39 09:13-09:24/11 08:10-08:18/8 | 08:37 14:20-15:19/59 09:31-09:55/24 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 08:21-09:05/44 | 16:09 09:58-10:33/35 |
| 3 | 04:58 | 05:43 | 06:42 19:35-19:54/19 | 07:39 | 07:41 09:10-09:26/16 08:12-08:14/2 | 08:38 14:21-15:19/58 09:32-09:55/23 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 08:21-09:05/44 | 16:08 09:58-10:33/35 |
| 4 | 04:59 | 05:45 | 06:44 19:36-19:53/17 | 07:41 | 07:43 09:09-09:29/20 | 08:40 14:21-15:19/58 09:34-09:55/21 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 08:22-09:06/44 | 16:08 09:59-10:34/35 |
| 5 | 05:00 | 05:47 | 06:45 19:37-19:50/13 | 07:42 | 07:45 09:33-09:42/9 08:22-09:06/44 | 08:41 14:21-15:18/57 09:34-09:54/20 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 09:08-09:30/22 | 16:07 09:59-10:34/35 |
| 6 | 05:01 | 05:49 | 06:47 19:37-19:47/10 | 07:44 | 07:47 08:23-09:45/82 | 08:43 14:22-15:19/57 09:36-09:54/18 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 10:00-10:34/34 |
| 7 | 05:02 | 05:51 | 06:49 19:41-19:45/4 | 07:46 | 07:49 08:23-09:47/84 | 08:44 14:21-15:18/57 11:07-11:12/5 09:36-09:53/17 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 12:45-12:53/8 10:00-10:34/34 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 | 07:51 08:25-09:49/84 | 08:46 14:22-15:18/56 11:06-11:15/9 09:38-09:54/16 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 12:44-12:56/12 10:01-10:35/34 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 14:49-15:01/12 08:26-08:40/14 | 08:47 14:22-15:18/56 11:05-11:17/12 09:39-09:53/14 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 08:41-09:50/69 | 16:05 12:43-12:57/14 10:01-10:35/34 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 14:47-15:07/20 08:28-08:37/9 | 08:48 14:23-15:18/55 11:05-11:19/14 09:41-09:53/12 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 08:41-09:51/70 | 16:04 12:43-12:59/16 10:02-10:36/34 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 14:45-15:09/24 | 08:50 14:23-15:18/55 11:04-11:19/15 09:43-09:52/9 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 08:41-09:52/71 | 16:04 12:43-13:00/17 10:03-10:36/33 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 14:44-15:12/28 08:43-09:53/70 | 08:51 14:24-15:17/53 11:04-11:20/16 09:44-09:51/7 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 10:04-10:16/12 | 16:04 12:42-13:01/19 10:03-10:36/33 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 14:43-15:13/30 08:43-09:54/71 | 08:52 14:24-15:17/53 11:04-11:21/17 09:47-09:48/1 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 10:02-10:19/17 | 16:04 12:42-13:01/19 10:04-10:36/32 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 14:42-15:14/32 08:44-09:54/70 | 08:53 14:24-15:16/52 11:04-11:22/18 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 10:00-10:21/21 | 16:04 12:42-13:02/20 10:04-10:36/32 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 14:42-15:14/32 09:04-09:54/50 | 08:54 14:25-15:16/51 11:05-11:24/19 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 09:58-10:22/24 08:45-09:03/18 | 16:04 12:42-13:03/21 10:06-10:37/31 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 14:42-15:16/34 09:58-10:24/26 08:47-09:03/16 | 08:55 14:25-15:15/50 11:04-11:23/19 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 14:31-14:39/8 09:05-09:55/50 | 16:04 12:42-13:04/22 10:05-10:37/32 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 09:07-09:15/8 | 08:09 14:28-15:16/48 09:06-09:55/49 | 08:56 15:00-15:12/12 12:43-13:05/22 10:06-10:37/31 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 09:57-10:25/28 08:49-09:01/12 | 16:04 14:26-14:59/33 11:04-11:24/20 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 09:04-09:18/14 | 08:11 14:27-15:17/50 09:06-09:56/50 | 08:56 15:01-15:12/11 12:43-13:05/22 10:07-10:38/31 |
| | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 09:57-10:26/29 08:51-08:59/8 | 16:04 14:26-15:00/34 11:05-11:25/20 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 09:02-09:19/17 | 08:13 14:25-15:17/52 | 08:57 15:02-15:13/11 12:44-13:06/22 10:07-10:39/32 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 09:06-10:26/80 | 16:04 14:27-15:01/34 11:06-11:26/20 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 09:01-09:19/18 | 08:15 14:24-15:17/53 | 08:58 15:02-15:12/10 12:44-13:06/22 10:07-10:38/31 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 09:07-10:27/80 | 16:05 14:27-15:00/33 11:05-11:26/21 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 09:00-09:20/20 | 08:17 14:25-15:18/53 | 08:59 15:03-15:13/10 12:44-13:07/23 10:08-10:39/31 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 09:09-10:29/80 | 16:05 14:28-15:01/33 11:06-11:27/21 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 09:00-09:22/22 | 08:19 14:24-15:19/55 | 08:59 15:03-15:13/10 12:44-13:07/23 10:09-10:40/31 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 09:09-10:29/80 | 16:05 14:28-15:01/33 11:07-11:28/21 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 08:59-09:23/24 | 08:21 14:24-15:19/55 | 09:00 15:04-15:14/10 12:45-13:08/23 10:09-10:40/31 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 09:10-10:30/80 | 16:06 14:29-15:02/33 11:07-11:28/21 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 08:59-09:23/24 | 08:23 14:23-15:19/56 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:40/31 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 09:11-10:30/79 | 16:07 14:29-15:02/33 11:07-11:28/21 |
| 25 | 05:28 | 06:25 19:43-19:52/9 | 07:23 | 07:22 07:59-08:23/24 | 08:25 14:22-15:19/57 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:41/32 |
| | 21:52 | 20:47 | 19:28 | 17:13 08:28-08:38/10 | 16:16 09:12-10:31/79 | 16:07 14:29-15:03/34 11:08-11:28/20 |
| 26 | 05:29 | 06:27 19:41-19:54/13 | 07:25 | 07:24 07:59-08:23/24 | 08:27 14:22-15:19/57 | 09:01 15:05-15:17/12 12:48-13:10/22 10:11-10:42/31 |
| | 21:51 | 20:44 | 19:25 | 17:11 08:25-08:40/15 | 16:15 09:14-10:31/77 | 16:08 14:31-15:04/33 11:09-11:29/20 |
| 27 | 05:31 | 06:28 19:39-19:54/15 | 07:27 | 07:26 08:00-08:42/42 | 08:28 14:21-15:19/58 | 09:01 14:31-15:20/49 11:10-11:29/19 |
| | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 09:15-10:31/76 | 16:09 12:48-13:10/22 10:11-10:43/32 |
| 28 | 05:33 | 06:30 19:38-19:55/17 | 07:29 | 07:29 08:01-08:43/42 | 08:30 14:21-15:19/58 09:17-09:56/39 | 09:01 14:31-15:22/51 11:11-11:30/19 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 09:57-10:32/35 | 16:10 12:49-13:10/21 10:11-10:43/32 |
| 29 | 05:34 | 06:32 19:37-19:56/19 | 07:31 | 07:31 08:47-08:59/12 | 08:32 14:21-15:19/58 09:29-09:56/27 | 09:01 14:32-15:24/52 11:11-11:30/19 |
| | 21:45 | 20:37 | 19:17 | 17:04 08:01-08:43/42 | 16:12 09:57-10:32/35 09:19-09:28/9 | 16:11 12:50-13:10/20 10:12-10:44/32 |
| 30 | 05:36 | 06:34 19:36-19:56/20 | 07:33 | 07:33 08:45-09:01/16 | 08:34 14:21-15:19/58 09:30-09:56/26 | 09:01 14:32-15:24/52 11:11-11:29/18 |
| | 21:44 | 20:35 | 19:15 | 17:02 08:03-08:43/40 | 16:11 09:58-10:33/35 | 16:11 12:50-13:09/19 10:11-10:44/33 |
| 31 | 05:38 | 06:36 19:36-19:56/20 | | 07:35 08:22-09:03/41 | | 09:01 14:32-15:25/53 11:13-11:29/16 09:53-09:59/6 |
| | 21:42 | 20:32 | | 17:00 08:06-08:21/15 | | 16:13 12:51-13:10/19 10:12-10:44/32 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 113 | 103 | 470 | 3328 | 3740 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:59-14:33/34 09:41-09:49/8 | 08:28 09:33-09:49/16 | 07:27 | 07:08 19:09-19:32/23 | 05:55 | 05:02 |
| | 16:14 09:56-10:21/25 | 17:08 08:57-09:32/35 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:00-14:32/32 09:40-09:50/10 | 08:26 09:34-09:47/13 | 07:24 | 07:05 19:09-19:33/24 | 05:53 | 05:01 |
| | 16:15 09:55-10:21/26 | 17:10 08:55-09:32/37 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 14:01-14:33/32 09:40-09:51/11 | 08:24 09:37-09:45/8 | 07:22 | 07:03 19:08-19:32/24 | 05:51 | 05:00 |
| | 16:16 09:56-10:22/26 | 17:12 08:55-09:31/36 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:01-14:33/32 09:39-09:52/13 | 08:22 08:55-09:31/36 | 07:19 | 07:00 19:09-19:32/23 | 05:49 | 04:59 |
| | 16:18 09:56-10:22/26 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:03-14:33/30 09:39-09:54/15 | 08:20 08:56-09:30/34 | 07:17 | 06:58 19:09-19:30/21 | 05:46 | 04:58 |
| | 16:19 09:57-10:23/26 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:04-14:32/28 09:39-09:55/16 | 08:18 08:56-09:29/33 | 07:14 | 06:55 19:10-19:29/19 | 05:44 | 04:57 |
| | 16:20 09:57-10:24/27 | 17:19 08:47-08:50/3 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:05-14:32/27 09:38-09:56/18 | 08:16 09:18-09:27/9 08:57-09:15/18 | 07:12 | 06:53 19:10-19:27/17 | 05:42 | 04:56 |
| | 16:22 09:57-10:24/27 | 17:21 08:45-08:52/7 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:06-14:31/25 09:38-09:56/18 | 08:14 08:42-08:52/10 | 07:09 | 06:50 19:12-19:26/14 | 05:40 | 04:56 |
| | 16:23 09:57-10:24/27 | 17:23 08:56-09:13/17 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 14:22-14:30/8 09:59-10:26/27 | 08:12 08:40-08:54/14 | 07:07 | 06:48 19:14-19:22/8 | 05:38 | 04:55 |
| | 16:25 14:08-14:19/11 09:39-09:58/19 | 17:25 08:58-09:13/15 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:11-14:18/7 | 08:10 08:38-08:54/16 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 09:39-10:26/47 | 17:27 08:59-09:12/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:39-10:26/47 | 08:08 08:37-08:55/18 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 09:32-09:38/6 | 17:30 09:01-09:10/9 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:30-10:26/56 | 08:06 08:37-08:55/18 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:29-10:26/57 | 08:04 08:37-08:55/18 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:29-10:27/58 | 08:02 08:37-08:55/18 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:28-10:27/59 | 07:59 08:38-08:55/17 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:27-10:26/59 | 07:57 08:38-08:53/15 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:27-10:27/60 | 07:55 08:40-08:52/12 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-10:27/59 | 07:53 08:41-08:49/8 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:27-10:26/59 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 09:27-10:27/60 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:06-10:26/20 09:17-09:22/5 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:27-10:05/38 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:07-10:24/17 09:16-09:25/9 | 07:44 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:27-10:05/38 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:09-10:24/15 09:14-09:26/12 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:27-10:05/38 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 10:11-10:22/11 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:12-10:05/53 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 10:14-10:19/5 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:11-10:04/53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:11-10:05/54 | 07:34 | 06:23 18:17-18:29/12 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:11-10:04/53 | 07:32 | 06:21 18:14-18:30/16 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:11-10:03/52 | 07:29 | 06:18 18:13-18:32/19 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:05-09:07/2 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:10-10:02/52 | | 07:16 19:11-19:32/21 | 06:00 | 05:05 | 04:55 |
| | 17:02 09:03-09:09/6 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:01-10:01/60 | | 07:13 19:10-19:32/22 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 09:51-09:58/7 | | 07:11 19:10-19:33/23 | | 05:03 | |
| | 17:06 08:59-09:50/51 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1909 | 503 | 113 | 173 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 08:08-08:24/16 | 08:35 09:14-10:07/53 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 08:28-08:41/13 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 08:10-08:23/13 | 08:37 13:54-14:00/6 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 08:27-08:42/15 | 16:09 09:21-10:08/47 |
| 3 | 04:58 | 05:43 | 06:42 19:13-19:20/7 | 07:39 | 07:41 08:50-08:53/3 08:26-08:43/17 | 08:38 14:06-14:14/8 09:42-10:09/27 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 08:12-08:22/10 | 16:08 13:52-14:02/10 09:22-09:41/19 |
| 4 | 04:59 | 05:45 | 06:44 19:09-19:23/14 | 07:41 | 07:43 08:47-08:57/10 08:26-08:44/18 | 08:40 13:51-14:16/25 09:23-09:42/19 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 08:15-08:21/6 | 16:08 09:43-10:09/26 |
| 5 | 05:00 | 05:47 | 06:45 19:07-19:24/17 | 07:42 | 07:45 08:45-08:59/14 08:26-08:44/18 | 08:41 13:50-14:17/27 09:24-09:41/17 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 08:17-08:19/2 | 16:07 09:42-10:09/27 |
| 6 | 05:01 | 05:49 | 06:47 19:05-19:24/19 | 07:44 | 07:47 08:25-09:00/35 | 08:43 13:50-14:18/28 09:25-09:41/16 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 09:43-10:10/27 |
| 7 | 05:02 | 05:51 | 06:49 19:04-19:25/21 | 07:46 | 07:49 08:25-09:01/36 | 08:44 13:49-14:19/30 09:25-09:40/15 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 09:43-10:10/27 |
| 8 | 05:03 | 05:53 | 06:51 19:03-19:26/23 | 07:48 | 07:51 09:07-09:16/9 | 08:46 13:50-14:21/31 09:27-09:40/13 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 9 | 05:05 | 05:54 | 06:53 19:02-19:26/24 | 07:50 | 07:53 09:05-09:18/13 | 08:47 13:49-14:21/32 09:28-09:40/12 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 10 | 05:06 | 05:56 | 06:55 19:02-19:26/24 | 07:52 | 07:55 09:03-09:20/17 | 08:48 13:50-14:23/33 09:30-09:40/10 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 08:28-09:02/34 | 16:04 09:45-10:11/26 |
| 11 | 05:07 | 05:58 | 06:57 19:02-19:26/24 | 07:54 | 07:57 08:31-09:29/58 | 08:50 13:49-14:23/34 09:31-09:39/8 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:46-10:11/25 |
| 12 | 05:08 | 06:00 | 06:59 19:01-19:24/23 | 07:56 | 07:59 08:33-09:33/60 | 08:51 13:49-14:24/35 09:32-09:38/6 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:46-10:11/25 |
| 13 | 05:09 | 06:02 | 07:01 19:01-19:24/23 | 07:58 | 08:01 08:42-09:34/52 | 08:52 13:49-14:24/35 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 08:35-08:41/6 | 16:04 09:46-10:12/26 |
| 14 | 05:11 | 06:04 | 07:02 19:02-19:23/21 | 08:00 | 08:03 08:42-09:35/53 | 08:53 13:50-14:25/35 10:42-10:44/2 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 08:37-08:39/2 | 16:04 13:42-13:43/1 09:47-10:12/25 |
| 15 | 05:12 | 06:06 | 07:04 19:02-19:22/20 | 08:02 | 08:05 08:43-09:36/53 | 08:54 13:50-14:25/35 10:42-10:47/5 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 13:40-13:46/6 09:48-10:13/25 |
| 16 | 05:14 | 06:08 | 07:06 19:03-19:20/17 | 08:04 | 08:07 08:44-09:38/54 | 08:55 13:50-14:26/36 10:40-10:47/7 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 13:40-13:47/7 09:48-10:13/25 |
| 17 | 05:15 | 06:09 | 07:08 19:05-19:18/13 | 08:06 | 08:09 09:48-09:53/5 | 08:56 13:51-14:27/36 10:40-10:49/9 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 08:45-09:38/53 | 16:04 13:40-13:48/8 09:49-10:13/24 |
| 18 | 05:16 | 06:11 | 07:10 19:07-19:13/6 | 08:08 | 08:11 09:45-09:56/11 | 08:56 13:51-14:27/36 10:41-10:50/9 |
| | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 08:46-09:39/53 | 16:04 13:40-13:49/9 09:49-10:14/25 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 09:43-09:58/15 08:48-09:00/12 | 08:57 13:52-14:28/36 10:41-10:51/10 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 09:01-09:39/38 | 16:04 13:40-13:50/10 09:50-10:14/24 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 09:42-09:59/17 08:50-08:59/9 | 08:58 13:52-14:28/36 10:41-10:51/10 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 09:02-09:40/38 | 16:05 13:40-13:50/10 09:50-10:14/24 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 09:42-10:02/20 08:53-08:58/5 | 08:58 13:52-14:29/37 10:42-10:52/10 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 09:03-09:41/38 | 16:05 13:41-13:51/10 09:51-10:15/24 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 09:03-10:03/60 | 08:59 13:52-14:29/37 10:43-10:53/10 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 13:41-13:51/10 09:52-10:16/24 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 09:04-10:03/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 13:42-13:52/10 09:52-10:16/24 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 09:11-09:20/9 | 08:23 09:05-10:04/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 13:42-13:52/10 09:52-10:16/24 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 08:09-08:22/13 | 08:25 09:05-10:05/60 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 13:43-13:52/9 09:52-10:17/25 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 08:08-08:23/15 | 08:27 09:06-10:05/59 | 09:01 13:55-14:32/37 10:45-10:54/9 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 13:44-13:53/9 09:54-10:18/24 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 08:08-08:24/16 | 08:28 09:07-10:06/59 | 09:01 13:56-14:32/36 10:46-10:54/8 |
| | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 16:09 13:45-13:53/8 09:54-10:18/24 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 08:07-08:24/17 | 08:30 09:09-10:07/58 | 09:01 13:56-14:32/36 10:47-10:53/6 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 13:47-13:53/6 09:54-10:19/25 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 08:06-08:24/18 | 08:32 09:10-10:07/57 | 09:01 13:57-14:32/35 10:49-10:53/4 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 13:49-13:52/3 09:55-10:20/25 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 08:06-08:24/18 | 08:34 09:12-10:08/56 | 09:01 13:57-14:32/35 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 09:54-10:19/25 |
| 31 | 05:38 | 06:36 | | 07:35 08:07-08:25/18 | | 09:01 13:58-14:32/34 09:42-09:46/4 |
| | 21:42 | 20:32 | | 17:00 08:30-08:40/10 | | 16:13 09:55-10:20/25 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 296 | 134 | 1550 | 2202 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:22-14:49/87 09:47-09:53/6 | 08:28 14:06-14:52/46 | 07:27 08:02-08:49/47 | 07:08 | 05:55 20:07-20:31/24 | 05:02 |
| | 16:14 10:52-11:32/40 | 17:08 09:49-10:10/21 | 18:07 07:52-08:00/8 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 13:22-14:49/87 09:46-09:54/8 | 08:26 14:08-14:50/42 | 07:24 08:03-08:40/37 | 07:05 | 05:53 20:07-20:31/24 | 05:01 |
| | 16:15 10:52-11:32/40 | 17:10 09:51-10:09/18 | 18:10 07:50-08:02/12 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 13:22-14:50/88 09:45-09:56/11 | 08:24 14:09-14:47/38 | 07:22 08:03-08:28/25 | 07:03 | 05:51 20:06-20:32/26 | 05:00 |
| | 16:16 10:53-11:33/40 | 17:12 09:53-10:07/14 | 18:12 07:47-08:02/15 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 13:22-14:50/88 09:44-09:57/13 | 08:22 14:12-14:35/23 09:02-09:09/7 | 07:19 08:20-08:24/4 08:05-08:17/12 | 07:00 | 05:49 20:06-20:32/26 | 04:59 |
| | 16:18 10:53-11:33/40 | 17:15 09:56-10:04/8 | 18:14 07:46-08:03/17 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 13:24-14:51/87 09:44-09:59/15 | 08:20 14:15-14:33/18 | 07:17 07:45-08:03/18 | 06:58 | 05:46 20:06-20:32/26 | 04:58 |
| | 16:19 10:54-11:34/40 | 17:17 08:59-09:13/14 | 18:16 08:07-08:14/7 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 13:24-14:52/88 09:44-10:00/16 | 08:18 14:19-14:29/10 | 07:14 07:45-08:03/18 | 06:55 | 05:44 20:05-20:32/27 | 04:57 |
| | 16:20 10:54-11:34/40 | 17:19 08:57-09:15/18 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 13:24-14:52/88 09:43-10:01/18 | 08:16 08:55-09:17/22 | 07:12 07:45-08:02/17 | 06:53 | 05:42 20:05-20:31/26 | 04:56 |
| | 16:22 10:54-11:34/40 | 17:21 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 13:24-14:52/88 09:43-10:02/19 | 08:14 08:53-09:17/24 | 07:09 07:46-08:02/16 | 06:50 | 05:40 20:05-20:31/26 | 04:56 |
| | 16:23 10:55-11:35/40 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 13:25-14:53/88 09:43-10:04/21 | 08:12 08:53-09:18/25 | 07:07 07:46-08:00/14 | 06:48 | 05:38 20:06-20:30/24 | 04:55 |
| | 16:25 10:56-11:36/40 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 13:26-14:54/88 09:43-10:05/22 | 08:10 08:52-09:19/27 | 07:04 07:47-07:58/11 | 06:45 | 05:36 20:06-20:30/24 | 04:55 |
| | 16:26 10:57-11:36/39 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 13:26-14:54/88 09:43-10:06/23 | 08:08 08:52-09:20/28 | 07:02 07:50-07:55/5 | 06:43 | 05:34 20:07-20:30/23 | 04:54 |
| | 16:28 10:57-11:36/39 | 17:29 08:43-08:50/7 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 13:26-14:55/89 09:42-10:06/24 | 08:06 08:39-09:20/41 | 06:59 | 06:40 | 05:32 20:07-20:29/22 | 04:54 |
| | 16:30 10:57-11:36/39 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 13:27-14:55/88 09:42-10:07/25 | 08:04 08:37-09:21/44 | 06:57 | 06:38 | 05:30 20:08-20:28/20 | 04:53 |
| | 16:31 10:58-11:36/38 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 13:28-14:56/88 09:42-10:08/26 | 08:02 08:34-09:21/47 | 06:54 | 06:35 | 05:29 20:09-20:27/18 | 04:53 |
| | 16:33 10:58-11:36/38 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 13:29-14:57/88 09:42-10:09/27 | 07:59 08:30-09:21/51 | 06:52 | 06:33 | 05:27 20:10-20:26/16 | 04:53 |
| | 16:35 10:59-11:37/38 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 13:29-14:56/87 09:42-10:09/27 | 07:57 08:28-09:21/53 | 06:49 | 06:30 | 05:25 20:11-20:24/13 | 04:52 |
| | 16:36 10:59-11:36/37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 13:30-14:57/87 09:42-10:10/28 | 07:55 08:27-09:21/54 | 06:47 | 06:28 | 05:23 20:14-20:23/9 | 04:52 |
| | 16:38 11:00-11:36/36 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 13:31-14:58/87 09:43-10:11/28 | 07:53 08:20-09:20/60 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:02-11:36/34 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 13:31-14:57/86 09:42-10:11/29 | 07:50 08:17-09:20/63 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:02-11:36/34 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 13:33-14:58/85 09:43-10:12/29 | 07:48 08:16-09:19/63 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:04-11:36/32 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 13:33-14:58/85 09:43-10:12/29 | 07:46 08:12-09:18/66 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:04-11:35/31 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 13:34-14:57/83 09:42-10:12/30 | 07:44 08:10-09:17/67 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 11:05-11:34/29 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 13:36-14:58/82 09:43-10:13/30 | 07:41 08:07-09:15/68 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:07-11:34/27 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 13:37-14:58/81 09:43-10:13/30 | 07:39 08:05-09:13/68 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:08-11:32/24 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 13:38-14:57/79 09:44-10:13/29 | 07:36 09:00-09:09/9 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:10-11:31/21 | 17:59 08:03-08:57/54 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 13:41-14:58/77 09:45-10:14/29 | 07:34 08:03-08:56/53 | 06:23 | 06:06 20:14-20:25/11 | 05:09 | 04:54 |
| | 16:56 11:13-11:30/17 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 13:43-14:57/74 09:45-10:13/28 | 07:32 08:02-08:54/52 | 06:21 | 06:04 20:12-20:27/15 | 05:08 | 04:54 |
| | 16:58 11:16-11:26/10 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:02-14:56/54 09:46-10:13/27 | 07:29 08:02-08:52/50 | 06:18 | 06:02 20:10-20:28/18 | 05:06 | 04:55 |
| | 17:00 13:46-14:01/15 | 18:05 07:55-07:59/4 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:03-14:56/53 09:46-10:12/26 | | 07:16 | 06:00 20:09-20:30/21 | 05:05 | 04:55 |
| | 17:02 13:52-13:55/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:04-14:55/51 | | 07:13 | 05:57 20:08-20:30/22 | 05:04 | 04:56 |
| | 17:04 09:47-10:12/25 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:05-14:54/49 | | 07:11 | | 05:03 | |
| | 17:06 09:48-10:11/23 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4180 | 1377 | 283 | 87 | 374 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:17-20:40/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:22-08:49/27<br>16:58 | 08:35 13:08-14:36/88 09:25-09:48/23<br>16:10 10:38-11:17/39 |
| 2 | 04:58<br>22:18 | 05:41 20:17-20:41/24<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:23-08:48/25<br>16:56 | 08:37 13:08-14:37/89 09:25-09:47/22<br>16:09 10:39-11:18/39 |
| 3 | 04:58<br>22:17 | 05:43 20:16-20:40/24<br>21:36 | 06:42<br>20:24 | 07:39 08:26-08:35/9<br>19:07 | 07:41 08:23-08:47/24<br>16:54 | 08:38 13:09-14:37/88 09:26-09:47/21<br>16:08 10:39-11:19/40 |
| 4 | 04:59<br>22:17 | 05:45 20:16-20:41/25<br>21:34 | 06:44<br>20:22 | 07:41 08:24-08:37/13<br>19:05 | 07:43 08:25-08:46/21<br>16:52 | 08:40 13:09-14:38/89 09:28-09:47/19<br>16:08 10:40-11:20/40 |
| 5 | 05:00<br>22:16 | 05:47 20:16-20:41/25<br>21:32 | 06:45<br>20:19 | 07:42 08:22-08:38/16<br>19:02 | 07:45 13:48-13:59/11<br>16:50 08:27-08:44/17 | 08:41 13:09-14:37/88 09:28-09:46/18<br>16:07 10:39-11:20/41 |
| 6 | 05:01<br>22:15 | 05:49 20:15-20:41/26<br>21:30 | 06:47<br>20:17 | 07:44 08:21-08:38/17<br>18:59 | 07:47 13:44-14:03/19<br>16:48 08:29-08:42/13 | 08:43 13:10-14:38/88 09:30-09:46/16<br>16:06 10:40-11:20/40 |
| 7 | 05:02<br>22:15 | 05:51 20:15-20:41/26<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:38/18<br>18:57 | 07:49 13:41-14:05/24 08:32-08:38/6<br>16:46 09:26-09:34/8 | 08:44 13:10-14:37/87 09:30-09:45/15<br>16:06 10:40-11:20/40 |
| 8 | 05:03<br>22:14 | 05:52 20:15-20:41/26<br>21:26 | 06:51<br>20:12 | 07:48 08:20-08:38/18<br>18:54 | 07:51 13:40-14:19/39<br>16:44 09:24-09:38/14 | 08:46 13:11-14:38/87 09:32-09:45/13<br>16:05 10:41-11:21/40 |
| 9 | 05:04<br>22:13 | 05:54 20:14-20:40/26<br>21:24 | 06:53<br>20:09 | 07:50 08:20-08:38/18<br>18:52 08:40-08:51/11 | 07:53 13:38-14:21/43<br>16:42 09:22-09:40/18 | 08:47 13:11-14:38/87 09:33-09:44/11<br>16:05 10:41-11:21/40 |
| 10 | 05:06<br>22:12 | 05:56 20:15-20:40/25<br>21:22 | 06:55<br>20:07 | 07:52 08:38-09:00/22<br>18:49 08:20-08:37/17 | 07:55 13:37-14:23/46<br>16:40 09:20-09:41/21 | 08:48 13:12-14:39/87 09:35-09:44/9<br>16:04 10:42-11:22/40 |
| 11 | 05:07<br>22:11 | 05:58 20:15-20:40/25<br>21:19 | 06:57<br>20:04 | 07:54 09:05-09:11/6 08:22-08:36/14<br>18:47 08:37-09:03/26 | 07:57 13:36-14:25/49<br>16:38 09:19-09:42/23 | 08:50 13:12-14:39/87 09:37-09:43/6<br>16:04 10:42-11:23/41 |
| 12 | 05:08<br>22:10 | 06:00 20:16-20:39/23<br>21:17 | 06:59<br>20:01 | 07:56 08:24-09:14/50<br>18:44 | 07:59 13:35-14:27/52<br>16:36 09:19-09:44/25 | 08:51 13:12-14:39/87<br>16:04 10:42-11:23/41 |
| 13 | 05:09<br>22:09 | 06:02 20:16-20:38/22<br>21:15 | 07:01<br>19:59 | 07:58 08:36-09:23/47<br>18:42 08:27-08:34/7 | 08:01 13:35-14:28/53 09:18-09:44/26<br>16:34 13:23-13:28/5 | 08:52 13:12-14:39/87<br>16:04 10:43-11:23/40 |
| 14 | 05:11<br>22:08 | 06:04 20:17-20:37/20<br>21:13 | 07:02<br>19:56 | 08:00 08:35-09:26/51<br>18:39 | 08:03 13:34-14:28/54 09:18-09:45/27<br>16:33 13:18-13:33/15 | 08:53 13:13-14:39/86<br>16:04 10:43-11:23/40 |
| 15 | 05:12<br>22:07 | 06:06 20:18-20:36/18<br>21:10 | 07:04<br>19:54 | 08:02 08:35-09:28/53<br>18:37 | 08:05 13:15-14:29/74 09:17-09:45/28<br>16:31 10:48-10:58/10 | 08:54 13:13-14:40/87<br>16:04 10:44-11:24/40 |
| 16 | 05:14<br>22:06 | 06:08 20:20-20:34/14<br>21:08 | 07:06<br>19:51 | 08:04 08:35-09:29/54<br>18:35 | 08:07 13:14-14:31/77 09:18-09:47/29<br>16:29 10:46-11:03/17 | 08:55 13:14-14:40/86<br>16:04 10:44-11:24/40 |
| 17 | 05:15<br>22:04 | 06:09 20:22-20:31/9<br>21:06 | 07:08<br>19:48 | 08:06 09:31-09:43/12<br>18:32 08:35-09:29/54 | 08:09 13:12-14:31/79 09:18-09:47/29<br>16:28 10:44-11:05/21 | 08:56 13:14-14:40/86<br>16:04 10:45-11:25/40 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 08:37-09:45/68<br>18:30 | 08:11 13:11-14:32/81 09:17-09:47/30<br>16:26 10:42-11:06/24 | 08:56 13:15-14:41/86<br>16:04 10:45-11:25/40 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 08:39-09:47/68<br>18:27 | 08:13 13:10-14:32/82 09:17-09:47/30<br>16:25 10:41-11:08/27 | 08:57 13:16-14:42/86<br>16:04 10:46-11:26/40 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 08:41-09:48/67<br>18:25 | 08:15 13:09-14:32/83 09:17-09:47/30<br>16:23 10:40-11:09/29 | 08:58 13:16-14:41/85<br>16:05 10:46-11:26/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 08:45-09:48/63<br>18:23 | 08:17 13:09-14:34/85 09:19-09:48/29<br>16:22 10:40-11:11/31 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 08:47-09:50/63<br>18:20 | 08:19 13:09-14:34/85 09:19-09:48/29<br>16:20 10:40-11:12/32 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:48-09:50/62<br>18:18 | 08:21 13:09-14:34/85 09:19-09:48/29<br>16:19 10:39-11:13/34 | 09:00 13:17-14:43/86<br>16:06 10:48-11:28/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:51-09:50/59<br>18:16 | 08:23 13:08-14:35/87 09:20-09:48/28<br>16:18 10:39-11:13/34 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 07:56-08:50/54<br>17:13 | 08:25 13:08-14:35/87 09:20-09:48/28<br>16:16 10:39-11:14/35 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 26 | 05:29 20:26-20:31/5<br>21:51 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 07:58-08:50/52<br>17:11 | 08:27 13:08-14:35/87 09:21-09:48/27<br>16:15 10:38-11:15/37 | 09:01 13:19-14:45/86<br>16:08 10:50-11:30/40 |
| 27 | 05:31 20:23-20:34/11<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 08:01-08:51/50<br>17:09 | 08:28 13:08-14:36/88 09:21-09:48/27<br>16:14 10:38-11:16/38 | 09:01 13:19-14:46/87<br>16:09 10:50-11:30/40 |
| 28 | 05:33 20:21-20:35/14<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 08:06-08:51/45<br>17:07 | 08:30 13:08-14:36/88 09:22-09:48/26<br>16:13 10:39-11:16/37 | 09:01 13:20-14:46/86<br>16:10 10:50-11:31/41 |
| 29 | 05:34 20:20-20:37/17<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 08:07-08:50/43<br>17:04 | 08:32 13:08-14:36/88 09:23-09:48/25<br>16:12 10:39-11:17/38 | 09:01 13:20-14:47/87<br>16:10 10:51-11:31/40 |
| 30 | 05:36 20:19-20:38/19<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 08:09-08:50/41<br>17:02 | 08:34 13:08-14:37/89 09:24-09:48/24<br>16:11 10:39-11:18/39 | 09:01 13:20-14:47/87<br>16:11 10:50-11:31/41 |
| 31 | 05:38 20:18-20:39/21<br>21:42 | 06:36<br>20:32 | | 07:35 08:22-08:50/28<br>17:00 08:14-08:18/4 | | 09:01 13:21-14:48/87<br>16:12 10:51-11:31/40 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 87 | 381 | 0 | 1300 | 2981 | 4107 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:59-12:48/49<br>16:14 | 08:28 11:39-14:28/169<br>17:08 | 07:27 11:43-14:29/166 08:18-08:46/28<br>18:07 08:56-09:39/43 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:58-12:48/50<br>16:15 | 08:26 11:39-14:29/170<br>17:10 | 07:24 11:45-14:28/163 08:19-08:46/27<br>18:09 08:57-09:38/41 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:59-12:49/50<br>16:16 | 08:24 11:39-14:30/171<br>17:12 | 07:22 11:46-14:27/161 08:19-08:45/26<br>18:12 08:57-09:37/40 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:58-12:50/52<br>16:18 | 08:22 11:38-14:30/172<br>17:15 | 07:19 11:48-14:26/158 08:20-08:44/24<br>18:14 08:58-09:36/38 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:59-12:51/52<br>16:19 | 08:20 11:38-14:31/173<br>17:17 | 07:17 11:49-14:24/155 08:21-08:42/21<br>18:16 08:58-09:34/36 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 |
| 6 | 08:59 11:59-12:52/53<br>16:20 | 08:18 11:38-14:32/174<br>17:19 | 07:14 11:52-14:23/151 08:23-08:40/17<br>18:18 09:00-09:33/33 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 11:57-12:52/55<br>16:22 | 08:16 11:37-14:32/175<br>17:21 | 07:12 11:55-14:20/145 08:25-08:37/12<br>18:20 09:01-09:30/29 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:56-12:53/57<br>16:23 | 08:14 11:37-14:33/176<br>17:23 09:13-09:24/11 | 07:09 11:58-14:17/139<br>18:22 09:02-09:27/25 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:54-12:54/60<br>16:25 | 08:12 11:37-14:33/176<br>17:25 09:09-09:28/19 | 07:07 12:06-14:15/129<br>18:24 09:05-09:25/20 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:54-12:55/61<br>16:26 | 08:10 11:37-14:34/177<br>17:27 09:07-09:31/24 | 07:04 12:13-14:11/118 07:36-07:44/8<br>18:26 09:09-09:19/10 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 11:52-12:55/63<br>16:28 | 08:08 11:37-14:34/177<br>17:29 09:05-09:33/28 | 07:02 12:14-14:07/113<br>18:28 07:33-07:48/15 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 13:45-13:50/5<br>16:29 11:51-12:56/65 | 08:06 11:37-14:34/177<br>17:32 09:03-09:34/31 | 06:59 12:14-13:44/90<br>18:30 07:30-07:49/19 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 13:40-13:56/16<br>16:31 11:51-12:57/66 | 08:04 11:37-14:35/178<br>17:34 09:02-09:36/34 | 06:57 12:14-13:42/88<br>18:32 07:22-07:51/29 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 13:38-14:00/22<br>16:33 11:50-12:58/68 | 08:02 11:37-14:35/178<br>17:36 09:01-09:37/36 | 06:54 12:16-13:41/85<br>18:34 07:19-07:51/32 | 06:35<br>20:35 | 05:28<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 13:36-14:03/27<br>16:35 11:49-12:59/70 | 07:59 11:36-14:35/179<br>17:38 08:59-09:38/39 | 06:52 12:16-13:40/84<br>18:36 07:16-07:51/35 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 13:33-14:04/31<br>16:36 11:48-12:59/71 | 07:57 11:37-14:35/178<br>17:40 08:59-09:39/40 | 06:49 12:18-13:39/81<br>18:38 07:14-07:52/38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 13:32-14:07/35<br>16:38 11:48-13:00/72 | 07:55 11:37-14:35/178 08:30-08:39/9<br>17:42 08:58-09:40/42 | 06:47 12:19-13:36/77<br>18:40 07:13-07:52/39 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 13:31-14:09/38<br>16:40 11:47-13:01/74 | 07:53 11:37-14:35/178 08:26-08:41/15<br>17:44 08:57-09:40/43 | 06:44 12:20-13:34/74<br>18:42 07:13-07:52/39 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 13:30-14:11/41<br>16:42 11:46-13:02/76 | 07:50 11:37-14:35/178 08:24-08:43/19<br>17:46 08:57-09:41/44 | 06:41 12:23-13:32/69<br>18:44 07:12-07:51/39 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 13:29-14:13/44<br>16:44 11:46-13:03/77 | 07:48 11:38-14:35/177 08:23-08:45/22<br>17:49 08:57-09:41/44 | 06:39 12:25-13:30/65<br>18:46 07:11-07:50/39 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 13:28-14:14/46<br>16:46 11:45-13:03/78 | 07:46 11:38-14:34/176 08:21-08:46/25<br>17:51 08:56-09:41/45 | 06:36 12:28-13:27/59<br>18:48 07:12-07:50/38 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 13:26-14:16/50<br>16:48 11:44-13:07/83 | 07:44 11:39-14:34/175 08:21-08:47/26<br>17:53 08:56-09:42/46 | 06:34 12:31-13:23/52<br>18:50 07:12-07:49/37 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 13:26-14:18/52<br>16:50 11:44-13:13/89 | 07:41 11:38-14:33/175 08:19-08:47/28<br>17:55 08:55-09:41/46 | 06:31 12:35-13:19/44<br>18:52 07:13-07:48/35 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 13:25-14:19/54<br>16:52 11:43-13:16/93 | 07:39 11:39-14:33/174 08:19-08:48/29<br>17:57 08:55-09:41/46 | 06:29 12:41-13:13/32<br>18:54 07:14-07:46/32 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 13:24-14:20/56<br>16:54 11:42-13:18/96 | 07:36 11:40-14:32/172 08:18-08:47/29<br>17:59 08:55-09:41/46 | 06:26 12:55-12:59/4<br>18:56 07:14-07:44/30 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 13:24-14:22/58<br>16:56 11:43-13:22/99 | 07:34 11:41-14:32/171 08:19-08:48/29<br>18:01 08:55-09:41/46 | 06:23 07:17-07:42/25<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:42-14:23/161<br>16:58 | 07:32 11:41-14:31/170 08:18-08:47/29<br>18:03 08:55-09:40/45 | 06:21 07:33-07:36/3<br>19:00 07:20-07:31/11 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 11:41-14:24/163<br>17:00 | 07:29 11:42-14:30/168 08:18-08:47/29<br>18:05 08:56-09:40/44 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:41-14:25/164<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 11:40-14:26/166<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 11:40-14:27/167<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3175 | 5980 | 3515 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35 12:53-14:22/89<br>19:12 08:07-08:28/21 | 07:37 11:07-14:03/176<br>16:58 08:37-09:00/23 | 08:35 11:34-12:37/63<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 14:24-14:42/18 08:10-08:26/16<br>19:10 12:52-14:23/91 | 07:39 11:07-14:03/176<br>16:56 08:40-08:57/17 | 08:37 11:36-12:38/62<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 12:51-14:47/116<br>19:07 08:12-08:24/12 | 07:41 11:07-14:02/175<br>16:54 08:44-08:53/9 | 08:38 11:38-12:38/60<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 12:50-14:51/121<br>19:04 09:44-10:00/16 | 07:43 11:08-14:02/174<br>16:52 | 08:40 11:41-12:38/57<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:38-14:53/135<br>19:02 09:41-10:03/22 | 07:45 11:08-14:02/174<br>16:50 | 08:41 11:42-12:37/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 12:33-14:55/142 09:03-09:11/8<br>18:59 09:38-10:05/27 | 07:47 11:08-14:01/173<br>16:48 | 08:43 11:45-12:38/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 12:29-14:57/148 08:59-09:14/15<br>18:57 09:36-10:07/31 | 07:49 11:08-14:00/172<br>16:46 | 08:44 11:45-12:37/52<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 12:26-14:58/152 08:57-09:16/19<br>18:54 09:34-10:08/34 | 07:51 11:10-14:00/170<br>16:44 | 08:46 11:46-12:38/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 12:23-14:59/156 08:55-09:18/23<br>18:52 09:33-10:09/36 | 07:53 11:10-14:00/170<br>16:42 | 08:47 11:47-12:37/50<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 12:21-15:00/159 08:54-09:18/24<br>18:49 09:31-10:10/39 | 07:55 11:10-13:59/169<br>16:40 | 08:48 11:48-12:38/50<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 12:19-15:01/162 08:53-09:19/26<br>18:47 09:30-10:11/41 | 07:57 11:11-13:58/167<br>16:38 | 08:50 11:49-12:38/49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 12:17-15:02/165 08:52-09:19/27<br>18:44 09:29-10:11/42 | 07:59 11:12-13:58/166<br>16:36 | 08:51 11:49-12:38/49<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 12:15-15:02/167 08:51-09:19/28<br>18:42 09:28-10:12/44 | 08:01 11:13-13:57/164<br>16:34 | 08:52 11:50-12:38/48<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 12:14-15:03/169 08:51-09:20/29<br>18:39 09:29-10:13/44 | 08:03 11:13-13:56/163<br>16:33 | 08:53 11:50-12:38/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 12:14-15:04/170 08:51-09:20/29<br>18:37 09:28-10:13/45 | 08:05 11:14-13:55/161<br>16:31 | 08:54 11:51-12:38/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 08:10-08:19/9<br>19:51 | 08:04 12:12-15:04/172 08:51-09:20/29<br>18:35 09:27-10:13/46 | 08:07 12:57-13:55/58<br>16:29 11:16-12:55/99 | 08:55 11:52-12:38/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 08:06-08:30/24<br>19:48 | 08:06 12:11-15:05/174 08:51-09:19/28<br>18:32 09:27-10:13/46 | 08:09 12:58-13:54/56<br>16:28 11:16-12:52/96 | 08:56 11:53-12:39/46<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 08:03-08:32/29<br>19:46 | 08:08 12:10-15:05/175 08:51-09:19/28<br>18:30 09:27-10:13/46 | 08:11 12:59-13:53/54<br>16:26 11:17-12:50/93 | 08:56 11:53-12:39/46<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 13:29-13:58/29<br>19:43 08:01-08:32/31 | 08:10 12:10-15:05/175 08:51-09:18/27<br>18:27 09:26-10:12/46 | 08:13 13:00-13:52/52<br>16:25 11:18-12:47/89 | 08:57 11:54-12:40/46<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 13:22-14:04/42<br>19:41 07:59-08:34/35 | 08:12 12:09-15:05/176 08:51-09:17/26<br>18:25 09:26-10:12/46 | 08:15 13:01-13:51/50<br>16:23 11:19-12:42/83 | 08:58 11:54-12:40/46<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 13:17-14:08/51<br>19:38 07:58-08:34/36 | 08:14 12:08-15:05/177 08:52-09:16/24<br>18:23 09:26-10:11/45 | 08:17 13:04-13:50/46<br>16:22 11:21-12:39/78 | 08:59 11:55-12:40/45<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18 13:13-14:11/58<br>19:35 07:57-08:35/38 | 08:16 12:08-15:05/177 08:54-09:15/21<br>18:20 09:27-10:12/45 | 08:19 13:05-13:49/44<br>16:20 11:22-12:39/77 | 08:59 11:55-12:40/45<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 13:10-14:13/63<br>19:33 07:56-08:35/39 | 08:18 12:08-15:05/177 08:55-09:13/18<br>18:18 09:27-10:11/44 | 08:21 13:07-13:48/41<br>16:19 11:23-12:39/76 | 09:00 11:56-12:42/46<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21 13:07-14:16/69<br>19:30 07:55-08:35/40 | 08:20 12:07-15:05/178 08:57-09:11/14<br>18:16 09:28-10:10/42 | 08:23 13:08-13:47/39<br>16:18 11:24-12:39/75 | 09:00 11:56-12:42/46<br>16:07 |
| 25 | 05:27<br>21:52 | 06:25<br>20:47 | 07:23 13:05-14:17/72<br>19:28 07:55-08:35/40 | 07:22 11:07-14:05/178 08:00-08:07/7<br>17:13 08:28-09:09/41 | 08:25 13:10-13:45/35<br>16:16 11:26-12:38/72 | 09:00 11:56-12:42/46<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 13:03-14:19/76<br>19:25 07:55-08:34/39 | 07:24 11:06-14:04/178<br>17:11 08:28-09:08/40 | 08:27 13:12-13:44/32<br>16:15 11:27-12:38/71 | 09:01 11:58-12:44/46<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 13:00-14:19/79<br>19:22 07:56-08:34/38 | 07:26 11:07-14:05/178<br>17:09 08:30-09:08/38 | 08:28 13:15-13:42/27<br>16:14 11:28-12:38/70 | 09:01 11:58-12:44/46<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 12:58-14:20/82<br>19:20 07:57-08:32/35 | 07:28 11:07-14:05/178<br>17:07 08:31-09:06/35 | 08:30 13:18-13:40/22<br>16:13 11:30-12:38/68 | 09:01 11:58-12:45/47<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31 12:56-14:21/85<br>19:17 07:58-08:31/33 | 07:31 11:06-14:04/178<br>17:04 08:32-09:05/33 | 08:32 13:21-13:37/16<br>16:12 11:32-12:38/66 | 09:01 11:58-12:46/48<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33 12:55-14:22/87<br>19:15 08:00-08:30/30 | 07:33 11:06-14:04/178<br>17:02 08:33-09:03/30 | 08:34 13:26-13:33/7<br>16:11 11:33-12:38/65 | 09:01 11:58-12:45/47<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 11:06-14:03/177<br>17:00 08:35-09:02/27 | | 09:01 11:58-12:46/48<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1289 | 6556 | 4356 | 1535 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27 08:24-09:13/49<br>18:07 08:02-08:23/21 | 07:08<br>20:10 | 05:55 19:59-20:36/37<br>21:09 | 05:02 20:37-21:02/25<br>22:02 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24 08:57-09:10/13 08:03-08:23/20<br>18:09 08:25-08:56/31 | 07:05<br>20:12 | 05:53 19:59-20:38/39<br>21:11 | 05:01 20:38-21:02/24<br>22:04 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:24-08:55/31<br>18:12 08:03-08:22/19 | 07:03<br>20:14 | 05:51 19:58-20:40/42<br>21:13 | 05:00 20:39-21:03/24<br>22:05 |
| 4 | 09:00<br>16:18 | 08:22 09:01-09:07/6<br>17:14 | 07:19 08:25-08:55/30<br>18:14 08:04-08:21/17 | 07:00<br>20:16 | 05:48 19:58-20:41/43<br>21:15 | 04:59 20:39-21:02/23<br>22:06 |
| 5 | 09:00<br>16:19 | 08:20 08:58-09:11/13<br>17:17 | 07:17 08:26-08:53/27<br>18:16 08:04-08:19/15 | 06:58<br>20:17 | 05:46 19:57-20:42/45<br>21:16 | 04:58 20:39-21:02/23<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18 08:56-09:13/17<br>17:19 | 07:14 08:27-08:52/25<br>18:18 08:07-08:17/10 | 06:55<br>20:19 | 05:44 19:57-20:43/46<br>21:18 | 04:57 20:39-21:01/22<br>22:09 |
| 7 | 08:59<br>16:22 | 08:16 08:54-09:14/20<br>17:21 | 07:12 08:28-08:50/22<br>18:20 | 06:53<br>20:21 | 05:42 19:57-20:43/46<br>21:20 | 04:56 21:25-21:27/2<br>22:10 20:40-21:02/22 |
| 8 | 08:58<br>16:23 | 08:14 08:53-09:16/23<br>17:23 | 07:09 08:30-08:47/17<br>18:22 | 06:50<br>20:23 | 05:40 19:57-20:43/46<br>21:22 | 04:56 21:22-21:29/7<br>22:11 20:40-21:01/21 |
| 9 | 08:57<br>16:25 | 08:12 08:52-09:17/25<br>17:25 | 07:07 08:33-08:44/11<br>18:24 | 06:48<br>20:25 | 05:38 19:57-20:43/46<br>21:24 | 04:55 21:22-21:31/9<br>22:12 20:41-21:02/21 |
| 10 | 08:57<br>16:26 | 08:10 08:52-09:18/26<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36 19:57-20:43/46<br>21:26 | 04:54 21:21-21:32/11<br>22:13 20:41-21:01/20 |
| 11 | 08:56<br>16:28 | 08:08 08:51-09:19/28<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34 19:57-20:43/46<br>21:28 20:46-20:50/4 | 04:54 21:21-21:33/12<br>22:13 20:42-21:01/19 |
| 12 | 08:55<br>16:29 | 08:06 08:50-09:19/29<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32 19:58-20:54/56<br>21:30 | 04:53 21:21-21:34/13<br>22:14 20:43-21:02/19 |
| 13 | 08:54<br>16:31 | 08:04 08:41-09:20/39<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30 19:58-20:56/58<br>21:32 | 04:53 21:20-21:34/14<br>22:15 20:43-21:01/18 |
| 14 | 08:53<br>16:33 | 08:02 08:38-09:21/43<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28 19:58-20:57/59<br>21:33 | 04:53 21:20-21:35/15<br>22:16 20:43-21:01/18 |
| 15 | 08:52<br>16:35 | 07:59 08:36-09:21/45<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27 20:00-20:59/59<br>21:35 | 04:53 21:20-21:35/15<br>22:16 20:44-21:01/17 |
| 16 | 08:51<br>16:36 | 07:57 08:35-09:22/47<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25 20:00-20:59/59<br>21:37 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 17 | 08:50<br>16:38 | 07:55 08:34-09:23/49<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23 20:01-21:00/59<br>21:39 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 18 | 08:49<br>16:40 | 07:53 08:32-09:22/50<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21 20:02-21:00/58<br>21:41 | 04:52 21:20-21:37/17<br>22:18 20:45-21:01/16 |
| 19 | 08:48<br>16:42 | 07:50 08:30-09:23/53<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 20:04-21:01/57<br>21:42 | 04:52 21:20-21:37/17<br>22:18 20:46-21:01/15 |
| 20 | 08:46<br>16:44 | 07:48 08:29-09:23/54<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18 20:05-21:01/56<br>21:44 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 21 | 08:45<br>16:46 | 07:46 08:27-09:22/55<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16 20:21-21:02/41<br>21:46 20:07-20:18/11 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 22 | 08:44<br>16:48 | 07:43 08:27-09:22/55<br>17:53 08:10-08:19/9 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15 20:24-21:02/38<br>21:47 20:10-20:15/5 | 04:52 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 23 | 08:42<br>16:50 | 07:41 08:26-09:21/55<br>17:55 08:07-08:20/13 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13 20:26-21:02/36<br>21:49 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 24 | 08:41<br>16:52 | 07:39 08:25-09:21/56<br>17:57 08:05-08:22/17 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12 20:28-20:35/7<br>21:51 20:36-21:03/27 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 25 | 08:39<br>16:54 | 07:36 08:24-09:19/55<br>17:59 08:04-08:22/18 | 06:26<br>18:56 | 06:09 20:09-20:17/8<br>20:57 | 05:10 20:35-21:02/27<br>21:52 | 04:53 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 26 | 08:38<br>16:56 | 07:34 08:25-09:19/54<br>18:01 08:03-08:23/20 | 06:23<br>18:58 | 06:06 20:23-20:28/5<br>20:59 20:06-20:21/15 | 05:09 20:36-21:02/26<br>21:54 | 04:54 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 27 | 08:36<br>16:58 | 07:32 08:24-09:17/53<br>18:03 08:02-08:23/21 | 06:21<br>19:00 | 06:04 20:04-20:30/26<br>21:01 | 05:08 20:36-21:02/26<br>21:55 | 04:54 21:23-21:39/16<br>22:19 20:47-21:04/17 |
| 28 | 08:35<br>17:00 | 07:29 08:03-09:15/72<br>18:05 | 06:18<br>19:02 | 06:02 20:02-20:32/30<br>21:03 | 05:06 20:36-21:03/27<br>21:57 | 04:55 21:23-21:38/15<br>22:19 20:47-21:04/17 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59 20:01-20:34/33<br>21:05 | 05:05 20:37-21:03/26<br>21:58 | 04:55 21:24-21:38/14<br>22:19 20:47-21:05/18 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57 20:00-20:36/36<br>21:07 | 05:04 20:37-21:03/26<br>22:00 | 04:56 21:24-21:37/13<br>22:19 20:46-21:05/19 |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 | | 05:03 20:37-21:02/25<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 1120 | 358 | 153 | 1355 | 896 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:25-21:37/12 | 05:40 20:08-20:54/46 | 06:38 | 07:35 | 07:37 08:21-08:47/26 | 08:35 |
| | 22:18 20:47-21:05/18 | 21:40 20:55-21:04/9 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 21:26-21:37/11 | 05:41 20:07-20:53/46 | 06:40 | 07:37 | 07:39 08:22-08:46/24 | 08:37 |
| | 22:18 20:47-21:06/19 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:27-21:37/10 | 05:43 20:07-20:53/46 | 06:42 | 07:39 | 07:41 08:23-08:45/22 | 08:38 |
| | 22:17 20:47-21:07/20 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:27-21:35/8 | 05:45 20:07-20:53/46 | 06:43 | 07:40 09:13-09:18/5 | 07:43 08:24-08:45/21 | 08:40 |
| | 22:17 20:46-21:07/21 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 21:29-21:34/5 | 05:47 20:07-20:53/46 | 06:45 | 07:42 09:08-09:23/15 | 07:45 08:26-08:43/17 | 08:41 |
| | 22:16 20:46-21:07/21 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 20:46-21:08/22 | 05:49 20:06-20:52/46 | 06:47 | 07:44 09:05-09:25/20 | 07:47 08:28-08:41/13 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 20:46-21:08/22 | 05:51 20:07-20:52/45 | 06:49 | 07:46 09:03-09:26/23 | 07:49 08:31-08:37/6 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:43-08:51/8 | 16:45 | 16:06 |
| 8 | 05:03 20:46-21:09/23 | 05:52 20:07-20:51/44 | 06:51 | 07:48 09:01-09:27/26 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:40-08:53/13 | 16:44 | 16:05 |
| 9 | 05:04 20:45-21:09/24 | 05:54 20:06-20:49/43 | 06:53 | 07:50 09:00-09:28/28 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:39-08:55/16 | 16:42 | 16:05 |
| 10 | 05:06 20:45-21:09/24 | 05:56 20:07-20:48/41 | 06:55 | 07:52 08:59-09:29/30 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 08:37-08:55/18 | 16:40 | 16:04 |
| 11 | 05:07 20:46-21:11/25 | 05:58 20:07-20:46/39 | 06:57 | 07:54 09:33-09:41/8 08:36-08:56/20 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:58-09:29/31 | 16:38 | 16:04 |
| 12 | 05:08 20:46-21:11/25 | 06:00 20:08-20:44/36 | 06:59 | 07:56 08:57-09:44/47 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:35-08:56/21 | 16:36 | 16:04 |
| 13 | 05:09 20:46-21:11/25 | 06:02 20:08-20:43/35 | 07:00 | 07:58 08:57-09:47/50 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:35-08:56/21 | 16:34 | 16:04 |
| 14 | 05:11 20:45-21:11/26 | 06:04 20:09-20:41/32 | 07:02 | 08:00 08:36-09:48/72 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 20:45-21:11/26 | 06:06 20:10-20:39/29 | 07:04 | 08:02 08:57-09:50/53 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:36-08:56/20 | 16:31 | 16:04 |
| 16 | 05:13 20:46-21:12/26 | 06:07 20:12-20:37/25 | 07:06 | 08:04 08:57-09:51/54 | 08:07 | 08:55 |
| | 22:06 | 21:08 | 19:51 | 18:34 08:36-08:55/19 | 16:29 | 16:04 |
| 17 | 05:15 20:45-21:12/27 | 06:09 20:31-20:34/3 | 07:08 | 08:06 08:57-09:52/55 | 08:09 | 08:56 |
| | 22:04 | 21:06 20:13-20:27/14 | 19:48 | 18:32 08:36-08:54/18 | 16:28 | 16:04 |
| 18 | 05:16 20:45-21:12/27 | 06:11 20:17-20:23/6 | 07:10 | 08:08 08:57-09:52/55 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 08:37-08:53/16 | 16:26 | 16:04 |
| 19 | 05:18 20:39-20:43/4 | 06:13 | 07:12 | 08:10 08:57-09:52/55 | 08:13 | 08:57 |
| | 22:02 20:46-21:12/26 | 21:01 | 19:43 | 18:27 08:39-08:51/12 | 16:25 | 16:04 |
| 20 | 05:19 20:36-21:12/36 | 06:15 | 07:14 | 08:12 08:57-09:52/55 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 08:41-08:48/7 | 16:23 | 16:05 |
| 21 | 05:21 20:35-21:12/37 | 06:17 | 07:16 | 08:14 08:58-09:52/54 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 20:34-21:12/38 | 06:19 | 07:17 | 08:16 09:00-09:53/53 | 08:19 | 08:59 |
| | 21:57 20:18-20:27/9 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 20:16-21:12/56 | 06:21 | 07:19 | 08:18 09:01-09:53/52 | 08:21 | 09:00 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 20:14-21:11/57 | 06:23 | 07:21 | 08:20 09:03-09:52/49 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 20:14-21:12/58 | 06:25 | 07:23 | 07:22 08:04-08:52/48 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 20:12-21:11/59 | 06:26 | 07:25 | 07:24 08:05-08:51/46 | 08:27 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 20:11-21:10/59 | 06:28 | 07:27 | 07:26 08:07-08:51/44 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 20:10-21:09/59 | 06:30 | 07:29 | 07:28 08:08-08:50/42 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 20:10-21:09/59 | 06:32 | 07:31 | 07:30 08:11-08:49/38 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 20:09-21:08/59 | 06:34 | 07:33 | 07:33 08:20-08:48/28 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 20:08-21:06/58 | 06:36 | | 07:35 08:20-08:47/27 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1141 | 677 | 0 | 1372 | 129 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 32 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:53-08:03/10 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 08:04-08:42/38 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 07:51-08:05/14 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 08:06-08:43/37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 07:49-08:06/17 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 08:09-08:44/35 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 07:48-08:08/20 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 08:10-08:44/34 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 07:47-08:08/21 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 08:11-08:44/33 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:08/24 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 08:13-08:44/31 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 07:38-08:08/30 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 08:15-08:44/29 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 07:35-08:07/32 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 08:20-08:43/23 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 07:34-08:07/33 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 08:22-08:42/20 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 07:32-08:06/34 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 08:22-08:41/19 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 07:29-08:05/36 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:23-08:40/17 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 07:26-08:03/37 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 08:25-08:38/13 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 07:24-08:01/37 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 08:27-08:34/7 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 07:23-07:59/36 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 07:22-07:58/36 | 06:33 | 05:27 | 04:52 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 07:22-07:58/36 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 07:21-07:56/35 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 07:20-07:55/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 07:20-07:53/33 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:12-08:22/10 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:20-07:50/30 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:09-08:24/15 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:21-07:42/21 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 08:07-08:25/18 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 07:21-07:40/19 | 06:16 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 08:06-08:26/20 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:23-07:39/16 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:05-08:34/29 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 07:25-07:36/11 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:04-08:36/32 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 08:04-08:38/34 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 08:03-08:39/36 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:02-08:38/36 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:02-08:39/37 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:03-08:39/36 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:03-08:40/37 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 653 | 0 | 0 | 0 | 0 | 0 | 340 | 336 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | | 04:57 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | 22:05 | | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:51-05:56/5 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | | 22:08 | 21:13 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 05:50-05:58/8 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:50-05:59/9 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:49-06:00/11 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:49-06:00/11 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:49-06:01/12 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:49-06:01/12 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:19 | | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:49-06:01/12 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | | 21:59 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:50-06:02/12 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:50-06:02/12 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:50-06:01/11 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:51-06:02/11 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:51-06:01/10 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:53-06:01/8 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:54-06:00/6 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:57-05:58/1 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 151 | | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:50-08:19/29 | 05:55 | 06:31-07:45/74 | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:50-08:19/29 | 05:53 | 06:29-07:45/76 | 05:01 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:11 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:49-08:18/29 | 05:51 | 06:28-07:45/77 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:41-08:19/38 | 05:48 | 06:27-07:45/78 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:37-08:17/40 | 05:46 | 06:26-07:45/79 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:35-08:17/42 | 05:44 | 06:25-07:45/80 | 04:57 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:33-08:16/43 | 05:42 | 06:24-07:44/80 | 04:56 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:32-08:15/43 | 05:40 | 06:24-06:55/31 | 04:56 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | 06:56-07:44/48 | 22:11 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 07:30-08:13/43 | 05:38 | 06:23-06:54/31 | 04:55 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | 06:57-07:43/46 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:29-08:11/42 | 05:36 | 06:23-06:52/29 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | 06:58-07:42/44 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 07:27-08:08/41 | 05:34 | 06:22-06:52/30 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | 06:59-07:42/43 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:22-08:05/43 | 05:32 | 06:23-06:52/29 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | 07:01-07:42/41 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | 07:19-08:01/42 | 05:30 | 06:23-06:52/29 | 04:53 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:31 | 07:02-07:41/39 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 07:17-08:01/44 | 05:28 | 06:23-06:52/29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | 07:02-07:40/38 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 | | 06:32 | 07:16-08:01/45 | 05:27 | 06:24-06:52/28 | 04:52 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | 07:03-07:40/37 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:14-08:00/46 | 05:25 | 06:23-06:51/28 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | 07:04-07:39/35 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:28 | 07:08-08:00/52 | 05:23 | 06:24-06:51/27 | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | 07:05-07:38/33 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:03-07:59/56 | 05:21 | 06:24-06:51/27 | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | 07:05-07:37/32 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:01-07:58/57 | 05:20 | 06:25-06:51/26 | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | 07:06-07:35/29 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:00-07:58/58 | 05:18 | 06:25-06:49/24 | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | 07:07-07:35/28 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 06:57-07:56/59 | 05:16 | 06:27-06:49/22 | 04:52 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | 07:09-07:34/25 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 06:46-06:52/6 | 05:15 | 06:27-06:48/21 | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 06:56-07:55/59 | 21:47 | 07:09-07:32/23 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 06:43-06:55/12 | 05:13 | 06:28-06:47/19 | 04:53 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 06:56-07:54/58 | 21:49 | 07:11-07:31/20 | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | 06:41-07:53/72 | 05:12 | 06:29-06:47/18 | 04:53 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | 07:13-07:29/16 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 07:01-07:13/12 | 06:08 | 06:40-07:50/70 | 05:10 | 06:30-06:45/15 | 04:53 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | 07:15-07:26/11 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:58-07:16/18 | 06:06 | 06:38-07:47/69 | 05:09 | 06:31-06:44/13 | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | 06:56-07:17/21 | 06:04 | 06:37-07:44/67 | 05:08 | 06:33-06:42/9 | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:54-07:17/23 | 06:02 | 06:37-07:45/68 | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:16 | 07:53-08:18/25 | 05:59 | 06:36-07:45/69 | 05:05 | | 04:55 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:51-08:18/27 | 05:57 | 06:33-07:45/72 | 05:04 | | 04:56 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:51-08:19/28 | | | 05:03 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 154 | | 1543 | | 1617 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 06:34-07:03/29 | 06:38 | 07:26-08:07/41 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | 07:12-07:52/40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:33-07:02/29 | 06:40 | 07:27-08:09/42 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | 07:09-07:52/43 | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:33-07:03/30 | 06:41 | 07:28-08:11/43 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | 07:08-07:53/45 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:34-07:05/31 | 06:43 | 07:29-08:12/43 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | 07:07-07:54/47 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:34-07:54/80 | 06:45 | 07:30-08:13/43 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:34-07:54/80 | 06:47 | 07:30-08:12/42 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:35-07:54/79 | 06:49 | 07:32-08:12/40 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 05:52 | 06:35-07:54/79 | 06:51 | 07:35-08:13/38 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:35-07:54/79 | 06:53 | 07:43-08:13/30 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:37-07:54/77 | 06:55 | 07:43-08:12/29 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:38-07:54/76 | 06:57 | 07:42-08:11/29 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | 06:40-07:54/74 | 06:58 | 07:42-08:11/29 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | 06:42-07:53/71 | 07:00 | 07:42-08:10/28 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:04 | 06:44-07:52/68 | 07:02 | 07:43-08:09/26 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | | 06:05 | 06:44-07:52/68 | 07:04 | 07:44-08:08/24 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:44-06:50/6 | 06:07 | 06:45-07:52/67 | 07:06 | 07:45-08:06/21 | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:42-06:53/11 | 06:09 | 06:45-07:55/70 | 07:08 | 07:46-08:04/18 | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:40-06:54/14 | 06:11 | 06:46-07:57/71 | 07:10 | 07:47-08:01/14 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 07:27-07:34/7 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:39-06:56/17 | 06:13 | 06:47-07:58/71 | 07:12 | 07:52-07:55/3 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 07:24-07:38/14 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:38-06:57/19 | 06:15 | 06:49-08:00/71 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 07:22-07:40/18 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:38-06:58/20 | 06:17 | 06:53-06:57/4 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 07:21-07:42/21 | 20:56 | 07:02-08:01/59 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:37-06:59/22 | 06:19 | 07:02-08:01/59 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 07:19-07:43/24 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:37-07:00/23 | 06:21 | 07:03-08:01/58 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 07:19-07:45/26 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:36-07:00/24 | 06:23 | 07:05-08:02/57 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 07:17-07:46/29 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:36-07:01/25 | 06:24 | 07:07-08:02/55 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 07:17-07:47/30 | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:35-07:01/26 | 06:26 | 07:12-08:03/51 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 07:15-07:48/33 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:35-07:02/27 | 06:28 | 07:16-08:02/46 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 07:15-07:49/34 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:34-07:02/28 | 06:30 | 07:17-08:02/45 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 07:14-07:49/35 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:34-07:02/28 | 06:32 | 07:18-08:02/44 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | 07:13-07:51/38 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34-07:03/29 | 06:34 | 07:20-08:01/41 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | 07:13-07:52/39 | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:33-07:02/29 | 06:36 | 07:22-08:05/43 | | | 07:34 | | 09:01 |
| | 21:42 | 07:12-07:52/40 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 736 | | 2037 | | 583 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 11:50-13:05/75<br>17:08 | 07:27 11:54-12:59/65<br>18:07 | 07:08<br>20:09 | 05:55 06:32-06:51/19<br>21:09 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 11:49-13:06/77<br>17:10 | 07:24 11:55-12:58/63<br>18:09 | 07:05<br>20:11 | 05:53 06:33-06:51/18<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00 12:13-12:22/9<br>16:16 | 08:24 11:49-13:06/77<br>17:12 | 07:22 11:56-12:55/59<br>18:11 | 07:03<br>20:13 | 05:51 06:33-06:50/17<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 12:11-12:26/15<br>16:18 | 08:22 11:49-13:07/78<br>17:15 | 07:19 11:58-12:53/55<br>18:14 | 07:00<br>20:15 | 05:48 06:34-06:49/15<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 12:08-12:28/20<br>16:19 | 08:20 11:48-13:06/78<br>17:17 | 07:17 12:00-12:51/51<br>18:16 | 06:58<br>20:17 | 05:46 06:35-06:47/12<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 12:08-12:31/23<br>16:20 | 08:18 11:48-13:07/79<br>17:19 | 07:14 12:02-12:47/45<br>18:18 | 06:55<br>20:19 | 05:44 06:37-06:45/8<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 12:06-12:33/27<br>16:22 | 08:16 11:47-13:08/81<br>17:21 | 07:12 12:06-12:44/38<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 12:05-12:35/30<br>16:23 | 08:14 11:47-13:08/81<br>17:23 | 07:09 12:10-12:38/28<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 12:04-12:36/32<br>16:25 | 08:12 11:47-13:09/82<br>17:25 | 07:07 12:18-12:30/12<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 12:03-12:38/35<br>16:26 | 08:10 11:48-13:09/81<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:12 |
| 11 | 08:56 12:02-12:40/38<br>16:28 | 08:08 11:47-13:09/82<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 12:01-12:42/41<br>16:30 | 08:06 11:47-13:09/82<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 12:00-12:43/43<br>16:31 | 08:04 11:47-13:09/82<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 12:00-12:45/45<br>16:33 | 08:01 11:46-13:09/83<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 11:58-12:46/48<br>16:35 | 07:59 11:47-13:09/82<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:58-12:48/50<br>16:36 | 07:57 11:47-13:09/82<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:58-12:49/51<br>16:38 | 07:55 11:47-13:08/81<br>17:42 | 06:46<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 11:56-12:50/54<br>16:40 | 07:53 11:47-13:08/81<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 11:56-12:52/56<br>16:42 | 07:50 11:48-13:08/80<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 11:55-12:53/58<br>16:44 | 07:48 11:48-13:07/79<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 11:55-12:54/59<br>16:46 | 07:46 11:48-13:07/79<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 11:54-12:55/61<br>16:48 | 07:43 11:48-13:06/78<br>17:53 | 06:34<br>18:50 | 06:16 06:41-06:47/6<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 |
| 23 | 08:42 11:53-12:56/63<br>16:50 | 07:41 11:49-13:06/77<br>17:55 | 06:31<br>18:52 | 06:13 06:39-06:49/10<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 11:53-12:58/65<br>16:52 | 07:39 11:49-13:05/76<br>17:57 | 06:28<br>18:54 | 06:11 06:37-06:50/13<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 11:52-12:59/67<br>16:54 | 07:36 11:50-13:04/74<br>17:59 | 06:26<br>18:56 | 06:09 06:35-06:51/16<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 11:52-12:59/67<br>16:56 | 07:34 11:51-13:04/73<br>18:01 | 06:23<br>18:58 | 06:06 06:33-06:51/18<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:51-13:00/69<br>16:58 | 07:31 11:52-13:02/70<br>18:03 | 06:21<br>19:00 | 06:04 06:32-06:51/19<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 11:51-13:02/71<br>17:00 | 07:29 11:53-13:01/68<br>18:05 | 06:18<br>19:02 | 06:02 06:32-06:52/20<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:51-13:03/72<br>17:02 | | 07:16<br>20:04 | 05:59 06:32-06:52/20<br>21:05 | 05:05<br>21:58 | 04:56<br>22:18 |
| 30 | 08:31 11:50-13:03/73<br>17:04 | | 07:13<br>20:06 | 05:57 06:32-06:52/20<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 11:50-13:04/74<br>17:06 | | 07:10<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1416 | 2198 | 416 | 142 | 89 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:36 11:16-12:38/82<br>16:58 | 08:35 11:44-12:22/38<br>16:10 |
| 2 | 04:58<br>22:17 | 05:41<br>21:38 | 06:40<br>20:27 | 07:36<br>19:09 | 07:39 11:17-12:38/81<br>16:56 | 08:37 11:46-12:21/35<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:38<br>19:07 | 07:41 11:17-12:38/81<br>16:54 | 08:38 11:48-12:21/33<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 11:17-12:37/80<br>16:52 | 08:40 11:49-12:19/30<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:50-13:12/22<br>19:02 | 07:45 11:18-12:38/80<br>16:49 | 08:41 11:51-12:18/27<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 06:48-06:52/4<br>21:30 | 06:47<br>20:17 | 07:44 12:44-13:18/34<br>18:59 | 07:47 11:18-12:37/79<br>16:47 | 08:43 11:54-12:17/23<br>16:06 |
| 7 | 05:02<br>22:14 | 05:51 06:45-06:55/10<br>21:28 | 06:49<br>20:14 | 07:46 12:40-13:22/42<br>18:57 | 07:49 11:19-12:37/78<br>16:46 | 08:44 11:55-12:15/20<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 06:44-06:57/13<br>21:26 | 06:51<br>20:11 | 07:48 12:37-13:24/47<br>18:54 | 07:51 11:19-12:36/77<br>16:44 | 08:45 11:59-12:14/15<br>16:05 |
| 9 | 05:05<br>22:13 | 05:54 06:43-06:59/16<br>21:23 | 06:53<br>20:09 | 07:50 12:34-13:27/53<br>18:52 | 07:53 11:20-12:36/76<br>16:42 | 08:47 12:02-12:11/9<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 06:41-06:58/17<br>21:21 | 06:55<br>20:06 | 07:52 12:32-13:29/57<br>18:49 | 07:55 11:20-12:36/76<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:41-06:59/18<br>21:19 | 06:57<br>20:04 | 07:54 12:30-13:30/60<br>18:47 | 07:57 11:21-12:35/74<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 06:41-07:00/19<br>21:17 | 06:59<br>20:01 | 07:56 12:28-13:31/63<br>18:44 | 07:59 11:21-12:34/73<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 06:40-07:00/20<br>21:15 | 07:00<br>19:59 | 07:58 12:26-13:33/67<br>18:42 | 08:01 11:23-12:35/72<br>16:34 | 08:51<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 06:39-06:59/20<br>21:12 | 07:02<br>19:56 | 08:00 12:25-13:34/69<br>18:39 | 08:03 11:23-12:34/71<br>16:33 | 08:52<br>16:04 |
| 15 | 05:12<br>22:06 | 06:06 06:40-06:59/19<br>21:10 | 07:04<br>19:53 | 08:02 12:23-13:34/71<br>18:37 | 08:05 11:24-12:33/69<br>16:31 | 08:53<br>16:04 |
| 16 | 05:14<br>22:05 | 06:07 06:40-06:59/19<br>21:08 | 07:06<br>19:51 | 08:04 12:22-13:35/73<br>18:34 | 08:07 11:25-12:32/67<br>16:29 | 08:54<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09 06:40-06:59/19<br>21:06 | 07:08<br>19:48 | 08:06 12:22-13:37/75<br>18:32 | 08:09 11:26-12:33/67<br>16:28 | 08:55<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 06:41-06:57/16<br>21:03 | 07:10<br>19:46 | 08:08 12:21-13:37/76<br>18:30 | 08:11 11:27-12:32/65<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18<br>22:01 | 06:13 06:43-06:56/13<br>21:01 | 07:12<br>19:43 | 08:10 12:20-13:37/77<br>18:27 | 08:13 11:28-12:31/63<br>16:25 | 08:57<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15 06:45-06:54/9<br>20:59 | 07:14<br>19:40 | 08:12 12:19-13:38/79<br>18:25 | 08:15 11:29-12:30/61<br>16:23 | 08:58<br>16:05 |
| 21 | 05:21<br>21:58 | 06:17 06:47-06:52/5<br>20:56 | 07:15<br>19:38 | 08:14 12:18-13:38/80<br>18:22 | 08:17 11:30-12:29/59<br>16:22 | 08:58<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16 12:18-13:38/80<br>18:20 | 08:19 11:31-12:29/58<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24<br>21:55 | 06:21<br>20:51 | 07:19<br>19:33 | 08:18 12:17-13:38/81<br>18:18 | 08:21 11:32-12:28/56<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 12:18-13:39/81<br>18:16 | 08:23 11:33-12:27/54<br>16:18 | 09:00<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 11:17-12:39/82<br>17:13 | 08:24 11:36-12:27/51<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 11:17-12:39/82<br>17:11 | 08:26 11:37-12:27/50<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 11:16-12:38/82<br>17:09 | 08:28 11:38-12:26/48<br>16:14 | 09:01<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 11:16-12:38/82<br>17:06 | 08:30 11:39-12:24/45<br>16:13 | 09:01<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:30 11:17-12:39/82<br>17:04 | 08:32 11:40-12:23/43<br>16:12 | 09:01<br>16:11 |
| 30 | 05:36<br>21:43 | 06:34<br>20:34 | 07:33<br>19:15 | 07:32 11:16-12:38/82<br>17:02 | 08:33 11:42-12:23/41<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:34 11:16-12:38/82<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 237 | 0 | 1861 | 1977 | 230 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 37 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:20-10:33/13 | 08:27 09:03-09:55/52 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 08:33-09:01/28 | 08:35 09:15-10:00/45 |
| | 16:14 09:38-10:13/35 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 10:22-10:34/12 | 08:25 09:02-09:54/52 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:33-09:05/32 | 08:36 09:17-10:01/44 |
| | 16:15 09:38-10:14/36 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 10:22-10:33/11 | 08:24 09:02-09:54/52 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:32-09:11/39 | 08:38 09:19-10:01/42 |
| | 16:16 09:37-10:14/37 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 10:24-10:33/9 | 08:22 09:01-09:52/51 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:32-09:15/43 | 08:39 09:19-10:01/42 |
| | 16:17 09:38-10:15/37 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 10:25-10:32/7 | 08:20 09:01-09:51/50 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 08:31-09:19/48 | 08:41 09:21-10:02/41 |
| | 16:19 09:37-10:15/38 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 09:37-10:17/40 | 08:18 09:02-09:49/47 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 08:32-09:21/49 | 08:42 09:22-10:02/40 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 09:36-10:17/41 | 08:16 09:02-09:44/42 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 08:32-09:23/51 | 08:44 10:13-10:19/6 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:05 09:24-10:03/39 |
| 8 | 08:58 09:35-10:17/42 | 08:14 09:03-09:41/38 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 08:32-09:24/52 | 08:45 10:11-10:20/9 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 09:25-10:02/37 |
| 9 | 08:57 09:35-10:17/42 | 08:12 09:03-09:35/32 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 08:32-09:24/52 | 08:47 10:11-10:22/11 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 09:26-10:03/37 |
| 10 | 08:56 09:34-10:18/44 | 08:10 09:03-09:30/27 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 08:34-09:26/52 | 08:48 10:11-10:23/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 09:27-10:03/36 |
| 11 | 08:56 09:33-10:18/45 | 08:08 09:05-09:27/22 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 08:34-09:28/54 | 08:49 10:11-10:24/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-10:05/37 |
| 12 | 08:55 09:32-10:18/46 | 08:06 09:06-09:22/16 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 08:35-09:29/54 | 08:50 10:11-10:25/14 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:30-10:05/35 |
| 13 | 08:54 09:32-10:18/46 | 08:03 09:08-09:20/12 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 08:37-09:32/55 | 08:51 10:11-10:26/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 09:31-10:05/34 |
| 14 | 08:53 09:32-10:19/47 | 08:01 09:11-09:16/5 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 08:38-09:33/55 | 08:52 10:11-10:26/15 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 09:32-10:05/33 |
| 15 | 08:52 09:30-10:18/48 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 08:40-09:35/55 | 08:53 10:11-10:27/16 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 09:33-10:05/32 |
| 16 | 08:51 09:28-10:18/50 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 08:44-09:37/53 | 08:54 10:12-10:28/16 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 09:34-10:06/32 |
| 17 | 08:50 09:27-10:18/51 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 08:45-09:38/53 | 08:55 10:12-10:29/17 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 09:35-10:06/31 |
| 18 | 08:49 09:25-10:17/52 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 08:48-09:41/53 | 08:56 10:13-10:29/16 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 09:36-10:07/31 |
| 19 | 08:47 09:23-10:17/54 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 08:50-09:42/52 | 08:57 10:12-10:29/17 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:35-10:07/32 |
| 20 | 08:46 09:20-10:16/56 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 08:52-09:47/55 | 08:57 10:13-10:30/17 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 09:36-10:08/32 |
| 21 | 08:45 09:19-10:15/56 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 08:54-09:50/56 | 08:58 10:14-10:31/17 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 09:36-10:07/31 |
| 22 | 08:43 09:17-10:12/55 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 08:56-09:52/56 | 08:59 10:14-10:31/17 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:37-10:08/31 |
| 23 | 08:42 09:15-10:07/52 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 08:59-09:53/54 | 08:59 10:14-10:31/17 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 09:37-10:08/31 |
| 24 | 08:40 09:14-10:07/53 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 09:02-09:54/52 | 08:59 10:15-10:32/17 |
| | 16:51 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 09:38-10:10/32 |
| 25 | 08:39 09:12-10:05/53 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 09:04-09:55/51 | 09:00 10:16-10:32/16 |
| | 16:53 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 09:39-10:10/31 |
| 26 | 08:37 09:11-10:04/53 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 09:06-09:56/50 | 09:00 10:16-10:33/17 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 09:39-10:10/31 |
| 27 | 08:36 09:07-10:02/55 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 09:09-09:57/48 | 09:00 10:16-10:33/17 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 09:39-10:11/32 |
| 28 | 08:34 09:05-10:00/55 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 08:39-08:47/8 | 08:30 09:11-09:58/47 | 09:01 10:17-10:33/16 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 09:39-10:11/32 |
| 29 | 08:33 09:05-10:00/55 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:37-08:50/13 | 08:31 09:12-09:59/47 | 09:01 10:18-10:33/15 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 09:39-10:12/33 |
| 30 | 08:31 09:04-09:58/54 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:35-08:52/17 | 08:33 09:13-09:59/46 | 09:01 10:19-10:34/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 09:39-10:13/34 |
| 31 | 08:29 09:03-09:57/54 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 08:34-08:57/23 | | 09:01 10:20-10:34/14 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 09:39-10:13/34 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1534 | 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 1492 | 1456 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down WTG: 38 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28 16:00-16:26/26<br>17:08 | 07:27 17:11-17:30/19<br>18:07 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:02 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 15:29-15:57/28<br>16:58 | 08:35<br>16:10 |
| 2 | 09:01<br>16:15 | 08:26 15:59-16:26/27<br>17:10 | 07:24 17:12-17:30/18<br>18:10 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 15:29-15:57/28<br>16:56 | 08:37<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24 15:59-16:27/28<br>17:12 | 07:22 17:12-17:29/17<br>18:12 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 | 04:59<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 15:28-15:57/29<br>16:54 | 08:38<br>16:08 |
| 4 | 09:00<br>16:18 | 08:22 15:59-16:28/29<br>17:15 | 07:19 17:14-17:28/14<br>18:14 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41<br>19:05 | 07:43 15:28-15:57/29<br>16:52 | 08:40<br>16:08 |
| 5 | 09:00<br>16:19 | 08:20 15:59-16:28/29<br>17:17 | 07:17 17:15-17:25/10<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 15:29-15:58/29<br>16:50 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18 15:59-16:28/29<br>17:19 | 07:14<br>18:18 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 15:29-15:58/29<br>16:48 | 08:43<br>16:06 |
| 7 | 08:59<br>16:22 | 08:16 15:58-16:28/30<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 15:29-15:57/28<br>16:46 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14 15:59-16:28/29<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48 17:52-17:59/7<br>18:54 | 07:51 15:30-15:58/28<br>16:44 | 08:46<br>16:05 |
| 9 | 08:57<br>16:25 | 08:12 15:59-16:28/29<br>17:25 | 07:07<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 17:49-18:01/12<br>18:52 | 07:53 15:30-15:57/27<br>16:42 | 08:47<br>16:05 |
| 10 | 08:57<br>16:26 | 08:10 16:00-16:28/28<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 | 05:06<br>22:12 | 05:56<br>21:21 | 06:55<br>20:07 | 07:52 17:47-18:02/15<br>18:49 | 07:55 15:30-15:56/26<br>16:40 | 08:48<br>16:05 |
| 11 | 08:56<br>16:28 | 08:08 16:01-16:27/26<br>17:30 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:45-18:03/18<br>18:47 | 07:57 15:31-15:56/25<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:30 | 08:06 16:01-16:26/25<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:44-18:04/20<br>18:44 | 07:59 15:33-15:56/23<br>16:36 | 08:51<br>16:04 |
| 13 | 08:54<br>16:31 | 08:04 16:02-16:26/24<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:44-18:04/20<br>18:42 | 08:01 15:34-15:54/20<br>16:34 | 08:52<br>16:04 |
| 14 | 08:53<br>16:33 | 08:02 16:04-16:25/21<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:16 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 17:43-18:04/21<br>18:39 | 08:03 15:35-15:53/18<br>16:33 | 08:53<br>16:04 |
| 15 | 08:52<br>16:35 | 07:59 16:04-16:22/18<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 17:43-18:03/20<br>18:37 | 08:05 15:36-15:51/15<br>16:31 | 08:54<br>16:04 |
| 16 | 08:51<br>16:37 | 07:57 16:07-16:21/14<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04 17:44-18:04/20<br>18:35 | 08:07 15:39-15:50/11<br>16:29 | 08:55<br>16:04 |
| 17 | 08:50<br>16:38 | 07:55 16:12-16:17/5<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 17:44-18:01/17<br>18:32 | 08:09 15:44-15:45/1<br>16:28 | 08:56<br>16:04 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 | 05:16<br>22:03 | 06:11<br>21:03 | 07:10<br>19:46 | 08:08 17:45-17:59/14<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:48<br>16:42 | 07:50<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 17:45-17:56/11<br>18:27 | 08:13<br>16:25 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 | 05:20<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 17:47-17:54/7<br>18:25 | 08:15<br>16:23 | 08:58<br>16:05 |
| 21 | 08:45<br>16:46 | 07:46 17:18-17:21/3<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:17<br>21:46 | 04:52<br>22:19 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 17:50-17:51/1<br>18:23 | 08:17<br>16:22 | 08:58<br>16:05 |
| 22 | 08:44<br>16:48 | 07:44 17:16-17:24/8<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41 17:14-17:26/12<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:52 | 07:39 17:13-17:28/15<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23<br>16:18 | 09:00<br>16:07 |
| 25 | 08:39 16:10-16:12/2<br>16:54 | 07:36 17:12-17:30/18<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 | 05:11<br>21:52 | 04:53<br>22:19 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 15:39-15:48/9<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 08:38 16:05-16:16/11<br>16:56 | 07:34 17:12-17:32/20<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 | 05:29<br>21:51 | 06:27<br>20:44 | 07:25<br>19:25 | 07:24 15:36-15:51/15<br>17:11 | 08:27<br>16:15 | 09:01<br>16:08 |
| 27 | 08:36 16:04-16:20/16<br>16:58 | 07:32 17:11-17:31/20<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 15:33-15:52/19<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 08:35 16:03-16:21/18<br>17:00 | 07:29 17:11-17:31/20<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:07<br>21:57 | 04:55<br>22:19 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 15:33-15:54/21<br>17:07 | 08:30<br>16:13 | 09:01<br>16:10 |
| 29 | 08:33 16:02-16:23/21<br>17:02 | | 07:16<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:56<br>22:19 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 15:31-15:55/24<br>17:04 | 08:32<br>16:12 | 09:01<br>16:11 |
| 30 | 08:31 16:01-16:24/23<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 15:30-15:56/26<br>17:02 | 08:33<br>16:11 | 09:01<br>16:12 |
| 31 | 08:29 16:00-16:25/25<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 15:29-15:56/27<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 116 | 533 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 394 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 09:43-10:16/33<br>17:08 | 07:27 17:18-17:39/21<br>18:07 | 07:08 18:55-19:32/37<br>20:09 | 05:55<br>21:08 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 09:44-10:15/31<br>17:10 | 07:24 17:17-17:39/22<br>18:09 | 07:05 18:58-19:33/35<br>20:11 | 05:53<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24 09:45-10:15/30<br>17:12 | 07:22 17:17-17:40/23<br>18:11 | 07:03 18:59-19:32/33<br>20:13 | 05:51<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 09:48-09:53/5<br>16:17 | 08:22 09:46-10:14/28<br>17:14 | 07:19 17:16-17:39/23<br>18:13 17:44-17:45/1 | 07:00 18:59-19:31/32<br>20:15 | 05:48<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 09:46-09:55/9<br>16:19 | 08:20 09:47-10:13/26<br>17:16 | 07:17 17:16-17:40/24<br>18:15 17:41-17:48/7 | 06:58 19:00-19:31/31<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:45-09:58/13<br>16:20 | 08:18 09:48-10:11/23<br>17:19 | 07:14 17:16-17:49/33<br>18:18 | 06:55 19:00-19:30/30<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 09:44-09:59/15<br>16:22 | 08:16 09:50-10:09/19<br>17:21 | 07:12 17:17-17:52/35<br>18:20 | 06:52 19:01-19:30/29<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 09:43-10:01/18<br>16:23 | 08:14 09:52-10:07/15<br>17:23 | 07:09 17:17-17:54/37<br>18:22 | 06:50 19:01-19:28/27<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 09:43-10:02/19<br>16:25 | 08:12 09:56-10:04/8<br>17:25 | 07:07 17:17-17:55/38<br>18:24 | 06:47 19:02-19:28/26<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 09:42-10:03/21<br>16:26 | 08:10<br>17:27 | 07:04 17:19-17:58/39<br>18:26 | 06:45 19:02-19:26/24<br>20:27 | 05:36<br>21:26 | 04:54<br>22:12 |
| 11 | 08:56 09:42-10:04/22<br>16:28 | 08:08<br>17:29 | 07:02 17:20-18:00/40<br>18:28 | 06:42 19:04-19:24/20<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:42-10:06/24<br>16:29 | 08:06<br>17:31 | 06:59 17:26-17:27/1<br>18:30 17:31-18:02/31 | 06:40 19:06-19:23/17<br>20:31 | 05:32<br>21:30 | 04:53<br>22:14 |
| 13 | 08:54 09:41-10:07/26<br>16:31 | 08:04<br>17:34 | 06:57 17:30-18:04/34<br>18:32 | 06:37 19:08-19:19/11<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 09:41-10:08/27<br>16:33 | 08:01<br>17:36 | 06:54 17:30-18:07/37<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 09:40-10:08/28<br>16:35 | 07:59<br>17:38 | 06:51 17:30-18:08/38<br>18:36 | 06:32<br>20:37 | 05:27<br>21:35 | 04:52<br>22:16 |
| 16 | 08:51 09:40-10:10/30<br>16:36 | 07:57<br>17:40 | 06:49 17:29-18:10/41<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:41-10:11/30<br>16:38 | 07:55<br>17:42 | 06:46 17:30-18:13/43<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:40-10:11/31<br>16:40 | 07:52<br>17:44 | 06:44 17:30-18:14/44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 09:40-10:12/32<br>16:42 | 07:50<br>17:46 | 06:41 17:32-18:17/45<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:40-10:12/32<br>16:44 | 07:48<br>17:48 | 06:39 17:33-18:18/45<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 09:40-10:14/34<br>16:46 | 07:46<br>17:51 | 06:36 17:34-18:19/45<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 09:40-10:14/34<br>16:48 | 07:43<br>17:53 | 06:34 17:37-18:21/44<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:40-10:14/34<br>16:50 | 07:41<br>17:55 | 06:31 17:39-18:24/45<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:41-10:15/34<br>16:52 | 07:39<br>17:57 | 06:28 17:41-18:27/46<br>18:54 | 06:11<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:15/35<br>16:54 | 07:36 17:27-17:30/3<br>17:59 | 06:26 17:42-18:28/46<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:40-10:15/35<br>16:56 | 07:34 17:22-17:32/10<br>18:01 | 06:23 17:44-18:29/45<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:41-10:15/34<br>16:58 | 07:31 17:21-17:35/14<br>18:03 | 06:21 17:46-18:30/44<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 09:42-10:16/34<br>17:00 | 07:29 17:19-17:36/17<br>18:05 | 06:18 17:48-18:30/42<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 09:42-10:16/34<br>17:02 | | 07:15 18:50-19:31/41<br>20:03 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:42-10:16/34<br>17:04 | | 07:13 18:51-19:31/40<br>20:05 | 05:57<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 09:43-10:16/33<br>17:06 | | 07:10 18:54-19:32/38<br>20:07 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 757 | 257 | 1178 | 352 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 19:03-19:23/20 | 07:34 18:10-18:42/32 | 07:36 | 08:35 09:24-09:47/23 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 | 06:40 19:01-19:25/24 | 07:36 18:01-18:40/39 | 07:39 09:25-09:34/9 | 08:37 09:25-09:46/21 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 19:00-19:26/26 | 07:38 17:58-18:37/39 | 07:41 09:22-09:37/15 | 08:38 09:27-09:46/19 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 18:59-19:26/27 | 07:40 17:56-18:35/39 | 07:43 09:19-09:39/20 | 08:40 09:27-09:45/18 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 18:57-19:26/29 | 07:42 17:54-18:32/38 | 07:45 09:18-09:42/24 | 08:41 09:29-09:45/16 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 18:56-19:26/30 | 07:44 17:53-18:29/36 | 07:47 09:17-09:43/26 | 08:43 09:31-09:44/13 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 18:56-19:26/30 | 07:46 17:52-18:27/35 | 07:49 09:16-09:44/28 | 08:44 09:33-09:43/10 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 18:55-19:26/31 | 07:48 17:52-18:24/32 | 07:51 09:15-09:44/29 | 08:45 09:36-09:41/5 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 18:54-19:26/32 | 07:50 17:51-18:15/24 | 07:53 09:15-09:46/31 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 18:17-18:22/5 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 18:50-19:25/35 | 07:52 17:51-18:14/23 | 07:55 09:14-09:46/32 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 18:48-19:24/36 | 07:54 17:51-18:14/23 | 07:57 09:14-09:47/33 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 18:46-19:24/38 | 07:56 17:51-18:13/22 | 07:59 09:13-09:47/34 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:00 18:43-19:23/40 | 07:58 17:52-18:11/19 | 08:01 09:14-09:48/34 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:41-19:22/41 | 08:00 17:52-18:08/16 | 08:03 09:14-09:48/34 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | 06:05 | 07:04 18:38-19:20/42 | 08:02 17:54-18:06/12 | 08:05 09:13-09:48/35 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:07 | 07:06 18:35-19:19/44 | 08:04 17:56-18:03/7 | 08:07 09:13-09:48/35 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 18:33-19:17/44 | 08:06 | 08:09 09:14-09:49/35 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 18:30-19:16/46 | 08:08 | 08:11 09:15-09:49/34 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 18:28-19:14/46 | 08:10 | 08:13 09:15-09:49/34 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:26-19:11/45 | 08:12 | 08:15 09:15-09:49/34 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 18:23-19:07/44 | 08:14 | 08:17 09:15-09:49/34 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 18:21-19:05/44 | 08:16 | 08:19 09:16-09:49/33 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:18-19:04/46 | 08:18 | 08:21 09:16-09:48/32 | 08:59 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:22 | 07:21 18:15-19:00/45 | 08:20 | 08:23 09:18-09:49/31 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 18:13-18:58/45 | 07:22 | 08:24 09:19-09:49/30 | 09:00 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:12-18:55/43 | 07:24 | 08:26 09:20-09:49/29 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:11-18:53/42 | 07:26 | 08:28 09:20-09:49/29 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:30 | 07:29 18:11-18:50/39 | 07:28 | 08:30 09:21-09:48/27 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 18:10-18:47/37 | 07:30 | 08:32 09:21-09:47/26 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 19:09-19:20/11 | 07:33 18:10-18:45/35 | 07:32 | 08:33 09:23-09:47/24 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 19:05-19:22/17 | | 07:34 | | 09:01 |
| | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 28 | 1126 | 441 | 851 | 125 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:58-12:21/23 09:46-10:22/36 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 10:24-10:36/12 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:00 12:00-12:21/21 09:46-10:22/36 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 10:24-10:36/12 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 |
| 3 | 09:00 12:01-12:21/20 09:47-10:22/35 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 10:26-10:36/10 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:02-12:20/18 09:47-10:22/35 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 10:27-10:34/7 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 12:03-12:19/16 10:29-10:32/3 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:35-09:37/2 09:47-10:22/35 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:06-12:19/13 09:48-10:23/35 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:35-09:39/4 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 12:07-12:18/11 09:48-10:22/34 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:34-09:41/7 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:11-12:14/3 09:48-10:22/34 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:33-09:42/9 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 09:32-09:43/11 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:49-10:22/33 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 09:31-09:44/13 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:49-10:21/32 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 09:30-09:45/15 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:50-10:20/30 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-09:46/17 09:51-10:11/20 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 10:13-10:19/6 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-09:47/19 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:52-10:11/19 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 09:28-09:48/20 | 08:01 | 06:54 18:04-18:07/3 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:53-10:11/18 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 09:28-09:49/21 | 07:59 | 06:52 18:01-18:08/7 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:54-10:11/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:28-09:49/21 | 07:57 | 06:49 17:59-18:10/11 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:54-10:10/16 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:28-09:50/22 | 07:55 | 06:46 17:58-18:13/15 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:56-10:10/14 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-09:50/22 | 07:53 | 06:44 17:57-18:14/17 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:57-10:09/12 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 09:28-09:51/23 | 07:50 | 06:41 17:57-18:17/20 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:59-10:08/9 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:28-09:51/23 | 07:48 | 06:39 17:56-18:17/21 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 09:29-09:52/23 | 07:46 | 06:36 17:56-18:16/20 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:29-09:51/22 | 07:43 | 06:34 17:56-18:16/20 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:30-09:52/22 | 07:41 | 06:31 17:56-18:14/18 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:30-09:52/22 | 07:39 | 06:28 17:58-18:13/15 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 09:31-09:51/20 | 07:36 | 06:26 17:59-18:11/12 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:31-09:51/20 | 07:34 | 06:23 18:01-18:07/6 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:33-09:51/18 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 09:34-09:50/16 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:36-09:49/13 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:38-09:47/9 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 | | 05:03 | |
| | 17:06 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1109 | 0 | 185 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:36 | 08:35 09:12-09:27/15 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 09:32-10:02/30 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 09:14-09:27/13 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 09:32-10:04/32 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 09:16-09:27/11 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 09:33-10:06/33 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 11:56-11:58/2 09:32-10:06/34 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 09:17-09:26/9 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 11:53-12:03/10 09:33-10:07/34 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 09:19-09:26/7 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 11:52-12:05/13 09:34-10:09/35 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 09:21-09:26/5 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 11:50-12:06/16 10:17-10:19/2 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 09:22-09:24/2 09:34-10:09/35 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 11:50-12:08/18 09:35-10:10/35 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 10:15-10:22/7 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 11:50-12:09/19 09:35-10:10/35 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 10:14-10:24/10 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 11:49-12:10/21 09:35-10:11/36 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 10:13-10:25/12 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 11:49-12:12/23 09:36-10:12/36 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 10:14-10:26/12 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 09:09-09:18/9 | 08:50 11:49-12:12/23 09:36-10:12/36 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 10:14-10:27/13 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 09:08-09:21/13 | 08:51 11:49-12:13/24 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:37-10:28/51 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:06-09:22/16 | 08:53 11:49-12:14/25 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 09:37-10:29/52 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 09:05-09:23/18 | 08:54 11:49-12:14/25 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 09:37-10:29/52 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 09:04-09:24/20 | 08:54 11:49-12:15/26 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 09:38-10:30/52 |
| 17 | 05:15 | 06:09 | 07:08 18:51-18:55/4 | 08:06 | 08:09 09:05-09:25/20 | 08:55 11:50-12:16/26 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 09:39-10:31/52 |
| 18 | 05:16 | 06:11 | 07:10 18:47-18:58/11 | 08:08 | 08:11 09:04-09:26/22 | 08:56 11:50-12:17/27 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:39-10:32/53 |
| 19 | 05:18 | 06:13 | 07:12 18:45-19:00/15 | 08:10 | 08:13 09:04-09:26/22 | 08:57 11:50-12:17/27 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:40-10:32/52 |
| 20 | 05:19 | 06:15 | 07:14 18:43-19:01/18 | 08:12 | 08:15 09:04-09:26/22 | 08:58 11:51-12:18/27 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 09:40-10:32/52 |
| 21 | 05:21 | 06:17 | 07:15 18:42-19:01/19 | 08:14 | 08:17 09:04-09:27/23 | 08:58 11:52-12:18/26 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 09:41-10:33/52 |
| 22 | 05:23 | 06:19 | 07:17 18:41-19:01/20 | 08:16 | 08:19 09:04-09:27/23 | 08:59 11:52-12:18/26 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:41-10:33/52 |
| 23 | 05:24 | 06:21 | 07:19 18:41-19:01/20 | 08:18 | 08:21 09:05-09:28/23 | 08:59 11:53-12:19/26 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 09:36-09:45/9 | 16:06 09:42-10:34/52 |
| 24 | 05:26 | 06:23 | 07:21 18:40-19:00/20 | 08:20 | 08:23 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 09:35-09:47/12 | 16:06 09:42-10:34/52 |
| 25 | 05:27 | 06:24 | 07:23 18:40-18:58/18 | 07:22 | 08:24 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 09:34-09:48/14 | 16:07 09:42-10:34/52 |
| 26 | 05:29 | 06:26 | 07:25 18:40-18:55/15 | 07:24 | 08:26 09:07-09:28/21 | 09:00 11:54-12:20/26 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 09:33-09:49/16 | 16:08 09:42-10:35/53 |
| 27 | 05:31 | 06:28 | 07:27 18:40-18:53/13 | 07:26 | 08:28 09:07-09:28/21 | 09:01 11:54-12:20/26 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:33-09:50/17 | 16:09 09:43-10:35/52 |
| 28 | 05:33 | 06:30 | 07:29 18:41-18:50/9 | 07:28 | 08:30 09:08-09:28/20 | 09:01 11:55-12:20/25 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 09:33-09:51/18 | 16:09 09:43-10:35/52 |
| 29 | 05:34 | 06:32 | 07:31 18:43-18:47/4 | 07:30 | 08:32 09:09-09:28/19 | 09:01 11:56-12:21/25 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 09:33-09:52/19 | 16:10 09:44-10:35/51 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 09:10-09:27/17 09:32-09:52/20 | 09:01 11:57-12:21/24 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 09:54-10:00/6 | 16:11 09:44-10:36/52 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:01 11:58-12:21/23 09:45-10:21/36 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 10:22-10:36/14 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 186 | 0 | 504 | 2148 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:44-13:42/58 | 08:27 12:52-13:57/65 10:04-10:09/5 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:39-10:37/58 | 17:08 09:03-09:23/20 09:32-10:00/28 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:01 12:45-13:43/58 | 08:26 12:53-13:56/63 09:33-09:59/26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:38-10:37/59 | 17:10 09:02-09:24/22 | 18:09 | 20:11 | 21:11 | 22:04 |
| 3 | 09:00 12:46-13:45/59 | 08:24 12:53-13:56/63 09:34-09:59/25 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 09:39-10:38/59 | 17:12 09:01-09:26/25 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:45-13:45/60 | 08:22 12:54-13:56/62 09:35-09:58/23 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 09:38-10:38/60 | 17:14 09:01-09:27/26 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 12:45-13:45/60 | 08:20 12:55-13:56/61 09:36-09:57/21 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:39-10:38/59 | 17:17 09:00-09:28/28 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:46-13:46/60 | 08:18 12:55-13:54/59 09:37-09:55/18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:39-10:39/60 | 17:19 08:59-09:27/28 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 12:46-13:47/61 | 08:16 12:56-13:54/58 08:59-09:28/29 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:38-10:39/61 | 17:21 08:46-08:55/9 09:39-09:53/14 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:46-13:47/61 | 08:14 12:57-13:53/56 08:59-09:29/30 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:38-10:40/62 | 17:23 08:44-08:58/14 09:43-09:50/7 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 12:46-13:48/62 | 08:12 12:58-13:52/54 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:38-10:40/62 | 17:25 08:42-09:29/47 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 12:46-13:49/63 | 08:10 13:00-13:52/52 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:38-10:40/62 | 17:27 08:41-09:29/48 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 12:46-13:49/63 | 08:08 13:00-13:50/50 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:35-10:41/66 | 17:29 08:40-09:29/49 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:47-13:50/63 | 08:06 13:02-13:49/47 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 09:34-10:41/67 | 17:31 08:39-09:29/50 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:47-13:51/64 | 08:04 13:04-13:47/43 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:33-10:42/69 | 17:34 08:39-09:29/50 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 12:47-13:52/65 | 08:01 13:07-13:46/39 | 06:54 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:33-10:42/69 | 17:36 08:39-09:29/50 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 12:47-13:51/64 | 07:59 13:09-13:43/34 | 06:52 | 06:33 | 05:27 | 04:52 |
| | 16:35 09:32-10:42/70 | 17:38 08:38-09:27/49 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 12:47-13:52/65 | 07:57 13:12-13:40/28 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:31-10:42/71 | 17:40 08:38-09:27/49 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 12:48-13:53/65 | 07:55 13:16-13:35/19 | 06:46 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:31-10:42/71 | 17:42 08:39-09:26/47 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 12:47-13:53/66 | 07:53 08:38-09:24/46 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:30-10:42/72 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 12:48-13:54/66 | 07:50 08:39-09:04/25 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:30-10:42/72 | 17:46 09:05-09:23/18 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 12:48-13:54/66 | 07:48 08:39-09:03/24 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 09:29-10:41/72 | 17:48 09:07-09:19/12 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 12:48-13:55/67 | 07:46 08:40-09:02/22 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 09:30-10:41/71 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 12:48-13:55/67 | 07:43 08:42-09:01/19 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 09:29-10:41/72 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 12:48-13:55/67 | 07:41 08:42-08:59/17 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:30-10:41/71 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 12:49-13:56/67 | 07:39 08:45-08:57/12 | 06:28 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:30-10:39/69 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 12:49-13:56/67 09:29-10:18/49 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 10:20-10:38/18 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 12:49-13:56/67 09:29-10:18/49 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 10:21-10:36/15 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 12:49-13:56/67 09:30-10:18/48 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:25-10:34/9 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 12:51-13:57/66 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:31-10:17/46 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 12:51-13:57/66 09:31-10:16/45 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 09:11-09:14/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 12:51-13:57/66 09:31-10:15/44 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 09:07-09:19/12 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 12:52-13:57/65 09:32-10:13/41 | | 07:10 | | 05:03 | |
| | 17:06 09:05-09:21/16 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3960 | 1885 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | 12:28-13:20/52 | 08:35 | 12:28-13:31/63 |
| | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 08:11-08:59/48 | 16:10 | 09:17-10:23/66 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | | 07:39 | 12:28-13:22/54 | 08:37 | 12:29-13:32/63 |
| | 22:17 | 21:38 | 20:27 | 19:09 | | 16:56 | 08:12-08:59/47 | 16:09 | 09:21-10:23/62 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:41 | 12:27-13:23/56 09:12-09:20/8 | 08:38 | 12:30-13:32/62 |
| | 22:17 | 21:36 | 20:24 | 19:07 | | 16:53 | 08:14-08:58/44 | 16:08 | 09:22-10:24/62 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:43 | 12:25-13:23/58 08:28-08:58/30 | 08:40 | 12:30-13:32/62 |
| | 22:16 | 21:34 | 20:22 | 19:04 | | 16:51 | 08:16-08:24/8 09:08-09:23/15 | 16:07 | 09:22-10:24/62 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | 12:25-13:25/60 09:07-09:26/19 | 08:41 | 12:31-13:32/61 |
| | 22:16 | 21:32 | 20:19 | 19:02 | | 16:49 | 08:30-08:58/28 | 16:07 | 09:23-10:24/61 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | 12:25-13:25/60 09:06-09:27/21 | 08:43 | 12:32-13:33/61 |
| | 22:15 | 21:30 | 20:17 | 18:59 | | 16:47 | 08:30-08:57/27 | 16:06 | 09:25-10:25/60 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | 12:24-13:26/62 09:04-09:28/24 | 08:44 | 12:32-13:32/60 |
| | 22:14 | 21:28 | 20:14 | 18:57 | | 16:45 | 08:31-08:56/25 | 16:06 | 09:25-10:25/60 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | 12:23-13:26/63 09:03-09:29/26 | 08:45 | 12:33-13:33/60 |
| | 22:14 | 21:26 | 20:11 | 18:54 | | 16:43 | 08:31-08:55/24 | 16:05 | 09:26-10:26/60 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | 12:23-13:27/64 09:04-09:30/26 | 08:47 | 12:34-13:33/59 |
| | 22:13 | 21:23 | 20:09 | 18:52 | | 16:42 | 08:33-08:55/22 | 16:05 | 09:27-10:26/59 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | | 07:55 | 12:23-13:27/64 09:34-09:41/7 | 08:48 | 12:34-13:33/59 |
| | 22:12 | 21:21 | 20:06 | 18:49 | | 16:40 | 08:34-08:54/20 09:03-09:31/28 | 16:04 | 09:28-10:26/58 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | | 07:57 | 12:22-13:28/66 09:02-09:44/42 | 08:49 | 12:35-13:33/58 |
| | 22:11 | 21:19 | 20:04 | 18:47 | | 16:38 | 08:36-08:52/16 | 16:04 | 09:29-10:27/58 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | | 07:59 | 12:22-13:28/66 09:02-09:46/44 | 08:50 | 12:36-13:34/58 |
| | 22:10 | 21:17 | 20:01 | 18:44 | | 16:36 | 08:38-08:49/11 | 16:04 | 09:29-10:27/58 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | | 08:01 | 12:23-13:29/66 | 08:52 | 12:36-13:34/58 |
| | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 09:03-09:48/45 | 16:04 | 09:30-10:27/57 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | | 08:03 | 12:23-13:29/66 | 08:53 | 12:37-13:34/57 |
| | 22:08 | 21:12 | 19:56 | 18:39 | | 16:33 | 09:02-09:49/47 | 16:04 | 09:31-10:27/56 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | | 08:05 | 12:22-13:29/67 09:02-09:50/48 | 08:54 | 12:37-13:34/57 |
| | 22:07 | 21:10 | 19:53 | 18:37 | | 16:31 | 09:57-10:06/9 | 16:04 | 09:32-10:28/56 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | | 08:07 | 12:22-13:29/67 09:02-09:51/49 | 08:54 | 12:38-13:34/56 |
| | 22:05 | 21:08 | 19:51 | 18:34 | | 16:29 | 09:54-10:09/15 | 16:04 | 09:33-10:28/55 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 09:19-09:26/7 | 08:09 | 12:23-13:30/67 09:03-09:52/49 | 08:55 | 12:39-13:35/56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | | 16:28 | 09:54-10:12/18 | 16:04 | 09:34-10:29/55 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 09:15-09:29/14 | 08:11 | 12:23-13:30/67 | 08:56 | 12:39-13:36/57 |
| | 22:03 | 21:03 | 19:46 | 18:30 | | 16:26 | 09:04-10:13/69 | 16:04 | 09:35-10:29/54 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 09:13-09:31/18 | 08:13 | 12:23-13:30/67 | 08:57 | 12:39-13:35/56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 09:04-10:15/71 | 16:04 | 09:36-10:30/54 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 09:11-09:32/21 | 08:15 | 12:23-13:30/67 | 08:58 | 12:40-13:36/56 |
| | 22:00 | 20:59 | 19:40 | 18:25 | | 16:23 | 09:04-10:16/72 | 16:04 | 09:36-10:30/54 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 09:10-09:33/23 | 08:17 | 12:23-13:30/67 | 08:58 | 12:41-13:37/56 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 09:41-09:47/6 | 16:22 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 09:09-09:33/24 | 08:19 | 12:24-13:30/66 | 08:59 | 12:41-13:37/56 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 09:36-09:51/15 | 16:20 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 09:09-09:34/25 | 08:21 | 12:24-13:30/66 | 08:59 | 12:42-13:38/56 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 09:35-09:54/19 | 16:19 | 09:07-10:19/72 | 16:06 | 09:38-10:32/54 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 13:54-13:59/5 | 08:23 | 12:25-13:31/66 | 09:00 | 12:42-13:38/56 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 09:09-09:55/46 | 16:17 | 09:08-10:20/72 | 16:06 | 09:38-10:32/54 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 12:45-13:07/22 | 08:25 | 12:26-13:31/65 | 09:00 | 12:42-13:38/56 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 08:08-08:56/48 | 16:16 | 09:09-10:20/71 | 16:07 | 09:38-10:32/54 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 12:41-13:10/29 | 08:26 | 12:26-13:31/65 | 09:00 | 12:43-13:39/56 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 08:08-08:57/49 | 16:15 | 09:10-10:21/71 | 16:08 | 09:38-10:33/55 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 12:37-13:13/36 | 08:28 | 12:27-13:31/64 | 09:01 | 12:43-13:39/56 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 08:08-08:57/49 | 16:14 | 09:11-10:21/70 | 16:09 | 09:38-10:33/55 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 12:36-13:16/40 | 08:30 | 12:27-13:32/65 | 09:01 | 12:43-13:40/57 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 08:09-08:58/49 | 16:13 | 09:13-10:22/69 | 16:09 | 09:38-10:34/56 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 12:33-13:17/44 | 08:32 | 12:27-13:31/64 | 09:01 | 12:44-13:41/57 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 08:09-08:58/49 | 16:12 | 09:14-10:23/69 | 16:10 | 09:38-10:34/56 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 12:32-13:18/46 | 08:33 | 12:28-13:31/63 | 09:01 | 12:44-13:41/57 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 08:09-08:58/49 | 16:11 | 09:15-10:22/67 | 16:11 | 09:38-10:35/57 |
| 31 | 05:38 | 06:36 | | 07:34 | 12:30-13:20/50 | | | 09:01 | 12:45-13:42/57 |
| | 21:42 | 20:32 | | 17:00 | 08:10-08:58/48 | | | 16:12 | 09:38-10:36/58 |
| Potential sun hours | 521 | 465 | 383 | 326 | | 253 | | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 831 | | 3717 | | 3573 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 43 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:38-08:01/23 | 05:55 | 06:49-08:15/86 | 05:02 | 06:38-07:53/75 |
| | 16:14 | 17:08 | 18:07 | | 20:10 | | 21:09 | | 22:03 | |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:36-08:01/25 | 05:53 | 06:47-08:13/86 | 05:01 | 06:38-07:53/75 |
| | 16:15 | 17:10 | 18:09 | | 20:12 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:32-08:07/35 | 05:51 | 06:46-08:12/86 | 05:00 | 06:39-07:54/75 |
| | 16:16 | 17:12 | 18:12 | | 20:14 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:31-08:11/40 | 05:48 | 06:44-08:11/87 | 04:59 | 06:39-07:54/75 |
| | 16:17 | 17:14 | 18:14 | | 20:16 | | 21:15 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:29-08:13/44 | 05:46 | 06:43-08:09/86 | 04:58 | 06:39-07:53/74 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:28-08:16/48 | 05:44 | 06:42-08:08/86 | 04:57 | 06:40-07:54/74 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 07:20-07:26/6 | 21:18 | | 22:09 | |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:17-08:17/60 | 05:42 | 06:41-08:06/85 | 04:56 | 06:40-07:53/73 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:15-08:19/64 | 05:40 | 06:40-08:03/83 | 04:56 | 06:40-07:53/73 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | 07:12-08:19/67 | 05:38 | 06:39-08:01/82 | 04:55 | 06:41-07:53/72 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:10-08:20/70 | 05:36 | 06:39-07:57/78 | 04:54 | 06:41-07:53/72 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:13 | |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 07:09-08:20/71 | 05:34 | 06:39-07:53/74 | 04:54 | 06:41-07:53/72 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:09-08:21/72 | 05:32 | 06:38-07:53/75 | 04:53 | 06:42-07:54/72 |
| | 16:29 | 17:32 | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 07:09-08:21/72 | 05:30 | 06:37-07:53/76 | 04:53 | 06:43-07:54/71 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 07:08-08:22/74 | 05:28 | 06:37-07:53/76 | 04:53 | 06:42-07:53/71 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | 07:09-08:22/73 | 05:27 | 06:37-07:54/77 | 04:52 | 21:37-21:38/1 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 | 06:43-07:53/70 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:09-08:22/73 | 05:25 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 | 06:43-07:54/71 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 07:10-08:22/72 | 05:23 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 | 06:43-07:54/71 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:11-08:23/72 | 05:21 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:41 | | 22:18 | 06:44-07:54/70 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:11-08:22/71 | 05:20 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 | 06:44-07:54/70 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:10-08:22/72 | 05:18 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | | 21:44 | | 22:19 | 06:44-07:54/70 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 07:09-08:22/73 | 05:16 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | | 22:19 | 06:44-07:54/70 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 07:07-08:21/74 | 05:15 | 06:36-07:54/78 | 04:52 | 21:37-21:41/4 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 | 06:45-07:55/70 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 07:06-08:20/74 | 05:13 | 06:36-07:54/78 | 04:53 | 21:37-21:41/4 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 | 06:45-07:55/70 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 07:06-08:20/74 | 05:12 | 06:37-07:54/77 | 04:53 | 21:37-21:41/4 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | | 22:19 | 06:45-07:55/70 |
| 25 | 08:39 | 07:36 | 06:26 | 06:50-06:54/4 | 06:09 | 07:05-08:20/75 | 05:10 | 06:37-07:54/77 | 04:53 | 21:38-21:41/3 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 | 06:45-07:56/71 |
| 26 | 08:38 | 07:34 | 06:23 | 06:48-06:58/10 | 06:06 | 07:03-08:18/75 | 05:09 | 06:36-07:53/77 | 04:54 | 21:38-21:41/3 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 | 06:45-07:56/71 |
| 27 | 08:36 | 07:32 | 06:21 | 06:45-06:59/14 | 06:04 | 07:01-08:18/77 | 05:08 | 06:37-07:54/77 | 04:54 | 21:40-21:41/1 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 | 06:46-07:57/71 |
| 28 | 08:35 | 07:29 | 06:18 | 06:43-07:01/18 | 06:02 | 06:56-08:17/81 | 05:06 | 06:37-07:54/77 | 04:55 | 06:45-07:56/71 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 07:40-08:01/21 | 05:59 | 06:53-08:16/83 | 05:05 | 06:37-07:54/77 | 04:55 | 06:46-07:57/71 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 07:40-08:02/22 | 05:57 | 06:51-08:15/84 | 05:04 | 06:38-07:54/76 | 04:56 | 06:45-07:57/72 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:19 | |
| 31 | 08:29 | | 07:11 | 07:39-08:01/22 | | | 05:03 | 06:38-07:53/75 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 111 | | 1974 | | 2456 | | 2195 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut downWTG: 43 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:46-07:57/71 | 05:40 | 06:49-08:03/74 | 06:38 | 07:09-08:19/70 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 06:46-07:58/72 | 05:41 | 06:49-08:03/74 | 06:40 | 07:08-08:18/70 | 07:37 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 | 06:46-07:59/73 | 05:43 | 06:49-08:09/80 | 06:42 | 07:10-08:17/67 | 07:39 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 06:46-07:59/73 | 05:45 | 06:50-08:12/82 | 06:43 | 07:12-08:16/64 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 06:46-07:59/73 | 05:47 | 06:51-08:15/84 | 06:45 | 07:14-08:14/60 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 06:46-07:59/73 | 05:49 | 06:51-08:16/85 | 06:47 | 07:24-08:11/47 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | 07:16-07:22/6 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 06:46-07:59/73 | 05:51 | 06:52-08:18/86 | 06:49 | 07:24-08:09/45 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 06:46-08:00/74 | 05:52 | 06:53-08:19/86 | 06:51 | 07:25-08:06/41 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 06:46-08:00/74 | 05:54 | 06:53-08:20/87 | 06:53 | 07:26-08:01/35 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 06:46-08:00/74 | 05:56 | 06:54-08:21/87 | 06:55 | 07:29-07:54/25 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 06:47-08:02/75 | 05:58 | 06:56-08:22/86 | 06:57 | 07:31-07:54/23 | 07:54 | 07:57 | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:46-08:02/76 | 06:00 | 06:58-08:23/85 | 06:59 | 07:30-07:53/23 | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:46-08:02/76 | 06:02 | 06:59-08:23/84 | 07:00 | 07:30-07:52/22 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:46-08:02/76 | 06:04 | 07:01-08:24/83 | 07:02 | 07:31-07:51/20 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:46-08:02/76 | 06:06 | 07:05-08:25/80 | 07:04 | 07:32-07:50/18 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:46-08:03/77 | 06:07 | 07:11-08:25/74 | 07:06 | 07:34-07:49/15 | 08:04 | 08:07 | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:46-08:03/77 | 06:09 | 07:11-08:26/75 | 07:08 | 07:36-07:47/11 | 08:06 | 08:09 | 08:56 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:46-08:03/77 | 06:11 | 07:11-08:25/74 | 07:10 | 07:38-07:44/6 | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:46-08:04/78 | 06:13 | 07:11-08:26/75 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:46-08:04/78 | 06:15 | 07:12-08:26/74 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:47-08:04/77 | 06:17 | 07:13-08:26/73 | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:46-08:04/78 | 06:19 | 07:13-08:25/72 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:47-08:05/78 | 06:21 | 07:14-08:26/72 | 07:19 | | 08:18 | 08:21 | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:47-08:04/77 | 06:23 | 07:15-08:25/70 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 | 06:47-08:05/78 | 06:25 | 07:14-08:25/71 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:47-08:04/77 | 06:26 | 07:13-08:25/72 | 07:25 | | 07:24 | 08:27 | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:47-08:04/77 | 06:28 | 07:11-08:24/73 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:47-08:04/77 | 06:30 | 07:10-08:23/73 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:48-08:04/76 | 06:32 | 07:09-08:23/74 | 07:31 | | 07:31 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-08:04/76 | 06:34 | 07:09-08:22/73 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-08:03/75 | 06:36 | 07:09-08:21/72 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 2342 | | 2410 | | 668 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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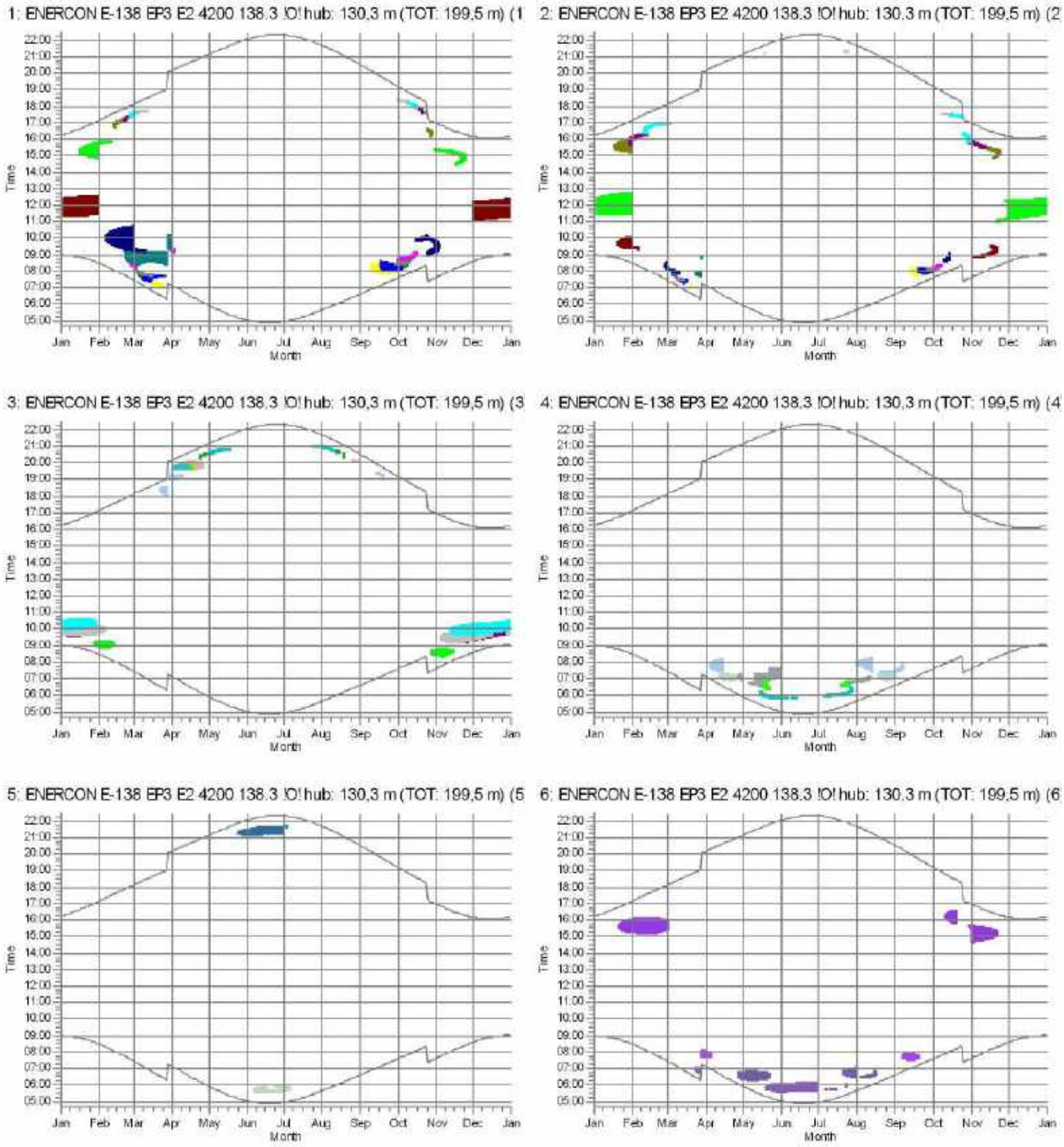
Calculated:
2021.12.03 10:50/3.5.552

# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 shut down




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)*
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)*
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)*
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)*
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)*
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)*
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)*
AS: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)*
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)*

* Results reduced by flicker curtailment

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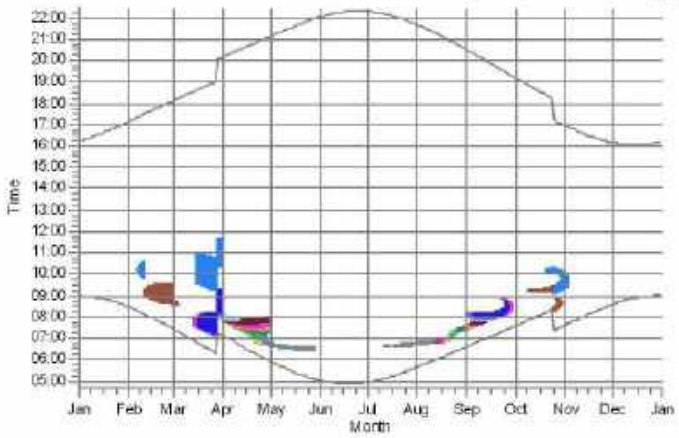
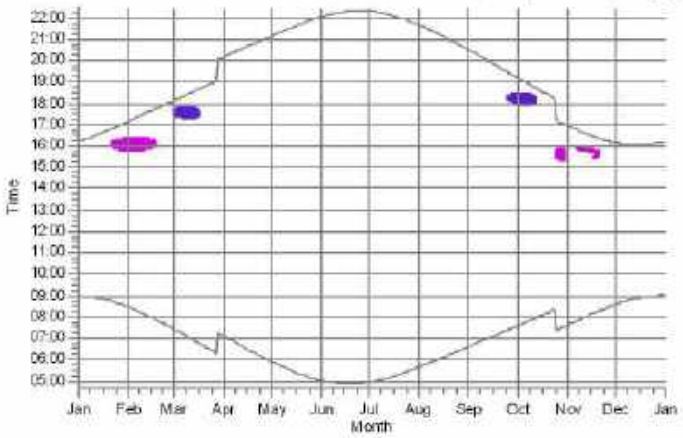
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 shut down

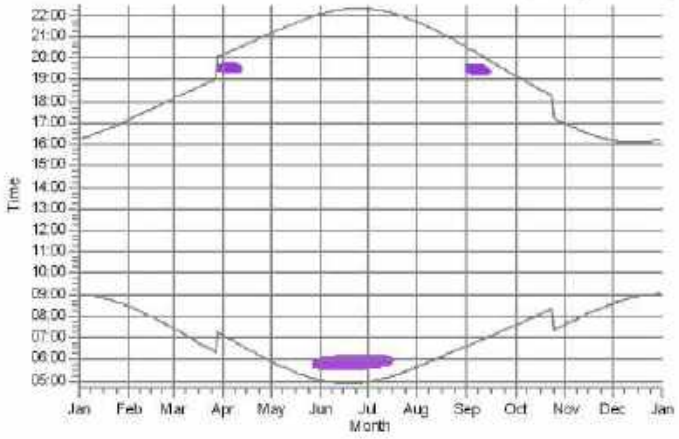
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7



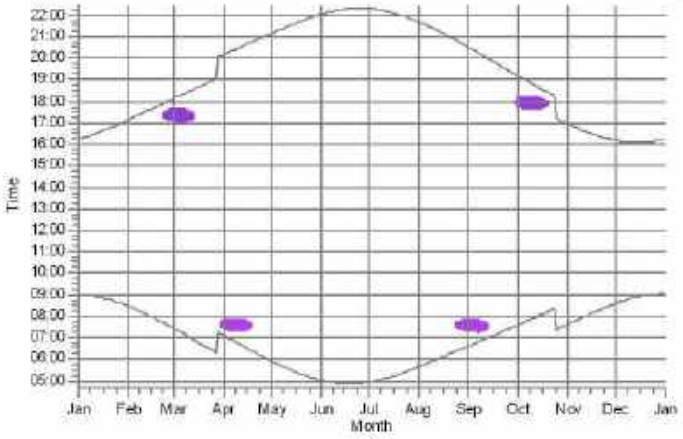

8: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8



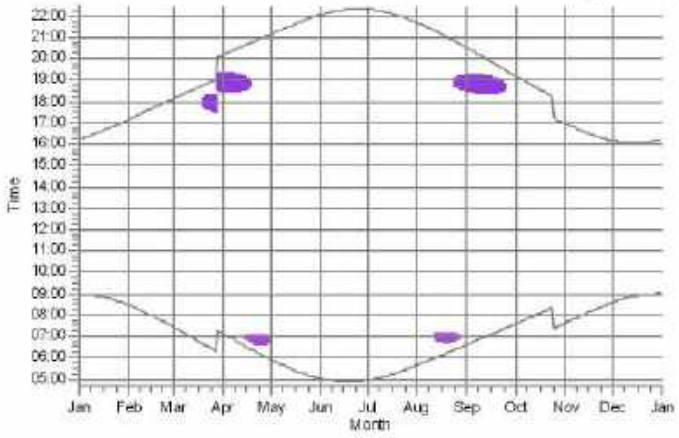

9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0



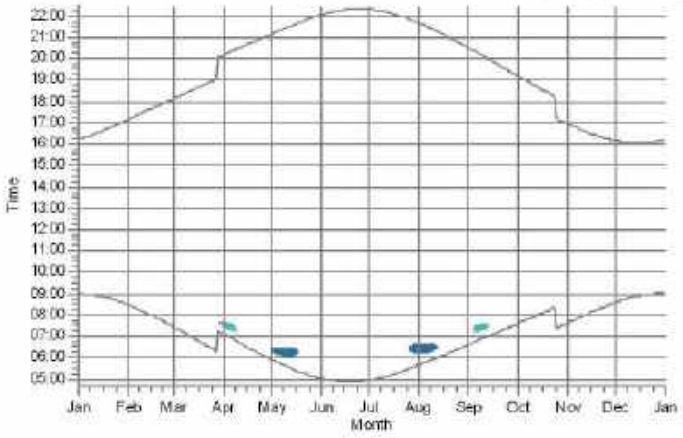

10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170




12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
- V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
- W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
- X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
- Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
- Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
- AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
- AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
- AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
- AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
- AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
- AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
- AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
- AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
- AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
- AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
- AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
- AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
- AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*
- AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*
- AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*
- AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)
- AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
- AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)*

* Results reduced by flicker curtailment

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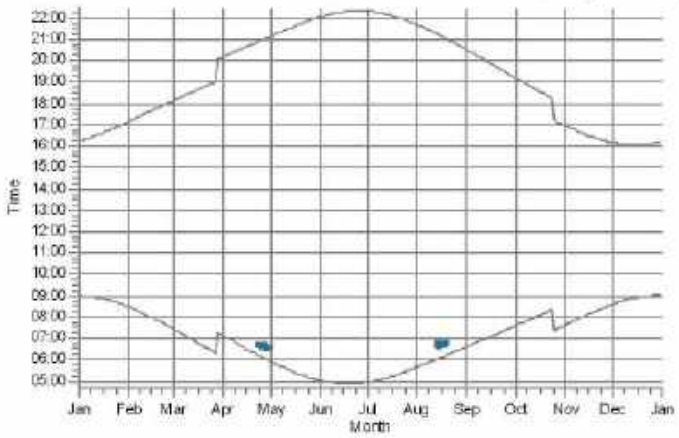
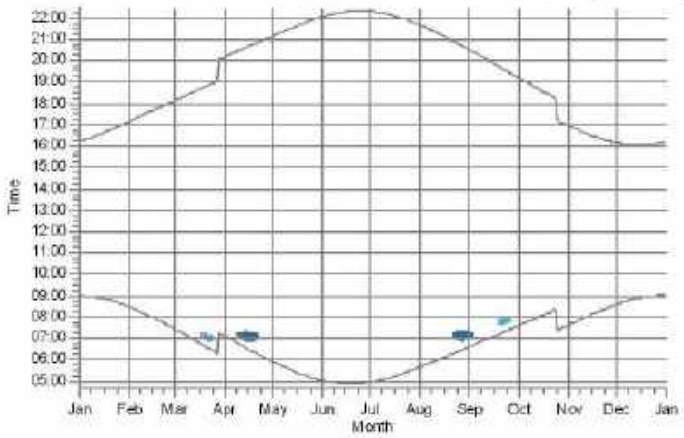
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down

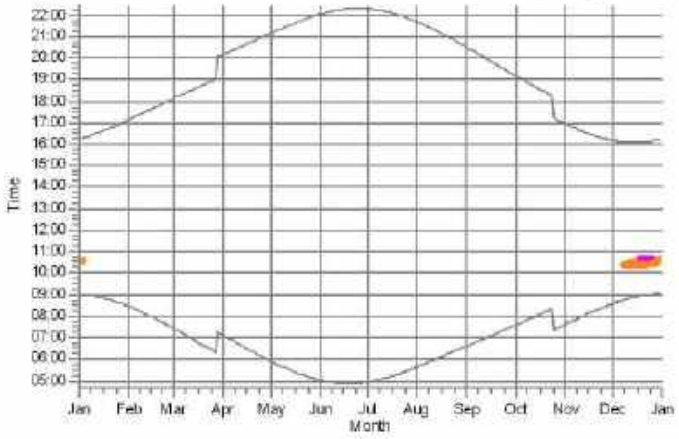
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



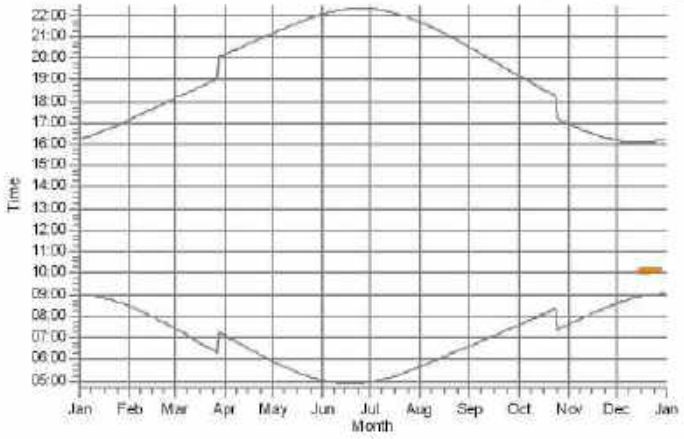

14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



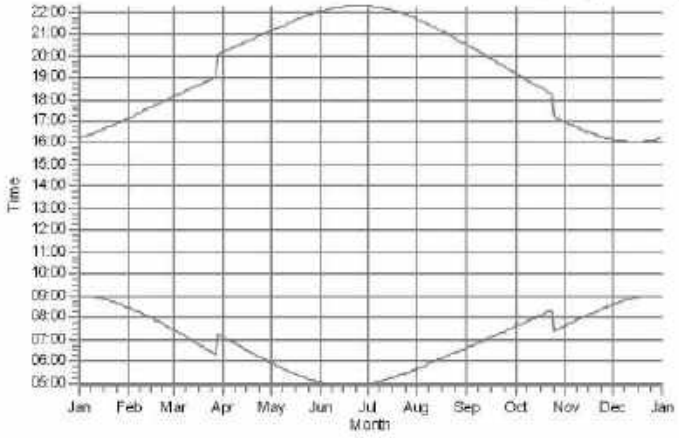

15: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



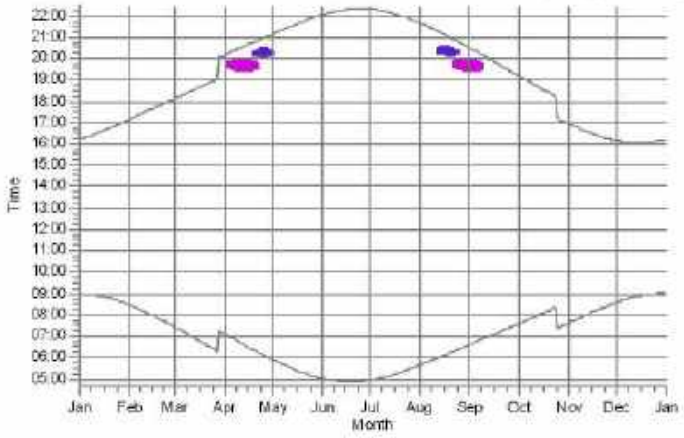

16: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




17: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




18: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




Shadow receptors

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

* Results reduced by flicker curtailment

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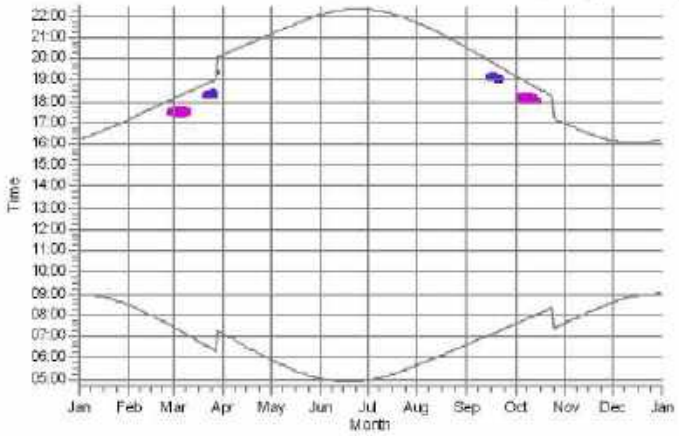
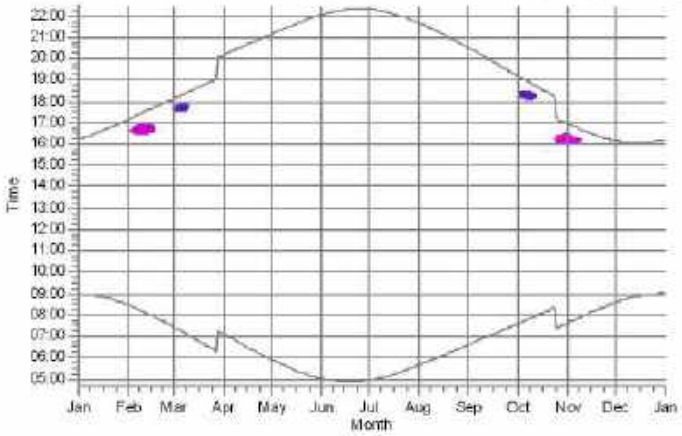
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down

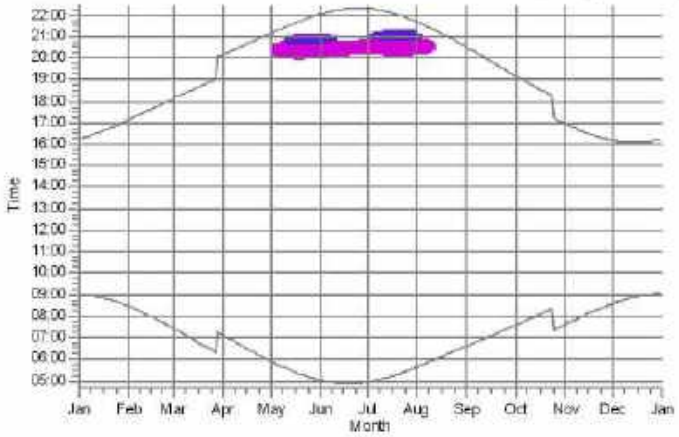
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



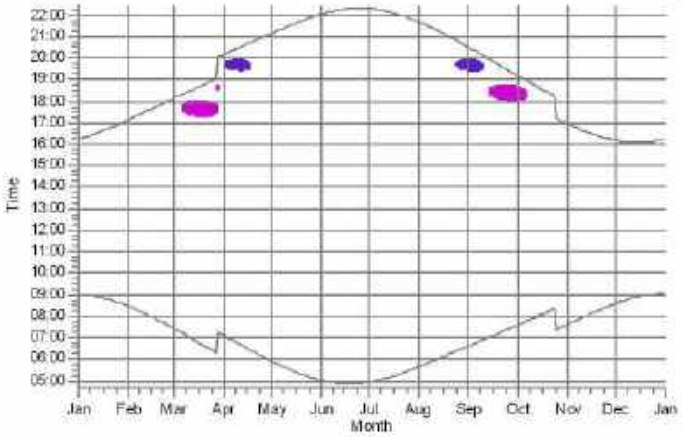

20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



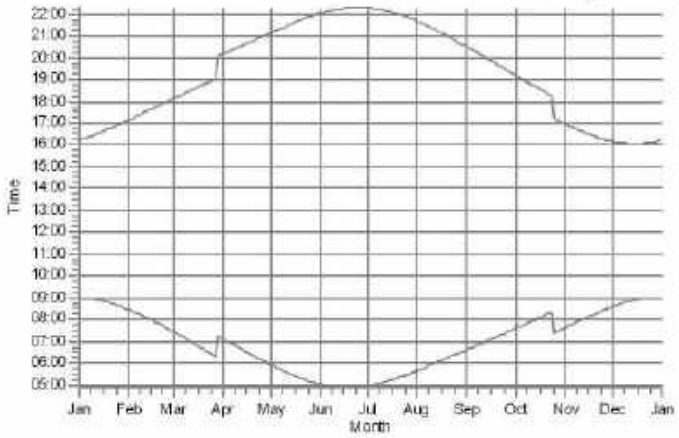

21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



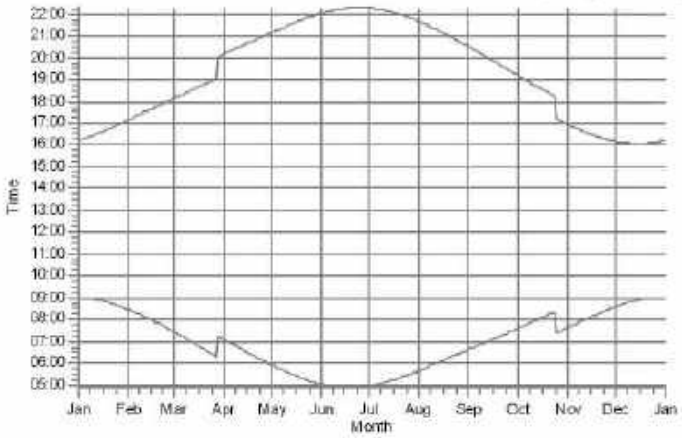

22: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




23: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




24: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




Shadow receptors

AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*

AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

* Results reduced by flicker curtailment

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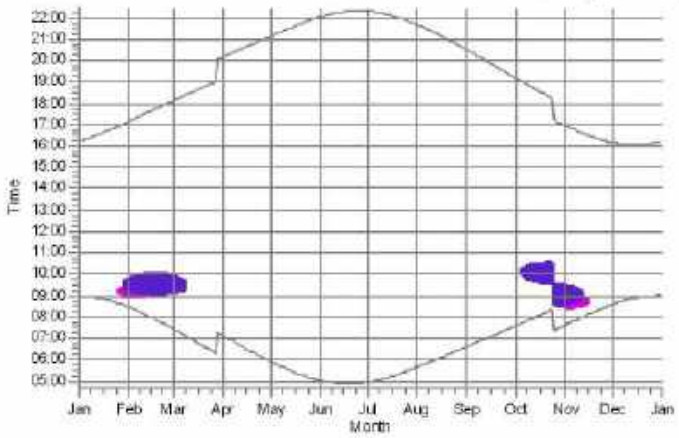
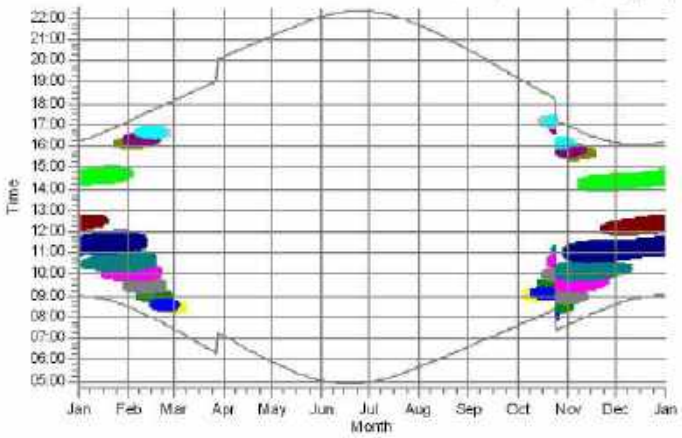
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down

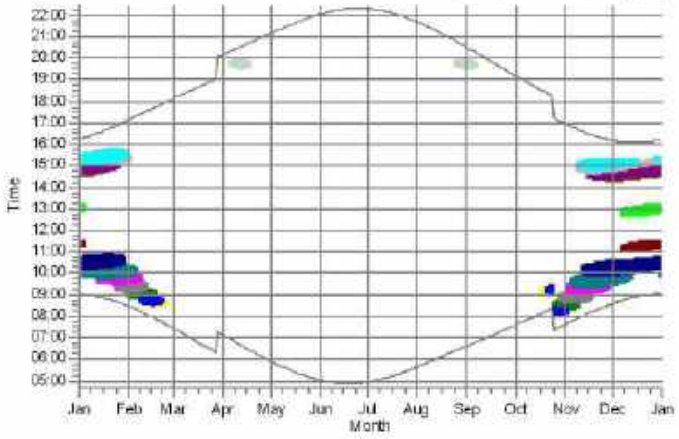
25: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170.



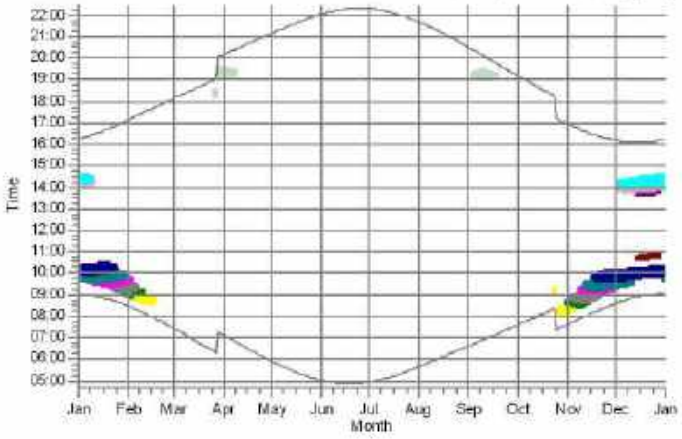

26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)



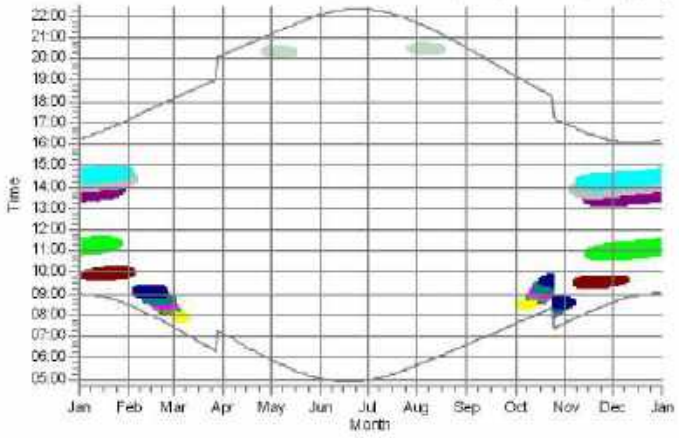

27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)



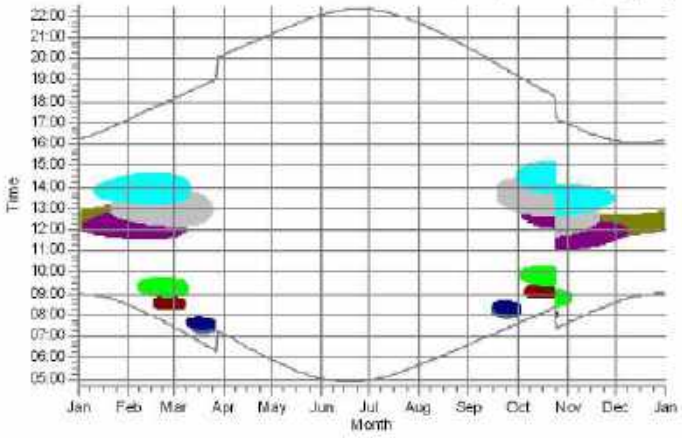

28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)




29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)




30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)*
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)*
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)*
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)*
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)*
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)*
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

* Results reduced by flicker curtailment

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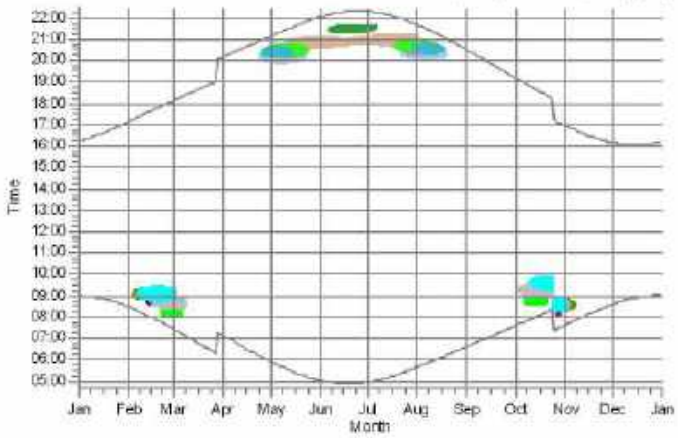
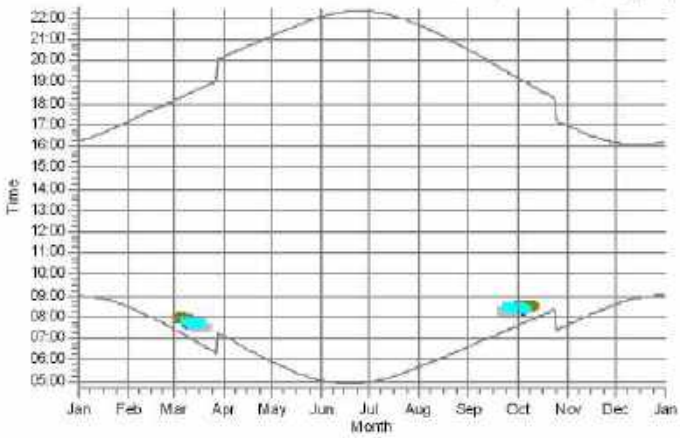
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down

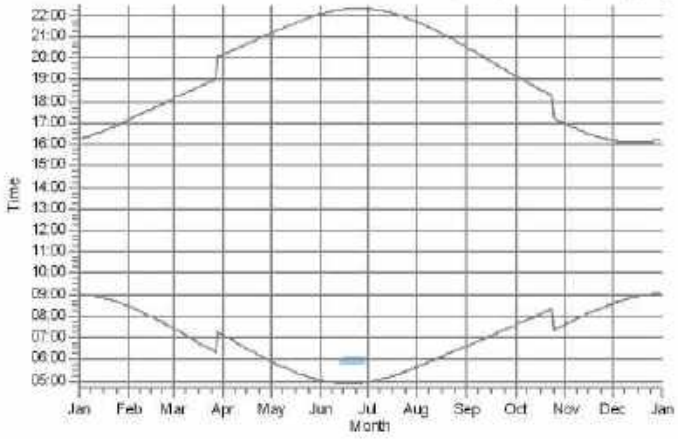
31: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (23)



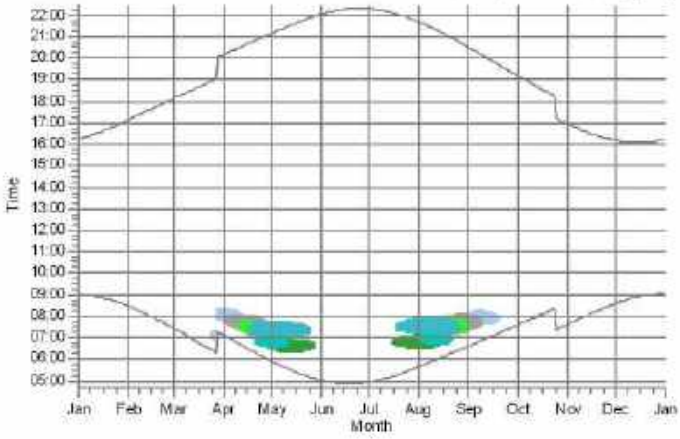

32: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (24)



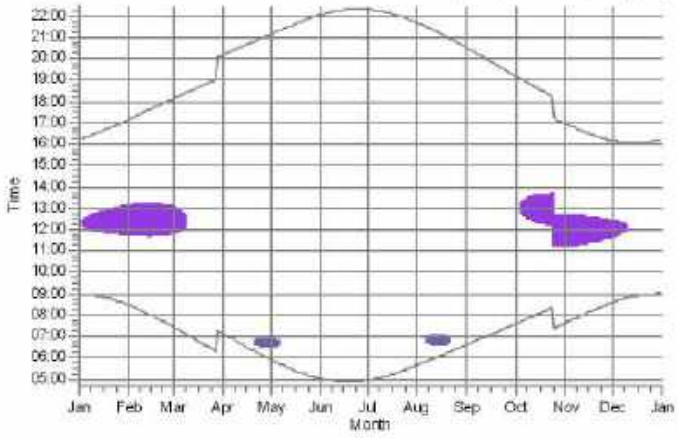

33: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (25)



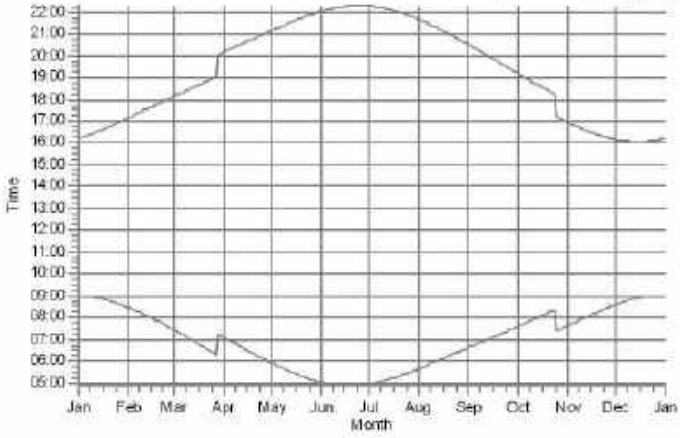

34: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (26)




35: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (27)




36: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (28)




Shadow receptors

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)*
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)*

* Results reduced by flicker curtailment

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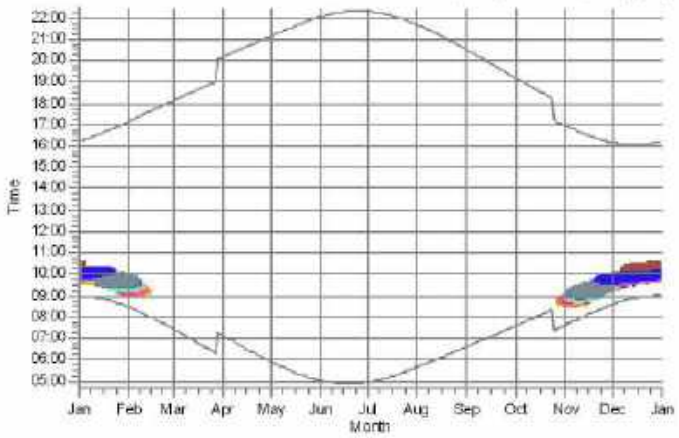
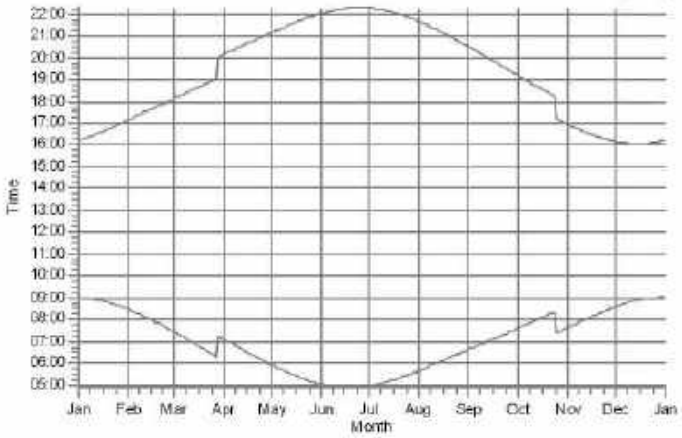
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 shut down

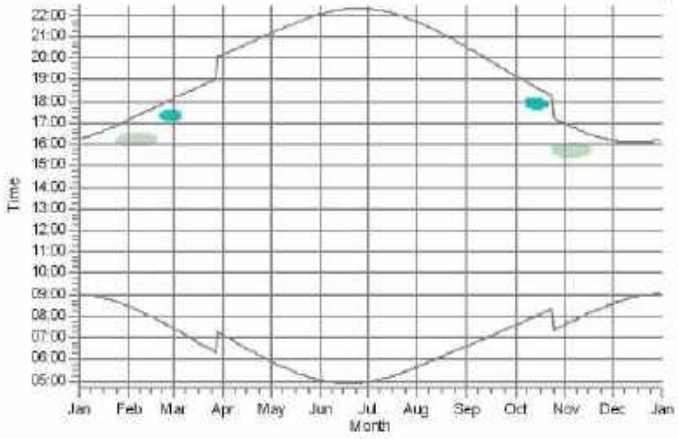
37: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)



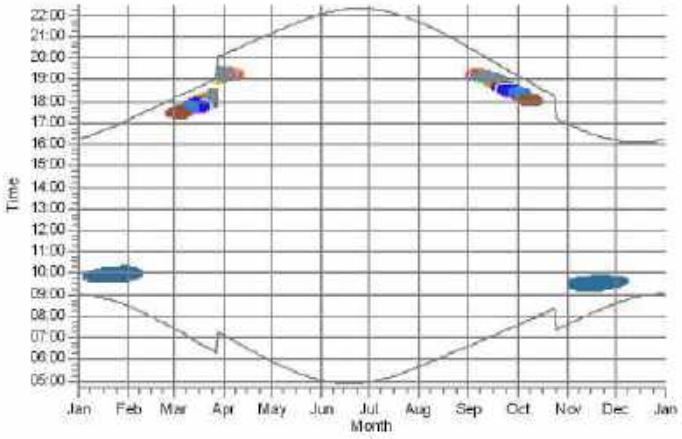

38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



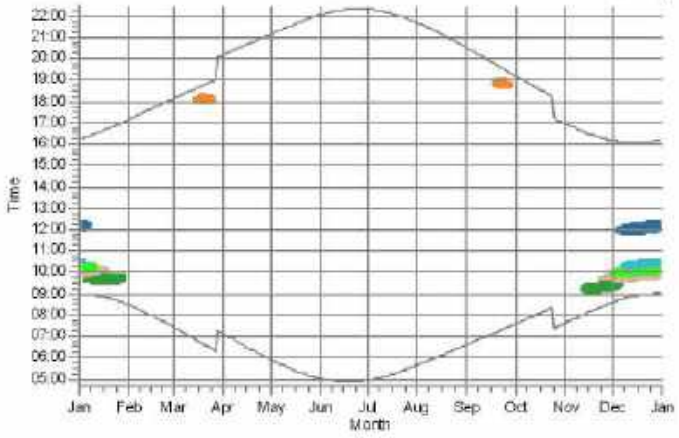

39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



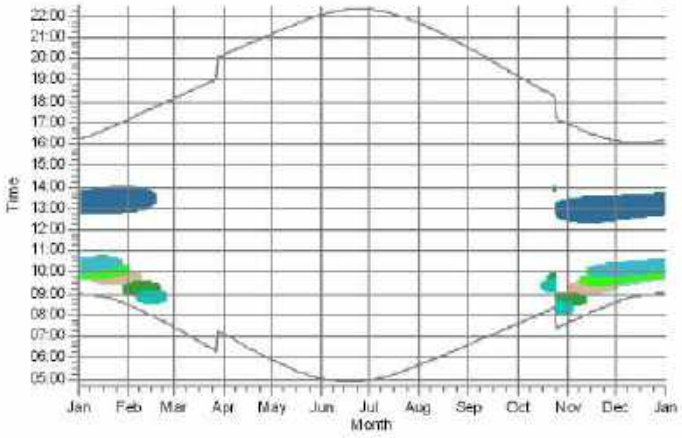

40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




Shadow receptors

- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
- O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
- T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
- U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
- V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
- W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
- X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
- Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
- Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
- AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
- AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
- AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
- AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
- AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
- AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
- AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
- AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
- AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
- AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
- AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
- AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
- AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*
- AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*

* Results reduced by flicker curtailment

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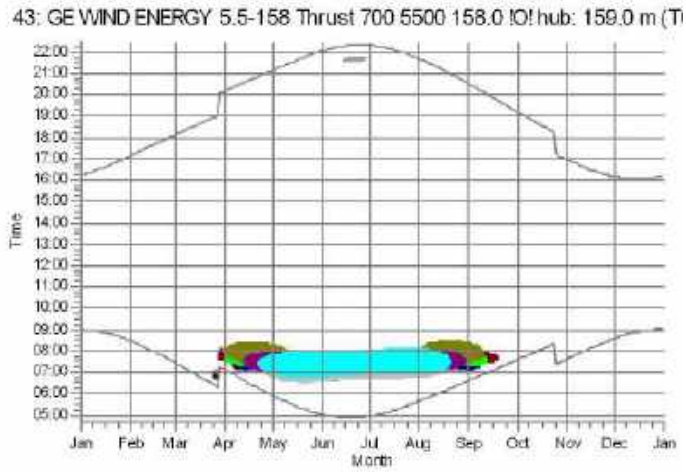
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down




Shadow receptors

G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*

* Results reduced by flicker curtailment

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 14:52-15:43 11:28-12:33 | 16:35-17:33 15:00-15:40 09:19-10:43 | 10:21-11:08 09:17-10:11 08:11-08:28 | | |
| 2 | | 14:51-15:44 11:29-12:33 | 16:36-17:35 15:03-15:38 09:18-10:43 | 10:24-11:05 09:18-10:09 08:14-08:25 | | |
| 3 | | 14:51-15:45 11:30-12:32 | 16:36-17:35 15:06-15:35 09:17-10:43 08:08-08:18 | 10:26-11:00 09:18-10:06 | | |
| 4 | | 14:51-15:46 11:30-12:32 | 16:38-17:37 15:10-15:32 09:17-10:44 08:04-08:23 | 10:30-10:56 09:28-10:03 | | |
| 5 | | 14:50-15:47 11:31-12:32 | 16:39-17:38 15:16-15:25 09:15-10:43 08:00-08:26 | 10:37-10:46 09:30-09:59 | | |
| 6 | | 14:50-15:48 11:32-12:31 | 16:42-17:40 09:15-10:44 07:58-08:28 | 09:34-09:55 | | |
| 7 | | 14:50-15:49 11:33-12:30 | 16:45-17:40 09:14-10:43 07:55-08:29 | 09:42-09:46 | | |
| 8 | | 14:49-15:49 11:33-12:29 | 16:47-17:41 09:13-10:43 07:53-08:30 | | | |
| 9 | | 14:49-15:50 11:35-12:28 | 16:48-17:42 09:13-10:43 07:52-08:32 | | | |
| 10 | | 14:49-15:51 11:36-12:27 | 16:48-17:42 09:12-10:42 07:50-08:32 | | | |
| 11 | | 14:49-15:51 11:38-12:26 | 16:50-17:43 09:12-10:42 07:50-08:34 | | | |
| 12 | | 14:49-15:51 11:39-12:23 | 16:50-17:42 09:11-10:41 07:48-08:34 | | | |
| 13 | | 14:49-15:52 11:41-12:21 | 16:51-17:42 09:11-10:41 07:48-08:35 | | | |
| 14 | | 16:44-16:55 14:49-15:52 11:44-12:19 | 16:54-17:42 09:10-10:40 07:47-08:35 | | | |
| 15 | | 16:40-16:58 14:49-15:51 11:46-12:16 | 16:56-17:41 09:09-10:39 07:46-08:34 07:24-07:30 | | | |
| 16 | | 16:39-17:01 14:49-15:51 11:50-12:12 | 17:08-17:41 09:09-10:39 07:46-08:35 07:20-07:35 | | | |
| 17 | | 16:38-17:03 14:50-15:52 11:58-12:05 | 17:08-17:40 09:09-10:38 07:45-08:34 07:16-07:37 | | | |
| 18 | | 16:37-17:04 14:50-15:51 | 17:09-17:38 09:09-10:37 07:45-08:35 07:15-07:39 | | | |
| 19 | | 16:36-17:05 14:50-15:51 | 17:10-17:37 09:08-10:36 07:44-08:34 07:13-07:40 | | | |
| 20 | | 16:36-17:07 14:51-15:51 | 17:11-17:35 09:08-10:34 07:44-08:33 07:11-07:41 | | | |
| 21 | | 16:35-17:07 14:51-15:49 | 17:14-17:33 09:08-10:33 07:44-08:33 07:10-07:42 | | | |
| 22 | | 16:35-17:12 14:52-15:49 | 17:16-17:30 09:08-10:31 07:44-08:32 07:09-07:42 | | | |
| 23 | | 16:34-17:15 14:53-15:48 | 09:08-10:30 07:44-08:32 07:09-07:43 | | | |
| 24 | | 16:34-17:17 14:54-15:47 | 09:08-10:28 07:44-08:31 07:07-07:42 | | | |
| 25 | | 16:34-17:18 14:54-15:46 | 09:08-10:26 07:44-08:29 07:07-07:42 | | | |
| 26 | | 16:34-17:20 14:56-15:45 | 09:08-10:25 07:45-08:28 07:07-07:38 | | | |
| 27 | | 16:34-17:28 14:57-15:43 | 09:08-10:22 07:51-08:27 07:07-07:36 | | | |
| 28 | | 16:35-17:31 14:59-15:42 | 09:09-10:20 07:54-08:26 07:07-07:36 | | | |
| 29 | | | 10:09-11:18 08:58-09:24 08:08-08:34 | | | |
| 30 | | | 10:19-11:15 10:10-10:16 09:06-09:22 08:09-08:33 | | | |
| 31 | | | 10:20-11:12 10:09-10:13 09:07-09:19 08:09-08:31 | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | | | 17:30-18:22 08:44-11:20 | 14:19-15:20 11:06-11:57 | |
| 2 | | | | 17:28-18:21 08:44-11:20 | 14:19-15:19 11:04-11:58 | |
| 3 | | | | 17:27-18:20 08:45-11:20 | 14:19-15:19 11:03-11:58 | |
| 4 | | | | 17:26-18:19 08:45-11:20 | 14:20-15:19 11:03-12:00 | |
| 5 | | | 09:40-09:41 | 17:25-18:18 08:46-11:20 | 14:20-15:18 11:02-12:01 | |
| 6 | | | 09:31-09:51 | 17:24-18:17 08:47-11:19 | 14:20-15:17 11:01-12:01 | |
| 7 | | | 10:34-10:40 09:26-09:54 | 17:19-18:16 08:48-11:19 | 14:20-15:16 11:00-12:02 | |
| 8 | | | 10:25-10:49 09:23-09:57 | 17:15-18:14 08:49-11:19 | 14:22-15:16 11:00-12:03 | |
| 9 | | | 10:21-10:54 09:09-10:00 | 17:13-18:12 15:47-16:03 08:50-11:18 | 14:22-15:15 11:00-12:04 | |
| 10 | | | 10:17-10:58 09:05-10:02 | 17:11-18:10 15:42-16:07 08:52-11:18 | 14:23-15:14 10:59-12:04 | |
| 11 | | | 10:15-11:01 09:02-10:04 | 17:10-18:09 15:38-16:10 08:54-11:17 | 14:23-15:12 10:59-12:04 | |
| 12 | | | 10:11-11:03 08:59-10:05 | 17:08-18:07 15:35-16:12 08:56-11:16 | 14:25-15:12 10:59-12:05 | |
| 13 | | | 10:09-11:05 08:56-10:06 | 17:07-18:05 15:33-16:13 09:00-11:15 | 14:25-15:11 10:59-12:06 | |
| 14 | | | 10:08-11:08 08:49-10:07 | 17:06-18:02 15:31-16:16 09:07-11:16 | 14:26-15:09 10:58-12:06 | |
| 15 | | | 08:44-11:10 | 17:07-17:59 15:29-16:17 09:08-11:15 | 14:27-15:08 10:58-12:06 | |
| 16 | | | 08:41-11:11 | 17:06-17:52 15:28-16:17 09:55-11:14 09:10-09:52 | 14:29-15:07 10:59-12:07 | |
| 17 | | | 08:34-11:13 | 17:06-17:50 15:26-16:18 09:56-11:13 09:12-09:49 | 14:31-15:06 10:59-12:07 | |
| 18 | | | 08:33-11:14 | 17:05-17:48 15:25-16:19 09:57-11:12 09:14-09:46 | 14:33-15:04 10:59-12:07 | |
| 19 | | | 08:31-11:15 | 17:05-17:45 15:24-16:19 09:57-11:11 09:17-09:43 | 14:36-15:01 10:59-12:07 | |
| 20 | | | 08:30-11:16 | 17:05-17:41 15:22-16:20 09:59-11:09 09:22-09:38 | 14:38-14:59 10:59-12:07 | |
| 21 | | | 18:02-18:14 08:29-11:17 | 17:05-17:37 15:21-16:20 10:00-11:08 | 14:44-14:56 11:00-12:08 | |
| 22 | | | 17:59-18:17 08:29-11:18 | 17:06-17:37 15:21-16:21 10:02-11:08 | 11:00-12:08 | |
| 23 | | | 17:56-18:19 08:28-11:18 | 17:07-17:35 15:21-16:21 10:03-11:06 | 11:00-12:09 | |
| 24 | | | 17:54-18:20 08:28-11:19 | 17:07-17:34 15:20-16:21 10:05-11:05 | 11:01-12:09 | |
| 25 | | | 17:53-18:21 08:28-11:20 | 16:08-16:32 14:19-15:21 11:24-11:37 09:06-10:03 | 11:01-12:09 | |
| 26 | | | 17:52-18:22 08:27-11:20 | 16:09-16:30 14:19-15:21 11:18-11:43 09:08-10:01 | 11:02-12:09 | |
| 27 | | | 17:49-18:22 08:27-11:21 | 16:11-16:28 14:19-15:22 11:15-11:47 09:12-09:59 | 11:02-12:09 | |
| 28 | | | 17:39-18:22 08:27-11:20 | 16:15-16:24 14:19-15:22 11:13-11:49 09:14-09:56 | 11:03-12:09 | |
| 29 | | | 17:35-18:22 08:26-11:20 | 14:18-15:21 11:10-11:51 09:17-09:52 | 11:03-12:10 | |
| 30 | | | 17:32-18:22 08:27-11:20 | 14:18-15:21 11:08-11:53 09:21-09:47 | 11:04-12:10 | |
| 31 | | | | 14:19-15:21 11:07-11:55 09:29-09:41 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 15:13-15:57 11:27-12:44 09:25-10:05 | 15:27-16:56 08:13-08:34 | | | 20:50-21:07 |
| 2 | | 15:12-15:59 11:27-12:44 09:24-10:06 | 15:28-16:57 08:10-08:36 | | | 20:51-21:06 |
| 3 | | 15:12-16:02 11:27-12:44 09:24-10:06 | 15:28-16:57 08:07-08:37 | | | 20:52-21:07 |
| 4 | | 15:12-16:05 11:28-12:44 09:23-10:07 | 15:30-16:57 08:06-08:39 | | | 20:53-21:06 |
| 5 | | 15:12-16:07 11:28-12:44 09:23-10:08 | 15:31-16:57 08:04-08:39 | | | 20:53-21:05 |
| 6 | | 15:12-16:10 11:28-12:44 09:23-10:08 | 15:33-16:58 08:03-08:41 | | | 20:55-21:05 |
| 7 | | 15:11-16:10 11:29-12:44 09:22-10:09 | 15:35-16:57 08:01-08:41 | | | 20:56-21:04 |
| 8 | | 15:11-16:12 11:28-12:43 09:21-10:08 | 15:36-16:56 07:59-08:41 07:40-07:47 | | | 20:57-21:02 |
| 9 | | 15:11-16:14 11:29-12:43 09:21-10:08 | 15:40-16:56 07:59-08:42 07:36-07:52 | | | |
| 10 | | 15:12-16:15 11:30-12:43 09:21-10:09 | 16:01-16:55 15:44-16:00 07:57-08:41 07:33-07:54 | | | |
| 11 | | 15:12-16:17 11:31-12:43 09:21-10:09 | 16:02-16:55 07:57-08:42 07:32-07:56 | | | |
| 12 | | 16:28-16:32 15:12-16:17 11:30-12:41 09:21-10:08 | 16:02-16:53 07:30-08:41 | | 20:51-20:57 | |
| 13 | | 16:21-16:39 15:12-16:18 11:31-12:41 09:21-10:08 | 16:02-16:52 07:29-08:42 | | 20:50-20:58 | |
| 14 | | 15:13-16:42 11:32-12:40 09:22-10:08 | 16:04-16:51 07:27-08:41 | | 20:48-21:00 | |
| 15 | | 15:13-16:44 11:32-12:39 09:22-10:07 | 16:04-16:50 07:26-08:40 | | 20:48-21:02 | |
| 16 | | 15:14-16:47 11:34-12:38 09:23-10:06 | 16:06-16:49 07:26-08:40 07:14-07:21 | | 20:47-21:03 | |
| 17 | | 15:15-16:49 11:35-12:37 09:24-10:06 | 16:07-16:47 07:25-08:39 07:11-07:24 | | 20:47-21:05 | |
| 18 | | 15:15-16:49 11:36-12:35 09:24-10:05 | 16:08-16:44 07:09-08:39 | | 20:47-21:07 | |
| 19 | | 15:16-16:51 11:37-12:34 09:25-10:04 | 16:11-16:43 07:06-08:37 | | 20:47-21:08 | |
| 20 | | 15:17-16:53 11:39-12:33 09:26-10:03 | 16:13-16:39 07:04-08:36 | | 20:46-21:08 | |
| 21 | | 15:18-16:53 11:40-12:30 09:27-10:01 | 16:17-16:36 07:03-08:35 | | 20:47-21:09 | |
| 22 | | 15:20-16:54 11:43-12:28 09:29-10:00 | 16:25-16:27 07:02-08:33 | | 20:46-21:08 | |
| 23 | | 15:21-16:54 11:44-12:25 09:30-09:57 | 07:02-08:32 | | 20:46-21:09 | |
| 24 | | 15:24-16:55 11:48-12:22 09:33-09:55 | 07:54-08:30 07:30-07:53 07:02-07:25 | | 20:47-21:09 | |
| 25 | | 15:24-16:55 11:51-12:17 09:36-09:50 | 07:54-08:27 07:33-07:51 07:02-07:22 | | 20:47-21:09 | |
| 26 | | 15:25-16:56 12:00-12:09 | 07:55-08:25 07:35-07:50 07:03-07:22 | | 20:47-21:08 | |
| 27 | | 15:25-16:56 | 08:04-08:21 07:56-08:03 07:37-07:47 07:03-07:20 | | 20:47-21:08 | |
| 28 | | 15:26-16:56 | 07:57-08:01 07:05-07:18 | | 20:48-21:08 | |
| 29 | | | 08:08-08:14 | | 20:48-21:08 | |
| 30 | | | | | 20:49-21:08 | |
| 31 | | | | | 20:49-21:07 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | 21:03-21:07 | | 16:42-17:32 08:14-09:20 | 14:41-15:45 10:59-12:12 08:51-09:38 | |
| 2 | | | | 16:40-17:32 08:15-09:20 | 14:41-15:43 10:59-12:13 08:51-09:38 | |
| 3 | | | | 16:39-17:33 16:25-16:35 08:16-09:20 | 14:41-15:42 10:58-12:13 08:51-09:38 | |
| 4 | 21:04-21:08 | | | 16:19-17:33 08:17-09:19 | 14:42-15:41 10:58-12:14 08:52-09:38 | |
| 5 | 21:02-21:09 | | | 16:15-17:33 08:19-09:18 | 14:42-15:39 10:58-12:14 08:52-09:38 | |
| 6 | 21:01-21:10 | | | 16:12-17:33 08:21-09:17 | 14:42-15:37 10:58-12:14 08:53-09:37 | |
| 7 | 21:00-21:11 | | | 16:09-17:33 08:23-09:16 | 14:42-15:34 10:57-12:14 08:53-09:37 | |
| 8 | 20:59-21:12 | | | 16:07-17:32 08:25-09:15 | 14:43-15:33 10:58-12:15 08:55-09:37 | |
| 9 | 20:59-21:13 | | | 16:05-17:32 08:29-09:14 | 14:43-15:29 10:58-12:15 08:55-09:36 | |
| 10 | 20:58-21:13 | | | 16:03-17:31 08:41-09:12 | 14:44-15:28 10:58-12:14 08:56-09:36 | |
| 11 | 20:59-21:15 | | | 16:02-17:30 08:42-09:11 | 14:44-15:27 10:57-12:14 08:57-09:35 | |
| 12 | 20:58-21:16 | | | 16:00-17:29 08:45-09:09 | 14:46-15:27 10:58-12:15 08:59-09:35 | |
| 13 | 20:58-21:16 | | | 15:59-17:29 08:48-09:06 | 14:46-15:26 10:58-12:15 09:00-09:34 | |
| 14 | 20:57-21:16 | | 08:41-08:43 | 15:58-17:28 08:55-09:00 | 14:47-15:25 10:58-12:15 09:01-09:33 | |
| 15 | 20:57-21:16 | | 08:34-08:49 | 15:58-17:29 | 14:48-15:23 10:58-12:15 09:03-09:32 | |
| 16 | 20:57-21:18 | | 08:55-09:09 08:27-08:52 | 15:57-17:28 12:28-12:45 10:13-10:18 | 14:50-15:23 11:00-12:15 09:05-09:32 | |
| 17 | 20:57-21:18 | | 08:24-09:13 | 15:56-17:27 12:22-12:51 10:06-10:24 | 14:51-15:21 11:00-12:15 09:07-09:30 | |
| 18 | 20:56-21:18 | | 08:22-09:15 | 15:54-17:26 12:18-12:54 10:03-10:27 | 14:52-15:19 11:00-12:15 09:10-09:27 | |
| 19 | 20:57-21:19 | | 08:17-09:16 | 15:52-17:25 12:15-12:57 10:01-10:29 | 14:54-15:17 11:00-12:15 09:13-09:24 | |
| 20 | 20:56-21:18 | | 08:11-09:17 | 15:50-17:24 12:12-12:59 09:59-10:30 | 14:57-15:15 11:01-12:15 | |
| 21 | 20:57-21:19 | | 08:10-09:19 | 15:48-17:23 12:10-13:01 09:57-10:32 | 15:02-15:12 11:03-12:15 | |
| 22 | 20:56-21:18 | | 17:03-17:19 08:10-09:20 | 15:47-17:23 12:09-13:04 09:56-10:34 | 11:03-12:15 | |
| 23 | 20:57-21:19 | | 16:59-17:23 08:09-09:20 | 15:46-17:21 12:07-13:05 09:55-10:35 | 11:04-12:15 | |
| 24 | 20:57-21:18 | | 16:56-17:26 08:08-09:21 | 15:45-17:19 12:06-13:06 09:54-10:35 | 11:05-12:15 | |
| 25 | 20:57-21:18 | | 16:53-17:27 08:08-09:21 | 14:44-16:18 11:04-12:07 08:53-09:36 | 11:06-12:15 | |
| 26 | 20:57-21:16 | | 16:51-17:29 08:08-09:22 | 14:43-16:16 11:03-12:08 08:52-09:36 | 11:06-12:15 | |
| 27 | 20:58-21:15 | | 16:48-17:29 08:08-09:22 | 14:43-16:14 11:03-12:09 08:52-09:37 | 11:07-12:15 | |
| 28 | 20:58-21:13 | | 16:46-17:30 08:08-09:21 | 14:42-16:11 11:02-12:10 08:52-09:37 | 11:08-12:15 | |
| 29 | 20:59-21:12 | | 16:44-17:31 08:07-09:21 | 15:52-16:07 14:42-15:48 11:01-12:10 08:51-09:38 | 11:09-12:14 | |
| 30 | 21:00-21:10 | | 16:43-17:31 08:08-09:21 | 14:41-15:46 11:00-12:11 08:50-09:38 | 11:10-12:14 | |
| 31 | 21:00-21:08 | | | 14:41-15:45 11:00-12:12 08:51-09:38 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 10:10-10:11 | | 19:15-19:42 | 20:08-20:33 | 20:20-20:46 | 20:32-20:46 | 20:20-20:56 | 19:20-20:00 | | | |
| 2 | | | | 19:15-19:40 | 20:07-20:33 | 20:21-20:46 | 20:32-20:47 | 20:18-20:55 | 19:19-19:57 19:10-19:16 | | | |
| 3 | | | | 19:15-19:40 | 20:07-20:34 | 20:22-20:46 | 20:32-20:48 | 20:18-20:54 | 19:06-19:55 | | | |
| 4 | | | | 19:15-19:40 | 20:07-20:35 | 20:23-20:46 | 20:31-20:48 | 20:18-20:54 | 19:04-19:51 | | | |
| 5 | | | | 19:15-19:40 | 20:07-20:38 | 20:23-20:45 | 20:30-20:49 | 20:17-20:53 | 19:02-19:50 | | | |
| 6 | | | | 19:15-19:40 | 20:07-20:40 | 20:23-20:44 | 20:30-20:50 | 20:16-20:51 | 19:00-19:47 | | | |
| 7 | | | | 19:15-19:40 | 20:07-20:42 | 20:25-20:44 | 20:30-20:51 | 20:16-20:49 | 18:59-19:45 | | | |
| 8 | | | | 19:15-19:40 | 20:07-20:43 | 20:25-20:43 | 20:29-20:52 | 20:16-20:47 | 18:58-19:42 | | | |
| 9 | | | | 19:15-19:40 | 20:07-20:44 | 20:26-20:43 | 20:29-20:52 | 20:15-20:42 | 18:57-19:40 | | | |
| 10 | | | | 19:21-19:40 19:15-19:18 | 20:08-20:44 | 20:27-20:42 | 20:28-20:53 | 20:15-20:42 | 18:57-19:38 | | | |
| 11 | | | | 19:21-19:40 | 20:08-20:45 | 20:28-20:42 | 20:29-20:54 | 20:16-20:42 | 18:55-19:34 | | | |
| 12 | | | | 19:23-19:40 | 20:10-20:46 | 20:29-20:42 | 20:28-20:55 | 20:16-20:41 | 18:55-19:32 | | | |
| 13 | | | | 19:24-19:40 | 20:11-20:47 | 20:29-20:41 | 20:28-20:55 | 20:16-20:40 | 18:55-19:29 | | | |
| 14 | | | | 19:26-19:40 | 20:12-20:47 | 20:30-20:41 | 20:27-20:56 | 20:16-20:39 | 19:24-19:27 18:55-19:21 | | | |
| 15 | | | | 19:31-19:40 | 20:14-20:48 | 20:31-20:41 | 20:27-20:56 | 20:17-20:38 | 18:56-19:20 | | | |
| 16 | | | | 19:32-19:40 | 20:15-20:48 | 20:32-20:40 | 20:27-20:57 | 20:18-20:37 | 18:56-19:19 | | | |
| 17 | | | | 19:34-19:40 | 20:15-20:49 | 20:33-20:40 | 20:26-20:57 | 20:18-20:34 19:52-20:03 | 18:57-19:17 | | | |
| 18 | | | | | 20:15-20:48 | 20:34-20:40 | 20:26-20:57 | 20:20-20:31 19:50-20:05 | 18:57-19:14 | | | |
| 19 | | | | | 20:15-20:49 | 20:34-20:39 | 20:26-20:58 | 19:48-20:06 | 18:59-19:10 | | | |
| 20 | | | | | 20:15-20:49 | 20:35-20:39 | 20:26-20:58 | 19:47-20:08 | | | | |
| 21 | | | | | 20:16-20:49 | 20:35-20:39 | 20:26-20:59 | 19:46-20:08 | | | | |
| 22 | | | | | 20:15-20:48 | 20:36-20:40 | 20:25-20:59 | 19:44-20:08 | | | | |
| 23 | | | | | 20:16-20:49 | 20:36-20:40 | 20:26-20:59 | 19:44-20:09 | | | | |
| 24 | | | | | 20:16-20:49 | 20:35-20:40 | 20:25-20:59 | 19:43-20:09 | | | | |
| 25 | | | | 20:13-20:25 | 20:17-20:49 | 20:35-20:42 | 20:26-20:59 | 19:40-20:09 | | | | |
| 26 | | | | 20:12-20:28 | 20:17-20:48 | 20:35-20:42 | 20:25-20:59 | 19:37-20:08 | | | | |
| 27 | | | | 20:10-20:29 | 20:17-20:48 | 20:35-20:44 | 20:26-20:59 | 19:34-20:07 | | | | |
| 28 | | | | 20:09-20:31 | 20:18-20:47 | 20:34-20:44 | 20:25-20:58 | 19:32-20:06 | | | | |
| 29 | | | | 20:09-20:32 | 20:18-20:47 | 20:34-20:45 | 20:24-20:58 | 19:27-20:05 | | | | |
| 30 | | | 19:15-19:38 | 20:08-20:32 | 20:19-20:47 | 20:33-20:45 | 20:22-20:58 | 19:24-20:04 | | | | |
| 31 | | | 19:15-19:40 | | 20:20-20:47 | | 20:21-20:57 | 19:23-20:03 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 06:52-08:05 | 05:52-07:40 | 05:57-07:46 | 06:53-07:52 | 07:31-08:06 | | | |
| 2 | | | | | 06:50-08:04 | 05:52-07:40 | 05:57-07:46 | 06:53-07:50 | 07:33-08:05 | | | |
| 3 | | | | | 06:48-08:03 | 05:53-07:41 | 05:58-07:47 | 06:55-07:50 | 07:35-08:03 | | | |
| 4 | | | | | 06:46-08:02 | 05:52-07:41 | 05:57-07:46 | 06:56-07:49 | 07:37-08:01 | | | |
| 5 | | | | | 06:45-08:01 | 05:52-07:41 | 05:58-07:46 | 06:57-07:48 | 07:41-07:59 | | | |
| 6 | | | | | 06:45-07:59 | 05:52-07:40 | 05:58-07:47 | 06:58-07:46 | 07:48-07:49 | | | |
| 7 | | | | | 06:45-07:58 | 05:52-07:41 | 05:58-07:47 | 07:00-07:44 | | | | |
| 8 | | | | | 06:45-07:56 | 05:52-07:41 | 05:59-07:47 | 07:01-07:43 | | | | |
| 9 | | | | | 06:45-07:54 | 05:53-07:41 | 05:59-07:47 | 07:02-07:40 | | | | |
| 10 | | | | | 06:45-07:52 | 05:52-07:41 | 05:59-07:48 | 07:05-07:38 | | | | |
| 11 | | | | | 07:15-07:49 | 05:53-07:41 | 06:01-07:49 | 07:08-07:35 | | | | |
| 12 | | | | | 07:37-07:45 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:01-07:32 | | | | |
| 13 | | | | | 07:15-07:36 | 05:53-07:41 | 06:01-07:49 | 07:03-07:29 | | | | |
| 14 | | | | | 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:27-08:14 07:06-07:25 | | | | |
| 15 | | | | 07:24-08:10 | 07:15-07:37 | 05:53-07:42 | 06:01-07:49 | 07:27-08:15 07:13-07:18 | | | | |
| 16 | | | | 07:22-08:10 | 07:15-07:37 | 05:54-07:42 | 06:03-07:49 | 07:27-08:15 | | | | |
| 17 | | | | 07:22-08:10 | 07:15-07:38 06:05-06:16 | 05:54-07:42 | 06:03-07:49 | 07:25-08:15 | | | | |
| 18 | | | | 07:21-08:10 | 07:15-07:38 06:02-06:17 | 05:54-07:43 | 06:03-07:49 | 07:25-08:15 | | | | |
| 19 | | | | 07:20-08:10 | 07:15-07:39 06:00-06:19 | 05:54-07:43 | 06:04-07:49 | 07:25-08:15 | | | | |
| 20 | | | | 07:20-08:11 | 07:15-07:39 05:58-06:20 | 05:54-07:43 | 06:37-07:49 06:05-06:35 | 07:26-08:15 | | | | |
| 21 | | | | 07:19-08:10 | 07:15-07:39 06:34-06:51 05:58-06:23 | 05:54-07:43 | 06:40-07:50 06:06-06:35 | 07:26-08:15 | | | | |
| 22 | | | | 07:19-08:10 | 06:30-06:54 05:56-06:23 | 05:55-07:44 | 06:42-07:49 06:07-06:33 | 07:25-08:14 | | | | |
| 23 | | | | 07:19-08:10 | 06:28-06:57 05:56-06:25 | 05:55-07:44 | 06:47-07:49 06:08-06:31 | 07:26-08:14 | | | | |
| 24 | | | | 07:19-08:10 | 05:55-06:59 | 05:55-07:44 | 06:48-07:49 06:09-06:30 | 07:26-08:14 | | | | |
| 25 | | | | 07:19-08:08 | 05:55-07:00 | 05:56-07:44 | 06:49-07:49 06:11-06:29 | 07:26-08:14 | | | | |
| 26 | | | | 07:19-08:08 | 05:54-07:02 | 05:56-07:44 | 06:49-07:48 06:13-06:27 | 07:27-08:13 | | | | |
| 27 | | | | 07:19-08:08 | 05:53-07:03 | 05:56-07:45 | 06:50-07:48 06:17-06:25 | 07:27-08:12 | | | | |
| 28 | | | | 07:20-08:07 | 05:53-07:05 | 05:56-07:45 | 06:50-07:48 | 07:27-08:11 | | | | |
| 29 | | | | 07:20-08:07 07:15-07:19 | 05:53-07:06 | 05:57-07:45 | 06:51-07:48 | 07:28-08:10 | | | | |
| 30 | | | | 07:07-08:06 | 05:53-07:07 | 05:56-07:45 | 06:52-07:47 | 07:29-08:09 | | | | |
| 31 | | | | | 05:52-07:08 | | 06:52-07:46 | 07:31-08:08 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 07:52-08:15 | | | | 21:16-21:39 05:48-05:52 | | | | | |
| 2 | | | 07:50-08:15 | | | | 21:17-21:39 | | | | | |
| 3 | | | 07:47-08:14 | | | | 21:17-21:39 | | | 08:26-08:34 | | |
| 4 | | | 07:45-08:14 | | | | 21:17-21:38 | | | 08:24-08:36 | | |
| 5 | | | 07:44-08:12 | | | | 21:17-21:38 | | | 08:22-08:37 | | |
| 6 | | | 07:44-08:11 | | | | 21:17-21:38 | | | 08:21-08:38 | | |
| 7 | | | 07:44-08:06 | | | | 21:18-21:37 | | | 08:20-08:44 | | |
| 8 | | | 07:44-08:01 | | | | 21:18-21:36 | | | 08:19-08:46 | | |
| 9 | | | 07:46-08:00 | | | | 21:18-21:35 | | | 08:19-08:48 | | |
| 10 | | | 07:47-07:57 | | | | 21:19-21:35 | | | 08:20-08:48 | | |
| 11 | | | | | | | 21:19-21:34 | | | 08:22-08:49 | | |
| 12 | | | | | | 05:43-05:50 | 21:20-21:34 | | | 08:24-08:49 | | |
| 13 | | | | | | 05:42-05:52 | 21:20-21:33 | | | 08:26-08:48 | | |
| 14 | | | | | | 05:41-05:52 | 21:21-21:31 | | | 08:28-08:48 | | |
| 15 | | | | | | 05:40-05:53 | 21:21-21:30 | | | 08:31-08:48 | | |
| 16 | | | | | | 05:40-05:54 | 21:22-21:30 | | | 08:33-08:47 | | |
| 17 | | | | | | 05:40-05:55 | 21:23-21:28 | | | 08:35-08:46 | | |
| 18 | | | | | | 05:40-05:55 | 21:24-21:27 | | | 08:37-08:45 | | |
| 19 | | | | | | 05:40-05:56 | | | | 08:39-08:42 | | |
| 20 | | | | | | 05:40-05:56 | | | | | | |
| 21 | | | | | | 05:40-05:56 | | | | | | |
| 22 | | | | | | 05:41-05:57 | | | | | | |
| 23 | | 08:07-08:12 | | | | 05:41-05:57 | | | | | | |
| 24 | | 08:05-08:14 | | | | 05:41-05:56 | | | | | | |
| 25 | | 08:02-08:14 | | | | 05:42-05:57 | | | | | | |
| 26 | | 08:00-08:16 | | | | 05:42-05:56 | | | | | | |
| 27 | | 07:57-08:15 | | | | 05:43-05:57 | | | | | | |
| 28 | | 07:55-08:16 | | | | 05:43-05:56 | | | | | | |
| 29 | | | | | | 05:45-05:55 | | | | | | |
| 30 | | | | | | 05:46-05:54 | | | | | | |
| 31 | | | | | | | | | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (6)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 05:42-06:08 | 06:30-06:58 | | | | |
| 2 | | | | | | | 05:43-06:08 | 06:30-06:59 | | | | |
| 3 | | | | | | | 05:43-06:09 | 06:29-06:58 | | | | |
| 4 | | | | | | | 05:44-06:09 | 06:30-06:58 | | | | |
| 5 | | | | | | | 05:44-06:09 | 06:30-06:59 | | | | |
| 6 | | | | | | | 05:44-06:10 | 06:30-06:58 | | | | |
| 7 | | | | | | | 05:44-06:09 | 06:30-06:58 | | | | |
| 8 | | | | | | | 05:44-06:09 | 06:31-06:58 | | | | |
| 9 | | | | | | | 05:45-06:10 | 06:32-06:57 | | | | |
| 10 | | | | | | | 05:46-06:10 | 06:32-06:56 | | | | |
| 11 | | | | | | | 05:46-06:10 | 06:33-06:55 | | | | |
| 12 | | | | | | | 05:46-06:10 | 06:34-06:54 | | | | |
| 13 | | | | | | | 05:47-06:09 | 06:36-06:53 | | | | |
| 14 | | | | | | | 05:47-06:09 | 06:37-06:51 | | | | |
| 15 | | | | | | | 05:48-06:09 | 06:41-06:48 | | | | |
| 16 | | | | | | | 05:48-06:09 | | | | | |
| 17 | | | | | | | 05:49-06:08 | | | | | |
| 18 | | | | | | | 05:51-06:08 | | | | | |
| 19 | | | | | | | 05:52-06:08 | | | | | |
| 20 | | | | | | | 05:53-06:06 | | | 15:47-16:34 | | |
| 21 | | | | | | | 05:55-06:06 | | | 15:46-16:35 | | |
| 22 | | | | | | | 05:56-06:04 | | | 15:45-16:35 | | |
| 23 | | | | | | | | | | 15:44-16:35 | | |
| 24 | | | | | | | | | | 15:44-16:36 | | |
| 25 | | | | | | | | | | 14:43-15:36 | | |
| 26 | | | | | | | | | | 14:42-15:36 | | |
| 27 | | | | | | | | | | 14:42-15:36 | | |
| 28 | | | | | | | | | | 14:41-15:36 | | |
| 29 | | | | | | | | | | 14:42-15:37 | | |
| 30 | | | | | | | | | | 14:42-15:36 | | |
| 31 | | | | | | | | | | 14:42-15:35 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | | 08:40-10:58 | 10:23-11:33 08:02-09:12 | 06:43-08:20 | 06:31-07:40 |
| 2 | | | 08:39-10:58 | 10:23-11:30 08:02-09:12 | 06:42-08:18 | 06:31-07:39 |
| 3 | | | 08:39-10:59 | 10:25-11:28 08:00-09:12 | 06:41-08:16 | 06:31-07:38 |
| 4 | | | 08:38-10:59 | 10:26-11:24 07:58-09:11 | 06:41-08:14 | 06:32-07:38 |
| 5 | | | 08:38-10:59 | 10:28-11:22 07:58-09:11 | 06:40-08:13 | 06:32-07:36 |
| 6 | | | 08:37-10:59 | 10:29-11:18 07:57-09:10 | 06:41-08:11 | 06:32-07:35 |
| 7 | | | 08:38-11:00 | 10:32-11:14 07:56-09:10 | 06:40-08:10 | 06:33-07:34 |
| 8 | | | 08:38-10:59 | 10:34-11:09 07:55-09:09 | 06:39-08:08 | 06:32-07:33 |
| 9 | | | 08:37-10:59 | 10:39-11:04 07:55-09:09 | 06:38-08:07 | 06:33-07:32 |
| 10 | | | 08:38-10:59 | 10:47-10:52 07:54-09:07 | 06:37-08:05 | 06:33-07:31 |
| 11 | | | 08:38-10:58 | 07:54-09:07 | 06:36-08:03 | 06:33-07:31 |
| 12 | | 09:48-10:38 | 08:39-10:59 | 07:54-09:06 | 06:36-08:02 | 06:34-07:32 |
| 13 | | 09:46-10:40 | 08:40-10:58 | 07:53-09:05 | 06:35-08:00 | 06:34-07:31 |
| 14 | | 09:43-10:42 | 08:41-10:58 | 07:53-09:04 | 06:34-07:59 | 06:34-07:31 |
| 15 | | 09:42-10:44 | 08:41-10:57 | 07:52-09:02 | 06:34-07:58 | 06:34-07:32 |
| 16 | | 09:40-10:46 | 08:42-09:36 | 07:53-09:01 | 06:34-07:56 | 06:35-07:32 |
| 17 | | 09:38-10:47 | 08:44-09:35 | 07:53-09:00 | 06:33-07:54 | 06:35-07:32 |
| 18 | | 09:37-10:49 | 08:45-09:33 | 07:52-08:58 | 06:33-07:53 | 06:35-07:32 |
| 19 | | 09:36-10:50 09:30-09:31 | 09:18-09:32 08:48-09:15 | 07:53-08:56 | 06:32-07:52 | 06:36-07:32 |
| 20 | | 09:34-10:51 09:30-09:32 | 09:18-09:30 08:51-09:11 | 07:53-08:55 | 06:32-07:51 | 06:36-07:32 |
| 21 | | 09:30-10:52 | 09:17-09:28 08:56-09:04 | 07:53-08:52 | 06:32-07:51 | 06:36-07:33 |
| 22 | | 09:30-10:53 | 09:18-09:26 | 07:54-08:50 | 06:31-07:49 | 06:36-07:32 |
| 23 | | 09:30-10:54 | 09:18-09:23 | 07:54-08:47 | 06:31-07:48 | 06:37-07:33 |
| 24 | | 09:30-10:55 | 09:19-09:21 | 07:55-08:43 | 06:32-07:47 | 06:36-07:33 |
| 25 | | 09:30-10:56 | | 08:31-08:35 07:55-08:30 | 06:31-07:45 | 06:37-07:34 |
| 26 | | 09:30-10:56 | | 07:56-08:29 | 06:31-07:44 | 06:37-07:34 |
| 27 | | 09:30-10:57 | | 07:57-08:27 | 06:31-07:44 | 06:37-07:34 |
| 28 | | 09:30-10:57 | | 07:58-08:26 06:58-07:14 | 06:31-07:43 | 06:37-07:35 |
| 29 | | | | 07:59-08:24 06:54-07:18 | 06:31-07:42 | 06:38-07:35 |
| 30 | | | | 08:00-08:22 06:51-07:21 | 06:31-07:42 | 06:37-07:35 |
| 31 | | | | | 06:31-07:41 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 06:38-07:35 | 06:47-08:13 | 08:08-09:06 07:34-08:07 | 09:19-11:38 | | |
| 2 | 06:38-07:36 | 06:46-08:14 | 10:46-10:51 08:08-09:06 07:36-08:04 | 09:17-11:37 | | |
| 3 | 06:37-07:36 | 06:47-08:16 | 10:37-11:02 08:08-09:07 07:40-08:00 | 09:17-11:37 | | |
| 4 | 06:38-07:37 | 06:48-08:18 | 10:32-11:07 08:08-09:07 07:49-07:51 | 09:16-11:37 | | |
| 5 | 06:38-07:39 | 06:48-08:18 | 10:28-11:10 08:07-09:06 | 09:15-11:36 | | |
| 6 | 06:38-07:41 | 06:50-08:20 | 10:25-11:14 08:07-09:06 | 09:14-11:36 | | |
| 7 | 06:38-07:42 | 06:50-08:22 | 10:23-11:17 08:07-09:06 | 09:14-11:35 | | |
| 8 | 06:38-07:43 | 06:51-08:24 | 10:21-11:19 08:07-09:06 | 09:13-11:35 | | |
| 9 | 06:38-07:45 | 06:50-08:24 | 10:19-11:22 08:07-09:06 | 09:13-11:34 | | |
| 10 | 06:38-07:46 | 06:51-08:26 | 10:17-11:23 08:06-09:05 | 09:13-11:33 | | |
| 11 | 06:38-07:47 | 06:51-08:27 | 10:15-11:25 08:07-09:04 | 09:13-11:33 | | |
| 12 | 06:40-07:49 | 06:51-08:28 | 10:14-11:27 08:07-09:04 | 09:13-11:32 | | |
| 13 | 06:40-07:50 | 06:52-08:30 | 10:12-11:29 08:08-09:03 | 09:13-11:31 | | |
| 14 | 06:40-07:50 | 06:53-08:32 | 10:11-11:30 08:08-09:03 | 09:13-11:30 | | |
| 15 | 06:39-07:51 | 06:54-08:34 | 10:10-11:32 08:09-09:02 | 09:14-11:29 | | |
| 16 | 06:40-07:53 | 06:55-08:35 | 10:08-11:32 08:09-09:00 | 09:14-11:28 | | |
| 17 | 06:40-07:53 | 06:55-08:35 | 10:07-11:33 08:10-08:59 | 09:15-11:27 | | |
| 18 | 06:40-07:54 | 06:57-08:44 | 10:06-11:34 08:11-08:58 | 09:16-11:26 | | |
| 19 | 06:41-07:56 | 06:59-08:50 | 10:05-11:35 08:12-08:57 | 09:17-11:25 | | |
| 20 | 06:41-07:57 | 07:01-08:53 | 10:05-11:36 08:14-08:56 | 10:11-11:24 09:18-10:08 | | |
| 21 | 06:41-07:58 | 07:03-08:55 | 10:04-11:36 08:15-08:55 | 10:12-11:22 10:04-10:06 09:19-10:03 | | |
| 22 | 06:42-08:00 | 07:16-08:57 07:10-07:13 | 10:03-11:37 08:17-08:54 | 10:13-11:21 09:20-10:02 | | |
| 23 | 06:42-08:00 | 07:18-08:59 | 10:02-11:38 09:37-09:54 08:20-08:51 | 10:15-11:19 09:21-10:00 | | |
| 24 | 06:43-08:02 | 07:20-09:00 | 10:01-11:37 09:32-09:57 08:22-08:46 | 10:18-11:18 09:24-10:00 | | |
| 25 | 06:42-08:03 | 07:23-09:02 | 09:29-11:37 08:27-08:41 | 09:20-10:15 08:26-08:58 | | |
| 26 | 06:43-08:04 | 07:23-09:02 | 09:26-11:38 | 09:22-10:12 08:28-08:56 | | |
| 27 | 06:44-08:06 | 07:25-09:03 | 09:24-11:38 | 09:25-10:09 08:32-08:52 | | |
| 28 | 06:44-08:07 | 07:27-09:04 | 09:23-11:38 | 09:28-10:05 08:38-08:45 | | |
| 29 | 06:45-08:09 | 07:29-09:05 | 09:21-11:38 | 09:33-10:01 | | |
| 30 | 06:45-08:09 | 07:31-09:06 | 09:20-11:38 | 09:39-09:55 | | |
| 31 | 06:46-08:11 | 07:32-09:05 | | | | |

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## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 8 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

### Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | 15:20-15:51 | |
| 2 | | | | | | | | | | | 15:19-15:51 | |
| 3 | | | | | | | | | | | 15:19-15:52 | |
| 4 | | | | | | | | | | | 15:19-15:52 | |
| 5 | | | | | | | | | | | 15:19-15:52 | |
| 6 | | | | | | | | | | | 15:18-15:52 | |
| 7 | | | | | | | | | | | 15:19-15:52 | |
| 8 | | | | | | | | | | | 15:19-15:52 | |
| 9 | | | | | | | | | | | 15:19-15:51 | |
| 10 | | | | | | | | | | | 15:19-15:50 | |
| 11 | | | | | | | | | | | 15:21-15:50 | |
| 12 | | | | | | | | | | | 15:21-15:49 | |
| 13 | | | | | | | | | | | 15:22-15:48 | |
| 14 | | | | | | | | | | | 15:22-15:47 | |
| 15 | | | | | | | | | | | 15:24-15:47 | |
| 16 | | | | | | | | | | | 15:25-15:45 | |
| 17 | | | | | | | | | | | 15:26-15:43 | |
| 18 | | | | | | | | | | | 15:29-15:41 | |
| 19 | | | | | | | | | | | 15:34-15:36 | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | | | | | | | | | | 15:21-15:51 | | |

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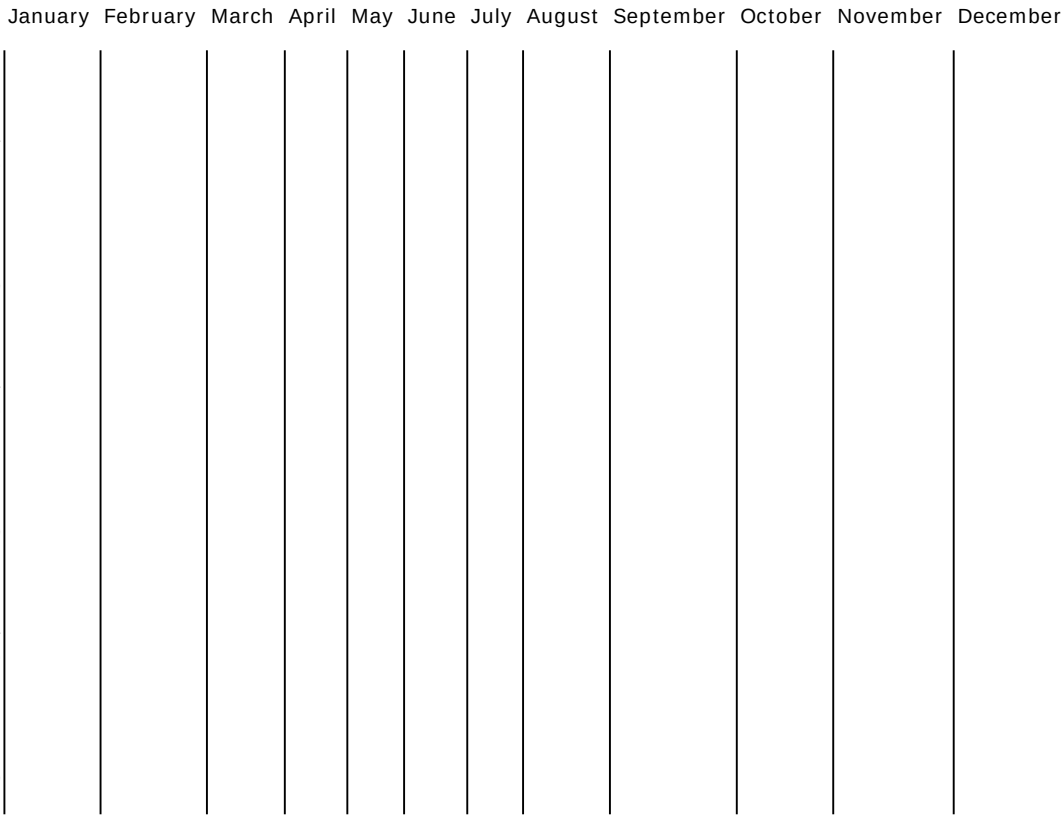
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

### Flicker curtailment according to specified plan



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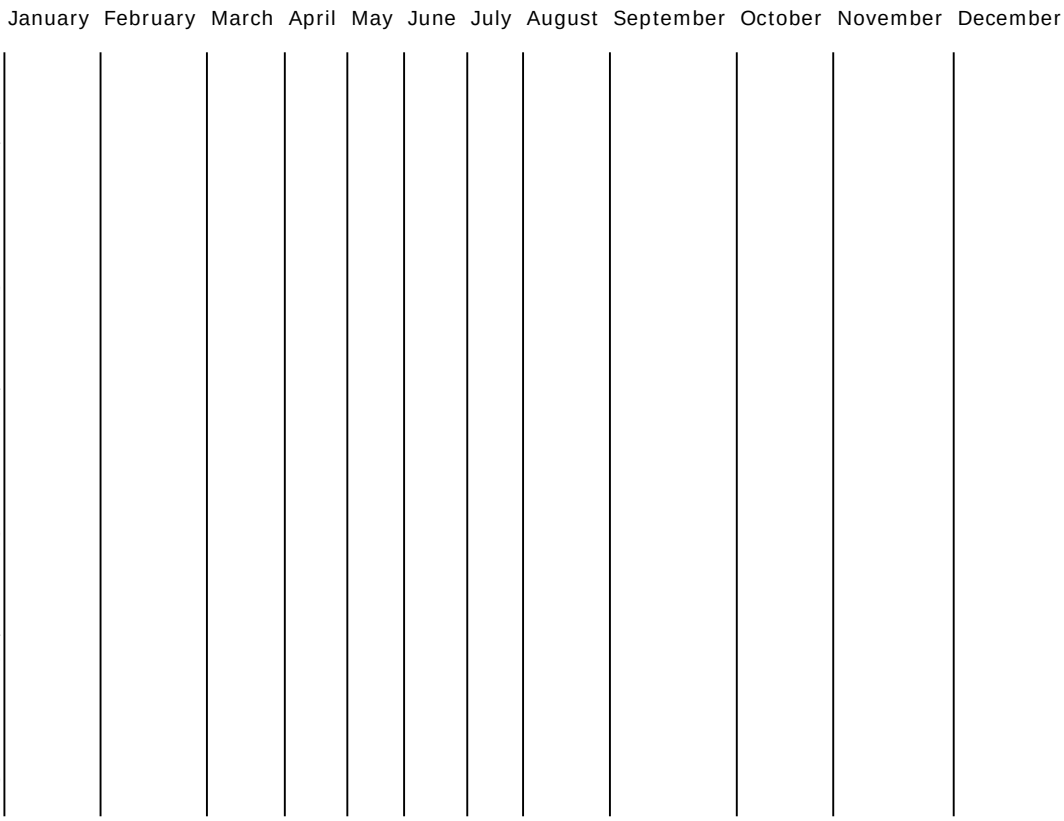
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Flicker curtailment according to specified plan



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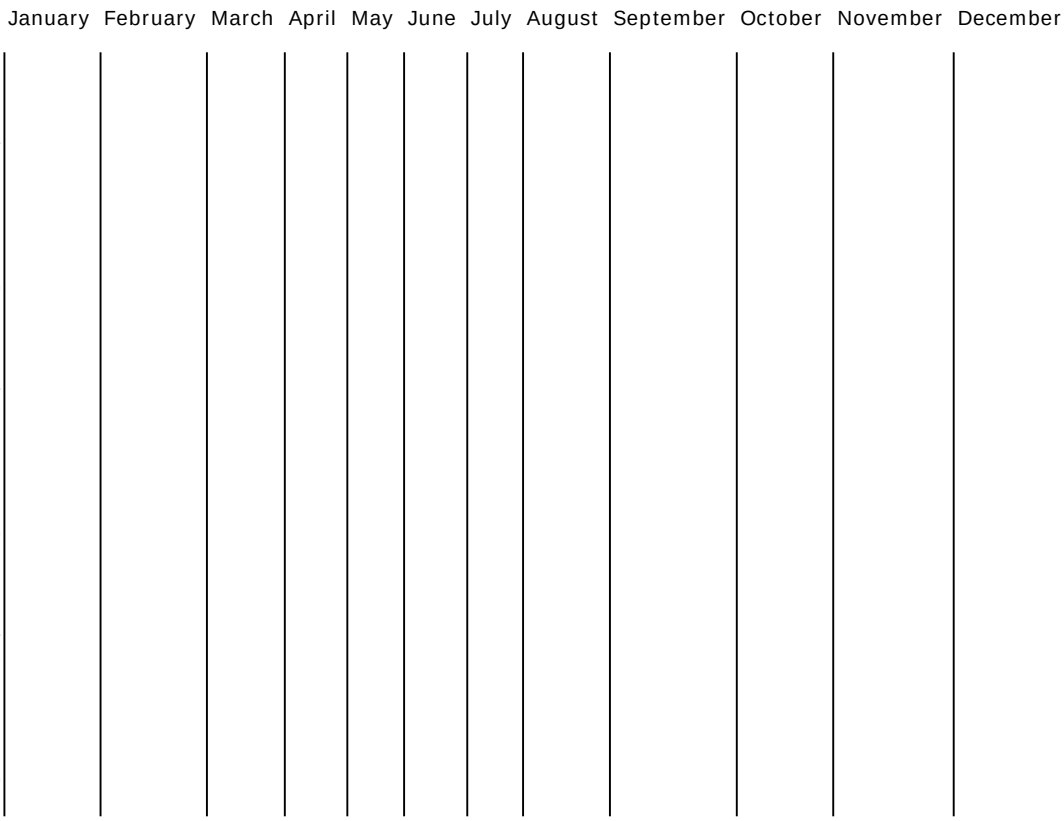
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

### Flicker curtailment according to specified plan



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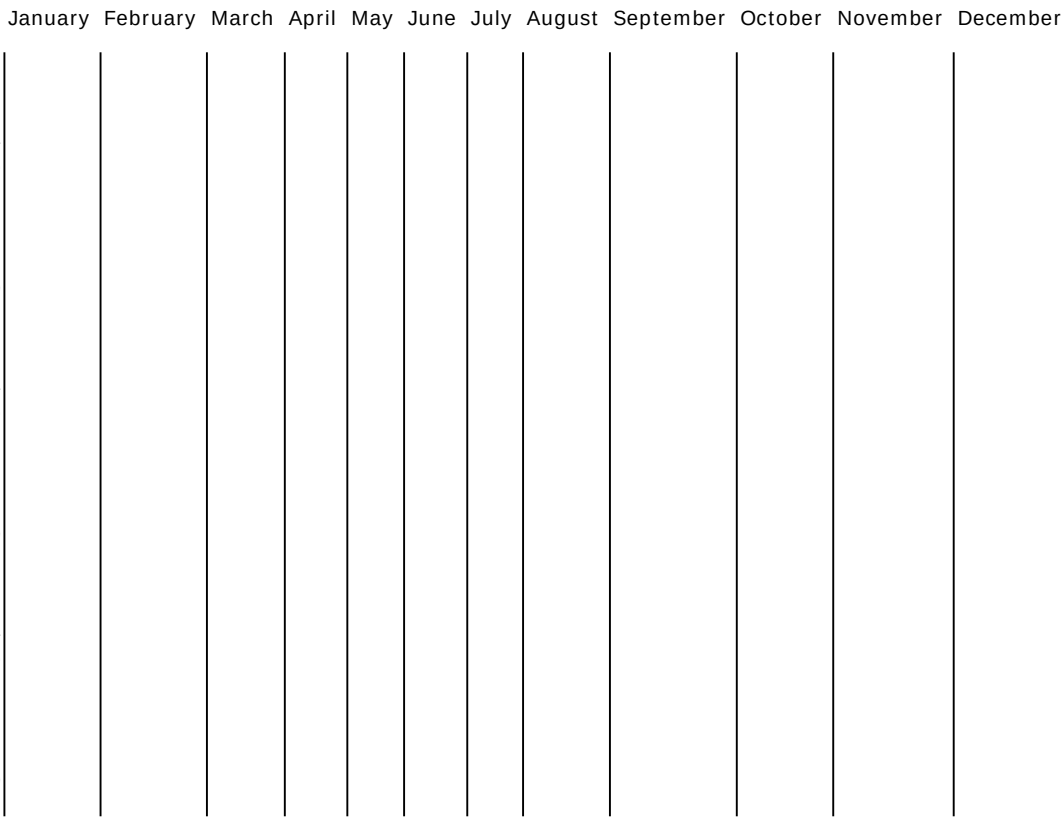
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Flicker curtailment according to specified plan



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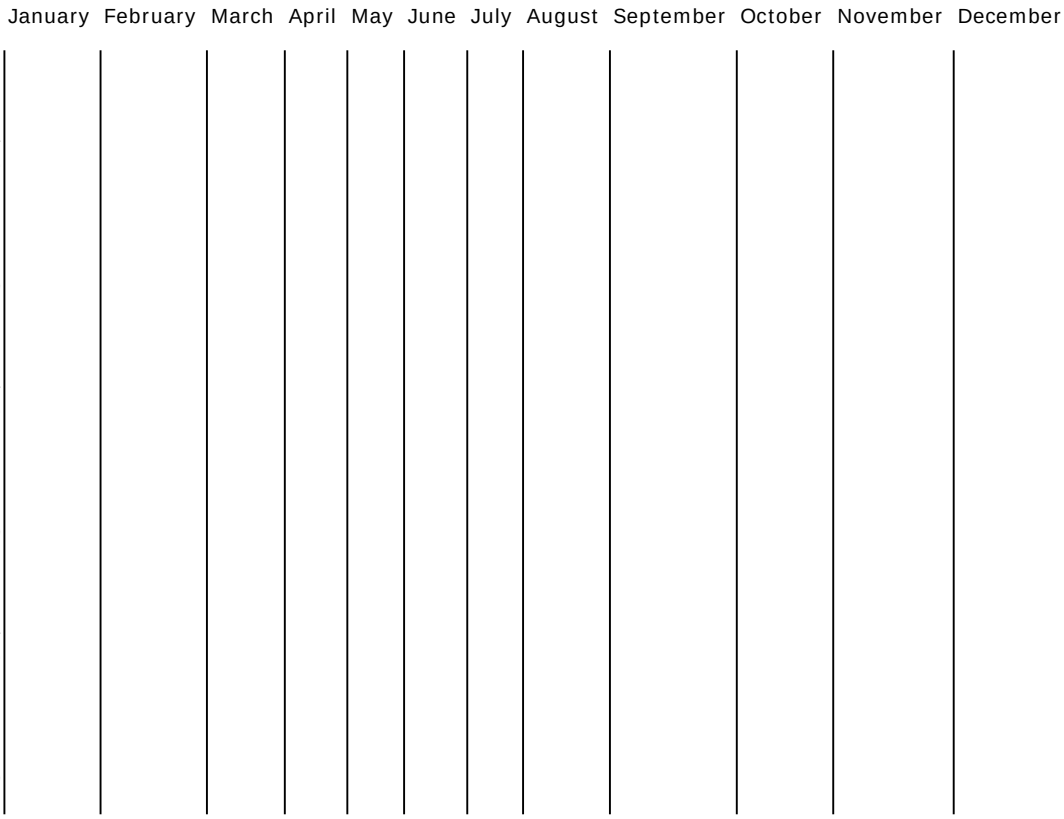
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

## Flicker curtailment according to specified plan



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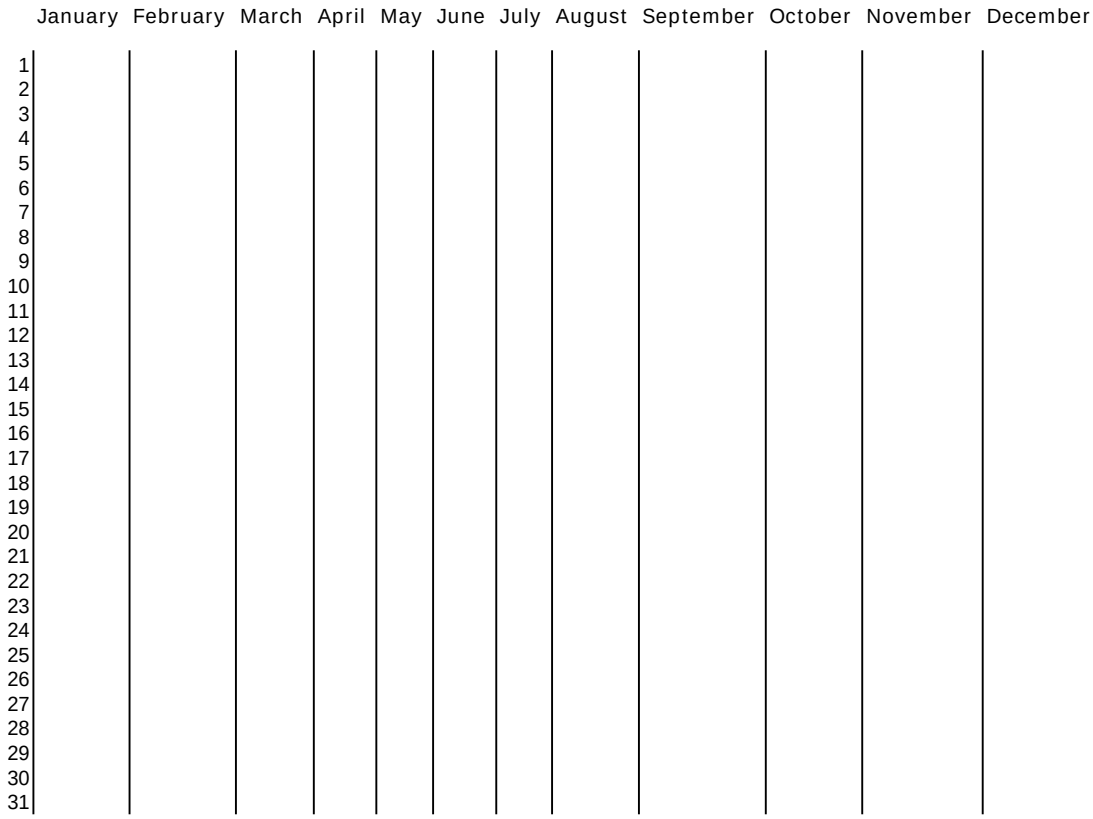
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

Flicker curtailment according to specified plan



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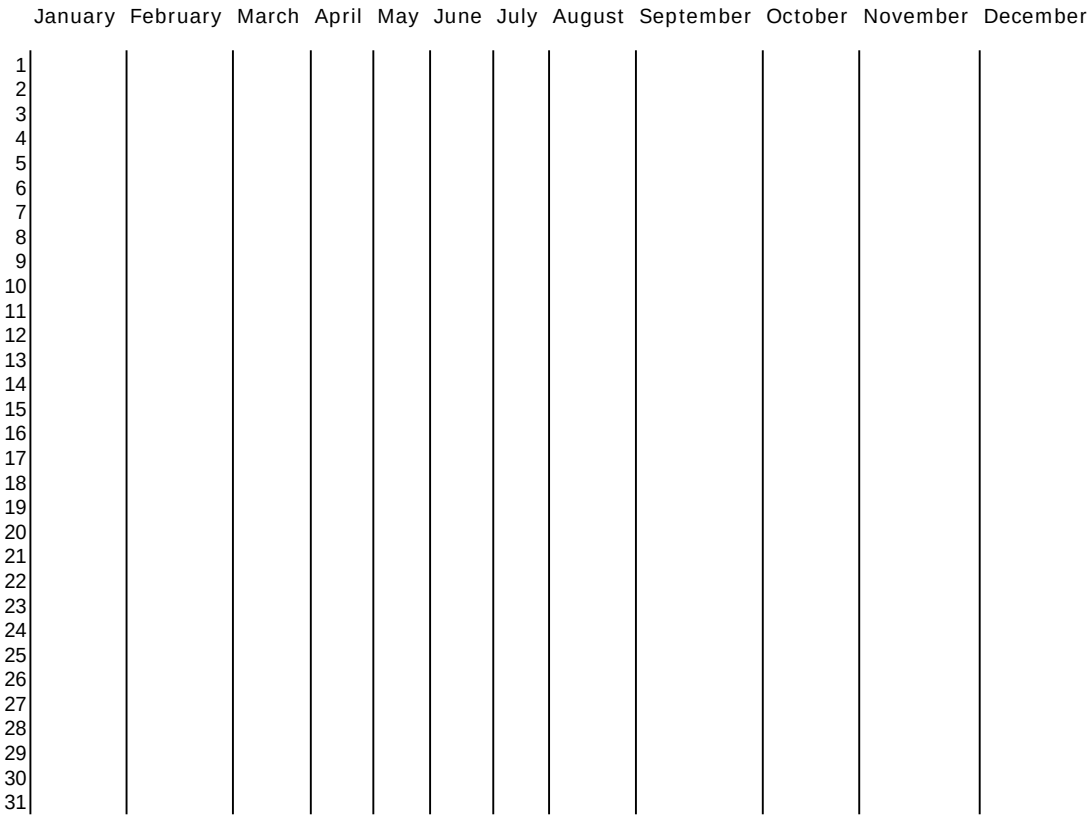
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

## Flicker curtailment according to specified plan



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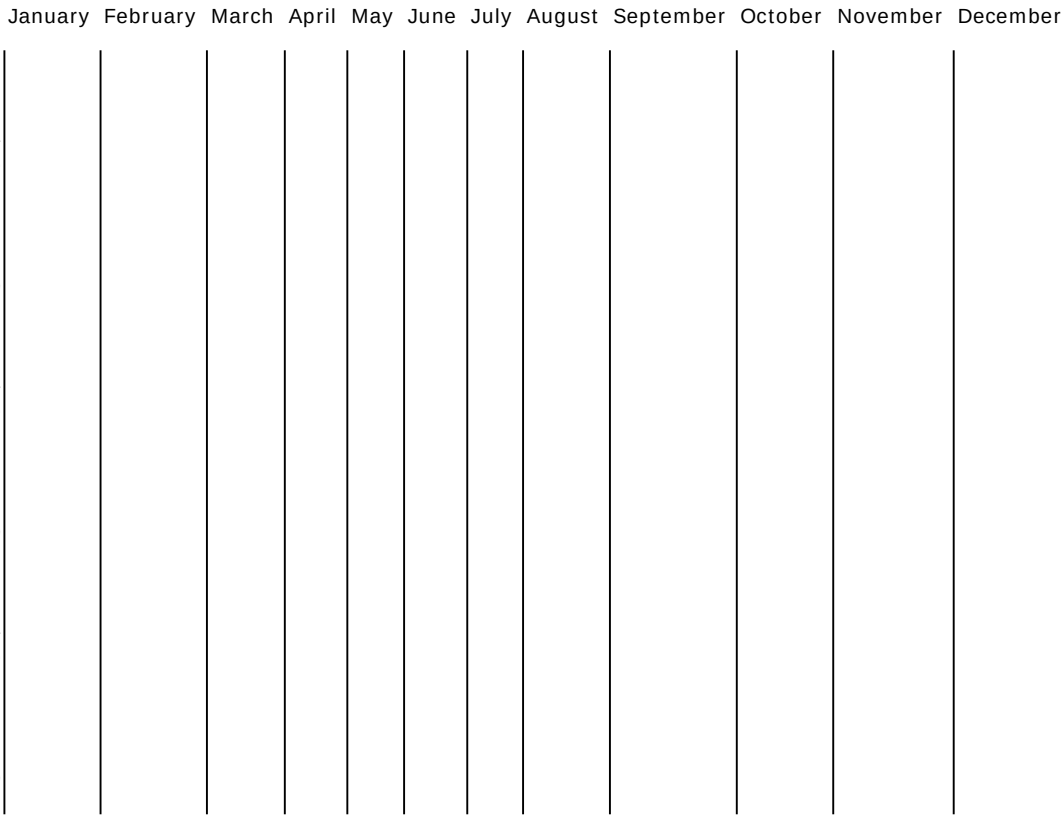
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

### Flicker curtailment according to specified plan



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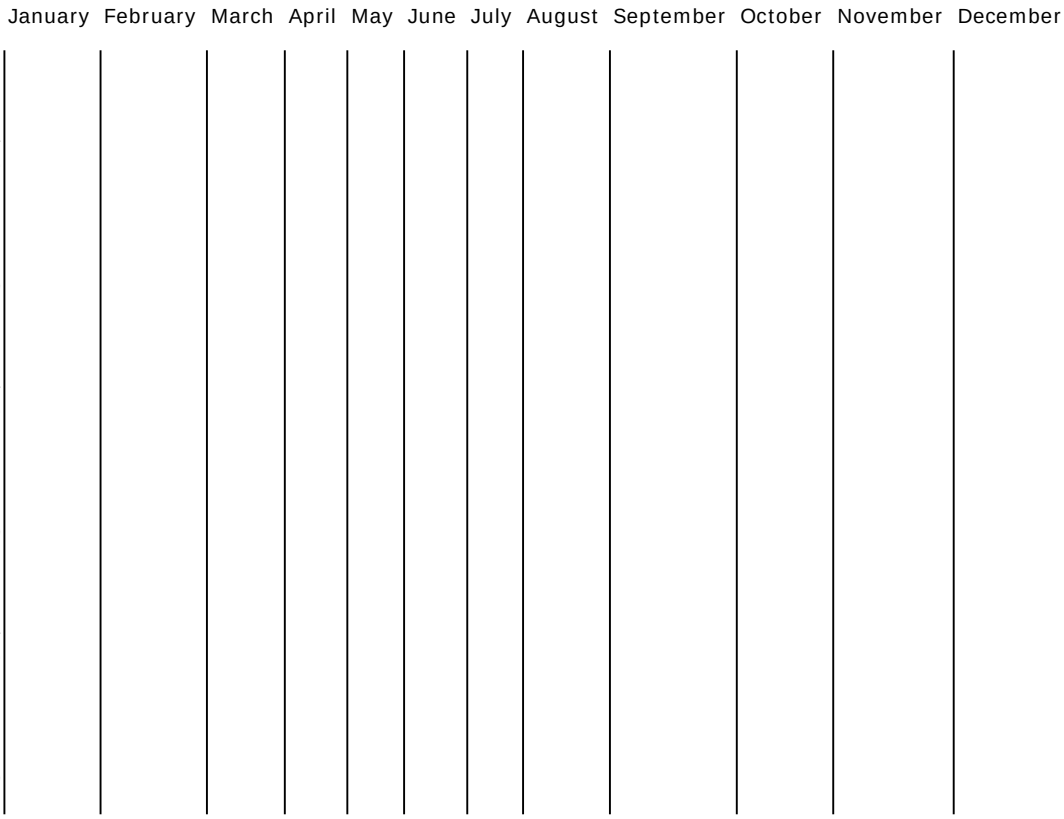
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

## Flicker curtailment according to specified plan



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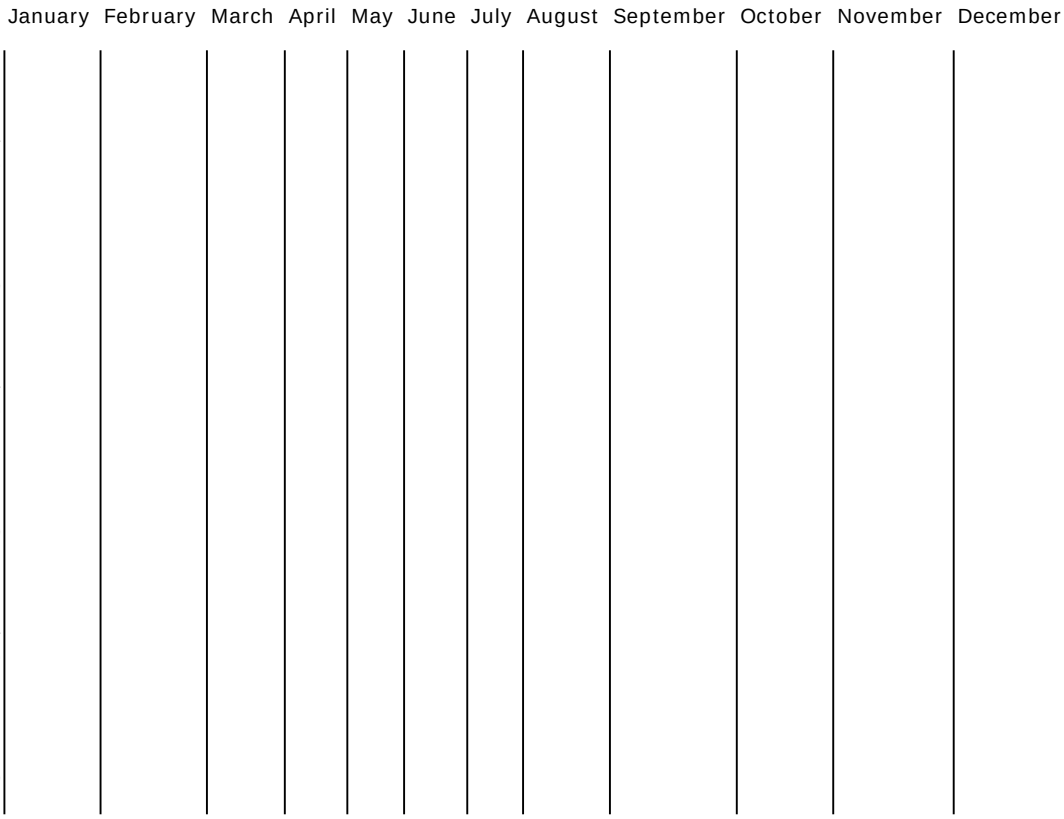
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 18 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

### Flicker curtailment according to specified plan



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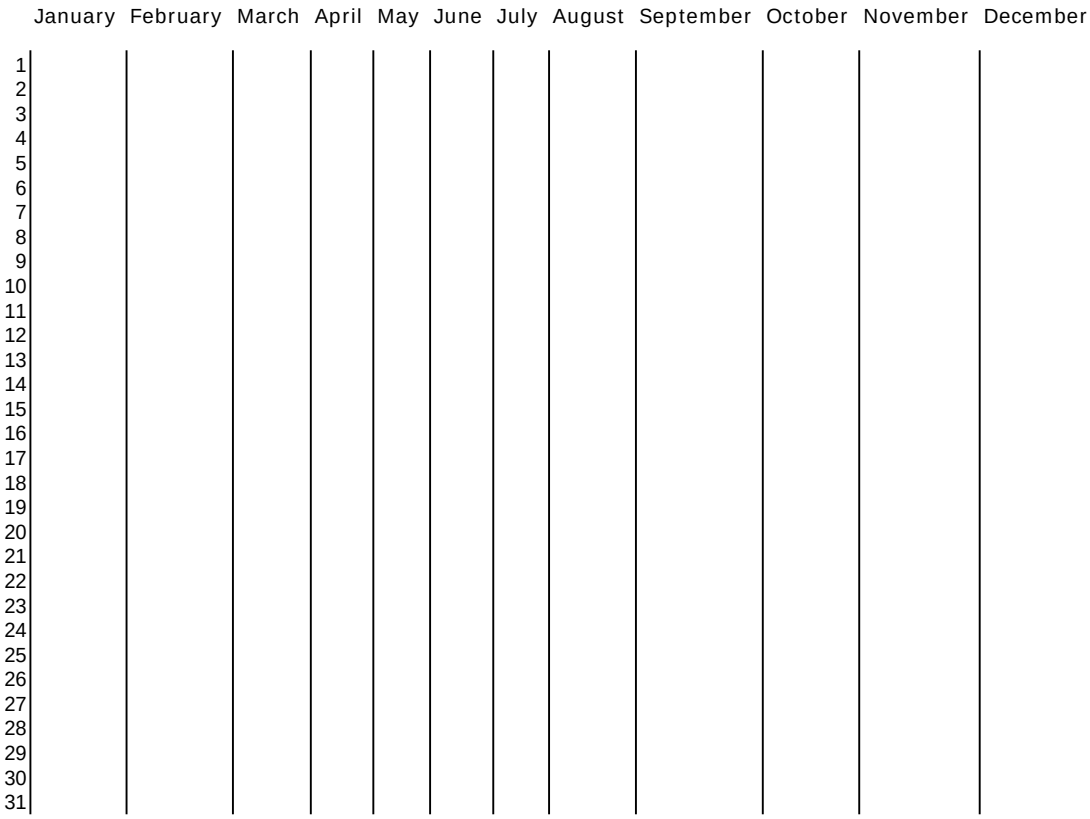
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 19 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

## Flicker curtailment according to specified plan



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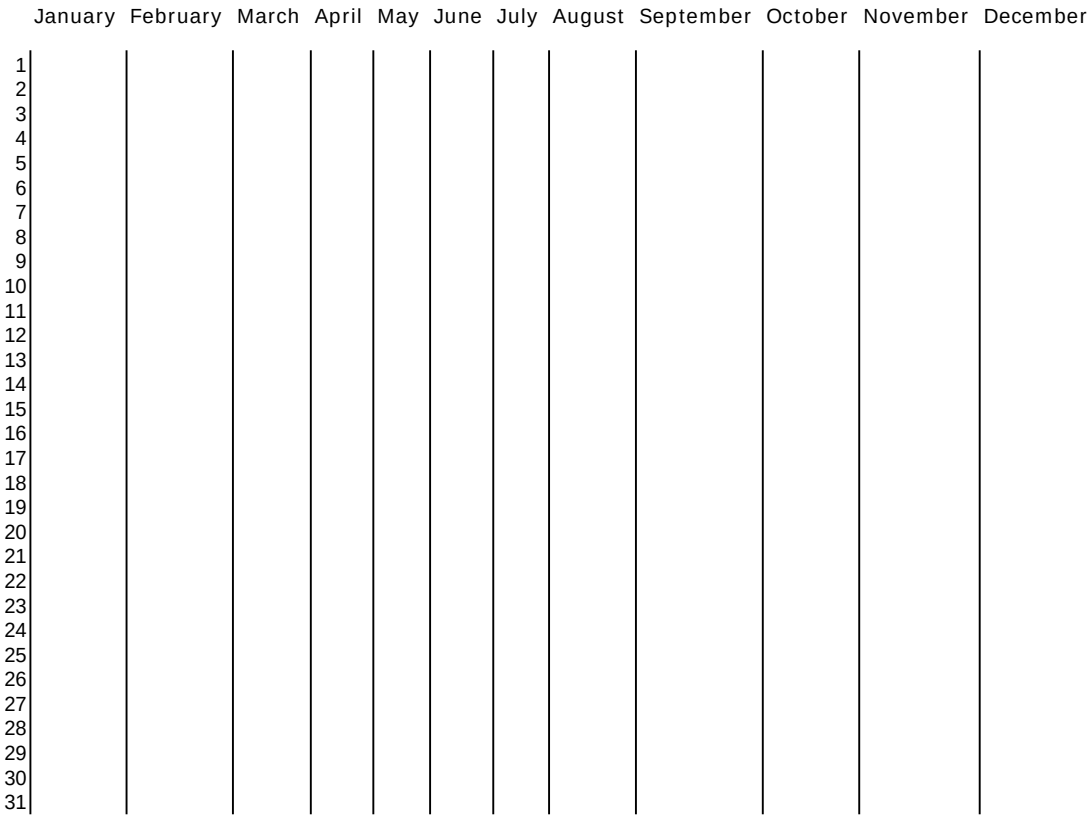
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 20 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

## Flicker curtailment according to specified plan



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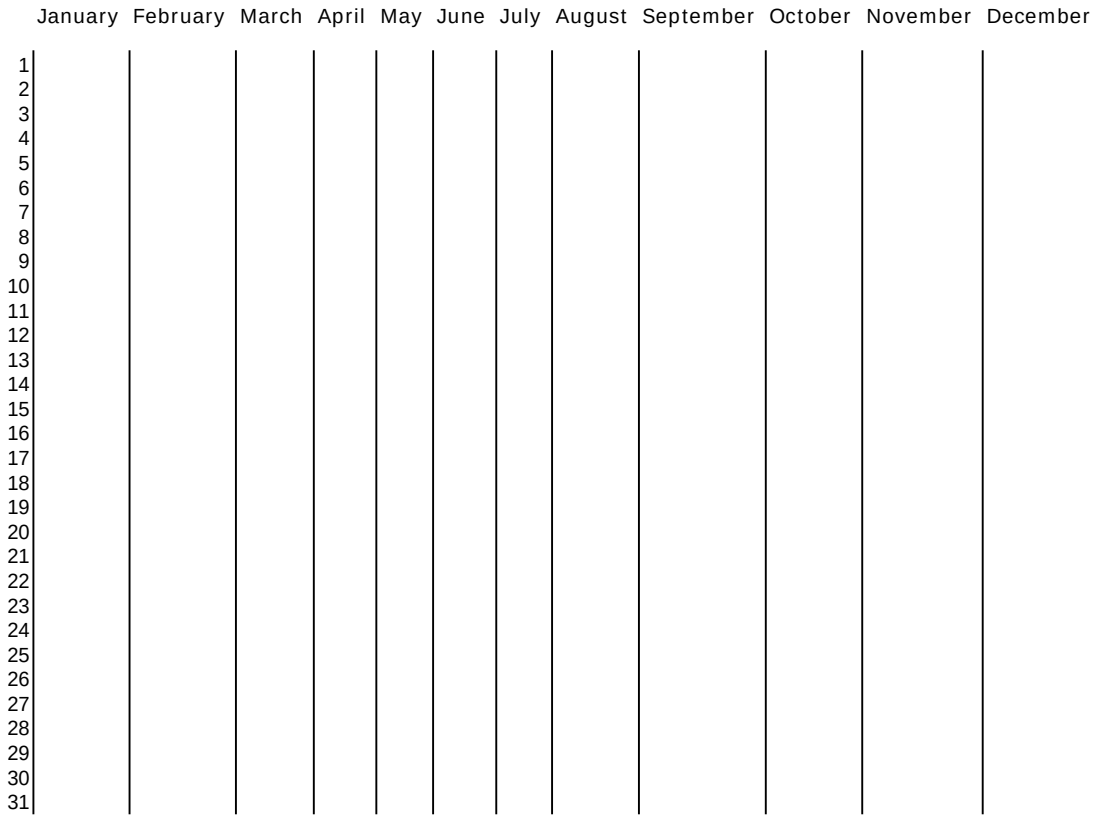
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 21 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

## Flicker curtailment according to specified plan



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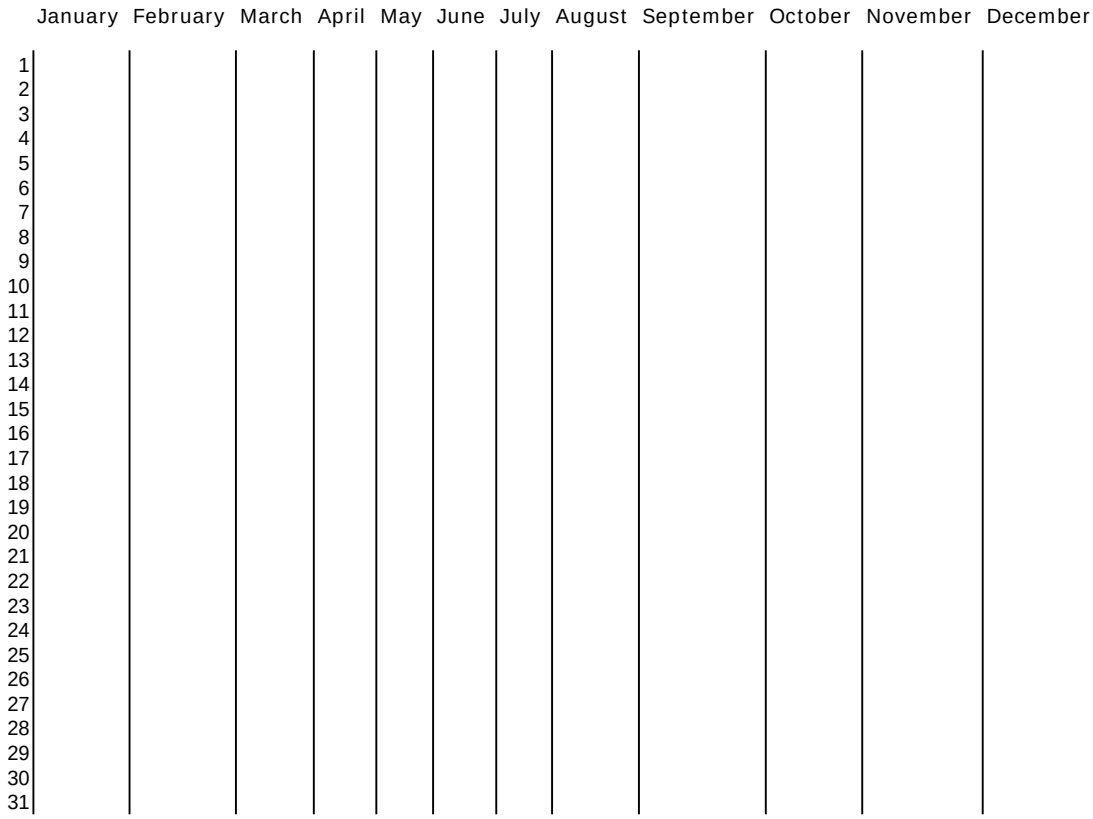
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 22 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

### Flicker curtailment according to specified plan



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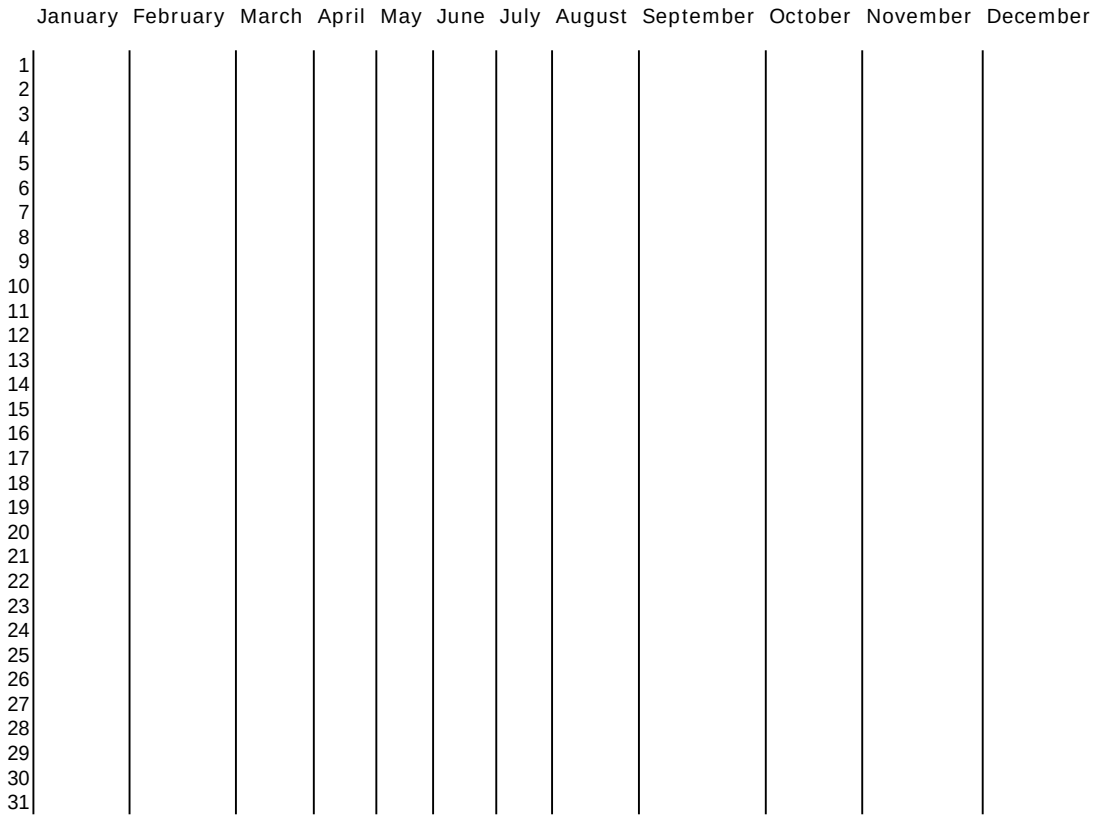
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 23 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

## Flicker curtailment according to specified plan



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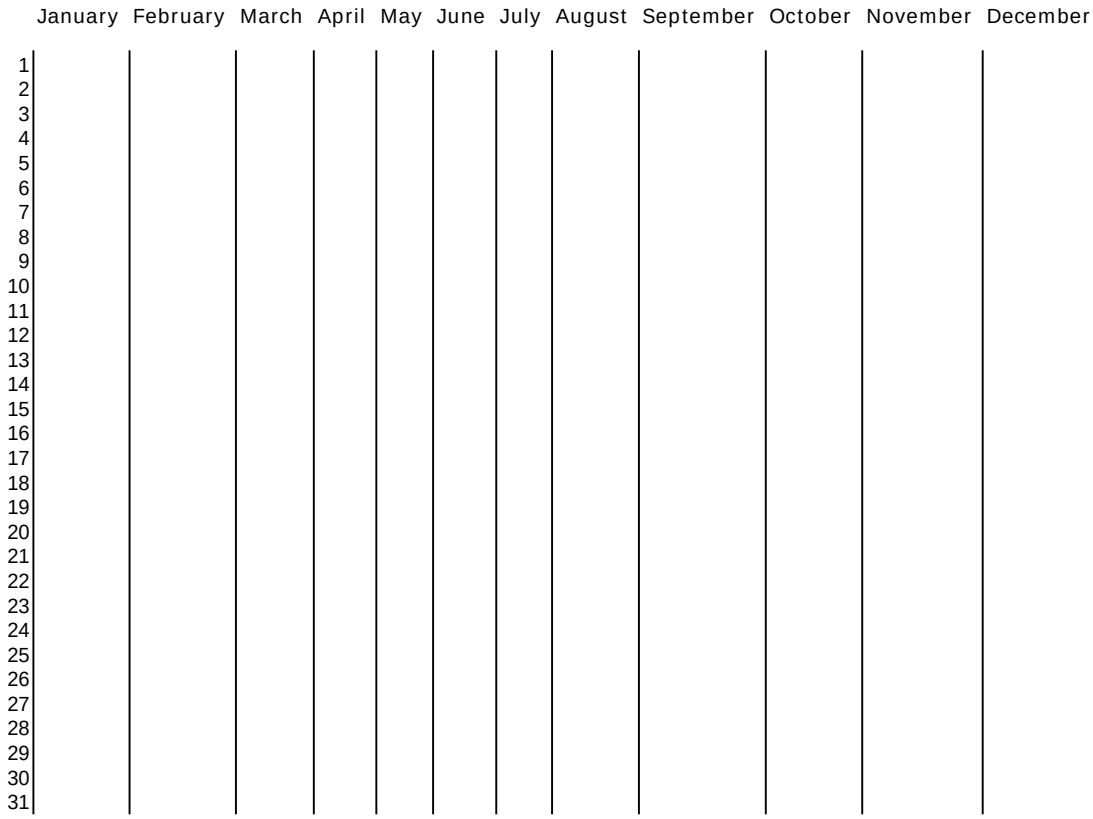
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 24 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

## Flicker curtailment according to specified plan



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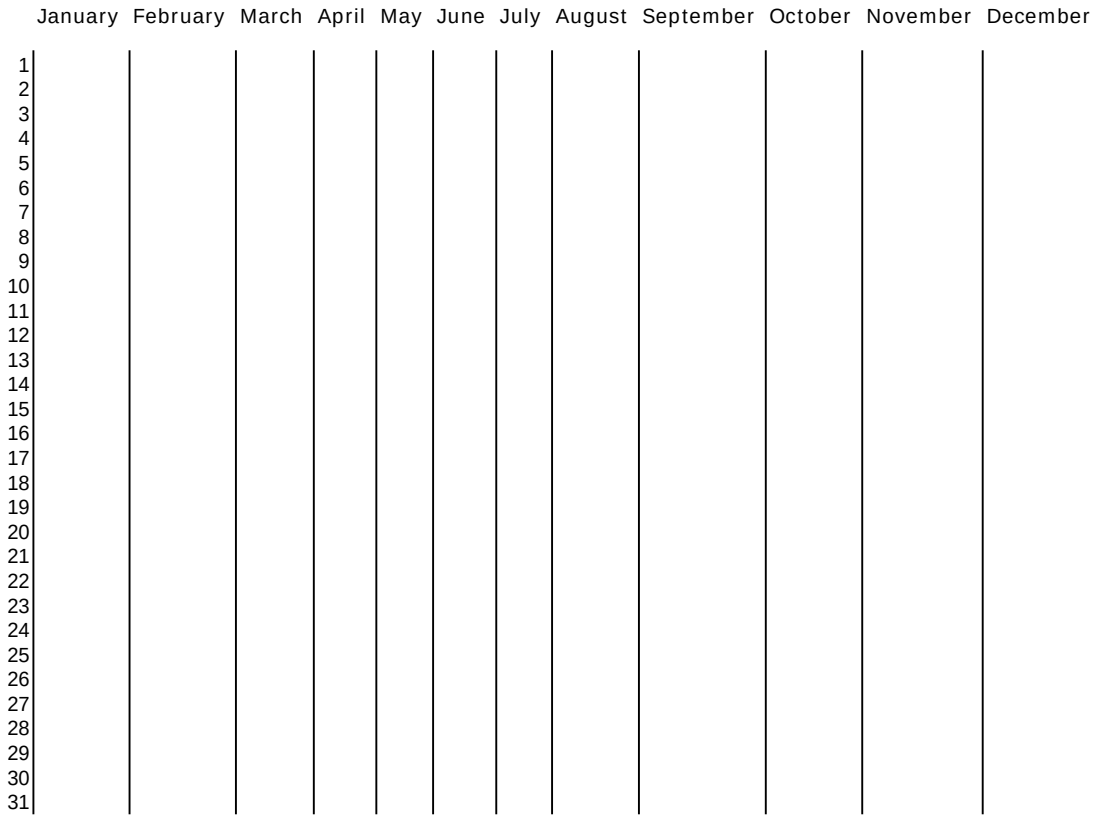
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 25 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

## Flicker curtailment according to specified plan



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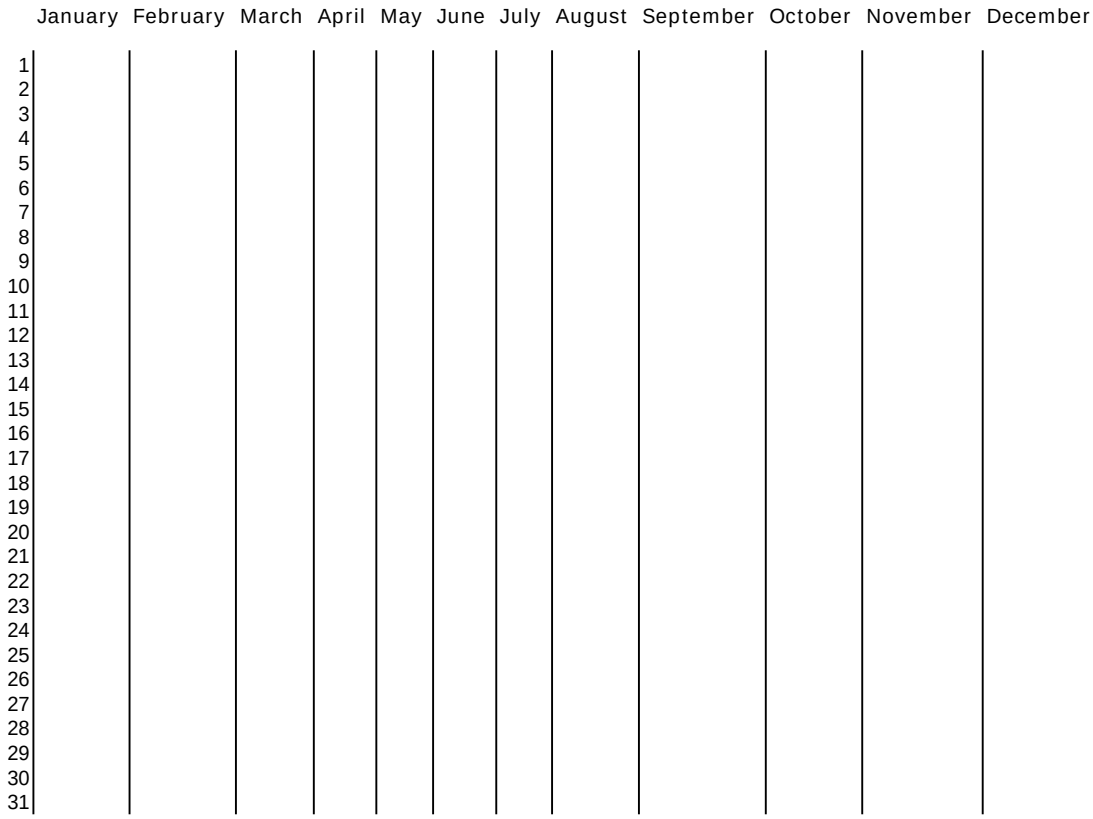
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

### Flicker curtailment according to specified plan



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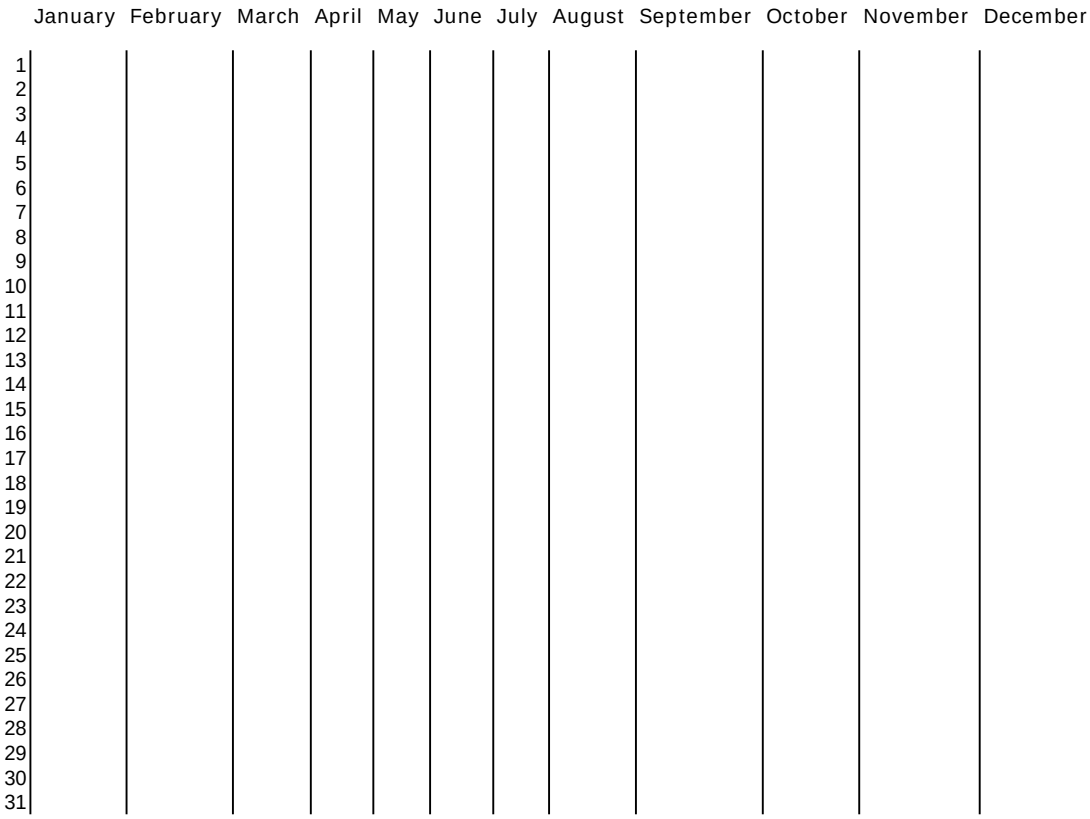
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

### Flicker curtailment according to specified plan



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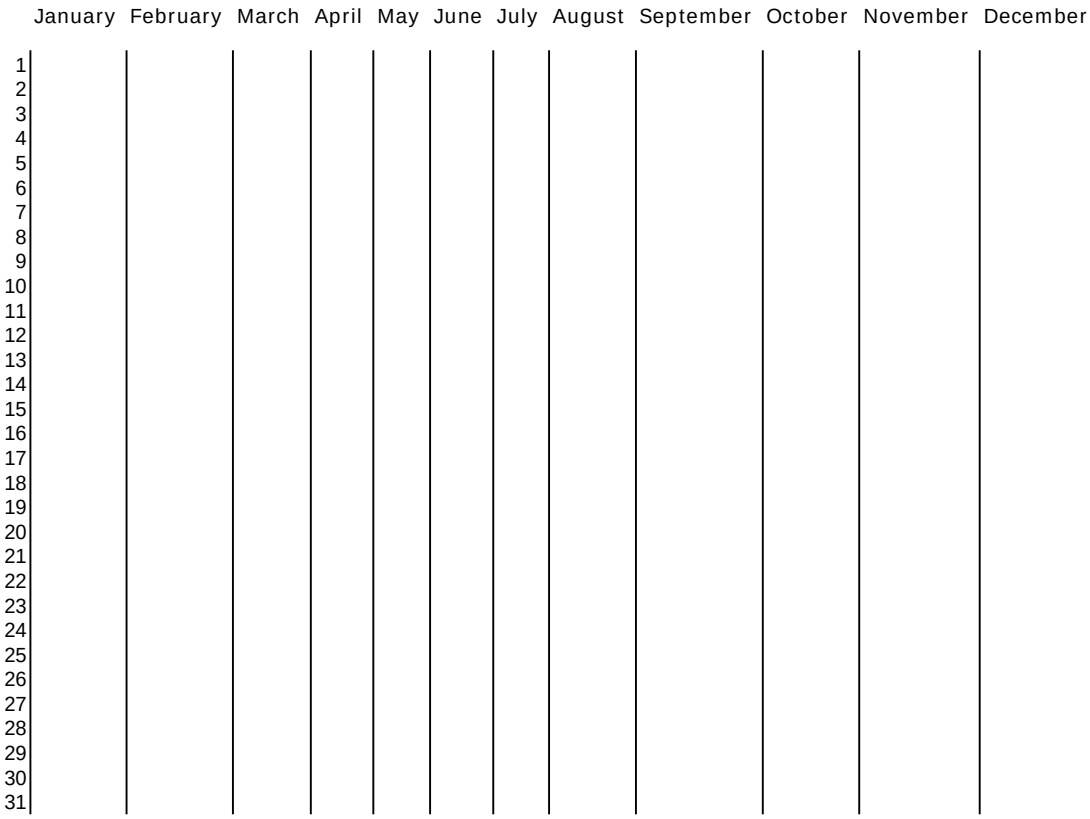
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

### Flicker curtailment according to specified plan



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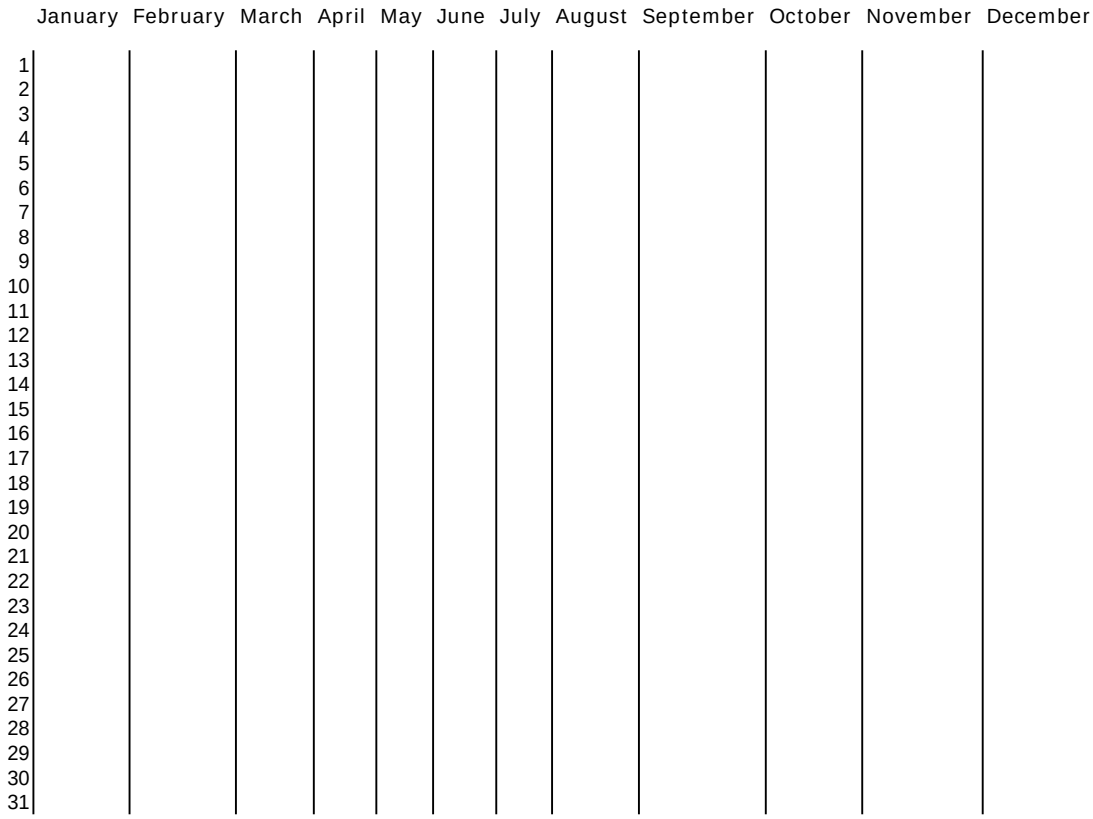
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

Flicker curtailment according to specified plan



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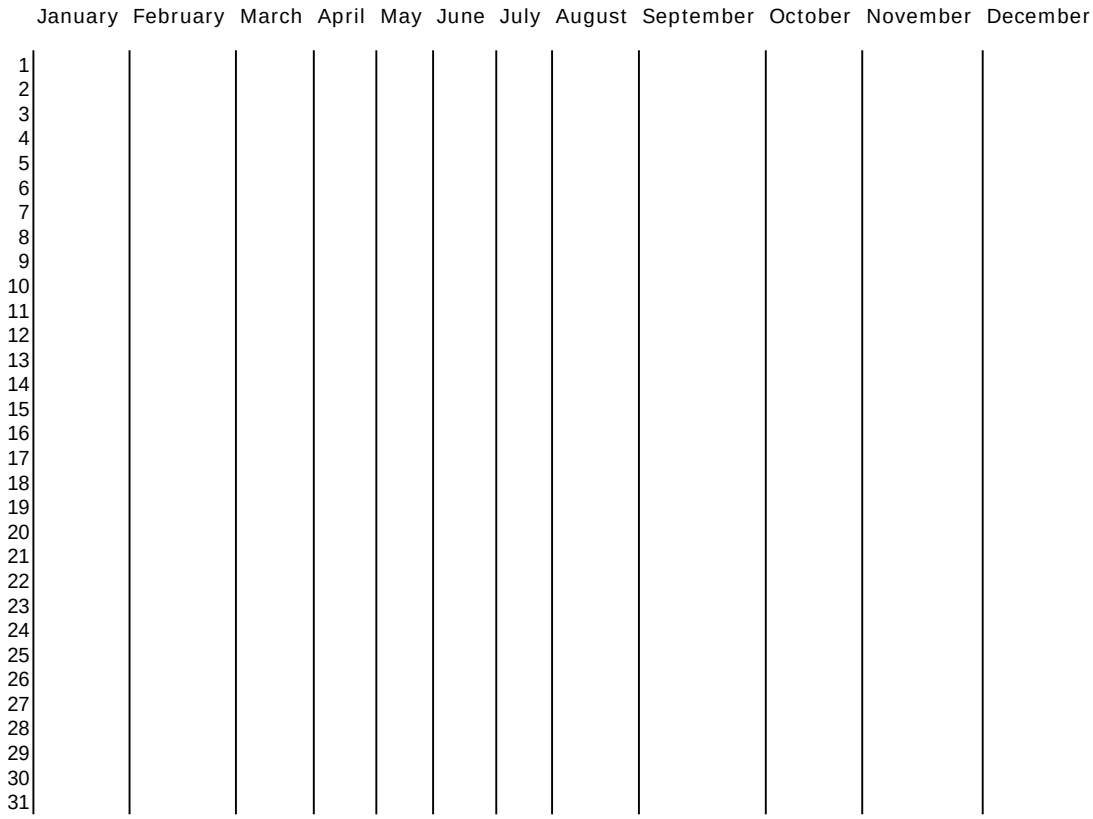
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

### Flicker curtailment according to specified plan



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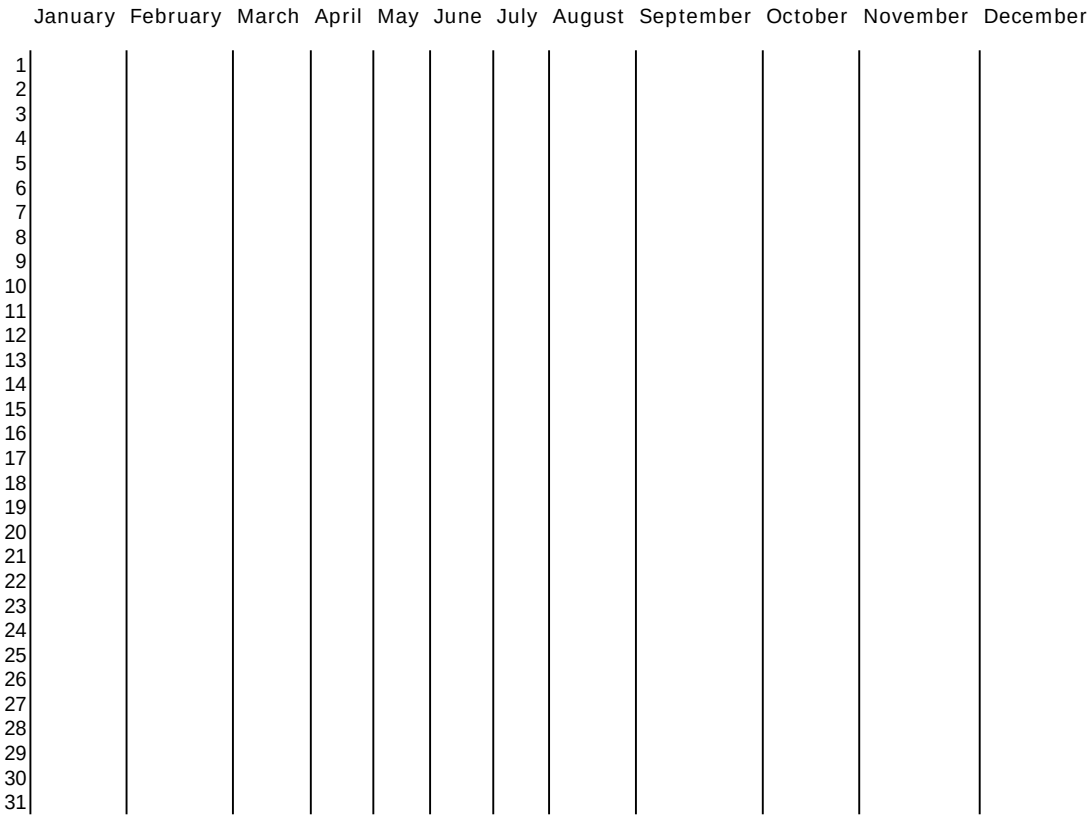
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

### Flicker curtailment according to specified plan



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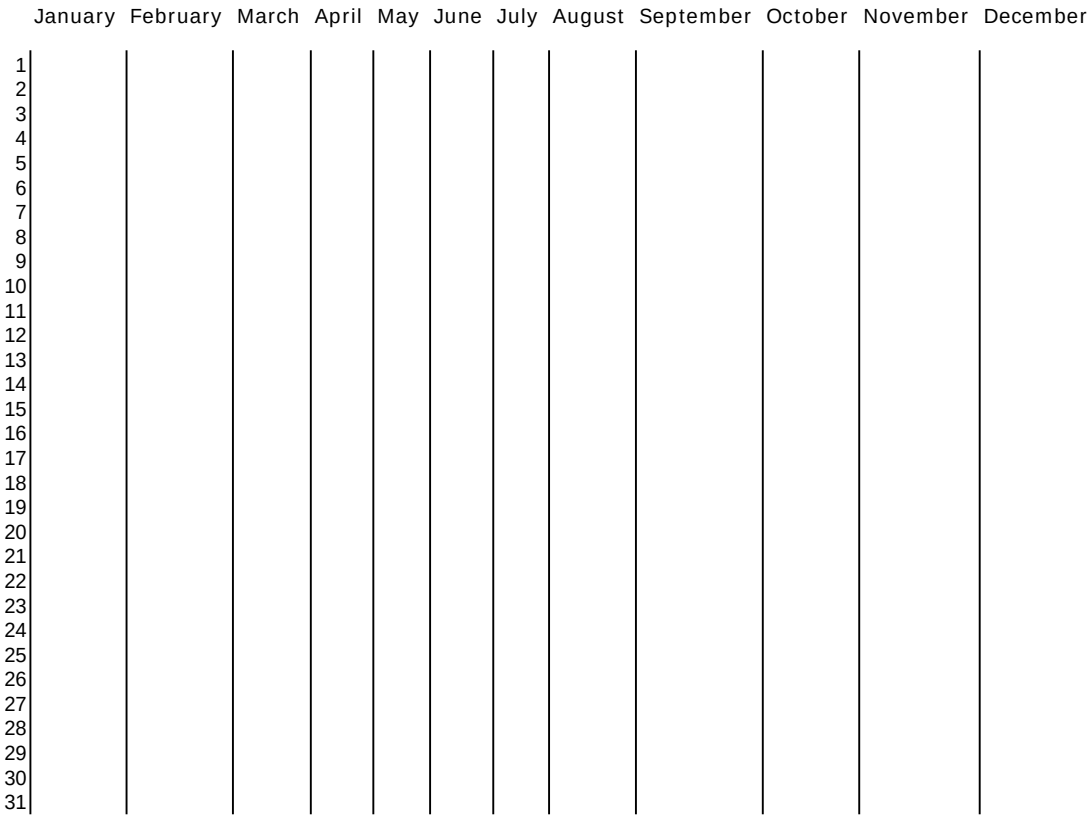
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 32 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

Flicker curtailment according to specified plan



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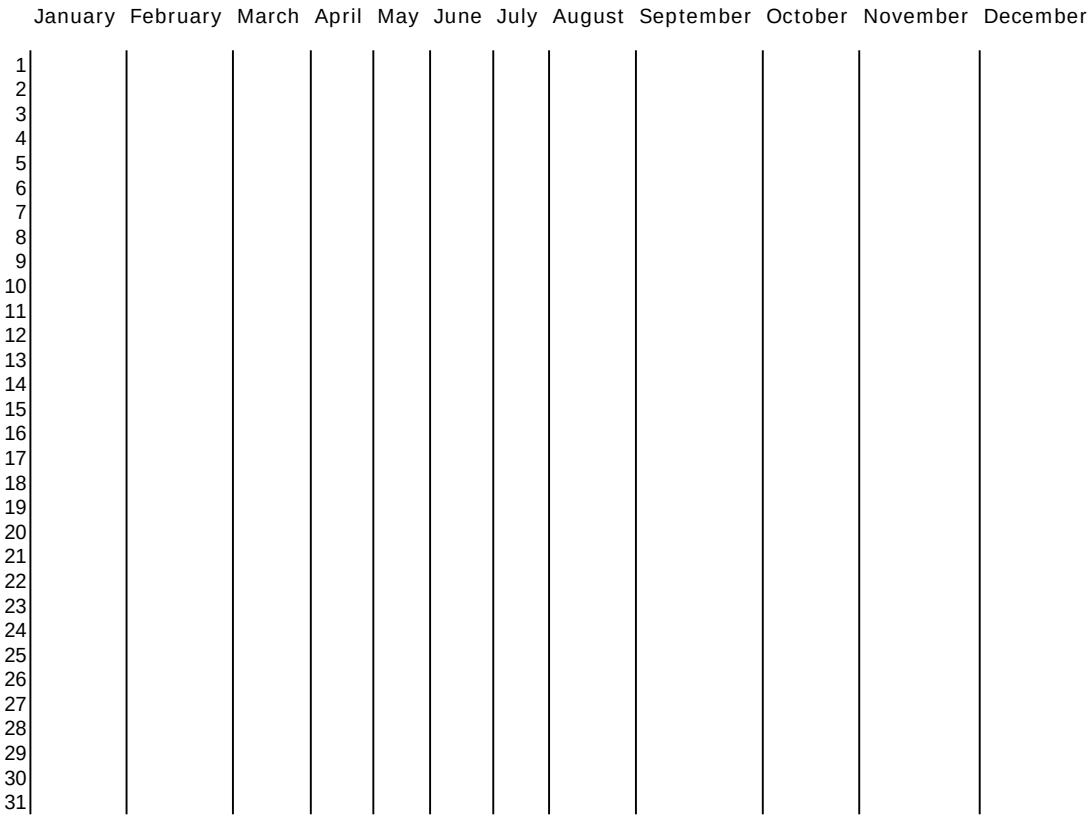
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

Flicker curtailment according to specified plan



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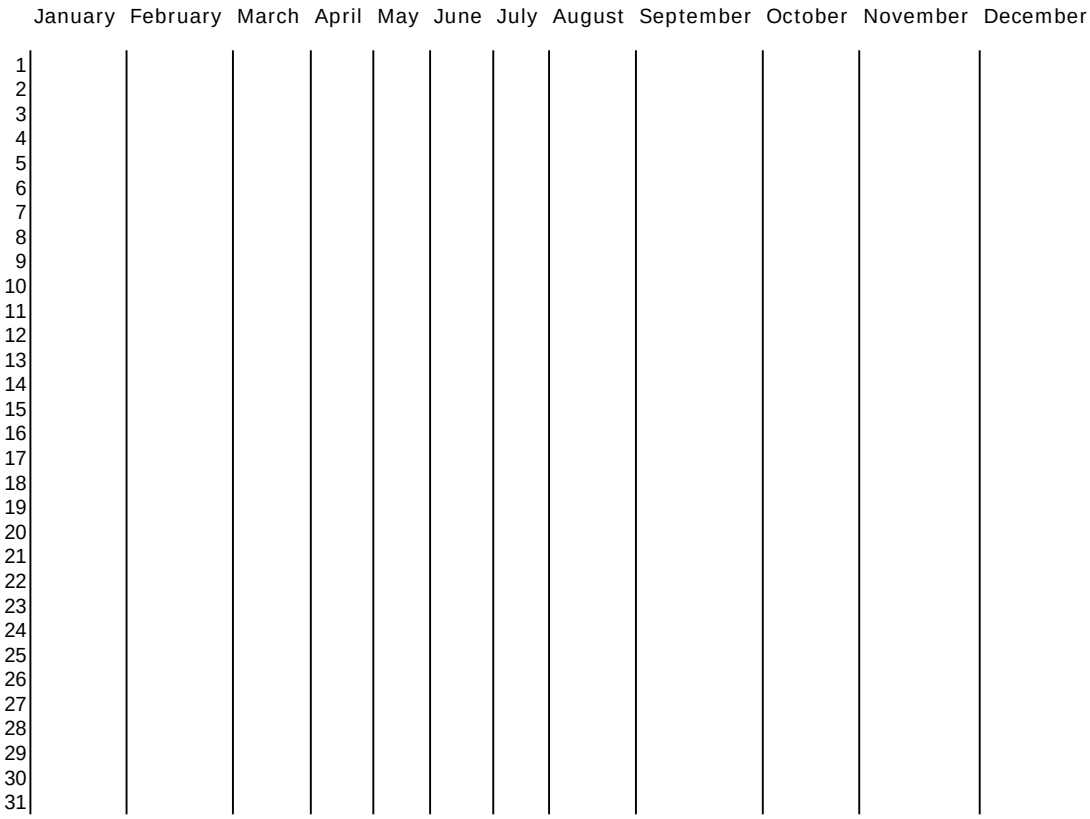
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

### Flicker curtailment according to specified plan



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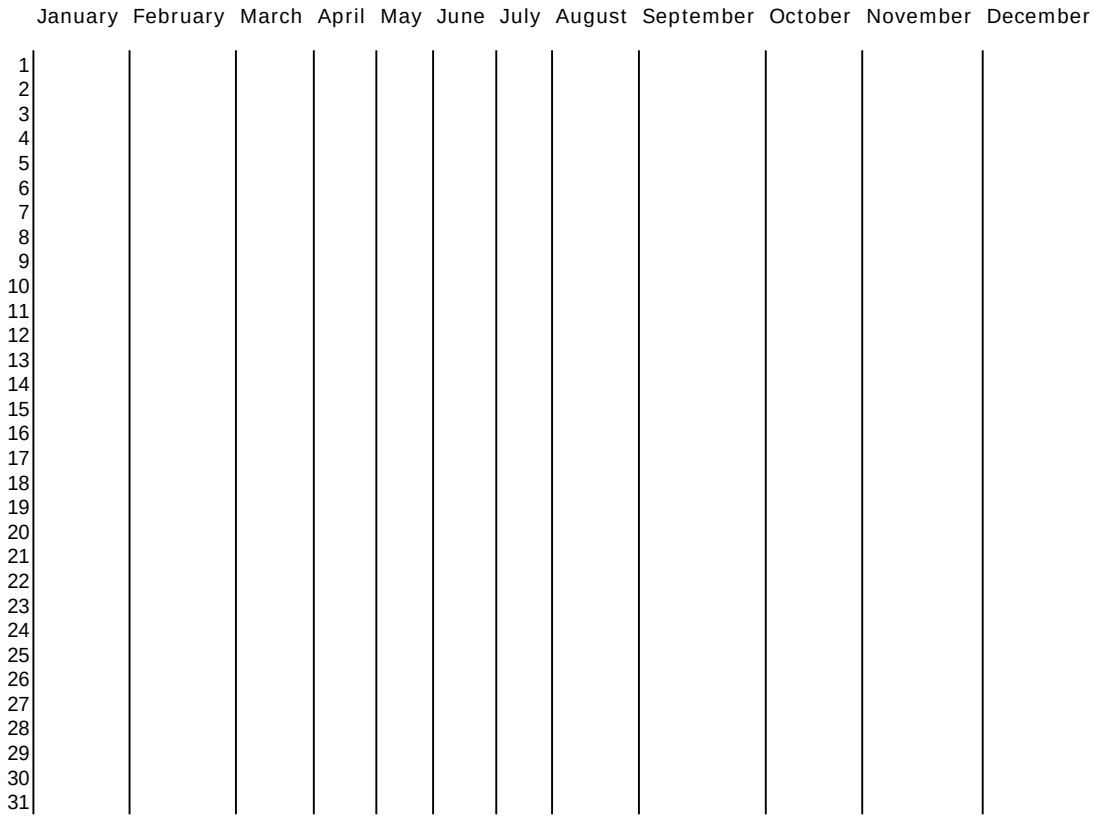
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

### Flicker curtailment according to specified plan



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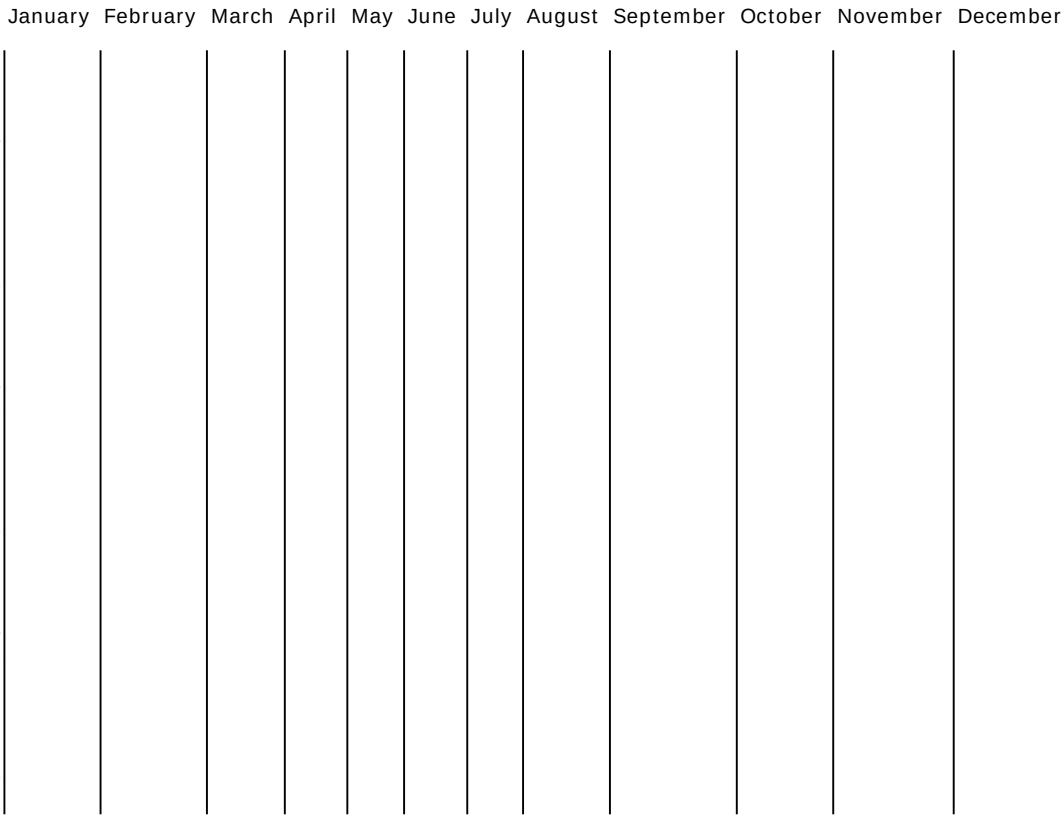
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

### Flicker curtailment according to specified plan



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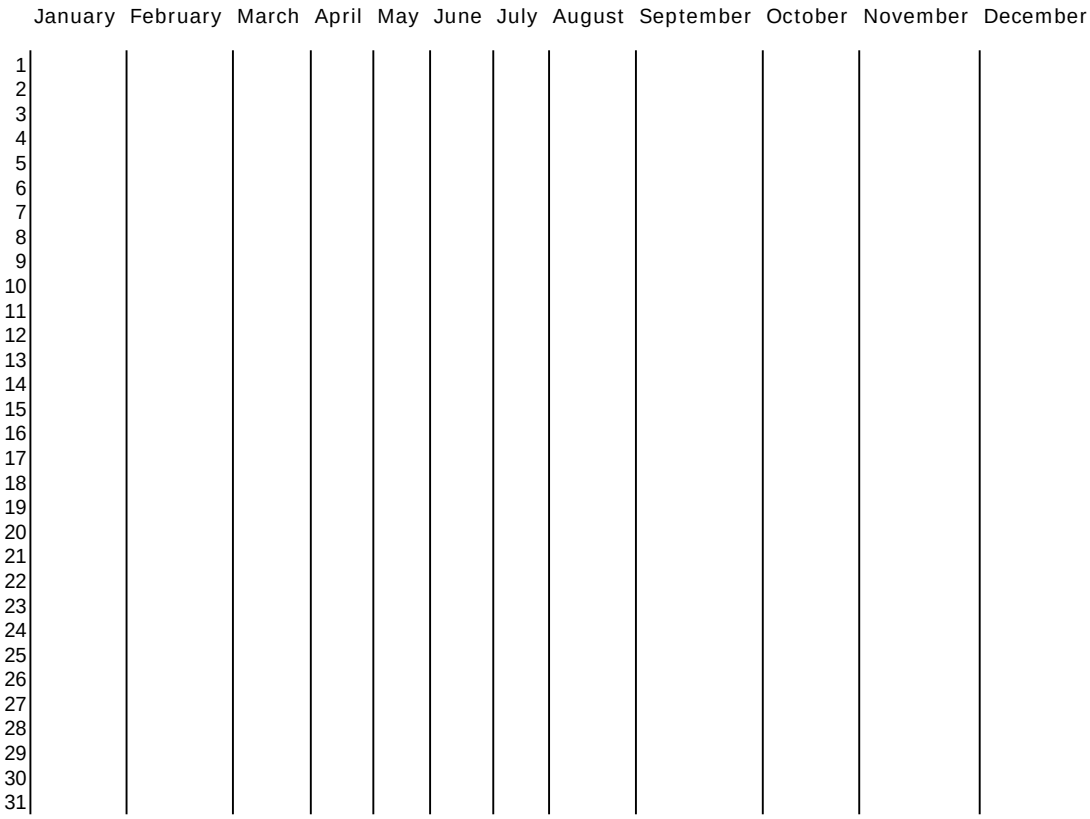
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 37 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

### Flicker curtailment according to specified plan



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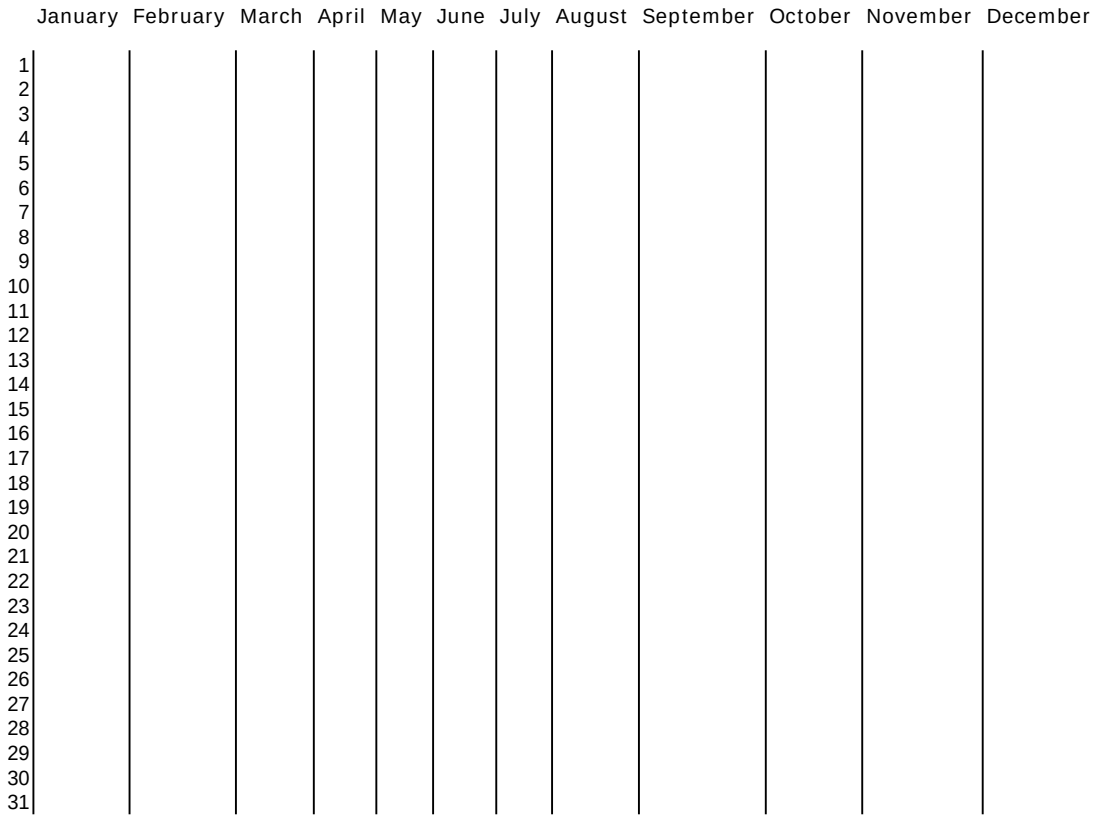
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 38 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Flicker curtailment according to specified plan



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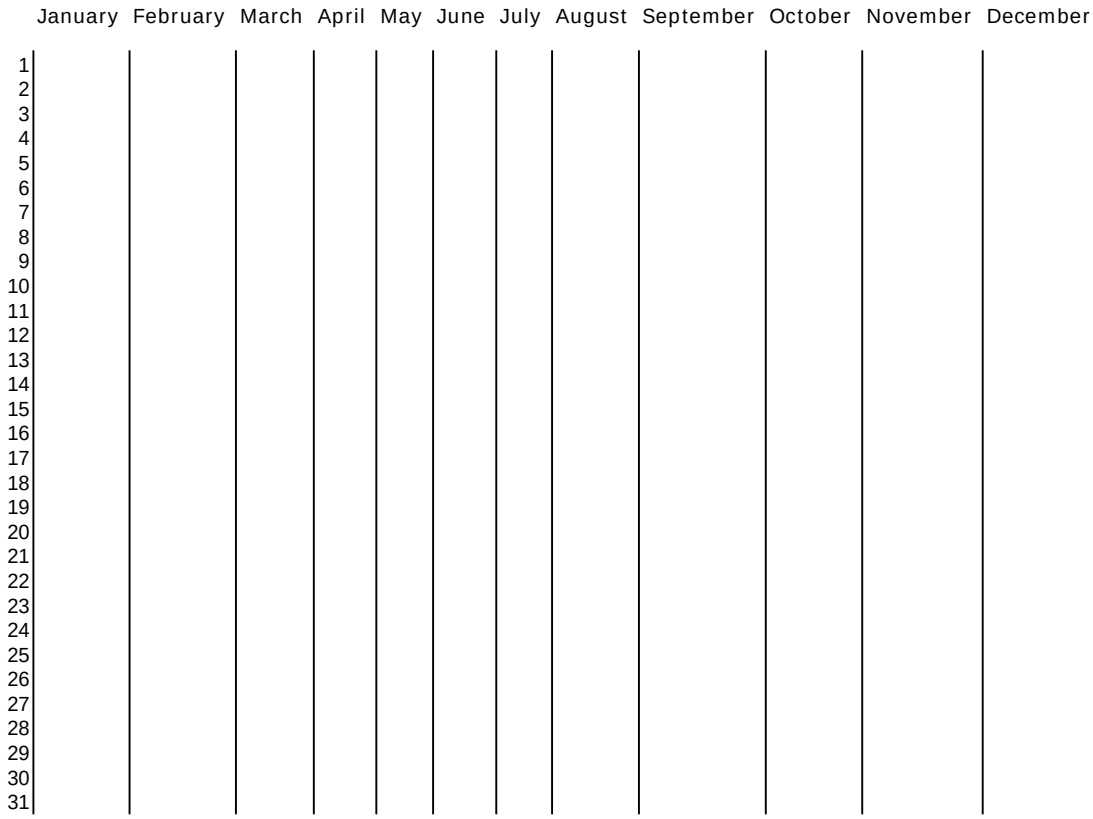
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

### Flicker curtailment according to specified plan



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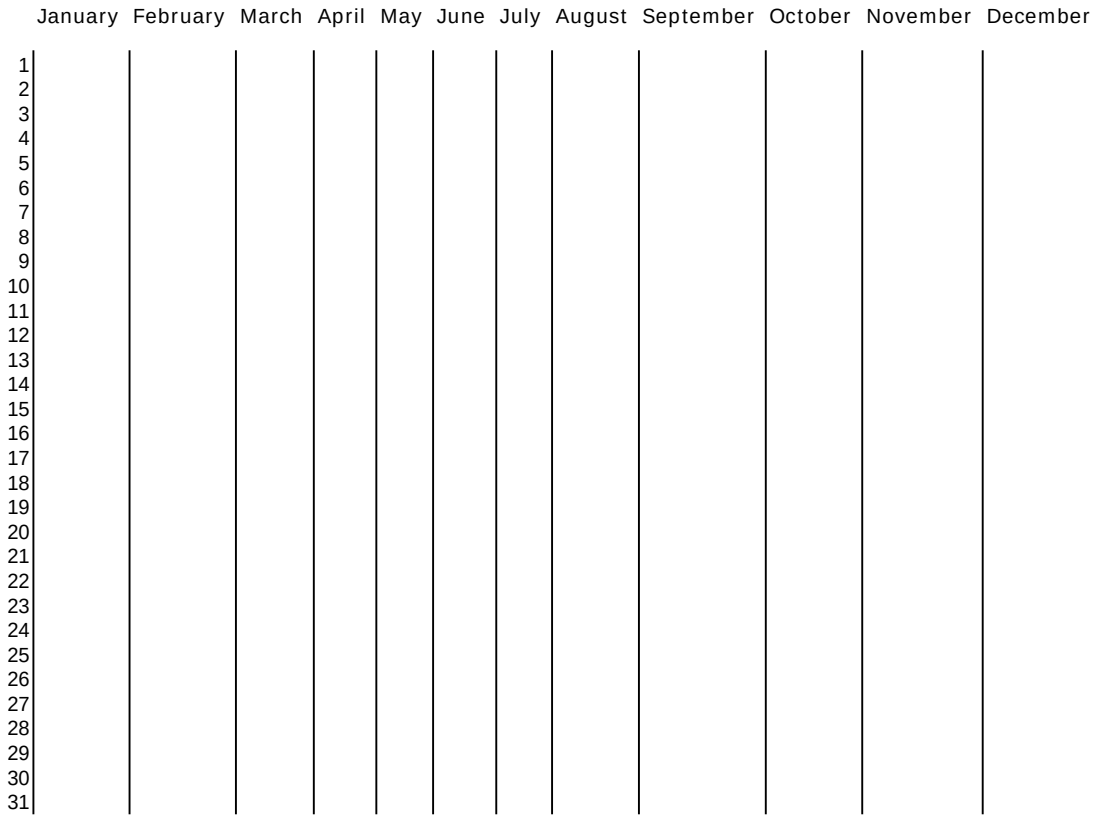
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Flicker curtailment according to specified plan



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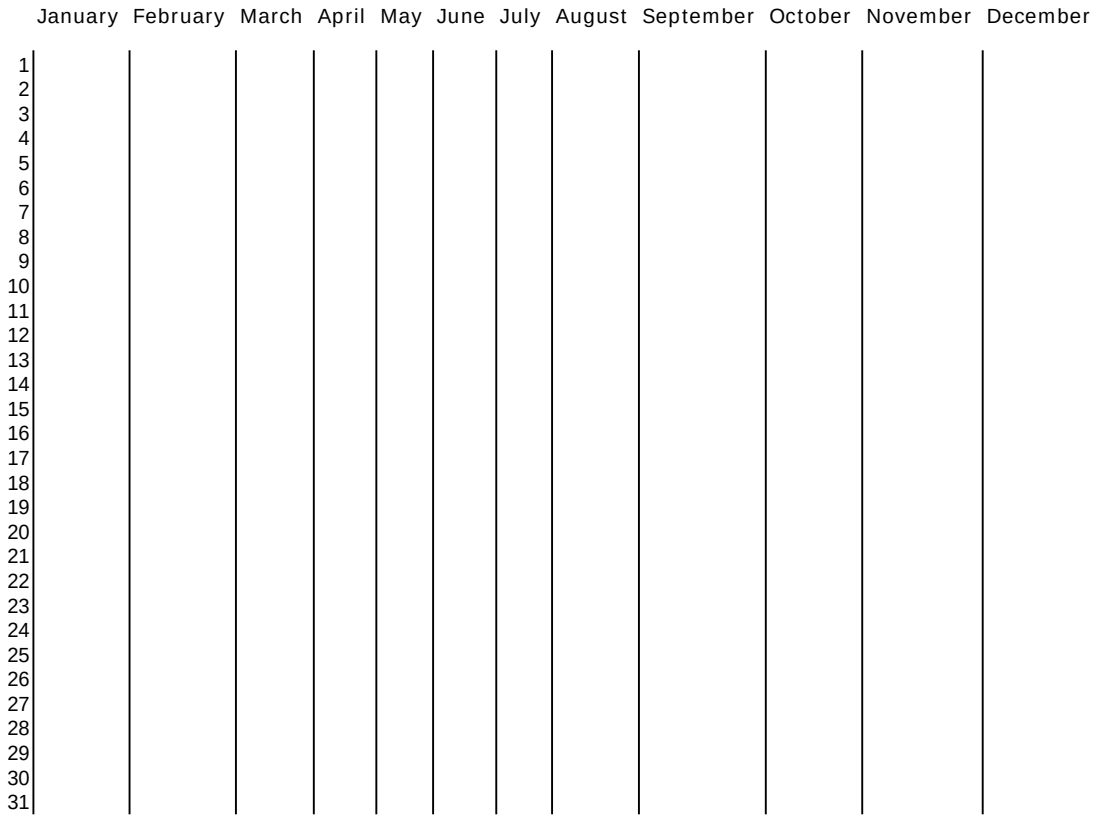
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Flicker curtailment according to specified plan



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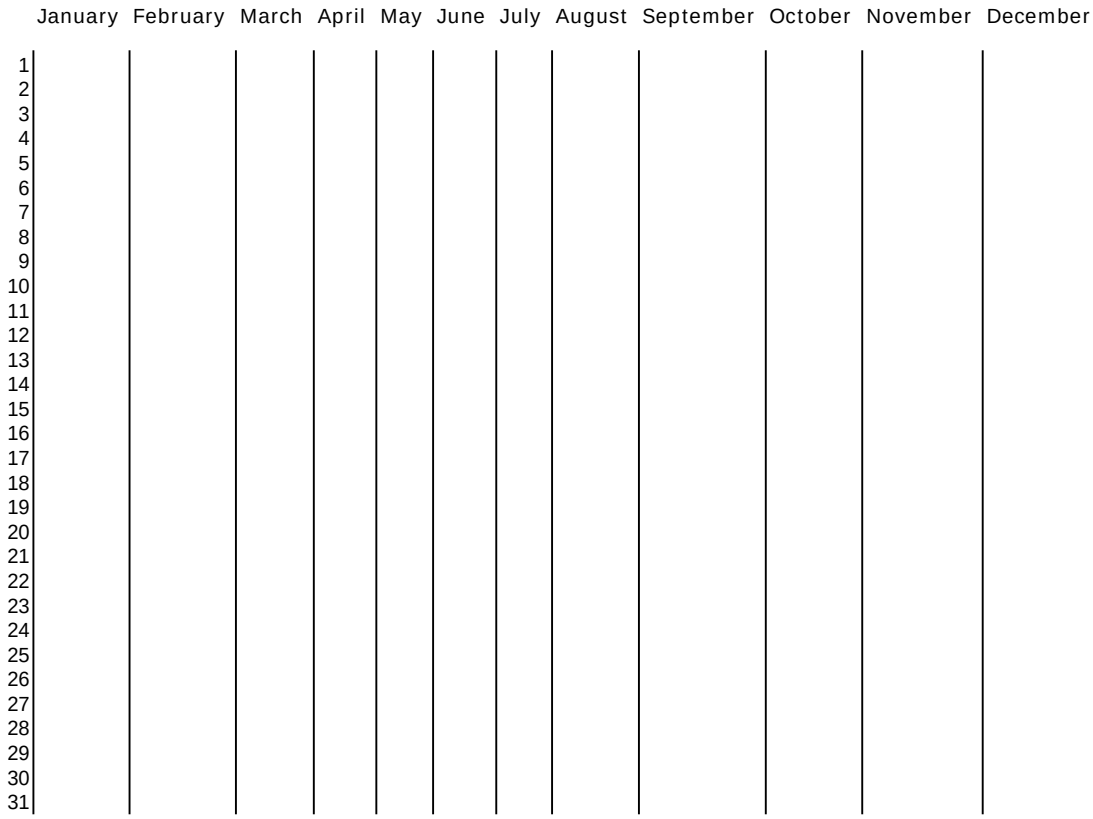
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Flicker curtailment according to specified plan



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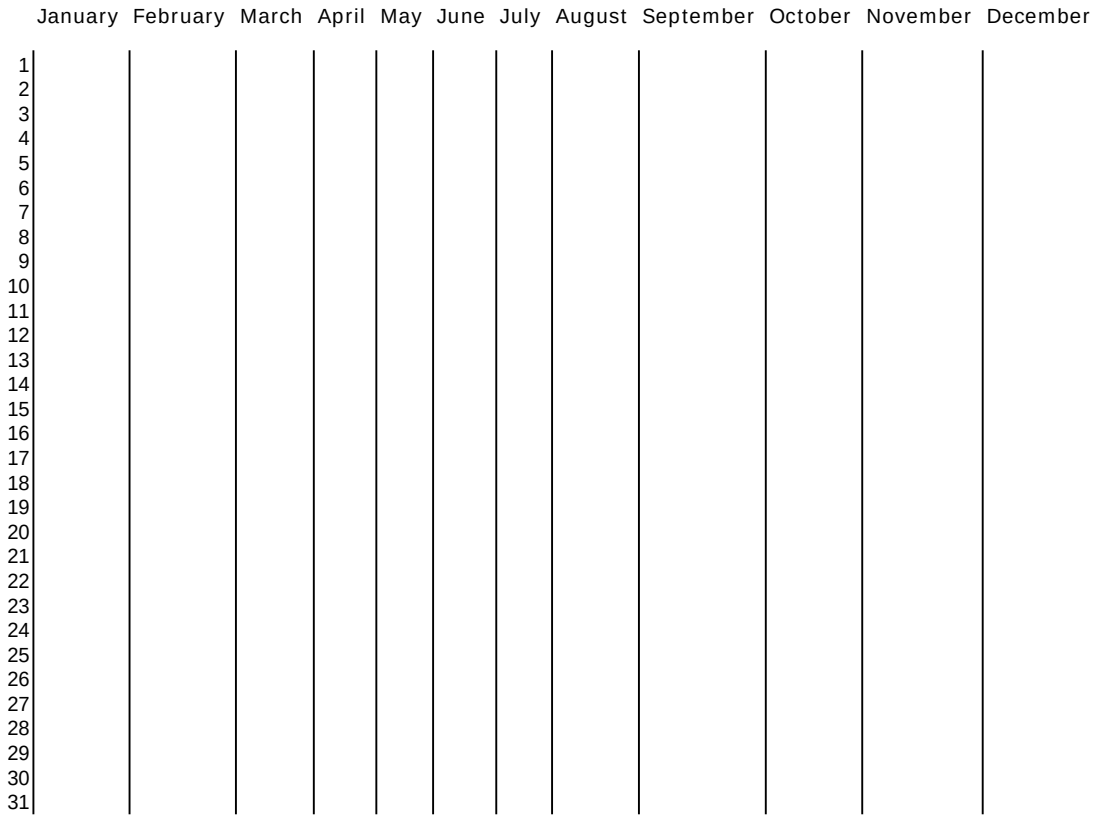
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut downWTG: 43 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Flicker curtailment according to specified plan



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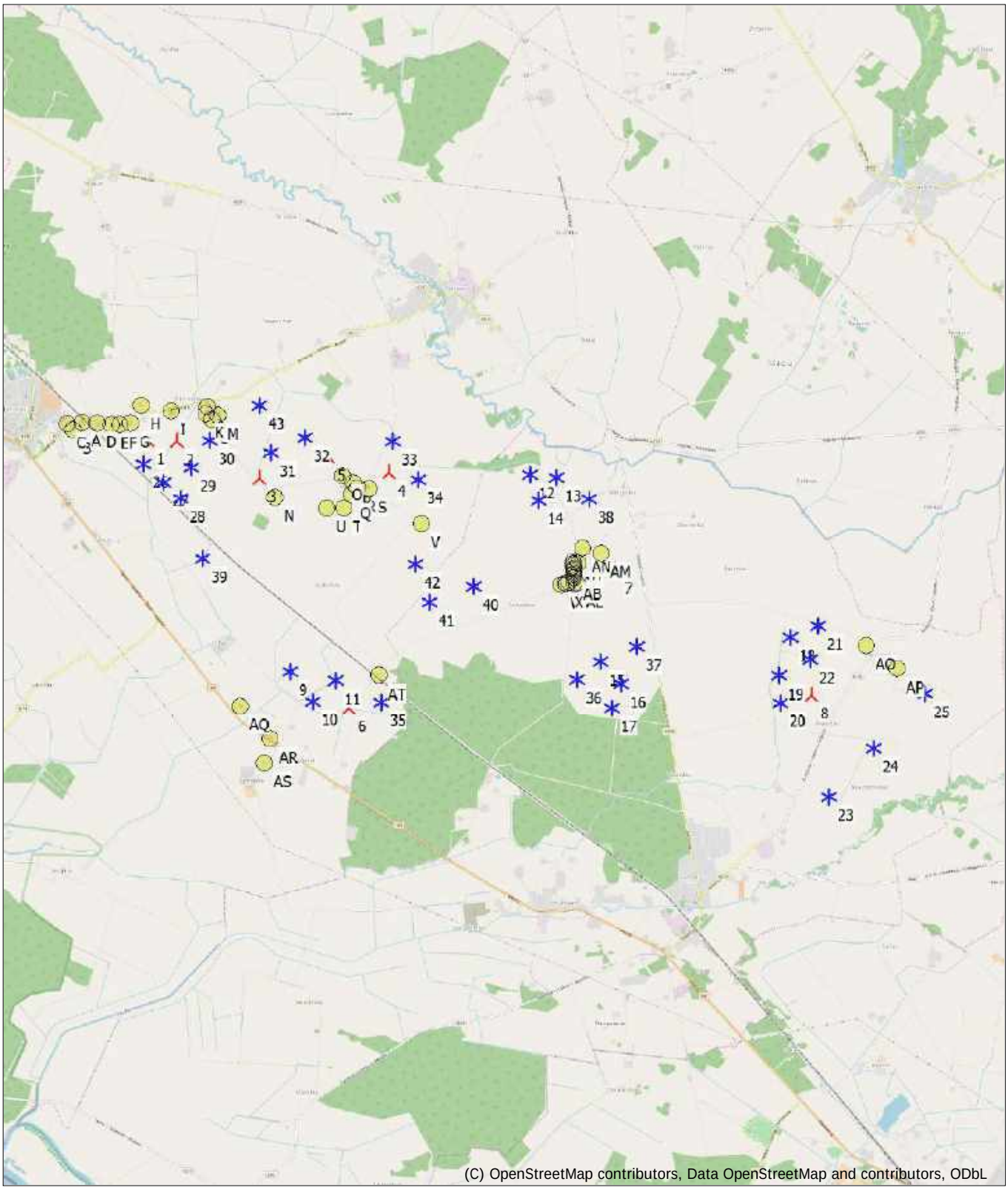
## SHADOW - Map

Calculation: Suminis poveikis Enercon E138 shut down




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.592 North: 6.128.131

New WTG Existing WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

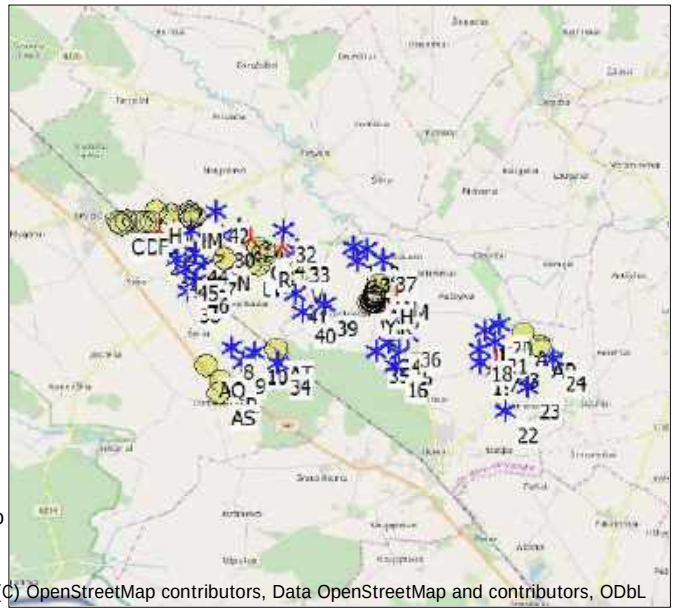
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




Scale 1:200.000

New WTG  Existing WTG  Shadow receptor

## WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 8 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 9 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 10 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 11 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 12 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 13 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 14 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 15 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 16 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 17 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 18 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 19 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 20 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 21 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 22 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 23 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 24 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 25 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 26 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 27 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 28 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 29 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 30 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 31 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 32 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 33 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 34 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 35 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 36 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

...continued from previous page

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 37 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 38 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 39 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 40 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 41 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 42 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 43 | 357.043 | 6.126.794 | 20,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 44 | 348.872 | 6.129.782 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 45 | 348.589 | 6.129.372 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 46 | 348.873 | 6.129.055 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |
| 47 | 349.068 | 6.129.458 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 144,0 | 1.721 | 10,3 |

## Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

### Calculation Results

Shadow receptor

| No. | Shadow, expected values<br>Shadow hours per year [h/year] |
|---|---|
| A | 15:23 |
| B | 14:08 |
| C | 10:06 |
| D | 23:30 |
| E | 36:54 |
| F | 48:11 |
| G | 60:22 |
| H | 19:11 |
| I | 39:03 |
| J | 42:53 |
| K | 57:34 |
| L | 78:31 |
| M | 86:24 |
| N | 62:38 |
| O | 47:45 |
| P | 74:32 |
| Q | 49:45 |
| R | 52:44 |
| S | 30:39 |
| T | 27:01 |
| U | 54:01 |
| V | 14:27 |
| W | 30:49 |
| X | 33:06 |
| Y | 35:43 |
| Z | 39:37 |
| AA | 44:05 |
| AB | 39:10 |
| AC | 36:05 |
| AD | 33:31 |
| AE | 31:16 |
| AF | 29:04 |
| AG | 26:59 |
| AH | 25:08 |
| AI | 23:19 |
| AJ | 28:56 |
| AK | 49:25 |
| AL | 51:22 |
| AM | 38:36 |
| AN | 17:40 |
| AO | 52:17 |
| AP | 33:33 |
| AQ | 17:45 |
| AR | 3:32 |
| AS | 0:00 |
| AT | 19:52 |

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 511:50 | 96:45 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 408:04 | 71:03 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 168:45 | 45:56 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 211:27 | 93:12 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 34:51 | 12:40 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 470:37 | 168:42 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 35:50 | 7:25 |
| 8 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1) | 30:12 | 11:54 |
| 9 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2) | 28:24 | 9:56 |
| 10 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3) | 45:23 | 18:09 |
| 11 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4) | 8:47 | 3:52 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

...continued from previous page

| No. | Name | Worst case [h/year] | Expected [h/year] |
|---|---|---|---|
| 12 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5) | 2:45 | 1:11 |
| 13 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6) | 5:51 | 2:28 |
| 14 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7) | 7:59 | 0:30 |
| 15 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8) | 1:25 | 0:06 |
| 16 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9) | 0:00 | 0:00 |
| 17 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10) | 18:09 | 7:48 |
| 18 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11) | 11:25 | 3:40 |
| 19 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12) | 10:09 | 2:23 |
| 20 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13) | 77:56 | 35:00 |
| 21 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14) | 29:48 | 10:59 |
| 22 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15) | 0:00 | 0:00 |
| 23 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16) | 0:00 | 0:00 |
| 24 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17) | 64:51 | 12:34 |
| 25 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18) | 358:56 | 38:01 |
| 26 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19) | 217:46 | 24:32 |
| 27 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20) | 114:40 | 14:14 |
| 28 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21) | 252:37 | 32:14 |
| 29 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22) | 440:06 | 40:32 |
| 30 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23) | 120:01 | 43:37 |
| 31 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24) | 22:09 | 7:26 |
| 32 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25) | 2:31 | 0:59 |
| 33 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26) | 111:10 | 50:29 |
| 34 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27) | 142:46 | 6:31 |
| 35 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28) | 0:00 | 0:00 |
| 36 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29) | 84:01 | 9:16 |
| 37 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30) | 0:00 | 0:00 |
| 38 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31) | 24:25 | 4:41 |
| 39 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32) | 85:15 | 22:20 |
| 40 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33) | 68:52 | 6:53 |
| 41 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34) | 232:46 | 17:08 |
| 42 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35) | 202:36 | 93:59 |
| 43 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37) | 56:58 | 10:42 |
| 44 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38) | 134:33 | 26:15 |
| 45 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39) | 53:05 | 8:14 |
| 46 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40) | 26:37 | 6:02 |
| 47 | NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41) | 81:17 | 25:21 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 08:57 (27) | 07:27 | | 08:02 (28) | 07:08 | | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 16 | 09:13 (27) | 18:08 | 18 | 08:20 (28) | 20:10 | | 21:09 | 22:03 |
| 2 | 09:01 | | | 08:26 | | 08:55 (27) | 07:24 | | 08:03 (28) | 07:06 | | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 18 | 09:13 (27) | 18:10 | 17 | 08:20 (28) | 20:12 | | 21:11 | 22:04 |
| 3 | 09:01 | | | 08:24 | | 08:54 (26) | 07:22 | | 08:03 (28) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | | | 17:13 | 20 | 09:14 (27) | 18:12 | 16 | 08:19 (28) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | | | 08:22 | | 08:53 (26) | 07:20 | | 08:05 (28) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | | | 17:15 | 21 | 09:14 (27) | 18:14 | 12 | 08:17 (28) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | | 08:20 | | 08:53 (26) | 07:17 | | 07:48 (1) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | | | 17:17 | 22 | 09:15 (27) | 18:16 | 18 | 08:14 (28) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | | 08:18 | | 08:52 (26) | 07:15 | | 07:45 (1) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | 23 | 09:15 (27) | 18:18 | 17 | 08:02 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | | 08:16 | | 08:52 (26) | 07:12 | | 07:42 (1) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | | | 17:21 | 23 | 09:15 (27) | 18:20 | 22 | 08:04 (1) | 20:22 | | 21:21 | 22:10 |
| 8 | 08:58 | | | 08:14 | | 08:51 (26) | 07:10 | | 07:39 (1) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | | | 17:23 | 23 | 09:14 (26) | 18:22 | 26 | 08:05 (1) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | | | 08:12 | | 08:50 (25) | 07:07 | | 07:32 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | | | 17:25 | 24 | 09:14 (26) | 18:24 | 35 | 08:07 (1) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | | | 08:10 | | 08:49 (25) | 07:05 | | 07:29 (2) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | | | 17:27 | 26 | 09:15 (26) | 18:26 | 38 | 08:07 (1) | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | | | 08:08 | | 08:48 (25) | 07:02 | | 07:27 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | | | 17:30 | 27 | 09:15 (26) | 18:28 | 41 | 08:08 (1) | 20:30 | | 21:28 | 22:14 |
| 12 | 08:55 | | | 08:06 | | 08:46 (25) | 06:59 | | 07:24 (2) | 06:40 | | 05:32 | 04:54 |
| | 16:30 | | | 17:32 | 28 | 09:14 (26) | 18:30 | 44 | 08:08 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | | | 08:04 | | 08:46 (25) | 06:57 | | 07:22 (2) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | | | 17:34 | 28 | 09:14 (25) | 18:32 | 47 | 08:09 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | | | 08:02 | | 08:46 (25) | 06:54 | | 07:21 (2) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | | | 17:36 | 29 | 09:15 (25) | 18:34 | 47 | 08:08 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | | | 08:00 | | 08:45 (25) | 06:52 | | 07:20 (2) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | | | 17:38 | 31 | 09:16 (25) | 18:36 | 48 | 08:08 (1) | 20:37 | | 21:35 | 22:17 |
| 16 | 08:51 | | | 07:57 | | 08:45 (25) | 06:49 | | 07:20 (2) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | | | 17:40 | 30 | 09:15 (25) | 18:38 | 48 | 08:08 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | 08:45 (25) | 06:47 | | 07:19 (2) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | 31 | 09:16 (25) | 18:40 | 48 | 08:07 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | | | 07:53 | | 08:44 (25) | 06:44 | | 07:20 (2) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | 31 | 09:15 (25) | 18:42 | 47 | 08:07 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | | | 07:51 | | 08:44 (25) | 06:42 | | 07:20 (2) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | | | 17:47 | 31 | 09:15 (25) | 18:44 | 46 | 08:06 (1) | 20:45 | | 21:43 | 22:18 |
| 20 | 08:47 | | | 07:48 | | 08:45 (25) | 06:39 | | 07:20 (2) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | | | 17:49 | 30 | 09:15 (25) | 18:46 | 45 | 08:05 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | | 07:46 | | 08:12 (28) | 06:36 | | 07:21 (2) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | | | 17:51 | 32 | 09:14 (25) | 18:48 | 43 | 08:04 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | | 07:44 | | 08:10 (28) | 06:34 | | 07:22 (2) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | | | 17:53 | 36 | 09:14 (25) | 18:50 | 40 | 08:02 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:43 | | | 07:41 | | 08:07 (28) | 06:31 | | 07:24 (2) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | | | 17:55 | 38 | 09:12 (25) | 18:52 | 37 | 08:01 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:39 | | 08:05 (28) | 06:29 | | 07:37 (1) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | | | 17:57 | 41 | 09:12 (25) | 18:54 | 22 | 07:59 (1) | 20:55 | | 21:51 | 22:20 |
| 25 | 08:40 | | | 07:37 | | 08:03 (28) | 06:26 | | 07:38 (1) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | | | 17:59 | 40 | 09:10 (25) | 18:56 | 18 | 07:56 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | | | 07:34 | | 08:03 (28) | 06:24 | | 07:42 (1) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 37 | 09:08 (25) | 18:58 | 11 | 07:53 (1) | 20:59 | | 21:54 | 22:20 |
| 27 | 08:36 | | | 07:32 | | 08:02 (28) | 06:21 | | | 06:04 | | 05:08 | 04:54 |
| | 16:58 | | | 18:03 | 32 | 09:05 (25) | 19:00 | | | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:05 (27) | 07:29 | | 08:02 (28) | 06:18 | | | 06:02 | | 05:07 | 04:55 |
| | 17:00 | 2 | 09:07 (27) | 18:05 | 22 | 09:00 (25) | 19:02 | | | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (27) | | | | 07:16 | | | 06:00 | | 05:05 | 04:56 |
| | 17:02 | 6 | 09:09 (27) | | | | 20:04 | | | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (27) | | | | 07:13 | | | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 10 | 09:11 (27) | | | | 20:06 | | | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (27) | | | | 07:11 | | | | | 05:03 | |
| | 17:06 | 13 | 09:12 (27) | | | | 20:08 | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | 31 | | | 790 | | | 851 | | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | | 0,80 | | | 0,84 | | | 0,97 | | | | | |
| Total reduction | | 0,14 | | | 0,20 | | | 0,33 | | | | | |
| Total, real | | 4 | | | 160 | | | 277 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | | 07:35 | | 08:02 (2) | 07:37 | | 08:19 (25) | 08:35 |
| | 22:18 | 21:40 | 20:30 | | | 19:12 | 45 | 08:47 (1) | 16:58 | 25 | 08:44 (26) | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | | | 07:37 | | 08:04 (2) | 07:39 | | 08:20 (25) | 08:37 |
| | 22:18 | 21:38 | 20:27 | | | 19:10 | 42 | 08:46 (1) | 16:56 | 24 | 08:44 (26) | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | | | 07:39 | | 08:06 (2) | 07:41 | | 08:21 (26) | 08:39 |
| | 22:17 | 21:36 | 20:25 | | | 19:07 | 39 | 08:45 (1) | 16:54 | 23 | 08:44 (26) | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | | | 07:41 | | 08:08 (2) | 07:43 | | 08:22 (26) | 08:40 |
| | 22:17 | 21:34 | 20:22 | | | 19:05 | 36 | 08:44 (1) | 16:52 | 22 | 08:44 (27) | 16:08 |
| 5 | 05:00 | 05:47 | 06:46 | | | 07:43 | | 08:10 (2) | 07:45 | | 08:22 (26) | 08:42 |
| | 22:16 | 21:32 | 20:19 | | | 19:02 | 31 | 08:43 (1) | 16:50 | 22 | 08:44 (27) | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | | | 07:45 | | 08:17 (1) | 07:47 | | 08:23 (26) | 08:43 |
| | 22:16 | 21:30 | 20:17 | | | 19:00 | 24 | 08:41 (1) | 16:48 | 21 | 08:44 (27) | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | | | 07:46 | | 08:19 (1) | 07:49 | | 08:23 (26) | 08:44 |
| | 22:15 | 21:28 | 20:14 | | | 18:57 | 20 | 08:39 (1) | 16:46 | 21 | 08:44 (27) | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | | | 07:48 | | 08:21 (1) | 07:51 | | 08:25 (26) | 08:46 |
| | 22:14 | 21:26 | 20:12 | | | 18:54 | 15 | 08:36 (1) | 16:44 | 20 | 08:45 (27) | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | | | 07:50 | | 08:26 (1) | 07:53 | | 08:26 (27) | 08:47 |
| | 22:13 | 21:24 | 20:09 | | | 18:52 | 15 | 08:51 (28) | 16:42 | 18 | 08:44 (27) | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | | | 07:52 | | 08:38 (28) | 07:55 | | 08:28 (27) | 08:48 |
| | 22:12 | 21:22 | 20:07 | | | 18:49 | 14 | 08:52 (28) | 16:40 | 15 | 08:43 (27) | 16:05 |
| 11 | 05:07 | 05:58 | 06:57 | | | 07:54 | | 08:37 (28) | 07:57 | | 08:31 (27) | 08:50 |
| | 22:11 | 21:19 | 20:04 | | | 18:47 | 16 | 08:53 (28) | 16:38 | 13 | 08:44 (27) | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 | | | 07:56 | | 08:35 (28) | 08:00 | | 08:33 (27) | 08:51 |
| | 22:10 | 21:17 | 20:01 | | | 18:44 | 18 | 08:53 (28) | 16:36 | 9 | 08:42 (27) | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 | | | 07:58 | | 08:36 (28) | 08:02 | | 08:35 (27) | 08:52 |
| | 22:09 | 21:15 | 19:59 | | | 18:42 | 19 | 08:55 (28) | 16:34 | 6 | 08:41 (27) | 16:04 |
| 14 | 05:11 | 06:04 | 07:03 | | | 08:00 | | 08:35 (28) | 08:04 | | 08:37 (27) | 08:53 |
| | 22:08 | 21:13 | 19:56 | | | 18:40 | 29 | 09:36 (25) | 16:33 | 2 | 08:39 (27) | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 | | | 08:02 | | 08:35 (28) | 08:06 | | | 08:54 |
| | 22:07 | 21:11 | 19:54 | | | 18:37 | 34 | 09:39 (25) | 16:31 | | | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 | | | 08:04 | | 08:35 (28) | 08:08 | | | 08:55 |
| | 22:06 | 21:08 | 19:51 | | | 18:35 | 39 | 09:41 (25) | 16:29 | | | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | | 08:31 (1) | 08:06 | | 08:35 (28) | 08:10 | | | 08:56 |
| | 22:04 | 21:06 | 19:49 | 9 | 08:40 (1) | 18:32 | 41 | 09:42 (25) | 16:28 | | | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | | 08:27 (1) | 08:08 | | 08:37 (28) | 08:12 | | | 08:57 |
| | 22:03 | 21:04 | 19:46 | 17 | 08:44 (1) | 18:30 | 40 | 09:43 (25) | 16:26 | | | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | | 08:24 (1) | 08:10 | | 08:39 (28) | 08:14 | | | 08:57 |
| | 22:02 | 21:01 | 19:43 | 21 | 08:45 (1) | 18:27 | 38 | 09:44 (25) | 16:25 | | | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | | 08:11 (2) | 08:12 | | 08:41 (28) | 08:15 | | | 08:58 |
| | 22:00 | 20:59 | 19:41 | 35 | 08:47 (1) | 18:25 | 35 | 09:44 (25) | 16:23 | | | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | | 08:08 (2) | 08:14 | | 09:15 (25) | 08:17 | | | 08:59 |
| | 21:59 | 20:57 | 19:38 | 40 | 08:48 (1) | 18:23 | 30 | 09:45 (25) | 16:22 | | | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 | | 08:06 (2) | 08:16 | | 09:15 (25) | 08:19 | | | 08:59 |
| | 21:57 | 20:54 | 19:36 | 43 | 08:49 (1) | 18:20 | 31 | 09:46 (25) | 16:20 | | | 16:05 |
| 23 | 05:24 | 06:21 | 07:20 | | 08:05 (2) | 08:18 | | 09:15 (25) | 08:21 | | | 09:00 |
| | 21:56 | 20:52 | 19:33 | 44 | 08:49 (1) | 18:18 | 31 | 09:46 (25) | 16:19 | | | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | | 08:04 (2) | 08:20 | | 09:14 (25) | 08:23 | | | 09:00 |
| | 21:54 | 20:49 | 19:30 | 46 | 08:50 (1) | 18:16 | 31 | 09:45 (25) | 16:18 | | | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | | 08:03 (2) | 07:22 | | 08:14 (25) | 08:25 | | | 09:00 |
| | 21:53 | 20:47 | 19:28 | 47 | 08:50 (1) | 17:13 | 31 | 08:45 (25) | 16:16 | | | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 | | 08:02 (2) | 07:24 | | 08:14 (25) | 08:27 | | | 09:01 |
| | 21:51 | 20:44 | 19:25 | 48 | 08:50 (1) | 17:11 | 30 | 08:44 (25) | 16:15 | | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | | 08:02 (2) | 07:27 | | 08:15 (25) | 08:28 | | | 09:01 |
| | 21:49 | 20:42 | 19:23 | 48 | 08:50 (1) | 17:09 | 30 | 08:45 (25) | 16:14 | | | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | | 08:02 (2) | 07:29 | | 08:15 (25) | 08:30 | | | 09:01 |
| | 21:47 | 20:40 | 19:20 | 48 | 08:50 (1) | 17:07 | 29 | 08:44 (25) | 16:13 | | | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | | 08:01 (2) | 07:31 | | 08:16 (25) | 08:32 | | | 09:01 |
| | 21:46 | 20:37 | 19:17 | 47 | 08:48 (1) | 17:04 | 27 | 08:43 (26) | 16:12 | | | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | | 08:01 (2) | 07:33 | | 08:16 (25) | 08:34 | | | 09:01 |
| | 21:44 | 20:35 | 19:15 | 47 | 08:48 (1) | 17:02 | 27 | 08:43 (26) | 16:11 | | | 16:12 |
| 31 | 05:38 | 06:36 | | | | 07:35 | | 08:18 (25) | | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | 26 | 08:44 (26) | | | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | | | 540 | | | 913 | | | 241 | | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | 0,97 | | | 0,89 | | | 0,81 | | |
| Total reduction | | | | 0,38 | | | 0,27 | | | 0,13 | | |
| Total, real | | | | 205 | | | 246 | | | 30 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | | 07:52 (28) | 07:08 | 08:11 (1) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:08 | 36 | 08:42 (25) | 20:10 | 17 08:28 (1) | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | 07:24 | | 07:50 (28) | 07:06 | 08:14 (1) | 05:53 | 05:01 |
| | 16:15 | 17:10 | | 18:10 | 40 | 08:42 (25) | 20:12 | 11 08:25 (1) | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | 07:22 | | 07:47 (28) | 07:03 | | 05:51 | 05:00 |
| | 16:16 | 17:13 | | 18:12 | 42 | 08:41 (25) | 20:14 | | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:20 | | 07:46 (28) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | 17:15 | | 18:14 | 43 | 08:41 (25) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | 07:17 | | 07:45 (28) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | 17:17 | | 18:16 | 42 | 08:39 (25) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | 08:47 (27) | 07:15 | | 07:45 (28) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | 17:19 | 3 08:50 (27) | 18:18 | 39 | 08:38 (25) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | 08:45 (27) | 07:12 | | 07:45 (28) | 06:53 | | 05:42 | 04:57 |
| | 16:22 | 17:21 | 7 08:52 (27) | 18:20 | 35 | 08:36 (25) | 20:22 | | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | 08:42 (27) | 07:10 | | 07:46 (28) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | 17:23 | 10 08:52 (27) | 18:22 | 30 | 08:34 (25) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | 08:40 (27) | 07:07 | | 07:46 (28) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | 17:25 | 14 08:54 (27) | 18:24 | 19 | 08:29 (25) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | 08:38 (27) | 07:05 | | 07:47 (28) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | 17:27 | 16 08:54 (27) | 18:26 | 11 | 07:58 (28) | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | 08:36 (26) | 07:02 | | 07:50 (28) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 17:30 | 19 08:55 (27) | 18:28 | 5 | 07:55 (28) | 20:30 | | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | 08:33 (26) | 06:59 | | | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 17:32 | 22 08:55 (27) | 18:30 | | | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 08:32 (26) | 06:57 | | | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 17:34 | 23 08:55 (27) | 18:32 | | | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 08:31 (26) | 06:54 | | | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 17:36 | 24 08:55 (27) | 18:34 | | | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | 08:31 (26) | 06:52 | | 07:18 (1) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 17:38 | 24 08:55 (27) | 18:36 | 14 | 07:32 (1) | 20:37 | | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | 08:29 (26) | 06:49 | | 07:14 (2) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 17:40 | 24 08:53 (27) | 18:38 | 21 | 07:35 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 08:29 (26) | 06:47 | | 07:11 (2) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 23 08:52 (27) | 18:40 | 25 | 07:36 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | 08:29 (26) | 06:44 | | 07:09 (2) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 21 08:50 (26) | 18:42 | 28 | 07:37 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | 08:25 (25) | 06:42 | | 07:06 (2) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 17:47 | 26 08:51 (26) | 18:44 | 32 | 07:38 (1) | 20:45 | | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | 08:22 (25) | 06:39 | | 07:03 (2) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 17:49 | 29 08:51 (26) | 18:46 | 35 | 07:38 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 08:20 (25) | 06:36 | | 07:03 (2) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | 17:51 | 29 08:49 (26) | 18:48 | 36 | 07:39 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | 08:18 (25) | 06:34 | | 07:02 (2) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 17:53 | 31 08:49 (26) | 18:50 | 36 | 07:38 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | 08:17 (25) | 06:31 | | 07:02 (2) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 17:55 | 30 08:47 (26) | 18:52 | 37 | 07:39 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 08:16 (25) | 06:29 | | 07:02 (2) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 17:57 | 30 08:46 (26) | 18:54 | 36 | 07:38 (1) | 20:55 | | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | 08:15 (25) | 06:26 | | 07:02 (2) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | 17:59 | 27 08:42 (26) | 18:56 | 35 | 07:37 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | 08:15 (25) | 06:24 | | 07:03 (2) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 18:01 | 28 08:43 (25) | 18:58 | 34 | 07:37 (1) | 20:59 | | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | 08:14 (25) | 06:21 | | 07:03 (2) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 18:03 | 28 08:42 (25) | 19:00 | 33 | 07:36 (1) | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | 07:55 (28) | 06:18 | | 07:05 (2) | 06:02 | | 05:07 | 04:55 |
| | 17:00 | 18:05 | 33 08:43 (25) | 19:02 | 31 | 07:36 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:16 | | 08:08 (1) | 06:00 | | 05:05 | 04:56 |
| | 17:02 | | | 20:04 | 26 | 08:34 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | | 07:13 | | 08:09 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:06 | 24 | 08:33 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | | 07:11 | | 08:09 (1) | | | 05:03 | |
| | 17:06 | | | 20:08 | 22 | 08:31 (1) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 521 | | 847 | | | 28 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,88 | | 0,97 | | | 0,99 | | |
| Total reduction | | | 0,21 | | 0,33 | | | 0,39 | | |
| Total, real | | | 112 | | 277 | | | 11 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:08 (27) | 08:35 |
| | 22:18 | 21:40 | 20:30 | | 19:12 | | 16:58 | 16 08:24 (27) | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | | 07:37 | | 07:39 | 08:10 (27) | 08:37 |
| | 22:18 | 21:38 | 20:27 | | 19:10 | | 16:56 | 13 08:23 (27) | 16:09 |
| 3 | 04:59 | 05:43 | 06:42 | | 07:39 | 08:26 (28) | 07:41 | 08:12 (27) | 08:39 |
| | 22:17 | 21:36 | 20:25 | | 19:07 | 9 08:35 (28) | 16:54 | 10 08:22 (27) | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:24 (28) | 07:43 | 08:15 (27) | 08:40 |
| | 22:17 | 21:34 | 20:22 | | 19:05 | 13 08:37 (28) | 16:52 | 6 08:21 (27) | 16:08 |
| 5 | 05:00 | 05:47 | 06:46 | | 07:43 | 08:22 (28) | 07:45 | 08:17 (27) | 08:42 |
| | 22:16 | 21:32 | 20:19 | | 19:02 | 27 09:09 (25) | 16:50 | 2 08:19 (27) | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | | 07:45 | 08:21 (28) | 07:47 | | 08:43 |
| | 22:16 | 21:30 | 20:17 | | 19:00 | 33 09:11 (25) | 16:48 | | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | | 07:46 | 08:20 (28) | 07:49 | | 08:44 |
| | 22:15 | 21:28 | 20:14 | | 18:57 | 38 09:13 (25) | 16:46 | | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | | 07:48 | 08:20 (28) | 07:51 | | 08:46 |
| | 22:14 | 21:26 | 20:12 | | 18:54 | 41 09:14 (25) | 16:44 | | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | | 07:50 | 08:20 (28) | 07:53 | | 08:47 |
| | 22:13 | 21:24 | 20:09 | | 18:52 | 43 09:15 (25) | 16:42 | | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | 08:07 (1) | 07:52 | 08:20 (28) | 07:55 | | 08:48 |
| | 22:12 | 21:22 | 20:07 | 11 08:18 (1) | 18:49 | 43 09:15 (25) | 16:40 | | 16:05 |
| 11 | 05:07 | 05:58 | 06:57 | 08:04 (1) | 07:54 | 08:22 (28) | 07:57 | | 08:50 |
| | 22:11 | 21:19 | 20:04 | 17 08:21 (1) | 18:47 | 41 09:15 (25) | 16:38 | | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 | 08:02 (1) | 07:56 | 08:24 (28) | 08:00 | | 08:51 |
| | 22:10 | 21:17 | 20:01 | 21 08:23 (1) | 18:44 | 39 09:15 (25) | 16:36 | | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 | 07:59 (1) | 07:58 | 08:27 (28) | 08:02 | | 08:52 |
| | 22:09 | 21:15 | 19:59 | 24 08:23 (1) | 18:42 | 35 09:16 (25) | 16:34 | | 16:04 |
| 14 | 05:11 | 06:04 | 07:03 | 07:58 (1) | 08:00 | 08:47 (25) | 08:04 | | 08:53 |
| | 22:08 | 21:13 | 19:56 | 26 08:24 (1) | 18:40 | 29 09:16 (25) | 16:33 | | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 | 07:55 (2) | 08:02 | 08:47 (25) | 08:06 | | 08:54 |
| | 22:07 | 21:11 | 19:54 | 30 08:25 (1) | 18:37 | 28 09:15 (25) | 16:31 | | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 | 07:53 (2) | 08:04 | 08:47 (25) | 08:08 | | 08:55 |
| | 22:06 | 21:08 | 19:51 | 32 08:25 (1) | 18:35 | 28 09:15 (25) | 16:29 | | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 07:51 (2) | 08:06 | 08:47 (25) | 08:10 | | 08:56 |
| | 22:04 | 21:06 | 19:49 | 35 08:26 (1) | 18:32 | 28 09:15 (26) | 16:28 | | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 07:50 (2) | 08:08 | 08:48 (25) | 08:12 | | 08:57 |
| | 22:03 | 21:04 | 19:46 | 36 08:26 (1) | 18:30 | 30 09:18 (26) | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 07:48 (2) | 08:10 | 08:48 (25) | 08:14 | | 08:57 |
| | 22:02 | 21:01 | 19:43 | 37 08:25 (1) | 18:27 | 31 09:19 (26) | 16:25 | | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 07:48 (2) | 08:12 | 08:49 (25) | 08:15 | | 08:58 |
| | 22:00 | 20:59 | 19:41 | 36 08:24 (1) | 18:25 | 30 09:19 (26) | 16:23 | | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 07:47 (2) | 08:14 | 08:50 (25) | 08:17 | | 08:59 |
| | 21:59 | 20:57 | 19:38 | 37 08:24 (1) | 18:23 | 30 09:20 (26) | 16:22 | | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 | 07:47 (2) | 08:16 | 08:53 (25) | 08:19 | | 08:59 |
| | 21:57 | 20:54 | 19:36 | 36 08:23 (1) | 18:20 | 28 09:21 (26) | 16:20 | | 16:06 |
| 23 | 05:24 | 06:21 | 07:20 | 07:47 (2) | 08:18 | 08:56 (25) | 08:21 | | 09:00 |
| | 21:56 | 20:52 | 19:33 | 36 08:23 (1) | 18:18 | 25 09:21 (26) | 16:19 | | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 07:49 (2) | 08:20 | 08:59 (26) | 08:23 | | 09:00 |
| | 21:54 | 20:49 | 19:30 | 33 08:22 (1) | 18:16 | 22 09:21 (26) | 16:18 | | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:51 (2) | 07:22 | 07:59 (26) | 08:25 | | 09:00 |
| | 21:53 | 20:47 | 19:28 | 29 08:20 (1) | 17:13 | 23 08:22 (27) | 16:16 | | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 | 07:53 (2) | 07:24 | 07:59 (26) | 08:27 | | 09:01 |
| | 21:51 | 20:44 | 19:25 | 26 08:19 (1) | 17:11 | 24 08:23 (27) | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | 08:00 (26) | 08:28 | | 09:01 |
| | 21:49 | 20:42 | 19:23 | 22 08:17 (1) | 17:09 | 24 08:24 (27) | 16:14 | | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | 08:01 (26) | 08:30 | | 09:01 |
| | 21:47 | 20:40 | 19:20 | 18 08:15 (1) | 17:07 | 23 08:24 (27) | 16:13 | | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 08:01 (1) | 07:31 | 08:01 (26) | 08:32 | | 09:01 |
| | 21:46 | 20:37 | 19:17 | 9 08:10 (1) | 17:04 | 23 08:24 (27) | 16:12 | | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | | 07:33 | 08:03 (26) | 08:34 | | 09:01 |
| | 21:44 | 20:35 | 19:15 | | 17:02 | 21 08:24 (27) | 16:11 | | 16:12 |
| 31 | 05:38 | 06:36 | | | 07:35 | 08:06 (26) | | | 09:01 |
| | 21:42 | 20:32 | | | 17:00 | 19 08:25 (27) | | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | | 326 | | 253 | | 224 |
| Total, worst case | | | | 551 | | 828 | | 47 | |
| Sun reduction | | | | 0,40 | | 0,31 | | 0,16 | |
| Oper. time red. | | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | 0,90 | | 0,85 | |
| Total reduction | | | | 0,39 | | 0,28 | | 0,13 | |
| Total, real | | | | 215 | | 228 | | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 08:22 (25) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | | 18:08 | 22 | 08:44 (25) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 08:24 (25) | 07:06 | 05:53 | 05:01 |
| | 16:15 | 17:10 | | | 18:10 | 19 | 08:43 (25) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | | 07:22 | | 08:25 (25) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:13 | | | 18:12 | 15 | 08:40 (25) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:20 | | 08:29 (25) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | | | 18:14 | 8 | 08:37 (25) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | | | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | | 07:15 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | | | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | | | 07:12 | | | 06:53 | 05:42 | 04:57 |
| | 16:22 | 17:21 | | | 18:20 | | | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | | 08:42 (26) | 07:10 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 3 | 08:45 (26) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | | 08:40 (26) | 07:07 | | 07:33 (1) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 9 | 08:49 (26) | 18:24 | 7 | 07:40 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | | 08:38 (26) | 07:05 | | 07:29 (1) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 13 | 08:51 (26) | 18:26 | 15 | 07:44 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | | 08:36 (26) | 07:02 | | 07:27 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 16 | 08:52 (26) | 18:28 | 19 | 07:46 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | | 08:34 (26) | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18 | 08:52 (26) | 18:30 | 23 | 07:47 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | | 08:34 (26) | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 19 | 08:53 (26) | 18:32 | 26 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:54 | 08:02 | | 08:34 (26) | 06:54 | | 07:19 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 20 | 08:54 (26) | 18:34 | 30 | 07:49 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | | 08:33 (25) | 06:52 | | 07:16 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 21 | 08:54 (26) | 18:36 | 33 | 07:49 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | | 08:28 (25) | 06:49 | | 07:14 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 25 | 08:53 (26) | 18:38 | 35 | 07:49 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 08:27 (25) | 06:47 | | 07:12 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 27 | 08:54 (26) | 18:40 | 37 | 07:49 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | | 08:24 (25) | 06:44 | | 07:12 (2) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 28 | 08:52 (26) | 18:42 | 37 | 07:49 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | | 08:24 (25) | 06:42 | | 07:12 (2) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 28 | 08:52 (26) | 18:44 | 36 | 07:48 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | | 08:23 (25) | 06:39 | | 07:11 (2) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 28 | 08:51 (26) | 18:46 | 36 | 07:47 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | | 08:22 (25) | 06:36 | | 07:12 (2) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 27 | 08:49 (26) | 18:48 | 35 | 07:47 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | | 08:22 (25) | 06:34 | | 07:13 (2) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 26 | 08:48 (25) | 18:50 | 33 | 07:46 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | | 08:21 (25) | 06:31 | | 07:14 (2) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 26 | 08:47 (25) | 18:52 | 31 | 07:45 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | | 08:21 (25) | 06:29 | | 07:16 (2) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 27 | 08:48 (25) | 18:54 | 27 | 07:43 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | | 08:21 (25) | 06:26 | | 07:23 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17:59 | 26 | 08:47 (25) | 18:56 | 17 | 07:40 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | | 08:21 (25) | 06:24 | | 07:25 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 26 | 08:47 (25) | 18:58 | 13 | 07:38 (1) | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | | 08:21 (25) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 25 | 08:46 (25) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | | 08:22 (25) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 23 | 08:45 (25) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | | 20:04 | | | 21:05 | 21:59 | 22:19 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 461 | | | 554 | | | | |
| Sun reduction | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | 0,88 | | | 0,97 | | | | |
| Total reduction | | | 0,21 | | | 0,33 | | | | |
| Total, real | | | 99 | | | 183 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | 07:37 | 08:08 (26) | 08:35 |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 24 | 08:26 (1) | 16:58 | 12 08:20 (26) | 16:10 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (1) | 07:39 | 08:10 (26) | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 21 | 08:25 (1) | 16:56 | 8 08:18 (26) | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (1) | 07:41 | 08:12 (26) | 08:39 |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 17 | 08:23 (1) | 16:54 | 2 08:14 (26) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (1) | 07:43 | | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 12 | 08:20 (1) | 16:52 | | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | | 07:45 | | 08:42 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | | 07:47 | | 08:43 |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | | | 16:48 | | 16:06 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | 07:51 | | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | | 16:05 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 09:01 (25) | 07:55 | | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 12 | 09:13 (25) | 16:40 | | 16:05 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:58 (25) | 07:57 | | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 17 | 09:15 (25) | 16:38 | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:56 (25) | 08:00 | | 08:51 |
| | 22:10 | | 21:17 | | 20:02 | | 18:44 | 20 | 09:16 (25) | 16:36 | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:56 (25) | 08:02 | | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 22 | 09:18 (25) | 16:34 | | 16:04 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 08:00 | | 08:55 (25) | 08:04 | | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 24 | 09:19 (25) | 16:33 | | 16:04 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:54 (25) | 08:06 | | 08:54 |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 25 | 09:19 (25) | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:53 (25) | 08:08 | | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 26 | 09:19 (25) | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:15 (1) | 08:06 | | 08:53 (25) | 08:10 | | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | 11 08:26 (1) | 18:32 | 26 | 09:19 (25) | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:12 (1) | 08:08 | | 08:52 (25) | 08:12 | | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 17 08:29 (1) | 18:30 | 27 | 09:19 (25) | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:04 (2) | 08:10 | | 08:52 (25) | 08:14 | | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 25 08:29 (1) | 18:27 | 26 | 09:18 (25) | 16:25 | | 16:04 |
| 20 | 05:20 | | 06:15 | | 07:14 | 08:01 (2) | 08:12 | | 08:52 (25) | 08:15 | | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 29 08:30 (1) | 18:25 | 26 | 09:18 (26) | 16:23 | | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (2) | 08:14 | | 08:52 (25) | 08:17 | | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 32 08:31 (1) | 18:23 | 28 | 09:20 (26) | 16:22 | | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:57 (2) | 08:16 | | 08:54 (25) | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 35 08:32 (1) | 18:20 | 28 | 09:22 (26) | 16:20 | | 16:06 |
| 23 | 05:24 | | 06:21 | | 07:20 | 07:56 (2) | 08:18 | | 08:54 (25) | 08:21 | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 36 08:32 (1) | 18:18 | 29 | 09:23 (26) | 16:19 | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:55 (2) | 08:20 | | 08:55 (25) | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 37 08:32 (1) | 18:16 | 28 | 09:23 (26) | 16:18 | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:55 (2) | 07:22 | | 07:56 (25) | 08:25 | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 37 08:32 (1) | 17:13 | 27 | 08:23 (26) | 16:16 | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:55 (2) | 07:24 | | 07:59 (25) | 08:27 | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 37 08:32 (1) | 17:11 | 24 | 08:23 (26) | 16:15 | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:55 (2) | 07:27 | | 08:03 (26) | 08:29 | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 36 08:31 (1) | 17:09 | 21 | 08:24 (26) | 16:14 | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:57 (2) | 07:29 | | 08:03 (26) | 08:30 | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 34 08:31 (1) | 17:07 | 20 | 08:23 (26) | 16:13 | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:58 (2) | 07:31 | | 08:03 (26) | 08:32 | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 31 08:29 (1) | 17:04 | 19 | 08:22 (26) | 16:12 | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:00 (2) | 07:33 | | 08:04 (26) | 08:34 | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | 28 08:28 (1) | 17:02 | 18 | 08:22 (26) | 16:11 | | 16:12 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:06 (26) | | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | 15 | 08:21 (26) | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 425 | | 582 | | | 22 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,98 | | 0,89 | | | 0,86 | | |
| Total reduction | | | | | 0,39 | | 0,27 | | | 0,13 | | |
| Total, real | | | | | 164 | | 158 | | | 3 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Inovacijy k. 3, Biruliskiy k.,
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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 09:10 (26) | | 07:27 | 08:13 (28) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 29 | 09:39 (25) | | 18:08 | 18 | 08:31 (28) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 09:10 (26) | | 07:24 | 08:05 (1) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 31 | 09:41 (25) | | 18:10 | 25 | 08:30 (28) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 09:10 (26) | | 07:22 | 08:00 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:12 | 32 | 09:42 (25) | | 18:12 | 28 | 08:28 (28) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:10 (26) | | 07:20 | 07:58 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 33 | 09:43 (25) | | 18:14 | 26 | 08:24 (28) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 09:11 (26) | | 07:17 | 07:55 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 33 | 09:44 (25) | | 18:16 | 29 | 08:24 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 09:11 (26) | | 07:15 | 07:54 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 34 | 09:45 (25) | | 18:18 | 32 | 08:26 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 09:12 (26) | | 07:12 | 07:41 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 34 | 09:46 (25) | | 18:20 | 38 | 08:27 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 09:11 (26) | | 07:10 | 07:35 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 35 | 09:46 (25) | | 18:22 | 50 | 08:27 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 09:11 (25) | | 07:07 | 07:33 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 36 | 09:47 (25) | | 18:24 | 55 | 08:28 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 09:11 (25) | | 07:05 | 07:30 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 36 | 09:47 (25) | | 18:26 | 58 | 08:28 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 09:11 (25) | | 07:02 | 07:29 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 37 | 09:48 (25) | | 18:28 | 60 | 08:29 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 09:10 (25) | | 06:59 | 07:28 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 37 | 09:47 (25) | | 18:30 | 61 | 08:29 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 09:10 (25) | | 06:57 | 07:22 (29) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 37 | 09:47 (25) | | 18:32 | 67 | 08:30 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 09:11 (25) | | 06:54 | 07:19 (29) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 36 | 09:47 (25) | | 18:34 | 70 | 08:29 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 09:10 (25) | | 06:52 | 07:16 (29) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 36 | 09:46 (25) | | 18:36 | 73 | 08:29 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 09:11 (25) | | 06:49 | 07:14 (29) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 35 | 09:46 (25) | | 18:38 | 75 | 08:29 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 09:12 (25) | | 06:47 | 07:13 (29) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 34 | 09:46 (25) | | 18:40 | 75 | 08:28 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:20 (28) | | 06:44 | 07:13 (29) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 40 | 09:45 (25) | | 18:42 | 75 | 08:28 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:17 (28) | | 06:42 | 07:12 (29) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 44 | 09:44 (25) | | 18:44 | 75 | 08:27 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:16 (28) | | 06:39 | 07:11 (29) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 46 | 09:44 (25) | | 18:46 | 75 | 08:26 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 09:17 (27) | 07:46 | | 08:14 (28) | | 06:36 | 07:12 (29) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 5 | 09:22 (27) | 17:51 | 46 | 09:42 (25) | | 18:48 | 73 | 08:25 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 09:16 (27) | 07:44 | | 08:14 (28) | | 06:34 | 07:12 (29) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 9 | 09:25 (27) | 17:53 | 44 | 09:40 (25) | | 18:50 | 72 | 08:24 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 09:14 (27) | 07:41 | | 08:12 (28) | | 06:31 | 07:13 (29) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 12 | 09:26 (27) | 17:55 | 42 | 09:38 (25) | | 18:52 | 70 | 08:23 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 09:12 (27) | 07:39 | | 08:13 (28) | | 06:29 | 07:14 (29) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 15 | 09:27 (27) | 17:57 | 35 | 09:35 (25) | | 18:54 | 61 | 08:21 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 09:11 (27) | 07:37 | | 08:12 (28) | | 06:26 | 07:16 (29) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17 | 09:28 (27) | 17:59 | 22 | 08:34 (28) | | 18:56 | 45 | 08:19 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 09:11 (27) | 07:34 | | 08:12 (28) | | 06:24 | 07:49 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 19 | 09:30 (27) | 18:01 | 22 | 08:34 (28) | | 18:58 | 28 | 08:17 (1) | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 09:11 (27) | 07:32 | | 08:12 (28) | | 06:21 | 07:51 (1) | 06:04 | 05:08 | 04:54 |
| | 16:58 | 20 | 09:31 (26) | 18:03 | 21 | 08:33 (28) | | 19:00 | 23 | 08:14 (1) | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:11 (27) | 07:29 | | 08:13 (28) | | 06:18 | 07:54 (1) | 06:02 | 05:07 | 04:55 |
| | 17:00 | 22 | 09:33 (26) | 18:05 | 20 | 08:33 (28) | | 19:02 | 18 | 08:12 (1) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:10 (27) | | | | | 07:16 | 08:58 (1) | 06:00 | 05:05 | 04:56 |
| | 17:02 | 23 | 09:33 (26) | | | | 20:04 | 8 | 09:06 (1) | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:10 (27) | | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 25 | 09:35 (25) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 09:10 (26) | | | | | 07:11 | | | 05:03 | |
| | 17:06 | 27 | 09:37 (25) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | | 423 | 501 | 520 |
| Total, worst case | 194 | | 967 | | 1463 | | | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | | | |
| Wind dir. red. | 0,75 | | 0,79 | | 0,96 | | | | | |
| Total reduction | 0,13 | | 0,19 | | 0,32 | | | | | |
| Total, real | 26 | | 183 | | 469 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 61 | 09:08 (1) | | 16:58 | 37 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:07 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 61 | 09:08 (1) | | 16:56 | 36 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:08 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 59 | 09:07 (1) | | 16:54 | 35 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:09 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 57 | 09:06 (1) | | 16:52 | 35 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:11 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 54 | 09:05 (1) | | 16:50 | 34 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:14 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 45 | 09:03 (1) | | 16:48 | 34 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:28 (1) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 34 | 09:02 (1) | | 16:46 | 33 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:29 (1) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 31 | 09:00 (1) | | 16:44 | 32 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:31 (1) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 27 | 08:58 (1) | | 16:42 | 30 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:33 (1) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 27 | 09:00 (28) | | 16:40 | 29 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:35 (1) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 28 | 09:03 (28) | | 16:38 | 27 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:41 (1) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 22 | 09:04 (28) | | 16:36 | 25 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:46 (28) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 09:05 (28) | | 16:34 | 23 |
| 14 | 05:11 | | 06:04 | | 07:02 | 08:49 (1) | 08:00 | | 08:46 (28) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 6 08:55 (1) | 18:40 | 20 | 09:06 (28) | | 16:33 | 22 |
| 15 | 05:12 | | 06:06 | | 07:04 | 08:44 (1) | 08:02 | | 08:45 (28) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 17 09:01 (1) | 18:37 | 21 | 09:06 (28) | | 16:31 | 20 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:41 (1) | 08:04 | | 08:44 (28) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 22 09:03 (1) | 18:35 | 22 | 09:06 (28) | | 16:29 | 19 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:38 (1) | 08:06 | | 08:44 (28) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:49 | 27 09:05 (1) | 18:32 | 31 | 10:04 (25) | | 16:28 | 17 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:06 (29) | 08:08 | | 08:44 (28) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 38 09:07 (1) | 18:30 | 37 | 10:07 (25) | | 16:26 | 15 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:01 (29) | 08:10 | | 08:44 (28) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 58 09:07 (1) | 18:27 | 43 | 10:10 (25) | | 16:25 | 12 |
| 20 | 05:20 | | 06:15 | | 07:14 | 07:59 (29) | 08:12 | | 08:44 (28) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 69 09:08 (1) | 18:25 | 45 | 10:11 (25) | | 16:23 | 9 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:58 (29) | 08:14 | | 08:45 (28) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 71 09:09 (1) | 18:23 | 46 | 10:12 (25) | | 16:22 | 5 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:57 (29) | 08:16 | | 08:47 (28) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 73 09:10 (1) | 18:20 | 45 | 10:14 (25) | | 16:20 | |
| 23 | 05:24 | | 06:21 | | 07:20 | 07:56 (29) | 08:18 | | 08:48 (28) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 74 09:10 (1) | 18:18 | 44 | 10:15 (25) | | 16:19 | |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:55 (29) | 08:20 | | 08:51 (28) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 76 09:11 (1) | 18:16 | 38 | 10:15 (25) | | 16:18 | |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:55 (29) | 07:22 | | 08:41 (25) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 76 09:11 (1) | 17:13 | 35 | 09:16 (25) | | 16:16 | |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:55 (29) | 07:24 | | 08:40 (25) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 76 09:11 (1) | 17:11 | 36 | 09:16 (25) | | 16:15 | |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:56 (29) | 07:27 | | 08:41 (25) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 75 09:11 (1) | 17:09 | 36 | 09:17 (25) | | 16:14 | |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:57 (29) | 07:29 | | 08:40 (25) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 74 09:11 (1) | 17:07 | 37 | 09:17 (25) | | 16:13 | |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:58 (29) | 07:31 | | 08:40 (25) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 71 09:09 (1) | 17:04 | 37 | 09:17 (25) | | 16:12 | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:00 (29) | 07:33 | | 08:39 (25) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 69 09:09 (1) | 17:02 | 37 | 09:16 (25) | | 16:11 | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:40 (25) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 37 | 09:17 (25) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 972 | | 1172 | | | | 529 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,96 | | 0,87 | | | | 0,75 |
| Total reduction | | | | | | 0,37 | | 0,26 | | | | 0,12 |
| Total, real | | | | | | 363 | | 307 | | | | 62 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:33 (27) | 07:27 | | 08:17 (1) | 07:08 | | 09:08 (1) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 56 | 10:29 (25) | 18:08 | 33 | 08:50 (1) | 20:10 | 30 | 09:38 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | | 08:26 | | 09:34 (27) | 07:24 | | 08:15 (1) | 07:06 | | 09:11 (1) | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | 55 | 10:29 (25) | 18:10 | 38 | 08:53 (1) | 20:12 | 24 | 09:35 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | | 08:24 | | 09:35 (26) | 07:22 | | 08:13 (1) | 07:03 | | 09:15 (1) | 05:51 | 05:00 |
| | 16:16 | | | 17:12 | 55 | 10:30 (25) | 18:12 | 41 | 08:54 (1) | 20:14 | 15 | 09:30 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | | 08:22 | | 09:36 (26) | 07:20 | | 08:12 (1) | 07:00 | | | 05:49 | 04:59 |
| | 16:18 | | | 17:15 | 54 | 10:30 (25) | 18:14 | 44 | 08:56 (1) | 20:16 | | | 21:15 | 22:06 |
| 5 | 09:00 | | | 08:20 | | 09:37 (26) | 07:17 | | 08:10 (1) | 06:58 | | | 05:46 | 04:58 |
| | 16:19 | | | 17:17 | 53 | 10:30 (25) | 18:16 | 46 | 08:56 (1) | 20:18 | | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:35 (45) | 08:18 | | 09:38 (26) | 07:15 | | 07:47 (2) | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | 1 | 09:36 (45) | 17:19 | 52 | 10:30 (25) | 18:18 | 57 | 08:58 (1) | 20:20 | | | 21:19 | 22:09 |
| 7 | 08:59 | | 09:34 (45) | 08:16 | | 09:40 (26) | 07:12 | | 07:42 (2) | 06:53 | | | 05:42 | 04:56 |
| | 16:22 | 4 | 09:38 (45) | 17:21 | 51 | 10:31 (25) | 18:20 | 68 | 08:58 (1) | 20:22 | | | 21:20 | 22:10 |
| 8 | 08:58 | | 09:33 (45) | 08:14 | | 09:41 (26) | 07:10 | | 07:39 (2) | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 6 | 09:39 (45) | 17:23 | 49 | 10:30 (25) | 18:22 | 73 | 08:58 (1) | 20:24 | | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:33 (45) | 08:12 | | 09:44 (26) | 07:07 | | 07:38 (2) | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 8 | 09:41 (45) | 17:25 | 46 | 10:30 (25) | 18:24 | 79 | 08:59 (1) | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:32 (45) | 08:10 | | 08:38 (44) | 07:05 | | 07:36 (2) | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 10 | 09:42 (45) | 17:27 | 50 | 10:30 (25) | 18:26 | 82 | 08:59 (1) | 20:28 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:31 (45) | 08:08 | | 08:36 (44) | 07:02 | | 07:35 (2) | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 12 | 09:43 (45) | 17:30 | 53 | 10:30 (25) | 18:28 | 85 | 09:00 (1) | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:29 (45) | 08:06 | | 08:33 (44) | 06:59 | | 07:33 (2) | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 14 | 09:43 (45) | 17:32 | 56 | 10:28 (25) | 18:30 | 87 | 09:00 (1) | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:28 (45) | 08:04 | | 08:31 (44) | 06:57 | | 07:24 (29) | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 19 | 09:47 (26) | 17:34 | 58 | 10:28 (25) | 18:32 | 93 | 09:00 (1) | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:28 (45) | 08:02 | | 08:31 (44) | 06:54 | | 07:20 (29) | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 22 | 09:50 (26) | 17:36 | 58 | 10:28 (25) | 18:34 | 100 | 09:00 (1) | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:28 (27) | 08:00 | | 08:30 (44) | 06:52 | | 07:17 (29) | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 24 | 09:52 (26) | 17:38 | 57 | 10:26 (25) | 18:36 | 102 | 08:59 (1) | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:27 (27) | 07:57 | | 08:28 (28) | 06:49 | | 07:16 (29) | 06:30 | | | 05:25 | 04:52 |
| | 16:37 | 35 | 10:07 (25) | 17:40 | 56 | 10:25 (25) | 18:38 | 104 | 09:00 (1) | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:27 (27) | 07:55 | | 08:27 (28) | 06:47 | | 07:15 (29) | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 41 | 10:10 (25) | 17:42 | 55 | 10:24 (25) | 18:40 | 104 | 08:59 (1) | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:28 (27) | 07:53 | | 08:25 (28) | 06:44 | | 07:15 (29) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 45 | 10:13 (25) | 17:44 | 53 | 10:22 (25) | 18:42 | 104 | 08:59 (1) | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:27 (27) | 07:51 | | 08:25 (28) | 06:42 | | 07:13 (29) | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 48 | 10:15 (25) | 17:47 | 49 | 10:20 (25) | 18:44 | 105 | 08:58 (1) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:27 (27) | 07:48 | | 08:24 (28) | 06:39 | | 07:13 (29) | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 50 | 10:17 (25) | 17:49 | 45 | 10:18 (25) | 18:46 | 104 | 08:57 (1) | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:27 (27) | 07:46 | | 08:23 (28) | 06:36 | | 07:13 (29) | 06:18 | | | 05:17 | 04:52 |
| | 16:46 | 51 | 10:18 (25) | 17:51 | 38 | 10:13 (25) | 18:48 | 104 | 08:57 (1) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:27 (27) | 07:44 | | 08:23 (28) | 06:34 | | 07:13 (29) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 52 | 10:19 (25) | 17:53 | 26 | 08:49 (28) | 18:50 | 103 | 08:56 (1) | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:27 (27) | 07:41 | | 08:23 (28) | 06:31 | | 07:14 (29) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 54 | 10:21 (25) | 17:55 | 25 | 08:48 (28) | 18:52 | 101 | 08:55 (1) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:27 (27) | 07:39 | | 08:23 (28) | 06:29 | | 07:14 (29) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 55 | 10:22 (25) | 17:57 | 25 | 08:48 (28) | 18:54 | 98 | 08:54 (1) | 20:55 | | | 21:51 | 22:20 |
| 25 | 08:40 | | 09:27 (27) | 07:37 | | 08:23 (28) | 06:26 | | 07:14 (29) | 06:09 | | | 05:11 | 04:53 |
| | 16:54 | 56 | 10:23 (25) | 17:59 | 24 | 08:47 (28) | 18:56 | 90 | 08:52 (1) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:28 (27) | 07:34 | | 08:24 (28) | 06:24 | | 07:17 (29) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 57 | 10:25 (25) | 18:01 | 23 | 08:47 (28) | 18:58 | 80 | 08:51 (1) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:29 (27) | 07:32 | | 08:23 (1) | 06:21 | | 07:20 (29) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 57 | 10:26 (25) | 18:03 | 22 | 08:45 (28) | 19:00 | 64 | 08:49 (1) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:29 (27) | 07:29 | | 08:20 (1) | 06:18 | | 08:04 (1) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 57 | 10:26 (25) | 18:05 | 28 | 08:48 (1) | 19:02 | 44 | 08:48 (1) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:30 (27) | | | | 07:16 | | 09:04 (1) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 57 | 10:27 (25) | | | | 20:04 | 42 | 09:46 (1) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:30 (27) | | | | 07:13 | | 09:06 (1) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 58 | 10:28 (25) | | | | 20:06 | 38 | 09:44 (1) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:31 (27) | | | | 07:11 | | 09:07 (1) | | | | 05:03 | |
| | 17:06 | 57 | 10:28 (25) | | | | 20:08 | 34 | 09:41 (1) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 950 | | | 1272 | | | 2347 | | | 69 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,67 | | | 0,73 | | | 0,94 | | | 0,92 | | | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,31 | | | 0,35 | | | |
| Total, real | | 111 | | | 218 | | | 723 | | | 24 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:12 (2) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 87 | 09:39 (1) | 49 | 16:58 | 49 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:12 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 86 | 09:38 (1) | 46 | 16:56 | 46 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:13 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 85 | 09:38 (1) | 49 | 16:54 | 49 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:14 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 81 | 09:37 (1) | 51 | 16:52 | 51 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:15 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 77 | 09:36 (1) | 52 | 16:50 | 52 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:17 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | 71 | 09:35 (1) | 54 | 16:48 | 54 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:20 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 62 | 09:33 (1) | 55 | 16:46 | 55 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:44 (1) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 48 | 09:32 (1) | 54 | 16:44 | 54 |
| 9 | 05:05 | | 05:54 | | 06:53 | 09:09 (1) | 07:50 | | 08:45 (1) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | 15 09:24 (1) | 18:52 | 46 | 09:31 (1) | 55 | 16:42 | 55 |
| 10 | 05:06 | | 05:56 | | 06:55 | 09:05 (1) | 07:52 | | 08:46 (1) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | 23 09:28 (1) | 18:49 | 43 | 09:29 (1) | 56 | 16:40 | 56 |
| 11 | 05:07 | | 05:58 | | 06:57 | 09:02 (1) | 07:54 | | 08:48 (1) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | 29 09:31 (1) | 18:47 | 39 | 09:27 (1) | 57 | 16:38 | 57 |
| 12 | 05:08 | | 06:00 | | 06:59 | 08:59 (1) | 07:56 | | 08:49 (1) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | 34 09:33 (1) | 18:44 | 36 | 09:25 (1) | 57 | 16:36 | 57 |
| 13 | 05:09 | | 06:02 | | 07:01 | 08:56 (1) | 07:58 | | 08:51 (1) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | 38 09:34 (1) | 18:42 | 31 | 09:22 (1) | 57 | 16:34 | 57 |
| 14 | 05:11 | | 06:04 | | 07:02 | 08:55 (1) | 08:00 | | 08:54 (1) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 41 09:36 (1) | 18:39 | 26 | 09:20 (1) | 57 | 16:33 | 57 |
| 15 | 05:12 | | 06:06 | | 07:04 | 08:53 (1) | 08:02 | | 08:57 (28) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 44 09:37 (1) | 18:37 | 22 | 09:19 (28) | 56 | 16:31 | 56 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:27 (2) | 08:04 | | 08:56 (28) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 59 09:38 (1) | 18:35 | 23 | 09:19 (28) | 57 | 16:29 | 57 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:06 (29) | 08:06 | | 08:55 (28) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:49 | 77 09:39 (1) | 18:32 | 24 | 09:19 (28) | 56 | 16:28 | 56 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:03 (29) | 08:08 | | 08:54 (28) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 89 09:40 (1) | 18:30 | 25 | 09:19 (28) | 55 | 16:26 | 55 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:01 (29) | 08:10 | | 08:54 (28) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 97 09:40 (1) | 18:27 | 25 | 09:19 (28) | 54 | 16:25 | 54 |
| 20 | 05:19 | | 06:15 | | 07:14 | 07:59 (29) | 08:12 | | 08:54 (28) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 101 09:41 (1) | 18:25 | 25 | 09:19 (28) | 52 | 16:23 | 52 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (29) | 08:14 | | 08:54 (28) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 102 09:41 (1) | 18:23 | 40 | 10:45 (25) | 51 | 16:22 | 51 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:58 (29) | 08:16 | | 08:55 (28) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 103 09:41 (1) | 18:20 | 46 | 10:49 (25) | 50 | 16:20 | 50 |
| 23 | 05:24 | | 06:21 | | 07:19 | 07:57 (29) | 08:18 | | 08:55 (28) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 105 09:42 (1) | 18:18 | 50 | 10:51 (25) | 48 | 16:19 | 48 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:57 (29) | 08:20 | | 08:56 (28) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 105 09:42 (1) | 18:16 | 54 | 10:53 (25) | 45 | 16:18 | 45 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:57 (29) | 07:22 | | 07:56 (28) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 105 09:42 (1) | 17:13 | 57 | 09:54 (25) | 42 | 16:16 | 42 |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:57 (29) | 07:24 | | 07:58 (28) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 105 09:42 (1) | 17:11 | 56 | 09:55 (25) | 35 | 16:15 | 35 |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:58 (29) | 07:27 | | 08:00 (44) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 104 09:42 (1) | 17:09 | 57 | 09:57 (25) | 24 | 16:14 | 24 |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:58 (29) | 07:29 | | 08:00 (44) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 102 09:40 (1) | 17:07 | 57 | 09:57 (25) | 22 | 16:13 | 22 |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:59 (29) | 07:31 | | 08:01 (44) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 101 09:40 (1) | 17:04 | 57 | 09:58 (25) | 19 | 16:12 | 19 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:01 (29) | 07:33 | | 08:03 (44) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 96 09:39 (1) | 17:02 | 55 | 09:58 (25) | 14 | 16:11 | 14 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:06 (44) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 53 | 09:59 (25) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | | 1675 | | 1544 | | | 1429 | | 41 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | 0,16 | | 0,14 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | 1,00 | | 1,00 |
| Wind dir. red. | | | | | | 0,94 | | 0,85 | | | 0,66 | | 0,69 |
| Total reduction | | | | | | 0,36 | | 0,25 | | | 0,10 | | 0,09 |
| Total, real | | | | | | 601 | | 390 | | | 144 | | 4 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (45) | 08:28 | | 09:54 (26) | 07:27 | | 08:31 (1) | 07:08 | | 09:23 (1) | 05:55 | 05:02 |
| | 16:14 | 27 | 10:32 (25) | 17:08 | 69 | 11:03 (25) | 18:07 | 54 | 09:25 (1) | 20:10 | 48 | 10:11 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:37 (45) | 08:26 | | 09:55 (26) | 07:24 | | 08:30 (1) | 07:05 | | 09:25 (1) | 05:53 | 05:01 |
| | 16:15 | 36 | 10:34 (25) | 17:10 | 68 | 11:03 (25) | 18:10 | 56 | 09:26 (1) | 20:12 | 44 | 10:09 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:37 (45) | 08:24 | | 09:56 (26) | 07:22 | | 08:28 (1) | 07:03 | | 09:26 (1) | 05:51 | 05:00 |
| | 16:16 | 41 | 10:36 (25) | 17:12 | 67 | 11:03 (25) | 18:12 | 59 | 09:27 (1) | 20:14 | 40 | 10:06 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:36 (45) | 08:22 | | 09:58 (26) | 07:20 | | 08:28 (1) | 07:00 | | 09:28 (1) | 05:49 | 04:59 |
| | 16:18 | 45 | 10:37 (25) | 17:15 | 66 | 11:04 (25) | 18:14 | 60 | 09:28 (1) | 20:16 | 35 | 10:03 (1) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:36 (45) | 08:20 | | 10:00 (26) | 07:17 | | 07:51 (2) | 06:58 | | 09:30 (1) | 05:46 | 04:58 |
| | 16:19 | 51 | 10:40 (25) | 17:17 | 63 | 11:03 (25) | 18:16 | 77 | 09:28 (1) | 20:18 | 29 | 09:59 (1) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:36 (45) | 08:18 | | 10:04 (26) | 07:15 | | 07:49 (2) | 06:55 | | 09:34 (1) | 05:44 | 04:57 |
| | 16:20 | 54 | 10:41 (25) | 17:19 | 56 | 11:03 (25) | 18:18 | 85 | 09:30 (1) | 20:20 | 21 | 09:55 (1) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:36 (45) | 08:16 | | 08:45 (44) | 07:12 | | 07:46 (2) | 06:53 | | 09:42 (1) | 05:42 | 04:56 |
| | 16:22 | 56 | 10:42 (25) | 17:21 | 53 | 11:03 (25) | 18:20 | 91 | 09:30 (1) | 20:22 | 4 | 09:46 (1) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:36 (45) | 08:14 | | 08:42 (44) | 07:10 | | 07:44 (2) | 06:50 | | | 05:40 | 04:56 |
| | 16:23 | 60 | 10:44 (25) | 17:23 | 58 | 11:02 (25) | 18:22 | 95 | 09:30 (1) | 20:24 | | | 21:22 | 22:11 |
| 9 | 08:58 | | 09:37 (45) | 08:12 | | 08:40 (44) | 07:07 | | 07:43 (2) | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 63 | 10:46 (25) | 17:25 | 60 | 11:02 (25) | 18:24 | 99 | 09:31 (1) | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:37 (45) | 08:10 | | 08:39 (44) | 07:04 | | 07:41 (2) | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 65 | 10:47 (25) | 17:27 | 61 | 11:01 (25) | 18:26 | 101 | 09:30 (1) | 20:28 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:37 (45) | 08:08 | | 08:38 (44) | 07:02 | | 07:40 (2) | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 68 | 10:48 (25) | 17:30 | 62 | 11:01 (25) | 18:28 | 106 | 09:31 (1) | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:37 (45) | 08:06 | | 08:37 (44) | 06:59 | | 07:39 (2) | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 70 | 10:49 (25) | 17:32 | 60 | 10:59 (25) | 18:30 | 108 | 09:31 (1) | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:37 (45) | 08:04 | | 08:37 (44) | 06:57 | | 07:25 (29) | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 73 | 10:50 (25) | 17:34 | 58 | 10:58 (25) | 18:32 | 119 | 09:31 (1) | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:38 (27) | 08:02 | | 08:36 (28) | 06:54 | | 07:22 (29) | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 73 | 10:51 (25) | 17:36 | 57 | 10:57 (25) | 18:34 | 125 | 09:31 (1) | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:38 (45) | 08:00 | | 08:34 (28) | 06:52 | | 07:20 (29) | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 75 | 10:53 (25) | 17:38 | 55 | 10:54 (25) | 18:36 | 127 | 09:30 (1) | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (27) | 07:57 | | 08:34 (28) | 06:49 | | 07:19 (29) | 06:30 | | | 05:25 | 04:52 |
| | 16:37 | 75 | 10:53 (25) | 17:40 | 53 | 10:53 (25) | 18:38 | 128 | 09:30 (1) | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (27) | 07:55 | | 08:33 (28) | 06:47 | | 07:17 (29) | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 75 | 10:54 (25) | 17:42 | 49 | 10:50 (25) | 18:40 | 130 | 09:29 (1) | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (27) | 07:53 | | 08:32 (28) | 06:44 | | 07:17 (29) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 77 | 10:56 (25) | 17:44 | 43 | 10:46 (25) | 18:42 | 130 | 09:30 (1) | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (27) | 07:51 | | 08:32 (28) | 06:42 | | 07:16 (29) | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 77 | 10:56 (25) | 17:47 | 28 | 09:00 (28) | 18:44 | 130 | 09:29 (1) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:40 (27) | 07:48 | | 08:33 (28) | 06:39 | | 07:15 (29) | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 78 | 10:58 (25) | 17:49 | 27 | 09:00 (28) | 18:46 | 128 | 09:27 (1) | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:40 (27) | 07:46 | | 08:32 (28) | 06:36 | | 07:15 (29) | 06:18 | | | 05:17 | 04:52 |
| | 16:46 | 78 | 10:58 (25) | 17:51 | 27 | 08:59 (28) | 18:48 | 127 | 09:27 (1) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:40 (27) | 07:44 | | 08:32 (28) | 06:34 | | 07:15 (29) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 78 | 10:58 (25) | 17:53 | 37 | 09:09 (1) | 18:50 | 125 | 09:26 (1) | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:41 (27) | 07:41 | | 08:32 (28) | 06:31 | | 07:16 (29) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 79 | 11:00 (25) | 17:55 | 41 | 09:13 (1) | 18:52 | 122 | 09:26 (1) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (27) | 07:39 | | 08:33 (28) | 06:29 | | 07:16 (29) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 79 | 11:00 (25) | 17:57 | 43 | 09:16 (1) | 18:54 | 118 | 09:24 (1) | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:42 (27) | 07:37 | | 08:33 (28) | 06:26 | | 07:16 (29) | 06:09 | | | 05:11 | 04:53 |
| | 16:54 | 78 | 11:00 (25) | 17:59 | 45 | 09:18 (1) | 18:56 | 113 | 09:23 (1) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:43 (27) | 07:34 | | 08:34 (28) | 06:23 | | 07:18 (29) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 79 | 11:02 (25) | 18:01 | 47 | 09:21 (1) | 18:58 | 105 | 09:22 (1) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:44 (27) | 07:32 | | 08:35 (28) | 06:21 | | 07:20 (29) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:02 (25) | 18:03 | 47 | 09:22 (1) | 19:00 | 94 | 09:20 (1) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:45 (27) | 07:29 | | 08:33 (1) | 06:18 | | 07:44 (2) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 77 | 11:02 (25) | 18:05 | 51 | 09:24 (1) | 19:02 | 76 | 09:19 (1) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:46 (27) | | | | 07:16 | | 08:48 (2) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 77 | 11:03 (25) | | | | 20:04 | 63 | 10:17 (1) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:48 (27) | | | | 07:13 | | 09:22 (1) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 75 | 11:03 (25) | | | | 20:06 | 54 | 10:16 (1) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:51 (27) | | | | 07:11 | | 09:22 (1) | | | | 05:03 | |
| | 17:06 | 72 | 11:03 (25) | | | | 20:08 | 51 | 10:13 (1) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 2089 | | | 1451 | | | 3056 | | | 221 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,59 | | | 0,69 | | | 0,91 | | | 0,88 | | | |
| Total reduction | | 0,10 | | | 0,16 | | | 0,29 | | | 0,33 | | | |
| Total, real | | 211 | | | 232 | | | 895 | | | 72 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
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+8 621 66746
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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (29) | | 07:37 | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 113 | 10:10 (1) | | 16:58 | 62 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:18 (2) | | 07:39 | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 106 | 10:09 (1) | | 16:56 | 59 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:18 (2) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 105 | 10:09 (1) | | 16:54 | 57 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:19 (2) | | 07:43 | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 101 | 10:08 (1) | | 16:52 | 53 |
| 5 | 05:00 | | 05:47 | | 06:45 | 09:40 (1) | 07:43 | | 08:20 (2) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | 1 09:41 (1) | 19:02 | 97 | 10:07 (1) | | 16:50 | 57 |
| 6 | 05:01 | | 05:49 | | 06:47 | 09:31 (1) | 07:44 | | 08:21 (2) | | 07:47 | |
| | 22:16 | | 21:30 | | 20:17 | 20 09:51 (1) | 18:59 | 93 | 10:06 (1) | | 16:48 | 63 |
| 7 | 05:02 | | 05:51 | | 06:49 | 09:26 (1) | 07:46 | | 08:23 (2) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | 28 09:54 (1) | 18:57 | 88 | 10:05 (1) | | 16:46 | 66 |
| 8 | 05:03 | | 05:53 | | 06:51 | 09:23 (1) | 07:48 | | 08:25 (2) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | 34 09:57 (1) | 18:54 | 81 | 10:04 (1) | | 16:44 | 67 |
| 9 | 05:05 | | 05:54 | | 06:53 | 09:20 (1) | 07:50 | | 08:29 (2) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | 40 10:00 (1) | 18:52 | 72 | 10:03 (1) | | 16:42 | 69 |
| 10 | 05:06 | | 05:56 | | 06:55 | 09:18 (1) | 07:52 | | 09:02 (1) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | 44 10:02 (1) | 18:49 | 60 | 10:02 (1) | | 16:40 | 70 |
| 11 | 05:07 | | 05:58 | | 06:57 | 09:17 (1) | 07:54 | | 09:03 (1) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | 47 10:04 (1) | 18:47 | 57 | 10:00 (1) | | 16:38 | 73 |
| 12 | 05:08 | | 06:00 | | 06:59 | 09:15 (1) | 07:56 | | 09:04 (1) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | 50 10:05 (1) | 18:44 | 55 | 09:59 (1) | | 16:36 | 75 |
| 13 | 05:09 | | 06:02 | | 07:01 | 09:12 (1) | 07:58 | | 09:05 (1) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | 54 10:06 (1) | 18:42 | 52 | 09:57 (1) | | 16:34 | 77 |
| 14 | 05:11 | | 06:04 | | 07:02 | 08:41 (2) | 08:00 | | 09:07 (1) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | 58 10:07 (1) | 18:39 | 49 | 09:56 (1) | | 16:33 | 77 |
| 15 | 05:12 | | 06:06 | | 07:04 | 08:34 (2) | 08:02 | | 09:08 (28) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | 73 10:08 (1) | 18:37 | 46 | 09:54 (1) | | 16:31 | 78 |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:10 (29) | 08:04 | | 09:06 (28) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | 90 10:09 (1) | 18:35 | 46 | 09:52 (1) | | 16:29 | 79 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:07 (29) | 08:06 | | 09:05 (28) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:48 | 102 10:10 (1) | 18:32 | 44 | 09:49 (1) | | 16:28 | 78 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:05 (29) | 08:08 | | 09:04 (28) | | 08:12 | |
| | 22:03 | | 21:04 | | 19:46 | 111 10:11 (1) | 18:30 | 42 | 09:46 (1) | | 16:26 | 79 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:03 (29) | 08:10 | | 09:03 (28) | | 08:13 | |
| | 22:02 | | 21:01 | | 19:43 | 118 10:11 (1) | 18:27 | 40 | 09:43 (1) | | 16:25 | 79 |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:02 (29) | 08:12 | | 09:03 (28) | | 08:15 | |
| | 22:00 | | 20:59 | | 19:41 | 122 10:11 (1) | 18:25 | 35 | 09:38 (1) | | 16:23 | 78 |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:01 (29) | 08:14 | | 09:02 (28) | | 08:17 | |
| | 21:59 | | 20:57 | | 19:38 | 123 10:11 (1) | 18:23 | 28 | 09:30 (28) | | 16:22 | 78 |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:00 (29) | 08:16 | | 09:03 (28) | | 08:19 | |
| | 21:57 | | 20:54 | | 19:36 | 127 10:12 (1) | 18:20 | 27 | 09:30 (28) | | 16:20 | 78 |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:00 (29) | 08:18 | | 09:03 (28) | | 08:21 | |
| | 21:56 | | 20:52 | | 19:33 | 128 10:12 (1) | 18:18 | 34 | 11:12 (25) | | 16:19 | 77 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:59 (29) | 08:20 | | 09:03 (28) | | 08:23 | |
| | 21:54 | | 20:49 | | 19:30 | 129 10:12 (1) | 18:16 | 45 | 11:18 (25) | | 16:18 | 77 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:59 (29) | 07:22 | | 08:03 (28) | | 08:25 | |
| | 21:53 | | 20:47 | | 19:28 | 130 10:12 (1) | 17:13 | 50 | 10:21 (25) | | 16:16 | 76 |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:00 (29) | 07:24 | | 08:03 (28) | | 08:27 | |
| | 21:51 | | 20:44 | | 19:25 | 129 10:12 (1) | 17:11 | 54 | 10:23 (25) | | 16:15 | 75 |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:00 (29) | 07:27 | | 08:05 (28) | | 08:28 | |
| | 21:49 | | 20:42 | | 19:23 | 129 10:12 (1) | 17:09 | 55 | 10:25 (25) | | 16:14 | 75 |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:00 (29) | 07:29 | | 08:06 (28) | | 08:30 | |
| | 21:47 | | 20:40 | | 19:20 | 128 10:11 (1) | 17:07 | 58 | 10:27 (25) | | 16:13 | 73 |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (29) | 07:31 | | 08:07 (44) | | 08:32 | |
| | 21:46 | | 20:37 | | 19:17 | 127 10:11 (1) | 17:04 | 58 | 10:28 (25) | | 16:12 | 72 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:03 (29) | 07:33 | | 08:07 (44) | | 08:34 | |
| | 21:44 | | 20:35 | | 19:15 | 122 10:10 (1) | 17:02 | 60 | 10:29 (25) | | 16:11 | 70 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:08 (44) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 61 | 10:30 (25) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 2264 | | 1912 | | | | 2147 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,91 | | 0,85 | | | | 0,58 |
| Total reduction | | | | | | 0,34 | | 0,25 | | | | 0,09 |
| Total, real | | | | | | 771 | | 469 | | | | 186 |

| | December | | |
|---|---|---|---|
| 1 | 08:35 | | 09:19 (45) |
| | 16:10 | 69 | 10:31 (25) |
| 2 | 08:37 | | 09:19 (45) |
| | 16:09 | 65 | 10:29 (25) |
| 3 | 08:39 | | 09:20 (45) |
| | 16:08 | 63 | 10:29 (25) |
| 4 | 08:40 | | 09:21 (45) |
| | 16:08 | 60 | 10:29 (25) |
| 5 | 08:42 | | 09:21 (45) |
| | 16:07 | 56 | 10:27 (25) |
| 6 | 08:43 | | 09:22 (45) |
| | 16:06 | 54 | 10:27 (25) |
| 7 | 08:44 | | 09:22 (45) |
| | 16:06 | 51 | 10:26 (25) |
| 8 | 08:46 | | 09:24 (45) |
| | 16:05 | 47 | 10:26 (25) |
| 9 | 08:47 | | 09:25 (45) |
| | 16:05 | 42 | 10:24 (25) |
| 10 | 08:48 | | 09:27 (45) |
| | 16:04 | 36 | 10:24 (25) |
| 11 | 08:50 | | 09:28 (45) |
| | 16:04 | 27 | 10:22 (25) |
| 12 | 08:51 | | 09:29 (45) |
| | 16:04 | 17 | 09:51 (26) |
| 13 | 08:52 | | 09:30 (45) |
| | 16:04 | 10 | 09:48 (26) |
| 14 | 08:53 | | 09:31 (45) |
| | 16:04 | 8 | 09:39 (45) |
| 15 | 08:54 | | 09:33 (45) |
| | 16:04 | 7 | 09:40 (45) |
| 16 | 08:55 | | 09:33 (45) |
| | 16:04 | 6 | 09:39 (45) |
| 17 | 08:56 | | 09:34 (45) |
| | 16:04 | 5 | 09:39 (45) |
| 18 | 08:57 | | 09:35 (45) |
| | 16:04 | 5 | 09:40 (45) |
| 19 | 08:57 | | 09:36 (45) |
| | 16:04 | 4 | 09:40 (45) |
| 20 | 08:58 | | 09:36 (45) |
| | 16:05 | 4 | 09:40 (45) |
| 21 | 08:59 | | 09:37 (45) |
| | 16:05 | 4 | 09:41 (45) |
| 22 | 08:59 | | 09:38 (45) |
| | 16:05 | 4 | 09:42 (45) |
| 23 | 09:00 | | 09:38 (45) |
| | 16:06 | 4 | 09:42 (45) |
| 24 | 09:00 | | 09:38 (45) |
| | 16:07 | 4 | 09:42 (45) |
| 25 | 09:00 | | 09:38 (45) |
| | 16:07 | 5 | 09:43 (45) |
| 26 | 09:01 | | 09:39 (45) |
| | 16:08 | 5 | 09:44 (45) |
| 27 | 09:01 | | 09:39 (45) |
| | 16:09 | 6 | 09:45 (45) |
| 28 | 09:01 | | 09:39 (45) |
| | 16:10 | 7 | 09:46 (45) |
| 29 | 09:01 | | 09:39 (45) |
| | 16:11 | 8 | 09:47 (45) |
| 30 | 09:01 | | 09:38 (45) |
| | 16:11 | 9 | 09:47 (45) |
| 31 | 09:01 | | 09:38 (45) |
| | 16:13 | 16 | 09:59 (26) |
| Potential sun hours | 224 | | |
| Total, worst case | | 708 | |
| Sun reduction | | 0,14 | |
| Oper. time red. | | 1,00 | |
| Wind dir. red. | | 0,61 | |
| Total reduction | | 0,08 | |
| Total, real | | 55 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (45) | 08:28 | 08:58 (44) | 07:27 | 08:07 (2) | 07:08 | 10:21 (1) | 05:55 | 05:02 |
| | 16:14 | 101 | 11:45 (25) | 17:08 53 | 11:56 (25) | 18:07 115 | 10:43 (1) | 20:10 47 | 11:08 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:50 (45) | 08:26 | 08:55 (44) | 07:24 | 08:05 (2) | 07:05 | 10:24 (1) | 05:53 | 05:01 |
| | 16:15 | 102 | 11:45 (25) | 17:10 60 | 11:56 (25) | 18:10 119 | 10:43 (1) | 20:12 41 | 11:05 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:51 (45) | 08:24 | 08:53 (44) | 07:22 | 08:03 (2) | 07:03 | 10:26 (1) | 05:51 | 05:00 |
| | 16:16 | 103 | 11:46 (25) | 17:12 62 | 11:56 (25) | 18:12 123 | 10:43 (1) | 20:14 34 | 11:00 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:51 (45) | 08:22 | 08:52 (44) | 07:19 | 08:02 (2) | 07:00 | 10:30 (1) | 05:49 | 04:59 |
| | 16:18 | 103 | 11:46 (25) | 17:15 63 | 11:55 (25) | 18:14 127 | 10:44 (1) | 20:16 26 | 10:56 (1) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:52 (45) | 08:20 | 08:52 (44) | 07:17 | 08:00 (2) | 06:58 | 10:37 (1) | 05:46 | 04:58 |
| | 16:19 | 104 | 11:48 (25) | 17:17 65 | 11:54 (25) | 18:16 129 | 10:43 (1) | 20:18 9 | 10:46 (1) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:52 (45) | 08:18 | 08:51 (44) | 07:15 | 07:59 (2) | 06:55 | 07:20 (42) | 05:44 | 04:57 |
| | 16:20 | 104 | 11:48 (25) | 17:19 65 | 11:53 (25) | 18:18 133 | 10:44 (1) | 20:20 6 | 07:26 (42) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:53 (45) | 08:16 | 08:51 (44) | 07:12 | 07:58 (2) | 06:53 | 07:17 (42) | 05:42 | 04:56 |
| | 16:22 | 104 | 11:48 (25) | 17:21 79 | 11:52 (25) | 18:20 134 | 10:43 (1) | 20:22 10 | 07:27 (42) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:53 (45) | 08:14 | 08:50 (44) | 07:10 | 07:57 (2) | 06:50 | 07:15 (42) | 05:40 | 04:56 |
| | 16:23 | 106 | 11:49 (25) | 17:23 89 | 11:50 (25) | 18:22 135 | 10:43 (1) | 20:24 14 | 07:29 (42) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:54 (45) | 08:12 | 08:50 (44) | 07:07 | 07:57 (2) | 06:48 | 07:12 (42) | 05:38 | 04:55 |
| | 16:25 | 107 | 11:51 (25) | 17:25 94 | 11:49 (25) | 18:24 136 | 10:43 (1) | 20:26 17 | 07:29 (42) | 21:24 | 22:12 |
| 10 | 08:57 | | 09:55 (45) | 08:10 | 08:50 (44) | 07:04 | 07:36 (29) | 06:45 | 07:10 (42) | 05:36 | 04:55 |
| | 16:26 | 106 | 11:51 (25) | 17:27 97 | 11:47 (25) | 18:26 145 | 10:42 (1) | 20:27 20 | 07:30 (42) | 21:26 | 22:13 |
| 11 | 08:56 | | 09:56 (45) | 08:08 | 08:51 (44) | 07:02 | 07:33 (29) | 06:43 | 07:09 (42) | 05:34 | 04:54 |
| | 16:28 | 106 | 11:52 (25) | 17:30 96 | 11:44 (25) | 18:28 152 | 10:42 (1) | 20:29 20 | 07:29 (42) | 21:28 | 22:14 |
| 12 | 08:55 | | 09:56 (45) | 08:06 | 08:51 (44) | 06:59 | 07:30 (29) | 06:40 | 07:09 (42) | 05:32 | 04:54 |
| | 16:30 | 107 | 11:52 (25) | 17:32 93 | 11:39 (25) | 18:30 155 | 10:41 (1) | 20:31 21 | 07:30 (42) | 21:30 | 22:14 |
| 13 | 08:54 | | 09:56 (45) | 08:04 | 08:51 (44) | 06:57 | 07:29 (29) | 06:38 | 07:09 (42) | 05:30 | 04:53 |
| | 16:31 | 107 | 11:52 (25) | 17:34 83 | 10:27 (1) | 18:32 159 | 10:41 (1) | 20:33 21 | 07:30 (42) | 21:32 | 22:15 |
| 14 | 08:53 | | 09:58 (45) | 08:02 | 08:51 (28) | 06:54 | 07:27 (29) | 06:35 | 07:08 (42) | 05:29 | 04:53 |
| | 16:33 | 106 | 11:53 (25) | 17:36 87 | 10:29 (1) | 18:34 160 | 10:40 (1) | 20:35 21 | 07:29 (42) | 21:34 | 22:16 |
| 15 | 08:52 | | 09:59 (45) | 08:00 | 08:50 (28) | 06:52 | 07:26 (29) | 06:33 | 07:09 (42) | 05:27 | 04:53 |
| | 16:35 | 106 | 11:54 (25) | 17:38 91 | 10:30 (1) | 18:36 160 | 10:39 (1) | 20:37 19 | 07:28 (42) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:59 (45) | 07:57 | 08:50 (28) | 06:49 | 07:25 (29) | 06:30 | 07:09 (42) | 05:25 | 04:52 |
| | 16:37 | 106 | 11:54 (25) | 17:40 94 | 10:32 (1) | 18:38 161 | 10:39 (1) | 20:39 18 | 07:27 (42) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:01 (45) | 07:55 | 08:51 (28) | 06:47 | 07:24 (29) | 06:28 | 07:10 (42) | 05:23 | 04:52 |
| | 16:38 | 106 | 11:55 (25) | 17:42 96 | 10:34 (1) | 18:40 160 | 10:38 (1) | 20:41 16 | 07:26 (42) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:03 (45) | 07:53 | 08:51 (28) | 06:44 | 07:25 (29) | 06:25 | 07:11 (42) | 05:21 | 04:52 |
| | 16:40 | 104 | 11:56 (25) | 17:44 98 | 10:35 (1) | 18:42 157 | 10:37 (1) | 20:43 14 | 07:25 (42) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (27) | 07:51 | 08:52 (28) | 06:42 | 07:24 (29) | 06:23 | 07:13 (42) | 05:20 | 04:52 |
| | 16:42 | 103 | 11:55 (25) | 17:47 99 | 10:36 (1) | 18:44 155 | 10:36 (1) | 20:45 8 | 07:21 (42) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (27) | 07:48 | 08:53 (28) | 06:39 | 07:23 (29) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 102 | 11:56 (25) | 17:49 100 | 10:38 (1) | 18:46 152 | 10:34 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:06 (27) | 07:46 | 08:53 (28) | 06:36 | 07:24 (29) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 101 | 11:56 (25) | 17:51 101 | 10:38 (1) | 18:48 146 | 10:33 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:07 (27) | 07:44 | 08:54 (28) | 06:34 | 07:24 (29) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 99 | 11:56 (25) | 17:53 100 | 10:39 (1) | 18:50 141 | 10:31 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:09 (27) | 07:41 | 08:55 (28) | 06:31 | 07:25 (29) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 97 | 11:57 (25) | 17:55 100 | 10:40 (1) | 18:52 135 | 10:30 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:11 (27) | 07:39 | 08:57 (28) | 06:29 | 07:25 (29) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 94 | 11:57 (25) | 17:57 97 | 10:41 (1) | 18:54 128 | 10:28 (1) | 20:55 | | 21:51 | 22:19 |
| 25 | 08:40 | | 10:14 (27) | 07:37 | 09:00 (28) | 06:26 | 07:26 (29) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 87 | 11:57 (25) | 17:59 92 | 10:41 (1) | 18:56 119 | 10:26 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | | 10:25 (26) | 07:34 | 09:18 (1) | 06:23 | 07:29 (29) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 80 | 11:58 (25) | 18:01 84 | 10:42 (1) | 18:58 107 | 10:25 (1) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:26 (26) | 07:32 | 08:13 (2) | 06:21 | 07:33 (29) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:58 (25) | 18:03 100 | 10:42 (1) | 19:00 87 | 10:22 (1) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:28 (26) | 07:29 | 08:10 (2) | 06:18 | 09:16 (1) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 74 | 11:58 (25) | 18:05 109 | 10:43 (1) | 19:02 64 | 10:20 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:30 (26) | | | 07:16 | 10:17 (1) | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 69 | 11:57 (25) | | | 20:04 61 | 11:18 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | | 10:32 (26) | | | 07:13 | 10:19 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 63 | 11:57 (25) | | | 20:06 56 | 11:15 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | | 11:06 (25) | | | 07:11 | 10:20 (1) | | | 05:03 | |
| | 17:06 | 51 | 11:57 (25) | | | 20:08 52 | 11:12 (1) | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 2986 | | | 2447 | | 3963 | | 382 | | |
| Sun reduction | | 0,18 | | | 0,25 | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,43 | | | 0,68 | | 0,80 | | 0,88 | | |
| Total reduction | | 0,07 | | | 0,15 | | 0,25 | | 0,32 | | |
| Total, real | | 215 | | | 377 | | 995 | | 121 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:09 (42) | 07:35 | | 08:08 (29) | 07:37 | | 08:20 (44) | 08:35 | | 09:37 (45) |
| | 22:18 | | 21:40 | | | 20:30 | 20 | 07:29 (42) | 19:12 | 157 | 11:20 (1) | 16:58 | 97 | 11:17 (25) | 16:10 | 106 | 11:33 (25) |
| 2 | 04:58 | | 05:42 | | | 06:40 | | 07:08 (42) | 07:37 | | 08:10 (29) | 07:39 | | 08:20 (44) | 08:37 | | 09:37 (45) |
| | 22:18 | | 21:38 | | | 20:27 | 20 | 07:28 (42) | 19:10 | 153 | 11:20 (1) | 16:56 | 93 | 11:18 (25) | 16:09 | 106 | 11:33 (25) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:10 (42) | 07:39 | | 08:12 (29) | 07:41 | | 08:20 (44) | 08:39 | | 09:38 (45) |
| | 22:17 | | 21:36 | | | 20:25 | 17 | 07:27 (42) | 19:07 | 150 | 11:20 (1) | 16:54 | 89 | 11:20 (25) | 16:08 | 105 | 11:34 (25) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:12 (42) | 07:41 | | 08:33 (2) | 07:43 | | 08:21 (44) | 08:40 | | 09:38 (45) |
| | 22:17 | | 21:34 | | | 20:22 | 14 | 07:26 (42) | 19:05 | 137 | 11:20 (1) | 16:52 | 75 | 11:22 (25) | 16:08 | 105 | 11:34 (25) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:14 (42) | 07:43 | | 08:34 (2) | 07:45 | | 08:21 (44) | 08:42 | | 09:38 (45) |
| | 22:16 | | 21:32 | | | 20:19 | 10 | 07:24 (42) | 19:02 | 135 | 11:20 (1) | 16:50 | 65 | 11:23 (25) | 16:07 | 105 | 11:34 (25) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:16 (42) | 07:44 | | 08:34 (2) | 07:47 | | 08:22 (44) | 08:43 | | 09:38 (45) |
| | 22:16 | | 21:30 | | | 20:17 | 6 | 07:22 (42) | 18:59 | 134 | 11:19 (1) | 16:48 | 64 | 11:24 (25) | 16:06 | 104 | 11:34 (25) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 10:34 (1) | 07:46 | | 08:34 (2) | 07:49 | | 08:22 (44) | 08:44 | | 09:38 (45) |
| | 22:15 | | 21:28 | | | 20:14 | 6 | 10:40 (1) | 18:57 | 133 | 11:19 (1) | 16:46 | 63 | 11:25 (25) | 16:06 | 104 | 11:34 (25) |
| 8 | 05:03 | | 05:53 | | | 06:51 | | 10:25 (1) | 07:48 | | 08:35 (2) | 07:51 | | 08:24 (44) | 08:46 | | 09:39 (45) |
| | 22:14 | | 21:26 | | | 20:12 | 24 | 10:49 (1) | 18:54 | 131 | 11:19 (1) | 16:44 | 61 | 11:26 (25) | 16:05 | 103 | 11:34 (25) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 10:21 (1) | 07:50 | | 08:36 (2) | 07:53 | | 08:26 (44) | 08:47 | | 09:39 (45) |
| | 22:13 | | 21:24 | | | 20:09 | 33 | 10:54 (1) | 18:52 | 128 | 11:18 (1) | 16:42 | 59 | 11:27 (25) | 16:05 | 103 | 11:34 (25) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 10:17 (1) | 07:52 | | 08:36 (2) | 07:55 | | 08:30 (44) | 08:48 | | 09:40 (45) |
| | 22:12 | | 21:22 | | | 20:07 | 41 | 10:58 (1) | 18:49 | 126 | 11:18 (1) | 16:40 | 52 | 11:27 (25) | 16:04 | 103 | 11:35 (25) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 10:15 (1) | 07:54 | | 08:38 (2) | 07:57 | | 10:37 (25) | 08:50 | | 09:40 (45) |
| | 22:11 | | 21:19 | | | 20:04 | 46 | 11:01 (1) | 18:47 | 122 | 11:17 (1) | 16:38 | 51 | 11:28 (25) | 16:04 | 102 | 11:35 (25) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | 10:11 (1) | 07:56 | | 08:39 (2) | 07:59 | | 10:04 (26) | 08:51 | | 09:41 (45) |
| | 22:10 | | 21:17 | | | 20:01 | 52 | 11:03 (1) | 18:44 | 118 | 11:16 (1) | 16:36 | 64 | 11:29 (25) | 16:04 | 101 | 11:35 (25) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | 10:09 (1) | 07:58 | | 08:41 (2) | 08:01 | | 10:02 (26) | 08:52 | | 09:41 (45) |
| | 22:09 | | 21:15 | | | 19:59 | 56 | 11:05 (1) | 18:42 | 111 | 11:15 (1) | 16:34 | 69 | 11:29 (25) | 16:04 | 100 | 11:35 (25) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | 10:08 (1) | 08:00 | | 08:44 (2) | 08:04 | | 10:00 (26) | 08:53 | | 09:41 (45) |
| | 22:08 | | 21:13 | | | 19:56 | 60 | 11:08 (1) | 18:39 | 106 | 11:16 (1) | 16:33 | 74 | 11:30 (25) | 16:04 | 100 | 11:35 (25) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | 10:06 (1) | 08:02 | | 08:48 (2) | 08:06 | | 09:58 (26) | 08:54 | | 09:43 (45) |
| | 22:07 | | 21:11 | | | 19:54 | 64 | 11:10 (1) | 18:37 | 97 | 11:15 (1) | 16:31 | 78 | 11:30 (25) | 16:04 | 98 | 11:36 (25) |
| 16 | 05:14 | | 06:08 | | | 07:06 | | 08:55 (2) | 08:04 | | 09:50 (1) | 08:08 | | 09:58 (26) | 08:55 | | 09:42 (45) |
| | 22:06 | | 21:08 | | | 19:51 | 81 | 11:11 (1) | 18:35 | 84 | 11:14 (1) | 16:29 | 80 | 11:31 (25) | 16:04 | 99 | 11:36 (25) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:18 (29) | 08:06 | | 09:31 (28) | 08:10 | | 09:48 (27) | 08:56 | | 09:43 (45) |
| | 22:04 | | 21:06 | | | 19:48 | 104 | 11:13 (1) | 18:32 | 94 | 11:13 (1) | 16:28 | 87 | 11:31 (25) | 16:04 | 98 | 11:36 (25) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:15 (29) | 08:08 | | 09:28 (28) | 08:12 | | 09:45 (27) | 08:57 | | 09:44 (45) |
| | 22:03 | | 21:04 | | | 19:46 | 116 | 11:14 (1) | 18:30 | 98 | 11:12 (1) | 16:26 | 94 | 11:31 (25) | 16:04 | 98 | 11:37 (25) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:12 (29) | 08:10 | | 09:26 (28) | 08:13 | | 09:43 (27) | 08:57 | | 09:45 (45) |
| | 22:02 | | 21:01 | | | 19:43 | 126 | 11:15 (1) | 18:27 | 100 | 11:11 (1) | 16:25 | 97 | 11:31 (25) | 16:04 | 97 | 11:37 (25) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 08:11 (29) | 08:12 | | 09:24 (28) | 08:15 | | 09:42 (27) | 08:58 | | 09:44 (45) |
| | 22:00 | | 20:59 | | | 19:41 | 134 | 11:16 (1) | 18:25 | 101 | 11:09 (1) | 16:23 | 99 | 11:31 (25) | 16:05 | 97 | 11:37 (25) |
| 21 | 05:21 | | 06:17 | | | 07:16 | | 08:10 (29) | 08:14 | | 09:23 (28) | 08:17 | | 09:42 (27) | 08:59 | | 09:45 (45) |
| | 21:59 | | 20:57 | | | 19:38 | 140 | 11:17 (1) | 18:23 | 100 | 11:08 (1) | 16:22 | 101 | 11:32 (25) | 16:05 | 97 | 11:38 (25) |
| 22 | 05:23 | | 06:19 | | | 07:18 | | 08:09 (29) | 08:16 | | 09:23 (28) | 08:19 | | 09:41 (27) | 08:59 | | 09:46 (45) |
| | 21:57 | | 20:54 | | | 19:36 | 146 | 11:18 (1) | 18:20 | 100 | 11:08 (1) | 16:20 | 102 | 11:32 (25) | 16:05 | 97 | 11:39 (25) |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 08:08 (29) | 08:18 | | 09:22 (28) | 08:21 | | 09:41 (27) | 09:00 | | 09:46 (45) |
| | 21:56 | | 20:52 | | | 19:33 | 150 | 11:18 (1) | 18:18 | 98 | 11:06 (1) | 16:19 | 104 | 11:33 (25) | 16:06 | 97 | 11:39 (25) |
| 24 | 05:26 | | 06:23 | | 07:16 (42) | 07:21 | | 08:08 (29) | 08:20 | | 09:21 (28) | 08:23 | | 09:41 (27) | 09:00 | | 09:46 (45) |
| | 21:54 | | 20:49 | 9 | 07:25 (42) | 19:30 | 154 | 11:19 (1) | 18:16 | 98 | 11:05 (1) | 16:18 | 103 | 11:33 (25) | 16:07 | 97 | 11:39 (25) |
| 25 | 05:28 | | 06:25 | | 07:14 (42) | 07:23 | | 08:07 (29) | 07:22 | | 08:20 (28) | 08:25 | | 09:39 (45) | 09:00 | | 09:47 (45) |
| | 21:52 | | 20:47 | 13 | 07:27 (42) | 19:28 | 158 | 11:20 (1) | 17:13 | 96 | 10:03 (1) | 16:16 | 106 | 11:33 (25) | 16:07 | 98 | 11:40 (25) |
| 26 | 05:29 | | 06:27 | | 07:13 (42) | 07:25 | | 08:07 (29) | 07:24 | | 08:20 (28) | 08:27 | | 09:38 (45) | 09:01 | | 09:48 (45) |
| | 21:51 | | 20:44 | 16 | 07:29 (42) | 19:25 | 158 | 11:20 (1) | 17:11 | 92 | 10:01 (1) | 16:15 | 106 | 11:33 (25) | 16:08 | 98 | 11:41 (25) |
| 27 | 05:31 | | 06:28 | | 07:11 (42) | 07:27 | | 08:07 (29) | 07:26 | | 08:21 (28) | 08:28 | | 09:38 (45) | 09:01 | | 09:48 (45) |
| | 21:49 | | 20:42 | 18 | 07:29 (42) | 19:23 | 161 | 11:21 (1) | 17:09 | 89 | 10:00 (1) | 16:14 | 106 | 11:33 (25) | 16:09 | 100 | 11:42 (25) |
| 28 | 05:33 | | 06:30 | | 07:10 (42) | 07:29 | | 08:06 (29) | 07:29 | | 08:20 (28) | 08:30 | | 09:38 (45) | 09:01 | | 09:49 (45) |
| | 21:47 | | 20:40 | 19 | 07:29 (42) | 19:20 | 162 | 11:20 (1) | 17:07 | 87 | 09:58 (1) | 16:13 | 106 | 11:33 (25) | 16:10 | 98 | 11:42 (25) |
| 29 | 05:34 | | 06:32 | | 07:09 (42) | 07:31 | | 08:07 (29) | 07:31 | | 08:20 (28) | 08:32 | | 09:38 (45) | 09:01 | | 09:49 (45) |
| | 21:46 | | 20:37 | 21 | 07:30 (42) | 19:17 | 160 | 11:20 (1) | 17:04 | 82 | 09:56 (1) | 16:12 | 106 | 11:33 (25) | 16:11 | 100 | 11:43 (25) |
| 30 | 05:36 | | 06:34 | | 07:09 (42) | 07:33 | | 08:07 (29) | 07:33 | | 08:20 (44) | 08:34 | | 09:38 (45) | 09:01 | | 09:49 (45) |
| | 21:44 | | 20:35 | 21 | 07:30 (42) | 19:15 | 160 | 11:20 (1) | 17:02 | 95 | 11:10 (25) | 16:11 | 107 | 11:34 (25) | 16:11 | 100 | 11:43 (25) |
| 31 | 05:38 | | 06:36 | | 07:09 (42) | | | | 07:35 | | 08:20 (44) | | | | 09:01 | | 09:49 (45) |
| | 21:42 | | 20:32 | 21 | 07:30 (42) | | | | 17:00 | 97 | 11:14 (25) | | | | 16:13 | 101 | 11:44 (25) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 138 | | | 2579 | | | 3449 | | | 2558 | | | 3117 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,81 | | | 0,77 | | | 0,45 | | | 0,46 | |
| Total reduction | | | | 0,47 | | | 0,29 | | | 0,22 | | | 0,07 | | | 0,06 | |
| Total, real | | | | 65 | | | 758 | | | 746 | | | 168 | | | 179 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:47 (28) | 08:28 | | 09:23 (2) | 07:27 | | 08:18 (29) | 07:08 | | 07:38 (42) | 05:55 | 05:02 |
| | 16:14 | 95 | 12:43 (25) | 17:08 | 112 | 12:33 (1) | 18:07 | 28 | 08:46 (29) | 20:10 | 23 | 08:01 (42) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:46 (28) | 08:26 | | 09:22 (2) | 07:24 | | 08:19 (29) | 07:05 | | 07:38 (42) | 05:53 | 05:01 |
| | 16:15 | 96 | 12:43 (25) | 17:10 | 111 | 12:33 (1) | 18:10 | 27 | 08:46 (29) | 20:12 | 23 | 08:01 (42) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:45 (28) | 08:24 | | 09:22 (2) | 07:22 | | 08:19 (29) | 07:03 | | 07:38 (42) | 05:51 | 05:00 |
| | 16:16 | 98 | 12:44 (25) | 17:12 | 107 | 12:32 (1) | 18:12 | 26 | 08:45 (29) | 20:14 | 22 | 08:00 (42) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:44 (28) | 08:22 | | 09:22 (2) | 07:19 | | 08:20 (29) | 07:00 | | 07:38 (42) | 05:49 | 04:59 |
| | 16:18 | 99 | 12:44 (25) | 17:15 | 107 | 12:32 (1) | 18:14 | 24 | 08:44 (29) | 20:16 | 22 | 08:00 (42) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:44 (28) | 08:20 | | 09:22 (2) | 07:17 | | 08:21 (29) | 06:58 | | 07:38 (42) | 05:46 | 04:58 |
| | 16:19 | 98 | 12:44 (25) | 17:17 | 107 | 12:32 (1) | 18:16 | 21 | 08:42 (29) | 20:18 | 20 | 07:58 (42) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:44 (28) | 08:18 | | 09:21 (2) | 07:15 | | 08:23 (29) | 06:55 | | 07:40 (42) | 05:44 | 04:57 |
| | 16:20 | 99 | 12:44 (25) | 17:19 | 106 | 12:31 (1) | 18:18 | 17 | 08:40 (29) | 20:20 | 17 | 07:57 (42) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:43 (28) | 08:16 | | 09:22 (2) | 07:12 | | 08:25 (29) | 06:53 | | 07:40 (42) | 05:42 | 04:56 |
| | 16:22 | 101 | 12:44 (25) | 17:21 | 104 | 12:30 (1) | 18:20 | 12 | 08:37 (29) | 20:22 | 15 | 07:55 (42) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:43 (28) | 08:14 | | 09:21 (2) | 07:10 | | | 06:50 | | 07:43 (42) | 05:40 | 04:56 |
| | 16:23 | 102 | 12:44 (25) | 17:23 | 103 | 12:29 (1) | 18:22 | | | 20:24 | 9 | 07:52 (42) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:33 (44) | 08:12 | | 09:21 (2) | 07:07 | | | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 105 | 12:45 (25) | 17:25 | 100 | 12:28 (1) | 18:24 | | | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:32 (44) | 08:10 | | 09:21 (2) | 07:04 | | | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 111 | 12:45 (25) | 17:27 | 99 | 12:27 (1) | 18:26 | | | 20:27 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:31 (44) | 08:08 | | 09:21 (2) | 07:02 | | | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 113 | 12:44 (25) | 17:30 | 96 | 12:26 (1) | 18:28 | | | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:29 (44) | 08:06 | | 09:21 (2) | 06:59 | | | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 116 | 12:43 (25) | 17:32 | 91 | 12:23 (1) | 18:30 | | | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:28 (44) | 08:04 | | 09:21 (2) | 06:57 | | | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 119 | 12:43 (25) | 17:34 | 87 | 12:21 (1) | 18:32 | | | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:27 (44) | 08:02 | | 09:22 (2) | 06:54 | | | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 122 | 12:43 (25) | 17:36 | 81 | 12:19 (1) | 18:34 | | | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:27 (44) | 08:00 | | 09:22 (2) | 06:52 | | | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 121 | 12:42 (25) | 17:38 | 75 | 12:16 (1) | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:26 (44) | 07:57 | | 09:23 (2) | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 121 | 12:40 (25) | 17:40 | 65 | 12:12 (1) | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:26 (44) | 07:55 | | 08:30 (29) | 06:47 | | | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 120 | 12:39 (25) | 17:42 | 58 | 12:05 (1) | 18:40 | | | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:27 (44) | 07:53 | | 08:26 (29) | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 118 | 12:38 (25) | 17:44 | 56 | 10:05 (2) | 18:42 | | | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:26 (44) | 07:51 | | 08:24 (29) | 06:42 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 116 | 12:34 (25) | 17:47 | 58 | 10:04 (2) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:27 (44) | 07:48 | | 08:23 (29) | 06:39 | | | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 113 | 12:32 (1) | 17:49 | 59 | 10:03 (2) | 18:46 | | | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:26 (44) | 07:46 | | 08:21 (29) | 06:36 | | | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 114 | 12:32 (1) | 17:51 | 59 | 10:01 (2) | 18:48 | | | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:26 (44) | 07:44 | | 08:21 (29) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 114 | 12:32 (1) | 17:53 | 57 | 10:00 (2) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:27 (44) | 07:41 | | 08:19 (29) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 114 | 12:33 (1) | 17:55 | 55 | 09:57 (2) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:27 (44) | 07:39 | | 08:19 (29) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 114 | 12:33 (1) | 17:57 | 51 | 09:55 (2) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | 08:18 (29) | 06:26 | | 06:50 (42) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 114 | 12:33 (1) | 17:59 | 43 | 09:50 (2) | 18:56 | 4 | 06:54 (42) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | 08:19 (29) | 06:23 | | 06:48 (42) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 115 | 12:34 (1) | 18:01 | 29 | 08:48 (29) | 18:58 | 10 | 06:58 (42) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | 08:18 (29) | 06:21 | | 06:45 (42) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 115 | 12:34 (1) | 18:03 | 29 | 08:47 (29) | 19:00 | 14 | 06:59 (42) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | 08:18 (29) | 06:18 | | 06:43 (42) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 115 | 12:34 (1) | 18:05 | 29 | 08:47 (29) | 19:02 | 18 | 07:01 (42) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | | 07:40 (42) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 115 | 12:34 (1) | | | | 20:04 | 21 | 08:01 (42) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | | 07:40 (42) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 115 | 12:34 (1) | | | | 20:06 | 22 | 08:02 (42) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 07:39 (42) | | | | 05:03 | |
| | 17:06 | 113 | 12:33 (1) | | | | 20:08 | 22 | 08:01 (42) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 3441 | | | 2134 | | | 266 | | | 151 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,34 | | | 0,54 | | | 0,94 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,12 | | | 0,28 | | | 0,34 | | | |
| Total, real | | 188 | | | 250 | | | 75 | | | 52 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 07:37 | | 08:51 (2) | 08:35 | 09:13 (44) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | | 16:58 | 98 | 11:57 (1) | 16:10 | 113 12:26 (25) |
| 2 | 04:58 | | 05:41 | | 06:40 | | 07:37 | | 07:39 | | 08:50 (2) | 08:37 | 09:14 (44) |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | 16:56 | 102 | 11:58 (1) | 16:09 | 111 12:27 (25) |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 07:41 | | 08:50 (2) | 08:39 | 09:16 (44) |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | | 16:54 | 103 | 11:58 (1) | 16:08 | 106 12:28 (25) |
| 4 | 04:59 | | 05:45 | | 06:44 | 07:40 (42) | 07:41 | | 07:43 | | 08:51 (2) | 08:40 | 09:28 (28) |
| | 22:17 | | 21:34 | | 20:22 | 9 07:49 (42) | 19:05 | | 16:52 | 104 | 12:00 (1) | 16:08 | 102 12:29 (25) |
| 5 | 05:00 | | 05:47 | | 06:45 | 07:38 (42) | 07:43 | | 07:45 | | 08:51 (2) | 08:42 | 09:28 (28) |
| | 22:16 | | 21:32 | | 20:19 | 14 07:52 (42) | 19:02 | | 16:50 | 106 | 12:01 (1) | 16:07 | 101 12:29 (25) |
| 6 | 05:01 | | 05:49 | | 06:47 | 07:36 (42) | 07:44 | 09:03 (29) | 07:47 | | 08:51 (2) | 08:43 | 09:30 (28) |
| | 22:16 | | 21:30 | | 20:17 | 17 07:53 (42) | 18:59 | 8 09:11 (29) | 16:48 | 106 | 12:01 (1) | 16:06 | 99 12:30 (25) |
| 7 | 05:02 | | 05:51 | | 06:49 | 07:34 (42) | 07:46 | 08:59 (29) | 07:49 | | 08:51 (2) | 08:44 | 09:30 (28) |
| | 22:15 | | 21:28 | | 20:14 | 19 07:53 (42) | 18:57 | 15 09:14 (29) | 16:46 | 108 | 12:02 (1) | 16:06 | 98 12:30 (25) |
| 8 | 05:03 | | 05:53 | | 06:51 | 07:33 (42) | 07:48 | 08:57 (29) | 07:51 | | 08:53 (2) | 08:46 | 09:32 (28) |
| | 22:14 | | 21:26 | | 20:12 | 21 07:54 (42) | 18:54 | 19 09:16 (29) | 16:44 | 108 | 12:03 (1) | 16:05 | 99 12:32 (25) |
| 9 | 05:04 | | 05:54 | | 06:53 | 07:32 (42) | 07:50 | 08:55 (29) | 07:53 | | 08:53 (2) | 08:47 | 09:33 (28) |
| | 22:13 | | 21:24 | | 20:09 | 22 07:54 (42) | 18:52 | 23 09:18 (29) | 16:42 | 111 | 12:04 (1) | 16:05 | 98 12:32 (25) |
| 10 | 05:06 | | 05:56 | | 06:55 | 07:31 (42) | 07:52 | 08:54 (29) | 07:55 | | 08:53 (2) | 08:48 | 09:35 (28) |
| | 22:12 | | 21:22 | | 20:07 | 23 07:54 (42) | 18:49 | 24 09:18 (29) | 16:40 | 113 | 12:04 (1) | 16:04 | 97 12:33 (25) |
| 11 | 05:07 | | 05:58 | | 06:57 | 07:31 (42) | 07:54 | 08:53 (29) | 07:57 | | 08:54 (2) | 08:50 | 09:37 (28) |
| | 22:11 | | 21:19 | | 20:04 | 23 07:54 (42) | 18:47 | 26 09:19 (29) | 16:38 | 113 | 12:04 (1) | 16:04 | 95 12:33 (25) |
| 12 | 05:08 | | 06:00 | | 06:59 | 07:30 (42) | 07:56 | 08:52 (29) | 07:59 | | 08:56 (2) | 08:51 | 11:04 (26) |
| | 22:10 | | 21:17 | | 20:01 | 23 07:53 (42) | 18:44 | 27 09:19 (29) | 16:36 | 114 | 12:05 (1) | 16:04 | 90 12:34 (25) |
| 13 | 05:09 | | 06:02 | | 07:01 | 07:30 (42) | 07:58 | 08:51 (29) | 08:01 | | 08:56 (2) | 08:52 | 11:04 (26) |
| | 22:09 | | 21:15 | | 19:59 | 22 07:52 (42) | 18:42 | 28 09:19 (29) | 16:34 | 115 | 12:06 (1) | 16:04 | 90 12:34 (25) |
| 14 | 05:11 | | 06:04 | | 07:02 | 07:31 (42) | 08:00 | 08:51 (29) | 08:04 | | 08:57 (2) | 08:53 | 10:42 (27) |
| | 22:08 | | 21:13 | | 19:56 | 20 07:51 (42) | 18:39 | 29 09:20 (29) | 16:33 | 116 | 12:06 (1) | 16:04 | 93 12:35 (25) |
| 15 | 05:12 | | 06:06 | | 07:04 | 07:32 (42) | 08:02 | 08:51 (29) | 08:06 | | 08:58 (2) | 08:54 | 10:42 (27) |
| | 22:07 | | 21:10 | | 19:54 | 18 07:50 (42) | 18:37 | 29 09:20 (29) | 16:31 | 115 | 12:06 (1) | 16:04 | 96 12:36 (25) |
| 16 | 05:14 | | 06:08 | | 07:06 | 07:34 (42) | 08:04 | 08:51 (29) | 08:08 | | 09:00 (2) | 08:55 | 10:40 (27) |
| | 22:06 | | 21:08 | | 19:51 | 15 07:49 (42) | 18:35 | 34 10:18 (2) | 16:29 | 115 | 12:07 (1) | 16:04 | 99 12:36 (25) |
| 17 | 05:15 | | 06:09 | | 07:08 | 07:36 (42) | 08:06 | 08:51 (29) | 08:10 | | 09:01 (2) | 08:56 | 10:40 (27) |
| | 22:04 | | 21:06 | | 19:48 | 11 07:47 (42) | 18:32 | 46 10:24 (2) | 16:28 | 114 | 12:07 (1) | 16:04 | 101 12:36 (25) |
| 18 | 05:16 | | 06:11 | | 07:10 | 07:38 (42) | 08:08 | 08:51 (29) | 08:12 | | 09:01 (44) | 08:57 | 10:41 (27) |
| | 22:03 | | 21:04 | | 19:46 | 6 07:44 (42) | 18:30 | 52 10:27 (2) | 16:26 | 114 | 12:07 (1) | 16:04 | 101 12:37 (25) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | 08:51 (29) | 08:13 | | 09:01 (44) | 08:57 | 10:41 (27) |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 55 10:29 (2) | 16:25 | 114 | 12:07 (1) | 16:04 | 102 12:38 (25) |
| 20 | 05:19 | | 06:15 | | 07:14 | | 08:12 | 08:51 (29) | 08:15 | | 09:01 (44) | 08:58 | 10:41 (27) |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 57 10:30 (2) | 16:23 | 114 | 12:07 (1) | 16:05 | 103 12:38 (25) |
| 21 | 05:21 | | 06:17 | | 07:16 | | 08:14 | 08:52 (29) | 08:17 | | 09:03 (44) | 08:59 | 10:42 (27) |
| | 21:59 | | 20:57 | | 19:38 | | 18:23 | 59 10:32 (2) | 16:22 | 113 | 12:08 (1) | 16:05 | 103 12:39 (25) |
| 22 | 05:23 | | 06:19 | | 07:18 | | 08:16 | 08:54 (29) | 08:19 | | 09:03 (44) | 08:59 | 10:43 (27) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 59 10:34 (2) | 16:20 | 113 | 12:08 (1) | 16:05 | 103 12:40 (25) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:55 (29) | 08:21 | | 09:03 (44) | 09:00 | 10:43 (27) |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 58 10:35 (2) | 16:19 | 115 | 12:10 (25) | 16:06 | 103 12:40 (25) |
| 24 | 05:26 | | 06:23 | | 07:21 | | 08:20 | 08:57 (29) | 08:23 | | 09:04 (44) | 09:00 | 10:43 (27) |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 55 10:35 (2) | 16:18 | 118 | 12:15 (25) | 16:07 | 103 12:40 (25) |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:22 | 08:00 (29) | 08:25 | | 09:04 (44) | 09:00 | 10:43 (27) |
| | 21:53 | | 20:47 | | 19:28 | | 17:13 | 63 11:37 (1) | 16:16 | 120 | 12:17 (25) | 16:07 | 102 12:40 (25) |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:24 | 08:52 (2) | 08:27 | | 09:05 (44) | 09:01 | 10:45 (27) |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 69 11:43 (1) | 16:15 | 120 | 12:19 (25) | 16:08 | 101 12:41 (25) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | 08:52 (2) | 08:28 | | 09:06 (44) | 09:01 | 10:46 (27) |
| | 21:49 | | 20:42 | | 19:23 | | 17:09 | 77 11:47 (1) | 16:14 | 121 | 12:21 (25) | 16:09 | 100 12:42 (25) |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:29 | 08:52 (2) | 08:30 | | 09:07 (44) | 09:01 | 10:47 (27) |
| | 21:47 | | 20:40 | | 19:20 | | 17:07 | 81 11:49 (1) | 16:13 | 121 | 12:23 (25) | 16:10 | 97 12:42 (25) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:31 | 08:51 (2) | 08:32 | | 09:09 (44) | 09:01 | 10:49 (27) |
| | 21:46 | | 20:37 | | 19:17 | | 17:04 | 88 11:51 (1) | 16:12 | 120 | 12:24 (25) | 16:10 | 96 12:43 (25) |
| 30 | 05:36 | | 06:34 | | 07:33 | | 07:33 | 08:50 (2) | 08:34 | | 09:11 (44) | 09:01 | 11:11 (26) |
| | 21:44 | | 20:35 | | 19:15 | | 17:02 | 93 11:53 (1) | 16:11 | 116 | 12:25 (25) | 16:11 | 91 12:42 (25) |
| 31 | 05:38 | | 06:36 | | | | 07:35 | 08:51 (2) | | | | 09:01 | 11:13 (26) |
| | 21:42 | | 20:32 | | | | 17:00 | 95 11:55 (1) | | | | 16:12 | 90 12:43 (25) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | | 224 | |
| Total, worst case | | | | | 263 | | 1269 | | 3380 | | | 3083 | |
| Sun reduction | | | | | 0,40 | | 0,31 | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | 1,00 | | 0,68 | | 0,41 | | | 0,20 | |
| Total reduction | | | | | 0,35 | | 0,18 | | 0,06 | | | 0,02 | |
| Total, real | | | | | 91 | | 232 | | 193 | | | 72 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:05 (44) | 08:28 | | 08:57 (3) | 07:27 | | 08:02 (30) | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 174 | 14:50 (25) | 17:08 | 169 | 15:47 (1) | 18:07 | 104 | 15:40 (1) | 20:10 | | | 21:09 | 22:03 |
| 2 | 09:01 | | 10:05 (44) | 08:26 | | 08:55 (3) | 07:24 | | 08:03 (30) | 07:05 | | 07:36 (42) | 05:53 | 05:01 |
| | 16:15 | 173 | 14:50 (25) | 17:10 | 169 | 15:47 (1) | 18:10 | 96 | 15:38 (1) | 20:12 | 13 | 07:49 (42) | 21:11 | 22:04 |
| 3 | 09:01 | | 10:06 (44) | 08:24 | | 08:54 (3) | 07:22 | | 08:03 (30) | 07:03 | | 07:32 (42) | 05:51 | 05:00 |
| | 16:16 | 171 | 14:51 (25) | 17:12 | 163 | 15:48 (1) | 18:12 | 88 | 15:35 (1) | 20:14 | 18 | 07:50 (42) | 21:13 | 22:05 |
| 4 | 09:00 | | 10:06 (44) | 08:22 | | 08:54 (3) | 07:19 | | 08:04 (30) | 07:00 | | 07:31 (42) | 05:49 | 04:59 |
| | 16:18 | 170 | 14:51 (25) | 17:15 | 156 | 15:49 (1) | 18:14 | 77 | 15:32 (1) | 20:16 | 21 | 07:52 (42) | 21:15 | 22:06 |
| 5 | 09:00 | | 10:07 (44) | 08:20 | | 08:54 (3) | 07:17 | | 08:04 (30) | 06:58 | | 07:29 (42) | 05:46 | 04:58 |
| | 16:19 | 168 | 14:53 (25) | 17:17 | 158 | 15:50 (1) | 18:16 | 60 | 15:25 (1) | 20:18 | 24 | 07:53 (42) | 21:17 | 22:08 |
| 6 | 08:59 | | 10:07 (44) | 08:18 | | 08:54 (3) | 07:14 | | 08:07 (30) | 06:55 | | 07:28 (42) | 05:44 | 04:57 |
| | 16:20 | 160 | 14:53 (25) | 17:19 | 158 | 15:50 (1) | 18:18 | 43 | 09:33 (29) | 20:20 | 26 | 07:54 (42) | 21:19 | 22:09 |
| 7 | 08:59 | | 10:08 (44) | 08:16 | | 08:54 (3) | 07:12 | | 09:01 (29) | 06:53 | | 07:26 (42) | 05:42 | 04:56 |
| | 16:22 | 160 | 14:53 (25) | 17:21 | 158 | 15:51 (1) | 18:20 | 29 | 09:30 (29) | 20:22 | 28 | 07:54 (42) | 21:20 | 22:10 |
| 8 | 08:58 | | 10:08 (44) | 08:14 | | 08:54 (3) | 07:09 | | 09:02 (29) | 06:50 | | 07:26 (42) | 05:40 | 04:56 |
| | 16:23 | 161 | 14:54 (25) | 17:23 | 167 | 15:51 (1) | 18:22 | 25 | 09:27 (29) | 20:24 | 29 | 07:55 (42) | 21:22 | 22:11 |
| 9 | 08:58 | | 10:09 (44) | 08:12 | | 08:55 (3) | 07:07 | | 09:05 (29) | 06:48 | | 07:25 (42) | 05:38 | 04:55 |
| | 16:25 | 160 | 14:55 (25) | 17:25 | 169 | 15:51 (1) | 18:24 | 20 | 09:25 (29) | 20:25 | 30 | 07:55 (42) | 21:24 | 22:12 |
| 10 | 08:57 | | 10:10 (44) | 08:10 | | 08:56 (3) | 07:04 | | 09:09 (29) | 06:45 | | 07:24 (42) | 05:36 | 04:55 |
| | 16:26 | 161 | 14:56 (25) | 17:27 | 171 | 15:52 (1) | 18:26 | 10 | 09:19 (29) | 20:27 | 31 | 07:55 (42) | 21:26 | 22:13 |
| 11 | 08:56 | | 10:10 (44) | 08:08 | | 08:57 (3) | 07:02 | | | 06:43 | | 07:24 (42) | 05:34 | 04:54 |
| | 16:28 | 162 | 14:56 (25) | 17:29 | 171 | 15:52 (1) | 18:28 | | | 20:29 | 30 | 07:54 (42) | 21:28 | 22:14 |
| 12 | 08:55 | | 10:10 (44) | 08:06 | | 08:58 (3) | 06:59 | | | 06:40 | | 07:24 (42) | 05:32 | 04:54 |
| | 16:30 | 161 | 14:56 (25) | 17:32 | 169 | 15:51 (1) | 18:30 | | | 20:31 | 30 | 07:54 (42) | 21:30 | 22:14 |
| 13 | 08:54 | | 10:11 (44) | 08:04 | | 09:01 (3) | 06:57 | | | 06:38 | | 07:23 (42) | 05:30 | 04:53 |
| | 16:31 | 162 | 14:57 (25) | 17:34 | 168 | 15:52 (1) | 18:32 | | | 20:33 | 30 | 07:53 (42) | 21:32 | 22:15 |
| 14 | 08:53 | | 10:12 (44) | 08:02 | | 09:01 (29) | 06:54 | | | 06:35 | | 07:24 (42) | 05:29 | 04:53 |
| | 16:33 | 162 | 14:57 (25) | 17:36 | 167 | 15:52 (1) | 18:34 | | | 20:35 | 29 | 07:53 (42) | 21:34 | 22:16 |
| 15 | 08:52 | | 10:13 (44) | 07:59 | | 08:59 (29) | 06:52 | | | 06:33 | | 07:24 (42) | 05:27 | 04:53 |
| | 16:35 | 161 | 14:58 (25) | 17:38 | 168 | 15:51 (1) | 18:36 | | | 20:37 | 29 | 07:53 (42) | 21:35 | 22:16 |
| 16 | 08:51 | | 10:13 (44) | 07:57 | | 08:59 (29) | 06:49 | | | 06:30 | | 07:24 (42) | 05:25 | 04:52 |
| | 16:36 | 160 | 14:58 (25) | 17:40 | 166 | 15:51 (1) | 18:38 | | | 20:39 | 27 | 07:51 (42) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:14 (44) | 07:55 | | 08:58 (29) | 06:47 | | | 06:28 | | 07:25 (42) | 05:23 | 04:52 |
| | 16:38 | 170 | 15:21 (1) | 17:42 | 166 | 15:52 (1) | 18:40 | | | 20:41 | 25 | 07:50 (42) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:15 (44) | 07:53 | | 08:57 (29) | 06:44 | | | 06:25 | | 07:26 (42) | 05:21 | 04:52 |
| | 16:40 | 176 | 15:25 (1) | 17:44 | 163 | 15:51 (1) | 18:42 | | | 20:43 | 23 | 07:49 (42) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:16 (44) | 07:51 | | 08:57 (29) | 06:41 | | | 06:23 | | 07:26 (42) | 05:20 | 04:52 |
| | 16:42 | 179 | 15:28 (1) | 17:47 | 162 | 15:51 (1) | 18:44 | | | 20:45 | 21 | 07:47 (42) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:18 (44) | 07:48 | | 08:57 (29) | 06:39 | | | 06:21 | | 07:28 (42) | 05:18 | 04:52 |
| | 16:44 | 178 | 15:30 (1) | 17:49 | 158 | 15:51 (1) | 18:46 | | | 20:47 | 17 | 07:45 (42) | 21:44 | 22:19 |
| 21 | 08:45 | | 10:19 (44) | 07:46 | | 08:56 (29) | 06:36 | | | 06:18 | | 07:31 (42) | 05:16 | 04:52 |
| | 16:46 | 180 | 15:32 (1) | 17:51 | 153 | 15:49 (1) | 18:48 | | | 20:49 | 12 | 07:43 (42) | 21:46 | 22:19 |
| 22 | 08:44 | | 10:21 (44) | 07:44 | | 08:10 (30) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 179 | 15:34 (1) | 17:53 | 157 | 15:49 (1) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:25 (44) | 07:41 | | 08:07 (30) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 173 | 15:36 (1) | 17:55 | 155 | 15:48 (1) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 11:08 (28) | 07:39 | | 08:05 (30) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 168 | 15:37 (1) | 17:57 | 150 | 15:47 (1) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:39 | | 11:10 (28) | 07:36 | | 08:04 (30) | 06:26 | | | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 167 | 15:39 (1) | 17:59 | 142 | 15:46 (1) | 18:56 | | | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | 11:13 (28) | 07:34 | | 08:03 (30) | 06:23 | | | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 166 | 15:41 (1) | 18:01 | 124 | 15:45 (1) | 18:58 | | | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 11:16 (28) | 07:32 | | 08:02 (30) | 06:21 | | | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 164 | 15:42 (1) | 18:03 | 112 | 15:43 (1) | 19:00 | | | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 08:03 (30) | 06:18 | | | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 157 | 15:43 (1) | 18:05 | 108 | 15:42 (1) | 19:02 | | | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (3) | | | | 07:16 | | | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 161 | 15:44 (1) | | | | 20:04 | | | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (3) | | | | 07:13 | | | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 164 | 15:45 (1) | | | | 20:06 | | | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (3) | | | | 07:11 | | | | | | 05:03 | |
| | 17:06 | 166 | 15:46 (1) | | | | 20:08 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 5174 | | | 4397 | | | 552 | | | 493 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,36 | | | 0,51 | | | 0,78 | | | 1,00 | | | |
| Total reduction | | 0,06 | | | 0,11 | | | 0,24 | | | 0,35 | | | |
| Total, real | | 299 | | | 494 | | | 132 | | | 173 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:22 (42) | 07:35 | | | 07:37 | | 08:25 (3) | 08:35 | | 09:51 (44) |
| | 22:18 | | 21:40 | | | 20:30 | 31 | 07:53 (42) | 19:12 | | | 16:58 | 170 | 15:21 (1) | 16:10 | 162 | 14:37 (25) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:22 (42) | 07:37 | | | 07:39 | | 08:24 (3) | 08:37 | | 09:52 (44) |
| | 22:18 | | 21:38 | | | 20:27 | 31 | 07:53 (42) | 19:10 | | | 16:56 | 169 | 15:21 (1) | 16:09 | 161 | 14:38 (25) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:23 (42) | 07:39 | | | 07:41 | | 08:24 (3) | 08:38 | | 09:52 (44) |
| | 22:17 | | 21:36 | | | 20:24 | 30 | 07:53 (42) | 19:07 | | | 16:54 | 165 | 15:20 (1) | 16:08 | 161 | 14:38 (25) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:23 (42) | 07:41 | | 09:44 (29) | 07:43 | | 08:24 (3) | 08:40 | | 09:53 (44) |
| | 22:17 | | 21:34 | | | 20:22 | 29 | 07:52 (42) | 19:05 | 16 | 10:00 (29) | 16:52 | 159 | 15:21 (1) | 16:08 | 160 | 14:39 (25) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:23 (42) | 07:42 | | 09:41 (29) | 07:45 | | 08:24 (3) | 08:42 | | 09:53 (44) |
| | 22:16 | | 21:32 | | | 20:19 | 28 | 07:51 (42) | 19:02 | 22 | 10:03 (29) | 16:50 | 158 | 15:20 (1) | 16:07 | 161 | 14:39 (25) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:24 (42) | 07:44 | | 09:38 (29) | 07:47 | | 08:23 (3) | 08:43 | | 09:53 (44) |
| | 22:16 | | 21:30 | | | 20:17 | 26 | 07:50 (42) | 18:59 | 27 | 10:05 (29) | 16:48 | 158 | 15:19 (1) | 16:06 | 160 | 14:39 (25) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 07:24 (42) | 07:46 | | 08:43 (30) | 07:49 | | 08:23 (3) | 08:44 | | 09:53 (44) |
| | 22:15 | | 21:28 | | | 20:14 | 24 | 07:48 (42) | 18:57 | 39 | 10:07 (29) | 16:46 | 158 | 15:19 (1) | 16:06 | 168 | 14:39 (25) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:25 (42) | 07:48 | | 08:40 (30) | 07:51 | | 08:24 (3) | 08:46 | | 09:54 (44) |
| | 22:14 | | 21:26 | | | 20:12 | 22 | 07:47 (42) | 18:54 | 47 | 10:08 (29) | 16:44 | 165 | 15:19 (1) | 16:05 | 171 | 14:40 (25) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:26 (42) | 07:50 | | 08:39 (30) | 07:53 | | 08:26 (3) | 08:47 | | 09:54 (44) |
| | 22:13 | | 21:24 | | | 20:09 | 19 | 07:45 (42) | 18:52 | 68 | 16:03 (1) | 16:42 | 169 | 15:18 (1) | 16:05 | 171 | 14:39 (25) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 07:29 (42) | 07:52 | | 08:37 (30) | 07:55 | | 08:28 (3) | 08:48 | | 09:55 (44) |
| | 22:12 | | 21:22 | | | 20:07 | 13 | 07:42 (42) | 18:49 | 82 | 16:07 (1) | 16:40 | 167 | 15:17 (1) | 16:04 | 173 | 14:40 (25) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 07:34 (42) | 07:54 | | 08:36 (30) | 07:57 | | 08:30 (3) | 08:50 | | 09:56 (47) |
| | 22:11 | | 21:19 | | | 20:04 | 3 | 07:37 (42) | 18:47 | 93 | 16:10 (1) | 16:38 | 166 | 15:16 (1) | 16:04 | 173 | 14:40 (25) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:35 (30) | 07:59 | | 08:33 (3) | 08:51 | | 09:56 (47) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 100 | 16:12 (1) | 16:36 | 165 | 15:17 (1) | 16:04 | 174 | 14:40 (25) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:35 (30) | 08:01 | | 08:35 (3) | 08:52 | | 09:56 (47) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 105 | 16:13 (1) | 16:34 | 161 | 15:16 (1) | 16:04 | 173 | 14:40 (25) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:36 (30) | 08:03 | | 08:37 (3) | 08:53 | | 09:56 (47) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 110 | 16:16 (1) | 16:33 | 157 | 15:15 (1) | 16:04 | 175 | 14:41 (25) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:36 (30) | 08:06 | | 10:48 (28) | 08:54 | | 09:57 (47) |
| | 22:07 | | 21:10 | | | 19:54 | | | 18:37 | 113 | 16:17 (1) | 16:31 | 164 | 15:14 (1) | 16:04 | 174 | 14:41 (25) |
| 16 | 05:13 | | 06:08 | | | 07:06 | | | 08:04 | | 08:36 (30) | 08:08 | | 10:46 (28) | 08:55 | | 09:57 (47) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 131 | 16:17 (1) | 16:29 | 166 | 15:14 (1) | 16:04 | 174 | 14:41 (25) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | | 08:06 | | 08:36 (30) | 08:09 | | 10:44 (28) | 08:56 | | 09:58 (47) |
| | 22:04 | | 21:06 | | | 19:48 | | | 18:32 | 145 | 16:18 (1) | 16:28 | 166 | 15:12 (1) | 16:04 | 174 | 14:42 (25) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | | 08:08 | | 08:37 (30) | 08:11 | | 10:42 (28) | 08:57 | | 09:58 (47) |
| | 22:03 | | 21:04 | | | 19:46 | | | 18:30 | 152 | 16:19 (1) | 16:26 | 168 | 15:11 (1) | 16:04 | 175 | 14:42 (25) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | | 08:10 | | 08:39 (30) | 08:13 | | 09:59 (44) | 08:57 | | 09:59 (47) |
| | 22:02 | | 21:01 | | | 19:43 | | | 18:27 | 155 | 16:19 (1) | 16:25 | 173 | 15:10 (1) | 16:04 | 174 | 14:43 (25) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | | 08:12 | | 08:41 (30) | 08:15 | | 09:56 (44) | 08:58 | | 09:59 (47) |
| | 22:00 | | 20:59 | | | 19:41 | | | 18:25 | 158 | 16:20 (1) | 16:23 | 179 | 15:09 (1) | 16:05 | 174 | 14:43 (25) |
| 21 | 05:21 | | 06:17 | | 07:41 (42) | 07:16 | | | 08:14 | | 09:26 (29) | 08:17 | | 09:55 (44) | 08:59 | | 10:00 (47) |
| | 21:59 | | 20:56 | 1 | 07:42 (42) | 19:38 | | | 18:23 | 155 | 16:20 (1) | 16:22 | 180 | 15:08 (1) | 16:05 | 175 | 14:44 (25) |
| 22 | 05:23 | | 06:19 | | 07:34 (42) | 07:18 | | | 08:16 | | 09:27 (29) | 08:19 | | 09:54 (44) | 08:59 | | 10:00 (47) |
| | 21:57 | | 20:54 | 13 | 07:47 (42) | 19:35 | | | 18:20 | 160 | 16:21 (1) | 16:20 | 179 | 15:07 (1) | 16:05 | 174 | 14:44 (25) |
| 23 | 05:24 | | 06:21 | | 07:32 (42) | 07:19 | | | 08:18 | | 09:27 (29) | 08:21 | | 09:53 (44) | 09:00 | | 10:01 (47) |
| | 21:56 | | 20:52 | 17 | 07:49 (42) | 19:33 | | | 18:18 | 162 | 16:21 (1) | 16:19 | 180 | 15:05 (1) | 16:06 | 175 | 14:45 (25) |
| 24 | 05:26 | | 06:23 | | 07:30 (42) | 07:21 | | | 08:20 | | 09:28 (29) | 08:23 | | 09:52 (44) | 09:00 | | 10:01 (47) |
| | 21:54 | | 20:49 | 21 | 07:51 (42) | 19:30 | | | 18:16 | 163 | 16:21 (1) | 16:18 | 176 | 15:02 (1) | 16:07 | 174 | 14:45 (25) |
| 25 | 05:28 | | 06:25 | | 07:29 (42) | 07:23 | | | 07:22 | | 08:28 (29) | 08:25 | | 09:52 (44) | 09:00 | | 10:01 (47) |
| | 21:52 | | 20:47 | 23 | 07:52 (42) | 19:28 | | | 17:13 | 166 | 15:21 (1) | 16:16 | 169 | 14:59 (1) | 16:07 | 174 | 14:45 (25) |
| 26 | 05:29 | | 06:26 | | 07:28 (42) | 07:25 | | | 07:24 | | 08:28 (29) | 08:27 | | 09:52 (44) | 09:01 | | 10:02 (47) |
| | 21:51 | | 20:44 | 25 | 07:53 (42) | 19:25 | | | 17:11 | 167 | 15:21 (1) | 16:15 | 160 | 14:37 (25) | 16:08 | 176 | 14:47 (25) |
| 27 | 05:31 | | 06:28 | | 07:26 (42) | 07:27 | | | 07:26 | | 08:30 (29) | 08:28 | | 09:52 (44) | 09:01 | | 10:03 (47) |
| | 21:49 | | 20:42 | 27 | 07:53 (42) | 19:23 | | | 17:09 | 167 | 15:22 (1) | 16:14 | 161 | 14:37 (25) | 16:09 | 174 | 14:47 (25) |
| 28 | 05:33 | | 06:30 | | 07:25 (42) | 07:29 | | | 07:29 | | 08:31 (29) | 08:30 | | 09:52 (44) | 09:01 | | 10:03 (47) |
| | 21:47 | | 20:39 | 29 | 07:54 (42) | 19:20 | | | 17:07 | 166 | 15:22 (1) | 16:13 | 160 | 14:37 (25) | 16:10 | 176 | 14:48 (25) |
| 29 | 05:34 | | 06:32 | | 07:24 (42) | 07:31 | | | 07:31 | | 08:29 (3) | 08:32 | | 09:52 (44) | 09:01 | | 10:04 (47) |
| | 21:46 | | 20:37 | 30 | 07:54 (42) | 19:17 | | | 17:04 | 168 | 15:21 (1) | 16:12 | 162 | 14:38 (25) | 16:10 | 173 | 14:48 (25) |
| 30 | 05:36 | | 06:34 | | 07:24 (42) | 07:33 | | | 07:33 | | 08:27 (3) | 08:34 | | 09:52 (44) | 09:01 | | 10:04 (47) |
| | 21:44 | | 20:35 | 30 | 07:54 (42) | 19:15 | | | 17:02 | 170 | 15:21 (1) | 16:11 | 161 | 14:38 (25) | 16:11 | 173 | 14:48 (25) |
| 31 | 05:38 | | 06:36 | | 07:24 (42) | | | | 07:35 | | 08:27 (3) | | | | 09:01 | | 10:04 (47) |
| | 21:42 | | 20:32 | 30 | 07:54 (42) | | | | 17:00 | 170 | 15:22 (1) | | | | 16:12 | 175 | 14:49 (25) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 246 | | | 256 | | | 3377 | | | 4991 | | | 5307 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,59 | | | 0,39 | | | 0,34 | |
| Total reduction | | | | 0,46 | | | 0,35 | | | 0,16 | | | 0,05 | | | 0,04 | |
| Total, real | | | | 113 | | | 91 | | | 548 | | | 274 | | | 219 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 12:00 (29) | 07:27 | | 07:53 (31) | 07:08 | | | 05:55 | | 07:32 (42) | 05:02 | |
| | 16:14 | 141 | 15:01 (26) | 17:08 | 135 | 16:21 (25) | 18:07 | 41 | 17:06 (1) | 20:10 | | | 21:09 | 43 | 08:15 (42) | 22:03 | |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 12:00 (29) | 07:24 | | 07:51 (31) | 07:05 | | | 05:53 | | 07:33 (42) | 05:01 | |
| | 16:15 | 142 | 15:01 (26) | 17:10 | 136 | 16:21 (25) | 18:09 | 43 | 17:05 (1) | 20:12 | | | 21:11 | 40 | 08:13 (42) | 22:04 | |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | 12:00 (29) | 07:22 | | 07:49 (31) | 07:03 | | 07:54 (42) | 05:51 | | 07:34 (42) | 05:00 | |
| | 16:16 | 142 | 15:02 (26) | 17:12 | 137 | 16:22 (25) | 18:12 | 45 | 17:04 (1) | 20:14 | 13 | 08:07 (42) | 21:13 | 38 | 08:12 (42) | 22:05 | |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | 09:01 (30) | 07:19 | | 07:48 (31) | 07:00 | | 07:50 (42) | 05:48 | | 07:35 (42) | 04:59 | |
| | 16:18 | 145 | 15:02 (26) | 17:15 | 142 | 16:22 (25) | 18:14 | 45 | 17:03 (1) | 20:16 | 21 | 08:11 (42) | 21:15 | 36 | 08:11 (42) | 22:06 | |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | 08:58 (30) | 07:17 | | 07:47 (31) | 06:58 | | 07:46 (42) | 05:46 | | 07:36 (42) | 04:58 | |
| | 16:19 | 145 | 15:03 (26) | 17:17 | 149 | 16:22 (25) | 18:16 | 43 | 17:01 (1) | 20:18 | 27 | 08:13 (42) | 21:17 | 33 | 08:09 (42) | 22:08 | |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | 08:56 (30) | 07:14 | | 07:47 (31) | 06:55 | | 07:44 (42) | 05:44 | | 07:37 (42) | 04:57 | |
| | 16:20 | 145 | 15:03 (26) | 17:19 | 152 | 16:22 (25) | 18:18 | 38 | 16:59 (1) | 20:20 | 32 | 08:16 (42) | 21:19 | 31 | 08:08 (42) | 22:09 | |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | 08:54 (30) | 07:12 | | 07:46 (31) | 06:53 | | 07:42 (42) | 05:42 | | 07:38 (42) | 04:56 | |
| | 16:22 | 144 | 15:03 (26) | 17:21 | 155 | 16:21 (25) | 18:20 | 31 | 16:54 (1) | 20:22 | 35 | 08:17 (42) | 21:20 | 28 | 08:06 (42) | 22:10 | |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | 08:53 (30) | 07:09 | | 07:45 (31) | 06:50 | | 07:40 (42) | 05:40 | | 07:40 (42) | 04:56 | |
| | 16:23 | 146 | 15:03 (26) | 17:23 | 156 | 16:21 (25) | 18:22 | 22 | 08:07 (31) | 20:23 | 39 | 08:19 (42) | 21:22 | 23 | 08:03 (42) | 22:11 | |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | 08:52 (30) | 07:07 | | 07:46 (31) | 06:48 | | 07:38 (42) | 05:38 | | 07:42 (42) | 04:55 | |
| | 16:25 | 146 | 15:03 (26) | 17:25 | 157 | 16:21 (25) | 18:24 | 21 | 08:07 (31) | 20:25 | 41 | 08:19 (42) | 21:24 | 19 | 08:01 (42) | 22:12 | |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | 08:52 (30) | 07:04 | | 07:46 (31) | 06:45 | | 07:37 (42) | 05:36 | | 07:45 (42) | 04:54 | |
| | 16:26 | 144 | 15:04 (26) | 17:27 | 155 | 16:20 (25) | 18:26 | 20 | 08:06 (31) | 20:27 | 43 | 08:20 (42) | 21:26 | 12 | 07:57 (42) | 22:13 | |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | 08:51 (30) | 07:02 | | 07:47 (31) | 06:43 | | 07:35 (42) | 05:34 | | | 04:54 | |
| | 16:28 | 144 | 15:03 (26) | 17:29 | 155 | 16:20 (25) | 18:28 | 18 | 08:05 (31) | 20:29 | 45 | 08:20 (42) | 21:28 | | | 22:14 | |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | 08:50 (30) | 06:59 | | 07:47 (31) | 06:40 | | 07:35 (42) | 05:32 | | | 04:54 | |
| | 16:29 | 143 | 15:03 (26) | 17:32 | 152 | 16:17 (25) | 18:30 | 16 | 08:03 (31) | 20:31 | 46 | 08:21 (42) | 21:30 | | | 22:14 | |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 08:50 (30) | 06:57 | | 07:48 (31) | 06:38 | | 07:33 (42) | 05:30 | | | 04:53 | |
| | 16:31 | 143 | 15:04 (26) | 17:34 | 161 | 16:58 (1) | 18:32 | 13 | 08:01 (31) | 20:33 | 48 | 08:21 (42) | 21:32 | | | 22:15 | |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 08:50 (30) | 06:54 | | 07:52 (31) | 06:35 | | 07:33 (42) | 05:28 | | | 04:53 | |
| | 16:33 | 140 | 15:04 (26) | 17:36 | 158 | 17:01 (1) | 18:34 | 6 | 07:58 (31) | 20:35 | 49 | 08:22 (42) | 21:34 | | | 22:16 | |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 08:50 (30) | 06:52 | | | 06:33 | | 07:32 (42) | 05:27 | | | 04:53 | |
| | 16:35 | 139 | 15:04 (26) | 17:38 | 151 | 17:02 (1) | 18:36 | | | 20:37 | 50 | 08:22 (42) | 21:35 | | | 22:16 | |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 08:50 (30) | 06:49 | | | 06:30 | | 07:31 (42) | 05:25 | | | 04:52 | |
| | 16:36 | 136 | 15:03 (26) | 17:40 | 150 | 17:04 (1) | 18:38 | | | 20:39 | 51 | 08:22 (42) | 21:37 | | | 22:17 | |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 08:51 (30) | 06:47 | | | 06:28 | | 07:31 (42) | 05:23 | | | 04:52 | |
| | 16:38 | 134 | 15:03 (26) | 17:42 | 147 | 17:06 (1) | 18:40 | | | 20:41 | 51 | 08:22 (42) | 21:39 | | | 22:18 | |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 08:50 (30) | 06:44 | | | 06:25 | | 07:31 (42) | 05:21 | | | 04:52 | |
| | 16:40 | 137 | 15:38 (2) | 17:44 | 143 | 17:06 (1) | 18:42 | | | 20:43 | 52 | 08:23 (42) | 21:41 | | | 22:18 | |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 08:51 (30) | 06:41 | | | 06:23 | | 07:30 (42) | 05:20 | | | 04:52 | |
| | 16:42 | 142 | 15:41 (2) | 17:46 | 137 | 17:07 (1) | 18:44 | | | 20:45 | 52 | 08:22 (42) | 21:42 | | | 22:18 | |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 08:52 (30) | 06:39 | | | 06:20 | | 07:30 (42) | 05:18 | | | 04:52 | |
| | 16:44 | 136 | 15:44 (2) | 17:49 | 129 | 17:08 (1) | 18:46 | | | 20:47 | 52 | 08:22 (42) | 21:44 | | | 22:19 | |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 08:53 (30) | 06:36 | | | 06:18 | | 07:30 (42) | 05:16 | | | 04:52 | |
| | 16:46 | 125 | 15:46 (2) | 17:51 | 117 | 17:08 (1) | 18:48 | | | 20:49 | 52 | 08:22 (42) | 21:46 | | | 22:19 | |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | 08:54 (30) | 06:34 | | | 06:16 | | 07:29 (42) | 05:15 | | | 04:52 | |
| | 16:48 | 117 | 15:48 (2) | 17:53 | 93 | 17:09 (1) | 18:50 | | | 20:51 | 52 | 08:21 (42) | 21:48 | | | 22:19 | |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | 08:55 (30) | 06:31 | | | 06:13 | | 07:29 (42) | 05:13 | | | 04:53 | |
| | 16:50 | 117 | 15:50 (2) | 17:55 | 84 | 17:08 (1) | 18:52 | | | 20:53 | 51 | 08:20 (42) | 21:49 | | | 22:19 | |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | 08:58 (30) | 06:29 | | | 06:11 | | 07:29 (42) | 05:12 | | | 04:53 | |
| | 16:52 | 127 | 16:11 (25) | 17:57 | 75 | 17:09 (1) | 18:54 | | | 20:55 | 51 | 08:20 (42) | 21:51 | | | 22:19 | |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | 15:26 (2) | 06:26 | | | 06:09 | | 07:30 (42) | 05:10 | | | 04:53 | |
| | 16:54 | 132 | 16:13 (25) | 17:59 | 57 | 17:08 (1) | 18:56 | | | 20:57 | 50 | 08:20 (42) | 21:52 | | | 22:19 | |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | 15:30 (2) | 06:23 | | | 06:06 | | 07:29 (42) | 05:09 | | | 04:54 | |
| | 16:56 | 133 | 16:15 (25) | 18:01 | 50 | 17:08 (1) | 18:58 | | | 20:59 | 49 | 08:18 (42) | 21:54 | | | 22:19 | |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | 16:34 (1) | 06:21 | | | 06:04 | | 07:30 (42) | 05:08 | | | 04:54 | |
| | 16:58 | 132 | 16:17 (25) | 18:03 | 33 | 17:07 (1) | 19:00 | | | 21:01 | 48 | 08:18 (42) | 21:55 | | | 22:19 | |
| 28 | 08:35 | | 11:59 (29) | 07:29 | | 16:35 (1) | 06:18 | | | 06:02 | | 07:30 (42) | 05:06 | | | 04:55 | |
| | 17:00 | 129 | 16:18 (25) | 18:05 | 32 | 17:07 (1) | 19:02 | | | 21:03 | 47 | 08:17 (42) | 21:57 | | | 22:19 | |
| 29 | 08:33 | | 11:59 (29) | | | | 07:16 | | | 05:59 | | 07:31 (42) | 05:05 | | | 04:55 | |
| | 17:02 | 132 | 16:19 (25) | | | | 20:04 | | | 21:05 | 45 | 08:16 (42) | 21:58 | | | 22:19 | |
| 30 | 08:31 | | 11:59 (29) | | | | 07:13 | | | 05:57 | | 07:31 (42) | 05:04 | | | 04:56 | |
| | 17:04 | 134 | 16:20 (25) | | | | 20:06 | | | 21:07 | 44 | 08:15 (42) | 22:00 | | | 22:19 | |
| 31 | 08:30 | | 11:59 (29) | | | | 07:11 | | | | | | 05:03 | | | | |
| | 17:06 | 135 | 16:20 (25) | | | | 20:08 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 4247 | | | 3498 | | | 402 | | | 1236 | | | 303 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,31 | | | 0,53 | | | 0,92 | | | 1,00 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,11 | | | 0,26 | | | 0,32 | | | 0,42 | | | |
| Total, real | | 197 | | | 371 | | | 104 | | | 399 | | | 128 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:34 (42) | 07:35 | | 08:27 (31) | 07:37 | | 08:21 (30) | 08:35 | | 09:32 (3) |
| | 22:18 | | 21:40 | | | 20:29 | 45 | 08:19 (42) | 19:12 | 15 | 08:42 (31) | 16:58 | 157 | 15:50 (25) | 16:10 | 144 | 14:45 (26) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:35 (42) | 07:37 | | 08:25 (31) | 07:39 | | 08:22 (30) | 08:37 | | 09:33 (3) |
| | 22:18 | | 21:38 | | | 20:27 | 43 | 08:18 (42) | 19:10 | 18 | 08:43 (31) | 16:56 | 156 | 15:50 (25) | 16:09 | 146 | 14:46 (26) |
| 3 | 04:58 | | 05:43 | | 07:54 (42) | 06:42 | | 07:36 (42) | 07:39 | | 08:24 (31) | 07:41 | | 08:23 (30) | 08:38 | | 09:33 (3) |
| | 22:17 | | 21:36 | 15 | 08:09 (42) | 20:24 | 41 | 08:17 (42) | 19:07 | 20 | 08:44 (31) | 16:54 | 155 | 15:51 (25) | 16:08 | 145 | 14:47 (26) |
| 4 | 04:59 | | 05:45 | | 07:52 (42) | 06:44 | | 07:37 (42) | 07:41 | | 08:23 (31) | 07:43 | | 08:24 (30) | 08:40 | | 09:34 (3) |
| | 22:17 | | 21:34 | 20 | 08:12 (42) | 20:22 | 39 | 08:16 (42) | 19:04 | 21 | 08:44 (31) | 16:52 | 155 | 15:52 (25) | 16:08 | 146 | 14:48 (26) |
| 5 | 05:00 | | 05:47 | | 07:50 (42) | 06:45 | | 07:39 (42) | 07:42 | | 08:22 (31) | 07:45 | | 08:26 (30) | 08:42 | | 09:34 (3) |
| | 22:16 | | 21:32 | 25 | 08:15 (42) | 20:19 | 35 | 08:14 (42) | 19:02 | 22 | 08:44 (31) | 16:50 | 153 | 15:52 (25) | 16:07 | 144 | 14:48 (26) |
| 6 | 05:01 | | 05:49 | | 07:47 (42) | 06:47 | | 07:39 (42) | 07:44 | | 08:22 (31) | 07:47 | | 08:28 (30) | 08:43 | | 09:35 (3) |
| | 22:15 | | 21:30 | 29 | 08:16 (42) | 20:17 | 32 | 08:11 (42) | 18:59 | 22 | 08:44 (31) | 16:48 | 149 | 15:52 (25) | 16:06 | 144 | 14:49 (26) |
| 7 | 05:02 | | 05:51 | | 07:46 (42) | 06:49 | | 07:41 (42) | 07:46 | | 08:22 (31) | 07:49 | | 08:31 (30) | 08:44 | | 09:35 (3) |
| | 22:15 | | 21:28 | 32 | 08:18 (42) | 20:14 | 28 | 08:09 (42) | 18:57 | 35 | 17:32 (1) | 16:46 | 143 | 15:52 (25) | 16:06 | 144 | 14:49 (26) |
| 8 | 05:03 | | 05:52 | | 07:45 (42) | 06:51 | | 07:44 (42) | 07:48 | | 08:22 (31) | 07:51 | | 11:31 (29) | 08:46 | | 09:36 (3) |
| | 22:14 | | 21:26 | 34 | 08:19 (42) | 20:12 | 22 | 08:06 (42) | 18:54 | 41 | 17:35 (1) | 16:44 | 136 | 15:52 (25) | 16:05 | 145 | 14:50 (26) |
| 9 | 05:04 | | 05:54 | | 07:43 (42) | 06:53 | | 07:48 (42) | 07:50 | | 08:22 (31) | 07:53 | | 11:31 (29) | 08:47 | | 09:36 (3) |
| | 22:13 | | 21:24 | 37 | 08:20 (42) | 20:09 | 13 | 08:01 (42) | 18:52 | 43 | 17:36 (1) | 16:42 | 136 | 15:52 (25) | 16:05 | 143 | 14:50 (26) |
| 10 | 05:06 | | 05:56 | | 07:42 (42) | 06:55 | | | 07:52 | | 08:22 (31) | 07:55 | | 11:30 (29) | 08:48 | | 09:37 (3) |
| | 22:12 | | 21:22 | 39 | 08:21 (42) | 20:07 | | | 18:49 | 45 | 17:37 (1) | 16:40 | 136 | 15:52 (25) | 16:04 | 142 | 14:51 (26) |
| 11 | 05:07 | | 05:58 | | 07:41 (42) | 06:57 | | | 07:54 | | 08:23 (31) | 07:57 | | 11:30 (29) | 08:50 | | 09:38 (3) |
| | 22:11 | | 21:19 | 41 | 08:22 (42) | 20:04 | | | 18:47 | 45 | 17:38 (1) | 16:38 | 135 | 15:51 (25) | 16:04 | 141 | 14:51 (26) |
| 12 | 05:08 | | 06:00 | | 07:40 (42) | 06:59 | | | 07:56 | | 08:25 (31) | 07:59 | | 11:31 (29) | 08:51 | | 09:38 (3) |
| | 22:10 | | 21:17 | 43 | 08:23 (42) | 20:01 | | | 18:44 | 44 | 17:39 (1) | 16:36 | 132 | 15:51 (25) | 16:04 | 141 | 14:51 (26) |
| 13 | 05:09 | | 06:02 | | 07:39 (42) | 07:01 | | | 07:58 | | 08:27 (31) | 08:01 | | 11:31 (29) | 08:52 | | 09:38 (3) |
| | 22:09 | | 21:15 | 44 | 08:23 (42) | 19:59 | | | 18:42 | 39 | 17:39 (1) | 16:34 | 132 | 15:51 (25) | 16:04 | 140 | 14:52 (26) |
| 14 | 05:11 | | 06:04 | | 07:38 (42) | 07:02 | | | 08:00 | | 17:06 (1) | 08:03 | | 11:31 (29) | 08:53 | | 09:39 (3) |
| | 22:08 | | 21:13 | 46 | 08:24 (42) | 19:56 | | | 18:39 | 33 | 17:39 (1) | 16:33 | 129 | 15:50 (25) | 16:04 | 140 | 14:52 (26) |
| 15 | 05:12 | | 06:06 | | 07:37 (42) | 07:04 | | | 08:02 | | 16:06 (2) | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 22:07 | | 21:10 | 48 | 08:25 (42) | 19:54 | | | 18:37 | 43 | 17:41 (1) | 16:31 | 133 | 15:49 (25) | 16:04 | 138 | 14:52 (26) |
| 16 | 05:13 | | 06:07 | | 07:37 (42) | 07:06 | | | 08:04 | | 16:00 (2) | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 22:06 | | 21:08 | 48 | 08:25 (42) | 19:51 | | | 18:35 | 54 | 17:40 (1) | 16:29 | 132 | 15:48 (25) | 16:04 | 138 | 14:53 (26) |
| 17 | 05:15 | | 06:09 | | 07:37 (42) | 07:08 | | | 08:06 | | 09:33 (30) | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 22:04 | | 21:06 | 49 | 08:26 (42) | 19:48 | | | 18:32 | 64 | 17:40 (1) | 16:28 | 132 | 15:47 (25) | 16:04 | 137 | 14:54 (26) |
| 18 | 05:16 | | 06:11 | | 07:35 (42) | 07:10 | | | 08:08 | | 09:28 (30) | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 22:03 | | 21:04 | 50 | 08:25 (42) | 19:46 | | | 18:30 | 79 | 17:40 (1) | 16:26 | 127 | 15:45 (25) | 16:04 | 138 | 14:54 (26) |
| 19 | 05:18 | | 06:13 | | 07:35 (42) | 07:12 | | | 08:10 | | 09:26 (30) | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 22:02 | | 21:01 | 51 | 08:26 (42) | 19:43 | | | 18:27 | 86 | 17:39 (1) | 16:25 | 117 | 15:24 (2) | 16:04 | 137 | 14:55 (26) |
| 20 | 05:19 | | 06:15 | | 07:35 (42) | 07:14 | | | 08:12 | | 09:24 (30) | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 22:00 | | 20:59 | 51 | 08:26 (42) | 19:41 | | | 18:25 | 105 | 17:39 (1) | 16:23 | 117 | 15:23 (2) | 16:05 | 138 | 14:55 (26) |
| 21 | 05:21 | | 06:17 | | 07:35 (42) | 07:16 | | | 08:14 | | 09:23 (30) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:59 | | 20:56 | 51 | 08:26 (42) | 19:38 | | | 18:23 | 121 | 17:38 (1) | 16:22 | 125 | 15:22 (2) | 16:05 | 137 | 14:56 (26) |
| 22 | 05:23 | | 06:19 | | 07:33 (42) | 07:18 | | | 08:16 | | 09:22 (30) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:57 | | 20:54 | 52 | 08:25 (42) | 19:35 | | | 18:20 | 132 | 17:38 (1) | 16:20 | 137 | 15:21 (2) | 16:05 | 137 | 14:56 (26) |
| 23 | 05:24 | | 06:21 | | 07:33 (42) | 07:19 | | | 08:18 | | 09:21 (30) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 21:56 | | 20:52 | 53 | 08:26 (42) | 19:33 | | | 18:18 | 138 | 17:37 (1) | 16:19 | 142 | 15:19 (2) | 16:06 | 138 | 14:57 (26) |
| 24 | 05:26 | | 06:23 | | 07:33 (42) | 07:21 | | | 08:20 | | 09:21 (30) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:54 | | 20:49 | 52 | 08:25 (42) | 19:30 | | | 18:16 | 145 | 17:36 (1) | 16:18 | 139 | 15:16 (2) | 16:06 | 137 | 14:57 (26) |
| 25 | 05:27 | | 06:25 | | 07:33 (42) | 07:23 | | | 07:22 | | 08:20 (30) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:52 | | 20:47 | 52 | 08:25 (42) | 19:28 | | | 17:13 | 149 | 16:35 (1) | 16:16 | 134 | 14:41 (26) | 16:07 | 138 | 14:57 (26) |
| 26 | 05:29 | | 06:26 | | 07:34 (42) | 07:25 | | | 07:24 | | 08:19 (30) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 21:51 | | 20:44 | 51 | 08:25 (42) | 19:25 | | | 17:11 | 151 | 16:33 (1) | 16:15 | 136 | 14:42 (26) | 16:08 | 136 | 14:58 (26) |
| 27 | 05:31 | | 06:28 | | 07:33 (42) | 07:27 | | | 07:26 | | 08:20 (30) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:49 | | 20:42 | 51 | 08:24 (42) | 19:22 | | | 17:09 | 151 | 16:32 (1) | 16:14 | 138 | 14:43 (26) | 16:09 | 137 | 14:59 (26) |
| 28 | 05:33 | | 06:30 | | 07:33 (42) | 07:29 | | | 07:28 | | 08:20 (30) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:47 | | 20:39 | 50 | 08:23 (42) | 19:20 | | | 17:07 | 158 | 16:30 (1) | 16:13 | 141 | 14:44 (26) | 16:10 | 139 | 14:59 (26) |
| 29 | 05:34 | | 06:32 | | 07:34 (42) | 07:31 | | | 07:31 | | 08:20 (30) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 21:46 | | 20:37 | 49 | 08:23 (42) | 19:17 | | | 17:04 | 159 | 16:26 (1) | 16:12 | 143 | 14:45 (26) | 16:10 | 140 | 15:00 (26) |
| 30 | 05:36 | | 06:34 | | 07:34 (42) | 07:33 | | 08:29 (31) | 07:33 | | 08:20 (30) | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 21:44 | | 20:34 | 48 | 08:22 (42) | 19:15 | 11 | 08:40 (31) | 17:02 | 153 | 15:47 (25) | 16:11 | 144 | 14:46 (26) | 16:11 | 138 | 14:59 (26) |
| 31 | 05:38 | | 06:36 | | 07:35 (42) | | | | 07:35 | | 08:20 (30) | | | | 09:01 | | 09:47 (3) |
| | 21:42 | | 20:32 | 46 | 08:21 (42) | | | | 17:00 | 154 | 15:48 (25) | | | | 16:12 | 140 | 15:00 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1257 | | | 309 | | | 2485 | | | 4141 | | | 4348 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,64 | | | 0,36 | | | 0,30 | |
| Total reduction | | | | 0,42 | | | 0,32 | | | 0,16 | | | 0,05 | | | 0,03 | |
| Total, real | | | | 531 | | | 100 | | | 403 | | | 195 | | | 145 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | | 08:33 (30) | 07:08 | | | 05:55 | | 07:02 (42) | 05:02 | |
| | 16:14 | 108 | 15:07 (26) | 17:08 | 137 | 16:27 (25) | 18:07 | 175 | 17:24 (1) | 20:10 | | | 21:09 | 51 | 07:53 (42) | 22:03 | |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | | 08:35 (30) | 07:05 | | | 05:53 | | 07:02 (42) | 05:01 | |
| | 16:15 | 107 | 15:07 (26) | 17:10 | 140 | 16:29 (25) | 18:09 | 169 | 17:25 (1) | 20:12 | | | 21:11 | 50 | 07:52 (42) | 22:04 | |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | | 08:36 (30) | 07:03 | | | 05:51 | | 07:02 (42) | 05:00 | |
| | 16:16 | 109 | 15:08 (26) | 17:12 | 139 | 16:30 (25) | 18:12 | 160 | 17:24 (1) | 20:14 | | | 21:13 | 50 | 07:52 (42) | 22:05 | |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 11:38 (29) | 07:19 | | 08:40 (30) | 07:00 | | | 05:49 | | 07:02 (42) | 04:59 | |
| | 16:18 | 112 | 15:08 (26) | 17:15 | 135 | 16:31 (25) | 18:14 | 146 | 17:25 (1) | 20:16 | | | 21:15 | 50 | 07:52 (42) | 22:06 | |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 11:38 (29) | 07:17 | | 11:49 (29) | 06:58 | | | 05:46 | | 07:01 (42) | 04:58 | |
| | 16:19 | 117 | 15:10 (26) | 17:17 | 137 | 16:32 (25) | 18:16 | 130 | 17:24 (1) | 20:18 | | | 21:17 | 51 | 07:52 (42) | 22:08 | |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 11:38 (29) | 07:14 | | 11:52 (29) | 06:55 | | | 05:44 | | 07:01 (42) | 04:57 | |
| | 16:20 | 119 | 15:10 (26) | 17:19 | 140 | 16:33 (25) | 18:18 | 120 | 17:24 (1) | 20:20 | | | 21:18 | 50 | 07:51 (42) | 22:09 | |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 11:37 (29) | 07:12 | | 07:38 (31) | 06:53 | | | 05:42 | | 07:02 (42) | 04:56 | |
| | 16:22 | 120 | 15:10 (26) | 17:21 | 143 | 16:33 (25) | 18:20 | 119 | 17:23 (1) | 20:22 | | | 21:20 | 49 | 07:51 (42) | 22:10 | |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 11:37 (29) | 07:09 | | 07:35 (31) | 06:50 | | | 05:40 | | 07:02 (42) | 04:56 | |
| | 16:23 | 122 | 15:10 (26) | 17:23 | 144 | 16:33 (25) | 18:22 | 110 | 17:22 (1) | 20:23 | | | 21:22 | 48 | 07:50 (42) | 22:11 | |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 11:37 (29) | 07:07 | | 07:34 (31) | 06:48 | | | 05:38 | | 07:02 (42) | 04:55 | |
| | 16:25 | 128 | 15:11 (26) | 17:25 | 146 | 16:34 (25) | 18:24 | 91 | 17:22 (1) | 20:25 | | | 21:24 | 48 | 07:50 (42) | 22:12 | |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 11:37 (29) | 07:04 | | 07:32 (31) | 06:45 | | | 05:36 | | 07:02 (42) | 04:54 | |
| | 16:26 | 131 | 15:12 (26) | 17:27 | 147 | 16:34 (25) | 18:26 | 67 | 17:20 (1) | 20:27 | | | 21:26 | 47 | 07:49 (42) | 22:13 | |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 11:37 (29) | 07:02 | | 07:32 (31) | 06:43 | | | 05:34 | | 07:03 (42) | 04:54 | |
| | 16:28 | 133 | 15:11 (26) | 17:29 | 148 | 16:34 (25) | 18:28 | 50 | 17:20 (1) | 20:29 | | | 21:28 | 46 | 07:49 (42) | 22:14 | |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 11:37 (29) | 06:59 | | 07:30 (31) | 06:40 | | | 05:32 | | 07:03 (42) | 04:54 | |
| | 16:29 | 138 | 15:12 (26) | 17:32 | 148 | 16:33 (25) | 18:30 | 50 | 17:18 (1) | 20:31 | | | 21:30 | 46 | 07:49 (42) | 22:14 | |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 08:41 (30) | 06:57 | | 07:30 (31) | 06:38 | | | 05:30 | | 07:03 (42) | 04:53 | |
| | 16:31 | 139 | 15:12 (26) | 17:34 | 159 | 16:33 (25) | 18:32 | 47 | 17:16 (1) | 20:33 | | | 21:32 | 45 | 07:48 (42) | 22:15 | |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | 08:38 (30) | 06:54 | | 07:30 (31) | 06:35 | | 07:28 (42) | 05:28 | | 07:04 (42) | 04:53 | |
| | 16:33 | 142 | 15:13 (26) | 17:36 | 166 | 16:33 (25) | 18:34 | 42 | 17:14 (1) | 20:35 | 6 | 07:34 (42) | 21:34 | 43 | 07:47 (42) | 22:16 | |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | 08:36 (30) | 06:52 | | 07:30 (31) | 06:33 | | 07:22 (42) | 05:27 | | 07:05 (42) | 04:53 | |
| | 16:35 | 144 | 15:13 (26) | 17:38 | 169 | 16:32 (25) | 18:36 | 35 | 17:10 (1) | 20:37 | 18 | 07:40 (42) | 21:35 | 42 | 07:47 (42) | 22:16 | |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | 08:35 (30) | 06:49 | | 07:30 (31) | 06:30 | | 07:18 (42) | 05:25 | | 07:05 (42) | 04:52 | |
| | 16:36 | 145 | 15:12 (26) | 17:40 | 170 | 16:31 (25) | 18:38 | 21 | 07:51 (31) | 20:39 | 24 | 07:42 (42) | 21:37 | 40 | 07:45 (42) | 22:17 | |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | 08:34 (30) | 06:47 | | 07:31 (31) | 06:28 | | 07:16 (42) | 05:23 | | 07:06 (42) | 04:52 | |
| | 16:38 | 147 | 15:13 (26) | 17:42 | 172 | 16:31 (25) | 18:40 | 18 | 07:49 (31) | 20:41 | 28 | 07:44 (42) | 21:39 | 39 | 07:45 (42) | 22:18 | |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | 08:33 (30) | 06:44 | | 07:31 (31) | 06:25 | | 07:14 (42) | 05:21 | | 07:07 (42) | 04:52 | |
| | 16:40 | 149 | 15:13 (26) | 17:44 | 172 | 16:28 (25) | 18:42 | 16 | 07:47 (31) | 20:43 | 32 | 07:46 (42) | 21:41 | 37 | 07:44 (42) | 22:18 | |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | 08:32 (30) | 06:41 | | 07:33 (31) | 06:23 | | 07:11 (42) | 05:20 | | 07:08 (42) | 04:52 | |
| | 16:42 | 148 | 15:13 (26) | 17:46 | 172 | 16:27 (25) | 18:44 | 13 | 07:46 (31) | 20:45 | 36 | 07:47 (42) | 21:42 | 35 | 07:43 (42) | 22:18 | |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:32 (30) | 06:39 | | 07:36 (31) | 06:20 | | 07:10 (42) | 05:18 | | 07:08 (42) | 04:52 | |
| | 16:44 | 147 | 15:13 (26) | 17:49 | 167 | 16:23 (25) | 18:46 | 5 | 07:41 (31) | 20:47 | 38 | 07:48 (42) | 21:44 | 34 | 07:42 (42) | 22:19 | |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 08:31 (30) | 06:36 | | | 06:18 | | 07:09 (42) | 05:16 | | 07:10 (42) | 04:52 | |
| | 16:46 | 147 | 15:12 (26) | 17:51 | 180 | 17:14 (1) | 18:48 | | | 20:49 | 41 | 07:50 (42) | 21:46 | 31 | 07:41 (42) | 22:19 | |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 08:31 (30) | 06:34 | | | 06:16 | | 07:07 (42) | 05:15 | | 07:10 (42) | 04:52 | |
| | 16:48 | 146 | 15:11 (26) | 17:53 | 185 | 17:17 (1) | 18:50 | | | 20:51 | 43 | 07:50 (42) | 21:48 | 29 | 07:39 (42) | 22:19 | |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 08:31 (30) | 06:31 | | | 06:13 | | 07:06 (42) | 05:13 | | 07:12 (42) | 04:53 | |
| | 16:50 | 144 | 15:11 (26) | 17:55 | 189 | 17:19 (1) | 18:52 | | | 20:53 | 45 | 07:51 (42) | 21:49 | 27 | 07:39 (42) | 22:19 | |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:31 (30) | 06:29 | | | 06:11 | | 07:06 (42) | 05:12 | | 07:14 (42) | 04:53 | |
| | 16:52 | 140 | 15:10 (26) | 17:57 | 190 | 17:21 (1) | 18:54 | | | 20:55 | 45 | 07:51 (42) | 21:51 | 23 | 07:37 (42) | 22:19 | |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:31 (30) | 06:26 | | | 06:09 | | 07:05 (42) | 05:10 | | 07:15 (42) | 04:53 | |
| | 16:54 | 134 | 15:08 (26) | 17:59 | 188 | 17:21 (1) | 18:56 | | | 20:57 | 47 | 07:52 (42) | 21:52 | 21 | 07:36 (42) | 22:19 | |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:32 (30) | 06:23 | | | 06:06 | | 07:03 (42) | 05:09 | | 07:16 (42) | 04:54 | |
| | 16:56 | 127 | 15:06 (26) | 18:01 | 188 | 17:23 (1) | 18:58 | | | 20:59 | 48 | 07:51 (42) | 21:54 | 18 | 07:34 (42) | 22:19 | |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 08:32 (30) | 06:21 | | | 06:04 | | 07:03 (42) | 05:08 | | 07:19 (42) | 04:54 | |
| | 16:58 | 115 | 14:03 (28) | 18:03 | 185 | 17:23 (1) | 19:00 | | | 21:01 | 49 | 07:52 (42) | 21:55 | 12 | 07:31 (42) | 22:19 | |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 08:33 (30) | 06:18 | | | 06:02 | | 07:03 (42) | 05:06 | | 07:23 (42) | 04:55 | |
| | 17:00 | 112 | 14:01 (28) | 18:05 | 181 | 17:24 (1) | 19:02 | | | 21:03 | 49 | 07:52 (42) | 21:57 | 5 | 07:28 (42) | 22:19 | |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 07:02 (42) | 05:05 | | | 04:55 | |
| | 17:02 | 99 | 13:55 (28) | | | | 20:04 | | | 21:05 | 50 | 07:52 (42) | 21:58 | | | 22:19 | |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | | | 05:57 | | 07:02 (42) | 05:04 | | | 04:56 | |
| | 17:04 | 118 | 16:22 (25) | | | | 20:06 | | | 21:07 | 50 | 07:52 (42) | 22:00 | | | 22:19 | |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | | | | | 05:03 | | | | |
| | 17:06 | 130 | 16:25 (25) | | | | 20:08 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 4017 | | | 4537 | | | 1584 | | | 649 | | | 1067 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,34 | | | 0,48 | | | 0,67 | | | 0,98 | | | 0,98 | | | |
| Total reduction | | 0,05 | | | 0,10 | | | 0,19 | | | 0,33 | | | 0,43 | | | |
| Total, real | | 213 | | | 459 | | | 309 | | | 214 | | | 463 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:13 (42) | 06:38 | | | 07:35 | | 08:09 (31) | 07:37 | | 11:07 (29) | 08:35 | | 09:19 (3) |
| | 22:18 | | | 21:40 | 46 | 07:59 (42) | 20:29 | | | 19:12 | 48 | 17:56 (1) | 16:58 | 147 | 16:04 (25) | 16:10 | 134 | 14:53 (26) |
| 2 | 04:58 | | | 05:41 | | 07:13 (42) | 06:40 | | | 07:37 | | 08:09 (31) | 07:39 | | 11:07 (29) | 08:37 | | 09:20 (3) |
| | 22:18 | | | 21:38 | 47 | 08:00 (42) | 20:27 | | | 19:10 | 51 | 17:57 (1) | 16:56 | 145 | 16:03 (25) | 16:09 | 131 | 14:54 (26) |
| 3 | 04:58 | | | 05:43 | | 07:12 (42) | 06:42 | | | 07:39 | | 08:10 (31) | 07:41 | | 11:07 (29) | 08:38 | | 09:21 (3) |
| | 22:17 | | | 21:36 | 48 | 08:00 (42) | 20:24 | | | 19:07 | 61 | 17:58 (1) | 16:54 | 144 | 16:03 (25) | 16:08 | 127 | 14:55 (26) |
| 4 | 04:59 | | | 05:45 | | 07:12 (42) | 06:44 | | | 07:41 | | 08:10 (31) | 07:43 | | 11:08 (29) | 08:40 | | 09:22 (3) |
| | 22:17 | | | 21:34 | 48 | 08:00 (42) | 20:22 | | | 19:04 | 73 | 17:59 (1) | 16:52 | 141 | 16:03 (25) | 16:08 | 123 | 14:55 (26) |
| 5 | 05:00 | | | 05:47 | | 07:12 (42) | 06:45 | | | 07:42 | | 08:11 (31) | 07:45 | | 11:08 (29) | 08:42 | | 09:22 (3) |
| | 22:16 | | | 21:32 | 49 | 08:01 (42) | 20:19 | | | 19:02 | 102 | 17:59 (1) | 16:50 | 139 | 16:02 (25) | 16:07 | 121 | 14:55 (26) |
| 6 | 05:01 | | | 05:49 | | 07:11 (42) | 06:47 | | | 07:44 | | 08:13 (31) | 07:47 | | 11:08 (29) | 08:43 | | 09:24 (3) |
| | 22:15 | | | 21:30 | 49 | 08:00 (42) | 20:17 | | | 18:59 | 114 | 17:59 (1) | 16:48 | 137 | 16:02 (25) | 16:06 | 119 | 14:56 (26) |
| 7 | 05:02 | | | 05:51 | | 07:11 (42) | 06:49 | | | 07:46 | | 08:15 (31) | 07:49 | | 11:08 (29) | 08:44 | | 09:24 (3) |
| | 22:15 | | | 21:28 | 50 | 08:01 (42) | 20:14 | | | 18:57 | 123 | 17:59 (1) | 16:46 | 135 | 16:01 (25) | 16:06 | 117 | 14:56 (26) |
| 8 | 05:03 | | | 05:52 | | 07:11 (42) | 06:51 | | | 07:48 | | 12:26 (29) | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 22:14 | | | 21:26 | 50 | 08:01 (42) | 20:12 | | | 18:54 | 126 | 17:59 (1) | 16:44 | 139 | 16:01 (25) | 16:05 | 111 | 14:56 (26) |
| 9 | 05:04 | | | 05:54 | | 07:10 (42) | 06:53 | | | 07:50 | | 12:23 (29) | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 22:13 | | | 21:24 | 51 | 08:01 (42) | 20:09 | | | 18:52 | 134 | 17:59 (1) | 16:42 | 140 | 15:59 (25) | 16:05 | 108 | 14:56 (26) |
| 10 | 05:06 | | | 05:56 | | 07:10 (42) | 06:55 | | | 07:52 | | 09:12 (30) | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 22:12 | | | 21:22 | 51 | 08:01 (42) | 20:07 | | | 18:49 | 154 | 17:59 (1) | 16:40 | 136 | 15:58 (25) | 16:04 | 107 | 14:57 (26) |
| 11 | 05:07 | | | 05:58 | | 07:10 (42) | 06:57 | | | 07:54 | | 09:09 (30) | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 22:11 | | | 21:19 | 51 | 08:01 (42) | 20:04 | | | 18:47 | 163 | 17:58 (1) | 16:38 | 130 | 15:56 (25) | 16:04 | 108 | 14:57 (26) |
| 12 | 05:08 | | | 06:00 | | 07:10 (42) | 06:59 | | | 07:56 | | 09:07 (30) | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 22:10 | | | 21:17 | 51 | 08:01 (42) | 20:01 | | | 18:44 | 173 | 17:57 (1) | 16:36 | 116 | 15:53 (25) | 16:04 | 107 | 14:58 (26) |
| 13 | 05:09 | | | 06:02 | | 07:10 (42) | 07:01 | | | 07:58 | | 09:06 (30) | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 22:09 | | | 21:15 | 50 | 08:00 (42) | 19:59 | | | 18:42 | 179 | 17:57 (1) | 16:34 | 100 | 13:28 (28) | 16:04 | 108 | 14:58 (26) |
| 14 | 05:11 | | | 06:04 | | 07:10 (42) | 07:02 | | | 08:00 | | 09:05 (30) | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 22:08 | | | 21:13 | 50 | 08:00 (42) | 19:56 | | | 18:39 | 182 | 17:56 (1) | 16:33 | 112 | 13:33 (28) | 16:04 | 106 | 14:58 (26) |
| 15 | 05:12 | | | 06:06 | | 07:10 (42) | 07:04 | | | 08:02 | | 09:04 (30) | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 22:07 | | | 21:10 | 50 | 08:00 (42) | 19:54 | | | 18:37 | 186 | 17:56 (1) | 16:31 | 115 | 13:35 (28) | 16:04 | 106 | 14:58 (26) |
| 16 | 05:13 | | 07:30 (42) | 06:07 | | 07:11 (42) | 07:06 | | | 08:04 | | 09:04 (30) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 22:06 | 9 | 07:39 (42) | 21:08 | 48 | 07:59 (42) | 19:51 | | | 18:35 | 188 | 17:55 (1) | 16:29 | 126 | 14:39 (26) | 16:04 | 104 | 14:59 (26) |
| 17 | 05:15 | | 07:27 (42) | 06:09 | | 07:11 (42) | 07:08 | | | 08:06 | | 09:03 (30) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 22:04 | 15 | 07:42 (42) | 21:06 | 48 | 07:59 (42) | 19:48 | | | 18:32 | 189 | 17:53 (1) | 16:28 | 135 | 14:42 (26) | 16:04 | 104 | 14:59 (26) |
| 18 | 05:16 | | 07:25 (42) | 06:11 | | 07:11 (42) | 07:10 | | | 08:08 | | 09:02 (30) | 08:11 | | 09:14 (3) | 08:56 | | 09:36 (3) |
| | 22:03 | 19 | 07:44 (42) | 21:04 | 46 | 07:57 (42) | 19:46 | | | 18:30 | 188 | 17:51 (1) | 16:26 | 140 | 14:44 (26) | 16:04 | 103 | 15:00 (26) |
| 19 | 05:18 | | 07:24 (42) | 06:13 | | 07:11 (42) | 07:12 | | | 08:10 | | 09:02 (30) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 22:02 | 22 | 07:46 (42) | 21:01 | 46 | 07:57 (42) | 19:43 | | | 18:27 | 186 | 17:49 (1) | 16:25 | 144 | 14:45 (26) | 16:04 | 102 | 15:01 (26) |
| 20 | 05:19 | | 07:22 (42) | 06:15 | | 07:12 (42) | 07:14 | | | 08:12 | | 09:02 (30) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 22:00 | 26 | 07:48 (42) | 20:59 | 44 | 07:56 (42) | 19:41 | | | 18:25 | 184 | 17:47 (1) | 16:23 | 147 | 14:46 (26) | 16:05 | 100 | 15:00 (26) |
| 21 | 05:21 | | 07:22 (42) | 06:17 | | 07:13 (42) | 07:16 | | | 08:14 | | 09:02 (30) | 08:17 | | 09:14 (3) | 08:59 | | 09:39 (3) |
| | 21:59 | 27 | 07:49 (42) | 20:56 | 42 | 07:55 (42) | 19:38 | | | 18:23 | 178 | 17:43 (1) | 16:22 | 147 | 14:48 (26) | 16:05 | 100 | 15:01 (26) |
| 22 | 05:23 | | 07:20 (42) | 06:19 | | 07:13 (42) | 07:18 | | | 08:16 | | 09:03 (30) | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 21:57 | 30 | 07:50 (42) | 20:54 | 40 | 07:53 (42) | 19:35 | | | 18:20 | 168 | 16:55 (25) | 16:20 | 147 | 14:49 (26) | 16:05 | 100 | 15:01 (26) |
| 23 | 05:24 | | 07:20 (42) | 06:21 | | 07:14 (42) | 07:19 | | | 08:18 | | 09:03 (30) | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 21:56 | 32 | 07:52 (42) | 20:52 | 38 | 07:52 (42) | 19:33 | | | 18:18 | 171 | 16:58 (25) | 16:19 | 148 | 14:50 (26) | 16:06 | 100 | 15:02 (26) |
| 24 | 05:26 | | 07:18 (42) | 06:23 | | 07:15 (42) | 07:21 | | 08:18 (31) | 08:20 | | 09:03 (30) | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 21:54 | 35 | 07:53 (42) | 20:49 | 36 | 07:51 (42) | 19:30 | 10 | 08:28 (31) | 18:16 | 173 | 16:59 (25) | 16:18 | 149 | 14:50 (26) | 16:06 | 101 | 15:02 (26) |
| 25 | 05:27 | | 07:18 (42) | 06:25 | | 07:17 (42) | 07:23 | | 08:15 (31) | 07:22 | | 08:04 (30) | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 21:52 | 36 | 07:54 (42) | 20:47 | 32 | 07:49 (42) | 19:28 | 15 | 08:30 (31) | 17:13 | 171 | 16:00 (25) | 16:16 | 146 | 14:51 (26) | 16:07 | 102 | 15:03 (26) |
| 26 | 05:29 | | 07:17 (42) | 06:26 | | 07:19 (42) | 07:25 | | 08:14 (31) | 07:24 | | 08:05 (30) | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 21:51 | 38 | 07:55 (42) | 20:44 | 28 | 07:47 (42) | 19:25 | 18 | 08:32 (31) | 17:11 | 171 | 16:01 (25) | 16:15 | 145 | 14:51 (26) | 16:08 | 102 | 15:04 (26) |
| 27 | 05:31 | | 07:16 (42) | 06:28 | | 07:20 (42) | 07:27 | | 08:12 (31) | 07:26 | | 08:07 (30) | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 21:49 | 40 | 07:56 (42) | 20:42 | 24 | 07:44 (42) | 19:22 | 19 | 08:31 (31) | 17:09 | 167 | 16:02 (25) | 16:14 | 144 | 14:52 (26) | 16:09 | 104 | 15:05 (26) |
| 28 | 05:33 | | 07:15 (42) | 06:30 | | 07:23 (42) | 07:29 | | 08:11 (31) | 07:28 | | 08:08 (30) | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 21:47 | 41 | 07:56 (42) | 20:39 | 17 | 07:40 (42) | 19:20 | 32 | 17:50 (1) | 17:07 | 165 | 16:03 (25) | 16:13 | 143 | 14:53 (26) | 16:10 | 104 | 15:05 (26) |
| 29 | 05:34 | | 07:15 (42) | 06:32 | | 07:29 (42) | 07:31 | | 08:10 (31) | 07:31 | | 08:11 (30) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 21:46 | 42 | 07:57 (42) | 20:37 | 5 | 07:34 (42) | 19:17 | 40 | 17:53 (1) | 17:04 | 159 | 16:03 (25) | 16:12 | 139 | 14:53 (26) | 16:10 | 107 | 15:06 (26) |
| 30 | 05:36 | | 07:15 (42) | 06:34 | | | 07:33 | | 08:10 (31) | 07:33 | | 11:06 (29) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 21:44 | 43 | 07:58 (42) | 20:34 | | | 19:15 | 45 | 17:55 (1) | 17:02 | 149 | 16:03 (25) | 16:11 | 138 | 14:54 (26) | 16:11 | 106 | 15:05 (26) |
| 31 | 05:38 | | 07:13 (42) | 06:36 | | | | | | 07:35 | | 11:06 (29) | | | | 09:01 | | 09:38 (3) |
| | 21:42 | 45 | 07:58 (42) | 20:32 | | | | | | 17:00 | 148 | 16:03 (25) | | | | 16:12 | 107 | 15:06 (26) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 500 | | | 1235 | | | 179 | | | 4624 | | | 4114 | | | 3379 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,98 | | | 0,95 | | | 0,55 | | | 0,36 | | | 0,35 | |
| Total reduction | | 0,41 | | | 0,43 | | | 0,32 | | | 0,14 | | | 0,05 | | | 0,04 | |
| Total, real | | 204 | | | 534 | | | 58 | | | 664 | | | 202 | | | 136 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | | 07:52 (5) | 07:08 | | | 05:55 | | 06:49 (42) | 05:02 | | 06:38 (42) |
| | 16:14 | 100 | 15:22 (26) | 17:08 | 138 | 15:32 (26) | 18:07 | 204 | 17:32 (1) | 20:10 | | | 21:09 | 33 | 07:22 (42) | 22:03 | 54 | 07:32 (42) |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | | 07:50 (5) | 07:05 | | | 05:53 | | 06:47 (42) | 05:01 | | 06:38 (42) |
| | 16:15 | 105 | 15:23 (26) | 17:10 | 130 | 15:30 (26) | 18:09 | 216 | 17:36 (1) | 20:12 | | | 21:11 | 37 | 07:24 (42) | 22:04 | 53 | 07:31 (42) |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | | 07:47 (5) | 07:03 | | | 05:51 | | 06:46 (42) | 05:00 | | 06:39 (42) |
| | 16:16 | 105 | 15:24 (26) | 17:12 | 118 | 14:37 (28) | 18:12 | 224 | 17:38 (1) | 20:14 | | | 21:13 | 39 | 07:25 (42) | 22:05 | 53 | 07:32 (42) |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | | 07:45 (5) | 07:00 | | | 05:48 | | 06:44 (42) | 04:59 | | 06:39 (42) |
| | 16:18 | 108 | 15:25 (26) | 17:15 | 113 | 14:35 (28) | 18:14 | 229 | 17:40 (1) | 20:16 | | | 21:15 | 42 | 07:26 (42) | 22:06 | 53 | 07:32 (42) |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | | 07:44 (5) | 06:58 | | | 05:46 | | 06:43 (42) | 04:58 | | 06:39 (42) |
| | 16:19 | 109 | 15:26 (26) | 17:17 | 105 | 14:33 (28) | 18:16 | 227 | 17:41 (1) | 20:18 | | | 21:17 | 44 | 07:27 (42) | 22:08 | 53 | 07:32 (42) |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | | 07:44 (5) | 06:55 | | | 05:44 | | 06:42 (42) | 04:57 | | 06:40 (42) |
| | 16:20 | 111 | 15:27 (26) | 17:19 | 91 | 14:29 (28) | 18:18 | 228 | 17:42 (1) | 20:20 | | | 21:18 | 45 | 07:27 (42) | 22:09 | 52 | 07:32 (42) |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | 12:23 (29) | 07:12 | | 07:44 (5) | 06:53 | | | 05:42 | | 06:41 (42) | 04:56 | | 06:40 (42) |
| | 16:22 | 112 | 15:28 (26) | 17:21 | 79 | 16:39 (25) | 18:20 | 224 | 17:43 (1) | 20:22 | | | 21:20 | 47 | 07:28 (42) | 22:10 | 52 | 07:32 (42) |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | 12:22 (29) | 07:09 | | 07:44 (5) | 06:50 | | | 05:40 | | 06:40 (42) | 04:56 | | 06:40 (42) |
| | 16:23 | 113 | 15:28 (26) | 17:23 | 92 | 16:44 (25) | 18:22 | 219 | 17:43 (1) | 20:23 | | | 21:22 | 49 | 07:29 (42) | 22:11 | 51 | 07:31 (42) |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | 12:22 (29) | 07:07 | | 07:46 (5) | 06:48 | | | 05:38 | | 06:39 (42) | 04:55 | | 06:41 (42) |
| | 16:25 | 113 | 15:29 (26) | 17:25 | 98 | 16:47 (25) | 18:24 | 208 | 17:43 (1) | 20:25 | | | 21:24 | 50 | 07:29 (42) | 22:12 | 51 | 07:32 (42) |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | 12:21 (29) | 07:04 | | 07:47 (5) | 06:45 | | | 05:36 | | 06:39 (42) | 04:54 | | 06:41 (42) |
| | 16:26 | 114 | 15:31 (26) | 17:27 | 103 | 16:49 (25) | 18:26 | 192 | 17:43 (1) | 20:27 | | | 21:26 | 50 | 07:29 (42) | 22:13 | 50 | 07:31 (42) |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | 12:20 (29) | 07:02 | | 07:29 (31) | 06:43 | | | 05:34 | | 06:39 (42) | 04:54 | | 06:41 (42) |
| | 16:28 | 114 | 15:31 (26) | 17:29 | 107 | 16:50 (25) | 18:28 | 191 | 17:44 (1) | 20:29 | | | 21:28 | 52 | 07:31 (42) | 22:14 | 51 | 07:32 (42) |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | 12:19 (29) | 06:59 | | 07:26 (31) | 06:40 | | | 05:32 | | 06:38 (42) | 04:54 | | 06:42 (42) |
| | 16:29 | 110 | 15:31 (26) | 17:32 | 110 | 16:50 (25) | 18:30 | 192 | 17:43 (1) | 20:31 | | | 21:30 | 53 | 07:31 (42) | 22:14 | 50 | 07:32 (42) |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | 12:18 (29) | 06:57 | | 07:24 (31) | 06:38 | | | 05:30 | | 06:37 (42) | 04:53 | | 06:43 (42) |
| | 16:31 | 105 | 15:32 (26) | 17:34 | 114 | 16:52 (25) | 18:32 | 191 | 17:42 (1) | 20:33 | | | 21:32 | 54 | 07:31 (42) | 22:15 | 49 | 07:32 (42) |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | 12:18 (29) | 06:54 | | 07:23 (31) | 06:35 | | | 05:28 | | 06:37 (42) | 04:53 | | 06:42 (42) |
| | 16:33 | 102 | 15:33 (26) | 17:36 | 117 | 16:52 (25) | 18:34 | 187 | 17:42 (1) | 20:35 | | | 21:34 | 54 | 07:31 (42) | 22:16 | 50 | 07:32 (42) |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | 12:17 (29) | 06:52 | | 07:22 (31) | 06:33 | | | 05:27 | | 06:37 (42) | 04:53 | | 06:43 (42) |
| | 16:35 | 105 | 15:34 (26) | 17:38 | 123 | 16:52 (25) | 18:36 | 186 | 17:41 (1) | 20:37 | | | 21:35 | 55 | 07:32 (42) | 22:16 | 49 | 07:32 (42) |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | 08:39 (30) | 06:49 | | 07:22 (31) | 06:30 | | | 05:25 | | 06:37 (42) | 04:52 | | 06:43 (42) |
| | 16:36 | 107 | 15:34 (26) | 17:40 | 133 | 16:53 (25) | 18:38 | 180 | 17:41 (1) | 20:39 | | | 21:37 | 54 | 07:31 (42) | 22:17 | 49 | 07:32 (42) |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | 08:35 (30) | 06:47 | | 07:21 (31) | 06:28 | | | 05:23 | | 06:37 (42) | 04:52 | | 06:43 (42) |
| | 16:38 | 106 | 15:35 (26) | 17:42 | 145 | 16:53 (25) | 18:40 | 172 | 17:40 (1) | 20:41 | | | 21:39 | 55 | 07:32 (42) | 22:18 | 49 | 07:32 (42) |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | 08:32 (30) | 06:44 | | 07:20 (31) | 06:25 | | | 05:21 | | 06:36 (42) | 04:52 | | 06:44 (42) |
| | 16:40 | 108 | 15:36 (26) | 17:44 | 154 | 16:53 (25) | 18:42 | 162 | 17:38 (1) | 20:43 | | | 21:41 | 56 | 07:32 (42) | 22:18 | 48 | 07:32 (42) |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | 08:30 (30) | 06:41 | | 07:20 (31) | 06:23 | | | 05:20 | | 06:37 (42) | 04:52 | | 06:44 (42) |
| | 16:42 | 109 | 15:36 (26) | 17:46 | 160 | 16:53 (25) | 18:44 | 152 | 17:37 (1) | 20:45 | | | 21:42 | 55 | 07:32 (42) | 22:18 | 48 | 07:32 (42) |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:29 (30) | 06:39 | | 07:20 (31) | 06:20 | | | 05:18 | | 06:36 (42) | 04:52 | | 06:44 (42) |
| | 16:44 | 109 | 15:36 (26) | 17:49 | 165 | 16:53 (25) | 18:46 | 137 | 17:35 (1) | 20:47 | | | 21:44 | 56 | 07:32 (42) | 22:19 | 48 | 07:32 (42) |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | 08:27 (30) | 06:36 | | 07:21 (31) | 06:18 | | | 05:16 | | 06:37 (42) | 04:52 | | 06:44 (42) |
| | 16:46 | 108 | 15:36 (26) | 17:51 | 169 | 16:53 (2) | 18:48 | 118 | 17:33 (1) | 20:49 | | | 21:46 | 55 | 07:32 (42) | 22:19 | 48 | 07:32 (42) |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 08:27 (30) | 06:34 | | 07:21 (31) | 06:16 | | | 05:15 | | 06:36 (42) | 04:52 | | 06:45 (42) |
| | 16:48 | 125 | 15:36 (26) | 17:53 | 174 | 16:55 (2) | 18:50 | 87 | 17:30 (1) | 20:51 | | | 21:47 | 56 | 07:32 (42) | 22:19 | 48 | 07:33 (42) |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 08:26 (30) | 06:31 | | 07:23 (31) | 06:13 | | | 05:13 | | 06:36 (42) | 04:53 | | 06:45 (42) |
| | 16:50 | 134 | 15:37 (26) | 17:55 | 177 | 16:55 (2) | 18:52 | 60 | 13:19 (29) | 20:53 | | | 21:49 | 56 | 07:32 (42) | 22:19 | 48 | 07:33 (42) |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:25 (30) | 06:29 | | 07:25 (31) | 06:11 | | | 05:12 | | 06:37 (42) | 04:53 | | 06:45 (42) |
| | 16:52 | 139 | 15:37 (26) | 17:57 | 181 | 16:56 (2) | 18:54 | 43 | 13:13 (29) | 20:55 | | | 21:51 | 55 | 07:32 (42) | 22:19 | 48 | 07:33 (42) |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:24 (30) | 06:26 | | 12:55 (29) | 06:09 | | | 05:10 | | 06:37 (42) | 04:53 | | 06:45 (42) |
| | 16:54 | 141 | 15:36 (26) | 17:59 | 184 | 16:56 (2) | 18:56 | 4 | 12:59 (29) | 20:57 | | | 21:52 | 56 | 07:33 (42) | 22:19 | 49 | 07:34 (42) |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:25 (30) | 06:23 | | | 06:06 | | | 05:09 | | 06:36 (42) | 04:54 | | 06:45 (42) |
| | 16:56 | 146 | 15:37 (26) | 18:01 | 183 | 16:57 (2) | 18:58 | | | 20:59 | | | 21:54 | 56 | 07:32 (42) | 22:19 | 49 | 07:34 (42) |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 07:01 (42) | 05:08 | | 06:37 (42) | 04:54 | | 06:46 (42) |
| | 16:58 | 147 | 15:37 (26) | 18:03 | 188 | 16:57 (2) | 19:00 | | | 21:01 | 9 | 07:10 (42) | 21:55 | 55 | 07:32 (42) | 22:19 | 49 | 07:35 (42) |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 07:55 (5) | 06:18 | | | 06:02 | | 06:56 (42) | 05:06 | | 06:37 (42) | 04:55 | | 06:45 (42) |
| | 17:00 | 146 | 15:36 (26) | 18:05 | 193 | 16:58 (2) | 19:02 | | | 21:03 | 19 | 07:15 (42) | 21:57 | 55 | 07:32 (42) | 22:19 | 50 | 07:35 (42) |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 06:53 (42) | 05:05 | | 06:37 (42) | 04:55 | | 06:46 (42) |
| | 17:02 | 146 | 15:35 (26) | | | | 20:04 | | | 21:05 | 25 | 07:18 (42) | 21:58 | 55 | 07:32 (42) | 22:19 | 49 | 07:35 (42) |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | | 05:57 | | 06:51 (42) | 05:04 | | 06:38 (42) | 04:56 | | 06:45 (42) |
| | 17:04 | 145 | 15:34 (26) | | | | 20:06 | | | 21:07 | 29 | 07:20 (42) | 22:00 | 54 | 07:32 (42) | 22:19 | 50 | 07:35 (42) |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | | | | 05:03 | | 06:38 (42) | | | |
| | 17:06 | 142 | 15:33 (26) | | | | 20:08 | | | | | | 22:01 | 54 | 07:32 (42) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3684 | | | 3844 | | | 4233 | | | 82 | | | 1587 | | | 1501 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,43 | | | 0,36 | | | 0,51 | | | 0,95 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,07 | | | 0,08 | | | 0,15 | | | 0,33 | | | 0,43 | | | 0,40 | |
| Total, real | | 248 | | | 295 | | | 647 | | | 27 | | | 683 | | | 604 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:46 (42) | 05:40 | | 06:49 (42) | 06:38 | | | 07:35 | | 08:04 (31) | 07:37 | | 11:51 (29) | 08:35 | | 09:21 (3) |
| | 22:18 | 50 | 07:36 (42) | 21:40 | 52 | 07:41 (42) | 20:29 | | | 19:12 | 191 | 18:22 (1) | 16:58 | 101 | 16:18 (25) | 16:10 | 112 | 15:13 (26) |
| 2 | 04:58 | | 06:46 (42) | 05:41 | | 06:49 (42) | 06:40 | | | 07:37 | | 08:06 (31) | 07:39 | | 11:51 (29) | 08:37 | | 09:22 (3) |
| | 22:18 | 50 | 07:36 (42) | 21:38 | 52 | 07:41 (42) | 20:27 | | | 19:10 | 192 | 18:22 (1) | 16:56 | 97 | 16:16 (25) | 16:09 | 114 | 15:13 (26) |
| 3 | 04:58 | | 06:46 (42) | 05:43 | | 06:49 (42) | 06:42 | | | 07:39 | | 08:09 (31) | 07:41 | | 11:52 (29) | 08:38 | | 09:23 (3) |
| | 22:17 | 51 | 07:37 (42) | 21:36 | 50 | 07:39 (42) | 20:24 | | | 19:07 | 196 | 18:21 (1) | 16:54 | 90 | 16:13 (25) | 16:08 | 113 | 15:13 (26) |
| 4 | 04:59 | | 06:46 (42) | 05:45 | | 06:50 (42) | 06:44 | | | 07:41 | | 08:24 (5) | 07:43 | | 11:54 (29) | 08:40 | | 09:24 (3) |
| | 22:17 | 51 | 07:37 (42) | 21:34 | 49 | 07:39 (42) | 20:22 | | | 19:04 | 201 | 18:21 (1) | 16:52 | 77 | 13:11 (29) | 16:08 | 113 | 15:13 (26) |
| 5 | 05:00 | | 06:46 (42) | 05:47 | | 06:51 (42) | 06:45 | | | 07:42 | | 08:22 (5) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | 51 | 07:37 (42) | 21:32 | 48 | 07:39 (42) | 20:19 | | | 19:02 | 214 | 18:20 (1) | 16:50 | 93 | 13:59 (28) | 16:07 | 112 | 15:13 (26) |
| 6 | 05:01 | | 06:46 (42) | 05:49 | | 06:51 (42) | 06:47 | | | 07:44 | | 08:21 (5) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | 51 | 07:37 (42) | 21:30 | 46 | 07:37 (42) | 20:17 | | | 18:59 | 221 | 18:19 (1) | 16:48 | 107 | 14:03 (28) | 16:06 | 111 | 15:13 (26) |
| 7 | 05:02 | | 06:46 (42) | 05:51 | | 06:52 (42) | 06:49 | | | 07:46 | | 08:20 (5) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | 52 | 07:38 (42) | 21:28 | 45 | 07:37 (42) | 20:14 | | | 18:57 | 225 | 18:18 (1) | 16:46 | 114 | 14:05 (28) | 16:06 | 109 | 15:12 (26) |
| 8 | 05:03 | | 06:46 (42) | 05:52 | | 06:53 (42) | 06:51 | | | 07:48 | | 08:19 (5) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | 52 | 07:38 (42) | 21:26 | 43 | 07:36 (42) | 20:12 | | | 18:54 | 228 | 18:17 (1) | 16:44 | 119 | 14:08 (28) | 16:05 | 108 | 15:13 (26) |
| 9 | 05:04 | | 06:46 (42) | 05:54 | | 06:53 (42) | 06:53 | | | 07:50 | | 08:19 (5) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | 52 | 07:38 (42) | 21:24 | 41 | 07:34 (42) | 20:09 | | | 18:52 | 229 | 18:15 (1) | 16:42 | 133 | 15:01 (26) | 16:05 | 104 | 15:12 (26) |
| 10 | 05:06 | | 06:46 (42) | 05:56 | | 06:54 (42) | 06:55 | | | 07:52 | | 08:20 (5) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | 53 | 07:39 (42) | 21:22 | 39 | 07:33 (42) | 20:07 | | | 18:49 | 226 | 18:13 (1) | 16:40 | 138 | 15:03 (26) | 16:04 | 105 | 15:13 (26) |
| 11 | 05:07 | | 06:47 (42) | 05:58 | | 06:56 (42) | 06:57 | | | 07:54 | | 08:22 (5) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | 53 | 07:40 (42) | 21:19 | 36 | 07:32 (42) | 20:04 | | | 18:47 | 221 | 18:11 (1) | 16:38 | 142 | 15:04 (26) | 16:04 | 101 | 15:13 (26) |
| 12 | 05:08 | | 06:46 (42) | 06:00 | | 06:58 (42) | 06:59 | | | 07:56 | | 08:24 (5) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | 54 | 07:40 (42) | 21:17 | 32 | 07:30 (42) | 20:01 | | | 18:44 | 213 | 18:08 (1) | 16:36 | 146 | 15:06 (26) | 16:04 | 99 | 15:12 (26) |
| 13 | 05:09 | | 06:46 (42) | 06:02 | | 06:59 (42) | 07:01 | | | 07:58 | | 08:26 (5) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | 54 | 07:40 (42) | 21:15 | 28 | 07:27 (42) | 19:59 | | | 18:42 | 195 | 18:01 (1) | 16:34 | 147 | 15:07 (26) | 16:04 | 95 | 15:12 (26) |
| 14 | 05:11 | | 06:46 (42) | 06:04 | | 07:01 (42) | 07:02 | | | 08:00 | | 08:28 (5) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | 54 | 07:40 (42) | 21:13 | 24 | 07:25 (42) | 19:56 | | | 18:39 | 192 | 17:30 (2) | 16:33 | 147 | 15:08 (26) | 16:04 | 94 | 15:12 (26) |
| 15 | 05:12 | | 06:46 (42) | 06:06 | | 07:05 (42) | 07:04 | | | 08:02 | | 08:57 (30) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | 54 | 07:40 (42) | 21:10 | 17 | 07:22 (42) | 19:54 | | | 18:37 | 186 | 17:30 (2) | 16:31 | 145 | 15:08 (26) | 16:04 | 90 | 15:12 (26) |
| 16 | 05:13 | | 06:46 (42) | 06:07 | | 07:12 (42) | 07:06 | | | 08:04 | | 08:57 (30) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | 55 | 07:41 (42) | 21:08 | 2 | 07:14 (42) | 19:51 | | | 18:35 | 184 | 17:29 (2) | 16:29 | 146 | 15:10 (26) | 16:04 | 87 | 15:12 (26) |
| 17 | 05:15 | | 06:46 (42) | 06:09 | | | 07:08 | | | 08:06 | | 08:57 (30) | 08:09 | | 09:14 (3) | 08:56 | | 11:50 (44) |
| | 22:04 | 55 | 07:41 (42) | 21:06 | | | 19:48 | | | 18:32 | 182 | 17:28 (2) | 16:28 | 141 | 15:10 (26) | 16:04 | 84 | 15:12 (26) |
| 18 | 05:16 | | 06:46 (42) | 06:11 | | | 07:10 | | | 08:08 | | 08:57 (30) | 08:11 | | 09:14 (3) | 08:56 | | 11:51 (44) |
| | 22:03 | 55 | 07:41 (42) | 21:04 | | | 19:46 | | | 18:30 | 179 | 17:27 (2) | 16:26 | 139 | 15:11 (26) | 16:04 | 81 | 15:12 (26) |
| 19 | 05:18 | | 06:46 (42) | 06:13 | | | 07:12 | | 08:12 (31) | 08:10 | | 08:57 (30) | 08:13 | | 09:14 (3) | 08:57 | | 11:52 (44) |
| | 22:02 | 56 | 07:42 (42) | 21:01 | | | 19:43 | 39 | 13:58 (29) | 18:27 | 177 | 17:26 (2) | 16:25 | 134 | 15:11 (26) | 16:04 | 82 | 15:13 (26) |
| 20 | 05:19 | | 06:46 (42) | 06:15 | | | 07:14 | | 08:09 (31) | 08:12 | | 08:57 (30) | 08:15 | | 09:14 (3) | 08:58 | | 11:51 (44) |
| | 22:00 | 56 | 07:42 (42) | 20:59 | | | 19:41 | 57 | 14:04 (29) | 18:25 | 173 | 17:25 (2) | 16:23 | 125 | 15:11 (26) | 16:05 | 82 | 15:12 (26) |
| 21 | 05:21 | | 06:47 (42) | 06:17 | | | 07:16 | | 08:07 (31) | 08:14 | | 08:58 (30) | 08:17 | | 09:15 (3) | 08:59 | | 11:52 (44) |
| | 21:59 | 55 | 07:42 (42) | 20:56 | | | 19:38 | 81 | 18:14 (1) | 18:23 | 167 | 17:23 (2) | 16:22 | 108 | 15:12 (26) | 16:05 | 82 | 15:13 (26) |
| 22 | 05:23 | | 06:46 (42) | 06:19 | | | 07:18 | | 08:06 (31) | 08:16 | | 09:00 (30) | 08:19 | | 09:15 (3) | 08:59 | | 11:52 (44) |
| | 21:57 | 56 | 07:42 (42) | 20:54 | | | 19:35 | 112 | 18:17 (1) | 18:20 | 163 | 17:23 (25) | 16:20 | 110 | 15:13 (26) | 16:05 | 82 | 15:13 (26) |
| 23 | 05:24 | | 06:47 (42) | 06:21 | | | 07:19 | | 08:05 (31) | 08:18 | | 09:01 (30) | 08:21 | | 09:16 (3) | 09:00 | | 11:53 (44) |
| | 21:56 | 56 | 07:43 (42) | 20:52 | | | 19:33 | 132 | 18:19 (1) | 18:18 | 158 | 17:23 (25) | 16:19 | 109 | 15:13 (26) | 16:06 | 82 | 15:14 (26) |
| 24 | 05:26 | | 06:47 (42) | 06:23 | | | 07:21 | | 08:04 (31) | 08:20 | | 09:03 (30) | 08:23 | | 09:16 (3) | 09:00 | | 11:54 (44) |
| | 21:54 | 55 | 07:42 (42) | 20:49 | | | 19:30 | 148 | 18:20 (1) | 18:16 | 151 | 17:23 (25) | 16:18 | 108 | 15:13 (26) | 16:06 | 82 | 15:15 (26) |
| 25 | 05:27 | | 06:47 (42) | 06:25 | | | 07:23 | | 08:04 (31) | 07:22 | | 08:05 (30) | 08:25 | | 09:17 (3) | 09:00 | | 11:54 (44) |
| | 21:52 | 56 | 07:43 (42) | 20:47 | | | 19:28 | 157 | 18:21 (1) | 17:13 | 143 | 16:23 (25) | 16:16 | 106 | 15:13 (26) | 16:07 | 81 | 15:15 (26) |
| 26 | 05:29 | | 06:47 (42) | 06:26 | | | 07:25 | | 08:03 (31) | 07:24 | | 11:46 (29) | 08:27 | | 09:17 (3) | 09:01 | | 11:55 (44) |
| | 21:51 | 55 | 07:42 (42) | 20:44 | | | 19:25 | 168 | 18:22 (1) | 17:11 | 126 | 16:22 (25) | 16:15 | 106 | 15:13 (26) | 16:08 | 83 | 15:17 (26) |
| 27 | 05:31 | | 06:47 (42) | 06:28 | | | 07:27 | | 08:02 (31) | 07:26 | | 11:47 (29) | 08:28 | | 09:18 (3) | 09:01 | | 11:56 (44) |
| | 21:49 | 55 | 07:42 (42) | 20:42 | | | 19:22 | 177 | 18:22 (1) | 17:09 | 123 | 16:23 (25) | 16:14 | 105 | 15:13 (26) | 16:09 | 84 | 15:18 (26) |
| 28 | 05:33 | | 06:47 (42) | 06:30 | | | 07:29 | | 08:02 (31) | 07:28 | | 11:48 (29) | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | 55 | 07:42 (42) | 20:39 | | | 19:20 | 183 | 18:22 (1) | 17:07 | 116 | 16:22 (25) | 16:13 | 102 | 15:13 (26) | 16:10 | 89 | 15:18 (26) |
| 29 | 05:34 | | 06:48 (42) | 06:32 | | | 07:31 | | 08:03 (31) | 07:31 | | 11:48 (29) | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | 54 | 07:42 (42) | 20:37 | | | 19:17 | 187 | 18:22 (1) | 17:04 | 113 | 16:21 (25) | 16:12 | 106 | 15:13 (26) | 16:10 | 93 | 15:19 (26) |
| 30 | 05:36 | | 06:48 (42) | 06:34 | | | 07:33 | | 08:03 (31) | 07:33 | | 11:49 (29) | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | 54 | 07:42 (42) | 20:34 | | | 19:15 | 190 | 18:22 (1) | 17:02 | 110 | 16:20 (25) | 16:11 | 111 | 15:14 (26) | 16:11 | 95 | 15:20 (26) |
| 31 | 05:38 | | 06:48 (42) | 06:36 | | | | | | 07:35 | | 11:49 (29) | | | | 09:01 | | 09:42 (3) |
| | 21:42 | 53 | 07:41 (42) | 20:32 | | | | | | 17:00 | 107 | 16:19 (25) | | | | 16:12 | 97 | 15:21 (26) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1663 | | | 604 | | | 1631 | | | 5502 | | | 3552 | | | 2946 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 0,50 | | | 0,46 | | | 0,37 | | | 0,36 | |
| Total reduction | | 0,40 | | | 0,43 | | | 0,17 | | | 0,12 | | | 0,05 | | | 0,04 | |
| Total, real | | 673 | | | 259 | | | 283 | | | 684 | | | 182 | | | 126 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | 13:19 (29) | 07:27 | | 07:55 (5) | 07:08 | | | 05:55 | | 06:59 (42) | 05:02 | | 06:51 (42) |
| | 16:14 | 100 | 15:27 (26) | 17:08 | 100 | 15:36 (26) | 18:07 | 181 | 17:35 (1) | 20:10 | | | 21:09 | 48 | 07:47 (42) | 22:03 | 62 | 07:53 (42) |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | 13:19 (29) | 07:24 | | 07:56 (5) | 07:05 | | | 05:53 | | 06:58 (42) | 05:01 | | 06:51 (42) |
| | 16:15 | 100 | 15:28 (26) | 17:10 | 88 | 14:50 (28) | 18:09 | 174 | 17:37 (1) | 20:12 | | | 21:11 | 50 | 07:48 (42) | 22:04 | 62 | 07:53 (42) |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | 13:18 (29) | 07:22 | | 07:55 (5) | 07:03 | | | 05:51 | | 06:57 (42) | 05:00 | | 06:52 (42) |
| | 16:16 | 101 | 15:29 (26) | 17:12 | 84 | 14:47 (28) | 18:12 | 161 | 17:37 (1) | 20:14 | | | 21:13 | 52 | 07:49 (42) | 22:05 | 62 | 07:54 (42) |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | 13:18 (29) | 07:19 | | 07:57 (5) | 07:00 | | | 05:48 | | 06:56 (42) | 04:59 | | 06:52 (42) |
| | 16:18 | 100 | 15:30 (26) | 17:15 | 72 | 14:30 (29) | 18:14 | 155 | 17:38 (1) | 20:16 | | | 21:15 | 54 | 07:50 (42) | 22:06 | 62 | 07:54 (42) |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | 13:17 (29) | 07:17 | | 07:57 (5) | 06:58 | | | 05:46 | | 06:55 (42) | 04:58 | | 06:52 (42) |
| | 16:19 | 101 | 15:32 (26) | 17:17 | 74 | 14:31 (29) | 18:16 | 150 | 17:38 (1) | 20:18 | | | 21:17 | 55 | 07:50 (42) | 22:08 | 61 | 07:53 (42) |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | 13:17 (29) | 07:14 | | 07:44 (31) | 06:55 | | | 05:44 | | 06:54 (42) | 04:57 | | 06:53 (42) |
| | 16:20 | 98 | 15:32 (26) | 17:19 | 80 | 16:42 (25) | 18:18 | 153 | 17:38 (1) | 20:20 | | | 21:18 | 57 | 07:51 (42) | 22:09 | 61 | 07:54 (42) |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | 09:01 (30) | 07:12 | | 07:41 (31) | 06:53 | | | 05:42 | | 06:53 (42) | 04:56 | | 06:53 (42) |
| | 16:22 | 92 | 15:33 (26) | 17:21 | 96 | 16:45 (25) | 18:20 | 144 | 17:38 (1) | 20:21 | | | 21:20 | 58 | 07:51 (42) | 22:10 | 60 | 07:53 (42) |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | 08:57 (30) | 07:09 | | 07:38 (31) | 06:50 | | | 05:40 | | 06:52 (42) | 04:56 | | 06:53 (42) |
| | 16:23 | 93 | 15:34 (26) | 17:23 | 108 | 16:47 (25) | 18:22 | 136 | 17:37 (1) | 20:23 | | | 21:22 | 60 | 07:52 (42) | 22:11 | 60 | 07:53 (42) |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | 08:55 (30) | 07:07 | | 07:38 (31) | 06:48 | | | 05:38 | | 06:52 (42) | 04:55 | | 06:54 (42) |
| | 16:25 | 94 | 15:35 (26) | 17:25 | 116 | 16:49 (25) | 18:24 | 130 | 17:37 (1) | 20:25 | | | 21:24 | 60 | 07:52 (42) | 22:12 | 59 | 07:53 (42) |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | 08:54 (30) | 07:04 | | 07:36 (31) | 06:45 | | | 05:36 | | 06:51 (42) | 04:54 | | 06:53 (42) |
| | 16:26 | 96 | 15:37 (26) | 17:27 | 123 | 16:50 (25) | 18:26 | 120 | 17:36 (1) | 20:27 | | | 21:26 | 61 | 07:52 (42) | 22:13 | 60 | 07:53 (42) |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 08:53 (30) | 07:02 | | 07:36 (31) | 06:43 | | | 05:34 | | 06:51 (42) | 04:54 | | 06:54 (42) |
| | 16:28 | 97 | 15:36 (26) | 17:29 | 129 | 16:51 (25) | 18:28 | 106 | 17:36 (1) | 20:29 | | | 21:28 | 62 | 07:53 (42) | 22:14 | 59 | 07:53 (42) |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 08:51 (30) | 06:59 | | 07:35 (31) | 06:40 | | | 05:32 | | 06:51 (42) | 04:54 | | 06:55 (42) |
| | 16:29 | 103 | 15:37 (26) | 17:32 | 136 | 16:51 (25) | 18:30 | 77 | 17:35 (1) | 20:31 | | | 21:30 | 62 | 07:53 (42) | 22:14 | 59 | 07:54 (42) |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 08:50 (30) | 06:57 | | 07:34 (31) | 06:38 | | | 05:30 | | 06:50 (42) | 04:53 | | 06:55 (42) |
| | 16:31 | 115 | 15:38 (26) | 17:34 | 142 | 16:52 (25) | 18:32 | 68 | 17:33 (1) | 20:33 | | | 21:32 | 63 | 07:53 (42) | 22:15 | 59 | 07:54 (42) |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 08:50 (30) | 06:54 | | 07:34 (31) | 06:35 | | | 05:28 | | 06:49 (42) | 04:53 | | 06:55 (42) |
| | 16:33 | 122 | 15:39 (26) | 17:36 | 144 | 16:52 (25) | 18:34 | 49 | 17:33 (1) | 20:35 | | | 21:34 | 64 | 07:53 (42) | 22:16 | 58 | 07:53 (42) |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 08:48 (30) | 06:52 | | 07:34 (31) | 06:33 | | | 05:27 | | 06:50 (42) | 04:53 | | 06:55 (42) |
| | 16:35 | 127 | 15:40 (26) | 17:38 | 150 | 16:52 (25) | 18:36 | 44 | 17:30 (1) | 20:37 | | | 21:35 | 64 | 07:54 (42) | 22:16 | 58 | 07:53 (42) |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 08:48 (30) | 06:49 | | 07:35 (31) | 06:30 | | | 05:25 | | 06:49 (42) | 04:52 | | 06:56 (42) |
| | 16:36 | 131 | 15:40 (26) | 17:40 | 152 | 16:52 (25) | 18:38 | 40 | 17:29 (1) | 20:39 | | | 21:37 | 65 | 07:54 (42) | 22:17 | 58 | 07:54 (42) |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 08:48 (30) | 06:47 | | 07:35 (31) | 06:28 | | | 05:23 | | 06:50 (42) | 04:52 | | 06:56 (42) |
| | 16:38 | 134 | 15:41 (26) | 17:42 | 154 | 16:53 (2) | 18:40 | 30 | 17:24 (1) | 20:41 | | | 21:39 | 64 | 07:54 (42) | 22:18 | 58 | 07:54 (42) |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 08:47 (30) | 06:44 | | 07:35 (31) | 06:25 | | | 05:21 | | 06:49 (42) | 04:52 | | 06:56 (42) |
| | 16:40 | 139 | 15:42 (26) | 17:44 | 156 | 16:53 (2) | 18:42 | 20 | 07:55 (31) | 20:43 | | | 21:41 | 65 | 07:54 (42) | 22:18 | 58 | 07:54 (42) |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 08:48 (30) | 06:41 | | 07:37 (31) | 06:23 | | | 05:20 | | 06:50 (42) | 04:52 | | 06:56 (42) |
| | 16:42 | 140 | 15:42 (26) | 17:46 | 157 | 16:54 (2) | 18:44 | 16 | 07:53 (31) | 20:45 | | | 21:42 | 64 | 07:54 (42) | 22:18 | 58 | 07:54 (42) |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 08:48 (30) | 06:39 | | 07:39 (31) | 06:20 | | | 05:18 | | 06:49 (42) | 04:52 | | 06:57 (42) |
| | 16:44 | 142 | 15:42 (26) | 17:49 | 158 | 16:55 (2) | 18:46 | 11 | 07:50 (31) | 20:47 | | | 21:44 | 65 | 07:54 (42) | 22:19 | 57 | 07:54 (42) |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 08:47 (30) | 06:36 | | | 06:18 | | | 05:16 | | 06:49 (42) | 04:52 | | 06:57 (42) |
| | 16:46 | 143 | 15:42 (26) | 17:51 | 159 | 16:55 (2) | 18:48 | | | 20:49 | | | 21:46 | 65 | 07:54 (42) | 22:19 | 57 | 07:54 (42) |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 08:48 (30) | 06:34 | | | 06:16 | | | 05:15 | | 06:49 (42) | 04:52 | | 06:58 (42) |
| | 16:48 | 143 | 15:42 (26) | 17:53 | 159 | 16:56 (2) | 18:50 | | | 20:51 | | | 21:47 | 65 | 07:54 (42) | 22:19 | 57 | 07:55 (42) |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 08:07 (5) | 06:31 | | | 06:13 | | 07:20 (42) | 05:13 | | 06:49 (42) | 04:53 | | 06:58 (42) |
| | 16:50 | 145 | 15:43 (26) | 17:55 | 163 | 16:56 (2) | 18:52 | | | 20:53 | 8 | 07:28 (42) | 21:49 | 65 | 07:54 (42) | 22:19 | 57 | 07:55 (42) |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 08:05 (5) | 06:29 | | | 06:11 | | 07:14 (42) | 05:12 | | 06:50 (42) | 04:53 | | 06:57 (42) |
| | 16:52 | 145 | 15:43 (26) | 17:57 | 166 | 16:57 (2) | 18:54 | | | 20:55 | 20 | 07:34 (42) | 21:51 | 64 | 07:54 (42) | 22:19 | 58 | 07:55 (42) |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 08:02 (5) | 06:26 | | | 06:09 | | 07:11 (42) | 05:10 | | 06:50 (42) | 04:53 | | 06:58 (42) |
| | 16:54 | 141 | 15:42 (26) | 17:59 | 166 | 16:56 (2) | 18:56 | | | 20:57 | 27 | 07:38 (42) | 21:52 | 64 | 07:54 (42) | 22:19 | 58 | 07:56 (42) |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 08:00 (5) | 06:23 | | | 06:06 | | 07:07 (42) | 05:09 | | 06:49 (42) | 04:54 | | 06:58 (42) |
| | 16:56 | 141 | 15:43 (26) | 18:01 | 180 | 17:30 (1) | 18:58 | | | 20:59 | 32 | 07:39 (42) | 21:54 | 64 | 07:53 (42) | 22:19 | 58 | 07:56 (42) |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 07:57 (5) | 06:21 | | | 06:04 | | 07:05 (42) | 05:08 | | 06:50 (42) | 04:54 | | 06:59 (42) |
| | 16:58 | 136 | 15:42 (26) | 18:03 | 184 | 17:32 (1) | 19:00 | | | 21:01 | 37 | 07:42 (42) | 21:55 | 64 | 07:54 (42) | 22:19 | 58 | 07:57 (42) |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 07:56 (5) | 06:18 | | | 06:02 | | 07:03 (42) | 05:06 | | 06:50 (42) | 04:55 | | 06:58 (42) |
| | 17:00 | 131 | 15:42 (26) | 18:05 | 184 | 17:34 (1) | 19:02 | | | 21:03 | 40 | 07:43 (42) | 21:57 | 64 | 07:54 (42) | 22:19 | 58 | 07:56 (42) |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | 07:01 (42) | 05:05 | | 06:50 (42) | 04:55 | | 06:59 (42) |
| | 17:02 | 125 | 15:41 (26) | | | | 20:04 | | | 21:05 | 44 | 07:45 (42) | 21:58 | 64 | 07:54 (42) | 22:19 | 58 | 07:57 (42) |
| 30 | 08:31 | | 13:20 (29) | | | | 07:13 | | | 05:57 | | 07:00 (42) | 05:04 | | 06:51 (42) | 04:56 | | 06:58 (42) |
| | 17:04 | 113 | 15:40 (26) | | | | 20:06 | | | 21:07 | 46 | 07:46 (42) | 22:00 | 63 | 07:54 (42) | 22:19 | 59 | 07:57 (42) |
| 31 | 08:30 | | 13:20 (29) | | | | 07:11 | | | | | | 05:03 | | 06:51 (42) | | | |
| | 17:06 | 107 | 15:38 (26) | | | | 20:08 | | | | | | 22:01 | 62 | 07:53 (42) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3695 | | | 3780 | | | 1965 | | | 254 | | | 1897 | | | 1769 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,46 | | | 0,54 | | | 0,72 | | | 0,97 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,07 | | | 0,12 | | | 0,22 | | | 0,33 | | | 0,44 | | | 0,41 | |
| Total, real | | 265 | | | 437 | | | 423 | | | 85 | | | 829 | | | 722 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:58 (42) | 05:40 | | 07:01 (42) | 06:38 | | | 07:35 | | 08:14 (31) | 07:37 | | 08:24 (30) | 08:35 | | 09:41 (3) |
| | 22:18 | 59 | 07:57 (42) | 21:40 | 62 | 08:03 (42) | 20:29 | | | 19:12 | 74 | 18:14 (1) | 16:58 | 120 | 16:19 (25) | 16:10 | 98 | 15:19 (26) |
| 2 | 04:58 | | 06:59 (42) | 05:41 | | 07:02 (42) | 06:40 | | | 07:37 | | 08:14 (31) | 07:39 | | 08:25 (30) | 08:37 | | 09:42 (3) |
| | 22:18 | 59 | 07:58 (42) | 21:38 | 61 | 08:03 (42) | 20:27 | | | 19:10 | 97 | 18:14 (1) | 16:56 | 116 | 16:18 (25) | 16:09 | 97 | 15:19 (26) |
| 3 | 04:58 | | 06:59 (42) | 05:43 | | 07:01 (42) | 06:42 | | | 07:39 | | 08:14 (31) | 07:41 | | 08:27 (30) | 08:38 | | 09:43 (3) |
| | 22:17 | 60 | 07:59 (42) | 21:36 | 61 | 08:02 (42) | 20:24 | | | 19:07 | 114 | 18:14 (1) | 16:54 | 106 | 16:16 (25) | 16:08 | 94 | 15:19 (26) |
| 4 | 04:59 | | 06:59 (42) | 05:45 | | 07:02 (42) | 06:44 | | | 07:41 | | 08:14 (31) | 07:43 | | 08:33 (30) | 08:40 | | 09:44 (3) |
| | 22:17 | 60 | 07:59 (42) | 21:34 | 60 | 08:02 (42) | 20:22 | | | 19:04 | 126 | 18:14 (1) | 16:52 | 91 | 16:15 (25) | 16:08 | 93 | 15:19 (26) |
| 5 | 05:00 | | 06:58 (42) | 05:47 | | 07:03 (42) | 06:45 | | | 07:42 | | 08:15 (31) | 07:45 | | 12:47 (29) | 08:41 | | 09:43 (3) |
| | 22:16 | 61 | 07:59 (42) | 21:32 | 59 | 08:02 (42) | 20:19 | | | 19:02 | 133 | 18:14 (1) | 16:50 | 79 | 16:11 (25) | 16:07 | 92 | 15:18 (26) |
| 6 | 05:01 | | 06:59 (42) | 05:49 | | 07:03 (42) | 06:47 | | | 07:44 | | 08:16 (31) | 07:47 | | 12:47 (29) | 08:43 | | 09:44 (3) |
| | 22:15 | 60 | 07:59 (42) | 21:30 | 58 | 08:01 (42) | 20:17 | | | 18:59 | 138 | 18:14 (1) | 16:48 | 74 | 14:01 (29) | 16:06 | 98 | 15:19 (26) |
| 7 | 05:02 | | 06:59 (42) | 05:51 | | 07:03 (42) | 06:49 | | | 07:46 | | 08:17 (31) | 07:49 | | 12:47 (29) | 08:44 | | 09:44 (3) |
| | 22:15 | 60 | 07:59 (42) | 21:28 | 57 | 08:00 (42) | 20:14 | | | 18:57 | 150 | 18:14 (1) | 16:46 | 73 | 14:00 (29) | 16:06 | 99 | 15:18 (26) |
| 8 | 05:03 | | 06:59 (42) | 05:52 | | 07:04 (42) | 06:51 | | | 07:48 | | 08:20 (31) | 07:51 | | 12:49 (29) | 08:46 | | 09:45 (3) |
| | 22:14 | 61 | 08:00 (42) | 21:26 | 56 | 08:00 (42) | 20:12 | | | 18:54 | 153 | 18:13 (1) | 16:44 | 84 | 14:19 (28) | 16:05 | 100 | 15:18 (26) |
| 9 | 05:04 | | 06:59 (42) | 05:54 | | 07:04 (42) | 06:53 | | | 07:50 | | 08:31 (5) | 07:53 | | 12:49 (29) | 08:47 | | 09:45 (3) |
| | 22:13 | 61 | 08:00 (42) | 21:24 | 54 | 07:58 (42) | 20:09 | | | 18:52 | 152 | 18:12 (1) | 16:42 | 89 | 14:21 (28) | 16:05 | 102 | 15:18 (26) |
| 10 | 05:06 | | 06:59 (42) | 05:56 | | 07:05 (42) | 06:55 | | | 07:52 | | 08:30 (5) | 07:55 | | 12:50 (29) | 08:48 | | 09:47 (3) |
| | 22:12 | 61 | 08:00 (42) | 21:22 | 52 | 07:57 (42) | 20:07 | | | 18:49 | 158 | 18:12 (1) | 16:40 | 102 | 15:07 (26) | 16:04 | 100 | 15:18 (26) |
| 11 | 05:07 | | 06:59 (42) | 05:58 | | 07:06 (42) | 06:57 | | | 07:54 | | 08:29 (5) | 07:57 | | 12:51 (29) | 08:50 | | 09:47 (3) |
| | 22:11 | 63 | 08:02 (42) | 21:19 | 50 | 07:56 (42) | 20:04 | | | 18:47 | 170 | 18:11 (1) | 16:38 | 108 | 15:09 (26) | 16:04 | 101 | 15:18 (26) |
| 12 | 05:08 | | 06:59 (42) | 06:00 | | 07:08 (42) | 06:59 | | | 07:56 | | 08:29 (5) | 07:59 | | 12:52 (29) | 08:51 | | 09:47 (3) |
| | 22:10 | 63 | 08:02 (42) | 21:17 | 47 | 07:55 (42) | 20:01 | | | 18:44 | 178 | 18:09 (1) | 16:36 | 113 | 15:12 (26) | 16:04 | 99 | 15:17 (26) |
| 13 | 05:09 | | 06:59 (42) | 06:02 | | 07:08 (42) | 07:01 | | | 07:58 | | 08:28 (5) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | 63 | 08:02 (42) | 21:15 | 45 | 07:53 (42) | 19:59 | | | 18:42 | 184 | 18:08 (1) | 16:34 | 126 | 15:13 (26) | 16:04 | 97 | 15:17 (26) |
| 14 | 05:11 | | 06:59 (42) | 06:04 | | 07:09 (42) | 07:02 | | | 08:00 | | 08:28 (5) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | 63 | 08:02 (42) | 21:13 | 43 | 07:52 (42) | 19:56 | | | 18:39 | 185 | 18:06 (1) | 16:33 | 132 | 15:14 (26) | 16:04 | 96 | 15:16 (26) |
| 15 | 05:12 | | 06:59 (42) | 06:06 | | 07:11 (42) | 07:04 | | | 08:02 | | 08:31 (5) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | 63 | 08:02 (42) | 21:10 | 39 | 07:50 (42) | 19:54 | | | 18:37 | 182 | 18:04 (1) | 16:31 | 136 | 15:14 (26) | 16:04 | 96 | 15:16 (26) |
| 16 | 05:13 | | 06:59 (42) | 06:07 | | 07:13 (42) | 07:06 | | | 08:04 | | 08:33 (5) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | 64 | 08:03 (42) | 21:08 | 36 | 07:49 (42) | 19:51 | | | 18:35 | 176 | 18:01 (1) | 16:29 | 141 | 15:16 (26) | 16:04 | 95 | 15:15 (26) |
| 17 | 05:15 | | 06:59 (42) | 06:09 | | 07:15 (42) | 07:08 | | | 08:06 | | 08:35 (5) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | 64 | 08:03 (42) | 21:06 | 32 | 07:47 (42) | 19:48 | | | 18:32 | 166 | 17:28 (2) | 16:28 | 141 | 15:16 (26) | 16:04 | 89 | 14:40 (28) |
| 18 | 05:16 | | 06:59 (42) | 06:11 | | 07:17 (42) | 07:10 | | | 08:08 | | 08:37 (5) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | 64 | 08:03 (42) | 21:04 | 26 | 07:43 (42) | 19:46 | | | 18:30 | 165 | 17:28 (2) | 16:26 | 145 | 15:17 (26) | 16:04 | 90 | 14:41 (28) |
| 19 | 05:18 | | 06:59 (42) | 06:13 | | 07:20 (42) | 07:12 | | | 08:10 | | 08:39 (5) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | 65 | 08:04 (42) | 21:01 | 19 | 07:39 (42) | 19:43 | | | 18:27 | 161 | 17:27 (2) | 16:25 | 145 | 15:17 (26) | 16:04 | 91 | 14:42 (28) |
| 20 | 05:19 | | 06:59 (42) | 06:15 | | 07:28 (42) | 07:14 | | | 08:12 | | 09:18 (30) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | 65 | 08:04 (42) | 20:59 | 3 | 07:31 (42) | 19:41 | | | 18:25 | 158 | 17:26 (2) | 16:23 | 143 | 15:17 (26) | 16:05 | 90 | 14:41 (28) |
| 21 | 05:21 | | 07:00 (42) | 06:17 | | | 07:16 | | | 08:14 | | 09:18 (30) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
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| 23 | 05:24 | | 07:00 (42) | 06:21 | | | 07:19 | | 08:24 (31) | 08:18 | | 09:18 (30) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | 65 | 08:05 (42) | 20:52 | | | 19:33 | 10 | 08:34 (31) | 18:18 | 156 | 17:24 (2) | 16:19 | 140 | 15:19 (26) | 16:06 | 90 | 14:43 (28) |
| 24 | 05:26 | | 06:59 (42) | 06:23 | | | 07:21 | | 08:21 (31) | 08:20 | | 09:18 (30) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | 65 | 08:04 (42) | 20:49 | | | 19:30 | 15 | 08:36 (31) | 18:16 | 155 | 17:23 (2) | 16:18 | 140 | 15:19 (26) | 16:06 | 92 | 14:44 (28) |
| 25 | 05:27 | | 07:00 (42) | 06:25 | | | 07:23 | | 08:20 (31) | 07:22 | | 08:18 (30) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | 65 | 08:05 (42) | 20:47 | | | 19:28 | 18 | 08:38 (31) | 17:13 | 153 | 16:22 (25) | 16:16 | 134 | 15:19 (26) | 16:07 | 90 | 14:44 (28) |
| 26 | 05:29 | | 07:00 (42) | 06:26 | | | 07:25 | | 08:18 (31) | 07:24 | | 08:18 (30) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | 64 | 08:04 (42) | 20:44 | | | 19:25 | 26 | 18:05 (1) | 17:11 | 150 | 16:22 (25) | 16:15 | 132 | 15:19 (26) | 16:08 | 89 | 14:45 (28) |
| 27 | 05:31 | | 07:00 (42) | 06:28 | | | 07:27 | | 08:16 (31) | 07:26 | | 08:19 (30) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | 64 | 08:04 (42) | 20:42 | | | 19:22 | 36 | 18:08 (1) | 17:09 | 147 | 16:22 (25) | 16:14 | 127 | 15:19 (26) | 16:09 | 94 | 15:20 (26) |
| 28 | 05:33 | | 07:00 (42) | 06:30 | | | 07:29 | | 08:15 (31) | 07:28 | | 08:19 (30) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | 64 | 08:04 (42) | 20:39 | | | 19:20 | 44 | 18:11 (1) | 17:07 | 146 | 16:22 (25) | 16:13 | 122 | 15:19 (26) | 16:10 | 95 | 15:22 (26) |
| 29 | 05:34 | | 07:00 (42) | 06:32 | | | 07:31 | | 08:14 (31) | 07:31 | | 08:20 (30) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | 64 | 08:04 (42) | 20:37 | | | 19:17 | 48 | 18:12 (1) | 17:04 | 140 | 16:21 (25) | 16:12 | 114 | 15:19 (26) | 16:10 | 97 | 15:24 (26) |
| 30 | 05:36 | | 07:01 (42) | 06:34 | | | 07:33 | | 08:14 (31) | 07:33 | | 08:21 (30) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | 63 | 08:04 (42) | 20:34 | | | 19:15 | 64 | 18:13 (1) | 17:02 | 135 | 16:20 (25) | 16:11 | 105 | 15:19 (26) | 16:11 | 99 | 15:24 (26) |
| 31 | 05:38 | | 07:00 (42) | 06:36 | | | | | | 07:35 | | 08:21 (30) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | 63 | 08:03 (42) | 20:32 | | | | | | 17:00 | 128 | 16:19 (25) | | | | 16:12 | 99 | 15:25 (26) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1945 | | | 920 | | | 261 | | | 4646 | | | 3564 | | | 2942 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,97 | | | 0,97 | | | 0,95 | | | 0,63 | | | 0,43 | | | 0,42 | |
| Total reduction | | 0,41 | | | 0,44 | | | 0,33 | | | 0,17 | | | 0,06 | | | 0,05 | |
| Total, real | | 799 | | | 401 | | | 86 | | | 783 | | | 211 | | | 145 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 16:00 (38) | 07:27 | | | 07:08 | | 17:50 (47) | 05:55 | | 19:22 (44) | 05:02 | | 20:50 (2) |
| | 16:14 | | | 17:08 | 26 | 16:26 (38) | 18:07 | | | 20:10 | 66 | 19:32 (27) | 21:09 | 62 | 20:31 (28) | 22:02 | 17 | 21:07 (2) |
| 2 | 09:01 | | | 08:26 | | 15:59 (38) | 07:24 | | | 07:05 | | 17:52 (47) | 05:53 | | 19:22 (44) | 05:01 | | 20:51 (2) |
| | 16:15 | | | 17:10 | 27 | 16:26 (38) | 18:09 | | | 20:12 | 64 | 19:33 (27) | 21:11 | 62 | 20:31 (28) | 22:04 | 15 | 21:06 (2) |
| 3 | 09:00 | | | 08:24 | | 15:59 (38) | 07:22 | | | 07:03 | | 17:52 (47) | 05:51 | | 19:22 (44) | 05:00 | | 20:52 (2) |
| | 16:16 | | | 17:12 | 28 | 16:27 (38) | 18:12 | | | 20:14 | 63 | 19:32 (27) | 21:13 | 63 | 20:32 (28) | 22:05 | 15 | 21:07 (2) |
| 4 | 09:00 | | | 08:22 | | 15:59 (38) | 07:19 | | | 07:00 | | 17:54 (47) | 05:48 | | 19:23 (44) | 04:59 | | 20:53 (2) |
| | 16:18 | | | 17:15 | 30 | 16:29 (46) | 18:14 | | | 20:16 | 59 | 19:32 (27) | 21:15 | 62 | 20:32 (28) | 22:06 | 13 | 21:06 (2) |
| 5 | 09:00 | | | 08:20 | | 15:59 (38) | 07:17 | | | 06:58 | | 17:55 (47) | 05:46 | | 19:23 (44) | 04:58 | | 20:53 (2) |
| | 16:19 | | | 17:17 | 32 | 16:31 (46) | 18:16 | | | 20:17 | 56 | 19:49 (26) | 21:16 | 61 | 20:32 (28) | 22:07 | 12 | 21:05 (2) |
| 6 | 08:59 | | | 08:18 | | 15:59 (38) | 07:14 | | | 06:55 | | 17:57 (47) | 05:44 | | 19:24 (44) | 04:57 | | 20:55 (2) |
| | 16:20 | | | 17:19 | 33 | 16:32 (46) | 18:18 | | | 20:19 | 58 | 19:52 (26) | 21:18 | 61 | 20:32 (28) | 22:09 | 10 | 21:05 (2) |
| 7 | 08:59 | | | 08:16 | | 15:58 (38) | 07:12 | | 17:33 (45) | 06:53 | | 17:58 (47) | 05:42 | | 19:24 (44) | 04:56 | | 05:40 (5) |
| | 16:22 | | | 17:21 | 34 | 16:32 (46) | 18:20 | 12 | 17:45 (45) | 20:21 | 55 | 19:53 (26) | 21:20 | 59 | 20:31 (28) | 22:10 | 14 | 21:04 (2) |
| 8 | 08:58 | | | 08:14 | | 15:59 (38) | 07:09 | | 17:30 (45) | 06:50 | | 18:02 (47) | 05:40 | | 19:25 (44) | 04:56 | | 05:37 (5) |
| | 16:23 | | | 17:23 | 35 | 16:34 (46) | 18:22 | 17 | 17:47 (45) | 20:23 | 49 | 19:56 (26) | 21:22 | 57 | 20:31 (28) | 22:11 | 15 | 21:02 (2) |
| 9 | 08:57 | | | 08:12 | | 15:59 (38) | 07:07 | | 17:29 (45) | 06:48 | | 18:06 (47) | 05:38 | | 19:25 (44) | 04:55 | | 05:37 (5) |
| | 16:25 | | | 17:25 | 36 | 16:35 (46) | 18:24 | 20 | 17:49 (45) | 20:25 | 35 | 19:56 (26) | 21:24 | 54 | 20:30 (28) | 22:12 | 12 | 05:49 (5) |
| 10 | 08:57 | | | 08:10 | | 16:00 (38) | 07:04 | | 17:09 (47) | 06:45 | | 19:37 (26) | 05:36 | | 19:26 (44) | 04:54 | | 05:35 (5) |
| | 16:26 | | | 17:27 | 35 | 16:35 (46) | 18:26 | 39 | 17:49 (45) | 20:27 | 20 | 19:57 (26) | 21:26 | 51 | 20:30 (28) | 22:13 | 15 | 05:50 (5) |
| 11 | 08:56 | | | 08:08 | | 16:01 (38) | 07:02 | | 17:06 (47) | 06:43 | | 19:36 (26) | 05:34 | | 19:28 (44) | 04:54 | | 05:35 (5) |
| | 16:28 | | | 17:29 | 35 | 16:36 (46) | 18:28 | 45 | 17:51 (45) | 20:29 | 20 | 19:56 (26) | 21:28 | 50 | 20:56 (2) | 22:13 | 16 | 05:51 (5) |
| 12 | 08:55 | | | 08:06 | | 16:01 (38) | 06:59 | | 17:03 (47) | 06:40 | | 07:05 (4) | 05:32 | | 19:30 (44) | 04:54 | | 05:35 (5) |
| | 16:29 | | | 17:32 | 35 | 16:36 (46) | 18:30 | 48 | 17:51 (45) | 20:31 | 26 | 19:56 (26) | 21:30 | 49 | 20:57 (2) | 22:14 | 17 | 05:52 (5) |
| 13 | 08:54 | | | 08:04 | | 16:02 (38) | 06:57 | | 17:00 (47) | 06:38 | | 07:02 (4) | 05:30 | | 19:31 (44) | 04:53 | | 05:35 (5) |
| | 16:31 | | | 17:34 | 34 | 16:36 (46) | 18:32 | 51 | 17:51 (45) | 20:33 | 30 | 19:55 (26) | 21:32 | 46 | 20:58 (2) | 22:15 | 18 | 05:53 (5) |
| 14 | 08:53 | | | 08:02 | | 16:04 (38) | 06:54 | | 16:59 (47) | 06:35 | | 07:00 (4) | 05:28 | | 19:33 (44) | 04:53 | | 05:34 (5) |
| | 16:33 | | | 17:36 | 33 | 16:37 (46) | 18:34 | 52 | 17:51 (45) | 20:35 | 32 | 19:55 (26) | 21:33 | 44 | 21:00 (2) | 22:16 | 19 | 05:53 (5) |
| 15 | 08:52 | | | 07:59 | | 16:04 (38) | 06:52 | | 16:57 (47) | 06:33 | | 06:58 (4) | 05:27 | | 19:37 (44) | 04:53 | | 05:34 (5) |
| | 16:35 | | | 17:38 | 32 | 16:36 (46) | 18:36 | 54 | 17:51 (45) | 20:37 | 33 | 19:54 (26) | 21:35 | 37 | 21:02 (2) | 22:16 | 20 | 05:54 (5) |
| 16 | 08:51 | | | 07:57 | | 16:04 (46) | 06:49 | | 16:56 (47) | 06:30 | | 06:55 (4) | 05:25 | | 20:11 (28) | 04:52 | | 05:34 (5) |
| | 16:36 | | | 17:40 | 32 | 16:36 (46) | 18:38 | 55 | 17:51 (45) | 20:39 | 37 | 19:53 (26) | 21:37 | 29 | 21:03 (2) | 22:17 | 21 | 05:55 (5) |
| 17 | 08:50 | | | 07:55 | | 16:05 (46) | 06:47 | | 16:54 (47) | 06:28 | | 06:54 (4) | 05:23 | | 20:14 (28) | 04:52 | | 05:34 (5) |
| | 16:38 | | | 17:42 | 31 | 16:36 (46) | 18:40 | 56 | 17:50 (45) | 20:41 | 43 | 19:55 (44) | 21:39 | 27 | 21:05 (2) | 22:17 | 21 | 05:55 (5) |
| 18 | 08:49 | | | 07:53 | | 16:05 (46) | 06:44 | | 16:53 (47) | 06:25 | | 06:53 (4) | 05:21 | | 20:47 (2) | 04:52 | | 05:34 (5) |
| | 16:40 | | | 17:44 | 30 | 16:35 (46) | 18:42 | 56 | 17:49 (45) | 20:43 | 46 | 19:55 (44) | 21:41 | 20 | 21:07 (2) | 22:18 | 21 | 05:55 (5) |
| 19 | 08:48 | | | 07:50 | | 16:06 (46) | 06:41 | | 16:53 (47) | 06:23 | | 06:53 (4) | 05:20 | | 20:47 (2) | 04:52 | | 05:34 (5) |
| | 16:42 | | | 17:46 | 29 | 16:35 (46) | 18:44 | 55 | 17:48 (45) | 20:45 | 50 | 19:57 (44) | 21:42 | 22 | 21:09 (2) | 22:18 | 22 | 05:56 (5) |
| 20 | 08:46 | | | 07:48 | | 16:06 (46) | 06:39 | | 16:51 (47) | 06:20 | | 06:54 (4) | 05:18 | | 20:46 (2) | 04:52 | | 05:34 (5) |
| | 16:44 | | | 17:49 | 27 | 16:33 (46) | 18:46 | 56 | 17:47 (45) | 20:47 | 50 | 19:58 (44) | 21:44 | 22 | 21:08 (2) | 22:19 | 22 | 05:56 (5) |
| 21 | 08:45 | | | 07:46 | | 16:07 (46) | 06:36 | | 16:51 (47) | 06:18 | | 06:54 (4) | 05:16 | | 20:47 (2) | 04:52 | | 05:34 (5) |
| | 16:46 | | | 17:51 | 26 | 16:33 (46) | 18:48 | 55 | 17:46 (45) | 20:49 | 52 | 19:59 (44) | 21:46 | 22 | 21:09 (2) | 22:19 | 22 | 05:56 (5) |
| 22 | 08:44 | | | 07:43 | | 16:09 (46) | 06:34 | | 16:50 (47) | 06:16 | | 06:54 (4) | 05:15 | | 20:46 (2) | 04:52 | | 05:35 (5) |
| | 16:48 | | | 17:53 | 23 | 16:32 (46) | 18:50 | 53 | 17:43 (45) | 20:51 | 51 | 19:59 (44) | 21:47 | 22 | 21:08 (2) | 22:19 | 22 | 05:57 (5) |
| 23 | 08:42 | | | 07:41 | | 16:10 (46) | 06:31 | | 16:49 (47) | 06:13 | | 06:55 (4) | 05:13 | | 20:46 (2) | 04:53 | | 05:35 (5) |
| | 16:50 | | | 17:55 | 20 | 16:30 (46) | 18:52 | 51 | 17:40 (45) | 20:53 | 51 | 20:00 (44) | 21:49 | 23 | 21:09 (2) | 22:19 | 22 | 05:57 (5) |
| 24 | 08:41 | | | 07:39 | | 16:13 (46) | 06:29 | | 16:50 (47) | 06:11 | | 06:57 (4) | 05:12 | | 20:47 (2) | 04:53 | | 05:35 (5) |
| | 16:52 | | | 17:57 | 15 | 16:28 (46) | 18:54 | 49 | 17:39 (47) | 20:55 | 48 | 20:00 (44) | 21:51 | 22 | 21:09 (2) | 22:19 | 22 | 05:57 (5) |
| 25 | 08:39 | | 16:10 (38) | 07:36 | | 16:17 (46) | 06:26 | | 16:49 (47) | 06:09 | | 06:59 (4) | 05:10 | | 20:47 (2) | 04:53 | | 05:36 (5) |
| | 16:54 | 2 | 16:12 (38) | 17:59 | 5 | 16:22 (46) | 18:56 | 49 | 17:38 (47) | 20:57 | 45 | 20:01 (44) | 21:52 | 22 | 21:09 (2) | 22:19 | 21 | 05:57 (5) |
| 26 | 08:38 | | 16:05 (38) | 07:34 | | | 06:23 | | 16:49 (47) | 06:06 | | 19:22 (44) | 05:09 | | 20:47 (2) | 04:54 | | 05:36 (5) |
| | 16:56 | 11 | 16:16 (38) | 18:01 | | | 18:58 | 61 | 18:29 (27) | 20:59 | 49 | 20:25 (28) | 21:54 | 21 | 21:08 (2) | 22:19 | 21 | 05:57 (5) |
| 27 | 08:36 | | 16:04 (38) | 07:32 | | | 06:21 | | 16:49 (47) | 06:04 | | 19:22 (44) | 05:08 | | 20:47 (2) | 04:54 | | 05:37 (5) |
| | 16:58 | 16 | 16:20 (38) | 18:03 | | | 19:00 | 64 | 18:30 (27) | 21:01 | 53 | 20:27 (28) | 21:55 | 21 | 21:08 (2) | 22:19 | 20 | 05:57 (5) |
| 28 | 08:35 | | 16:03 (38) | 07:29 | | | 06:18 | | 16:49 (47) | 06:02 | | 19:22 (44) | 05:06 | | 20:48 (2) | 04:55 | | 05:37 (5) |
| | 17:00 | 18 | 16:21 (38) | 18:05 | | | 19:02 | 67 | 18:32 (27) | 21:03 | 56 | 20:28 (28) | 21:57 | 20 | 21:08 (2) | 22:19 | 20 | 05:57 (5) |
| 29 | 08:33 | | 16:02 (38) | | | | 07:16 | | 17:49 (47) | 05:59 | | 19:22 (44) | 05:05 | | 20:48 (2) | 04:55 | | 05:38 (5) |
| | 17:02 | 21 | 16:23 (38) | | | | 20:04 | 68 | 19:32 (27) | 21:05 | 59 | 20:30 (28) | 21:58 | 20 | 21:08 (2) | 22:19 | 19 | 05:57 (5) |
| 30 | 08:31 | | 16:01 (38) | | | | 07:13 | | 17:49 (47) | 05:57 | | 19:22 (44) | 05:04 | | 20:49 (2) | 04:56 | | 05:38 (5) |
| | 17:04 | 23 | 16:24 (38) | | | | 20:06 | 68 | 19:32 (27) | 21:07 | 60 | 20:30 (28) | 22:00 | 19 | 21:08 (2) | 22:18 | 18 | 05:56 (5) |
| 31 | 08:29 | | 16:00 (38) | | | | 07:11 | | 17:50 (47) | | | | 05:03 | | 20:49 (2) | | | |
| | 17:06 | 25 | 16:25 (38) | | | | 20:08 | 68 | 19:33 (27) | | | | 22:01 | 18 | 21:07 (2) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 116 | | | 723 | | | 1269 | | | 1416 | | | 1168 | | | 542 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,76 | | | 0,77 | | | 0,96 | | | 0,98 | | | 0,94 | | | 0,81 | |
| Total reduction | | 0,13 | | | 0,19 | | | 0,32 | | | 0,38 | | | 0,48 | | | 0,39 | |
| Total, real | | 16 | | | 136 | | | 411 | | | 539 | | | 560 | | | 209 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 (5) | 05:40 | 19:39 (44) | 06:38 | 19:35 (26) | 07:35 | 17:41 (47) | 07:37 | 15:29 (38) | 08:35 |
| | 22:18 | 17 | 05:56 (5) | 21:40 51 | 21:07 (2) | 20:29 20 | 19:55 (26) | 19:12 49 | 18:30 (45) | 16:58 36 | 16:05 (46) | 16:10 |
| 2 | 04:58 | | 05:40 (5) | 05:41 | 19:38 (44) | 06:40 | 19:35 (26) | 07:37 | 17:43 (47) | 07:39 | 15:29 (38) | 08:37 |
| | 22:18 | 16 | 05:56 (5) | 21:38 50 | 20:41 (28) | 20:27 20 | 19:55 (26) | 19:10 46 | 18:29 (45) | 16:56 35 | 16:04 (46) | 16:09 |
| 3 | 04:58 | | 05:42 (5) | 05:43 | 19:36 (44) | 06:42 | 18:04 (47) | 07:39 | 17:46 (47) | 07:41 | 15:28 (38) | 08:38 |
| | 22:17 | 13 | 05:55 (5) | 21:36 52 | 20:40 (28) | 20:24 34 | 19:54 (26) | 19:07 42 | 18:28 (45) | 16:54 35 | 16:03 (46) | 16:08 |
| 4 | 04:59 | | 05:43 (5) | 05:45 | 19:35 (44) | 06:43 | 17:59 (47) | 07:40 | 17:50 (47) | 07:43 | 15:28 (38) | 08:40 |
| | 22:17 | 15 | 21:08 (2) | 21:34 55 | 20:41 (28) | 20:22 49 | 19:53 (26) | 19:04 32 | 18:26 (45) | 16:52 34 | 16:02 (46) | 16:08 |
| 5 | 05:00 | | 05:44 (5) | 05:47 | 19:35 (44) | 06:45 | 17:56 (47) | 07:42 | 18:06 (45) | 07:45 | 15:29 (38) | 08:41 |
| | 22:16 | 15 | 21:09 (2) | 21:32 56 | 20:41 (28) | 20:19 54 | 19:50 (26) | 19:02 19 | 18:25 (45) | 16:49 33 | 16:02 (46) | 16:07 |
| 6 | 05:01 | | 05:48 (5) | 05:49 | 19:33 (44) | 06:47 | 17:52 (47) | 07:44 | 18:08 (45) | 07:47 | 15:29 (38) | 08:43 |
| | 22:15 | 10 | 21:10 (2) | 21:30 59 | 20:41 (28) | 20:17 58 | 19:47 (26) | 18:59 14 | 18:22 (45) | 16:47 31 | 16:00 (46) | 16:06 |
| 7 | 05:02 | | 21:00 (2) | 05:51 | 19:33 (44) | 06:49 | 17:50 (47) | 07:46 | 18:11 (45) | 07:49 | 15:29 (38) | 08:44 |
| | 22:15 | 11 | 21:11 (2) | 21:28 60 | 20:41 (28) | 20:14 57 | 19:45 (26) | 18:57 7 | 18:18 (45) | 16:46 29 | 15:58 (46) | 16:06 |
| 8 | 05:03 | | 20:59 (2) | 05:52 | 19:32 (44) | 06:51 | 17:48 (47) | 07:48 | | 07:51 | 15:30 (38) | 08:46 |
| | 22:14 | 13 | 21:12 (2) | 21:26 62 | 20:41 (28) | 20:12 59 | 19:26 (27) | 18:54 | | 16:44 28 | 15:58 (38) | 16:05 |
| 9 | 05:04 | | 20:59 (2) | 05:54 | 19:31 (44) | 06:53 | 17:46 (47) | 07:50 | | 07:53 | 15:30 (38) | 08:47 |
| | 22:13 | 14 | 21:13 (2) | 21:24 62 | 20:40 (28) | 20:09 63 | 19:26 (27) | 18:52 | | 16:42 27 | 15:57 (38) | 16:05 |
| 10 | 05:06 | | 20:58 (2) | 05:56 | 19:31 (44) | 06:55 | 17:45 (47) | 07:52 | | 07:55 | 15:30 (38) | 08:48 |
| | 22:12 | 15 | 21:13 (2) | 21:21 62 | 20:40 (28) | 20:06 65 | 19:26 (27) | 18:49 | | 16:40 26 | 15:56 (38) | 16:04 |
| 11 | 05:07 | | 20:59 (2) | 05:58 | 19:30 (44) | 06:57 | 17:44 (47) | 07:54 | | 07:57 | 15:31 (38) | 08:49 |
| | 22:11 | 16 | 21:15 (2) | 21:19 63 | 20:40 (28) | 20:04 66 | 19:26 (27) | 18:47 | | 16:38 25 | 15:56 (38) | 16:04 |
| 12 | 05:08 | | 20:58 (2) | 06:00 | 19:30 (44) | 06:59 | 17:42 (47) | 07:56 | | 07:59 | 15:33 (38) | 08:51 |
| | 22:10 | 18 | 21:16 (2) | 21:17 62 | 20:39 (28) | 20:01 67 | 19:24 (27) | 18:44 | | 16:36 23 | 15:56 (38) | 16:04 |
| 13 | 05:09 | | 20:58 (2) | 06:02 | 19:29 (44) | 07:00 | 17:41 (47) | 07:58 | | 08:01 | 15:34 (38) | 08:52 |
| | 22:09 | 18 | 21:16 (2) | 21:15 61 | 20:38 (28) | 19:59 68 | 19:24 (27) | 18:42 | | 16:34 20 | 15:54 (38) | 16:04 |
| 14 | 05:11 | | 20:57 (2) | 06:04 | 19:29 (44) | 07:02 | 17:40 (47) | 08:00 | | 08:03 | 15:35 (38) | 08:53 |
| | 22:08 | 19 | 21:16 (2) | 21:13 59 | 20:37 (28) | 19:56 67 | 19:23 (27) | 18:39 | | 16:33 18 | 15:53 (38) | 16:04 |
| 15 | 05:12 | | 20:57 (2) | 06:06 | 19:29 (44) | 07:04 | 17:39 (47) | 08:02 | | 08:05 | 15:36 (38) | 08:54 |
| | 22:07 | 19 | 21:16 (2) | 21:10 57 | 20:36 (28) | 19:54 68 | 19:22 (27) | 18:37 | | 16:31 15 | 15:51 (38) | 16:04 |
| 16 | 05:13 | | 20:57 (2) | 06:07 | 19:29 (44) | 07:06 | 17:38 (47) | 08:04 | | 08:07 | 15:39 (38) | 08:55 |
| | 22:05 | 21 | 21:18 (2) | 21:08 53 | 20:34 (28) | 19:51 66 | 19:20 (27) | 18:34 | | 16:29 11 | 15:50 (38) | 16:04 |
| 17 | 05:15 | | 20:57 (2) | 06:09 | 19:30 (44) | 07:08 | 17:38 (47) | 08:06 | 16:47 (46) | 08:09 | 15:44 (38) | 08:56 |
| | 22:04 | 21 | 21:18 (2) | 21:06 47 | 20:31 (28) | 19:48 62 | 19:18 (27) | 18:32 10 | 16:57 (46) | 16:28 1 | 15:45 (38) | 16:04 |
| 18 | 05:16 | | 20:56 (2) | 06:11 | 07:04 (4) | 07:10 | 17:36 (47) | 08:08 | 16:43 (46) | 08:11 | | 08:56 |
| | 22:03 | 22 | 21:18 (2) | 21:03 45 | 20:06 (44) | 19:46 56 | 19:13 (27) | 18:30 17 | 17:00 (46) | 16:26 | | 16:04 |
| 19 | 05:18 | | 20:57 (2) | 06:13 | 07:02 (4) | 07:12 | 17:36 (47) | 08:10 | 16:41 (46) | 08:13 | | 08:57 |
| | 22:02 | 22 | 21:19 (2) | 21:01 50 | 20:06 (44) | 19:43 49 | 18:25 (47) | 18:27 20 | 17:01 (46) | 16:25 | | 16:04 |
| 20 | 05:19 | | 20:56 (2) | 06:15 | 07:01 (4) | 07:14 | 17:36 (47) | 08:12 | 16:39 (46) | 08:15 | | 08:58 |
| | 22:00 | 22 | 21:18 (2) | 20:59 50 | 20:05 (44) | 19:41 50 | 18:26 (45) | 18:25 24 | 17:03 (46) | 16:23 | | 16:05 |
| 21 | 05:21 | | 20:57 (2) | 06:17 | 07:00 (4) | 07:16 | 17:36 (47) | 08:14 | 16:37 (46) | 08:17 | | 08:58 |
| | 21:59 | 22 | 21:19 (2) | 20:56 52 | 20:05 (44) | 19:38 52 | 18:28 (45) | 18:23 26 | 17:03 (46) | 16:22 | | 16:05 |
| 22 | 05:23 | | 20:56 (2) | 06:19 | 06:58 (4) | 07:17 | 17:36 (47) | 08:16 | 16:36 (46) | 08:19 | | 08:59 |
| | 21:57 | 23 | 21:19 (2) | 20:54 52 | 20:03 (44) | 19:35 54 | 18:30 (45) | 18:20 28 | 17:04 (46) | 16:20 | | 16:05 |
| 23 | 05:24 | | 20:57 (2) | 06:21 | 06:57 (4) | 07:19 | 17:36 (47) | 08:18 | 16:36 (46) | 08:21 | | 08:59 |
| | 21:56 | 22 | 21:19 (2) | 20:52 51 | 20:02 (44) | 19:33 55 | 18:31 (45) | 18:18 29 | 17:05 (46) | 16:19 | | 16:06 |
| 24 | 05:26 | | 20:57 (2) | 06:23 | 06:57 (4) | 07:21 | 17:36 (47) | 08:20 | 16:35 (46) | 08:23 | | 09:00 |
| | 21:54 | 22 | 21:19 (2) | 20:49 49 | 20:01 (44) | 19:30 56 | 18:32 (45) | 18:16 31 | 17:06 (46) | 16:18 | | 16:06 |
| 25 | 05:27 | | 20:57 (2) | 06:25 | 06:57 (4) | 07:23 | 17:36 (47) | 07:22 | 15:34 (46) | 08:25 | | 09:00 |
| | 21:52 | 21 | 21:18 (2) | 20:47 45 | 19:59 (44) | 19:28 56 | 18:32 (45) | 17:13 32 | 16:06 (46) | 16:16 | | 16:07 |
| 26 | 05:29 | | 20:26 (28) | 06:26 | 06:57 (4) | 07:25 | 17:37 (47) | 07:24 | 15:34 (46) | 08:26 | | 09:01 |
| | 21:51 | 24 | 21:16 (2) | 20:44 42 | 19:57 (44) | 19:25 55 | 18:32 (45) | 17:11 32 | 16:06 (46) | 16:15 | | 16:08 |
| 27 | 05:31 | | 20:23 (28) | 06:28 | 06:57 (4) | 07:27 | 17:37 (47) | 07:26 | 15:33 (38) | 08:28 | | 09:01 |
| | 21:49 | 28 | 21:15 (2) | 20:42 36 | 19:54 (44) | 19:22 55 | 18:32 (45) | 17:09 33 | 16:06 (46) | 16:14 | | 16:09 |
| 28 | 05:33 | | 20:21 (28) | 06:30 | 06:59 (4) | 07:29 | 17:37 (47) | 07:28 | 15:33 (38) | 08:30 | | 09:01 |
| | 21:47 | 29 | 21:13 (2) | 20:39 33 | 19:55 (26) | 19:20 54 | 18:31 (45) | 17:06 33 | 16:06 (46) | 16:13 | | 16:10 |
| 29 | 05:34 | | 19:46 (44) | 06:32 | 07:01 (4) | 07:31 | 17:38 (47) | 07:30 | 15:31 (38) | 08:32 | | 09:01 |
| | 21:45 | 40 | 21:12 (2) | 20:37 32 | 19:56 (26) | 19:17 53 | 18:31 (45) | 17:04 35 | 16:06 (46) | 16:12 | | 16:10 |
| 30 | 05:36 | | 19:43 (44) | 06:34 | 07:03 (4) | 07:33 | 17:40 (47) | 07:33 | 15:30 (38) | 08:33 | | 09:01 |
| | 21:44 | 45 | 21:10 (2) | 20:34 30 | 19:56 (26) | 19:15 51 | 18:31 (45) | 17:02 35 | 16:05 (46) | 16:11 | | 16:11 |
| 31 | 05:38 | | 19:41 (44) | 06:36 | 07:05 (4) | | | 07:35 | 15:29 (38) | | | 09:01 |
| | 21:42 | 49 | 21:08 (2) | 20:32 26 | 19:56 (26) | | | 17:00 36 | 16:05 (46) | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | | 662 | | 1564 | | 1639 | | 630 | | 427 | | |
| Sun reduction | | 0,49 | | 0,51 | | 0,40 | | 0,31 | | 0,16 | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,89 | | 0,97 | | 0,97 | | 0,84 | | 0,76 | | |
| Total reduction | | 0,42 | | 0,50 | | 0,38 | | 0,25 | | 0,12 | | |
| Total, real | | 281 | | 776 | | 619 | | 160 | | 51 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (41) | 08:28 | | 07:27 | | 17:35 (47) | 07:08 | | 07:50 (33) | 05:55 | | 07:21 (4) | 05:02 | | |
| | 16:14 | 16 | 09:55 (41) | 17:08 | | 18:07 | 4 | 17:39 (47) | 20:10 | 57 | 19:31 (3) | 21:09 | 72 | 20:27 (30) | 22:02 | | |
| 2 | 09:01 | | 09:38 (41) | 08:26 | | 07:24 | | 17:32 (47) | 07:05 | | 07:50 (33) | 05:53 | | 07:22 (4) | 05:01 | | |
| | 16:15 | 17 | 09:55 (41) | 17:10 | | 18:09 | 10 | 17:42 (47) | 20:12 | 58 | 19:32 (3) | 21:11 | 70 | 20:27 (30) | 22:04 | | |
| 3 | 09:00 | | 09:39 (41) | 08:24 | | 07:22 | | 17:30 (47) | 07:03 | | 07:49 (33) | 05:51 | | 07:22 (4) | 05:00 | | |
| | 16:16 | 18 | 09:57 (41) | 17:12 | | 18:11 | 13 | 17:43 (47) | 20:13 | 57 | 19:31 (3) | 21:13 | 71 | 20:28 (30) | 22:05 | | |
| 4 | 09:00 | | 09:38 (41) | 08:22 | | 07:19 | | 17:29 (47) | 07:00 | | 07:49 (33) | 05:48 | | 07:23 (4) | 04:59 | | |
| | 16:17 | 19 | 09:57 (41) | 17:14 | | 18:14 | 17 | 17:46 (47) | 20:15 | 56 | 19:30 (3) | 21:14 | 69 | 20:28 (30) | 22:06 | | |
| 5 | 09:00 | | 09:39 (41) | 08:20 | | 07:17 | | 17:28 (47) | 06:58 | | 07:45 (4) | 05:46 | | 07:24 (4) | 04:58 | | |
| | 16:19 | 19 | 09:58 (41) | 17:17 | | 18:16 | 18 | 17:46 (47) | 20:17 | 58 | 19:29 (3) | 21:16 | 68 | 20:28 (30) | 22:07 | | |
| 6 | 08:59 | | 09:39 (41) | 08:18 | | 07:14 | | 17:27 (47) | 06:55 | | 07:40 (4) | 05:44 | | 07:25 (4) | 04:57 | | |
| | 16:20 | 20 | 09:59 (41) | 17:19 | | 18:18 | 19 | 17:46 (47) | 20:19 | 60 | 19:28 (3) | 21:18 | 65 | 20:28 (30) | 22:08 | | |
| 7 | 08:59 | | 09:38 (41) | 08:16 | | 07:12 | | 17:27 (47) | 06:53 | | 07:36 (4) | 05:42 | | 07:26 (4) | 04:56 | | |
| | 16:22 | 22 | 10:00 (41) | 17:21 | | 18:20 | 19 | 17:46 (47) | 20:21 | 61 | 19:26 (3) | 21:20 | 63 | 20:28 (30) | 22:10 | | |
| 8 | 08:58 | | 09:38 (41) | 08:14 | | 07:09 | | 17:26 (47) | 06:50 | | 07:34 (4) | 05:40 | | 07:27 (4) | 04:56 | | |
| | 16:23 | 22 | 10:00 (41) | 17:23 | | 18:22 | 20 | 17:46 (47) | 20:23 | 59 | 19:25 (3) | 21:22 | 60 | 20:28 (30) | 22:11 | | |
| 9 | 08:57 | | 09:38 (41) | 08:12 | | 07:07 | | 17:27 (47) | 06:48 | | 07:31 (4) | 05:38 | | 07:28 (4) | 04:55 | | |
| | 16:25 | 23 | 10:01 (41) | 17:25 | | 18:24 | 19 | 17:46 (47) | 20:25 | 56 | 19:22 (3) | 21:24 | 56 | 20:27 (30) | 22:12 | | |
| 10 | 08:57 | | 09:38 (41) | 08:10 | | 07:04 | | 17:27 (47) | 06:45 | | 07:30 (4) | 05:36 | | 07:30 (4) | 04:54 | | |
| | 16:26 | 23 | 10:01 (41) | 17:27 | | 18:26 | 17 | 17:44 (47) | 20:27 | 46 | 19:18 (3) | 21:26 | 52 | 20:27 (30) | 22:12 | | |
| 11 | 08:56 | | 09:39 (41) | 08:08 | | 07:02 | | 17:28 (47) | 06:43 | | 07:28 (4) | 05:34 | | 07:32 (4) | 04:54 | | |
| | 16:28 | 23 | 10:02 (41) | 17:29 | | 18:28 | 15 | 17:43 (47) | 20:29 | 40 | 08:08 (33) | 21:28 | 46 | 20:26 (30) | 22:13 | | |
| 12 | 08:55 | | 09:39 (41) | 08:06 | | 06:59 | | 17:29 (47) | 06:40 | | 07:27 (4) | 05:32 | | 07:37 (4) | 04:53 | | |
| | 16:29 | 24 | 10:03 (41) | 17:32 | | 18:30 | 12 | 17:41 (47) | 20:31 | 41 | 08:08 (4) | 21:30 | 37 | 20:27 (30) | 22:14 | | |
| 13 | 08:54 | | 09:39 (41) | 08:04 | | 06:57 | | 17:32 (47) | 06:38 | | 07:25 (4) | 05:30 | | 19:58 (30) | 04:53 | | |
| | 16:31 | 25 | 10:04 (41) | 17:34 | | 18:32 | 6 | 17:38 (47) | 20:33 | 43 | 08:08 (4) | 21:32 | 28 | 20:26 (30) | 22:15 | | |
| 14 | 08:53 | | 09:40 (41) | 08:02 | | 06:54 | | | 06:35 | | 07:24 (4) | 05:28 | | 19:58 (30) | 04:53 | | 05:51 (32) |
| | 16:33 | 24 | 10:04 (41) | 17:36 | | 18:34 | | | 20:35 | 45 | 08:09 (4) | 21:33 | 27 | 20:25 (30) | 22:16 | 5 | 05:56 (32) |
| 15 | 08:52 | | 09:40 (41) | 07:59 | | 06:52 | | | 06:33 | | 07:24 (4) | 05:27 | | 20:00 (30) | 04:52 | | 05:50 (32) |
| | 16:35 | 25 | 10:05 (41) | 17:38 | | 18:36 | | | 20:37 | 46 | 08:10 (4) | 21:35 | 25 | 20:25 (30) | 22:16 | 8 | 05:58 (32) |
| 16 | 08:51 | | 09:40 (41) | 07:57 | | 06:49 | | | 06:30 | | 07:22 (4) | 05:25 | | 20:00 (30) | 04:52 | | 05:50 (32) |
| | 16:36 | 25 | 10:05 (41) | 17:40 | | 18:38 | | | 20:39 | 48 | 08:10 (4) | 21:37 | 24 | 20:24 (30) | 22:17 | 9 | 05:59 (32) |
| 17 | 08:50 | | 09:40 (41) | 07:55 | | 06:46 | | | 06:28 | | 07:22 (4) | 05:23 | | 20:01 (30) | 04:52 | | 05:49 (32) |
| | 16:38 | 26 | 10:06 (41) | 17:42 | | 18:40 | | | 20:41 | 48 | 08:10 (4) | 21:39 | 23 | 20:24 (30) | 22:17 | 11 | 06:00 (32) |
| 18 | 08:49 | | 09:40 (41) | 07:53 | | 06:44 | | | 06:25 | | 07:21 (4) | 05:21 | | 20:02 (30) | 04:52 | | 05:49 (32) |
| | 16:40 | 25 | 10:05 (41) | 17:44 | | 18:42 | | | 20:43 | 49 | 08:10 (4) | 21:41 | 20 | 20:22 (30) | 22:18 | 11 | 06:00 (32) |
| 19 | 08:48 | | 09:41 (41) | 07:50 | | 06:41 | | 18:11 (44) | 06:23 | | 07:20 (4) | 05:20 | | 20:04 (30) | 04:52 | | 05:49 (32) |
| | 16:42 | 25 | 10:06 (41) | 17:46 | | 18:44 | 6 | 18:17 (44) | 20:45 | 50 | 08:10 (4) | 21:42 | 18 | 20:22 (30) | 22:18 | 12 | 06:01 (32) |
| 20 | 08:46 | | 09:41 (41) | 07:48 | | 06:39 | | 18:08 (44) | 06:20 | | 07:20 (4) | 05:18 | | 20:05 (30) | 04:52 | | 05:49 (32) |
| | 16:44 | 25 | 10:06 (41) | 17:49 | | 18:46 | 10 | 18:18 (44) | 20:47 | 51 | 08:11 (4) | 21:44 | 15 | 20:20 (30) | 22:19 | 12 | 06:01 (32) |
| 21 | 08:45 | | 09:42 (41) | 07:46 | | 06:36 | | 18:07 (44) | 06:18 | | 07:19 (4) | 05:16 | | 20:07 (30) | 04:52 | | 05:49 (32) |
| | 16:46 | 24 | 10:06 (41) | 17:51 | | 18:48 | 14 | 18:21 (44) | 20:49 | 51 | 08:10 (4) | 21:46 | 11 | 20:18 (30) | 22:19 | 12 | 06:01 (32) |
| 22 | 08:44 | | 09:42 (41) | 07:43 | | 06:34 | | 18:06 (44) | 06:16 | | 07:19 (4) | 05:15 | | 20:10 (30) | 04:52 | | 05:50 (32) |
| | 16:48 | 24 | 10:06 (41) | 17:53 | | 18:50 | 16 | 18:22 (44) | 20:51 | 51 | 08:10 (4) | 21:47 | 5 | 20:15 (30) | 22:19 | 12 | 06:02 (32) |
| 23 | 08:42 | | 09:44 (41) | 07:41 | | 06:31 | | 18:05 (44) | 06:13 | | 07:19 (4) | 05:13 | | | 04:53 | | 05:50 (32) |
| | 16:50 | 22 | 10:06 (41) | 17:55 | | 18:52 | 18 | 18:23 (3) | 20:53 | 51 | 08:10 (4) | 21:49 | | | 22:19 | 12 | 06:02 (32) |
| 24 | 08:41 | | 09:44 (41) | 07:39 | | 06:28 | | 18:05 (44) | 06:11 | | 07:19 (4) | 05:12 | | | 04:53 | | 05:50 (32) |
| | 16:52 | 22 | 10:06 (41) | 17:57 | | 18:54 | 22 | 18:27 (3) | 20:55 | 51 | 08:10 (4) | 21:51 | | | 22:19 | 11 | 06:01 (32) |
| 25 | 08:39 | | 09:45 (41) | 07:36 | | 06:26 | | 07:01 (33) | 06:09 | | 07:19 (4) | 05:10 | | | 04:53 | | 05:51 (32) |
| | 16:54 | 20 | 10:05 (41) | 17:59 | | 18:56 | 36 | 18:28 (3) | 20:57 | 57 | 20:17 (30) | 21:52 | | | 22:19 | 11 | 06:02 (32) |
| 26 | 08:38 | | 09:46 (41) | 07:34 | | 06:23 | | 06:58 (33) | 06:06 | | 07:19 (4) | 05:09 | | | 04:54 | | 05:51 (32) |
| | 16:56 | 18 | 10:04 (41) | 18:01 | | 18:58 | 44 | 18:31 (3) | 20:59 | 64 | 20:21 (30) | 21:54 | | | 22:19 | 10 | 06:01 (32) |
| 27 | 08:36 | | 09:48 (41) | 07:32 | | 06:21 | | 06:56 (33) | 06:04 | | 07:19 (4) | 05:08 | | | 04:54 | | 05:53 (32) |
| | 16:58 | 16 | 10:04 (41) | 18:03 | | 19:00 | 47 | 18:31 (3) | 21:01 | 68 | 20:23 (30) | 21:55 | | | 22:19 | 8 | 06:01 (32) |
| 28 | 08:35 | | 09:50 (41) | 07:29 | | 06:18 | | 06:54 (33) | 06:02 | | 07:20 (4) | 05:06 | | | 04:55 | | 05:54 (32) |
| | 17:00 | 12 | 10:02 (41) | 18:05 | | 19:02 | 49 | 18:31 (3) | 21:03 | 69 | 20:24 (30) | 21:57 | | | 22:19 | 6 | 06:00 (32) |
| 29 | 08:33 | | 09:53 (41) | | | 07:16 | | 07:53 (33) | 05:59 | | 07:20 (4) | 05:05 | | | 04:55 | | 05:57 (32) |
| | 17:02 | 7 | 10:00 (41) | | | 20:04 | 52 | 19:32 (3) | 21:05 | 71 | 20:25 (30) | 21:58 | | | 22:19 | 1 | 05:58 (32) |
| 30 | 08:31 | | | | | 07:13 | | 07:51 (33) | 05:57 | | 07:20 (4) | 05:04 | | | 04:56 | | |
| | 17:04 | | | | | 20:06 | 55 | 19:32 (3) | 21:07 | 72 | 20:26 (30) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | | | | 07:10 | | 07:51 (33) | | | | 05:03 | | | | | |
| | 17:06 | | | | | 20:08 | 56 | 19:32 (3) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 611 | | | | | 614 | | | 1634 | | | 925 | | | 151 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | | | 0,98 | | | 0,99 | | | 0,97 | | | 0,81 | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,38 | | | 0,48 | | | 0,38 | |
| Total, real | | 68 | | | | | 198 | | | 615 | | | 446 | | | 57 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:46 (4) | 06:38 | | 07:27 (4) | 07:35 | | 18:09 (47) | 07:37 | | | 08:35 | | 09:21 (41) |
| | 22:18 | | | 21:40 | 41 | 20:37 (30) | 20:29 | 40 | 08:07 (33) | 19:12 | 10 | 18:19 (47) | 16:58 | | | 16:10 | 23 | 09:44 (41) |
| 2 | 04:57 | | | 05:41 | | 07:42 (4) | 06:40 | | 07:28 (4) | 07:37 | | 18:07 (47) | 07:39 | | | 08:37 | | 09:21 (41) |
| | 22:18 | | | 21:38 | 48 | 20:37 (30) | 20:27 | 47 | 19:16 (3) | 19:09 | 14 | 18:21 (47) | 16:56 | | | 16:09 | 24 | 09:45 (41) |
| 3 | 04:58 | | | 05:43 | | 07:40 (4) | 06:42 | | 07:29 (4) | 07:38 | | 18:05 (47) | 07:41 | | | 08:38 | | 09:22 (41) |
| | 22:17 | | | 21:36 | 53 | 20:37 (30) | 20:24 | 56 | 19:20 (3) | 19:07 | 17 | 18:22 (47) | 16:54 | | | 16:08 | 23 | 09:45 (41) |
| 4 | 04:59 | | | 05:45 | | 07:38 (4) | 06:43 | | 07:31 (4) | 07:40 | | 18:04 (47) | 07:43 | | | 08:40 | | 09:22 (41) |
| | 22:17 | | | 21:34 | 58 | 20:38 (30) | 20:22 | 59 | 19:22 (3) | 19:04 | 18 | 18:22 (47) | 16:51 | | | 16:07 | 22 | 09:44 (41) |
| 5 | 05:00 | | | 05:47 | | 07:37 (4) | 06:45 | | 07:33 (4) | 07:42 | | 18:03 (47) | 07:45 | | | 08:41 | | 09:23 (41) |
| | 22:16 | | | 21:32 | 61 | 20:38 (30) | 20:19 | 61 | 19:23 (3) | 19:02 | 20 | 18:23 (47) | 16:49 | | | 16:07 | 22 | 09:45 (41) |
| 6 | 05:01 | | | 05:49 | | 07:35 (4) | 06:47 | | 07:35 (4) | 07:44 | | 18:03 (47) | 07:47 | | | 08:43 | | 09:25 (41) |
| | 22:15 | | | 21:30 | 64 | 20:37 (30) | 20:17 | 60 | 19:23 (3) | 18:59 | 19 | 18:22 (47) | 16:47 | | | 16:06 | 20 | 09:45 (41) |
| 7 | 05:02 | | | 05:51 | | 07:34 (4) | 06:49 | | 07:40 (4) | 07:46 | | 18:03 (47) | 07:49 | | | 08:44 | | 09:25 (41) |
| | 22:15 | | | 21:28 | 65 | 20:37 (30) | 20:14 | 57 | 19:24 (3) | 18:57 | 19 | 18:22 (47) | 16:45 | | | 16:06 | 20 | 09:45 (41) |
| 8 | 05:03 | | | 05:52 | | 07:33 (4) | 06:51 | | 07:44 (33) | 07:48 | | 18:03 (47) | 07:51 | | | 08:46 | | 09:26 (41) |
| | 22:14 | | | 21:26 | 68 | 20:37 (30) | 20:12 | 55 | 19:24 (3) | 18:54 | 19 | 18:22 (47) | 16:44 | | | 16:05 | 19 | 09:45 (41) |
| 9 | 05:04 | | | 05:54 | | 07:31 (4) | 06:53 | | 07:43 (33) | 07:50 | | 18:03 (47) | 07:53 | | | 08:47 | | 09:27 (41) |
| | 22:13 | | | 21:24 | 70 | 20:36 (30) | 20:09 | 58 | 19:25 (3) | 18:52 | 18 | 18:21 (47) | 16:42 | | | 16:05 | 18 | 09:45 (41) |
| 10 | 05:06 | | | 05:56 | | 07:30 (4) | 06:55 | | 07:43 (33) | 07:52 | | 18:03 (47) | 07:55 | | | 08:48 | | 09:28 (41) |
| | 22:12 | | | 21:21 | 71 | 20:36 (30) | 20:06 | 57 | 19:25 (3) | 18:49 | 16 | 18:19 (47) | 16:40 | | | 16:04 | 17 | 09:45 (41) |
| 11 | 05:07 | | | 05:58 | | 07:30 (4) | 06:57 | | 07:42 (33) | 07:54 | | 18:04 (47) | 07:57 | | | 08:49 | | 09:29 (41) |
| | 22:11 | | | 21:19 | 72 | 20:36 (30) | 20:04 | 58 | 19:24 (3) | 18:47 | 12 | 18:16 (47) | 16:38 | | | 16:04 | 16 | 09:45 (41) |
| 12 | 05:08 | | | 06:00 | | 07:29 (4) | 06:59 | | 07:42 (33) | 07:56 | | 18:06 (47) | 07:59 | | | 08:51 | | 09:29 (41) |
| | 22:10 | | | 21:17 | 72 | 20:35 (30) | 20:01 | 57 | 19:23 (3) | 18:44 | 8 | 18:14 (47) | 16:36 | | | 16:04 | 16 | 09:45 (41) |
| 13 | 05:09 | | | 06:02 | | 07:28 (4) | 07:00 | | 07:42 (33) | 07:58 | | | 08:01 | | 09:24 (41) | 08:52 | | 09:30 (41) |
| | 22:09 | | | 21:15 | 70 | 20:33 (30) | 19:59 | 56 | 19:23 (3) | 18:42 | | | 16:34 | 8 | 09:32 (41) | 16:04 | 15 | 09:45 (41) |
| 14 | 05:11 | | | 06:04 | | 07:27 (4) | 07:02 | | 07:43 (33) | 08:00 | | | 08:03 | | 09:22 (41) | 08:53 | | 09:31 (41) |
| | 22:08 | | | 21:13 | 70 | 20:32 (30) | 19:56 | 53 | 19:22 (3) | 18:39 | | | 16:33 | 12 | 09:34 (41) | 16:04 | 14 | 09:45 (41) |
| 15 | 05:12 | | | 06:06 | | 07:27 (4) | 07:04 | | 07:44 (33) | 08:02 | | | 08:05 | | 09:20 (41) | 08:54 | | 09:32 (41) |
| | 22:07 | | | 21:10 | 69 | 20:31 (30) | 19:53 | 50 | 19:22 (3) | 18:37 | | | 16:31 | 16 | 09:36 (41) | 16:04 | 13 | 09:45 (41) |
| 16 | 05:13 | | | 06:07 | | 07:27 (4) | 07:06 | | 07:45 (33) | 08:04 | | | 08:07 | | 09:19 (41) | 08:55 | | 09:33 (41) |
| | 22:05 | | | 21:08 | 66 | 20:30 (30) | 19:51 | 47 | 19:21 (3) | 18:34 | | | 16:29 | 18 | 09:37 (41) | 16:04 | 12 | 09:45 (41) |
| 17 | 05:15 | | | 06:09 | | 07:25 (4) | 07:08 | | 07:46 (33) | 08:06 | | | 08:09 | | 09:19 (41) | 08:56 | | 09:34 (41) |
| | 22:04 | | | 21:06 | 64 | 20:27 (30) | 19:48 | 43 | 19:19 (3) | 18:32 | | | 16:28 | 20 | 09:39 (41) | 16:04 | 11 | 09:45 (41) |
| 18 | 05:16 | | | 06:11 | | 07:25 (4) | 07:10 | | 07:47 (33) | 08:08 | | | 08:11 | | 09:18 (41) | 08:56 | | 09:35 (41) |
| | 22:03 | | | 21:03 | 56 | 20:23 (30) | 19:46 | 38 | 19:16 (3) | 18:30 | | | 16:26 | 22 | 09:40 (41) | 16:04 | 11 | 09:46 (41) |
| 19 | 05:18 | | | 06:13 | | 07:25 (4) | 07:12 | | 07:52 (33) | 08:10 | | | 08:13 | | 09:18 (41) | 08:57 | | 09:36 (41) |
| | 22:01 | | | 21:01 | 50 | 08:15 (4) | 19:43 | 25 | 19:14 (3) | 18:27 | | | 16:24 | 22 | 09:40 (41) | 16:04 | 10 | 09:46 (41) |
| 20 | 05:19 | | | 06:15 | | 07:25 (4) | 07:14 | | 18:51 (44) | 08:12 | | | 08:15 | | 09:17 (41) | 08:58 | | 09:36 (41) |
| | 22:00 | | | 20:59 | 50 | 08:15 (4) | 19:41 | 20 | 19:11 (3) | 18:25 | | | 16:23 | 24 | 09:41 (41) | 16:04 | 10 | 09:46 (41) |
| 21 | 05:21 | | | 06:17 | | 07:25 (4) | 07:16 | | 18:51 (44) | 08:14 | | | 08:17 | | 09:17 (41) | 08:58 | | 09:37 (41) |
| | 21:59 | | | 20:56 | 50 | 08:15 (4) | 19:38 | 18 | 19:09 (44) | 18:22 | | | 16:22 | 24 | 09:41 (41) | 16:05 | 10 | 09:47 (41) |
| 22 | 05:22 | | 20:18 (30) | 06:19 | | 07:24 (4) | 07:17 | | 18:52 (44) | 08:16 | | | 08:19 | | 09:17 (41) | 08:59 | | 09:37 (41) |
| | 21:57 | 9 | 20:27 (30) | 20:54 | 50 | 08:14 (4) | 19:35 | 14 | 19:06 (44) | 18:20 | | | 16:20 | 25 | 09:42 (41) | 16:05 | 10 | 09:47 (41) |
| 23 | 05:24 | | 20:16 (30) | 06:21 | | 07:24 (4) | 07:19 | | 18:52 (44) | 08:18 | | | 08:21 | | 09:18 (41) | 08:59 | | 09:38 (41) |
| | 21:56 | 14 | 20:30 (30) | 20:52 | 50 | 08:14 (4) | 19:33 | 12 | 19:04 (44) | 18:18 | | | 16:19 | 25 | 09:43 (41) | 16:06 | 10 | 09:48 (41) |
| 24 | 05:26 | | 20:14 (30) | 06:23 | | 07:24 (4) | 07:21 | | 18:54 (44) | 08:20 | | | 08:23 | | 09:18 (41) | 09:00 | | 09:38 (41) |
| | 21:54 | 17 | 20:31 (30) | 20:49 | 50 | 08:14 (4) | 19:30 | 7 | 19:01 (44) | 18:15 | | | 16:17 | 25 | 09:43 (41) | 16:06 | 10 | 09:48 (41) |
| 25 | 05:27 | | 20:14 (30) | 06:24 | | 07:24 (4) | 07:23 | | 18:56 (44) | 07:22 | | | 08:25 | | 09:18 (41) | 09:00 | | 09:38 (41) |
| | 21:52 | 18 | 20:32 (30) | 20:47 | 50 | 08:14 (4) | 19:28 | 3 | 18:59 (44) | 17:13 | | | 16:16 | 26 | 09:44 (41) | 16:07 | 10 | 09:48 (41) |
| 26 | 05:29 | | 20:12 (30) | 06:26 | | 07:25 (4) | 07:25 | | | 07:24 | | | 08:26 | | 09:19 (41) | 09:00 | | 09:38 (41) |
| | 21:51 | 21 | 20:33 (30) | 20:44 | 48 | 08:13 (4) | 19:25 | | | 17:11 | | | 16:15 | 25 | 09:44 (41) | 16:08 | 11 | 09:49 (41) |
| 27 | 05:31 | | 20:11 (30) | 06:28 | | 07:24 (4) | 07:27 | | | 07:26 | | | 08:28 | | 09:19 (41) | 09:01 | | 09:38 (41) |
| | 21:49 | 23 | 20:34 (30) | 20:42 | 48 | 08:12 (4) | 19:22 | | | 17:09 | | | 16:14 | 25 | 09:44 (41) | 16:09 | 12 | 09:50 (41) |
| 28 | 05:33 | | 20:10 (30) | 06:30 | | 07:25 (4) | 07:29 | | | 07:28 | | | 08:30 | | 09:20 (41) | 09:01 | | 09:38 (41) |
| | 21:47 | 24 | 20:34 (30) | 20:39 | 46 | 08:11 (4) | 19:20 | | | 17:06 | | | 16:13 | 24 | 09:44 (41) | 16:09 | 12 | 09:50 (41) |
| 29 | 05:34 | | 20:10 (30) | 06:32 | | 07:25 (4) | 07:31 | | | 07:30 | | | 08:32 | | 09:20 (41) | 09:01 | | 09:38 (41) |
| | 21:45 | 26 | 20:36 (30) | 20:37 | 45 | 08:10 (4) | 19:17 | | | 17:04 | | | 16:12 | 25 | 09:45 (41) | 16:10 | 13 | 09:51 (41) |
| 30 | 05:36 | | 20:09 (30) | 06:34 | | 07:26 (4) | 07:33 | | | 07:32 | | | 08:33 | | 09:20 (41) | 09:01 | | 09:38 (41) |
| | 21:44 | 28 | 20:37 (30) | 20:34 | 43 | 08:09 (4) | 19:15 | | | 17:02 | | | 16:11 | 24 | 09:44 (41) | 16:11 | 14 | 09:52 (41) |
| 31 | 05:38 | | 20:08 (30) | 06:36 | | 07:27 (4) | | | | 07:35 | | | | | | 09:01 | | 09:38 (41) |
| | 21:42 | 28 | 20:36 (30) | 20:32 | 41 | 08:08 (4) | | | | 17:00 | | | | | | 16:12 | 16 | 09:54 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 208 | | | 1759 | | | 1051 | | | 190 | | | 390 | | | 464 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,98 | | | 1,00 | | | 0,95 | | | 0,64 | | | 0,64 | |
| Total reduction | | 0,44 | | | 0,49 | | | 0,38 | | | 0,28 | | | 0,10 | | | 0,08 | |
| Total, real | | 93 | | | 858 | | | 400 | | | 54 | | | 38 | | | 39 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (41) | 08:28 | | 07:27 | | | 07:08 | | 07:32 (11) | 05:55 | | 06:52 (4) | 05:02 | | 06:35 (4) |
| | 16:14 | 22 | 10:07 (41) | 17:08 | | 18:07 | | | 20:10 | 24 | 19:42 (3) | 21:09 | 52 | 20:34 (30) | 22:02 | 65 | 07:40 (4) |
| 2 | 09:01 | | 09:45 (41) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (11) | 05:53 | | 06:50 (4) | 05:01 | | 06:35 (4) |
| | 16:15 | 23 | 10:08 (41) | 17:10 | | 18:09 | | | 20:12 | 28 | 19:44 (3) | 21:11 | 58 | 20:35 (30) | 22:04 | 65 | 07:40 (4) |
| 3 | 09:00 | | 09:45 (41) | 08:24 | | 07:22 | | | 07:03 | | 07:30 (11) | 05:51 | | 06:48 (4) | 05:00 | | 06:36 (4) |
| | 16:16 | 24 | 10:09 (41) | 17:12 | | 18:11 | | | 20:13 | 30 | 19:46 (3) | 21:13 | 64 | 20:36 (30) | 22:05 | 65 | 07:41 (4) |
| 4 | 09:00 | | 09:45 (41) | 08:22 | | 07:19 | | | 07:00 | | 07:41 (33) | 05:48 | | 06:46 (4) | 04:59 | | 06:36 (4) |
| | 16:17 | 24 | 10:09 (41) | 17:14 | | 18:14 | | | 20:15 | 36 | 19:46 (3) | 21:14 | 68 | 20:36 (30) | 22:06 | 65 | 07:41 (4) |
| 5 | 09:00 | | 09:46 (41) | 08:20 | | 07:17 | | | 06:58 | | 07:37 (33) | 05:46 | | 06:45 (4) | 04:58 | | 06:36 (4) |
| | 16:19 | 24 | 10:10 (41) | 17:17 | | 18:16 | | | 20:17 | 43 | 19:46 (3) | 21:16 | 70 | 20:36 (30) | 22:07 | 65 | 07:41 (4) |
| 6 | 08:59 | | 09:46 (41) | 08:18 | | 07:14 | | | 06:55 | | 07:35 (33) | 05:44 | | 06:43 (4) | 04:57 | | 06:35 (4) |
| | 16:20 | 25 | 10:11 (41) | 17:19 | | 18:18 | | | 20:19 | 47 | 19:46 (3) | 21:18 | 75 | 20:37 (30) | 22:08 | 65 | 07:40 (4) |
| 7 | 08:59 | | 09:46 (41) | 08:16 | | 07:12 | | | 06:53 | | 07:33 (33) | 05:42 | | 06:42 (4) | 04:56 | | 06:36 (4) |
| | 16:22 | 25 | 10:11 (41) | 17:21 | | 18:20 | | | 20:21 | 50 | 19:45 (3) | 21:20 | 77 | 20:37 (30) | 22:10 | 65 | 07:41 (4) |
| 8 | 08:58 | | 09:46 (41) | 08:14 | | 07:09 | | 17:48 (47) | 06:50 | | 07:32 (33) | 05:40 | | 06:41 (4) | 04:56 | | 06:36 (4) |
| | 16:23 | 26 | 10:12 (41) | 17:23 | | 18:22 | 6 | 17:54 (47) | 20:23 | 52 | 19:45 (3) | 21:22 | 78 | 20:36 (30) | 22:11 | 65 | 07:41 (4) |
| 9 | 08:57 | | 09:46 (41) | 08:12 | | 07:07 | | 17:47 (47) | 06:48 | | 07:30 (33) | 05:38 | | 06:40 (4) | 04:55 | | 06:37 (4) |
| | 16:25 | 26 | 10:12 (41) | 17:25 | | 18:24 | 9 | 17:56 (47) | 20:25 | 54 | 19:44 (3) | 21:24 | 80 | 20:36 (30) | 22:12 | 64 | 07:41 (4) |
| 10 | 08:57 | | 09:46 (41) | 08:10 | | 07:04 | | 17:45 (47) | 06:45 | | 07:29 (33) | 05:36 | | 06:39 (4) | 04:54 | | 06:36 (4) |
| | 16:26 | 27 | 10:13 (41) | 17:27 | | 18:26 | 13 | 17:58 (47) | 20:27 | 55 | 19:44 (3) | 21:26 | 81 | 20:36 (30) | 22:12 | 65 | 07:41 (4) |
| 11 | 08:56 | | 09:46 (41) | 08:08 | | 07:02 | | 17:44 (47) | 06:42 | | 07:28 (33) | 05:34 | | 06:38 (4) | 04:54 | | 06:37 (4) |
| | 16:28 | 28 | 10:14 (41) | 17:29 | | 18:28 | 17 | 18:01 (47) | 20:29 | 54 | 19:42 (3) | 21:28 | 82 | 20:35 (30) | 22:13 | 64 | 07:41 (4) |
| 12 | 08:55 | | 09:46 (41) | 08:06 | | 06:59 | | 17:43 (47) | 06:40 | | 07:28 (33) | 05:32 | | 06:38 (4) | 04:53 | | 06:38 (4) |
| | 16:29 | 28 | 10:14 (41) | 17:31 | | 18:30 | 18 | 18:01 (47) | 20:31 | 51 | 19:41 (3) | 21:30 | 83 | 20:36 (30) | 22:14 | 64 | 07:42 (4) |
| 13 | 08:54 | | 09:47 (41) | 08:04 | | 06:57 | | 17:42 (47) | 06:38 | | 07:26 (33) | 05:30 | | 06:37 (4) | 04:53 | | 06:37 (4) |
| | 16:31 | 28 | 10:15 (41) | 17:34 | | 18:32 | 19 | 18:01 (47) | 20:33 | 49 | 19:38 (3) | 21:32 | 83 | 20:35 (30) | 22:15 | 64 | 07:41 (4) |
| 14 | 08:53 | | 09:47 (41) | 08:02 | | 06:54 | | 17:43 (47) | 06:35 | | 07:26 (33) | 05:28 | | 06:36 (4) | 04:53 | | 06:38 (4) |
| | 16:33 | 29 | 10:16 (41) | 17:36 | | 18:34 | 18 | 18:01 (47) | 20:35 | 45 | 19:36 (3) | 21:33 | 83 | 20:34 (30) | 22:16 | 64 | 07:42 (4) |
| 15 | 08:52 | | 09:48 (41) | 07:59 | | 06:52 | | 17:43 (47) | 06:33 | | 07:26 (33) | 05:27 | | 06:37 (4) | 04:52 | | 06:38 (4) |
| | 16:35 | 28 | 10:16 (41) | 17:38 | | 18:36 | 17 | 18:00 (47) | 20:37 | 35 | 08:01 (33) | 21:35 | 82 | 20:34 (30) | 22:16 | 65 | 21:38 (42) |
| 16 | 08:51 | | 09:48 (41) | 07:57 | | 06:49 | | 17:44 (47) | 06:30 | | 07:26 (33) | 05:25 | | 06:36 (4) | 04:52 | | 06:38 (4) |
| | 16:36 | 28 | 10:16 (41) | 17:40 | | 18:38 | 15 | 17:59 (47) | 20:39 | 34 | 08:00 (33) | 21:37 | 81 | 20:33 (30) | 22:17 | 67 | 21:39 (42) |
| 17 | 08:50 | | 09:48 (41) | 07:55 | | 06:46 | | 17:44 (47) | 06:28 | | 07:26 (33) | 05:23 | | 06:36 (4) | 04:52 | | 06:39 (4) |
| | 16:38 | 29 | 10:17 (41) | 17:42 | | 18:40 | 13 | 17:57 (47) | 20:41 | 34 | 08:00 (33) | 21:39 | 81 | 20:33 (30) | 22:17 | 66 | 21:39 (42) |
| 18 | 08:49 | | 09:48 (41) | 07:53 | | 06:44 | | 07:08 (13) | 06:25 | | 07:25 (33) | 05:21 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:40 | 28 | 10:16 (41) | 17:44 | | 18:42 | 11 | 17:55 (47) | 20:43 | 34 | 07:59 (33) | 21:41 | 79 | 20:31 (30) | 22:18 | 68 | 21:40 (42) |
| 19 | 08:48 | | 09:49 (41) | 07:50 | | 06:41 | | 07:06 (13) | 06:23 | | 07:26 (33) | 05:20 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:42 | 28 | 10:17 (41) | 17:46 | | 18:44 | 4 | 07:10 (13) | 20:45 | 32 | 07:58 (33) | 21:42 | 79 | 20:31 (30) | 22:18 | 68 | 21:40 (42) |
| 20 | 08:46 | | 09:49 (41) | 07:48 | | 06:39 | | 07:03 (13) | 06:20 | | 07:26 (33) | 05:18 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:44 | 28 | 10:17 (41) | 17:48 | | 18:46 | 6 | 07:09 (13) | 20:47 | 32 | 07:58 (33) | 21:44 | 75 | 20:29 (30) | 22:19 | 68 | 21:40 (42) |
| 21 | 08:45 | | 09:50 (41) | 07:46 | | 06:36 | | 07:01 (13) | 06:18 | | 07:26 (33) | 05:16 | | 06:35 (4) | 04:52 | | 06:39 (4) |
| | 16:46 | 27 | 10:17 (41) | 17:51 | | 18:48 | 7 | 07:08 (13) | 20:49 | 30 | 07:56 (33) | 21:46 | 70 | 20:27 (30) | 22:19 | 68 | 21:40 (42) |
| 22 | 08:44 | | 09:51 (41) | 07:43 | | 06:34 | | 07:01 (13) | 06:16 | | 07:27 (33) | 05:15 | | 06:34 (4) | 04:52 | | 06:40 (4) |
| | 16:48 | 26 | 10:17 (41) | 17:53 | | 18:50 | 4 | 07:05 (13) | 20:51 | 28 | 07:55 (33) | 21:47 | 65 | 07:39 (4) | 22:19 | 68 | 21:41 (42) |
| 23 | 08:42 | | 09:52 (41) | 07:41 | | 06:31 | | | 06:13 | | 07:28 (33) | 05:13 | | 06:34 (4) | 04:53 | | 06:40 (4) |
| | 16:50 | 25 | 10:17 (41) | 17:55 | | 18:52 | | | 20:53 | 26 | 07:54 (33) | 21:49 | 65 | 07:39 (4) | 22:19 | 68 | 21:41 (42) |
| 24 | 08:41 | | 09:52 (41) | 07:39 | | 06:28 | | | 06:11 | | 07:30 (33) | 05:12 | | 06:35 (4) | 04:53 | | 06:40 (4) |
| | 16:52 | 25 | 10:17 (41) | 17:57 | | 18:54 | | | 20:55 | 23 | 07:53 (33) | 21:51 | 65 | 07:40 (4) | 22:19 | 68 | 21:41 (42) |
| 25 | 08:39 | | 09:53 (41) | 07:36 | | 06:26 | | | 06:09 | | 07:30 (33) | 05:10 | | 06:34 (4) | 04:53 | | 06:41 (4) |
| | 16:54 | 23 | 10:16 (41) | 17:59 | | 18:56 | | | 20:57 | 20 | 07:50 (33) | 21:52 | 65 | 07:39 (4) | 22:19 | 66 | 21:41 (42) |
| 26 | 08:38 | | 09:54 (41) | 07:34 | | 06:23 | | | 06:06 | | 07:33 (33) | 05:09 | | 06:34 (4) | 04:54 | | 06:40 (4) |
| | 16:56 | 21 | 10:15 (41) | 18:01 | | 18:58 | | | 20:59 | 14 | 07:47 (33) | 21:54 | 65 | 07:39 (4) | 22:19 | 67 | 21:41 (42) |
| 27 | 08:36 | | 09:56 (41) | 07:32 | | 06:21 | | | 06:04 | | 07:36 (33) | 05:08 | | 06:34 (4) | 04:54 | | 06:41 (4) |
| | 16:58 | 19 | 10:15 (41) | 18:03 | | 19:00 | | | 21:01 | 8 | 07:44 (33) | 21:55 | 66 | 07:40 (4) | 22:19 | 65 | 21:41 (42) |
| 28 | 08:35 | | 09:58 (41) | 07:29 | | 06:18 | | | 06:02 | | 07:03 (4) | 05:06 | | 06:34 (4) | 04:55 | | 06:41 (4) |
| | 17:00 | 16 | 10:14 (41) | 18:05 | | 19:02 | | | 21:03 | 19 | 20:29 (30) | 21:57 | 66 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 29 | 08:33 | | 10:00 (41) | | | 07:16 | | | 05:59 | | 06:58 (4) | 05:05 | | 06:35 (4) | 04:55 | | 06:41 (4) |
| | 17:02 | 12 | 10:12 (41) | | | 20:04 | | | 21:05 | 35 | 20:31 (30) | 21:58 | 65 | 07:40 (4) | 22:19 | 64 | 07:45 (4) |
| 30 | 08:31 | | 10:04 (41) | | | 07:13 | | 07:37 (11) | 05:57 | | 06:54 (4) | 05:04 | | 06:35 (4) | 04:56 | | 06:41 (4) |
| | 17:04 | 4 | 10:08 (41) | | | 20:06 | 12 | 19:38 (3) | 21:07 | 46 | 20:33 (30) | 22:00 | 65 | 07:40 (4) | 22:18 | 64 | 07:45 (4) |
| 31 | 08:29 | | | | | 07:10 | | 07:35 (11) | | | | 05:03 | | 06:35 (4) | | | |
| | 17:06 | | | | | 20:08 | 18 | 19:40 (3) | | | | 22:01 | 65 | 07:40 (4) | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 726 | | | | | 207 | | | 1068 | | | 2233 | | | 1969 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,61 | | | | | 0,98 | | | 0,99 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,38 | | | 0,47 | | | 0,44 | |
| Total, real | | 77 | | | | | 67 | | | 402 | | | 1056 | | | 869 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:41 (4) | 05:40 | | 06:49 (4) | 06:38 | | 07:27 (33) | 07:35 | | 18:22 (47) | 07:37 | | | 08:35 | | 09:28 (41) |
| | 22:18 | 65 | 07:46 (4) | 21:40 | 82 | 20:46 (30) | 20:29 | 53 | 19:41 (3) | 19:12 | 18 | 18:40 (47) | 16:58 | | | 16:10 | 28 | 09:56 (41) |
| 2 | 04:57 | | 06:42 (4) | 05:41 | | 06:49 (4) | 06:40 | | 07:27 (33) | 07:37 | | 18:22 (47) | 07:39 | | | 08:37 | | 09:29 (41) |
| | 22:18 | 64 | 07:46 (4) | 21:38 | 82 | 20:46 (30) | 20:27 | 55 | 19:42 (3) | 19:09 | 18 | 18:40 (47) | 16:56 | | | 16:09 | 27 | 09:56 (41) |
| 3 | 04:58 | | 06:42 (4) | 05:43 | | 06:50 (4) | 06:42 | | 07:28 (33) | 07:38 | | 18:22 (47) | 07:41 | | | 08:38 | | 09:30 (41) |
| | 22:17 | 65 | 07:47 (4) | 21:36 | 80 | 20:46 (30) | 20:24 | 54 | 19:42 (3) | 19:07 | 15 | 18:37 (47) | 16:54 | | | 16:08 | 26 | 09:56 (41) |
| 4 | 04:59 | | 06:41 (4) | 05:45 | | 06:51 (4) | 06:43 | | 07:29 (33) | 07:40 | | 18:23 (47) | 07:43 | | | 08:40 | | 09:30 (41) |
| | 22:17 | 65 | 07:46 (4) | 21:34 | 80 | 20:47 (30) | 20:22 | 52 | 19:42 (3) | 19:04 | 12 | 18:35 (47) | 16:51 | | | 16:07 | 26 | 09:56 (41) |
| 5 | 05:00 | | 06:42 (4) | 05:47 | | 06:52 (4) | 06:45 | | 07:30 (33) | 07:42 | | 18:24 (47) | 07:45 | | | 08:41 | | 09:31 (41) |
| | 22:16 | 64 | 07:46 (4) | 21:32 | 78 | 20:47 (30) | 20:19 | 50 | 19:42 (3) | 19:02 | 8 | 18:32 (47) | 16:49 | | | 16:07 | 25 | 09:56 (41) |
| 6 | 05:01 | | 06:42 (4) | 05:49 | | 06:52 (4) | 06:47 | | 07:30 (33) | 07:44 | | 18:27 (47) | 07:47 | | | 08:43 | | 09:32 (41) |
| | 22:15 | 65 | 07:47 (4) | 21:30 | 75 | 20:46 (30) | 20:17 | 48 | 19:41 (3) | 18:59 | 2 | 18:29 (47) | 16:47 | | | 16:06 | 25 | 09:57 (41) |
| 7 | 05:02 | | 06:42 (4) | 05:51 | | 06:53 (4) | 06:49 | | 07:32 (33) | 07:46 | | | 07:49 | | | 08:44 | | 09:32 (41) |
| | 22:15 | 65 | 07:47 (4) | 21:28 | 73 | 20:46 (30) | 20:14 | 43 | 19:41 (3) | 18:57 | | | 16:45 | | | 16:06 | 25 | 09:57 (41) |
| 8 | 05:03 | | 06:42 (4) | 05:52 | | 06:55 (4) | 06:51 | | 07:35 (33) | 07:48 | | | 07:51 | | | 08:46 | | 09:33 (41) |
| | 22:14 | 65 | 07:47 (4) | 21:26 | 70 | 20:46 (30) | 20:12 | 37 | 19:41 (3) | 18:54 | | | 16:43 | | | 16:05 | 24 | 09:57 (41) |
| 9 | 05:04 | | 06:42 (4) | 05:54 | | 06:55 (4) | 06:53 | | 07:24 (11) | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (41) |
| | 22:13 | 65 | 07:47 (4) | 21:24 | 66 | 20:44 (30) | 20:09 | 29 | 19:40 (3) | 18:52 | | | 16:42 | | | 16:05 | 23 | 09:57 (41) |
| 10 | 05:06 | | 06:42 (4) | 05:56 | | 06:57 (4) | 06:55 | | 07:23 (11) | 07:52 | | | 07:55 | | | 08:48 | | 09:34 (41) |
| | 22:12 | 66 | 07:48 (4) | 21:21 | 62 | 20:44 (30) | 20:06 | 30 | 19:38 (3) | 18:49 | | | 16:40 | | | 16:04 | 23 | 09:57 (41) |
| 11 | 05:07 | | 06:43 (4) | 05:58 | | 06:59 (4) | 06:57 | | 07:24 (11) | 07:54 | | | 07:57 | | | 08:49 | | 09:35 (41) |
| | 22:11 | 66 | 07:49 (4) | 21:19 | 56 | 20:43 (30) | 20:04 | 24 | 19:34 (3) | 18:47 | | | 16:38 | | | 16:04 | 23 | 09:58 (41) |
| 12 | 05:08 | | 06:43 (4) | 06:00 | | 07:01 (4) | 06:59 | | 07:26 (11) | 07:56 | | | 07:59 | | 09:35 (41) | 08:51 | | 09:36 (41) |
| | 22:10 | 66 | 07:49 (4) | 21:17 | 50 | 20:42 (30) | 20:01 | 19 | 19:32 (3) | 18:44 | | | 16:36 | 5 | 09:40 (41) | 16:04 | 22 | 09:58 (41) |
| 13 | 05:09 | | 06:43 (4) | 06:02 | | 07:03 (4) | 07:00 | | 07:28 (11) | 07:58 | | | 08:01 | | 09:31 (41) | 08:52 | | 09:36 (41) |
| | 22:09 | 66 | 07:49 (4) | 21:15 | 43 | 20:40 (30) | 19:59 | 12 | 19:29 (3) | 18:42 | | | 16:34 | 13 | 09:44 (41) | 16:04 | 22 | 09:58 (41) |
| 14 | 05:11 | | 06:43 (4) | 06:04 | | 07:06 (4) | 07:02 | | 19:24 (3) | 08:00 | | | 08:03 | | 09:29 (41) | 08:53 | | 09:37 (41) |
| | 22:08 | 66 | 07:49 (4) | 21:13 | 32 | 20:38 (30) | 19:56 | 3 | 19:27 (3) | 18:39 | | | 16:33 | 17 | 09:46 (41) | 16:04 | 21 | 09:58 (41) |
| 15 | 05:12 | | 06:43 (4) | 06:06 | | 07:13 (4) | 07:04 | | | 08:02 | | | 08:05 | | 09:28 (41) | 08:54 | | 09:38 (41) |
| | 22:07 | 66 | 07:49 (4) | 21:10 | 12 | 20:35 (30) | 19:53 | | | 18:37 | | | 16:31 | 19 | 09:47 (41) | 16:04 | 20 | 09:58 (41) |
| 16 | 05:13 | | 06:44 (4) | 06:07 | | 07:43 (33) | 07:06 | | | 08:04 | | | 08:07 | | 09:27 (41) | 08:55 | | 09:38 (41) |
| | 22:05 | 65 | 07:49 (4) | 21:08 | 9 | 07:52 (33) | 19:51 | | | 18:34 | | | 16:29 | 21 | 09:48 (41) | 16:04 | 20 | 09:58 (41) |
| 17 | 05:15 | | 06:44 (4) | 06:09 | | 07:39 (33) | 07:08 | | | 08:06 | | | 08:09 | | 09:27 (41) | 08:55 | | 09:39 (41) |
| | 22:04 | 65 | 07:49 (4) | 21:06 | 16 | 07:55 (33) | 19:48 | | | 18:32 | | | 16:28 | 23 | 09:50 (41) | 16:04 | 20 | 09:59 (41) |
| 18 | 05:16 | | 06:43 (4) | 06:11 | | 07:37 (33) | 07:10 | | | 08:08 | | | 08:11 | | 09:26 (41) | 08:56 | | 09:40 (41) |
| | 22:03 | 66 | 07:49 (4) | 21:03 | 20 | 07:57 (33) | 19:46 | | | 18:30 | | | 16:26 | 25 | 09:51 (41) | 16:04 | 19 | 09:59 (41) |
| 19 | 05:18 | | 06:44 (4) | 06:13 | | 07:35 (33) | 07:12 | | | 08:10 | | | 08:13 | | 09:26 (41) | 08:57 | | 09:41 (41) |
| | 22:01 | 65 | 07:49 (4) | 21:01 | 23 | 07:58 (33) | 19:43 | | | 18:27 | | | 16:24 | 25 | 09:51 (41) | 16:04 | 19 | 10:00 (41) |
| 20 | 05:19 | | 06:44 (4) | 06:15 | | 07:34 (33) | 07:14 | | | 08:12 | | | 08:15 | | 09:26 (41) | 08:58 | | 09:41 (41) |
| | 22:00 | 65 | 07:49 (4) | 20:59 | 26 | 08:00 (33) | 19:41 | | | 18:25 | | | 16:23 | 26 | 09:52 (41) | 16:04 | 18 | 09:59 (41) |
| 21 | 05:21 | | 06:45 (4) | 06:17 | | 07:33 (33) | 07:15 | | | 08:14 | | | 08:17 | | 09:25 (41) | 08:58 | | 09:42 (41) |
| | 21:59 | 65 | 07:50 (4) | 20:56 | 28 | 08:01 (33) | 19:38 | | | 18:22 | | | 16:22 | 27 | 09:52 (41) | 16:05 | 18 | 10:00 (41) |
| 22 | 05:22 | | 06:45 (4) | 06:19 | | 07:31 (33) | 07:17 | | 07:45 (13) | 08:16 | | | 08:19 | | 09:25 (41) | 08:59 | | 09:42 (41) |
| | 21:57 | 64 | 07:49 (4) | 20:54 | 30 | 08:01 (33) | 19:35 | 7 | 07:52 (13) | 18:20 | | | 16:20 | 28 | 09:53 (41) | 16:05 | 18 | 10:00 (41) |
| 23 | 05:24 | | 06:45 (4) | 06:21 | | 07:30 (33) | 07:19 | | 07:47 (13) | 08:18 | | | 08:21 | | 09:26 (41) | 08:59 | | 09:43 (41) |
| | 21:56 | 72 | 20:38 (30) | 20:52 | 31 | 08:01 (33) | 19:33 | 6 | 07:53 (13) | 18:18 | | | 16:19 | 28 | 09:54 (41) | 16:06 | 18 | 10:01 (41) |
| 24 | 05:26 | | 06:45 (4) | 06:23 | | 07:29 (33) | 07:21 | | 07:49 (13) | 08:20 | | | 08:23 | | 09:26 (41) | 09:00 | | 09:43 (41) |
| | 21:54 | 77 | 20:40 (30) | 20:49 | 33 | 08:02 (33) | 19:30 | 5 | 07:54 (13) | 18:15 | | | 16:17 | 28 | 09:54 (41) | 16:06 | 19 | 10:02 (41) |
| 25 | 05:27 | | 06:46 (4) | 06:24 | | 07:29 (33) | 07:23 | | 07:51 (13) | 07:22 | | | 08:25 | | 09:26 (41) | 09:00 | | 09:43 (41) |
| | 21:52 | 79 | 20:42 (30) | 20:47 | 33 | 08:02 (33) | 19:28 | 8 | 18:37 (47) | 17:13 | | | 16:16 | 29 | 09:55 (41) | 16:07 | 19 | 10:02 (41) |
| 26 | 05:29 | | 06:46 (4) | 06:26 | | 07:29 (33) | 07:25 | | 18:27 (47) | 07:24 | | | 08:26 | | 09:27 (41) | 09:00 | | 09:43 (41) |
| | 21:51 | 80 | 20:42 (30) | 20:44 | 34 | 08:03 (33) | 19:25 | 11 | 18:38 (47) | 17:11 | | | 16:15 | 28 | 09:55 (41) | 16:08 | 19 | 10:02 (41) |
| 27 | 05:31 | | 06:47 (4) | 06:28 | | 07:27 (33) | 07:27 | | 18:25 (47) | 07:26 | | | 08:28 | | 09:27 (41) | 09:01 | | 09:43 (41) |
| | 21:49 | 81 | 20:44 (30) | 20:42 | 35 | 08:02 (33) | 19:22 | 15 | 18:40 (47) | 17:09 | | | 16:14 | 28 | 09:55 (41) | 16:09 | 20 | 10:03 (41) |
| 28 | 05:33 | | 06:46 (4) | 06:30 | | 07:27 (33) | 07:29 | | 18:24 (47) | 07:28 | | | 08:30 | | 09:27 (41) | 09:01 | | 09:44 (41) |
| | 21:47 | 83 | 20:44 (30) | 20:39 | 35 | 08:02 (33) | 19:20 | 16 | 18:40 (47) | 17:06 | | | 16:13 | 29 | 09:56 (41) | 16:09 | 20 | 10:04 (41) |
| 29 | 05:34 | | 06:47 (4) | 06:32 | | 07:27 (33) | 07:31 | | 18:23 (47) | 07:30 | | | 08:32 | | 09:28 (41) | 09:01 | | 09:44 (41) |
| | 21:45 | 84 | 20:45 (30) | 20:37 | 45 | 19:37 (3) | 19:17 | 18 | 18:41 (47) | 17:04 | | | 16:12 | 28 | 09:56 (41) | 16:10 | 20 | 10:04 (41) |
| 30 | 05:36 | | 06:48 (4) | 06:34 | | 07:27 (33) | 07:33 | | 18:22 (47) | 07:32 | | | 08:33 | | 09:28 (41) | 09:01 | | 09:44 (41) |
| | 21:44 | 83 | 20:46 (30) | 20:34 | 49 | 19:39 (3) | 19:15 | 18 | 18:40 (47) | 17:02 | | | 16:11 | 27 | 09:55 (41) | 16:11 | 21 | 10:05 (41) |
| 31 | 05:38 | | 06:48 (4) | 06:36 | | 07:27 (33) | | | | 07:35 | | | | | | 09:01 | | 09:45 (41) |
| | 21:42 | 83 | 20:46 (30) | 20:32 | 52 | 19:41 (3) | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 2156 | | | 1440 | | | 613 | | | 73 | | | 454 | | | 669 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,97 | | | 1,00 | | | 0,98 | | | 0,61 | | | 0,61 | |
| Total reduction | | 0,45 | | | 0,48 | | | 0,38 | | | 0,29 | | | 0,09 | | | 0,08 | |
| Total, real | | 960 | | | 690 | | | 233 | | | 21 | | | 42 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (40) | 08:28 | | 09:32 (41) | 07:27 | | | 07:08 | | | 05:55 | | 06:53 (33) | 05:02 | | 05:59 (4) |
| | 16:14 | 22 | 10:08 (40) | 17:08 | 28 | 10:00 (41) | 18:07 | | | 20:10 | | | 21:09 | 32 | 07:25 (33) | 22:02 | 63 | 21:02 (30) |
| 2 | 09:01 | | 09:46 (40) | 08:26 | | 09:33 (41) | 07:24 | | | 07:05 | | | 05:53 | | 06:53 (33) | 05:01 | | 05:58 (4) |
| | 16:15 | 22 | 10:08 (40) | 17:10 | 26 | 09:59 (41) | 18:09 | | | 20:12 | | | 21:11 | 32 | 07:25 (33) | 22:04 | 63 | 21:02 (30) |
| 3 | 09:00 | | 09:47 (40) | 08:24 | | 09:34 (41) | 07:22 | | | 07:03 | | | 05:51 | | 06:53 (33) | 05:00 | | 05:58 (4) |
| | 16:16 | 22 | 10:09 (40) | 17:12 | 25 | 09:59 (41) | 18:11 | | | 20:13 | | | 21:13 | 31 | 07:24 (33) | 22:05 | 65 | 21:03 (30) |
| 4 | 09:00 | | 09:47 (40) | 08:22 | | 09:35 (41) | 07:19 | | | 07:00 | | 07:25 (11) | 05:48 | | 06:53 (33) | 04:59 | | 05:58 (4) |
| | 16:17 | 22 | 10:09 (40) | 17:14 | 23 | 09:58 (41) | 18:14 | | | 20:15 | 2 | 07:27 (11) | 21:14 | 31 | 07:24 (33) | 22:06 | 64 | 21:02 (30) |
| 5 | 09:00 | | 09:47 (40) | 08:20 | | 09:36 (41) | 07:17 | | | 06:58 | | 07:22 (11) | 05:46 | | 06:54 (33) | 04:58 | | 05:57 (4) |
| | 16:19 | 22 | 10:09 (40) | 17:17 | 21 | 09:57 (41) | 18:16 | | | 20:17 | 4 | 07:26 (11) | 21:16 | 29 | 07:23 (33) | 22:07 | 66 | 21:02 (30) |
| 6 | 08:59 | | 09:48 (40) | 08:18 | | 09:37 (41) | 07:14 | | | 06:55 | | 07:20 (11) | 05:44 | | 06:54 (33) | 04:57 | | 05:57 (4) |
| | 16:20 | 22 | 10:10 (40) | 17:19 | 18 | 09:55 (41) | 18:18 | | | 20:19 | 6 | 07:26 (11) | 21:18 | 28 | 07:22 (33) | 22:08 | 65 | 21:01 (30) |
| 7 | 08:59 | | 09:48 (40) | 08:16 | | 09:39 (41) | 07:12 | | | 06:53 | | 07:17 (11) | 05:42 | | 06:55 (33) | 04:56 | | 05:57 (4) |
| | 16:22 | 22 | 10:10 (40) | 17:21 | 14 | 09:53 (41) | 18:20 | | | 20:21 | 8 | 07:25 (11) | 21:20 | 26 | 07:21 (33) | 22:10 | 66 | 21:02 (30) |
| 8 | 08:58 | | 09:48 (40) | 08:14 | | 09:43 (41) | 07:09 | | | 06:50 | | 07:17 (11) | 05:40 | | 06:56 (33) | 04:56 | | 05:56 (4) |
| | 16:23 | 22 | 10:10 (40) | 17:23 | 7 | 09:50 (41) | 18:22 | | | 20:23 | 6 | 07:23 (11) | 21:22 | 24 | 07:20 (33) | 22:11 | 66 | 21:01 (30) |
| 9 | 08:57 | | 09:49 (40) | 08:12 | | | 07:07 | | | 06:48 | | 19:50 (3) | 05:38 | | 06:57 (33) | 04:55 | | 05:57 (4) |
| | 16:25 | 21 | 10:10 (40) | 17:25 | | | 18:24 | | | 20:25 | 7 | 19:57 (3) | 21:24 | 21 | 07:18 (33) | 22:12 | 66 | 21:02 (30) |
| 10 | 08:57 | | 09:49 (40) | 08:10 | | | 07:04 | | | 06:45 | | 19:48 (3) | 05:36 | | 06:58 (33) | 04:54 | | 05:56 (4) |
| | 16:26 | 21 | 10:10 (40) | 17:27 | | | 18:26 | | | 20:27 | 11 | 19:59 (3) | 21:26 | 19 | 07:17 (33) | 22:12 | 66 | 21:01 (30) |
| 11 | 08:56 | | 09:35 (41) | 08:08 | | | 07:02 | | | 06:42 | | 19:45 (3) | 05:34 | | 06:59 (33) | 04:54 | | 05:56 (4) |
| | 16:28 | 30 | 10:11 (40) | 17:29 | | | 18:28 | | | 20:29 | 16 | 20:01 (3) | 21:28 | 20 | 20:50 (30) | 22:13 | 66 | 21:01 (30) |
| 12 | 08:55 | | 09:34 (41) | 08:06 | | | 06:59 | | | 06:40 | | 19:44 (3) | 05:32 | | 07:02 (33) | 04:53 | | 05:57 (4) |
| | 16:29 | 32 | 10:11 (40) | 17:32 | | | 18:30 | | | 20:31 | 19 | 20:03 (3) | 21:30 | 22 | 20:54 (30) | 22:14 | 66 | 21:02 (30) |
| 13 | 08:54 | | 09:33 (41) | 08:04 | | | 06:57 | | | 06:38 | | 19:42 (3) | 05:30 | | 20:41 (30) | 04:53 | | 05:56 (4) |
| | 16:31 | 34 | 10:11 (40) | 17:34 | | | 18:32 | | | 20:33 | 22 | 20:04 (3) | 21:32 | 15 | 20:56 (30) | 22:15 | 65 | 21:01 (30) |
| 14 | 08:53 | | 09:33 (41) | 08:02 | | | 06:54 | | | 06:35 | | 19:42 (3) | 05:28 | | 20:40 (30) | 04:53 | | 05:56 (4) |
| | 16:33 | 35 | 10:11 (40) | 17:36 | | | 18:34 | | | 20:35 | 24 | 20:06 (3) | 21:33 | 17 | 20:57 (30) | 22:16 | 66 | 21:01 (30) |
| 15 | 08:52 | | 09:32 (41) | 07:59 | | | 06:52 | | 18:03 (47) | 06:33 | | 19:41 (3) | 05:27 | | 20:39 (30) | 04:52 | | 05:56 (4) |
| | 16:35 | 36 | 10:11 (40) | 17:38 | | | 18:36 | 5 | 18:08 (47) | 20:37 | 25 | 20:06 (3) | 21:35 | 20 | 20:59 (30) | 22:16 | 65 | 21:01 (30) |
| 16 | 08:51 | | 09:31 (41) | 07:57 | | | 06:49 | | 18:01 (47) | 06:30 | | 19:40 (3) | 05:25 | | 20:38 (30) | 04:52 | | 05:57 (4) |
| | 16:36 | 37 | 10:10 (40) | 17:40 | | | 18:38 | 10 | 18:11 (47) | 20:39 | 26 | 20:06 (3) | 21:37 | 21 | 20:59 (30) | 22:17 | 64 | 21:01 (30) |
| 17 | 08:50 | | 09:31 (41) | 07:55 | | | 06:46 | | 17:59 (47) | 06:28 | | 07:08 (33) | 05:23 | | 20:38 (30) | 04:52 | | 05:57 (4) |
| | 16:38 | 36 | 10:10 (40) | 17:42 | | | 18:40 | 14 | 18:13 (47) | 20:41 | 33 | 20:06 (3) | 21:39 | 22 | 21:00 (30) | 22:17 | 64 | 21:01 (30) |
| 18 | 08:49 | | 09:30 (41) | 07:53 | | | 06:44 | | 17:57 (47) | 06:25 | | 07:03 (33) | 05:21 | | 20:37 (30) | 04:52 | | 05:57 (4) |
| | 16:40 | 36 | 10:09 (40) | 17:44 | | | 18:42 | 17 | 18:14 (47) | 20:43 | 41 | 20:05 (3) | 21:41 | 23 | 21:00 (30) | 22:18 | 64 | 21:01 (30) |
| 19 | 08:48 | | 09:30 (41) | 07:50 | | | 06:41 | | 17:57 (47) | 06:23 | | 07:01 (33) | 05:20 | | 20:37 (30) | 04:52 | | 05:57 (4) |
| | 16:42 | 34 | 10:08 (40) | 17:46 | | | 18:44 | 18 | 18:15 (47) | 20:45 | 45 | 20:05 (3) | 21:42 | 24 | 21:01 (30) | 22:18 | 64 | 21:01 (30) |
| 20 | 08:46 | | 09:29 (41) | 07:48 | | | 06:39 | | 17:56 (47) | 06:20 | | 07:00 (33) | 05:18 | | 20:36 (30) | 04:52 | | 05:57 (4) |
| | 16:44 | 27 | 09:56 (41) | 17:49 | | | 18:46 | 19 | 18:15 (47) | 20:47 | 48 | 20:05 (3) | 21:44 | 25 | 21:01 (30) | 22:19 | 64 | 21:01 (30) |
| 21 | 08:45 | | 09:30 (41) | 07:46 | | | 06:36 | | 17:56 (47) | 06:18 | | 06:57 (33) | 05:16 | | 20:36 (30) | 04:52 | | 05:57 (4) |
| | 16:46 | 27 | 09:57 (41) | 17:51 | | | 18:48 | 19 | 18:15 (47) | 20:49 | 49 | 20:03 (3) | 21:46 | 26 | 21:02 (30) | 22:19 | 64 | 21:01 (30) |
| 22 | 08:44 | | 09:29 (41) | 07:43 | | | 06:34 | | 17:56 (47) | 06:16 | | 06:56 (33) | 05:15 | | 20:36 (30) | 04:52 | | 05:58 (4) |
| | 16:48 | 28 | 09:57 (41) | 17:53 | | | 18:50 | 18 | 18:14 (47) | 20:51 | 50 | 20:03 (3) | 21:47 | 26 | 21:02 (30) | 22:19 | 64 | 21:02 (30) |
| 23 | 08:42 | | 09:30 (41) | 07:41 | | | 06:31 | | 17:56 (47) | 06:13 | | 06:56 (33) | 05:13 | | 06:11 (4) | 04:53 | | 05:58 (4) |
| | 16:50 | 29 | 09:59 (41) | 17:55 | | | 18:52 | 17 | 18:13 (47) | 20:53 | 49 | 20:02 (3) | 21:49 | 38 | 21:02 (30) | 22:19 | 64 | 21:02 (30) |
| 24 | 08:41 | | 09:30 (41) | 07:39 | | | 06:28 | | 17:57 (47) | 06:11 | | 06:55 (33) | 05:12 | | 06:08 (4) | 04:53 | | 05:58 (4) |
| | 16:52 | 29 | 09:59 (41) | 17:57 | | | 18:54 | 15 | 18:12 (47) | 20:55 | 48 | 20:01 (3) | 21:51 | 45 | 21:03 (30) | 22:19 | 63 | 21:02 (30) |
| 25 | 08:39 | | 09:29 (41) | 07:36 | | | 06:26 | | 17:58 (47) | 06:09 | | 06:53 (33) | 05:10 | | 06:05 (4) | 04:53 | | 05:59 (4) |
| | 16:54 | 30 | 09:59 (41) | 17:59 | | | 18:56 | 12 | 18:10 (47) | 20:57 | 46 | 19:58 (3) | 21:52 | 50 | 21:02 (30) | 22:19 | 64 | 21:03 (30) |
| 26 | 08:38 | | 09:29 (41) | 07:34 | | | 06:23 | | 18:01 (47) | 06:06 | | 06:53 (33) | 05:09 | | 06:04 (4) | 04:54 | | 05:59 (4) |
| | 16:56 | 30 | 09:59 (41) | 18:01 | | | 18:58 | 6 | 18:07 (47) | 20:59 | 41 | 19:55 (3) | 21:54 | 52 | 21:02 (30) | 22:19 | 64 | 21:03 (30) |
| 27 | 08:36 | | 09:30 (41) | 07:32 | | | 06:21 | | | 06:04 | | 06:53 (33) | 05:08 | | 06:03 (4) | 04:54 | | 05:59 (4) |
| | 16:58 | 30 | 10:00 (41) | 18:03 | | | 19:00 | | | 21:01 | 33 | 07:26 (33) | 21:55 | 54 | 21:02 (30) | 22:19 | 66 | 21:04 (30) |
| 28 | 08:34 | | 09:31 (41) | 07:29 | | | 06:18 | | | 06:02 | | 06:53 (33) | 05:06 | | 06:02 (4) | 04:55 | | 05:59 (4) |
| | 17:00 | 29 | 10:00 (41) | 18:05 | | | 19:02 | | | 21:03 | 33 | 07:26 (33) | 21:57 | 58 | 21:03 (30) | 22:19 | 65 | 21:04 (30) |
| 29 | 08:33 | | 09:31 (41) | | | | 07:16 | | | 05:59 | | 06:53 (33) | 05:05 | | 06:01 (4) | 04:55 | | 06:00 (4) |
| | 17:02 | 29 | 10:00 (41) | | | | 20:04 | | | 21:05 | 33 | 07:26 (33) | 21:58 | 59 | 21:03 (30) | 22:19 | 66 | 21:05 (30) |
| 30 | 08:31 | | 09:31 (41) | | | | 07:13 | | | 05:57 | | 06:53 (33) | 05:04 | | 06:00 (4) | 04:56 | | 06:00 (4) |
| | 17:04 | 29 | 10:00 (41) | | | | 20:06 | | | 21:07 | 33 | 07:26 (33) | 22:00 | 61 | 21:03 (30) | 22:18 | 66 | 21:05 (30) |
| 31 | 08:29 | | 09:32 (41) | | | | 07:10 | | | | | | 05:03 | | 05:59 (4) | | | |
| | 17:06 | 28 | 10:00 (41) | | | | 20:08 | | | | | | 22:01 | 62 | 21:02 (30) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | 873 | | | 162 | | | 170 | | | 758 | | | 1013 | | | 1944 | | |
| Sun reduction | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | 0,65 | | | 0,68 | | | 0,99 | | | 0,98 | | | 0,91 | | | 0,87 | | |
| Total reduction | 0,11 | | | 0,16 | | | 0,32 | | | 0,37 | | | 0,45 | | | 0,40 | | |
| Total, real | 98 | | | 26 | | | 55 | | | 279 | | | 453 | | | 778 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:01 (4) | 05:40 | | 07:12 (33) | 06:38 | | 19:44 (3) | 07:35 | 07:37 | | | 08:35 | | 09:17 (41) |
| | 22:18 | 64 | 21:05 (30) | 21:40 | 21 | 21:04 (30) | 20:29 | 16 | 20:00 (3) | 19:12 | 16:58 | | | 16:10 | 30 | 09:53 (40) |
| 2 | 04:58 | | 06:01 (4) | 05:41 | | 07:09 (33) | 06:40 | | 19:46 (3) | 07:37 | 07:39 | | | 08:37 | | 09:32 (40) |
| | 22:18 | 65 | 21:06 (30) | 21:38 | 17 | 07:26 (33) | 20:27 | 11 | 19:57 (3) | 19:09 | 16:56 | | | 16:09 | 22 | 09:54 (40) |
| 3 | 04:58 | | 06:02 (4) | 05:43 | | 07:08 (33) | 06:42 | | 19:48 (3) | 07:38 | 07:41 | | 09:12 (41) | 08:38 | | 09:33 (40) |
| | 22:17 | 66 | 21:07 (30) | 21:36 | 20 | 07:28 (33) | 20:24 | 7 | 19:55 (3) | 19:07 | 16:54 | 8 | 09:20 (41) | 16:08 | 21 | 09:54 (40) |
| 4 | 04:59 | | 06:02 (4) | 05:45 | | 07:07 (33) | 06:43 | | 07:14 (11) | 07:40 | 07:43 | | 09:08 (41) | 08:40 | | 09:32 (40) |
| | 22:17 | 66 | 21:07 (30) | 21:34 | 22 | 07:29 (33) | 20:22 | 6 | 07:20 (11) | 19:04 | 16:51 | 15 | 09:23 (41) | 16:07 | 22 | 09:54 (40) |
| 5 | 05:00 | | 06:02 (4) | 05:47 | | 07:06 (33) | 06:45 | | 07:14 (11) | 07:42 | 07:45 | | 09:07 (41) | 08:41 | | 09:33 (40) |
| | 22:16 | 66 | 21:07 (30) | 21:32 | 25 | 07:31 (33) | 20:19 | 8 | 07:22 (11) | 19:02 | 16:49 | 19 | 09:26 (41) | 16:07 | 22 | 09:55 (40) |
| 6 | 05:01 | | 06:03 (4) | 05:49 | | 07:04 (33) | 06:47 | | 07:15 (11) | 07:44 | 07:47 | | 09:06 (41) | 08:43 | | 09:34 (40) |
| | 22:15 | 65 | 21:08 (30) | 21:30 | 27 | 07:31 (33) | 20:17 | 6 | 07:21 (11) | 18:59 | 16:47 | 21 | 09:27 (41) | 16:06 | 22 | 09:56 (40) |
| 7 | 05:02 | | 06:03 (4) | 05:51 | | 07:04 (33) | 06:49 | | 07:17 (11) | 07:46 | 07:49 | | 09:04 (41) | 08:44 | | 09:34 (40) |
| | 22:15 | 65 | 21:08 (30) | 21:28 | 28 | 07:32 (33) | 20:14 | 5 | 07:22 (11) | 18:57 | 16:45 | 24 | 09:28 (41) | 16:06 | 22 | 09:56 (40) |
| 8 | 05:03 | | 06:04 (4) | 05:52 | | 07:03 (33) | 06:51 | | 07:19 (11) | 07:48 | 07:51 | | 09:03 (41) | 08:46 | | 09:35 (40) |
| | 22:14 | 65 | 21:09 (30) | 21:26 | 30 | 07:33 (33) | 20:12 | 2 | 07:21 (11) | 18:54 | 16:44 | 26 | 09:29 (41) | 16:05 | 22 | 09:57 (40) |
| 9 | 05:04 | | 06:05 (4) | 05:54 | | 07:02 (33) | 06:53 | | | 07:50 | 07:53 | | 09:04 (41) | 08:47 | | 09:35 (40) |
| | 22:13 | 65 | 21:09 (30) | 21:24 | 30 | 07:32 (33) | 20:09 | | | 18:52 | 16:42 | 26 | 09:30 (41) | 16:05 | 22 | 09:57 (40) |
| 10 | 05:06 | | 06:05 (4) | 05:56 | | 07:01 (33) | 06:55 | | | 07:52 | 07:55 | | 09:03 (41) | 08:48 | | 09:35 (40) |
| | 22:12 | 64 | 21:09 (30) | 21:21 | 32 | 07:33 (33) | 20:06 | | | 18:49 | 16:40 | 28 | 09:31 (41) | 16:04 | 22 | 09:57 (40) |
| 11 | 05:07 | | 06:07 (4) | 05:58 | | 07:01 (33) | 06:57 | | | 07:54 | 07:57 | | 09:02 (41) | 08:49 | | 09:36 (40) |
| | 22:11 | 64 | 21:11 (30) | 21:19 | 32 | 07:33 (33) | 20:04 | | | 18:47 | 16:38 | 29 | 09:31 (41) | 16:04 | 22 | 09:58 (40) |
| 12 | 05:08 | | 06:08 (4) | 06:00 | | 07:01 (33) | 06:59 | | | 07:56 | 07:59 | | 09:02 (41) | 08:51 | | 09:36 (40) |
| | 22:10 | 62 | 21:11 (30) | 21:17 | 33 | 07:34 (33) | 20:01 | | | 18:44 | 16:36 | 29 | 09:31 (41) | 16:04 | 22 | 09:58 (40) |
| 13 | 05:09 | | 06:08 (4) | 06:02 | | 07:00 (33) | 07:00 | | | 07:58 | 08:01 | | 09:03 (41) | 08:52 | | 09:37 (40) |
| | 22:09 | 61 | 21:11 (30) | 21:15 | 33 | 07:33 (33) | 19:59 | | | 18:42 | 16:34 | 29 | 09:32 (41) | 16:04 | 21 | 09:58 (40) |
| 14 | 05:11 | | 06:09 (4) | 06:04 | | 07:00 (33) | 07:02 | | | 08:00 | 08:03 | | 09:02 (41) | 08:53 | | 09:37 (40) |
| | 22:08 | 60 | 21:11 (30) | 21:13 | 33 | 07:33 (33) | 19:56 | | | 18:39 | 16:33 | 30 | 09:32 (41) | 16:04 | 22 | 09:59 (40) |
| 15 | 05:12 | | 06:10 (4) | 06:06 | | 07:00 (33) | 07:04 | | | 08:02 | 08:05 | | 09:02 (41) | 08:54 | | 09:37 (40) |
| | 22:07 | 58 | 21:11 (30) | 21:10 | 33 | 07:33 (33) | 19:53 | | | 18:37 | 16:31 | 30 | 09:32 (41) | 16:04 | 22 | 09:59 (40) |
| 16 | 05:13 | | 06:12 (4) | 06:07 | | 07:00 (33) | 07:06 | | | 08:04 | 08:07 | | 09:02 (41) | 08:55 | | 09:38 (40) |
| | 22:05 | 56 | 21:12 (30) | 21:08 | 33 | 07:33 (33) | 19:51 | | | 18:34 | 16:29 | 30 | 09:32 (41) | 16:04 | 21 | 09:59 (40) |
| 17 | 05:15 | | 06:13 (4) | 06:09 | | 07:00 (33) | 07:08 | | 18:51 (47) | 08:06 | 08:09 | | 09:03 (41) | 08:55 | | 09:39 (40) |
| | 22:04 | 54 | 21:12 (30) | 21:06 | 43 | 20:03 (3) | 19:48 | 4 | 18:55 (47) | 18:32 | 16:28 | 30 | 09:33 (41) | 16:04 | 21 | 10:00 (40) |
| 18 | 05:16 | | 06:14 (4) | 06:11 | | 07:00 (33) | 07:10 | | 18:46 (47) | 08:08 | 08:11 | | 09:04 (41) | 08:56 | | 09:39 (40) |
| | 22:03 | 51 | 21:12 (30) | 21:03 | 46 | 20:05 (3) | 19:46 | 11 | 18:57 (47) | 18:30 | 16:26 | 29 | 09:33 (41) | 16:04 | 22 | 10:01 (40) |
| 19 | 05:18 | | 06:17 (4) | 06:13 | | 07:01 (33) | 07:12 | | 18:44 (47) | 08:10 | 08:13 | | 09:04 (41) | 08:57 | | 09:40 (40) |
| | 22:01 | 46 | 21:12 (30) | 21:01 | 48 | 20:06 (3) | 19:43 | 14 | 18:58 (47) | 18:27 | 16:24 | 29 | 09:33 (41) | 16:04 | 21 | 10:01 (40) |
| 20 | 05:19 | | 06:19 (4) | 06:15 | | 07:01 (33) | 07:14 | | 18:43 (47) | 08:12 | 08:15 | | 09:04 (41) | 08:58 | | 09:40 (40) |
| | 22:00 | 43 | 21:12 (30) | 20:59 | 50 | 20:08 (3) | 19:41 | 16 | 18:59 (47) | 18:25 | 16:23 | 28 | 09:32 (41) | 16:04 | 21 | 10:01 (40) |
| 21 | 05:21 | | 06:23 (4) | 06:17 | | 07:02 (33) | 07:16 | | 18:42 (47) | 08:14 | 08:17 | | 09:05 (41) | 08:58 | | 09:41 (40) |
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| | 21:57 | 26 | 21:12 (30) | 20:54 | 49 | 20:08 (3) | 19:35 | 19 | 19:00 (47) | 18:20 | 16:20 | 27 | 09:32 (41) | 16:05 | 21 | 10:02 (40) |
| 23 | 05:24 | | 20:47 (30) | 06:21 | | 07:03 (33) | 07:19 | | 18:41 (47) | 08:18 | 08:21 | | 09:07 (41) | 08:59 | | 09:42 (40) |
| | 21:55 | 25 | 21:12 (30) | 20:52 | 48 | 20:09 (3) | 19:33 | 19 | 19:00 (47) | 18:18 | 16:19 | 34 | 09:45 (40) | 16:06 | 21 | 10:03 (40) |
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| | 21:54 | 24 | 21:11 (30) | 20:49 | 45 | 20:09 (3) | 19:30 | 18 | 18:59 (47) | 18:15 | 16:18 | 36 | 09:47 (40) | 16:06 | 21 | 10:03 (40) |
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| | 21:52 | 25 | 21:12 (30) | 20:47 | 41 | 20:09 (3) | 19:28 | 18 | 18:59 (47) | 17:13 | 16:16 | 37 | 09:48 (40) | 16:07 | 21 | 10:03 (40) |
| 26 | 05:29 | | 20:47 (30) | 06:26 | | 07:12 (33) | 07:25 | | 18:40 (47) | 07:24 | 08:26 | | 09:10 (41) | 09:00 | | 09:42 (40) |
| | 21:51 | 24 | 21:11 (30) | 20:44 | 32 | 20:09 (3) | 19:25 | 15 | 18:55 (47) | 17:11 | 16:15 | 37 | 09:49 (40) | 16:08 | 22 | 10:04 (40) |
| 27 | 05:31 | | 20:48 (30) | 06:28 | | 19:42 (3) | 07:27 | | 18:41 (47) | 07:26 | 08:28 | | 09:11 (41) | 09:01 | | 09:43 (40) |
| | 21:49 | 22 | 21:10 (30) | 20:42 | 26 | 20:08 (3) | 19:22 | 12 | 18:53 (47) | 17:09 | 16:14 | 37 | 09:50 (40) | 16:09 | 21 | 10:04 (40) |
| 28 | 05:33 | | 20:49 (30) | 06:30 | | 19:42 (3) | 07:29 | | 18:43 (47) | 07:28 | 08:30 | | 09:13 (41) | 09:01 | | 09:43 (40) |
| | 21:47 | 20 | 21:09 (30) | 20:39 | 25 | 20:07 (3) | 19:20 | 7 | 18:50 (47) | 17:06 | 16:13 | 35 | 09:51 (40) | 16:09 | 22 | 10:05 (40) |
| 29 | 05:34 | | 20:50 (30) | 06:32 | | 19:43 (3) | 07:31 | | | 07:30 | 08:32 | | 09:14 (41) | 09:01 | | 09:44 (40) |
| | 21:45 | 19 | 21:09 (30) | 20:37 | 24 | 20:07 (3) | 19:17 | | | 17:04 | 16:12 | 34 | 09:52 (40) | 16:10 | 21 | 10:05 (40) |
| 30 | 05:36 | | 20:51 (30) | 06:34 | | 19:43 (3) | 07:33 | | | 07:32 | 08:33 | | 09:15 (41) | 09:01 | | 09:44 (40) |
| | 21:44 | 17 | 21:08 (30) | 20:34 | 22 | 20:05 (3) | 19:15 | | | 17:02 | 16:11 | 32 | 09:52 (40) | 16:11 | 22 | 10:06 (40) |
| 31 | 05:38 | | 07:15 (33) | 06:36 | | 19:44 (3) | | | | 07:35 | | | | 09:01 | | 09:45 (40) |
| | 21:42 | 19 | 21:06 (30) | 20:32 | 19 | 20:03 (3) | | | | 17:00 | | | | 16:12 | 22 | 10:07 (40) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 1461 | | | 1016 | | | 232 | | | | 796 | | | 677 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,88 | | | 0,98 | | | 0,99 | | | | 0,67 | | | 0,60 | |
| Total reduction | | 0,41 | | | 0,48 | | | 0,37 | | | | 0,10 | | | 0,08 | |
| Total, real | | 592 | | | 487 | | | 87 | | | | 80 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (41) | 08:28 | | 10:04 (41) | 07:27 | | | 07:08 | | 07:32 (11) | 05:55 | | 07:10 (33) | 05:02 | | 06:11 (4) |
| | 16:14 | 36 | 10:22 (40) | 17:08 | 5 | 10:09 (41) | 18:07 | | | 20:10 | 2 | 07:34 (11) | 21:09 | 39 | 20:36 (30) | 22:02 | 53 | 07:04 (4) |
| 2 | 09:01 | | 09:46 (41) | 08:26 | | | 07:24 | | | 07:05 | | 07:30 (11) | 05:53 | | 07:11 (33) | 05:01 | | 06:11 (4) |
| | 16:15 | 36 | 10:22 (40) | 17:10 | | | 18:09 | | | 20:11 | 6 | 19:44 (3) | 21:11 | 42 | 20:38 (30) | 22:04 | 54 | 07:05 (4) |
| 3 | 09:00 | | 09:46 (41) | 08:24 | | | 07:22 | | | 07:03 | | 07:27 (11) | 05:51 | | 07:12 (33) | 05:00 | | 06:11 (4) |
| | 16:16 | 36 | 10:22 (40) | 17:12 | | | 18:11 | | | 20:13 | 15 | 19:46 (3) | 21:13 | 44 | 20:40 (30) | 22:05 | 55 | 07:06 (4) |
| 4 | 09:00 | | 09:46 (41) | 08:22 | | | 07:19 | | | 07:00 | | 07:25 (11) | 05:48 | | 07:13 (33) | 04:59 | | 06:11 (4) |
| | 16:17 | 36 | 10:22 (40) | 17:14 | | | 18:13 | | | 20:15 | 21 | 19:48 (3) | 21:14 | 44 | 20:41 (30) | 22:06 | 56 | 07:07 (4) |
| 5 | 09:00 | | 09:45 (41) | 08:20 | | | 07:17 | | | 06:58 | | 07:23 (11) | 05:46 | | 07:14 (33) | 04:58 | | 06:10 (4) |
| | 16:19 | 37 | 10:22 (40) | 17:17 | | | 18:16 | | | 20:17 | 24 | 19:49 (3) | 21:16 | 43 | 20:42 (30) | 22:07 | 57 | 07:07 (4) |
| 6 | 08:59 | | 09:46 (41) | 08:18 | | | 07:14 | | | 06:55 | | 07:25 (11) | 05:44 | | 07:16 (33) | 04:57 | | 06:10 (4) |
| | 16:20 | 37 | 10:23 (40) | 17:19 | | | 18:18 | | | 20:19 | 24 | 19:52 (3) | 21:18 | 41 | 20:43 (30) | 22:08 | 57 | 07:07 (4) |
| 7 | 08:59 | | 09:46 (41) | 08:16 | | | 07:12 | | | 06:53 | | 19:31 (3) | 05:42 | | 07:18 (33) | 04:56 | | 06:10 (4) |
| | 16:22 | 36 | 10:22 (40) | 17:21 | | | 18:20 | | | 20:21 | 22 | 19:53 (3) | 21:20 | 37 | 20:43 (30) | 22:10 | 58 | 07:08 (4) |
| 8 | 08:58 | | 09:46 (41) | 08:14 | | | 07:09 | | | 06:50 | | 19:31 (3) | 05:40 | | 07:21 (33) | 04:56 | | 06:09 (4) |
| | 16:23 | 36 | 10:22 (40) | 17:23 | | | 18:22 | | | 20:23 | 23 | 19:54 (3) | 21:22 | 30 | 20:43 (30) | 22:11 | 59 | 07:08 (4) |
| 9 | 08:57 | | 09:46 (41) | 08:12 | | | 07:07 | | | 06:48 | | 19:30 (3) | 05:38 | | 20:18 (30) | 04:55 | | 06:10 (4) |
| | 16:25 | 36 | 10:22 (40) | 17:25 | | | 18:24 | | | 20:25 | 24 | 19:54 (3) | 21:24 | 25 | 20:43 (30) | 22:12 | 59 | 07:09 (4) |
| 10 | 08:57 | | 09:46 (41) | 08:10 | | | 07:04 | | | 06:45 | | 19:30 (3) | 05:36 | | 20:18 (30) | 04:54 | | 06:09 (4) |
| | 16:26 | 35 | 10:21 (40) | 17:27 | | | 18:26 | | | 20:27 | 24 | 19:54 (3) | 21:26 | 25 | 20:43 (30) | 22:12 | 60 | 07:09 (4) |
| 11 | 08:56 | | 09:46 (41) | 08:08 | | | 07:02 | | 17:58 (47) | 06:42 | | 07:27 (33) | 05:34 | | 20:18 (30) | 04:54 | | 06:10 (4) |
| | 16:28 | 34 | 10:20 (40) | 17:29 | | | 18:28 | 3 | 18:01 (47) | 20:29 | 30 | 19:53 (3) | 21:28 | 25 | 20:43 (30) | 22:13 | 60 | 07:10 (4) |
| 12 | 08:55 | | 09:46 (41) | 08:06 | | | 06:59 | | 17:55 (47) | 06:40 | | 07:22 (33) | 05:32 | | 20:18 (30) | 04:53 | | 06:10 (4) |
| | 16:29 | 33 | 10:19 (40) | 17:31 | | | 18:30 | 7 | 18:02 (47) | 20:31 | 39 | 19:53 (3) | 21:30 | 26 | 20:44 (30) | 22:14 | 60 | 07:10 (4) |
| 13 | 08:54 | | 09:47 (41) | 08:04 | | | 06:57 | | 17:53 (47) | 06:38 | | 07:19 (33) | 05:30 | | 20:18 (30) | 04:53 | | 06:09 (4) |
| | 16:31 | 29 | 10:16 (41) | 17:34 | | | 18:32 | 11 | 18:04 (47) | 20:33 | 43 | 19:52 (3) | 21:32 | 25 | 20:43 (30) | 22:15 | 61 | 07:10 (4) |
| 14 | 08:53 | | 09:47 (41) | 08:02 | | | 06:54 | | 17:52 (47) | 06:35 | | 07:17 (33) | 05:28 | | 20:18 (30) | 04:53 | | 06:09 (4) |
| | 16:33 | 30 | 10:17 (41) | 17:36 | | | 18:34 | 15 | 18:07 (47) | 20:35 | 45 | 19:51 (3) | 21:33 | 25 | 20:43 (30) | 22:16 | 62 | 07:11 (4) |
| 15 | 08:52 | | 09:48 (41) | 07:59 | | | 06:52 | | 17:51 (47) | 06:33 | | 07:16 (33) | 05:27 | | 20:19 (30) | 04:52 | | 06:10 (4) |
| | 16:35 | 29 | 10:17 (41) | 17:38 | | | 18:36 | 17 | 18:08 (47) | 20:37 | 46 | 19:50 (3) | 21:35 | 24 | 20:43 (30) | 22:16 | 61 | 07:11 (4) |
| 16 | 08:51 | | 09:47 (41) | 07:57 | | | 06:49 | | 17:51 (47) | 06:30 | | 07:14 (33) | 05:25 | | 20:19 (30) | 04:52 | | 06:10 (4) |
| | 16:36 | 30 | 10:17 (41) | 17:40 | | | 18:38 | 18 | 18:09 (47) | 20:39 | 45 | 19:48 (3) | 21:37 | 23 | 20:42 (30) | 22:17 | 61 | 07:11 (4) |
| 17 | 08:50 | | 09:48 (41) | 07:55 | | | 06:46 | | 17:50 (47) | 06:28 | | 07:13 (33) | 05:23 | | 20:20 (30) | 04:52 | | 06:10 (4) |
| | 16:38 | 30 | 10:18 (41) | 17:42 | | | 18:40 | 18 | 18:08 (47) | 20:41 | 43 | 19:46 (3) | 21:39 | 22 | 20:42 (30) | 22:17 | 62 | 07:12 (4) |
| 18 | 08:49 | | 09:48 (41) | 07:53 | | | 06:44 | | 17:50 (47) | 06:25 | | 07:11 (33) | 05:21 | | 06:29 (4) | 04:52 | | 06:10 (4) |
| | 16:40 | 30 | 10:18 (41) | 17:44 | | | 18:42 | 17 | 18:07 (47) | 20:43 | 37 | 19:41 (3) | 21:41 | 37 | 20:41 (30) | 22:18 | 62 | 07:12 (4) |
| 19 | 08:48 | | 09:48 (41) | 07:50 | | | 06:41 | | 17:51 (47) | 06:23 | | 07:11 (33) | 05:20 | | 06:26 (4) | 04:52 | | 06:10 (4) |
| | 16:42 | 31 | 10:19 (41) | 17:46 | | | 18:44 | 16 | 18:07 (47) | 20:45 | 34 | 07:45 (33) | 21:42 | 43 | 20:41 (30) | 22:18 | 62 | 07:12 (4) |
| 20 | 08:46 | | 09:48 (41) | 07:48 | | | 06:39 | | 07:03 (13) | 06:20 | | 07:10 (33) | 05:18 | | 06:23 (4) | 04:52 | | 06:10 (4) |
| | 16:44 | 30 | 10:18 (41) | 17:48 | | | 18:46 | 15 | 18:05 (47) | 20:47 | 35 | 07:45 (33) | 21:44 | 45 | 20:40 (30) | 22:19 | 62 | 07:12 (4) |
| 21 | 08:45 | | 09:49 (41) | 07:46 | | | 06:36 | | 07:01 (13) | 06:18 | | 07:09 (33) | 05:16 | | 06:21 (4) | 04:52 | | 06:10 (4) |
| | 16:46 | 30 | 10:19 (41) | 17:51 | | | 18:48 | 13 | 18:03 (47) | 20:49 | 36 | 07:45 (33) | 21:46 | 48 | 20:39 (30) | 22:19 | 62 | 07:12 (4) |
| 22 | 08:44 | | 09:50 (41) | 07:43 | | | 06:34 | | 06:58 (13) | 06:16 | | 07:09 (33) | 05:15 | | 06:19 (4) | 04:52 | | 06:11 (4) |
| | 16:48 | 29 | 10:19 (41) | 17:53 | | | 18:50 | 6 | 07:04 (13) | 20:51 | 36 | 07:45 (33) | 21:47 | 49 | 20:38 (30) | 22:19 | 62 | 07:13 (4) |
| 23 | 08:42 | | 09:51 (41) | 07:41 | | | 06:31 | | 06:55 (13) | 06:13 | | 07:09 (33) | 05:13 | | 06:18 (4) | 04:53 | | 06:11 (4) |
| | 16:50 | 28 | 10:19 (41) | 17:55 | | | 18:52 | 7 | 07:02 (13) | 20:53 | 36 | 07:45 (33) | 21:49 | 49 | 20:37 (30) | 22:19 | 62 | 07:13 (4) |
| 24 | 08:41 | | 09:51 (41) | 07:39 | | | 06:28 | | 06:56 (13) | 06:11 | | 07:09 (33) | 05:12 | | 06:17 (4) | 04:53 | | 06:11 (4) |
| | 16:52 | 28 | 10:19 (41) | 17:57 | | | 18:54 | 5 | 07:01 (13) | 20:55 | 36 | 07:45 (33) | 21:51 | 47 | 20:35 (30) | 22:19 | 62 | 07:13 (4) |
| 25 | 08:39 | | 09:52 (41) | 07:36 | | | 06:26 | | | 06:09 | | 07:08 (33) | 05:10 | | 06:15 (4) | 04:53 | | 06:12 (4) |
| | 16:54 | 26 | 10:18 (41) | 17:59 | | | 18:56 | | | 20:57 | 36 | 07:44 (33) | 21:52 | 43 | 06:58 (4) | 22:19 | 62 | 07:14 (4) |
| 26 | 08:38 | | 09:52 (41) | 07:34 | | | 06:23 | | | 06:06 | | 07:08 (33) | 05:09 | | 06:15 (4) | 04:54 | | 06:12 (4) |
| | 16:56 | 26 | 10:18 (41) | 18:01 | | | 18:58 | | | 20:59 | 36 | 07:44 (33) | 21:54 | 44 | 06:59 (4) | 22:19 | 62 | 07:14 (4) |
| 27 | 08:36 | | 09:54 (41) | 07:32 | | | 06:21 | | | 06:04 | | 07:08 (33) | 05:08 | | 06:14 (4) | 04:54 | | 06:13 (4) |
| | 16:58 | 24 | 10:18 (41) | 18:03 | | | 19:00 | | | 21:01 | 36 | 07:44 (33) | 21:55 | 46 | 07:00 (4) | 22:19 | 61 | 07:14 (4) |
| 28 | 08:34 | | 09:55 (41) | 07:29 | | | 06:18 | | | 06:02 | | 07:09 (33) | 05:06 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:00 | 22 | 10:17 (41) | 18:05 | | | 19:02 | | | 21:03 | 34 | 07:43 (33) | 21:57 | 48 | 07:01 (4) | 22:19 | 61 | 07:14 (4) |
| 29 | 08:33 | | 09:56 (41) | | | | 07:16 | | | 05:59 | | 07:09 (33) | 05:05 | | 06:13 (4) | 04:55 | | 06:13 (4) |
| | 17:02 | 20 | 10:16 (41) | | | | 20:04 | | | 21:05 | 34 | 07:43 (33) | 21:58 | 49 | 07:02 (4) | 22:19 | 61 | 07:14 (4) |
| 30 | 08:31 | | 09:58 (41) | | | | 07:13 | | | 05:57 | | 07:10 (33) | 05:04 | | 06:12 (4) | 04:56 | | 06:13 (4) |
| | 17:04 | 17 | 10:15 (41) | | | | 20:06 | | | 21:07 | 32 | 07:42 (33) | 22:00 | 51 | 07:03 (4) | 22:18 | 61 | 07:14 (4) |
| 31 | 08:29 | | 10:00 (41) | | | | 07:10 | | | | | | 05:03 | | 06:12 (4) | | | |
| | 17:06 | 13 | 10:13 (41) | | | | 20:08 | | | | | | 22:01 | 52 | 07:04 (4) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 930 | | | 5 | | | 168 | | | 934 | | | 1191 | | | 1797 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,60 | | | 0,61 | | | 0,99 | | | 0,99 | | | 0,92 | | | 0,89 | |
| Total reduction | | 0,10 | | | 0,14 | | | 0,32 | | | 0,37 | | | 0,45 | | | 0,41 | |
| Total, real | | 95 | | | 1 | | | 53 | | | 343 | | | 533 | | | 729 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:14 (4) | 05:40 | 20:29 (30) | 06:38 | 07:26 (33) | 07:35 | 18:33 (47) | 07:37 | | 08:35 | 09:28 (41) |
| | 22:18 60 | 07:14 (4) | 21:40 25 | 20:54 (30) | 20:29 29 | 19:52 (3) | 19:12 9 | 18:42 (47) | 16:58 | | 16:10 34 | 10:02 (40) |
| 2 | 04:57 | 06:14 (4) | 05:41 | 20:28 (30) | 06:40 | 19:28 (3) | 07:37 | 18:35 (47) | 07:39 | | 08:37 | 09:29 (41) |
| | 22:18 60 | 07:14 (4) | 21:38 25 | 20:53 (30) | 20:27 24 | 19:52 (3) | 19:09 5 | 18:40 (47) | 16:56 | | 16:09 35 | 10:04 (40) |
| 3 | 04:58 | 06:15 (4) | 05:43 | 20:28 (30) | 06:42 | 19:28 (3) | 07:38 | | 07:41 | | 08:38 | 09:30 (41) |
| | 22:17 59 | 07:14 (4) | 21:36 25 | 20:53 (30) | 20:24 24 | 19:52 (3) | 19:07 | | 16:54 | | 16:08 36 | 10:06 (40) |
| 4 | 04:59 | 06:15 (4) | 05:45 | 20:29 (30) | 06:43 | 19:28 (3) | 07:40 | | 07:43 | | 08:40 | 09:30 (41) |
| | 22:17 58 | 07:13 (4) | 21:34 24 | 20:53 (30) | 20:22 23 | 19:51 (3) | 19:04 | | 16:51 | | 16:07 36 | 10:06 (40) |
| 5 | 05:00 | 06:15 (4) | 05:47 | 07:30 (33) | 06:45 | 19:28 (3) | 07:42 | | 07:45 | | 08:41 | 09:31 (41) |
| | 22:16 58 | 07:13 (4) | 21:32 34 | 20:53 (30) | 20:19 22 | 19:50 (3) | 19:02 | | 16:49 | | 16:07 36 | 10:07 (40) |
| 6 | 05:01 | 06:16 (4) | 05:49 | 07:26 (33) | 06:47 | 07:20 (11) | 07:44 | | 07:47 | | 08:43 | 09:32 (41) |
| | 22:15 57 | 07:13 (4) | 21:30 39 | 20:52 (30) | 20:17 23 | 19:47 (3) | 18:59 | | 16:47 | | 16:06 37 | 10:09 (40) |
| 7 | 05:02 | 06:16 (4) | 05:51 | 07:24 (33) | 06:49 | 07:18 (11) | 07:46 | | 07:49 | | 08:44 | 09:32 (41) |
| | 22:15 57 | 07:13 (4) | 21:28 42 | 20:52 (30) | 20:14 25 | 19:45 (3) | 18:57 | | 16:45 | | 16:06 37 | 10:09 (40) |
| 8 | 05:03 | 06:17 (4) | 05:52 | 07:23 (33) | 06:51 | 07:19 (11) | 07:48 | | 07:51 | | 08:46 | 09:34 (41) |
| | 22:14 56 | 07:13 (4) | 21:26 43 | 20:51 (30) | 20:12 21 | 19:42 (3) | 18:54 | | 16:43 | | 16:05 36 | 10:10 (40) |
| 9 | 05:04 | 06:17 (4) | 05:54 | 07:21 (33) | 06:53 | 07:21 (11) | 07:50 | | 07:53 | | 08:47 | 09:34 (41) |
| | 22:13 56 | 07:13 (4) | 21:24 43 | 20:49 (30) | 20:09 16 | 19:40 (3) | 18:52 | | 16:42 | | 16:05 36 | 10:10 (40) |
| 10 | 05:06 | 06:18 (4) | 05:56 | 07:20 (33) | 06:55 | 07:23 (11) | 07:52 | | 07:55 | 09:34 (41) | 08:48 | 09:35 (41) |
| | 22:12 54 | 07:12 (4) | 21:21 44 | 20:48 (30) | 20:06 9 | 19:38 (3) | 18:49 | | 16:40 7 | 09:41 (41) | 16:04 36 | 10:11 (40) |
| 11 | 05:07 | 06:19 (4) | 05:58 | 07:19 (33) | 06:57 | 07:24 (11) | 07:54 | | 07:57 | 09:31 (41) | 08:49 | 09:36 (41) |
| | 22:11 54 | 07:13 (4) | 21:19 42 | 20:46 (30) | 20:04 2 | 07:26 (11) | 18:47 | | 16:38 13 | 09:44 (41) | 16:04 36 | 10:12 (40) |
| 12 | 05:08 | 06:20 (4) | 06:00 | 07:18 (33) | 06:59 | | 07:56 | | 07:59 | 09:29 (41) | 08:51 | 09:37 (41) |
| | 22:10 52 | 07:12 (4) | 21:17 37 | 20:43 (30) | 20:01 | | 18:44 | | 16:36 17 | 09:46 (41) | 16:04 35 | 10:12 (40) |
| 13 | 05:09 | 06:21 (4) | 06:02 | 07:17 (33) | 07:00 | | 07:58 | | 08:01 | 09:28 (41) | 08:52 | 09:37 (41) |
| | 22:09 51 | 07:12 (4) | 21:15 33 | 07:50 (33) | 19:59 | | 18:42 | | 16:34 20 | 09:48 (41) | 16:04 36 | 10:13 (40) |
| 14 | 05:11 | 06:21 (4) | 06:04 | 07:16 (33) | 07:02 | | 08:00 | | 08:03 | 09:27 (41) | 08:53 | 09:38 (41) |
| | 22:08 50 | 07:11 (4) | 21:13 34 | 07:50 (33) | 19:56 | | 18:39 | | 16:33 22 | 09:49 (41) | 16:04 35 | 10:13 (40) |
| 15 | 05:12 | 06:22 (4) | 06:05 | 07:16 (33) | 07:04 | | 08:02 | | 08:05 | 09:26 (41) | 08:54 | 09:39 (41) |
| | 22:07 48 | 07:10 (4) | 21:10 35 | 07:51 (33) | 19:53 | | 18:37 | | 16:31 24 | 09:50 (41) | 16:04 35 | 10:14 (40) |
| 16 | 05:13 | 06:23 (4) | 06:07 | 07:16 (33) | 07:06 | | 08:04 | | 08:07 | 09:25 (41) | 08:55 | 09:39 (41) |
| | 22:05 47 | 07:10 (4) | 21:08 35 | 07:51 (33) | 19:51 | | 18:34 | | 16:29 26 | 09:51 (41) | 16:04 35 | 10:14 (40) |
| 17 | 05:15 | 06:24 (4) | 06:09 | 07:14 (33) | 07:08 | | 08:06 | | 08:09 | 09:26 (41) | 08:55 | 09:40 (41) |
| | 22:04 45 | 07:09 (4) | 21:06 37 | 07:51 (33) | 19:48 | | 18:32 | | 16:28 26 | 09:52 (41) | 16:04 35 | 10:15 (40) |
| 18 | 05:16 | 06:25 (4) | 06:11 | 07:14 (33) | 07:10 | | 08:08 | | 08:11 | 09:25 (41) | 08:56 | 09:41 (41) |
| | 22:03 43 | 07:08 (4) | 21:03 37 | 07:51 (33) | 19:46 | | 18:30 | | 16:26 28 | 09:53 (41) | 16:04 35 | 10:16 (40) |
| 19 | 05:18 | 06:26 (4) | 06:13 | 07:14 (33) | 07:12 | 07:43 (13) | 08:10 | | 08:13 | 09:25 (41) | 08:57 | 09:42 (41) |
| | 22:01 46 | 20:43 (30) | 21:01 37 | 07:51 (33) | 19:43 4 | 07:47 (13) | 18:27 | | 16:24 28 | 09:53 (41) | 16:04 35 | 10:17 (40) |
| 20 | 05:19 | 06:27 (4) | 06:15 | 07:14 (33) | 07:14 | 07:41 (13) | 08:12 | | 08:15 | 09:25 (41) | 08:58 | 09:42 (41) |
| | 22:00 49 | 20:46 (30) | 20:59 37 | 07:51 (33) | 19:41 8 | 07:49 (13) | 18:25 | | 16:23 29 | 09:54 (41) | 16:04 34 | 10:16 (40) |
| 21 | 05:21 | 06:29 (4) | 06:17 | 07:14 (33) | 07:15 | 07:43 (13) | 08:14 | | 08:17 | 09:24 (41) | 08:58 | 09:43 (41) |
| | 21:59 49 | 20:48 (30) | 20:56 37 | 07:51 (33) | 19:38 7 | 07:50 (13) | 18:22 | | 16:22 30 | 09:54 (41) | 16:05 34 | 10:17 (40) |
| 22 | 05:22 | 06:30 (4) | 06:19 | 07:14 (33) | 07:17 | 07:45 (13) | 08:16 | | 08:19 | 09:24 (41) | 08:59 | 09:43 (41) |
| | 21:57 49 | 20:49 (30) | 20:54 36 | 07:50 (33) | 19:35 13 | 18:47 (47) | 18:20 | | 16:20 30 | 09:54 (41) | 16:05 34 | 10:17 (40) |
| 23 | 05:24 | 06:33 (4) | 06:21 | 07:14 (33) | 07:19 | 07:47 (13) | 08:18 | | 08:21 | 09:26 (41) | 08:59 | 09:44 (41) |
| | 21:55 46 | 20:50 (30) | 20:52 35 | 07:49 (33) | 19:33 14 | 18:49 (47) | 18:18 | | 16:19 30 | 09:56 (41) | 16:06 34 | 10:18 (40) |
| 24 | 05:26 | 06:34 (4) | 06:23 | 07:14 (33) | 07:21 | 18:35 (47) | 08:20 | | 08:23 | 09:26 (41) | 09:00 | 09:44 (41) |
| | 21:54 45 | 20:51 (30) | 20:49 35 | 07:49 (33) | 19:30 15 | 18:50 (47) | 18:15 | | 16:17 30 | 09:56 (41) | 16:06 34 | 10:18 (40) |
| 25 | 05:27 | 06:37 (4) | 06:24 | 07:15 (33) | 07:23 | 18:34 (47) | 07:22 | | 08:25 | 09:26 (41) | 09:00 | 09:44 (41) |
| | 21:52 42 | 20:52 (30) | 20:47 38 | 19:45 (3) | 19:28 17 | 18:51 (47) | 17:13 | | 16:16 30 | 09:56 (41) | 16:07 35 | 10:19 (40) |
| 26 | 05:29 | 06:41 (4) | 06:26 | 07:16 (33) | 07:25 | 18:32 (47) | 07:24 | | 08:26 | 09:26 (41) | 09:00 | 09:44 (41) |
| | 21:51 34 | 20:52 (30) | 20:44 43 | 19:49 (3) | 19:25 18 | 18:50 (47) | 17:11 | | 16:15 30 | 09:56 (41) | 16:08 35 | 10:19 (40) |
| 27 | 05:31 | 20:30 (30) | 06:28 | 07:16 (33) | 07:27 | 18:32 (47) | 07:26 | | 08:28 | 09:27 (41) | 09:01 | 09:44 (41) |
| | 21:49 23 | 20:53 (30) | 20:42 45 | 19:50 (3) | 19:22 18 | 18:50 (47) | 17:09 | | 16:14 29 | 09:56 (41) | 16:09 35 | 10:19 (40) |
| 28 | 05:33 | 20:29 (30) | 06:30 | 07:17 (33) | 07:29 | 18:32 (47) | 07:28 | | 08:30 | 09:27 (41) | 09:01 | 09:45 (41) |
| | 21:47 24 | 20:53 (30) | 20:39 46 | 19:51 (3) | 19:20 17 | 18:49 (47) | 17:06 | | 16:13 30 | 09:57 (41) | 16:09 35 | 10:20 (40) |
| 29 | 05:34 | 20:29 (30) | 06:32 | 07:18 (33) | 07:31 | 18:32 (47) | 07:30 | | 08:32 | 09:28 (41) | 09:01 | 09:45 (41) |
| | 21:45 24 | 20:53 (30) | 20:37 45 | 19:52 (3) | 19:17 15 | 18:47 (47) | 17:04 | | 16:12 29 | 09:57 (41) | 16:10 35 | 10:20 (40) |
| 30 | 05:36 | 20:29 (30) | 06:34 | 07:20 (33) | 07:33 | 18:32 (47) | 07:32 | | 08:33 | 09:28 (41) | 09:01 | 09:45 (41) |
| | 21:44 25 | 20:54 (30) | 20:34 42 | 19:52 (3) | 19:15 13 | 18:45 (47) | 17:02 | | 16:11 32 | 10:00 (40) | 16:11 36 | 10:21 (40) |
| 31 | 05:38 | 20:29 (30) | 06:36 | 07:22 (33) | | | 07:35 | | | | 09:01 | 09:45 (41) |
| | 21:42 25 | 20:54 (30) | 20:32 39 | 19:53 (3) | | | 17:00 | | | | 16:12 36 | 10:21 (40) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | | 1446 | | 1149 | | 377 | | 14 | | 540 | | 1093 |
| Sun reduction | | 0,49 | | 0,51 | | 0,40 | | 0,31 | | 0,16 | | 0,14 |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | 0,90 | | 0,98 | | 0,99 | | 0,98 | | 0,61 | | 0,58 |
| Total reduction | | 0,41 | | 0,47 | | 0,37 | | 0,28 | | 0,09 | | 0,07 |
| Total, real | | 594 | | 544 | | 139 | | 4 | | 49 | | 81 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:05 (41) | 08:28 | | 07:27 | | | 07:08 | | 19:41 (3) | 05:55 | | 07:01 (33) | 05:02 | |
| | 16:14 | 32 | 10:37 (41) | 17:08 | | 18:07 | | | 20:10 | 1 | 19:42 (3) | 21:09 | 64 | 20:36 (30) | 22:02 | |
| 2 | 09:01 | | 10:05 (41) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (11) | 05:53 | | 07:00 (33) | 05:01 | |
| | 16:15 | 32 | 10:37 (41) | 17:10 | | 18:09 | | | 20:11 | 9 | 19:44 (3) | 21:11 | 66 | 20:36 (30) | 22:04 | |
| 3 | 09:00 | | 10:06 (41) | 08:24 | | 07:22 | | | 07:03 | | 07:27 (11) | 05:51 | | 07:00 (33) | 05:00 | |
| | 16:16 | 32 | 10:38 (41) | 17:12 | | 18:11 | | | 20:13 | 16 | 19:46 (3) | 21:13 | 67 | 20:37 (30) | 22:05 | |
| 4 | 09:00 | | 10:05 (41) | 08:22 | | 07:19 | | | 07:00 | | 07:25 (11) | 05:48 | | 07:00 (33) | 04:59 | |
| | 16:17 | 33 | 10:38 (41) | 17:14 | | 18:13 | | | 20:15 | 21 | 19:48 (3) | 21:14 | 68 | 20:37 (30) | 22:06 | |
| 5 | 09:00 | | 10:05 (41) | 08:20 | | 07:17 | | | 06:58 | | 07:22 (11) | 05:46 | | 07:00 (33) | 04:58 | |
| | 16:19 | 33 | 10:38 (41) | 17:17 | | 18:16 | | | 20:17 | 26 | 19:49 (3) | 21:16 | 68 | 20:37 (30) | 22:07 | |
| 6 | 08:59 | | 10:06 (41) | 08:18 | | 07:14 | | | 06:55 | | 07:21 (11) | 05:44 | | 07:00 (33) | 04:57 | |
| | 16:20 | 33 | 10:39 (41) | 17:19 | | 18:18 | | | 20:19 | 29 | 19:52 (3) | 21:18 | 67 | 20:36 (30) | 22:08 | |
| 7 | 08:59 | | 10:07 (41) | 08:16 | | 07:12 | | | 06:53 | | 07:22 (11) | 05:42 | | 07:00 (33) | 04:56 | |
| | 16:22 | 32 | 10:39 (41) | 17:21 | | 18:20 | | | 20:21 | 27 | 19:53 (3) | 21:20 | 66 | 20:36 (30) | 22:10 | |
| 8 | 08:58 | | 10:07 (41) | 08:14 | | 07:09 | | | 06:50 | | 19:32 (3) | 05:40 | | 07:00 (33) | 04:56 | |
| | 16:23 | 33 | 10:40 (41) | 17:23 | | 18:22 | | | 20:23 | 22 | 19:54 (3) | 21:22 | 65 | 20:35 (30) | 22:11 | |
| 9 | 08:57 | | 10:07 (41) | 08:12 | | 07:07 | | | 06:48 | | 19:31 (3) | 05:38 | | 07:00 (33) | 04:55 | |
| | 16:25 | 33 | 10:40 (41) | 17:25 | | 18:24 | | | 20:25 | 22 | 19:53 (3) | 21:24 | 63 | 20:35 (30) | 22:12 | |
| 10 | 08:57 | | 10:08 (41) | 08:10 | | 07:04 | | | 06:45 | | 19:32 (3) | 05:36 | | 07:00 (33) | 04:54 | |
| | 16:26 | 32 | 10:40 (41) | 17:27 | | 18:26 | | | 20:27 | 20 | 19:52 (3) | 21:26 | 61 | 20:34 (30) | 22:12 | |
| 11 | 08:56 | | 10:08 (41) | 08:08 | | 07:02 | | | 06:42 | | 19:31 (3) | 05:34 | | 07:00 (33) | 04:54 | |
| | 16:28 | 33 | 10:41 (41) | 17:29 | | 18:28 | | | 20:29 | 20 | 19:51 (3) | 21:28 | 59 | 20:33 (30) | 22:13 | |
| 12 | 08:55 | | 10:09 (41) | 08:06 | | 06:59 | | | 06:40 | | 19:33 (3) | 05:32 | | 07:01 (33) | 04:53 | |
| | 16:29 | 32 | 10:41 (41) | 17:31 | | 18:30 | | | 20:31 | 17 | 19:50 (3) | 21:30 | 55 | 20:32 (30) | 22:14 | |
| 13 | 08:54 | | 10:09 (41) | 08:04 | | 06:57 | | | 06:37 | | 19:33 (3) | 05:30 | | 07:02 (33) | 04:53 | |
| | 16:31 | 33 | 10:42 (41) | 17:34 | | 18:32 | | | 20:33 | 15 | 19:48 (3) | 21:32 | 51 | 20:31 (30) | 22:15 | |
| 14 | 08:53 | | 10:10 (41) | 08:01 | | 06:54 | | | 06:35 | | 19:35 (3) | 05:28 | | 07:02 (33) | 04:53 | |
| | 16:33 | 32 | 10:42 (41) | 17:36 | | 18:34 | | | 20:35 | 12 | 19:47 (3) | 21:33 | 45 | 20:28 (30) | 22:16 | |
| 15 | 08:52 | | 10:11 (41) | 07:59 | | 06:52 | | | 06:33 | | 19:39 (3) | 05:27 | | 07:03 (33) | 04:52 | |
| | 16:35 | 31 | 10:42 (41) | 17:38 | | 18:36 | | | 20:37 | 4 | 19:43 (3) | 21:35 | 37 | 07:40 (33) | 22:16 | |
| 16 | 08:51 | | 10:11 (41) | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 07:04 (33) | 04:52 | |
| | 16:36 | 31 | 10:42 (41) | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | 35 | 07:39 (33) | 22:17 | |
| 17 | 08:50 | | 10:12 (41) | 07:55 | | 06:46 | | | 06:28 | | 07:21 (33) | 05:23 | | 07:05 (33) | 04:52 | |
| | 16:38 | 30 | 10:42 (41) | 17:42 | | 18:40 | | | 20:41 | 10 | 07:31 (33) | 21:39 | 33 | 07:38 (33) | 22:17 | |
| 18 | 08:49 | | 10:12 (41) | 07:53 | | 06:44 | | | 06:25 | | 07:16 (33) | 05:21 | | 07:05 (33) | 04:52 | |
| | 16:40 | 30 | 10:42 (41) | 17:44 | | 18:42 | | | 20:43 | 18 | 07:34 (33) | 21:40 | 32 | 07:37 (33) | 22:18 | |
| 19 | 08:48 | | 10:13 (41) | 07:50 | | 06:41 | | | 06:23 | | 07:13 (33) | 05:20 | | 07:06 (33) | 04:52 | |
| | 16:42 | 29 | 10:42 (41) | 17:46 | | 18:44 | | | 20:45 | 24 | 07:37 (33) | 21:42 | 29 | 07:35 (33) | 22:18 | |
| 20 | 08:46 | | 10:13 (41) | 07:48 | | 06:39 | | 07:03 (13) | 06:20 | | 07:11 (33) | 05:18 | | 07:07 (33) | 04:52 | |
| | 16:44 | 28 | 10:41 (41) | 17:48 | | 18:46 | 3 | 07:06 (13) | 20:47 | 28 | 07:39 (33) | 21:44 | 28 | 07:35 (33) | 22:19 | |
| 21 | 08:45 | | 10:15 (41) | 07:46 | | 06:36 | | 07:01 (13) | 06:18 | | 07:09 (33) | 05:16 | | 07:09 (33) | 04:52 | |
| | 16:46 | 26 | 10:41 (41) | 17:51 | | 18:48 | 5 | 07:06 (13) | 20:49 | 31 | 07:40 (33) | 21:46 | 25 | 07:34 (33) | 22:19 | |
| 22 | 08:44 | | 10:15 (41) | 07:43 | | 06:34 | | 06:58 (13) | 06:16 | | 07:07 (33) | 05:15 | | 07:09 (33) | 04:52 | |
| | 16:48 | 26 | 10:41 (41) | 17:53 | | 18:50 | 7 | 07:05 (13) | 20:51 | 34 | 07:41 (33) | 21:47 | 23 | 07:32 (33) | 22:19 | |
| 23 | 08:42 | | 10:17 (41) | 07:41 | | 06:31 | | 06:55 (13) | 06:13 | | 07:06 (33) | 05:13 | | 07:11 (33) | 04:53 | |
| | 16:50 | 24 | 10:41 (41) | 17:55 | | 18:52 | 9 | 07:04 (13) | 20:53 | 36 | 07:42 (33) | 21:49 | 20 | 07:31 (33) | 22:19 | |
| 24 | 08:41 | | 10:18 (41) | 07:39 | | 06:28 | | 06:55 (13) | 06:11 | | 07:05 (33) | 05:12 | | 07:13 (33) | 04:53 | |
| | 16:52 | 21 | 10:39 (41) | 17:57 | | 18:54 | 8 | 07:03 (13) | 20:55 | 38 | 07:43 (33) | 21:51 | 16 | 07:29 (33) | 22:19 | |
| 25 | 08:39 | | 10:20 (41) | 07:36 | | 06:26 | | | 06:09 | | 07:03 (33) | 05:10 | | 07:15 (33) | 04:53 | |
| | 16:54 | 18 | 10:38 (41) | 17:59 | | 18:56 | | | 20:57 | 40 | 07:43 (33) | 21:52 | 11 | 07:26 (33) | 22:19 | |
| 26 | 08:38 | | 10:21 (41) | 07:34 | | 06:23 | | | 06:06 | | 07:03 (33) | 05:09 | | | 04:54 | |
| | 16:56 | 15 | 10:36 (41) | 18:01 | | 18:58 | | | 20:59 | 46 | 20:28 (30) | 21:54 | | | 22:19 | |
| 27 | 08:36 | | 10:25 (41) | 07:31 | | 06:21 | | | 06:04 | | 07:02 (33) | 05:08 | | | 04:54 | |
| | 16:58 | 9 | 10:34 (41) | 18:03 | | 19:00 | | | 21:01 | 52 | 20:30 (30) | 21:55 | | | 22:19 | |
| 28 | 08:34 | | | 07:29 | | 06:18 | | | 06:02 | | 07:02 (33) | 05:06 | | | 04:55 | |
| | 17:00 | | | 18:05 | | 19:02 | | | 21:03 | 57 | 20:32 (30) | 21:57 | | | 22:19 | |
| 29 | 08:33 | | | | | 07:16 | | | 05:59 | | 07:01 (33) | 05:05 | | | 04:55 | |
| | 17:02 | | | | | 20:04 | | | 21:05 | 61 | 20:34 (30) | 21:58 | | | 22:19 | |
| 30 | 08:31 | | | | | 07:13 | | | 05:57 | | 07:01 (33) | 05:04 | | | 04:56 | |
| | 17:04 | | | | | 20:06 | | | 21:07 | 64 | 20:36 (30) | 22:00 | | | 22:18 | |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | | | | |
| | 17:06 | | | | | 20:08 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 773 | | | | | 32 | | | 800 | | | 1154 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,53 | | | | | 1,00 | | | 0,98 | | | 0,97 | | | |
| Total reduction | | 0,09 | | | | | 0,31 | | | 0,35 | | | 0,45 | | | |
| Total, real | | 66 | | | | | 10 | | | 278 | | | 521 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:12 (33) | 06:38 | | 19:30 (3) | 07:35 | 07:37 | | | 08:35 | | 09:50 (41) |
| | 22:18 | | | 21:40 | 55 | 20:43 (30) | 20:29 | 20 | 19:50 (3) | 19:12 | 16:58 | | | 16:10 | 33 | 10:23 (41) |
| 2 | 04:57 | | | 05:41 | | 07:10 (33) | 06:40 | | 19:30 (3) | 07:37 | 07:39 | | | 08:37 | | 09:51 (41) |
| | 22:18 | | | 21:38 | 59 | 20:43 (30) | 20:27 | 20 | 19:50 (3) | 19:09 | 16:56 | | | 16:09 | 32 | 10:23 (41) |
| 3 | 04:58 | | | 05:43 | | 07:10 (33) | 06:42 | | 19:29 (3) | 07:38 | 07:41 | | | 08:38 | | 09:51 (41) |
| | 22:17 | | | 21:36 | 62 | 20:44 (30) | 20:24 | 22 | 19:51 (3) | 19:07 | 16:54 | | | 16:08 | 33 | 10:24 (41) |
| 4 | 04:59 | | | 05:45 | | 07:10 (33) | 06:43 | | 19:29 (3) | 07:40 | 07:43 | | | 08:40 | | 09:51 (41) |
| | 22:17 | | | 21:34 | 64 | 20:45 (30) | 20:22 | 22 | 19:51 (3) | 19:04 | 16:51 | | | 16:07 | 33 | 10:24 (41) |
| 5 | 05:00 | | | 05:47 | | 07:10 (33) | 06:45 | | 07:19 (11) | 07:42 | 07:45 | | | 08:41 | | 09:52 (41) |
| | 22:16 | | | 21:32 | 65 | 20:46 (30) | 20:19 | 27 | 19:50 (3) | 19:02 | 16:49 | | | 16:07 | 32 | 10:24 (41) |
| 6 | 05:01 | | | 05:49 | | 07:09 (33) | 06:47 | | 07:16 (11) | 07:44 | 07:47 | | | 08:43 | | 09:53 (41) |
| | 22:15 | | | 21:30 | 66 | 20:45 (30) | 20:17 | 29 | 19:47 (3) | 18:59 | 16:47 | | | 16:06 | 32 | 10:25 (41) |
| 7 | 05:02 | | | 05:51 | | 07:09 (33) | 06:49 | | 07:17 (11) | 07:46 | 07:49 | | | 08:44 | | 09:53 (41) |
| | 22:15 | | | 21:28 | 67 | 20:46 (30) | 20:14 | 27 | 19:45 (3) | 18:57 | 16:45 | | | 16:06 | 32 | 10:25 (41) |
| 8 | 05:03 | | | 05:52 | | 07:09 (33) | 06:51 | | 07:19 (11) | 07:48 | 07:51 | | | 08:46 | | 09:54 (41) |
| | 22:14 | | | 21:26 | 67 | 20:46 (30) | 20:12 | 21 | 19:42 (3) | 18:54 | 16:43 | | | 16:05 | 32 | 10:26 (41) |
| 9 | 05:04 | | | 05:54 | | 07:08 (33) | 06:53 | | 07:21 (11) | 07:50 | 07:53 | | | 08:47 | | 09:54 (41) |
| | 22:13 | | | 21:24 | 68 | 20:45 (30) | 20:09 | 16 | 19:40 (3) | 18:52 | 16:42 | | | 16:05 | 32 | 10:26 (41) |
| 10 | 05:06 | | | 05:56 | | 07:09 (33) | 06:55 | | 07:23 (11) | 07:52 | 07:55 | | | 08:48 | | 09:54 (41) |
| | 22:12 | | | 21:21 | 67 | 20:45 (30) | 20:06 | 10 | 19:38 (3) | 18:49 | 16:40 | | | 16:04 | 32 | 10:26 (41) |
| 11 | 05:07 | | | 05:58 | | 07:09 (33) | 06:57 | | 19:33 (3) | 07:54 | 07:57 | | | 08:49 | | 09:55 (41) |
| | 22:11 | | | 21:19 | 66 | 20:45 (30) | 20:04 | 1 | 19:34 (3) | 18:47 | 16:38 | | | 16:04 | 32 | 10:27 (41) |
| 12 | 05:08 | | | 06:00 | | 07:09 (33) | 06:59 | | | 07:56 | 07:59 | | | 08:51 | | 09:55 (41) |
| | 22:10 | | | 21:17 | 65 | 20:44 (30) | 20:01 | | | 18:44 | 16:36 | | | 16:04 | 32 | 10:27 (40) |
| 13 | 05:09 | | | 06:02 | | 07:08 (33) | 07:00 | | | 07:58 | 08:01 | | | 08:52 | | 09:56 (41) |
| | 22:09 | | | 21:15 | 64 | 20:43 (30) | 19:59 | | | 18:42 | 16:34 | | | 16:04 | 32 | 10:28 (40) |
| 14 | 05:11 | | | 06:04 | | 07:09 (33) | 07:02 | | | 08:00 | 08:03 | | | 08:53 | | 09:56 (41) |
| | 22:08 | | | 21:13 | 59 | 20:41 (30) | 19:56 | | | 18:39 | 16:33 | | | 16:04 | 33 | 10:29 (40) |
| 15 | 05:12 | | | 06:05 | | 07:09 (33) | 07:04 | | | 08:02 | 08:05 | | 09:57 (41) | 08:54 | | 09:57 (41) |
| | 22:07 | | | 21:10 | 56 | 20:39 (30) | 19:53 | | | 18:37 | 16:31 | 9 | 10:06 (41) | 16:04 | 32 | 10:29 (40) |
| 16 | 05:13 | | | 06:07 | | 07:10 (33) | 07:06 | | | 08:04 | 08:07 | | 09:54 (41) | 08:55 | | 09:57 (41) |
| | 22:05 | | | 21:08 | 51 | 20:37 (30) | 19:51 | | | 18:34 | 16:29 | 15 | 10:09 (41) | 16:04 | 33 | 10:30 (40) |
| 17 | 05:15 | | | 06:09 | | 07:09 (33) | 07:08 | | | 08:06 | 08:09 | | 09:54 (41) | 08:55 | | 09:58 (41) |
| | 22:04 | | | 21:06 | 44 | 20:34 (30) | 19:48 | | | 18:32 | 16:28 | 18 | 10:12 (41) | 16:04 | 33 | 10:31 (40) |
| 18 | 05:16 | | 07:27 (33) | 06:11 | | 07:10 (33) | 07:10 | | | 08:08 | 08:11 | | 09:52 (41) | 08:56 | | 09:59 (41) |
| | 22:03 | 7 | 07:34 (33) | 21:03 | 39 | 07:49 (33) | 19:46 | | | 18:30 | 16:26 | 21 | 10:13 (41) | 16:04 | 33 | 10:32 (40) |
| 19 | 05:18 | | 07:24 (33) | 06:13 | | 07:11 (33) | 07:12 | | 07:42 (13) | 08:10 | 08:13 | | 09:51 (41) | 08:57 | | 09:59 (41) |
| | 22:01 | 14 | 07:38 (33) | 21:01 | 38 | 07:49 (33) | 19:43 | 7 | 07:49 (13) | 18:27 | 16:24 | 24 | 10:15 (41) | 16:04 | 33 | 10:32 (40) |
| 20 | 05:19 | | 07:22 (33) | 06:15 | | 07:12 (33) | 07:14 | | 07:41 (13) | 08:12 | 08:15 | | 09:50 (41) | 08:58 | | 09:59 (41) |
| | 22:00 | 18 | 07:40 (33) | 20:59 | 36 | 07:48 (33) | 19:40 | 9 | 07:50 (13) | 18:25 | 16:23 | 26 | 10:16 (41) | 16:04 | 33 | 10:32 (40) |
| 21 | 05:21 | | 07:21 (33) | 06:17 | | 07:13 (33) | 07:15 | | 07:43 (13) | 08:14 | 08:17 | | 09:50 (41) | 08:58 | | 10:00 (41) |
| | 21:59 | 21 | 07:42 (33) | 20:56 | 33 | 07:46 (33) | 19:38 | 8 | 07:51 (13) | 18:22 | 16:22 | 27 | 10:17 (41) | 16:05 | 33 | 10:33 (40) |
| 22 | 05:22 | | 07:19 (33) | 06:19 | | 07:14 (33) | 07:17 | | 07:45 (13) | 08:16 | 08:19 | | 09:49 (41) | 08:59 | | 10:00 (41) |
| | 21:57 | 24 | 07:43 (33) | 20:54 | 30 | 07:44 (33) | 19:35 | 6 | 07:51 (13) | 18:20 | 16:20 | 28 | 10:17 (41) | 16:05 | 33 | 10:33 (40) |
| 23 | 05:24 | | 07:19 (33) | 06:21 | | 07:15 (33) | 07:19 | | 07:47 (13) | 08:18 | 08:21 | | 09:50 (41) | 08:59 | | 10:01 (41) |
| | 21:55 | 26 | 07:45 (33) | 20:52 | 27 | 07:42 (33) | 19:33 | 3 | 07:50 (13) | 18:18 | 16:19 | 29 | 10:19 (41) | 16:06 | 33 | 10:34 (40) |
| 24 | 05:26 | | 07:17 (33) | 06:23 | | 07:17 (33) | 07:21 | | 07:49 (13) | 08:20 | 08:23 | | 09:50 (41) | 09:00 | | 10:01 (41) |
| | 21:54 | 29 | 07:46 (33) | 20:49 | 23 | 07:40 (33) | 19:30 | 1 | 07:50 (13) | 18:15 | 16:17 | 30 | 10:20 (41) | 16:06 | 33 | 10:34 (40) |
| 25 | 05:27 | | 07:17 (33) | 06:24 | | 07:20 (33) | 07:23 | | | 07:22 | 08:25 | | 09:50 (41) | 09:00 | | 10:01 (41) |
| | 21:52 | 30 | 07:47 (33) | 20:47 | 17 | 07:37 (33) | 19:28 | | | 17:13 | 16:16 | 30 | 10:20 (41) | 16:07 | 33 | 10:34 (40) |
| 26 | 05:29 | | 07:15 (33) | 06:26 | | 07:25 (33) | 07:25 | | | 07:24 | 08:26 | | 09:50 (41) | 09:00 | | 10:02 (41) |
| | 21:51 | 33 | 07:48 (33) | 20:44 | 8 | 07:33 (33) | 19:25 | | | 17:11 | 16:15 | 31 | 10:21 (41) | 16:08 | 33 | 10:35 (40) |
| 27 | 05:31 | | 07:15 (33) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | 09:50 (41) | 09:01 | | 10:02 (41) |
| | 21:49 | 34 | 07:49 (33) | 20:42 | | | 19:22 | | | 17:09 | 16:14 | 31 | 10:21 (41) | 16:09 | 33 | 10:35 (40) |
| 28 | 05:32 | | 07:14 (33) | 06:30 | | 19:39 (3) | 07:29 | | | 07:28 | 08:30 | | 09:50 (41) | 09:01 | | 10:02 (41) |
| | 21:47 | 35 | 07:49 (33) | 20:39 | 5 | 19:44 (3) | 19:20 | | | 17:06 | 16:13 | 32 | 10:22 (41) | 16:09 | 33 | 10:35 (40) |
| 29 | 05:34 | | 07:13 (33) | 06:32 | | 19:36 (3) | 07:31 | | | 07:30 | 08:32 | | 09:50 (41) | 09:01 | | 10:03 (41) |
| | 21:45 | 41 | 20:37 (30) | 20:37 | 12 | 19:48 (3) | 19:17 | | | 17:04 | 16:12 | 33 | 10:23 (41) | 16:10 | 32 | 10:35 (40) |
| 30 | 05:36 | | 07:13 (33) | 06:34 | | 19:34 (3) | 07:33 | | | 07:32 | 08:33 | | 09:50 (41) | 09:01 | | 10:03 (41) |
| | 21:43 | 48 | 20:40 (30) | 20:34 | 15 | 19:49 (3) | 19:15 | | | 17:02 | 16:11 | 32 | 10:22 (41) | 16:11 | 33 | 10:36 (40) |
| 31 | 05:38 | | 07:12 (33) | 06:36 | | 19:32 (3) | | | | 07:35 | | | | 09:01 | | 10:04 (41) |
| | 21:42 | 53 | 20:41 (30) | 20:32 | 18 | 19:50 (3) | | | | 17:00 | | | | 16:12 | 32 | 10:36 (40) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 413 | | | 1346 | | | 249 | | | | 416 | | | 1010 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,97 | | | 1,00 | | | | 0,53 | | | 0,52 | |
| Total reduction | | 0,43 | | | 0,45 | | | 0,35 | | | | 0,07 | | | 0,06 | |
| Total, real | | 176 | | | 606 | | | 88 | | | | 31 | | | 64 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:03 (41) | 07:27 | | | 07:08 | | 19:12 (47) | 05:55 | | 06:31 (33) | 05:02 | | |
| | 16:14 | | | 17:08 | 20 | 09:23 (41) | 18:07 | | | 20:10 | 19 | 19:31 (47) | 21:09 | 42 | 20:34 (3) | 22:02 | | |
| 2 | 09:01 | | | 08:26 | | 09:02 (41) | 07:24 | | | 07:05 | | 19:13 (47) | 05:53 | | 06:29 (33) | 05:01 | | |
| | 16:15 | | | 17:10 | 22 | 09:24 (41) | 18:09 | | | 20:12 | 18 | 19:31 (47) | 21:11 | 46 | 20:34 (3) | 22:04 | | |
| 3 | 09:00 | | | 08:24 | | 09:01 (41) | 07:22 | | | 07:03 | | 19:13 (47) | 05:51 | | 06:28 (33) | 05:00 | | |
| | 16:16 | | | 17:12 | 25 | 09:26 (41) | 18:11 | | | 20:13 | 16 | 19:29 (47) | 21:13 | 48 | 20:34 (3) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:01 (41) | 07:19 | | | 07:00 | | 19:14 (47) | 05:48 | | 06:27 (33) | 04:59 | | |
| | 16:17 | | | 17:14 | 26 | 09:27 (41) | 18:14 | | | 20:15 | 14 | 19:28 (47) | 21:14 | 50 | 20:34 (3) | 22:06 | | |
| 5 | 09:00 | | 09:35 (40) | 08:20 | | 09:00 (41) | 07:17 | | | 06:58 | | 19:16 (47) | 05:46 | | 06:26 (33) | 04:58 | | |
| | 16:19 | 2 | 09:37 (40) | 17:17 | 28 | 09:28 (41) | 18:16 | | | 20:17 | 9 | 19:25 (47) | 21:16 | 52 | 20:34 (3) | 22:07 | | |
| 6 | 08:59 | | 09:35 (40) | 08:18 | | 08:59 (41) | 07:14 | | | 06:55 | | | 05:44 | | 06:25 (33) | 04:57 | | |
| | 16:20 | 4 | 09:39 (40) | 17:19 | 28 | 09:27 (41) | 18:18 | | | 20:19 | | | 21:18 | 53 | 20:34 (3) | 22:08 | | |
| 7 | 08:59 | | 09:34 (40) | 08:16 | | 08:59 (41) | 07:12 | | | 06:53 | | | 05:42 | | 06:24 (33) | 04:56 | | 21:25 (30) |
| | 16:22 | 7 | 09:41 (40) | 17:21 | 29 | 09:28 (41) | 18:20 | | | 20:21 | | | 21:20 | 54 | 20:33 (3) | 22:10 | 2 | 21:27 (30) |
| 8 | 08:58 | | 09:33 (40) | 08:14 | | 08:59 (41) | 07:09 | | | 06:50 | | | 05:40 | | 06:24 (33) | 04:56 | | 21:22 (30) |
| | 16:23 | 9 | 09:42 (40) | 17:23 | 30 | 09:29 (41) | 18:22 | | | 20:23 | | | 21:22 | 54 | 20:33 (3) | 22:11 | 7 | 21:29 (30) |
| 9 | 08:57 | | 09:32 (40) | 08:12 | | 08:59 (41) | 07:07 | | | 06:48 | | | 05:38 | | 06:23 (33) | 04:55 | | 21:22 (30) |
| | 16:25 | 11 | 09:43 (40) | 17:25 | 30 | 09:29 (41) | 18:24 | | | 20:25 | | | 21:24 | 54 | 20:32 (3) | 22:12 | 9 | 21:31 (30) |
| 10 | 08:57 | | 09:31 (40) | 08:10 | | 08:59 (41) | 07:04 | | | 06:45 | | | 05:36 | | 06:23 (33) | 04:54 | | 21:21 (30) |
| | 16:26 | 13 | 09:44 (40) | 17:27 | 30 | 09:29 (41) | 18:26 | | | 20:27 | | | 21:26 | 52 | 20:31 (3) | 22:12 | 11 | 21:32 (30) |
| 11 | 08:56 | | 09:30 (40) | 08:08 | | 08:58 (41) | 07:02 | | | 06:43 | | | 05:34 | | 06:22 (33) | 04:54 | | 21:21 (30) |
| | 16:28 | 15 | 09:45 (40) | 17:29 | 31 | 09:29 (41) | 18:28 | | | 20:29 | | | 21:28 | 52 | 20:30 (3) | 22:13 | 12 | 21:33 (30) |
| 12 | 08:55 | | 09:29 (40) | 08:06 | | 08:59 (41) | 06:59 | | | 06:40 | | | 05:32 | | 06:23 (33) | 04:53 | | 21:21 (30) |
| | 16:29 | 17 | 09:46 (40) | 17:32 | 30 | 09:29 (41) | 18:30 | | | 20:31 | | | 21:30 | 49 | 20:30 (3) | 22:14 | 13 | 21:34 (30) |
| 13 | 08:54 | | 09:28 (40) | 08:04 | | 08:59 (41) | 06:57 | | | 06:38 | | | 05:30 | | 06:23 (33) | 04:53 | | 21:20 (30) |
| | 16:31 | 19 | 09:47 (40) | 17:34 | 30 | 09:29 (41) | 18:32 | | | 20:33 | | | 21:32 | 47 | 20:29 (3) | 22:15 | 14 | 21:34 (30) |
| 14 | 08:53 | | 09:28 (40) | 08:02 | | 09:00 (41) | 06:54 | | | 06:35 | | | 05:28 | | 06:23 (33) | 04:53 | | 21:20 (30) |
| | 16:33 | 20 | 09:48 (40) | 17:36 | 29 | 09:29 (41) | 18:34 | | | 20:35 | | | 21:33 | 44 | 20:27 (3) | 22:16 | 15 | 21:35 (30) |
| 15 | 08:52 | | 09:28 (40) | 07:59 | | 09:00 (41) | 06:52 | | | 06:33 | | | 05:27 | | 06:24 (33) | 04:52 | | 21:20 (30) |
| | 16:35 | 21 | 09:49 (40) | 17:38 | 27 | 09:27 (41) | 18:36 | | | 20:37 | | | 21:35 | 40 | 20:26 (3) | 22:16 | 15 | 21:35 (30) |
| 16 | 08:51 | | 09:28 (40) | 07:57 | | 09:01 (41) | 06:49 | | | 06:30 | | | 05:25 | | 06:23 (33) | 04:52 | | 21:20 (30) |
| | 16:36 | 21 | 09:49 (40) | 17:40 | 26 | 09:27 (41) | 18:38 | | | 20:39 | | | 21:37 | 35 | 20:23 (3) | 22:17 | 16 | 21:36 (30) |
| 17 | 08:50 | | 09:28 (40) | 07:55 | | 09:02 (41) | 06:46 | | | 06:28 | | | 05:23 | | 06:24 (33) | 04:52 | | 21:20 (30) |
| | 16:38 | 22 | 09:50 (40) | 17:42 | 24 | 09:26 (41) | 18:40 | | | 20:41 | | | 21:39 | 27 | 06:51 (33) | 22:17 | 16 | 21:36 (30) |
| 18 | 08:49 | | 09:28 (40) | 07:53 | | 09:03 (41) | 06:44 | | | 06:25 | | | 05:21 | | 06:24 (33) | 04:52 | | 21:20 (30) |
| | 16:40 | 22 | 09:50 (40) | 17:44 | 21 | 09:24 (41) | 18:42 | | | 20:43 | | | 21:41 | 27 | 06:51 (33) | 22:18 | 17 | 21:37 (30) |
| 19 | 08:48 | | 09:28 (40) | 07:50 | | 09:05 (41) | 06:41 | | | 06:23 | | | 05:20 | | 06:25 (33) | 04:52 | | 21:20 (30) |
| | 16:42 | 23 | 09:51 (40) | 17:46 | 18 | 09:23 (41) | 18:44 | | | 20:45 | | | 21:42 | 26 | 06:51 (33) | 22:18 | 17 | 21:37 (30) |
| 20 | 08:46 | | 09:28 (40) | 07:48 | | 09:07 (41) | 06:39 | | | 06:20 | | | 05:18 | | 06:25 (33) | 04:52 | | 21:20 (30) |
| | 16:44 | 23 | 09:51 (40) | 17:49 | 12 | 09:19 (41) | 18:46 | | | 20:47 | | | 21:44 | 24 | 06:49 (33) | 22:19 | 17 | 21:37 (30) |
| 21 | 08:45 | | 09:29 (40) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:27 (33) | 04:52 | | 21:20 (30) |
| | 16:46 | 23 | 09:52 (40) | 17:51 | | | 18:48 | | | 20:49 | | | 21:46 | 22 | 06:49 (33) | 22:19 | 17 | 21:37 (30) |
| 22 | 08:44 | | 09:29 (40) | 07:43 | | | 06:34 | | | 06:16 | | | 05:15 | | 06:27 (33) | 04:52 | | 21:21 (30) |
| | 16:48 | 22 | 09:51 (40) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 21 | 06:48 (33) | 22:19 | 17 | 21:38 (30) |
| 23 | 08:42 | | 09:30 (40) | 07:41 | | | 06:31 | | | 06:13 | | | 05:13 | | 06:28 (33) | 04:53 | | 21:21 (30) |
| | 16:50 | 22 | 09:52 (40) | 17:55 | | | 18:52 | | | 20:53 | | | 21:49 | 19 | 06:47 (33) | 22:19 | 17 | 21:38 (30) |
| 24 | 08:41 | | 09:30 (40) | 07:39 | | | 06:28 | | 18:22 (47) | 06:11 | | 20:17 (3) | 05:12 | | 06:29 (33) | 04:53 | | 21:21 (30) |
| | 16:52 | 22 | 09:52 (40) | 17:57 | | | 18:54 | 5 | 18:27 (47) | 20:55 | 8 | 20:25 (3) | 21:51 | 18 | 06:47 (33) | 22:19 | 17 | 21:38 (30) |
| 25 | 08:39 | | 09:31 (40) | 07:36 | | | 06:26 | | 18:18 (47) | 06:09 | | 20:13 (3) | 05:10 | | 06:30 (33) | 04:53 | | 21:22 (30) |
| | 16:54 | 20 | 09:51 (40) | 17:59 | | | 18:56 | 10 | 18:28 (47) | 20:57 | 13 | 20:26 (3) | 21:52 | 15 | 06:45 (33) | 22:19 | 16 | 21:38 (30) |
| 26 | 08:38 | | 09:31 (40) | 07:34 | | | 06:23 | | 18:16 (47) | 06:06 | | 20:12 (3) | 05:09 | | 06:31 (33) | 04:54 | | 21:22 (30) |
| | 16:56 | 20 | 09:51 (40) | 18:01 | | | 18:58 | 15 | 18:31 (47) | 20:59 | 16 | 20:28 (3) | 21:54 | 13 | 06:44 (33) | 22:19 | 16 | 21:38 (30) |
| 27 | 08:36 | | 09:33 (40) | 07:32 | | | 06:21 | | 18:14 (47) | 06:04 | | 20:10 (3) | 05:08 | | 06:33 (33) | 04:54 | | 21:23 (30) |
| | 16:58 | 18 | 09:51 (40) | 18:03 | | | 19:00 | 18 | 18:32 (47) | 21:01 | 20 | 20:30 (3) | 21:55 | 9 | 06:42 (33) | 22:19 | 16 | 21:39 (30) |
| 28 | 08:34 | | 09:34 (40) | 07:29 | | | 06:18 | | 18:13 (47) | 06:02 | | 20:09 (3) | 05:06 | | | 04:55 | | 21:23 (30) |
| | 17:00 | 16 | 09:50 (40) | 18:05 | | | 19:02 | 19 | 18:32 (47) | 21:03 | 23 | 20:32 (3) | 21:57 | | | 22:19 | 15 | 21:38 (30) |
| 29 | 08:33 | | 09:11 (41) | | | | 07:16 | | 19:13 (47) | 05:59 | | 20:09 (3) | 05:05 | | | 04:55 | | 21:24 (30) |
| | 17:02 | 16 | 09:49 (40) | | | | 20:04 | 20 | 19:33 (47) | 21:05 | 24 | 20:33 (3) | 21:58 | | | 22:19 | 14 | 21:38 (30) |
| 30 | 08:31 | | 09:07 (41) | | | | 07:13 | | 19:12 (47) | 05:57 | | 06:33 (33) | 05:04 | | | 04:56 | | 21:24 (30) |
| | 17:04 | 21 | 09:47 (40) | | | | 20:06 | 20 | 19:32 (47) | 21:07 | 37 | 20:34 (3) | 22:00 | | | 22:18 | 13 | 21:37 (30) |
| 31 | 08:29 | | 09:05 (41) | | | | 07:10 | | 19:12 (47) | | | | 05:03 | | | | | |
| | 17:06 | 16 | 09:21 (41) | | | | 20:08 | 20 | 19:32 (47) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 465 | | | 516 | | | 127 | | | 217 | | | 993 | | | 339 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,79 | | | 1,00 | | | 0,96 | | | 0,94 | | | 0,80 | |
| Total reduction | | 0,12 | | | 0,19 | | | 0,33 | | | 0,37 | | | 0,47 | | | 0,37 | |
| Total, real | | 56 | | | 96 | | | 42 | | | 79 | | | 463 | | | 126 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:25 (30) | 05:40 | | 06:34 (33) | 06:38 | | | 07:35 | | | 07:37 | | 08:29 (41) | 08:35 | | 09:12 (40) |
| | 22:18 | 12 | 21:37 (30) | 21:40 | 50 | 20:41 (3) | 20:29 | | | 19:12 | | | 16:58 | 30 | 08:59 (41) | 16:10 | 15 | 09:27 (40) |
| 2 | 04:58 | | 21:26 (30) | 05:41 | | 06:33 (33) | 06:40 | | | 07:37 | | | 07:39 | | 08:28 (41) | 08:37 | | 09:14 (40) |
| | 22:18 | 11 | 21:37 (30) | 21:38 | 52 | 20:41 (3) | 20:27 | | | 19:10 | | | 16:56 | 31 | 08:59 (41) | 16:09 | 13 | 09:27 (40) |
| 3 | 04:58 | | 21:27 (30) | 05:43 | | 06:33 (33) | 06:42 | | | 07:38 | | | 07:41 | | 08:28 (41) | 08:38 | | 09:16 (40) |
| | 22:17 | 10 | 21:37 (30) | 21:36 | 53 | 20:42 (3) | 20:24 | | | 19:07 | | | 16:54 | 30 | 08:58 (41) | 16:08 | 11 | 09:27 (40) |
| 4 | 04:59 | | 21:27 (30) | 05:45 | | 06:34 (33) | 06:43 | | | 07:40 | | | 07:43 | | 08:28 (41) | 08:40 | | 09:17 (40) |
| | 22:17 | 8 | 21:35 (30) | 21:34 | 53 | 20:43 (3) | 20:22 | | | 19:04 | | | 16:51 | 30 | 08:58 (41) | 16:07 | 9 | 09:26 (40) |
| 5 | 05:00 | | 21:29 (30) | 05:47 | | 06:34 (33) | 06:45 | | | 07:42 | | | 07:45 | | 08:30 (41) | 08:41 | | 09:19 (40) |
| | 22:16 | 5 | 21:34 (30) | 21:32 | 54 | 20:43 (3) | 20:19 | | | 19:02 | | | 16:49 | 28 | 08:58 (41) | 16:07 | 7 | 09:26 (40) |
| 6 | 05:01 | | | 05:49 | | 06:34 (33) | 06:47 | | | 07:44 | | | 07:47 | | 08:30 (41) | 08:43 | | 09:21 (40) |
| | 22:15 | | | 21:30 | 54 | 20:43 (3) | 20:17 | | | 18:59 | | | 16:47 | 27 | 08:57 (41) | 16:06 | 5 | 09:26 (40) |
| 7 | 05:02 | | | 05:51 | | 06:35 (33) | 06:49 | | 19:11 (47) | 07:46 | | | 07:49 | | 08:31 (41) | 08:44 | | 09:22 (40) |
| | 22:15 | | | 21:28 | 53 | 20:43 (3) | 20:14 | 9 | 19:20 (47) | 18:57 | | | 16:45 | 25 | 08:56 (41) | 16:06 | 2 | 09:24 (40) |
| 8 | 05:03 | | | 05:52 | | 06:35 (33) | 06:51 | | 19:09 (47) | 07:48 | | | 07:51 | | 08:31 (41) | 08:46 | | |
| | 22:14 | | | 21:26 | 53 | 20:44 (3) | 20:12 | 13 | 19:22 (47) | 18:54 | | | 16:44 | 24 | 08:55 (41) | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 06:35 (33) | 06:53 | | 19:07 (47) | 07:50 | | | 07:53 | | 08:33 (41) | 08:47 | | |
| | 22:13 | | | 21:24 | 51 | 20:43 (3) | 20:09 | 16 | 19:23 (47) | 18:52 | | | 16:42 | 22 | 08:55 (41) | 16:05 | | |
| 10 | 05:06 | | | 05:56 | | 06:37 (33) | 06:55 | | 19:06 (47) | 07:52 | | | 07:55 | | 08:34 (41) | 08:48 | | |
| | 22:12 | | | 21:21 | 49 | 20:43 (3) | 20:06 | 18 | 19:24 (47) | 18:49 | | | 16:40 | 20 | 08:54 (41) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 06:38 (33) | 06:57 | | 19:04 (47) | 07:54 | | | 07:57 | | 08:36 (41) | 08:49 | | |
| | 22:11 | | | 21:19 | 45 | 20:43 (3) | 20:04 | 19 | 19:23 (47) | 18:47 | | | 16:38 | 16 | 08:52 (41) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 06:40 (33) | 06:59 | | 19:03 (47) | 07:56 | | | 07:59 | | 08:38 (41) | 08:51 | | |
| | 22:10 | | | 21:17 | 42 | 20:43 (3) | 20:01 | 21 | 19:24 (47) | 18:44 | | | 16:36 | 20 | 09:18 (40) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 06:42 (33) | 07:00 | | 19:03 (47) | 07:58 | | | 08:01 | | 09:08 (40) | 08:52 | | |
| | 22:09 | | | 21:15 | 34 | 20:41 (3) | 19:59 | 20 | 19:23 (47) | 18:42 | | | 16:34 | 13 | 09:21 (40) | 16:04 | | |
| 14 | 05:11 | | | 06:04 | | 20:16 (3) | 07:02 | | 19:03 (47) | 08:00 | | | 08:03 | | 09:06 (40) | 08:53 | | |
| | 22:08 | | | 21:13 | 25 | 20:41 (3) | 19:56 | 20 | 19:23 (47) | 18:39 | | | 16:33 | 16 | 09:22 (40) | 16:04 | | |
| 15 | 05:12 | | | 06:06 | | 20:17 (3) | 07:04 | | 19:03 (47) | 08:02 | | | 08:05 | | 09:05 (40) | 08:54 | | |
| | 22:07 | | | 21:10 | 22 | 20:39 (3) | 19:53 | 19 | 19:22 (47) | 18:37 | | | 16:31 | 18 | 09:23 (40) | 16:04 | | |
| 16 | 05:13 | | 06:44 (33) | 06:07 | | 20:18 (3) | 07:06 | | 19:04 (47) | 08:04 | | | 08:07 | | 09:04 (40) | 08:55 | | |
| | 22:05 | 6 | 06:50 (33) | 21:08 | 19 | 20:37 (3) | 19:51 | 18 | 19:22 (47) | 18:34 | | | 16:29 | 20 | 09:24 (40) | 16:04 | | |
| 17 | 05:15 | | 06:42 (33) | 06:09 | | 20:18 (3) | 07:08 | | 19:05 (47) | 08:06 | | | 08:09 | | 09:05 (40) | 08:55 | | |
| | 22:04 | 11 | 06:53 (33) | 21:06 | 16 | 20:34 (3) | 19:48 | 15 | 19:20 (47) | 18:32 | | | 16:28 | 20 | 09:25 (40) | 16:04 | | |
| 18 | 05:16 | | 06:40 (33) | 06:11 | | 20:20 (3) | 07:10 | | 19:05 (47) | 08:08 | | | 08:11 | | 09:04 (40) | 08:56 | | |
| | 22:03 | 14 | 06:54 (33) | 21:03 | 12 | 20:32 (3) | 19:46 | 11 | 19:16 (47) | 18:30 | | | 16:26 | 22 | 09:26 (40) | 16:04 | | |
| 19 | 05:18 | | 06:39 (33) | 06:13 | | 20:23 (3) | 07:12 | | 19:07 (47) | 08:10 | | | 08:13 | | 09:04 (40) | 08:57 | | |
| | 22:01 | 17 | 06:56 (33) | 21:01 | 7 | 20:30 (3) | 19:43 | 7 | 19:14 (47) | 18:27 | | | 16:24 | 22 | 09:26 (40) | 16:04 | | |
| 20 | 05:19 | | 06:38 (33) | 06:15 | | | 07:14 | | | 08:12 | | | 08:15 | | 09:04 (40) | 08:58 | | |
| | 22:00 | 19 | 06:57 (33) | 20:59 | | | 19:41 | | | 18:25 | | | 16:23 | 22 | 09:26 (40) | 16:04 | | |
| 21 | 05:21 | | 06:38 (33) | 06:17 | | | 07:16 | | | 08:14 | | 09:41 (41) | 08:17 | | 09:04 (40) | 08:58 | | |
| | 21:59 | 20 | 06:58 (33) | 20:56 | | | 19:38 | | | 18:22 | 6 | 09:47 (41) | 16:22 | 23 | 09:27 (40) | 16:05 | | |
| 22 | 05:23 | | 06:37 (33) | 06:19 | | | 07:17 | | | 08:16 | | 09:36 (41) | 08:19 | | 09:04 (40) | 08:59 | | |
| | 21:57 | 22 | 06:59 (33) | 20:54 | | | 19:35 | | | 18:20 | 15 | 09:51 (41) | 16:20 | 23 | 09:27 (40) | 16:05 | | |
| 23 | 05:24 | | 06:37 (33) | 06:21 | | | 07:19 | | | 08:18 | | 09:35 (41) | 08:21 | | 09:05 (40) | 08:59 | | |
| | 21:55 | 23 | 07:00 (33) | 20:52 | | | 19:33 | | | 18:18 | 19 | 09:54 (41) | 16:19 | 23 | 09:28 (40) | 16:06 | | |
| 24 | 05:26 | | 06:36 (33) | 06:23 | | | 07:21 | | | 08:20 | | 09:33 (41) | 08:23 | | 09:06 (40) | 09:00 | | |
| | 21:54 | 24 | 07:00 (33) | 20:49 | | | 19:30 | | | 18:15 | 22 | 09:55 (41) | 16:18 | 22 | 09:28 (40) | 16:06 | | |
| 25 | 05:27 | | 06:36 (33) | 06:24 | | | 07:23 | | | 07:22 | | 08:32 (41) | 08:25 | | 09:06 (40) | 09:00 | | |
| | 21:52 | 25 | 07:01 (33) | 20:47 | | | 19:28 | | | 17:13 | 24 | 08:56 (41) | 16:16 | 22 | 09:28 (40) | 16:07 | | |
| 26 | 05:29 | | 06:35 (33) | 06:26 | | | 07:25 | | | 07:24 | | 08:30 (41) | 08:26 | | 09:07 (40) | 09:00 | | |
| | 21:51 | 26 | 07:01 (33) | 20:44 | | | 19:25 | | | 17:11 | 27 | 08:57 (41) | 16:15 | 21 | 09:28 (40) | 16:08 | | |
| 27 | 05:31 | | 06:35 (33) | 06:28 | | | 07:27 | | | 07:26 | | 08:29 (41) | 08:28 | | 09:07 (40) | 09:01 | | |
| | 21:49 | 27 | 07:02 (33) | 20:42 | | | 19:22 | | | 17:09 | 28 | 08:57 (41) | 16:14 | 21 | 09:28 (40) | 16:09 | | |
| 28 | 05:33 | | 06:34 (33) | 06:30 | | | 07:29 | | | 07:28 | | 08:29 (41) | 08:30 | | 09:08 (40) | 09:01 | | |
| | 21:47 | 38 | 20:35 (3) | 20:39 | | | 19:20 | | | 17:06 | 29 | 08:58 (41) | 16:13 | 20 | 09:28 (40) | 16:09 | | |
| 29 | 05:34 | | 06:34 (33) | 06:32 | | | 07:31 | | | 07:30 | | 08:29 (41) | 08:32 | | 09:09 (40) | 09:01 | | |
| | 21:45 | 41 | 20:37 (3) | 20:37 | | | 19:17 | | | 17:04 | 29 | 08:58 (41) | 16:12 | 19 | 09:28 (40) | 16:10 | | |
| 30 | 05:36 | | 06:34 (33) | 06:34 | | | 07:33 | | | 07:32 | | 08:28 (41) | 08:33 | | 09:10 (40) | 09:01 | | |
| | 21:44 | 46 | 20:39 (3) | 20:34 | | | 19:15 | | | 17:02 | 30 | 08:58 (41) | 16:11 | 17 | 09:27 (40) | 16:11 | | |
| 31 | 05:38 | | 06:33 (33) | 06:36 | | | | | | 07:35 | | 08:28 (41) | | | | 09:01 | | |
| | 21:42 | 48 | 20:40 (3) | 20:32 | | | | | | 17:00 | 30 | 08:58 (41) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 453 | | | 744 | | | 206 | | | 259 | | | 667 | | | 62 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,94 | | | 1,00 | | | 0,79 | | | 0,73 | | | 0,68 | |
| Total reduction | | 0,43 | | | 0,47 | | | 0,38 | | | 0,23 | | | 0,11 | | | 0,09 | |
| Total, real | | 195 | | | 347 | | | 78 | | | 60 | | | 74 | | | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | | 07:27 | | 17:11 (38) | 07:08 | | 19:07 (47) | 05:55 | | 06:36 (33) | 05:02 | | 05:51 (4) |
| | 16:14 | | 17:08 | | | 18:07 | 19 | 17:30 (38) | 20:10 | 24 | 19:31 (47) | 21:09 | 24 | 07:00 (33) | 22:02 | 61 | 20:46 (3) |
| 2 | 09:01 | | 08:26 | | | 07:24 | | 17:12 (38) | 07:05 | | 19:07 (47) | 05:53 | | 06:36 (33) | 05:01 | | 05:51 (4) |
| | 16:15 | | 17:10 | | | 18:09 | 26 | 17:42 (46) | 20:12 | 24 | 19:31 (47) | 21:11 | 24 | 07:00 (33) | 22:04 | 60 | 20:46 (3) |
| 3 | 09:00 | | 08:24 | | | 07:22 | | 17:12 (38) | 07:03 | | 19:06 (47) | 05:51 | | 06:36 (33) | 05:00 | | 05:52 (4) |
| | 16:16 | | 17:12 | | | 18:11 | 29 | 17:43 (46) | 20:13 | 24 | 19:30 (47) | 21:13 | 34 | 20:38 (3) | 22:05 | 59 | 20:46 (3) |
| 4 | 09:00 | | 08:22 | | | 07:19 | | 17:14 (38) | 07:00 | | 19:07 (47) | 05:48 | | 06:36 (33) | 04:59 | | 05:52 (4) |
| | 16:18 | | 17:14 | | | 18:14 | 30 | 17:46 (46) | 20:15 | 22 | 19:29 (47) | 21:14 | 39 | 20:41 (3) | 22:06 | 58 | 20:46 (3) |
| 5 | 09:00 | | 08:20 | | | 07:17 | | 17:15 (38) | 06:58 | | 19:07 (47) | 05:46 | | 06:37 (33) | 04:58 | | 05:51 (4) |
| | 16:19 | | 17:17 | | | 18:16 | 28 | 17:47 (46) | 20:17 | 21 | 19:28 (47) | 21:16 | 41 | 20:42 (3) | 22:07 | 58 | 20:45 (3) |
| 6 | 08:59 | | 08:18 | | | 07:14 | | 17:27 (46) | 06:55 | | 19:08 (47) | 05:44 | | 06:37 (33) | 04:57 | | 05:51 (4) |
| | 16:20 | | 17:19 | | | 18:18 | 20 | 17:47 (46) | 20:19 | 19 | 19:27 (47) | 21:18 | 44 | 20:44 (3) | 22:08 | 57 | 20:44 (3) |
| 7 | 08:59 | | 08:16 | | 08:46 (41) | 07:12 | | 17:27 (46) | 06:53 | | 19:09 (47) | 05:42 | | 06:38 (33) | 04:56 | | 05:52 (4) |
| | 16:22 | | 17:21 | 9 | 08:55 (41) | 18:20 | 20 | 17:47 (46) | 20:21 | 16 | 19:25 (47) | 21:20 | 44 | 20:45 (3) | 22:10 | 54 | 20:44 (3) |
| 8 | 08:58 | | 08:14 | | 08:44 (41) | 07:09 | | 17:27 (46) | 06:50 | | 19:11 (47) | 05:40 | | 06:39 (33) | 04:56 | | 05:52 (4) |
| | 16:23 | | 17:23 | 14 | 08:58 (41) | 18:22 | 20 | 17:47 (46) | 20:23 | 12 | 19:23 (47) | 21:22 | 43 | 20:46 (3) | 22:11 | 53 | 20:43 (3) |
| 9 | 08:57 | | 08:12 | | 08:42 (41) | 07:07 | | 17:27 (46) | 06:48 | | 19:15 (47) | 05:38 | | 06:40 (33) | 04:55 | | 05:52 (4) |
| | 16:25 | | 17:25 | 18 | 09:00 (41) | 18:24 | 20 | 17:47 (46) | 20:25 | 2 | 19:17 (47) | 21:24 | 42 | 20:46 (3) | 22:12 | 53 | 20:43 (3) |
| 10 | 08:57 | | 08:10 | | 08:41 (41) | 07:04 | | 17:27 (46) | 06:45 | | | 05:36 | | 06:41 (33) | 04:54 | | 05:52 (4) |
| | 16:26 | | 17:27 | 21 | 09:02 (41) | 18:26 | 19 | 17:46 (46) | 20:27 | | | 21:26 | 41 | 20:47 (3) | 22:12 | 50 | 20:42 (3) |
| 11 | 08:56 | | 08:08 | | 08:40 (41) | 07:02 | | 17:28 (46) | 06:43 | | | 05:34 | | 06:45 (33) | 04:54 | | 05:52 (4) |
| | 16:28 | | 17:29 | 22 | 09:02 (41) | 18:28 | 17 | 17:45 (46) | 20:29 | | | 21:28 | 34 | 20:47 (3) | 22:13 | 50 | 20:42 (3) |
| 12 | 08:55 | | 08:06 | | 08:39 (41) | 06:59 | | 17:28 (46) | 06:40 | | 19:54 (44) | 05:32 | | 20:16 (3) | 04:53 | | 05:53 (4) |
| | 16:29 | | 17:32 | 24 | 09:03 (41) | 18:30 | 16 | 17:44 (46) | 20:31 | 9 | 20:03 (44) | 21:30 | 32 | 20:48 (3) | 22:14 | 48 | 20:42 (3) |
| 13 | 08:54 | | 08:04 | | 08:39 (41) | 06:57 | | 17:29 (46) | 06:38 | | 19:51 (44) | 05:30 | | 20:15 (3) | 04:53 | | 05:52 (4) |
| | 16:31 | | 17:34 | 25 | 09:04 (41) | 18:32 | 12 | 17:41 (46) | 20:33 | 13 | 20:04 (44) | 21:32 | 33 | 20:48 (3) | 22:15 | 48 | 20:41 (3) |
| 14 | 08:53 | | 08:02 | | 08:39 (41) | 06:54 | | 17:33 (46) | 06:35 | | 19:50 (44) | 05:28 | | 20:15 (3) | 04:53 | | 05:53 (4) |
| | 16:33 | | 17:36 | 26 | 09:05 (41) | 18:34 | 5 | 17:38 (46) | 20:35 | 16 | 20:06 (44) | 21:33 | 33 | 20:48 (3) | 22:16 | 46 | 20:41 (3) |
| 15 | 08:52 | | 07:59 | | 08:38 (41) | 06:52 | | | 06:33 | | 19:49 (44) | 05:27 | | 06:04 (4) | 04:53 | | 05:53 (4) |
| | 16:35 | | 17:38 | 26 | 09:04 (41) | 18:36 | | | 20:37 | 18 | 20:07 (44) | 21:35 | 41 | 20:49 (3) | 22:16 | 46 | 20:41 (3) |
| 16 | 08:51 | | 07:57 | | 08:38 (41) | 06:49 | | | 06:30 | | 19:48 (44) | 05:25 | | 06:00 (4) | 04:52 | | 05:54 (4) |
| | 16:36 | | 17:40 | 27 | 09:05 (41) | 18:38 | | | 20:39 | 19 | 20:07 (44) | 21:37 | 48 | 20:49 (3) | 22:17 | 43 | 20:40 (3) |
| 17 | 08:50 | | 07:55 | | 08:39 (41) | 06:46 | | | 06:28 | | 19:47 (44) | 05:23 | | 05:59 (4) | 04:52 | | 05:54 (4) |
| | 16:38 | | 17:42 | 26 | 09:05 (41) | 18:40 | | | 20:41 | 21 | 20:08 (44) | 21:39 | 51 | 20:49 (3) | 22:17 | 42 | 20:40 (3) |
| 18 | 08:49 | | 07:53 | | 08:38 (41) | 06:44 | | | 06:25 | | 19:46 (44) | 05:21 | | 05:57 (4) | 04:52 | | 05:54 (4) |
| | 16:40 | | 17:44 | 26 | 09:04 (41) | 18:42 | | | 20:43 | 21 | 20:07 (44) | 21:41 | 54 | 20:49 (3) | 22:18 | 41 | 20:40 (3) |
| 19 | 08:48 | | 07:50 | | 08:39 (41) | 06:41 | | | 06:23 | | 19:47 (44) | 05:20 | | 05:56 (4) | 04:52 | | 05:54 (4) |
| | 16:42 | | 17:46 | 25 | 09:04 (41) | 18:44 | | | 20:45 | 20 | 20:07 (44) | 21:42 | 57 | 20:49 (3) | 22:18 | 40 | 20:39 (3) |
| 20 | 08:46 | | 07:48 | | 08:39 (41) | 06:39 | | | 06:20 | | 19:47 (44) | 05:18 | | 05:55 (4) | 04:52 | | 05:54 (4) |
| | 16:44 | | 17:49 | 24 | 09:03 (41) | 18:46 | | | 20:47 | 20 | 20:07 (44) | 21:44 | 59 | 20:49 (3) | 22:19 | 39 | 20:39 (3) |
| 21 | 08:45 | | 07:46 | | 08:40 (41) | 06:36 | | | 06:18 | | 19:47 (44) | 05:16 | | 05:54 (4) | 04:52 | | 05:54 (4) |
| | 16:46 | | 17:51 | 25 | 17:21 (38) | 18:48 | | | 20:49 | 19 | 20:06 (44) | 21:46 | 60 | 20:49 (3) | 22:19 | 40 | 20:39 (3) |
| 22 | 08:44 | | 07:43 | | 08:42 (41) | 06:34 | | | 06:16 | | 06:46 (33) | 05:15 | | 05:53 (4) | 04:52 | | 05:55 (4) |
| | 16:48 | | 17:53 | 27 | 17:24 (38) | 18:50 | | | 20:51 | 24 | 20:05 (44) | 21:47 | 61 | 20:48 (3) | 22:19 | 39 | 20:40 (3) |
| 23 | 08:42 | | 07:41 | | 08:42 (41) | 06:31 | | | 06:13 | | 06:43 (33) | 05:13 | | 05:53 (4) | 04:53 | | 05:55 (4) |
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| 24 | 08:41 | | 07:39 | | 08:45 (41) | 06:28 | | | 06:11 | | 06:41 (33) | 05:12 | | 05:53 (4) | 04:53 | | 05:55 (4) |
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| 25 | 08:39 | | 07:36 | | 17:12 (38) | 06:26 | | 18:17 (47) | 06:09 | | 06:40 (33) | 05:10 | | 05:53 (4) | 04:53 | | 05:56 (4) |
| | 16:54 | | 17:59 | 18 | 17:30 (38) | 18:56 | 8 | 18:25 (47) | 20:57 | 26 | 20:00 (44) | 21:52 | 63 | 20:49 (3) | 22:19 | 42 | 20:42 (3) |
| 26 | 08:38 | | 07:34 | | 17:12 (38) | 06:23 | | 18:14 (47) | 06:06 | | 06:38 (33) | 05:09 | | 05:52 (4) | 04:54 | | 05:56 (4) |
| | 16:56 | | 18:01 | 20 | 17:32 (38) | 18:58 | 14 | 18:28 (47) | 20:59 | 21 | 06:59 (33) | 21:54 | 62 | 20:48 (3) | 22:19 | 42 | 20:42 (3) |
| 27 | 08:36 | | 07:32 | | 17:11 (38) | 06:21 | | 18:12 (47) | 06:04 | | 06:37 (33) | 05:08 | | 05:51 (4) | 04:54 | | 05:56 (4) |
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| 28 | 08:35 | | 07:29 | | 17:11 (38) | 06:18 | | 18:10 (47) | 06:02 | | 06:37 (33) | 05:06 | | 05:51 (4) | 04:55 | | 05:56 (4) |
| | 17:00 | | 18:05 | 20 | 17:31 (38) | 19:02 | 20 | 18:30 (47) | 21:03 | 23 | 07:00 (33) | 21:57 | 62 | 20:47 (3) | 22:19 | 45 | 20:44 (3) |
| 29 | 08:33 | | | | | 07:16 | | 19:09 (47) | 05:59 | | 06:36 (33) | 05:05 | | 05:51 (4) | 04:55 | | 05:57 (4) |
| | 17:02 | | | | | 20:04 | 22 | 19:31 (47) | 21:05 | 24 | 07:00 (33) | 21:58 | 63 | 20:47 (3) | 22:19 | 46 | 20:45 (3) |
| 30 | 08:31 | | | | | 07:13 | | 19:08 (47) | 05:57 | | 06:36 (33) | 05:04 | | 05:51 (4) | 04:56 | | 05:56 (4) |
| | 17:04 | | | | | 20:06 | 23 | 19:31 (47) | 21:07 | 24 | 07:00 (33) | 22:00 | 62 | 20:47 (3) | 22:18 | 48 | 20:45 (3) |
| 31 | 08:29 | | | | | 07:10 | | 19:08 (47) | | | | 05:03 | | 05:51 (4) | | | |
| | 17:06 | | | | | 20:08 | 23 | 19:31 (47) | | | | 22:01 | 61 | 20:47 (3) | | | |
| Potential sun hours | 242 | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | 499 | | | 408 | | | 560 | | | 1501 | | | 1432 | |
| Sun reduction | | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,86 | | | 0,96 | | | 0,98 | | | 0,91 | | | 0,88 | |
| Total reduction | | | | 0,21 | | | 0,33 | | | 0,38 | | | 0,47 | | | 0,42 | |
| Total, real | | | | 106 | | | 134 | | | 216 | | | 704 | | | 608 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:57 (4) | 05:40 | | 20:27 (3) | 06:38 | | | 07:35 | | 18:08 (46) | 07:37 | | 08:11 (41) | 08:35 |
| | 22:18 | 49 | 20:46 (3) | 21:40 | 31 | 20:58 (3) | 20:29 | | | 19:12 | 14 | 18:22 (46) | 16:58 | 20 | 08:31 (41) | 16:10 |
| 2 | 04:58 | | 05:57 (4) | 05:41 | | 06:53 (33) | 06:40 | | | 07:37 | | 18:06 (46) | 07:39 | | 08:12 (41) | 08:37 |
| | 22:18 | 51 | 20:47 (3) | 21:38 | 38 | 20:57 (3) | 20:27 | | | 19:10 | 17 | 18:23 (46) | 16:56 | 18 | 08:30 (41) | 16:09 |
| 3 | 04:58 | | 05:58 (4) | 05:43 | | 06:51 (33) | 06:42 | | 19:14 (47) | 07:38 | | 18:05 (46) | 07:41 | | 08:14 (41) | 08:38 |
| | 22:17 | 51 | 20:48 (3) | 21:36 | 42 | 20:57 (3) | 20:24 | 1 | 19:15 (47) | 19:07 | 18 | 18:23 (46) | 16:54 | 14 | 08:28 (41) | 16:08 |
| 4 | 04:59 | | 05:57 (4) | 05:45 | | 06:50 (33) | 06:43 | | 19:08 (47) | 07:40 | | 18:04 (46) | 07:43 | | 08:16 (41) | 08:40 |
| | 22:17 | 52 | 20:48 (3) | 21:34 | 43 | 20:56 (3) | 20:22 | 12 | 19:20 (47) | 19:04 | 20 | 18:24 (46) | 16:51 | 8 | 08:24 (41) | 16:08 |
| 5 | 05:00 | | 05:57 (4) | 05:47 | | 06:49 (33) | 06:45 | | 19:06 (47) | 07:42 | | 18:04 (46) | 07:45 | | | 08:41 |
| | 22:16 | 55 | 20:49 (3) | 21:32 | 44 | 20:56 (3) | 20:19 | 16 | 19:22 (47) | 19:02 | 20 | 18:24 (46) | 16:49 | | | 16:07 |
| 6 | 05:01 | | 05:58 (4) | 05:49 | | 06:47 (33) | 06:47 | | 19:04 (47) | 07:44 | | 18:03 (46) | 07:47 | | | 08:43 |
| | 22:15 | 55 | 20:50 (3) | 21:30 | 44 | 20:54 (3) | 20:17 | 18 | 19:22 (47) | 18:59 | 20 | 18:23 (46) | 16:47 | | | 16:06 |
| 7 | 05:02 | | 05:58 (4) | 05:51 | | 06:46 (33) | 06:49 | | 19:02 (47) | 07:46 | | 18:03 (46) | 07:49 | | | 08:44 |
| | 22:15 | 56 | 20:51 (3) | 21:28 | 43 | 20:53 (3) | 20:14 | 21 | 19:23 (47) | 18:57 | 20 | 18:23 (46) | 16:45 | | | 16:06 |
| 8 | 05:03 | | 05:58 (4) | 05:52 | | 06:46 (33) | 06:51 | | 19:01 (47) | 07:48 | | 17:52 (38) | 07:51 | | | 08:46 |
| | 22:14 | 58 | 20:52 (3) | 21:26 | 40 | 20:51 (3) | 20:12 | 23 | 19:24 (47) | 18:54 | 26 | 18:22 (46) | 16:44 | | | 16:05 |
| 9 | 05:04 | | 05:58 (4) | 05:54 | | 06:45 (33) | 06:53 | | 19:01 (47) | 07:50 | | 17:49 (38) | 07:53 | | | 08:47 |
| | 22:13 | 58 | 20:52 (3) | 21:24 | 37 | 20:48 (3) | 20:09 | 23 | 19:24 (47) | 18:52 | 29 | 18:21 (46) | 16:42 | | | 16:05 |
| 10 | 05:06 | | 05:58 (4) | 05:56 | | 06:45 (33) | 06:55 | | 19:00 (47) | 07:52 | | 17:47 (38) | 07:55 | | | 08:48 |
| | 22:12 | 60 | 20:53 (3) | 21:21 | 30 | 20:45 (3) | 20:06 | 24 | 19:24 (47) | 18:49 | 29 | 18:19 (46) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:59 (4) | 05:58 | | 06:44 (33) | 06:57 | | 19:00 (47) | 07:54 | | 17:45 (38) | 07:57 | | | 08:49 |
| | 22:11 | 60 | 20:54 (3) | 21:19 | 24 | 07:08 (33) | 20:04 | 24 | 19:24 (47) | 18:47 | 28 | 18:16 (46) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 (4) | 06:00 | | 06:45 (33) | 06:59 | | 18:59 (47) | 07:56 | | 17:44 (38) | 07:59 | | | 08:51 |
| | 22:10 | 61 | 20:55 (3) | 21:17 | 24 | 07:09 (33) | 20:01 | 23 | 19:22 (47) | 18:44 | 25 | 18:14 (46) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:00 (4) | 06:02 | | 06:44 (33) | 07:00 | | 18:59 (47) | 07:58 | | 17:44 (38) | 08:01 | | | 08:52 |
| | 22:09 | 61 | 20:55 (3) | 21:15 | 24 | 07:08 (33) | 19:59 | 23 | 19:22 (47) | 18:42 | 20 | 18:04 (38) | 16:34 | | | 16:04 |
| 14 | 05:11 | | 06:00 (4) | 06:04 | | 06:44 (33) | 07:02 | | 18:59 (47) | 08:00 | | 17:43 (38) | 08:03 | | | 08:53 |
| | 22:08 | 63 | 20:56 (3) | 21:13 | 23 | 07:07 (33) | 19:56 | 22 | 19:21 (47) | 18:39 | 21 | 18:04 (38) | 16:33 | | | 16:04 |
| 15 | 05:12 | | 06:00 (4) | 06:06 | | 06:44 (33) | 07:04 | | 19:00 (47) | 08:02 | | 17:43 (38) | 08:05 | | | 08:54 |
| | 22:07 | 62 | 20:56 (3) | 21:10 | 23 | 07:07 (33) | 19:54 | 20 | 19:20 (47) | 18:37 | 20 | 18:03 (38) | 16:31 | | | 16:04 |
| 16 | 05:13 | | 06:01 (4) | 06:07 | | 06:45 (33) | 07:06 | | 19:01 (47) | 08:04 | | 17:44 (38) | 08:07 | | | 08:55 |
| | 22:05 | 63 | 20:57 (3) | 21:08 | 22 | 07:07 (33) | 19:51 | 18 | 19:19 (47) | 18:34 | 20 | 18:04 (38) | 16:29 | | | 16:04 |
| 17 | 05:15 | | 06:01 (4) | 06:09 | | 06:45 (33) | 07:08 | | 19:02 (47) | 08:06 | | 09:19 (41) | 08:09 | | | 08:55 |
| | 22:04 | 63 | 20:57 (3) | 21:06 | 20 | 07:05 (33) | 19:48 | 15 | 19:17 (47) | 18:32 | 24 | 18:01 (38) | 16:28 | | | 16:04 |
| 18 | 05:16 | | 06:01 (4) | 06:11 | | 06:46 (33) | 07:10 | | 19:03 (47) | 08:08 | | 09:15 (41) | 08:11 | | | 08:56 |
| | 22:03 | 63 | 20:57 (3) | 21:03 | 27 | 20:06 (44) | 19:46 | 10 | 19:13 (47) | 18:30 | 28 | 17:59 (38) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:02 (4) | 06:13 | | 06:47 (33) | 07:12 | | | 08:10 | | 09:13 (41) | 08:13 | | | 08:57 |
| | 22:01 | 63 | 20:58 (3) | 21:01 | 29 | 20:08 (44) | 19:43 | | | 18:27 | 29 | 17:56 (38) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:02 (4) | 06:15 | | 06:49 (33) | 07:14 | | | 08:12 | | 09:11 (41) | 08:15 | | | 08:58 |
| | 22:00 | 62 | 20:58 (3) | 20:59 | 27 | 20:09 (44) | 19:41 | | | 18:25 | 28 | 17:54 (38) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:04 (4) | 06:17 | | 06:53 (33) | 07:16 | | | 08:14 | | 09:10 (41) | 08:17 | | | 08:58 |
| | 21:59 | 61 | 20:59 (3) | 20:56 | 21 | 20:10 (44) | 19:38 | | | 18:22 | 24 | 17:51 (38) | 16:22 | | | 16:05 |
| 22 | 05:23 | | 06:04 (4) | 06:19 | | 19:51 (44) | 07:17 | | | 08:16 | | 09:09 (41) | 08:19 | | | 08:59 |
| | 21:57 | 61 | 20:59 (3) | 20:54 | 19 | 20:10 (44) | 19:35 | | | 18:20 | 24 | 09:33 (41) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:05 (4) | 06:21 | | 19:51 (44) | 07:19 | | | 08:18 | | 09:09 (41) | 08:21 | | | 08:59 |
| | 21:56 | 59 | 20:59 (3) | 20:52 | 19 | 20:10 (44) | 19:33 | | | 18:18 | 25 | 09:34 (41) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:06 (4) | 06:23 | | 19:50 (44) | 07:21 | | | 08:20 | | 09:09 (41) | 08:23 | | | 09:00 |
| | 21:54 | 58 | 20:59 (3) | 20:49 | 21 | 20:11 (44) | 19:30 | | | 18:15 | 25 | 09:34 (41) | 16:18 | | | 16:06 |
| 25 | 05:27 | | 06:07 (4) | 06:24 | | 19:50 (44) | 07:23 | | | 07:22 | | 08:08 (41) | 08:25 | | | 09:00 |
| | 21:52 | 56 | 21:00 (3) | 20:47 | 21 | 20:11 (44) | 19:28 | | | 17:13 | 26 | 08:34 (41) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:08 (4) | 06:26 | | 19:50 (44) | 07:25 | | | 07:24 | | 08:08 (41) | 08:26 | | | 09:00 |
| | 21:51 | 53 | 20:59 (3) | 20:44 | 20 | 20:10 (44) | 19:25 | | | 17:11 | 26 | 08:34 (41) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:10 (4) | 06:28 | | 19:49 (44) | 07:27 | | | 07:26 | | 08:08 (41) | 08:28 | | | 09:01 |
| | 21:49 | 50 | 21:00 (3) | 20:42 | 20 | 20:09 (44) | 19:22 | | | 17:09 | 26 | 08:34 (41) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 06:12 (4) | 06:30 | | 19:50 (44) | 07:29 | | | 07:28 | | 08:09 (41) | 08:30 | | | 09:01 |
| | 21:47 | 45 | 20:59 (3) | 20:39 | 18 | 20:08 (44) | 19:20 | | | 17:06 | 25 | 08:34 (41) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 20:26 (3) | 06:32 | | 19:51 (44) | 07:31 | | | 07:30 | | 08:09 (41) | 08:32 | | | 09:01 |
| | 21:45 | 33 | 20:59 (3) | 20:37 | 16 | 20:07 (44) | 19:17 | | | 17:04 | 24 | 08:33 (41) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 20:26 (3) | 06:34 | | 19:52 (44) | 07:33 | | 18:10 (46) | 07:32 | | 08:09 (41) | 08:33 | | | 09:01 |
| | 21:44 | 33 | 20:59 (3) | 20:34 | 13 | 20:05 (44) | 19:15 | 10 | 18:20 (46) | 17:02 | 23 | 08:32 (41) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 20:26 (3) | 06:36 | | 19:54 (44) | | | | 07:35 | | 08:10 (41) | | | | 09:01 |
| | 21:42 | 32 | 20:58 (3) | 20:32 | 9 | 20:03 (44) | | | | 17:00 | 21 | 08:31 (41) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 1707 | | | 832 | | | 303 | | | 725 | | | 60 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,89 | | | 0,95 | | | 1,00 | | | 0,90 | | | 0,85 | | |
| Total reduction | | 0,43 | | | 0,49 | | | 0,39 | | | 0,28 | | | 0,13 | | |
| Total, real | | 740 | | | 408 | | | 120 | | | 200 | | | 8 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:58 (40) | 08:28 | | 09:43 (39) | 07:27 | 07:08 | | | 05:55 | | 06:32 (12) | 05:02 | | 21:11 (5) |
| | 16:14 | 81 | 13:42 (41) | 17:08 | 98 | 13:57 (41) | 18:07 | 20:09 | | | 21:09 | 6 | 06:38 (12) | 22:02 | 15 | 21:26 (5) |
| 2 | 09:01 | | 12:00 (40) | 08:26 | | 09:44 (39) | 07:24 | 07:05 | | | 05:53 | | 06:20 (11) | 05:01 | | 21:11 (5) |
| | 16:15 | 79 | 13:43 (41) | 17:10 | 94 | 13:56 (41) | 18:09 | 20:11 | | | 21:11 | 2 | 06:22 (11) | 22:04 | 16 | 21:27 (5) |
| 3 | 09:00 | | 12:01 (40) | 08:24 | | 09:45 (39) | 07:22 | 07:03 | | | 05:51 | | 06:18 (11) | 05:00 | | 21:11 (5) |
| | 16:16 | 79 | 13:45 (41) | 17:12 | 93 | 13:56 (41) | 18:11 | 20:13 | | | 21:12 | 6 | 06:24 (11) | 22:05 | 17 | 21:28 (5) |
| 4 | 09:00 | | 09:48 (39) | 08:22 | | 09:46 (39) | 07:19 | 07:00 | | | 05:48 | | 06:16 (11) | 04:59 | | 21:12 (5) |
| | 16:17 | 83 | 13:45 (41) | 17:14 | 90 | 13:56 (41) | 18:13 | 20:15 | | | 21:14 | 8 | 06:24 (11) | 22:06 | 17 | 21:29 (5) |
| 5 | 09:00 | | 09:46 (39) | 08:20 | | 09:47 (39) | 07:17 | 06:58 | | | 05:46 | | 06:14 (11) | 04:58 | | 21:11 (5) |
| | 16:19 | 85 | 13:45 (41) | 17:17 | 87 | 13:56 (41) | 18:16 | 20:17 | | | 21:16 | 11 | 06:25 (11) | 22:07 | 19 | 21:30 (5) |
| 6 | 08:59 | | 09:45 (39) | 08:18 | | 09:48 (39) | 07:14 | 06:55 | | | 05:44 | | 06:12 (11) | 04:57 | | 21:11 (5) |
| | 16:20 | 86 | 13:46 (41) | 17:19 | 82 | 13:54 (41) | 18:18 | 20:19 | | | 21:18 | 13 | 06:25 (11) | 22:08 | 20 | 21:31 (5) |
| 7 | 08:59 | | 09:44 (39) | 08:16 | | 09:50 (39) | 07:12 | 06:53 | | | 05:42 | | 06:10 (11) | 04:56 | | 21:12 (5) |
| | 16:22 | 87 | 13:47 (41) | 17:21 | 77 | 13:54 (41) | 18:20 | 20:21 | | | 21:20 | 15 | 06:25 (11) | 22:09 | 20 | 21:32 (5) |
| 8 | 08:58 | | 09:43 (39) | 08:14 | | 09:52 (39) | 07:09 | 06:50 | | | 05:40 | | 06:08 (11) | 04:56 | | 21:11 (5) |
| | 16:23 | 82 | 13:47 (41) | 17:23 | 71 | 13:53 (41) | 18:22 | 20:23 | | | 21:22 | 17 | 06:25 (11) | 22:10 | 22 | 21:33 (5) |
| 9 | 08:57 | | 09:43 (39) | 08:12 | | 09:56 (39) | 07:07 | 06:47 | | | 05:38 | | 06:07 (11) | 04:55 | | 21:12 (5) |
| | 16:25 | 81 | 13:48 (41) | 17:25 | 62 | 13:52 (41) | 18:24 | 20:25 | | | 21:24 | 18 | 06:25 (11) | 22:11 | 22 | 21:34 (5) |
| 10 | 08:57 | | 09:42 (39) | 08:10 | | 13:00 (41) | 07:04 | 06:45 | | 07:10 (13) | 05:36 | | 06:07 (11) | 04:54 | | 21:12 (5) |
| | 16:26 | 84 | 13:49 (41) | 17:27 | 52 | 13:52 (41) | 18:26 | 20:27 | 1 | 07:11 (13) | 21:26 | 17 | 06:24 (11) | 22:12 | 22 | 21:34 (5) |
| 11 | 08:56 | | 09:42 (39) | 08:08 | | 13:00 (41) | 07:02 | 06:42 | | 07:07 (13) | 05:34 | | 06:07 (11) | 04:54 | | 21:12 (5) |
| | 16:28 | 85 | 13:49 (41) | 17:29 | 50 | 13:50 (41) | 18:28 | 20:29 | 5 | 07:12 (13) | 21:28 | 17 | 06:24 (11) | 22:13 | 23 | 21:35 (5) |
| 12 | 08:55 | | 09:42 (39) | 08:06 | | 13:02 (41) | 06:59 | 06:40 | | 07:05 (13) | 05:32 | | 06:08 (11) | 04:53 | | 21:13 (5) |
| | 16:29 | 87 | 13:50 (41) | 17:31 | 47 | 13:49 (41) | 18:30 | 20:31 | 8 | 07:13 (13) | 21:30 | 16 | 06:24 (11) | 22:14 | 22 | 21:35 (5) |
| 13 | 08:54 | | 09:41 (39) | 08:04 | | 13:04 (41) | 06:57 | 06:37 | | 07:02 (13) | 05:30 | | 06:08 (11) | 04:53 | | 21:12 (5) |
| | 16:31 | 90 | 13:51 (41) | 17:34 | 43 | 13:47 (41) | 18:32 | 20:33 | 11 | 07:13 (13) | 21:31 | 15 | 06:23 (11) | 22:15 | 23 | 21:35 (5) |
| 14 | 08:53 | | 09:41 (39) | 08:01 | | 13:07 (41) | 06:54 | 06:35 | | 07:00 (13) | 05:28 | | 06:09 (11) | 04:53 | | 21:13 (5) |
| | 16:33 | 92 | 13:52 (41) | 17:36 | 39 | 13:46 (41) | 18:34 | 20:35 | 14 | 07:14 (13) | 21:33 | 13 | 06:22 (11) | 22:16 | 22 | 21:35 (5) |
| 15 | 08:52 | | 09:40 (39) | 07:59 | | 13:09 (41) | 06:52 | 06:33 | | 06:57 (13) | 05:27 | | 06:11 (11) | 04:52 | | 21:13 (5) |
| | 16:35 | 92 | 13:51 (41) | 17:38 | 34 | 13:43 (41) | 18:36 | 20:37 | 16 | 07:13 (13) | 21:35 | 10 | 06:21 (11) | 22:16 | 22 | 21:35 (5) |
| 16 | 08:51 | | 09:40 (39) | 07:57 | | 13:12 (41) | 06:49 | 06:30 | | 06:56 (13) | 05:25 | | 06:12 (11) | 04:52 | | 21:13 (5) |
| | 16:36 | 95 | 13:52 (41) | 17:40 | 28 | 13:40 (41) | 18:38 | 20:39 | 17 | 07:13 (13) | 21:37 | 7 | 06:19 (11) | 22:17 | 23 | 21:36 (5) |
| 17 | 08:50 | | 09:41 (39) | 07:55 | | 13:16 (41) | 06:46 | 06:28 | | 06:56 (13) | 05:23 | | | 04:52 | | 21:14 (5) |
| | 16:38 | 95 | 13:53 (41) | 17:42 | 19 | 13:35 (41) | 18:40 | 20:41 | 17 | 07:13 (13) | 21:39 | | | 22:17 | 22 | 21:36 (5) |
| 18 | 08:49 | | 09:40 (39) | 07:53 | | | 06:44 | 06:25 | | 06:56 (13) | 05:21 | | | 04:52 | | 21:14 (5) |
| | 16:40 | 97 | 13:53 (41) | 17:44 | | | 18:42 | 20:43 | 15 | 07:11 (13) | 21:40 | | | 22:18 | 22 | 21:36 (5) |
| 19 | 08:48 | | 09:40 (39) | 07:50 | | | 06:41 | 06:23 | | 06:57 (13) | 05:20 | | | 04:52 | | 21:14 (5) |
| | 16:42 | 98 | 13:54 (41) | 17:46 | | | 18:44 | 20:45 | 13 | 07:10 (13) | 21:42 | | | 22:18 | 22 | 21:36 (5) |
| 20 | 08:46 | | 09:40 (39) | 07:48 | | | 06:39 | 06:20 | | 06:59 (13) | 05:18 | | | 04:52 | | 21:14 (5) |
| | 16:44 | 98 | 13:54 (41) | 17:48 | | | 18:46 | 20:47 | 10 | 07:09 (13) | 21:44 | | | 22:18 | 22 | 21:36 (5) |
| 21 | 08:45 | | 09:40 (39) | 07:46 | | | 06:36 | 06:18 | | 07:01 (13) | 05:16 | | | 04:52 | | 21:14 (5) |
| | 16:46 | 101 | 13:55 (41) | 17:51 | | | 18:48 | 20:49 | 3 | 07:04 (13) | 21:46 | | | 22:19 | 22 | 21:36 (5) |
| 22 | 08:44 | | 09:40 (39) | 07:43 | | | 06:34 | 06:16 | | | 05:15 | | | 04:52 | | 21:15 (5) |
| | 16:48 | 101 | 13:55 (41) | 17:53 | | | 18:50 | 20:51 | | | 21:47 | | | 22:19 | 22 | 21:37 (5) |
| 23 | 08:42 | | 09:40 (39) | 07:41 | | | 06:31 | 06:13 | | 06:39 (12) | 05:13 | | | 04:53 | | 21:15 (5) |
| | 16:50 | 101 | 13:55 (41) | 17:55 | | | 18:52 | 20:53 | 3 | 06:42 (12) | 21:49 | | | 22:19 | 22 | 21:37 (5) |
| 24 | 08:41 | | 09:41 (39) | 07:39 | | | 06:28 | 06:11 | | 06:37 (12) | 05:12 | | | 04:53 | | 21:15 (5) |
| | 16:52 | 101 | 13:56 (41) | 17:57 | | | 18:54 | 20:55 | 6 | 06:43 (12) | 21:51 | | | 22:19 | 22 | 21:37 (5) |
| 25 | 08:39 | | 09:40 (39) | 07:36 | | | 06:26 | 06:08 | | 06:34 (12) | 05:10 | | 21:15 (5) | 04:53 | | 21:16 (5) |
| | 16:54 | 102 | 13:56 (41) | 17:59 | | | 18:56 | 20:57 | 8 | 06:42 (12) | 21:52 | 1 | 21:16 (5) | 22:19 | 22 | 21:38 (5) |
| 26 | 08:38 | | 09:40 (39) | 07:34 | | | 06:23 | 06:06 | | 06:32 (12) | 05:09 | | 21:14 (5) | 04:54 | | 21:15 (5) |
| | 16:56 | 102 | 13:56 (41) | 18:01 | | | 18:58 | 20:59 | 10 | 06:42 (12) | 21:54 | 4 | 21:18 (5) | 22:19 | 23 | 21:38 (5) |
| 27 | 08:36 | | 09:41 (39) | 07:31 | | | 06:21 | 06:04 | | 06:30 (12) | 05:08 | | 21:13 (5) | 04:54 | | 21:16 (5) |
| | 16:58 | 101 | 13:56 (41) | 18:03 | | | 19:00 | 21:01 | 12 | 06:42 (12) | 21:55 | 6 | 21:19 (5) | 22:19 | 23 | 21:39 (5) |
| 28 | 08:34 | | 09:42 (39) | 07:29 | | | 06:18 | 06:02 | | 06:28 (12) | 05:06 | | 21:13 (5) | 04:55 | | 21:16 (5) |
| | 17:00 | 100 | 13:57 (41) | 18:05 | | | 19:02 | 21:03 | 14 | 06:42 (12) | 21:57 | 8 | 21:21 (5) | 22:19 | 22 | 21:38 (5) |
| 29 | 08:33 | | 09:42 (39) | | | | 07:16 | 05:59 | | 06:29 (12) | 05:05 | | 21:12 (5) | 04:55 | | 21:16 (5) |
| | 17:02 | 100 | 13:57 (41) | | | | 20:04 | 21:05 | 12 | 06:41 (12) | 21:58 | 10 | 21:22 (5) | 22:19 | 23 | 21:39 (5) |
| 30 | 08:31 | | 09:42 (39) | | | | 07:13 | 05:57 | | 06:30 (12) | 05:04 | | 21:12 (5) | 04:56 | | 21:16 (5) |
| | 17:04 | 100 | 13:57 (41) | | | | 20:06 | 21:07 | 10 | 06:40 (12) | 22:00 | 12 | 21:24 (5) | 22:18 | 22 | 21:38 (5) |
| 31 | 08:29 | | 09:43 (39) | | | | 07:10 | | | | 05:03 | | 21:12 (5) | | | |
| | 17:06 | 98 | 13:57 (41) | | | | 20:07 | | | | 22:01 | 13 | 21:25 (5) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 2863 | | | 1066 | | | | 205 | | | 245 | | | 636 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,28 | | | 0,25 | | | | 0,97 | | | 0,89 | | | 0,82 | |
| Total reduction | | 0,04 | | | 0,05 | | | | 0,28 | | | 0,34 | | | 0,30 | |
| Total, real | | 109 | | | 49 | | | | 58 | | | 84 | | | 189 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:16 (5) | 05:40 | | 06:18 (11) | 06:38 | | 07:06 (13) | 07:35 | | | 07:37 | | 12:28 (41) | 08:35 | | 09:24 (39) |
| | 22:18 | 23 | 21:39 (5) | 21:40 | 16 | 06:34 (11) | 20:29 | 5 | 07:11 (13) | 19:12 | | | 16:58 | 52 | 13:20 (41) | 16:10 | 86 | 13:31 (41) |
| 2 | 04:57 | | 21:17 (5) | 05:41 | | 06:17 (11) | 06:40 | | 07:08 (13) | 07:36 | | | 07:39 | | 09:25 (39) | 08:37 | | 09:25 (39) |
| | 22:18 | 22 | 21:39 (5) | 21:38 | 17 | 06:34 (11) | 20:27 | 1 | 07:09 (13) | 19:09 | | | 16:56 | 63 | 13:22 (41) | 16:09 | 84 | 13:32 (41) |
| 3 | 04:58 | | 21:17 (5) | 05:43 | | 06:17 (11) | 06:41 | | | 07:38 | | | 07:41 | | 09:22 (39) | 08:38 | | 09:27 (39) |
| | 22:17 | 23 | 21:40 (5) | 21:36 | 18 | 06:35 (11) | 20:24 | | | 19:07 | | | 16:53 | 71 | 13:23 (41) | 16:08 | 81 | 13:32 (41) |
| 4 | 04:59 | | 21:17 (5) | 05:45 | | 06:17 (11) | 06:43 | | | 07:40 | | | 07:43 | | 09:19 (39) | 08:40 | | 09:27 (39) |
| | 22:16 | 21 | 21:38 (5) | 21:34 | 18 | 06:35 (11) | 20:22 | | | 19:04 | | | 16:51 | 78 | 13:23 (41) | 16:07 | 82 | 13:32 (41) |
| 5 | 05:00 | | 21:17 (5) | 05:47 | | 06:18 (11) | 06:45 | | | 07:42 | | | 07:45 | | 09:18 (39) | 08:41 | | 09:29 (39) |
| | 22:16 | 21 | 21:38 (5) | 21:32 | 16 | 06:34 (11) | 20:19 | | | 19:02 | | | 16:49 | 84 | 13:25 (41) | 16:07 | 87 | 13:32 (41) |
| 6 | 05:01 | | 21:17 (5) | 05:49 | | 06:20 (11) | 06:47 | | | 07:44 | | | 07:47 | | 09:17 (39) | 08:43 | | 09:31 (39) |
| | 22:15 | 21 | 21:38 (5) | 21:30 | 14 | 06:34 (11) | 20:17 | | | 18:59 | | | 16:47 | 86 | 13:25 (41) | 16:06 | 87 | 13:33 (41) |
| 7 | 05:02 | | 21:18 (5) | 05:50 | | 06:22 (11) | 06:49 | | | 07:46 | | | 07:49 | | 09:16 (39) | 08:44 | | 09:33 (39) |
| | 22:14 | 19 | 21:37 (5) | 21:28 | 12 | 06:34 (11) | 20:14 | | | 18:57 | | | 16:45 | 90 | 13:26 (41) | 16:06 | 86 | 13:32 (41) |
| 8 | 05:03 | | 21:18 (5) | 05:52 | | 06:24 (11) | 06:51 | | | 07:48 | | | 07:51 | | 09:15 (39) | 08:45 | | 09:36 (39) |
| | 22:14 | 18 | 21:36 (5) | 21:26 | 10 | 06:34 (11) | 20:11 | | | 18:54 | | | 16:43 | 92 | 13:26 (41) | 16:05 | 83 | 13:33 (41) |
| 9 | 05:04 | | 21:18 (5) | 05:54 | | 06:25 (11) | 06:53 | | | 07:50 | | | 07:53 | | 09:15 (39) | 08:47 | | 11:50 (40) |
| | 22:13 | 17 | 21:35 (5) | 21:23 | 8 | 06:33 (11) | 20:09 | | | 18:52 | | | 16:42 | 95 | 13:27 (41) | 16:05 | 78 | 13:33 (41) |
| 10 | 05:05 | | 21:19 (5) | 05:56 | | 06:27 (11) | 06:55 | | | 07:52 | | | 07:55 | | 09:14 (39) | 08:48 | | 11:49 (40) |
| | 22:12 | 16 | 21:35 (5) | 21:21 | 5 | 06:32 (11) | 20:06 | | | 18:49 | | | 16:40 | 96 | 13:27 (41) | 16:04 | 80 | 13:33 (41) |
| 11 | 05:07 | | 21:19 (5) | 05:58 | | 06:29 (11) | 06:57 | | | 07:54 | | | 07:57 | | 09:14 (39) | 08:49 | | 11:49 (40) |
| | 22:11 | 15 | 21:34 (5) | 21:19 | 1 | 06:30 (11) | 20:04 | | | 18:47 | | | 16:38 | 99 | 13:28 (41) | 16:04 | 81 | 13:33 (41) |
| 12 | 05:08 | | 21:20 (5) | 06:00 | | 06:39 (12) | 06:58 | | | 07:56 | | | 07:59 | | 09:13 (39) | 08:50 | | 11:49 (40) |
| | 22:10 | 14 | 21:34 (5) | 21:17 | 8 | 06:47 (12) | 20:01 | | | 18:44 | | | 16:36 | 100 | 13:28 (41) | 16:04 | 81 | 13:34 (41) |
| 13 | 05:09 | | 21:20 (5) | 06:02 | | 06:37 (12) | 07:00 | | | 07:58 | | | 08:01 | | 09:14 (39) | 08:52 | | 11:49 (40) |
| | 22:09 | 13 | 21:33 (5) | 21:15 | 11 | 06:48 (12) | 19:59 | | | 18:42 | | | 16:34 | 100 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 14 | 05:11 | | 21:21 (5) | 06:04 | | 06:36 (12) | 07:02 | | | 08:00 | | | 08:03 | | 09:14 (39) | 08:53 | | 11:49 (40) |
| | 22:08 | 10 | 21:31 (5) | 21:12 | 13 | 06:49 (12) | 19:56 | | | 18:39 | | | 16:33 | 100 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 15 | 05:12 | | 21:21 (5) | 06:05 | | 06:36 (12) | 07:04 | | | 08:02 | | | 08:05 | | 09:13 (39) | 08:54 | | 11:49 (40) |
| | 22:07 | 9 | 21:30 (5) | 21:10 | 13 | 06:49 (12) | 19:53 | | | 18:37 | | | 16:31 | 102 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 16 | 05:13 | | 21:22 (5) | 06:07 | | 06:38 (12) | 07:06 | | | 08:04 | | | 08:07 | | 09:13 (39) | 08:55 | | 11:49 (40) |
| | 22:05 | 8 | 21:30 (5) | 21:08 | 12 | 06:50 (12) | 19:51 | | | 18:34 | | | 16:29 | 102 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 17 | 05:15 | | 21:23 (5) | 06:09 | | 06:39 (12) | 07:08 | | | 08:06 | | | 08:09 | | 09:14 (39) | 08:55 | | 11:50 (40) |
| | 22:04 | 5 | 21:28 (5) | 21:06 | 10 | 06:49 (12) | 19:48 | | | 18:32 | | | 16:28 | 102 | 13:30 (41) | 16:04 | 82 | 13:35 (41) |
| 18 | 05:16 | | 21:24 (5) | 06:11 | | 06:41 (12) | 07:10 | | | 08:08 | | | 08:11 | | 09:15 (39) | 08:56 | | 11:50 (40) |
| | 22:03 | 3 | 21:27 (5) | 21:03 | 8 | 06:49 (12) | 19:46 | | | 18:30 | | | 16:26 | 101 | 13:30 (41) | 16:04 | 84 | 13:36 (41) |
| 19 | 05:18 | | | 06:13 | | 06:43 (12) | 07:12 | | | 08:10 | | | 08:13 | | 09:15 (39) | 08:57 | | 11:50 (40) |
| | 22:01 | | | 21:01 | 6 | 06:49 (12) | 19:43 | | | 18:27 | | | 16:24 | 101 | 13:30 (41) | 16:04 | 83 | 13:35 (41) |
| 20 | 05:19 | | | 06:15 | | 06:45 (12) | 07:14 | | | 08:12 | | | 08:15 | | 09:15 (39) | 08:58 | | 11:51 (40) |
| | 22:00 | | | 20:59 | 3 | 06:48 (12) | 19:40 | | | 18:25 | | | 16:23 | 101 | 13:30 (41) | 16:04 | 83 | 13:36 (41) |
| 21 | 05:21 | | | 06:17 | | | 07:15 | | | 08:14 | | | 08:17 | | 09:15 (39) | 08:58 | | 11:52 (40) |
| | 21:58 | | | 20:56 | | | 19:38 | | | 18:22 | | | 16:21 | 101 | 13:30 (41) | 16:05 | 82 | 13:37 (41) |
| 22 | 05:22 | | | 06:19 | | 07:05 (13) | 07:17 | | | 08:16 | | | 08:19 | | 09:16 (39) | 08:59 | | 11:52 (40) |
| | 21:57 | | | 20:54 | 5 | 07:10 (13) | 19:35 | | | 18:20 | | | 16:20 | 99 | 13:30 (41) | 16:05 | 82 | 13:37 (41) |
| 23 | 05:24 | | | 06:21 | | 07:02 (13) | 07:19 | | | 08:18 | | | 08:21 | | 09:16 (39) | 08:59 | | 11:53 (40) |
| | 21:55 | | | 20:51 | 11 | 07:13 (13) | 19:33 | | | 18:18 | | | 16:19 | 98 | 13:30 (41) | 16:06 | 82 | 13:38 (41) |
| 24 | 05:26 | | | 06:23 | | 07:01 (13) | 07:21 | | | 08:20 | | 13:54 (41) | 08:23 | | 09:18 (39) | 09:00 | | 11:53 (40) |
| | 21:54 | | | 20:49 | 13 | 07:14 (13) | 19:30 | | | 18:15 | 5 | 13:59 (41) | 16:17 | 97 | 13:31 (41) | 16:06 | 83 | 13:38 (41) |
| 25 | 05:27 | | | 06:24 | | 07:00 (13) | 07:23 | | | 07:22 | | 12:45 (41) | 08:25 | | 09:19 (39) | 09:00 | | 11:53 (40) |
| | 21:52 | | | 20:47 | 15 | 07:15 (13) | 19:27 | | | 17:13 | 22 | 13:07 (41) | 16:16 | 95 | 13:31 (41) | 16:07 | 83 | 13:38 (41) |
| 26 | 05:29 | | | 06:26 | | 06:58 (13) | 07:25 | | | 07:24 | | 12:41 (41) | 08:26 | | 09:20 (39) | 09:00 | | 11:54 (40) |
| | 21:51 | | | 20:44 | 17 | 07:15 (13) | 19:25 | | | 17:11 | 29 | 13:10 (41) | 16:15 | 94 | 13:31 (41) | 16:08 | 82 | 13:39 (41) |
| 27 | 05:31 | | 06:25 (11) | 06:28 | | 06:57 (13) | 07:27 | | | 07:26 | | 12:37 (41) | 08:28 | | 09:20 (39) | 09:01 | | 11:54 (40) |
| | 21:49 | 2 | 06:27 (11) | 20:42 | 18 | 07:15 (13) | 19:22 | | | 17:09 | 36 | 13:13 (41) | 16:14 | 93 | 13:31 (41) | 16:09 | 82 | 13:39 (41) |
| 28 | 05:32 | | 06:22 (11) | 06:30 | | 06:59 (13) | 07:29 | | | 07:28 | | 12:36 (41) | 08:30 | | 09:21 (39) | 09:01 | | 11:55 (40) |
| | 21:47 | 8 | 06:30 (11) | 20:39 | 16 | 07:15 (13) | 19:20 | | | 17:06 | 40 | 13:16 (41) | 16:13 | 92 | 13:32 (41) | 16:09 | 82 | 13:40 (41) |
| 29 | 05:34 | | 06:20 (11) | 06:32 | | 07:01 (13) | 07:31 | | | 07:30 | | 12:33 (41) | 08:32 | | 09:21 (39) | 09:01 | | 11:56 (40) |
| | 21:45 | 12 | 06:32 (11) | 20:37 | 14 | 07:15 (13) | 19:17 | | | 17:04 | 44 | 13:17 (41) | 16:12 | 90 | 13:31 (41) | 16:10 | 82 | 13:41 (41) |
| 30 | 05:36 | | 06:19 (11) | 06:34 | | 07:03 (13) | 07:33 | | | 07:32 | | 12:32 (41) | 08:33 | | 09:23 (39) | 09:01 | | 11:57 (40) |
| | 21:43 | 13 | 06:32 (11) | 20:34 | 11 | 07:14 (13) | 19:15 | | | 17:02 | 46 | 13:18 (41) | 16:11 | 87 | 13:31 (41) | 16:11 | 81 | 13:41 (41) |
| 31 | 05:38 | | 06:18 (11) | 06:36 | | 07:04 (13) | | | | 07:34 | | 12:30 (41) | | | | 09:01 | | 11:58 (40) |
| | 21:42 | 15 | 06:33 (11) | 20:32 | 8 | 07:12 (13) | | | | 17:00 | 50 | 13:20 (41) | | | | 16:12 | 80 | 13:42 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 328 | | | 347 | | | 6 | | | 272 | | | 2761 | | | 2557 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,83 | | | 0,94 | | | 0,98 | | | 0,15 | | | 0,30 | | | 0,17 | |
| Total reduction | | 0,30 | | | 0,36 | | | 0,29 | | | 0,04 | | | 0,04 | | | 0,02 | |
| Total, real | | 99 | | | 126 | | | 2 | | | 10 | | | 99 | | | 43 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:27 (14) | 08:27 | | 09:03 (36) | 07:26 | | | 07:08 | | 19:02 (39) | 05:55 | | 06:41 (6) | 05:02 | | |
| | 16:14 | 14 | 10:41 (14) | 17:08 | 21 | 09:24 (36) | 18:07 | | | 20:09 | 30 | 19:32 (39) | 21:08 | 42 | 07:23 (6) | 22:02 | | |
| 2 | 09:00 | | 10:29 (14) | 08:26 | | 09:02 (36) | 07:24 | | | 07:05 | | 19:02 (39) | 05:53 | | 06:40 (6) | 05:01 | | |
| | 16:15 | 12 | 10:41 (14) | 17:10 | 23 | 09:25 (36) | 18:09 | | | 20:11 | 31 | 19:33 (39) | 21:10 | 42 | 07:22 (6) | 22:03 | | |
| 3 | 09:00 | | 10:30 (14) | 08:24 | | 09:02 (36) | 07:22 | | | 07:03 | | 19:01 (39) | 05:50 | | 06:40 (6) | 05:00 | | |
| | 16:16 | 10 | 10:40 (14) | 17:12 | 23 | 09:25 (36) | 18:11 | | | 20:13 | 31 | 19:32 (39) | 21:12 | 42 | 07:22 (6) | 22:05 | | |
| 4 | 09:00 | | 10:32 (14) | 08:22 | | 09:01 (36) | 07:19 | | | 07:00 | | 19:00 (39) | 05:48 | | 06:39 (6) | 04:59 | | |
| | 16:17 | 8 | 10:40 (14) | 17:14 | 24 | 09:25 (36) | 18:13 | | | 20:15 | 31 | 19:31 (39) | 21:14 | 43 | 07:22 (6) | 22:06 | | |
| 5 | 08:59 | | 10:34 (14) | 08:20 | | 09:01 (36) | 07:17 | | | 06:57 | | 19:01 (39) | 05:46 | | 06:39 (6) | 04:58 | | |
| | 16:19 | 3 | 10:37 (14) | 17:16 | 24 | 09:25 (36) | 18:15 | | | 20:17 | 30 | 19:31 (39) | 21:16 | 43 | 07:22 (6) | 22:07 | | |
| 6 | 08:59 | | | 08:18 | | 09:02 (36) | 07:14 | | | 06:55 | | 19:00 (39) | 05:44 | | 06:40 (6) | 04:57 | | |
| | 16:20 | | | 17:19 | 23 | 09:25 (36) | 18:17 | | | 20:19 | 30 | 19:30 (39) | 21:18 | 43 | 07:23 (6) | 22:08 | | |
| 7 | 08:58 | | | 08:16 | | 09:02 (36) | 07:12 | | | 06:52 | | 19:01 (39) | 05:42 | | 06:40 (6) | 04:56 | | |
| | 16:21 | | | 17:21 | 24 | 09:26 (36) | 18:19 | | | 20:21 | 29 | 19:30 (39) | 21:20 | 43 | 07:23 (6) | 22:09 | | |
| 8 | 08:58 | | | 08:14 | | 09:03 (36) | 07:09 | | | 06:50 | | 19:01 (39) | 05:40 | | 06:40 (6) | 04:56 | | |
| | 16:23 | | | 17:23 | 22 | 09:25 (36) | 18:22 | | | 20:23 | 27 | 19:28 (39) | 21:22 | 43 | 07:23 (6) | 22:10 | | |
| 9 | 08:57 | | | 08:12 | | 09:03 (36) | 07:07 | | | 06:47 | | 19:02 (39) | 05:38 | | 06:39 (6) | 04:55 | | |
| | 16:24 | | | 17:25 | 22 | 09:25 (36) | 18:24 | | | 20:25 | 26 | 19:28 (39) | 21:24 | 43 | 07:22 (6) | 22:11 | | |
| 10 | 08:56 | | | 08:10 | | 09:03 (36) | 07:04 | | | 06:45 | | 19:02 (39) | 05:36 | | 06:39 (6) | 04:54 | | |
| | 16:26 | | | 17:27 | 21 | 09:24 (36) | 18:26 | | | 20:27 | 24 | 19:26 (39) | 21:26 | 43 | 07:22 (6) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | 09:05 (36) | 07:02 | | | 06:42 | | 19:04 (39) | 05:34 | | 06:39 (6) | 04:54 | | |
| | 16:28 | | | 17:29 | 18 | 09:23 (36) | 18:28 | | | 20:29 | 20 | 19:24 (39) | 21:28 | 42 | 07:21 (6) | 22:13 | | |
| 12 | 08:55 | | | 08:06 | | 09:06 (36) | 06:59 | | | 06:40 | | 19:06 (39) | 05:32 | | 06:40 (6) | 04:53 | | |
| | 16:29 | | | 17:31 | 16 | 09:22 (36) | 18:30 | | | 20:31 | 17 | 19:23 (39) | 21:29 | 42 | 07:22 (6) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | 09:08 (36) | 06:57 | | | 06:37 | | 19:08 (39) | 05:30 | | 06:40 (6) | 04:53 | | |
| | 16:31 | | | 17:33 | 12 | 09:20 (36) | 18:32 | | | 20:33 | 11 | 19:19 (39) | 21:31 | 41 | 07:21 (6) | 22:15 | | |
| 14 | 08:53 | | | 08:01 | | 09:11 (36) | 06:54 | | 18:04 (40) | 06:35 | | | 05:28 | | 06:40 (6) | 04:53 | | |
| | 16:33 | | | 17:36 | 5 | 09:16 (36) | 18:34 | 3 | 18:07 (40) | 20:35 | | | 21:33 | 40 | 07:20 (6) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | 18:01 (40) | 06:32 | | | 05:26 | | 06:42 (6) | 04:52 | | |
| | 16:34 | | | 17:38 | | | 18:36 | 7 | 18:08 (40) | 20:37 | | | 21:35 | 38 | 07:20 (6) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | 17:59 (40) | 06:30 | | | 05:25 | | 06:42 (6) | 04:52 | | |
| | 16:36 | | | 17:40 | | | 18:38 | 11 | 18:10 (40) | 20:39 | | | 21:37 | 37 | 07:19 (6) | 22:17 | | |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | 17:58 (40) | 06:27 | | | 05:23 | | 06:42 (6) | 04:52 | | |
| | 16:38 | | | 17:42 | | | 18:40 | 15 | 18:13 (40) | 20:41 | | | 21:39 | 36 | 07:18 (6) | 22:17 | | |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | 17:57 (40) | 06:25 | | | 05:21 | | 06:43 (6) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | 17 | 18:14 (40) | 20:43 | | | 21:40 | 35 | 07:18 (6) | 22:18 | | |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:57 (40) | 06:23 | | | 05:19 | | 06:43 (6) | 04:52 | | |
| | 16:42 | | | 17:46 | | | 18:44 | 20 | 18:17 (40) | 20:45 | | | 21:42 | 34 | 07:17 (6) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | 17:56 (40) | 06:20 | | 06:59 (6) | 05:18 | | 06:44 (6) | 04:52 | | |
| | 16:44 | | | 17:48 | | | 18:46 | 21 | 18:17 (40) | 20:47 | 10 | 07:09 (6) | 21:44 | 33 | 07:17 (6) | 22:18 | | |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | 17:56 (40) | 06:18 | | 06:54 (6) | 05:16 | | 06:46 (6) | 04:52 | | |
| | 16:46 | | | 17:50 | | | 18:48 | 20 | 18:16 (40) | 20:49 | 18 | 07:12 (6) | 21:45 | 30 | 07:16 (6) | 22:19 | | |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | 17:56 (40) | 06:15 | | 06:52 (6) | 05:15 | | 06:46 (6) | 04:52 | | |
| | 16:48 | | | 17:53 | | | 18:50 | 20 | 18:16 (40) | 20:51 | 23 | 07:15 (6) | 21:47 | 29 | 07:15 (6) | 22:19 | | |
| 23 | 08:42 | | | 07:41 | | | 06:31 | | 17:56 (40) | 06:13 | | 06:50 (6) | 05:13 | | 06:47 (6) | 04:53 | | |
| | 16:50 | | | 17:55 | | | 18:52 | 18 | 18:14 (40) | 20:53 | 27 | 07:17 (6) | 21:49 | 27 | 07:14 (6) | 22:19 | | |
| 24 | 08:41 | | | 07:38 | | | 06:28 | | 17:58 (40) | 06:11 | | 06:48 (6) | 05:12 | | 06:49 (6) | 04:53 | | |
| | 16:52 | | | 17:57 | | | 18:54 | 15 | 18:13 (40) | 20:55 | 30 | 07:18 (6) | 21:50 | 25 | 07:14 (6) | 22:19 | | |
| 25 | 08:39 | | | 07:36 | | | 06:26 | | 17:59 (40) | 06:08 | | 06:46 (6) | 05:10 | | 06:49 (6) | 04:53 | | |
| | 16:54 | | | 17:59 | | | 18:56 | 21 | 18:24 (39) | 20:57 | 33 | 07:19 (6) | 21:52 | 23 | 07:12 (6) | 22:19 | | |
| 26 | 08:37 | | | 07:34 | | | 06:23 | | 18:01 (40) | 06:06 | | 06:45 (6) | 05:09 | | 06:51 (6) | 04:54 | | |
| | 16:56 | | | 18:01 | | | 18:58 | 21 | 18:26 (39) | 20:59 | 35 | 07:20 (6) | 21:53 | 20 | 07:11 (6) | 22:19 | | |
| 27 | 08:36 | | 09:07 (36) | 07:31 | | | 06:21 | | 18:09 (39) | 06:04 | | 06:44 (6) | 05:08 | | 06:52 (6) | 04:54 | | |
| | 16:58 | 10 | 09:17 (36) | 18:03 | | | 18:59 | 20 | 18:29 (39) | 21:01 | 37 | 07:21 (6) | 21:55 | 17 | 07:09 (6) | 22:19 | | |
| 28 | 08:34 | | 09:05 (36) | 07:29 | | | 06:18 | | 18:06 (39) | 06:02 | | 06:43 (6) | 05:06 | | 06:54 (6) | 04:55 | | |
| | 17:00 | 14 | 09:19 (36) | 18:05 | | | 19:01 | 24 | 18:30 (39) | 21:03 | 38 | 07:21 (6) | 21:57 | 14 | 07:08 (6) | 22:19 | | |
| 29 | 08:33 | | 09:05 (36) | | | | 07:15 | | 19:06 (39) | 05:59 | | 06:43 (6) | 05:05 | | 06:57 (6) | 04:55 | | |
| | 17:02 | 16 | 09:21 (36) | | | | 20:03 | 25 | 19:31 (39) | 21:05 | 39 | 07:22 (6) | 21:58 | 8 | 07:05 (6) | 22:18 | | |
| 30 | 08:31 | | 09:04 (36) | | | | 07:13 | | 19:04 (39) | 05:57 | | 06:42 (6) | 05:04 | | | 04:56 | | |
| | 17:04 | 18 | 09:22 (36) | | | | 20:05 | 27 | 19:31 (39) | 21:06 | 41 | 07:23 (6) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:03 (36) | | | | 07:10 | | 19:03 (39) | | | | 05:03 | | | | | |
| | 17:06 | 20 | 09:23 (36) | | | | 20:07 | 29 | 19:32 (39) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 125 | | | 278 | | | 334 | | | 668 | | | 998 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,66 | | | 0,78 | | | 0,99 | | | 0,98 | | | 0,96 | | | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,32 | | | 0,37 | | | 0,47 | | | | |
| Total, real | | 14 | | | 51 | | | 108 | | | 246 | | | 474 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:51 (6) | 06:38 | | 19:03 (39) | 07:34 | | 07:36 | 08:33 (36) | 08:35 | |
| | 22:18 | | 21:40 | 41 | 07:32 (6) | 20:29 | 20 | 19:23 (39) | 19:12 | | 16:58 | 21 08:54 (36) | 16:10 | |
| 2 | 04:57 | | 05:41 | | 06:50 (6) | 06:39 | | 19:01 (39) | 07:36 | | 07:38 | 08:33 (36) | 08:36 | |
| | 22:17 | | 21:38 | 42 | 07:32 (6) | 20:27 | 24 | 19:25 (39) | 19:09 | | 16:55 | 22 08:55 (36) | 16:09 | |
| 3 | 04:58 | | 05:43 | | 06:50 (6) | 06:41 | | 19:00 (39) | 07:38 | | 07:41 | 08:32 (36) | 08:38 | |
| | 22:17 | | 21:36 | 42 | 07:32 (6) | 20:24 | 26 | 19:26 (39) | 19:07 | | 16:53 | 23 08:55 (36) | 16:08 | |
| 4 | 04:59 | | 05:45 | | 06:50 (6) | 06:43 | | 18:59 (39) | 07:40 | | 07:43 | 08:32 (36) | 08:40 | |
| | 22:16 | | 21:34 | 43 | 07:33 (6) | 20:22 | 27 | 19:26 (39) | 19:04 | | 16:51 | 23 08:55 (36) | 16:07 | |
| 5 | 05:00 | | 05:47 | | 06:49 (6) | 06:45 | | 18:57 (39) | 07:42 | | 07:45 | 08:31 (36) | 08:41 | |
| | 22:16 | | 21:32 | 43 | 07:32 (6) | 20:19 | 29 | 19:26 (39) | 19:02 | | 16:49 | 24 08:55 (36) | 16:07 | |
| 6 | 05:01 | | 05:49 | | 06:49 (6) | 06:47 | | 18:56 (39) | 07:44 | | 07:47 | 08:32 (36) | 08:43 | |
| | 22:15 | | 21:30 | 43 | 07:32 (6) | 20:16 | 30 | 19:26 (39) | 18:59 | | 16:47 | 24 08:56 (36) | 16:06 | |
| 7 | 05:02 | | 05:50 | | 06:49 (6) | 06:49 | | 18:56 (39) | 07:46 | | 07:49 | 08:32 (36) | 08:44 | 10:22 (14) |
| | 22:14 | | 21:28 | 44 | 07:33 (6) | 20:14 | 30 | 19:26 (39) | 18:57 | | 16:45 | 24 08:56 (36) | 16:06 | 2 10:24 (14) |
| 8 | 05:03 | | 05:52 | | 06:50 (6) | 06:51 | | 18:56 (39) | 07:48 | | 07:51 | 08:32 (36) | 08:45 | 10:19 (14) |
| | 22:14 | | 21:25 | 43 | 07:33 (6) | 20:11 | 30 | 19:26 (39) | 18:54 | | 16:43 | 23 08:55 (36) | 16:05 | 8 10:27 (14) |
| 9 | 05:04 | | 05:54 | | 06:49 (6) | 06:53 | | 18:55 (39) | 07:50 | | 07:53 | 08:32 (36) | 08:47 | 10:19 (14) |
| | 22:13 | | 21:23 | 43 | 07:32 (6) | 20:09 | 31 | 19:26 (39) | 18:52 | | 16:41 | 23 08:55 (36) | 16:05 | 10 10:29 (14) |
| 10 | 05:05 | | 05:56 | | 06:49 (6) | 06:55 | | 18:54 (39) | 07:52 | | 07:55 | 08:34 (36) | 08:48 | 10:18 (14) |
| | 22:12 | | 21:21 | 43 | 07:32 (6) | 20:06 | 31 | 19:25 (39) | 18:49 | | 16:40 | 21 08:55 (36) | 16:04 | 12 10:30 (14) |
| 11 | 05:07 | | 05:58 | | 06:50 (6) | 06:56 | | 18:54 (39) | 07:54 | | 07:57 | 08:34 (36) | 08:49 | 10:18 (14) |
| | 22:11 | | 21:19 | 42 | 07:32 (6) | 20:04 | 30 | 19:24 (39) | 18:47 | | 16:38 | 20 08:54 (36) | 16:04 | 13 10:31 (14) |
| 12 | 05:08 | | 06:00 | | 06:49 (6) | 06:58 | | 18:55 (39) | 07:56 | | 07:59 | 08:35 (36) | 08:50 | 10:18 (14) |
| | 22:10 | | 21:17 | 41 | 07:30 (6) | 20:01 | 29 | 19:24 (39) | 18:44 | | 16:36 | 18 08:53 (36) | 16:04 | 15 10:33 (14) |
| 13 | 05:09 | | 06:02 | | 06:50 (6) | 07:00 | | 18:55 (39) | 07:58 | | 08:01 | 08:37 (36) | 08:51 | 10:18 (14) |
| | 22:09 | | 21:15 | 40 | 07:30 (6) | 19:58 | 28 | 19:23 (39) | 18:42 | | 16:34 | 16 08:53 (36) | 16:04 | 15 10:33 (14) |
| 14 | 05:11 | 07:08 (6) | 06:03 | | 06:50 (6) | 07:02 | | 18:56 (39) | 08:00 | | 08:03 | 08:38 (36) | 08:52 | 10:18 (14) |
| | 22:08 | 3 07:11 (6) | 21:12 | 39 | 07:29 (6) | 19:56 | 26 | 19:22 (39) | 18:39 | | 16:32 | 14 08:52 (36) | 16:03 | 16 10:34 (14) |
| 15 | 05:12 | 07:04 (6) | 06:05 | | 06:51 (6) | 07:04 | | 18:57 (39) | 08:02 | | 08:05 | 08:40 (36) | 08:53 | 10:05 (15) |
| | 22:06 | 11 07:15 (6) | 21:10 | 38 | 07:29 (6) | 19:53 | 23 | 19:20 (39) | 18:37 | | 16:31 | 9 08:49 (36) | 16:03 | 18 10:35 (14) |
| 16 | 05:13 | 07:03 (6) | 06:07 | | 06:52 (6) | 07:06 | | 18:57 (39) | 08:04 | | 08:07 | | 08:54 | 10:04 (15) |
| | 22:05 | 15 07:18 (6) | 21:08 | 36 | 07:28 (6) | 19:51 | 21 | 19:18 (39) | 18:34 | | 16:29 | | 16:03 | 22 10:36 (14) |
| 17 | 05:15 | 07:01 (6) | 06:09 | | 06:52 (6) | 07:08 | | 18:51 (40) | 08:06 | | 08:09 | | 08:55 | 10:04 (15) |
| | 22:04 | 18 07:19 (6) | 21:05 | 34 | 07:26 (6) | 19:48 | 20 | 19:15 (39) | 18:32 | | 16:27 | | 16:04 | 24 10:37 (14) |
| 18 | 05:16 | 06:59 (6) | 06:11 | | 06:53 (6) | 07:10 | | 18:47 (40) | 08:08 | | 08:11 | | 08:56 | 10:04 (15) |
| | 22:03 | 22 07:21 (6) | 21:03 | 32 | 07:25 (6) | 19:46 | 22 | 19:12 (39) | 18:29 | | 16:26 | | 16:04 | 25 10:37 (14) |
| 19 | 05:18 | 06:59 (6) | 06:13 | | 06:54 (6) | 07:12 | | 18:45 (40) | 08:10 | | 08:13 | | 08:57 | 10:04 (15) |
| | 22:01 | 24 07:23 (6) | 21:01 | 30 | 07:24 (6) | 19:43 | 15 | 19:00 (40) | 18:27 | | 16:24 | | 16:04 | 25 10:37 (14) |
| 20 | 05:19 | 06:57 (6) | 06:15 | | 06:56 (6) | 07:13 | | 18:43 (40) | 08:12 | | 08:15 | | 08:57 | 10:04 (15) |
| | 22:00 | 26 07:23 (6) | 20:58 | 26 | 07:22 (6) | 19:40 | 18 | 19:01 (40) | 18:25 | | 16:23 | | 16:04 | 26 10:38 (14) |
| 21 | 05:21 | 06:56 (6) | 06:17 | | 06:57 (6) | 07:15 | | 18:42 (40) | 08:14 | | 08:17 | | 08:58 | 10:04 (15) |
| | 21:58 | 28 07:24 (6) | 20:56 | 22 | 07:19 (6) | 19:38 | 19 | 19:01 (40) | 18:22 | | 16:21 | | 16:05 | 27 10:38 (14) |
| 22 | 05:22 | 06:56 (6) | 06:19 | | 06:59 (6) | 07:17 | | 18:41 (40) | 08:16 | | 08:19 | | 08:59 | 10:05 (15) |
| | 21:57 | 30 07:26 (6) | 20:54 | 18 | 07:17 (6) | 19:35 | 20 | 19:01 (40) | 18:20 | | 16:20 | | 16:05 | 27 10:39 (14) |
| 23 | 05:24 | 06:55 (6) | 06:21 | | 07:04 (6) | 07:19 | | 18:41 (40) | 08:18 | | 08:21 | | 08:59 | 10:05 (15) |
| | 21:55 | 31 07:26 (6) | 20:51 | 8 | 07:12 (6) | 19:33 | 20 | 19:01 (40) | 18:18 | | 16:19 | | 16:06 | 26 10:39 (14) |
| 24 | 05:26 | 06:54 (6) | 06:22 | | | 07:21 | | 18:40 (40) | 08:20 | | 08:23 | | 09:00 | 10:06 (15) |
| | 21:54 | 33 07:27 (6) | 20:49 | | | 19:30 | 20 | 19:00 (40) | 18:15 | | 16:17 | | 16:06 | 26 10:40 (14) |
| 25 | 05:27 | 06:53 (6) | 06:24 | | | 07:23 | | 18:40 (40) | 07:22 | | 08:24 | | 09:00 | 10:07 (15) |
| | 21:52 | 35 07:28 (6) | 20:46 | | | 19:27 | 18 | 18:58 (40) | 17:13 | | 16:16 | | 16:07 | 25 10:40 (14) |
| 26 | 05:29 | 06:53 (6) | 06:26 | | | 07:25 | | 18:40 (40) | 07:24 | | 08:26 | | 09:00 | 10:08 (15) |
| | 21:50 | 36 07:29 (6) | 20:44 | | | 19:25 | 15 | 18:55 (40) | 17:11 | | 16:15 | | 16:08 | 23 10:40 (14) |
| 27 | 05:31 | 06:53 (6) | 06:28 | | | 07:27 | | 18:40 (40) | 07:26 | | 08:28 | | 09:00 | 10:09 (15) |
| | 21:49 | 37 07:30 (6) | 20:42 | | | 19:22 | 13 | 18:53 (40) | 17:09 | | 16:14 | | 16:08 | 22 10:41 (14) |
| 28 | 05:32 | 06:52 (6) | 06:30 | | | 07:29 | | 18:41 (40) | 07:28 | 08:39 (36) | 08:30 | | 09:01 | 10:10 (15) |
| | 21:47 | 38 07:30 (6) | 20:39 | | | 19:20 | 9 | 18:50 (40) | 17:06 | 8 08:47 (36) | 16:13 | | 16:09 | 20 10:41 (14) |
| 29 | 05:34 | 06:52 (6) | 06:32 | | | 07:31 | | 18:43 (40) | 07:30 | 08:37 (36) | 08:31 | | 09:01 | 10:25 (14) |
| | 21:45 | 39 07:31 (6) | 20:37 | | | 19:17 | 4 | 18:47 (40) | 17:04 | 13 08:50 (36) | 16:12 | | 16:10 | 16 10:41 (14) |
| 30 | 05:36 | 06:51 (6) | 06:34 | | 19:09 (39) | 07:32 | | | 07:32 | 08:35 (36) | 08:33 | | 09:01 | 10:26 (14) |
| | 21:43 | 40 07:31 (6) | 20:34 | 11 | 19:20 (39) | 19:14 | | | 17:02 | 17 08:52 (36) | 16:11 | | 16:11 | 15 10:41 (14) |
| 31 | 05:38 | 06:51 (6) | 06:36 | | 19:05 (39) | | | | 07:34 | 08:34 (36) | | | 09:01 | 10:27 (14) |
| | 21:41 | 41 07:32 (6) | 20:32 | 17 | 19:22 (39) | | | | 17:00 | 19 08:53 (36) | | | 16:12 | 15 10:42 (14) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | 224 | |
| Total, worst case | | 507 | | 861 | | | 648 | | | 57 | | 305 | | 473 |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | 0,31 | | 0,16 | | 0,14 |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | 0,96 | | 0,96 | | | 1,00 | | | 0,78 | | 0,78 | | 0,48 |
| Total reduction | | 0,45 | | 0,47 | | | 0,38 | | | 0,23 | | 0,12 | | 0,06 |
| Total, real | | 226 | | 408 | | | 244 | | | 13 | | 36 | | 29 |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:10 (36) | 07:26 | | 07:08 | 19:00 (39) | 05:55 | 06:43 (6) | 05:02 | 06:55 (6) |
| | 16:14 | | 17:08 24 | 09:34 (36) | 18:07 | | 20:09 30 | 19:30 (39) | 21:08 44 | 07:27 (6) | 22:02 19 | 07:14 (6) |
| 2 | 09:00 | | 08:26 | 09:10 (36) | 07:24 | | 07:05 | 19:01 (39) | 05:53 | 06:42 (6) | 05:01 | 06:56 (6) |
| | 16:15 | | 17:10 25 | 09:35 (36) | 18:09 | | 20:11 29 | 19:30 (39) | 21:10 45 | 07:27 (6) | 22:03 17 | 07:13 (6) |
| 3 | 09:00 | | 08:24 | 09:10 (36) | 07:22 | | 07:03 | 19:00 (39) | 05:50 | 06:41 (6) | 05:00 | 06:58 (6) |
| | 16:16 | | 17:12 25 | 09:35 (36) | 18:11 | | 20:13 29 | 19:29 (39) | 21:12 46 | 07:27 (6) | 22:05 13 | 07:11 (6) |
| 4 | 09:00 | | 08:22 | 09:10 (36) | 07:19 | | 07:00 | 19:00 (39) | 05:48 | 06:41 (6) | 04:59 | 07:01 (6) |
| | 16:17 | | 17:14 24 | 09:34 (36) | 18:13 | | 20:15 28 | 19:28 (39) | 21:14 46 | 07:27 (6) | 22:06 9 | 07:10 (6) |
| 5 | 08:59 | | 08:20 | 09:10 (36) | 07:17 | | 06:57 | 19:00 (39) | 05:46 | 06:41 (6) | 04:58 | |
| | 16:19 | | 17:16 24 | 09:34 (36) | 18:15 | | 20:17 28 | 19:28 (39) | 21:16 46 | 07:27 (6) | 22:07 | |
| 6 | 08:59 | | 08:18 | 09:11 (36) | 07:14 | | 06:55 | 19:00 (39) | 05:44 | 06:41 (6) | 04:57 | |
| | 16:20 | | 17:19 22 | 09:33 (36) | 18:17 | | 20:19 26 | 19:26 (39) | 21:18 47 | 07:28 (6) | 22:08 | |
| 7 | 08:58 | | 08:16 | 09:12 (36) | 07:12 | | 06:52 | 19:01 (39) | 05:42 | 06:41 (6) | 04:56 | |
| | 16:21 | | 17:21 21 | 09:33 (36) | 18:19 | | 20:21 24 | 19:25 (39) | 21:20 47 | 07:28 (6) | 22:09 | |
| 8 | 08:58 | | 08:14 | 09:13 (36) | 07:09 | | 06:50 | 19:02 (39) | 05:40 | 06:41 (6) | 04:56 | |
| | 16:23 | | 17:23 19 | 09:32 (36) | 18:22 | | 20:23 21 | 19:23 (39) | 21:22 47 | 07:28 (6) | 22:10 | |
| 9 | 08:57 | | 08:12 | 09:14 (36) | 07:07 | | 06:47 | 19:04 (39) | 05:38 | 06:41 (6) | 04:55 | |
| | 16:24 | | 17:25 18 | 09:32 (36) | 18:24 | | 20:25 18 | 19:22 (39) | 21:24 47 | 07:28 (6) | 22:11 | |
| 10 | 08:56 | | 08:10 | 09:15 (36) | 07:04 | | 06:45 | 19:05 (39) | 05:36 | 06:41 (6) | 04:54 | |
| | 16:26 | | 17:27 14 | 09:29 (36) | 18:26 | | 20:27 14 | 19:19 (39) | 21:26 46 | 07:27 (6) | 22:12 | |
| 11 | 08:56 | | 08:08 | 09:18 (36) | 07:02 | | 06:42 | 19:10 (39) | 05:34 | 06:40 (6) | 04:54 | |
| | 16:28 | | 17:29 9 | 09:27 (36) | 18:28 | | 20:29 4 | 19:14 (39) | 21:28 47 | 07:27 (6) | 22:13 | |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 06:41 (6) | 04:53 | |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 46 | 07:27 (6) | 22:14 | |
| 13 | 08:54 | | 08:03 | | 06:57 | | 06:37 | | 05:30 | 06:41 (6) | 04:53 | |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 46 | 07:27 (6) | 22:15 | |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 06:41 (6) | 04:53 | |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 45 | 07:26 (6) | 22:15 | |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 06:42 (6) | 04:52 | |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 44 | 07:26 (6) | 22:16 | |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 06:42 (6) | 04:52 | |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | | 21:37 44 | 07:26 (6) | 22:17 | |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 05:23 | 06:42 (6) | 04:52 | |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 43 | 07:25 (6) | 22:17 | |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 05:21 | 06:43 (6) | 04:52 | |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 42 | 07:25 (6) | 22:18 | |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:23 | | 05:19 | 06:43 (6) | 04:52 | |
| | 16:42 | | 17:46 | | 18:44 | | 20:45 | | 21:42 41 | 07:24 (6) | 22:18 | |
| 20 | 08:46 | | 07:48 | | 06:39 | | 06:20 | 07:02 (6) | 05:18 | 06:44 (6) | 04:52 | |
| | 16:44 | | 17:48 | | 18:46 | | 20:47 10 | 07:12 (6) | 21:44 40 | 07:24 (6) | 22:18 | |
| 21 | 08:45 | | 07:46 | | 06:36 | | 06:18 | 06:57 (6) | 05:16 | 06:45 (6) | 04:52 | |
| | 16:46 | | 17:50 | | 18:48 | | 20:49 19 | 07:16 (6) | 21:45 38 | 07:23 (6) | 22:19 | |
| 22 | 08:43 | | 07:43 | | 06:33 | | 06:15 | 06:55 (6) | 05:15 | 06:45 (6) | 04:52 | |
| | 16:48 | | 17:53 | | 18:50 | | 20:51 24 | 07:19 (6) | 21:47 37 | 07:22 (6) | 22:19 | |
| 23 | 08:42 | 09:15 (36) | 07:41 | | 06:31 | | 06:13 | 06:53 (6) | 05:13 | 06:46 (6) | 04:53 | |
| | 16:50 9 | 09:24 (36) | 17:55 | | 18:52 | | 20:53 28 | 07:21 (6) | 21:49 36 | 07:22 (6) | 22:19 | |
| 24 | 08:41 | 09:14 (36) | 07:38 | | 06:28 | 18:12 (39) | 06:11 | 06:51 (6) | 05:12 | 06:47 (6) | 04:53 | |
| | 16:52 13 | 09:27 (36) | 17:57 | | 18:54 12 | 18:24 (39) | 20:55 31 | 07:22 (6) | 21:50 34 | 07:21 (6) | 22:19 | |
| 25 | 08:39 | 09:12 (36) | 07:36 | | 06:26 | 18:08 (39) | 06:08 | 06:49 (6) | 05:10 | 06:47 (6) | 04:53 | |
| | 16:54 16 | 09:28 (36) | 17:59 | | 18:56 18 | 18:26 (39) | 20:57 34 | 07:23 (6) | 21:52 33 | 07:20 (6) | 22:19 | |
| 26 | 08:37 | 09:11 (36) | 07:34 | | 06:23 | 18:06 (39) | 06:06 | 06:47 (6) | 05:09 | 06:48 (6) | 04:54 | |
| | 16:56 18 | 09:29 (36) | 18:01 | | 18:57 21 | 18:27 (39) | 20:59 37 | 07:24 (6) | 21:53 31 | 07:19 (6) | 22:19 | |
| 27 | 08:36 | 09:10 (36) | 07:31 | | 06:21 | 18:05 (39) | 06:04 | 06:46 (6) | 05:08 | 06:49 (6) | 04:54 | |
| | 16:58 20 | 09:30 (36) | 18:03 | | 18:59 24 | 18:29 (39) | 21:01 39 | 07:25 (6) | 21:55 30 | 07:19 (6) | 22:19 | |
| 28 | 08:34 | 09:10 (36) | 07:29 | | 06:18 | 18:03 (39) | 06:02 | 06:45 (6) | 05:06 | 06:50 (6) | 04:55 | |
| | 17:00 21 | 09:31 (36) | 18:05 | | 19:01 26 | 18:29 (39) | 21:03 41 | 07:26 (6) | 21:57 28 | 07:18 (6) | 22:19 | |
| 29 | 08:33 | 09:10 (36) | | | 07:15 | 19:03 (39) | 05:59 | 06:45 (6) | 05:05 | 06:51 (6) | 04:55 | |
| | 17:02 23 | 09:33 (36) | | | 20:03 27 | 19:30 (39) | 21:05 41 | 07:26 (6) | 21:58 26 | 07:17 (6) | 22:18 | |
| 30 | 08:31 | 09:10 (36) | | | 07:13 | 19:01 (39) | 05:57 | 06:44 (6) | 05:04 | 06:52 (6) | 04:56 | |
| | 17:04 23 | 09:33 (36) | | | 20:05 29 | 19:30 (39) | 21:06 43 | 07:27 (6) | 21:59 24 | 07:16 (6) | 22:18 | |
| 31 | 08:29 | 09:10 (36) | | | 07:10 | 19:01 (39) | | | 05:03 | 06:54 (6) | | |
| | 17:06 24 | 09:34 (36) | | | 20:07 29 | 19:30 (39) | | | 22:01 21 | 07:15 (6) | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Total, worst case | 167 | | 225 | | 186 | | 598 | | 1237 | | 58 | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | 0,48 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,76 | | 0,76 | | 1,00 | | 0,98 | | 0,96 | | 0,96 | |
| Total reduction | 0,13 | | 0,18 | | 0,33 | | 0,38 | | 0,49 | | 0,46 | |
| Total, real | 22 | | 41 | | 62 | | 225 | | 603 | | 26 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 06:52 (6) | 06:38 | | 19:09 (39) | 07:34 | | | 07:36 | | 08:44 (36) | 08:35 | | |
| | 22:18 | | | 21:40 | 46 | 07:38 (6) | 20:29 | 4 | 19:13 (39) | 19:12 | | | 16:58 | 15 | 08:59 (36) | 16:10 | | |
| 2 | 04:57 | | | 05:41 | | 06:51 (6) | 06:39 | | 19:04 (39) | 07:36 | | | 07:38 | | 08:43 (36) | 08:36 | | |
| | 22:17 | | | 21:38 | 46 | 07:37 (6) | 20:27 | 14 | 19:18 (39) | 19:09 | | | 16:55 | 18 | 09:01 (36) | 16:09 | | |
| 3 | 04:58 | | | 05:43 | | 06:51 (6) | 06:41 | | 19:02 (39) | 07:38 | | | 07:41 | | 08:42 (36) | 08:38 | | |
| | 22:17 | | | 21:36 | 47 | 07:38 (6) | 20:24 | 18 | 19:20 (39) | 19:07 | | | 16:53 | 20 | 09:02 (36) | 16:08 | | |
| 4 | 04:59 | | | 05:45 | | 06:51 (6) | 06:43 | | 19:00 (39) | 07:40 | | | 07:43 | | 08:41 (36) | 08:40 | | |
| | 22:16 | | | 21:34 | 47 | 07:38 (6) | 20:22 | 21 | 19:21 (39) | 19:04 | | | 16:51 | 22 | 09:03 (36) | 16:07 | | |
| 5 | 05:00 | | | 05:47 | | 06:50 (6) | 06:45 | | 18:58 (39) | 07:42 | | | 07:45 | | 08:40 (36) | 08:41 | | |
| | 22:16 | | | 21:32 | 47 | 07:37 (6) | 20:19 | 23 | 19:21 (39) | 19:02 | | | 16:49 | 23 | 09:03 (36) | 16:07 | | |
| 6 | 05:01 | | | 05:49 | | 06:51 (6) | 06:47 | | 18:56 (39) | 07:44 | | | 07:47 | | 08:41 (36) | 08:43 | | |
| | 22:15 | | | 21:30 | 46 | 07:37 (6) | 20:16 | 26 | 19:22 (39) | 18:59 | | | 16:47 | 23 | 09:04 (36) | 16:06 | | |
| 7 | 05:02 | | | 05:50 | | 06:51 (6) | 06:49 | | 18:56 (39) | 07:46 | | | 07:49 | | 08:40 (36) | 08:44 | | |
| | 22:14 | | | 21:28 | 47 | 07:38 (6) | 20:14 | 27 | 19:23 (39) | 18:57 | | | 16:45 | 25 | 09:05 (36) | 16:06 | | |
| 8 | 05:03 | | 07:08 (6) | 05:52 | | 06:51 (6) | 06:51 | | 18:55 (39) | 07:48 | | | 07:51 | | 08:40 (36) | 08:45 | | |
| | 22:14 | 7 | 07:15 (6) | 21:25 | 47 | 07:38 (6) | 20:11 | 28 | 19:23 (39) | 18:54 | | | 16:43 | 24 | 09:04 (36) | 16:05 | | |
| 9 | 05:04 | | 07:06 (6) | 05:54 | | 06:51 (6) | 06:53 | | 18:54 (39) | 07:50 | | | 07:53 | | 08:40 (36) | 08:47 | | |
| | 22:13 | 12 | 07:18 (6) | 21:23 | 46 | 07:37 (6) | 20:09 | 29 | 19:23 (39) | 18:52 | | | 16:41 | 24 | 09:04 (36) | 16:05 | | |
| 10 | 05:05 | | 07:04 (6) | 05:56 | | 06:51 (6) | 06:55 | | 18:53 (39) | 07:52 | | | 07:55 | | 08:41 (36) | 08:48 | | |
| | 22:12 | 15 | 07:19 (6) | 21:21 | 45 | 07:36 (6) | 20:06 | 29 | 19:22 (39) | 18:49 | | | 16:40 | 24 | 09:05 (36) | 16:04 | | |
| 11 | 05:07 | | 07:03 (6) | 05:58 | | 06:51 (6) | 06:56 | | 18:53 (39) | 07:54 | | | 07:57 | | 08:41 (36) | 08:49 | | |
| | 22:11 | 18 | 07:21 (6) | 21:19 | 45 | 07:36 (6) | 20:04 | 29 | 19:22 (39) | 18:47 | | | 16:38 | 24 | 09:05 (36) | 16:04 | | |
| 12 | 05:08 | | 07:03 (6) | 06:00 | | 06:51 (6) | 06:58 | | 18:53 (39) | 07:56 | | | 07:59 | | 08:41 (36) | 08:50 | | |
| | 22:10 | 20 | 07:23 (6) | 21:17 | 44 | 07:35 (6) | 20:01 | 29 | 19:22 (39) | 18:44 | | | 16:36 | 23 | 09:04 (36) | 16:04 | | |
| 13 | 05:09 | | 07:01 (6) | 06:02 | | 06:52 (6) | 07:00 | | 18:53 (39) | 07:58 | | | 08:01 | | 08:42 (36) | 08:51 | | |
| | 22:09 | 23 | 07:24 (6) | 21:15 | 42 | 07:34 (6) | 19:58 | 28 | 19:21 (39) | 18:42 | | | 16:34 | 23 | 09:05 (36) | 16:04 | | |
| 14 | 05:11 | | 07:00 (6) | 06:03 | | 06:52 (6) | 07:02 | | 18:53 (39) | 08:00 | | | 08:03 | | 08:43 (36) | 08:52 | | |
| | 22:08 | 25 | 07:25 (6) | 21:12 | 42 | 07:34 (6) | 19:56 | 27 | 19:20 (39) | 18:39 | | | 16:32 | 21 | 09:04 (36) | 16:03 | | |
| 15 | 05:12 | | 06:59 (6) | 06:05 | | 06:53 (6) | 07:04 | | 18:53 (39) | 08:02 | | | 08:05 | | 08:43 (36) | 08:53 | | |
| | 22:06 | 27 | 07:26 (6) | 21:10 | 40 | 07:33 (6) | 19:53 | 26 | 19:19 (39) | 18:37 | | | 16:31 | 20 | 09:03 (36) | 16:03 | | |
| 16 | 05:13 | | 06:59 (6) | 06:07 | | 06:54 (6) | 07:06 | | 18:53 (39) | 08:04 | | | 08:07 | | 08:44 (36) | 08:54 | | |
| | 22:05 | 29 | 07:28 (6) | 21:08 | 38 | 07:32 (6) | 19:51 | 24 | 19:17 (39) | 18:34 | | | 16:29 | 18 | 09:02 (36) | 16:03 | | |
| 17 | 05:15 | | 06:58 (6) | 06:09 | | 06:54 (6) | 07:08 | | 18:54 (39) | 08:06 | | | 08:09 | | 08:45 (36) | 08:55 | | |
| | 22:04 | 31 | 07:29 (6) | 21:05 | 36 | 07:30 (6) | 19:48 | 22 | 19:16 (39) | 18:32 | | | 16:27 | 16 | 09:01 (36) | 16:04 | | |
| 18 | 05:16 | | 06:57 (6) | 06:11 | | 06:55 (6) | 07:10 | | 18:55 (39) | 08:08 | | | 08:11 | | 08:48 (36) | 08:56 | | 10:39 (14) |
| | 22:03 | 32 | 07:29 (6) | 21:03 | 34 | 07:29 (6) | 19:46 | 19 | 19:14 (39) | 18:29 | | | 16:26 | 13 | 09:01 (36) | 16:04 | 4 | 10:43 (14) |
| 19 | 05:18 | | 06:57 (6) | 06:13 | | 06:57 (6) | 07:12 | | 18:57 (39) | 08:10 | | | 08:13 | | 08:50 (36) | 08:57 | | 10:38 (14) |
| | 22:01 | 34 | 07:31 (6) | 21:01 | 31 | 07:28 (6) | 19:43 | 15 | 19:12 (39) | 18:27 | | | 16:24 | 9 | 08:59 (36) | 16:04 | 5 | 10:43 (14) |
| 20 | 05:19 | | 06:56 (6) | 06:15 | | 06:59 (6) | 07:13 | | 19:01 (39) | 08:12 | | | 08:15 | | | 08:57 | | 10:38 (14) |
| | 22:00 | 35 | 07:31 (6) | 20:58 | 27 | 07:26 (6) | 19:40 | 6 | 19:07 (39) | 18:25 | | | 16:23 | | | 16:04 | 6 | 10:44 (14) |
| 21 | 05:21 | | 06:55 (6) | 06:17 | | 07:00 (6) | 07:15 | | | 08:14 | | | 08:17 | | | 08:58 | | 10:38 (14) |
| | 21:58 | 37 | 07:32 (6) | 20:56 | 23 | 07:23 (6) | 19:38 | | | 18:22 | | | 16:21 | | | 16:05 | 6 | 10:44 (14) |
| 22 | 05:22 | | 06:55 (6) | 06:19 | | 07:02 (6) | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 | | 10:39 (14) |
| | 21:57 | 38 | 07:33 (6) | 20:54 | 18 | 07:20 (6) | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 | 6 | 10:45 (14) |
| 23 | 05:24 | | 06:54 (6) | 06:21 | | 07:07 (6) | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 | | 10:39 (14) |
| | 21:55 | 39 | 07:33 (6) | 20:51 | 8 | 07:15 (6) | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 | 6 | 10:45 (14) |
| 24 | 05:26 | | 06:54 (6) | 06:22 | | | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 | | 10:41 (14) |
| | 21:54 | 40 | 07:34 (6) | 20:49 | | | 19:30 | | | 18:15 | | | 16:17 | | | 16:06 | 5 | 10:46 (14) |
| 25 | 05:27 | | 06:53 (6) | 06:24 | | | 07:23 | | | 07:22 | | | 08:24 | | | 09:00 | | 10:42 (14) |
| | 21:52 | 41 | 07:34 (6) | 20:46 | | | 19:27 | | | 17:13 | | | 16:16 | | | 16:07 | 4 | 10:46 (14) |
| 26 | 05:29 | | 06:53 (6) | 06:26 | | | 07:25 | | | 07:24 | | | 08:26 | | | 09:00 | | 10:43 (14) |
| | 21:50 | 42 | 07:35 (6) | 20:44 | | | 19:25 | | | 17:11 | | | 16:15 | | | 16:08 | 2 | 10:45 (14) |
| 27 | 05:31 | | 06:53 (6) | 06:28 | | | 07:27 | | | 07:26 | | | 08:28 | | | 09:00 | | |
| | 21:49 | 43 | 07:36 (6) | 20:42 | | | 19:22 | | | 17:08 | | | 16:14 | | | 16:08 | | |
| 28 | 05:32 | | 06:52 (6) | 06:30 | | | 07:29 | | | 07:28 | | | 08:30 | | | 09:01 | | |
| | 21:47 | 44 | 07:36 (6) | 20:39 | | | 19:20 | | | 17:06 | | | 16:13 | | | 16:09 | | |
| 29 | 05:34 | | 06:52 (6) | 06:32 | | | 07:31 | | | 07:30 | | | 08:31 | | | 09:01 | | |
| | 21:45 | 45 | 07:37 (6) | 20:37 | | | 19:17 | | | 17:04 | | | 16:12 | | | 16:10 | | |
| 30 | 05:36 | | 06:51 (6) | 06:34 | | | 07:32 | | | 07:32 | | | 08:33 | | | 09:01 | | |
| | 21:43 | 46 | 07:37 (6) | 20:34 | | | 19:14 | | | 17:02 | | | 16:11 | | | 16:11 | | |
| 31 | 05:38 | | 06:51 (6) | 06:36 | | | | | | 07:34 | | 08:47 (36) | | | | 09:01 | | |
| | 21:41 | 46 | 07:37 (6) | 20:32 | | | | | | 17:00 | 10 | 08:57 (36) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 769 | | | 892 | | | 444 | | | 10 | | | 385 | | | 44 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,96 | | | 0,96 | | | 1,00 | | | 0,76 | | | 0,76 | | | 0,42 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,39 | | | 0,23 | | | 0,12 | | | 0,06 | |
| Total, real | | 352 | | | 433 | | | 172 | | | 2 | | | 45 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:13 (36) | 07:26 | | | 07:08 | | 19:00 (39) | 05:55 | | 06:44 (6) | 05:02 | | 06:53 (6) |
| | 16:14 | | | 17:08 | 25 | 09:38 (36) | 18:07 | | | 20:09 | 29 | 19:29 (39) | 21:08 | 45 | 07:29 (6) | 22:02 | 26 | 07:19 (6) |
| 2 | 09:00 | | | 08:26 | | 09:13 (36) | 07:24 | | | 07:05 | | 19:00 (39) | 05:53 | | 06:43 (6) | 05:01 | | 06:54 (6) |
| | 16:15 | | | 17:10 | 25 | 09:38 (36) | 18:09 | | | 20:11 | 29 | 19:29 (39) | 21:10 | 46 | 07:29 (6) | 22:03 | 24 | 07:18 (6) |
| 3 | 09:00 | | | 08:24 | | 09:14 (36) | 07:22 | | | 07:03 | | 19:00 (39) | 05:50 | | 06:42 (6) | 05:00 | | 06:55 (6) |
| | 16:16 | | | 17:12 | 24 | 09:38 (36) | 18:11 | | | 20:13 | 28 | 19:28 (39) | 21:12 | 47 | 07:29 (6) | 22:05 | 22 | 07:17 (6) |
| 4 | 09:00 | | | 08:22 | | 09:13 (36) | 07:19 | | | 07:00 | | 18:59 (39) | 05:48 | | 06:42 (6) | 04:59 | | 06:57 (6) |
| | 16:17 | | | 17:14 | 24 | 09:37 (36) | 18:13 | | | 20:15 | 27 | 19:26 (39) | 21:14 | 47 | 07:29 (6) | 22:06 | 20 | 07:17 (6) |
| 5 | 08:59 | | | 08:20 | | 09:14 (36) | 07:17 | | | 06:57 | | 19:00 (39) | 05:46 | | 06:41 (6) | 04:58 | | 06:58 (6) |
| | 16:19 | | | 17:16 | 23 | 09:37 (36) | 18:15 | | | 20:17 | 26 | 19:26 (39) | 21:16 | 48 | 07:29 (6) | 22:07 | 17 | 07:15 (6) |
| 6 | 08:59 | | | 08:18 | | 09:15 (36) | 07:14 | | | 06:55 | | 19:01 (39) | 05:44 | | 06:42 (6) | 04:57 | | 06:59 (6) |
| | 16:20 | | | 17:19 | 21 | 09:36 (36) | 18:17 | | | 20:19 | 23 | 19:24 (39) | 21:18 | 48 | 07:30 (6) | 22:08 | 15 | 07:14 (6) |
| 7 | 08:58 | | | 08:16 | | 09:16 (36) | 07:12 | | | 06:52 | | 19:02 (39) | 05:42 | | 06:42 (6) | 04:56 | | 07:01 (6) |
| | 16:21 | | | 17:21 | 20 | 09:36 (36) | 18:19 | | | 20:21 | 21 | 19:23 (39) | 21:20 | 48 | 07:30 (6) | 22:09 | 12 | 07:13 (6) |
| 8 | 08:58 | | | 08:14 | | 09:17 (36) | 07:09 | | | 06:50 | | 19:03 (39) | 05:40 | | 06:41 (6) | 04:56 | | 07:02 (6) |
| | 16:23 | | | 17:23 | 18 | 09:35 (36) | 18:22 | | | 20:23 | 18 | 19:21 (39) | 21:22 | 49 | 07:30 (6) | 22:10 | 9 | 07:11 (6) |
| 9 | 08:57 | | | 08:12 | | 09:19 (36) | 07:07 | | | 06:47 | | 19:05 (39) | 05:38 | | 06:41 (6) | 04:55 | | 07:06 (6) |
| | 16:24 | | | 17:25 | 15 | 09:34 (36) | 18:24 | | | 20:25 | 14 | 19:19 (39) | 21:24 | 49 | 07:30 (6) | 22:11 | 2 | 07:08 (6) |
| 10 | 08:56 | | | 08:10 | | 09:21 (36) | 07:04 | | | 06:45 | | 19:09 (39) | 05:36 | | 06:41 (6) | 04:54 | | |
| | 16:26 | | | 17:27 | 9 | 09:30 (36) | 18:26 | | | 20:27 | 5 | 19:14 (39) | 21:26 | 49 | 07:30 (6) | 22:12 | | |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:41 (6) | 04:54 | | |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 48 | 07:29 (6) | 22:13 | | |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:42 (6) | 04:53 | | |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 48 | 07:30 (6) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | | 06:57 | | | 06:37 | | | 05:30 | | 06:41 (6) | 04:53 | | |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 48 | 07:29 (6) | 22:15 | | |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:41 (6) | 04:53 | | |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 48 | 07:29 (6) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:42 (6) | 04:52 | | |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 47 | 07:29 (6) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:42 (6) | 04:52 | | |
| | 16:36 | | | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 46 | 07:28 (6) | 22:17 | | |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:42 (6) | 04:52 | | |
| | 16:38 | | | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 45 | 07:27 (6) | 22:17 | | |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:43 (6) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 44 | 07:27 (6) | 22:18 | | |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:43 (6) | 04:52 | | |
| | 16:42 | | | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 43 | 07:26 (6) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | | 06:20 | | 07:04 (6) | 05:18 | | 06:44 (6) | 04:52 | | |
| | 16:44 | | | 17:48 | | | 18:46 | | | 20:47 | 9 | 07:13 (6) | 21:44 | 42 | 07:26 (6) | 22:18 | | |
| 21 | 08:45 | | 09:19 (36) | 07:46 | | | 06:36 | | | 06:18 | | 06:59 (6) | 05:16 | | 06:45 (6) | 04:52 | | |
| | 16:46 | 8 | 09:27 (36) | 17:50 | | | 18:48 | | | 20:49 | 18 | 07:17 (6) | 21:45 | 41 | 07:26 (6) | 22:19 | | |
| 22 | 08:43 | | 09:17 (36) | 07:43 | | | 06:33 | | | 06:15 | | 06:56 (6) | 05:15 | | 06:45 (6) | 04:52 | | |
| | 16:48 | 12 | 09:29 (36) | 17:53 | | | 18:50 | | | 20:51 | 24 | 07:20 (6) | 21:47 | 40 | 07:25 (6) | 22:19 | | |
| 23 | 08:42 | | 09:15 (36) | 07:41 | | | 06:31 | | 18:12 (39) | 06:13 | | 06:54 (6) | 05:13 | | 06:46 (6) | 04:53 | | |
| | 16:50 | 16 | 09:31 (36) | 17:55 | | | 18:52 | 9 | 18:21 (39) | 20:53 | 28 | 07:22 (6) | 21:49 | 39 | 07:25 (6) | 22:19 | | |
| 24 | 08:41 | | 09:15 (36) | 07:38 | | | 06:28 | | 18:09 (39) | 06:11 | | 06:52 (6) | 05:12 | | 06:47 (6) | 04:53 | | |
| | 16:51 | 18 | 09:33 (36) | 17:57 | | | 18:54 | 16 | 18:25 (39) | 20:55 | 32 | 07:24 (6) | 21:50 | 38 | 07:25 (6) | 22:19 | | |
| 25 | 08:39 | | 09:14 (36) | 07:36 | | | 06:26 | | 18:07 (39) | 06:08 | | 06:50 (6) | 05:10 | | 06:46 (6) | 04:53 | | |
| | 16:54 | 20 | 09:34 (36) | 17:59 | | | 18:56 | 19 | 18:26 (39) | 20:57 | 34 | 07:24 (6) | 21:52 | 37 | 07:23 (6) | 22:19 | | |
| 26 | 08:37 | | 09:14 (36) | 07:34 | | | 06:23 | | 18:04 (39) | 06:06 | | 06:48 (6) | 05:09 | | 06:47 (6) | 04:54 | | |
| | 16:56 | 20 | 09:34 (36) | 18:01 | | | 18:57 | 23 | 18:27 (39) | 20:59 | 38 | 07:26 (6) | 21:53 | 36 | 07:23 (6) | 22:19 | | |
| 27 | 08:36 | | 09:13 (36) | 07:31 | | | 06:21 | | 18:04 (39) | 06:04 | | 06:47 (6) | 05:08 | | 06:48 (6) | 04:54 | | |
| | 16:58 | 22 | 09:35 (36) | 18:03 | | | 18:59 | 24 | 18:28 (39) | 21:01 | 40 | 07:27 (6) | 21:55 | 34 | 07:22 (6) | 22:19 | | |
| 28 | 08:34 | | 09:13 (36) | 07:29 | | | 06:18 | | 18:02 (39) | 06:02 | | 06:46 (6) | 05:06 | | 06:49 (6) | 04:55 | | |
| | 17:00 | 23 | 09:36 (36) | 18:05 | | | 19:01 | 26 | 18:28 (39) | 21:03 | 41 | 07:27 (6) | 21:57 | 33 | 07:22 (6) | 22:19 | | |
| 29 | 08:33 | | 09:13 (36) | | | | 07:15 | | 19:02 (39) | 05:59 | | 06:46 (6) | 05:05 | | 06:50 (6) | 04:55 | | |
| | 17:02 | 24 | 09:37 (36) | | | | 20:03 | 27 | 19:29 (39) | 21:05 | 42 | 07:28 (6) | 21:58 | 31 | 07:21 (6) | 22:18 | | |
| 30 | 08:31 | | 09:13 (36) | | | | 07:13 | | 19:01 (39) | 05:57 | | 06:45 (6) | 05:04 | | 06:51 (6) | 04:56 | | |
| | 17:04 | 25 | 09:38 (36) | | | | 20:05 | 28 | 19:29 (39) | 21:06 | 44 | 07:29 (6) | 21:59 | 29 | 07:20 (6) | 22:18 | | |
| 31 | 08:29 | | 09:13 (36) | | | | 07:10 | | 19:01 (39) | | | | 05:03 | | 06:52 (6) | | | |
| | 17:06 | 25 | 09:38 (36) | | | | 20:07 | 28 | 19:29 (39) | | | | 22:01 | 28 | 07:20 (6) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 213 | | | 204 | | | 200 | | | 570 | | | 1321 | | | 147 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,74 | | | 0,74 | | | 1,00 | | | 0,98 | | | 0,96 | | | 0,96 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 28 | | | 37 | | | 67 | | | 215 | | | 645 | | | 67 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 06:52 (6) | 06:38 | | | 07:34 | 07:36 | | 08:50 (36) | | 08:35 | |
| | 22:18 | | | 21:40 | 48 | 07:40 (6) | 20:29 | | | 19:12 | 16:58 | 11 | 09:01 (36) | | 16:10 | |
| 2 | 04:57 | | | 05:41 | | 06:51 (6) | 06:39 | | 19:08 (39) | 07:36 | 07:38 | | 08:49 (36) | | 08:36 | |
| | 22:17 | | | 21:38 | 49 | 07:40 (6) | 20:27 | 5 | 19:13 (39) | 19:09 | 16:55 | 15 | 09:04 (36) | | 16:09 | |
| 3 | 04:58 | | | 05:43 | | 06:51 (6) | 06:41 | | 19:03 (39) | 07:38 | 07:41 | | 08:47 (36) | | 08:38 | |
| | 22:17 | | | 21:36 | 49 | 07:40 (6) | 20:24 | 14 | 19:17 (39) | 19:07 | 16:53 | 18 | 09:05 (36) | | 16:08 | |
| 4 | 04:59 | | 07:09 (6) | 05:45 | | 06:52 (6) | 06:43 | | 19:01 (39) | 07:40 | 07:43 | | 08:46 (36) | | 08:40 | |
| | 22:16 | 6 | 07:15 (6) | 21:34 | 48 | 07:40 (6) | 20:22 | 18 | 19:19 (39) | 19:04 | 16:51 | 20 | 09:06 (36) | | 16:07 | |
| 5 | 05:00 | | 07:07 (6) | 05:47 | | 06:51 (6) | 06:45 | | 18:58 (39) | 07:42 | 07:45 | | 08:45 (36) | | 08:41 | |
| | 22:16 | 11 | 07:18 (6) | 21:32 | 48 | 07:39 (6) | 20:19 | 21 | 19:19 (39) | 19:02 | 16:49 | 21 | 09:06 (36) | | 16:07 | |
| 6 | 05:01 | | 07:05 (6) | 05:49 | | 06:51 (6) | 06:47 | | 18:57 (39) | 07:44 | 07:47 | | 08:45 (36) | | 08:43 | |
| | 22:15 | 14 | 07:19 (6) | 21:30 | 49 | 07:40 (6) | 20:16 | 23 | 19:20 (39) | 18:59 | 16:47 | 23 | 09:08 (36) | | 16:06 | |
| 7 | 05:02 | | 07:04 (6) | 05:50 | | 06:51 (6) | 06:49 | | 18:56 (39) | 07:46 | 07:49 | | 08:44 (36) | | 08:44 | |
| | 22:14 | 17 | 07:21 (6) | 21:28 | 49 | 07:40 (6) | 20:14 | 25 | 19:21 (39) | 18:57 | 16:45 | 24 | 09:08 (36) | | 16:06 | |
| 8 | 05:03 | | 07:03 (6) | 05:52 | | 06:52 (6) | 06:51 | | 18:55 (39) | 07:48 | 07:51 | | 08:44 (36) | | 08:45 | |
| | 22:14 | 19 | 07:22 (6) | 21:25 | 48 | 07:40 (6) | 20:11 | 27 | 19:22 (39) | 18:54 | 16:43 | 24 | 09:08 (36) | | 16:05 | |
| 9 | 05:04 | | 07:02 (6) | 05:54 | | 06:51 (6) | 06:53 | | 18:54 (39) | 07:50 | 07:53 | | 08:43 (36) | | 08:47 | |
| | 22:13 | 22 | 07:24 (6) | 21:23 | 48 | 07:39 (6) | 20:09 | 28 | 19:22 (39) | 18:52 | 16:41 | 25 | 09:08 (36) | | 16:05 | |
| 10 | 05:05 | | 07:02 (6) | 05:56 | | 06:52 (6) | 06:55 | | 18:52 (39) | 07:52 | 07:55 | | 08:44 (36) | | 08:48 | |
| | 22:12 | 23 | 07:25 (6) | 21:21 | 46 | 07:38 (6) | 20:06 | 29 | 19:21 (39) | 18:49 | 16:40 | 25 | 09:09 (36) | | 16:04 | |
| 11 | 05:07 | | 07:01 (6) | 05:58 | | 06:52 (6) | 06:56 | | 18:52 (39) | 07:54 | 07:57 | | 08:44 (36) | | 08:49 | |
| | 22:11 | 25 | 07:26 (6) | 21:19 | 46 | 07:38 (6) | 20:04 | 29 | 19:21 (39) | 18:47 | 16:38 | 25 | 09:09 (36) | | 16:04 | |
| 12 | 05:08 | | 07:01 (6) | 06:00 | | 06:52 (6) | 06:58 | | 18:52 (39) | 07:56 | 07:59 | | 08:44 (36) | | 08:50 | |
| | 22:10 | 27 | 07:28 (6) | 21:17 | 45 | 07:37 (6) | 20:01 | 29 | 19:21 (39) | 18:44 | 16:36 | 24 | 09:08 (36) | | 16:04 | |
| 13 | 05:09 | | 07:00 (6) | 06:02 | | 06:53 (6) | 07:00 | | 18:52 (39) | 07:58 | 08:01 | | 08:45 (36) | | 08:51 | |
| | 22:09 | 29 | 07:29 (6) | 21:15 | 43 | 07:36 (6) | 19:58 | 28 | 19:20 (39) | 18:42 | 16:34 | 24 | 09:09 (36) | | 16:04 | |
| 14 | 05:11 | | 06:59 (6) | 06:03 | | 06:53 (6) | 07:02 | | 18:52 (39) | 08:00 | 08:03 | | 08:45 (36) | | 08:52 | |
| | 22:08 | 30 | 07:29 (6) | 21:12 | 43 | 07:36 (6) | 19:56 | 28 | 19:20 (39) | 18:39 | 16:32 | 24 | 09:09 (36) | | 16:03 | |
| 15 | 05:12 | | 06:58 (6) | 06:05 | | 06:54 (6) | 07:04 | | 18:52 (39) | 08:02 | 08:05 | | 08:46 (36) | | 08:53 | |
| | 22:06 | 32 | 07:30 (6) | 21:10 | 41 | 07:35 (6) | 19:53 | 27 | 19:19 (39) | 18:37 | 16:31 | 22 | 09:08 (36) | | 16:03 | |
| 16 | 05:13 | | 06:58 (6) | 06:07 | | 06:55 (6) | 07:06 | | 18:52 (39) | 08:04 | 08:07 | | 08:47 (36) | | 08:54 | |
| | 22:05 | 34 | 07:32 (6) | 21:08 | 39 | 07:34 (6) | 19:51 | 25 | 19:17 (39) | 18:34 | 16:29 | 20 | 09:07 (36) | | 16:03 | |
| 17 | 05:15 | | 06:57 (6) | 06:09 | | 06:55 (6) | 07:08 | | 18:53 (39) | 08:06 | 08:09 | | 08:47 (36) | | 08:55 | |
| | 22:04 | 35 | 07:32 (6) | 21:05 | 37 | 07:32 (6) | 19:48 | 23 | 19:16 (39) | 18:32 | 16:27 | 20 | 09:07 (36) | | 16:04 | |
| 18 | 05:16 | | 06:56 (6) | 06:11 | | 06:56 (6) | 07:10 | | 18:54 (39) | 08:08 | 08:11 | | 08:49 (36) | | 08:56 | |
| | 22:03 | 37 | 07:33 (6) | 21:03 | 35 | 07:31 (6) | 19:46 | 20 | 19:14 (39) | 18:29 | 16:26 | 18 | 09:07 (36) | | 16:04 | |
| 19 | 05:18 | | 06:57 (6) | 06:13 | | 06:58 (6) | 07:12 | | 18:55 (39) | 08:10 | 08:13 | | 08:50 (36) | | 08:57 | |
| | 22:01 | 37 | 07:34 (6) | 21:01 | 31 | 07:29 (6) | 19:43 | 17 | 19:12 (39) | 18:27 | 16:24 | 16 | 09:06 (36) | | 16:04 | |
| 20 | 05:19 | | 06:56 (6) | 06:15 | | 07:00 (6) | 07:13 | | 18:58 (39) | 08:12 | 08:15 | | 08:52 (36) | | 08:57 | |
| | 22:00 | 38 | 07:34 (6) | 20:58 | 27 | 07:27 (6) | 19:40 | 11 | 19:09 (39) | 18:25 | 16:23 | 12 | 09:04 (36) | | 16:04 | |
| 21 | 05:21 | | 06:55 (6) | 06:17 | | 07:01 (6) | 07:15 | | | 08:14 | 08:17 | | 08:54 (36) | | 08:58 | |
| | 21:58 | 40 | 07:35 (6) | 20:56 | 23 | 07:24 (6) | 19:38 | | | 18:22 | 16:21 | 8 | 09:02 (36) | | 16:05 | |
| 22 | 05:22 | | 06:55 (6) | 06:19 | | 07:04 (6) | 07:17 | | | 08:16 | 08:19 | | | | 08:59 | |
| | 21:57 | 41 | 07:36 (6) | 20:54 | 17 | 07:21 (6) | 19:35 | | | 18:20 | 16:20 | | | | 16:05 | |
| 23 | 05:24 | | 06:54 (6) | 06:21 | | 07:09 (6) | 07:19 | | | 08:18 | 08:21 | | | | 08:59 | |
| | 21:55 | 42 | 07:36 (6) | 20:51 | 7 | 07:16 (6) | 19:33 | | | 18:18 | 16:19 | | | | 16:06 | |
| 24 | 05:26 | | 06:54 (6) | 06:22 | | | 07:21 | | | 08:20 | 08:23 | | | | 09:00 | |
| | 21:54 | 43 | 07:37 (6) | 20:49 | | | 19:30 | | | 18:15 | 16:17 | | | | 16:06 | |
| 25 | 05:27 | | 06:53 (6) | 06:24 | | | 07:23 | | | 07:22 | 08:24 | | | | 09:00 | |
| | 21:52 | 44 | 07:37 (6) | 20:46 | | | 19:27 | | | 17:13 | 16:16 | | | | 16:07 | |
| 26 | 05:29 | | 06:53 (6) | 06:26 | | | 07:25 | | | 07:24 | 08:26 | | | | 09:00 | |
| | 21:50 | 45 | 07:38 (6) | 20:44 | | | 19:25 | | | 17:11 | 16:15 | | | | 16:08 | |
| 27 | 05:31 | | 06:53 (6) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | | | 09:00 | |
| | 21:49 | 46 | 07:39 (6) | 20:42 | | | 19:22 | | | 17:08 | 16:14 | | | | 16:08 | |
| 28 | 05:32 | | 06:52 (6) | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | | | 09:01 | |
| | 21:47 | 47 | 07:39 (6) | 20:39 | | | 19:20 | | | 17:06 | 16:13 | | | | 16:09 | |
| 29 | 05:34 | | 06:52 (6) | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | | | 09:01 | |
| | 21:45 | 47 | 07:39 (6) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | | | | 16:10 | |
| 30 | 05:36 | | 06:52 (6) | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | | | 09:01 | |
| | 21:43 | 47 | 07:39 (6) | 20:34 | | | 19:14 | | | 17:02 | 16:11 | | | | 16:11 | |
| 31 | 05:38 | | 06:52 (6) | 06:36 | | | | | | 07:34 | | | | | 09:01 | |
| | 21:41 | 48 | 07:40 (6) | 20:32 | | | | | | 17:00 | | | | | 16:12 | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | | 224 | |
| Total, worst case | | 926 | | | 916 | | | 427 | | | | 419 | | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,96 | | | 0,96 | | | 1,00 | | | | 0,74 | | | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,39 | | | | 0,12 | | | | |
| Total, real | | 425 | | | 446 | | | 165 | | | | 48 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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+8 621 66746
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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:17 (36) | 07:26 | | | 07:08 | | 18:59 (39) | 05:55 | | 06:45 (6) | 05:02 | | 06:51 (6) |
| | 16:14 | | | 17:08 | 25 | 09:42 (36) | 18:07 | | | 20:09 | 29 | 19:28 (39) | 21:08 | 46 | 07:31 (6) | 22:02 | 32 | 07:23 (6) |
| 2 | 09:00 | | | 08:26 | | 09:17 (36) | 07:24 | | | 07:05 | | 19:00 (39) | 05:53 | | 06:44 (6) | 05:01 | | 06:52 (6) |
| | 16:15 | | | 17:10 | 25 | 09:42 (36) | 18:09 | | | 20:11 | 28 | 19:28 (39) | 21:10 | 47 | 07:31 (6) | 22:03 | 30 | 07:22 (6) |
| 3 | 09:00 | | | 08:24 | | 09:18 (36) | 07:22 | | | 07:03 | | 19:00 (39) | 05:50 | | 06:43 (6) | 05:00 | | 06:53 (6) |
| | 16:16 | | | 17:12 | 24 | 09:42 (36) | 18:11 | | | 20:13 | 26 | 19:26 (39) | 21:12 | 48 | 07:31 (6) | 22:05 | 29 | 07:22 (6) |
| 4 | 09:00 | | | 08:22 | | 09:18 (36) | 07:19 | | | 07:00 | | 19:00 (39) | 05:48 | | 06:42 (6) | 04:59 | | 06:54 (6) |
| | 16:17 | | | 17:14 | 22 | 09:40 (36) | 18:13 | | | 20:15 | 25 | 19:25 (39) | 21:14 | 49 | 07:31 (6) | 22:06 | 28 | 07:22 (6) |
| 5 | 08:59 | | | 08:20 | | 09:19 (36) | 07:17 | | | 06:57 | | 19:01 (39) | 05:46 | | 06:42 (6) | 04:58 | | 06:55 (6) |
| | 16:19 | | | 17:16 | 21 | 09:40 (36) | 18:15 | | | 20:17 | 23 | 19:24 (39) | 21:16 | 49 | 07:31 (6) | 22:07 | 26 | 07:21 (6) |
| 6 | 08:59 | | | 08:18 | | 09:20 (36) | 07:14 | | | 06:55 | | 19:01 (39) | 05:44 | | 06:43 (6) | 04:57 | | 06:55 (6) |
| | 16:20 | | | 17:19 | 19 | 09:39 (36) | 18:17 | | | 20:19 | 21 | 19:22 (39) | 21:18 | 50 | 07:33 (6) | 22:08 | 25 | 07:20 (6) |
| 7 | 08:58 | | | 08:16 | | 09:21 (36) | 07:12 | | | 06:52 | | 19:03 (39) | 05:42 | | 06:42 (6) | 04:56 | | 06:57 (6) |
| | 16:21 | | | 17:21 | 17 | 09:38 (36) | 18:19 | | | 20:21 | 18 | 19:21 (39) | 21:20 | 50 | 07:32 (6) | 22:09 | 23 | 07:20 (6) |
| 8 | 08:58 | | | 08:14 | | 09:23 (36) | 07:09 | | | 06:50 | | 19:04 (39) | 05:40 | | 06:42 (6) | 04:56 | | 06:57 (6) |
| | 16:23 | | | 17:23 | 14 | 09:37 (36) | 18:22 | | | 20:23 | 14 | 19:18 (39) | 21:22 | 50 | 07:32 (6) | 22:10 | 22 | 07:19 (6) |
| 9 | 08:57 | | | 08:12 | | 09:26 (36) | 07:07 | | | 06:47 | | 19:08 (39) | 05:38 | | 06:42 (6) | 04:55 | | 06:59 (6) |
| | 16:24 | | | 17:25 | 9 | 09:35 (36) | 18:24 | | | 20:25 | 6 | 19:14 (39) | 21:24 | 50 | 07:32 (6) | 22:11 | 19 | 07:18 (6) |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:41 (6) | 04:54 | | 06:59 (6) |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 51 | 07:32 (6) | 22:12 | 18 | 07:17 (6) |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:41 (6) | 04:54 | | 07:01 (6) |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 51 | 07:32 (6) | 22:13 | 16 | 07:17 (6) |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:42 (6) | 04:53 | | 07:02 (6) |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 50 | 07:32 (6) | 22:14 | 14 | 07:16 (6) |
| 13 | 08:54 | | | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:42 (6) | 04:53 | | 07:03 (6) |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 50 | 07:32 (6) | 22:15 | 12 | 07:15 (6) |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:42 (6) | 04:53 | | 07:04 (6) |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 49 | 07:31 (6) | 22:15 | 10 | 07:14 (6) |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:42 (6) | 04:52 | | 07:05 (6) |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 50 | 07:32 (6) | 22:16 | 9 | 07:14 (6) |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:42 (6) | 04:52 | | 07:07 (6) |
| | 16:36 | | | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 49 | 07:31 (6) | 22:17 | 6 | 07:13 (6) |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:42 (6) | 04:52 | | 07:08 (6) |
| | 16:38 | | | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 48 | 07:30 (6) | 22:17 | 4 | 07:12 (6) |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:43 (6) | 04:52 | | |
| | 16:40 | | | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 47 | 07:30 (6) | 22:18 | | |
| 19 | 08:47 | | 09:23 (36) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:43 (6) | 04:52 | | |
| | 16:42 | 7 | 09:30 (36) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 46 | 07:29 (6) | 22:18 | | |
| 20 | 08:46 | | 09:20 (36) | 07:48 | | | 06:39 | | | 06:20 | | 07:07 (6) | 05:18 | | 06:44 (6) | 04:52 | | |
| | 16:44 | 12 | 09:32 (36) | 17:48 | | | 18:46 | | | 20:47 | 7 | 07:14 (6) | 21:44 | 45 | 07:29 (6) | 22:18 | | |
| 21 | 08:45 | | 09:20 (36) | 07:46 | | | 06:36 | | | 06:18 | | 07:00 (6) | 05:16 | | 06:45 (6) | 04:52 | | |
| | 16:46 | 14 | 09:34 (36) | 17:50 | | | 18:48 | | | 20:49 | 18 | 07:18 (6) | 21:45 | 44 | 07:29 (6) | 22:19 | | |
| 22 | 08:43 | | 09:18 (36) | 07:43 | | | 06:33 | | 18:16 (39) | 06:15 | | 06:57 (6) | 05:15 | | 06:44 (6) | 04:52 | | |
| | 16:48 | 17 | 09:35 (36) | 17:53 | | | 18:50 | 2 | 18:18 (39) | 20:51 | 24 | 07:21 (6) | 21:47 | 44 | 07:28 (6) | 22:19 | | |
| 23 | 08:42 | | 09:17 (36) | 07:41 | | | 06:31 | | 18:10 (39) | 06:13 | | 06:55 (6) | 05:13 | | 06:45 (6) | 04:53 | | |
| | 16:50 | 19 | 09:36 (36) | 17:55 | | | 18:52 | 13 | 18:23 (39) | 20:53 | 29 | 07:24 (6) | 21:49 | 43 | 07:28 (6) | 22:19 | | |
| 24 | 08:41 | | 09:18 (36) | 07:38 | | | 06:28 | | 18:08 (39) | 06:11 | | 06:53 (6) | 05:12 | | 06:46 (6) | 04:53 | | |
| | 16:51 | 20 | 09:38 (36) | 17:57 | | | 18:54 | 17 | 18:25 (39) | 20:55 | 33 | 07:26 (6) | 21:50 | 42 | 07:28 (6) | 22:19 | | |
| 25 | 08:39 | | 09:17 (36) | 07:36 | | | 06:26 | | 18:05 (39) | 06:08 | | 06:51 (6) | 05:10 | | 06:46 (6) | 04:53 | | 07:11 (6) |
| | 16:54 | 22 | 09:39 (36) | 17:59 | | | 18:56 | 21 | 18:26 (39) | 20:57 | 35 | 07:26 (6) | 21:52 | 41 | 07:27 (6) | 22:19 | 2 | 07:13 (6) |
| 26 | 08:37 | | 09:16 (36) | 07:34 | | | 06:23 | | 18:03 (39) | 06:06 | | 06:50 (6) | 05:09 | | 06:47 (6) | 04:54 | | 07:09 (6) |
| | 16:56 | 23 | 09:39 (36) | 18:01 | | | 18:57 | 24 | 18:27 (39) | 20:59 | 37 | 07:27 (6) | 21:53 | 39 | 07:26 (6) | 22:19 | 6 | 07:15 (6) |
| 27 | 08:36 | | 09:16 (36) | 07:31 | | | 06:21 | | 18:03 (39) | 06:04 | | 06:48 (6) | 05:08 | | 06:48 (6) | 04:54 | | 07:08 (6) |
| | 16:58 | 24 | 09:40 (36) | 18:03 | | | 18:59 | 25 | 18:28 (39) | 21:01 | 40 | 07:28 (6) | 21:55 | 38 | 07:26 (6) | 22:19 | 7 | 07:15 (6) |
| 28 | 08:34 | | 09:16 (36) | 07:29 | | | 06:18 | | 18:01 (39) | 06:02 | | 06:47 (6) | 05:06 | | 06:48 (6) | 04:55 | | 07:07 (6) |
| | 17:00 | 24 | 09:40 (36) | 18:05 | | | 19:01 | 27 | 18:28 (39) | 21:03 | 42 | 07:29 (6) | 21:57 | 38 | 07:26 (6) | 22:19 | 10 | 07:17 (6) |
| 29 | 08:33 | | 09:17 (36) | | | | 07:15 | | 19:01 (39) | 05:59 | | 06:47 (6) | 05:05 | | 06:49 (6) | 04:55 | | 07:07 (6) |
| | 17:02 | 25 | 09:42 (36) | | | | 20:03 | 28 | 19:29 (39) | 21:05 | 43 | 07:30 (6) | 21:58 | 36 | 07:25 (6) | 22:18 | 12 | 07:19 (6) |
| 30 | 08:31 | | 09:17 (36) | | | | 07:13 | | 19:00 (39) | 05:57 | | 06:46 (6) | 05:04 | | 06:50 (6) | 04:56 | | 07:06 (6) |
| | 17:04 | 25 | 09:42 (36) | | | | 20:05 | 28 | 19:28 (39) | 21:06 | 45 | 07:31 (6) | 21:59 | 35 | 07:25 (6) | 22:18 | 13 | 07:19 (6) |
| 31 | 08:29 | | 09:17 (36) | | | | 07:10 | | 19:00 (39) | | | | 05:03 | | 06:51 (6) | | | |
| | 17:06 | 25 | 09:42 (36) | | | | 20:07 | 28 | 19:28 (39) | | | | 22:01 | 33 | 07:24 (6) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 257 | | | 176 | | | 213 | | | 543 | | | 1408 | | | 373 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,73 | | | 0,73 | | | 1,00 | | | 0,98 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 33 | | | 31 | | | 71 | | | 205 | | | 688 | | | 170 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 07:05 (6) | 05:39 | | 06:52 (6) | 06:38 | | | 07:34 | | 07:36 | | | 08:35 |
| | 22:18 | 16 | 07:21 (6) | 21:40 | 51 | 07:43 (6) | 20:29 | | | 19:12 | | 16:58 | | | 16:10 |
| 2 | 04:57 | | 07:05 (6) | 05:41 | | 06:52 (6) | 06:39 | | | 07:36 | | 07:38 | | 08:55 (36) | 08:36 |
| | 22:17 | 17 | 07:22 (6) | 21:38 | 50 | 07:42 (6) | 20:27 | | | 19:09 | | 16:55 | 10 | 09:05 (36) | 16:09 |
| 3 | 04:58 | | 07:04 (6) | 05:43 | | 06:52 (6) | 06:41 | | 19:06 (39) | 07:38 | | 07:41 | | 08:52 (36) | 08:38 |
| | 22:17 | 18 | 07:22 (6) | 21:36 | 50 | 07:42 (6) | 20:24 | 6 | 19:12 (39) | 19:07 | | 16:53 | 15 | 09:07 (36) | 16:08 |
| 4 | 04:59 | | 07:03 (6) | 05:45 | | 06:52 (6) | 06:43 | | 19:02 (39) | 07:40 | | 07:43 | | 08:51 (36) | 08:40 |
| | 22:16 | 21 | 07:24 (6) | 21:34 | 51 | 07:43 (6) | 20:22 | 14 | 19:16 (39) | 19:04 | | 16:51 | 17 | 09:08 (36) | 16:07 |
| 5 | 05:00 | | 07:03 (6) | 05:47 | | 06:51 (6) | 06:45 | | 18:59 (39) | 07:42 | | 07:45 | | 08:49 (36) | 08:41 |
| | 22:16 | 22 | 07:25 (6) | 21:32 | 51 | 07:42 (6) | 20:19 | 18 | 19:17 (39) | 19:02 | | 16:49 | 20 | 09:09 (36) | 16:07 |
| 6 | 05:01 | | 07:02 (6) | 05:49 | | 06:52 (6) | 06:47 | | 18:57 (39) | 07:44 | | 07:47 | | 08:49 (36) | 08:43 |
| | 22:15 | 24 | 07:26 (6) | 21:30 | 50 | 07:42 (6) | 20:16 | 21 | 19:18 (39) | 18:59 | | 16:47 | 22 | 09:11 (36) | 16:06 |
| 7 | 05:02 | | 07:02 (6) | 05:50 | | 06:52 (6) | 06:49 | | 18:56 (39) | 07:46 | | 07:49 | | 08:48 (36) | 08:44 |
| | 22:14 | 25 | 07:27 (6) | 21:28 | 50 | 07:42 (6) | 20:14 | 23 | 19:19 (39) | 18:57 | | 16:45 | 23 | 09:11 (36) | 16:06 |
| 8 | 05:03 | | 07:01 (6) | 05:52 | | 06:53 (6) | 06:51 | | 18:55 (39) | 07:48 | | 07:51 | | 08:48 (36) | 08:45 |
| | 22:14 | 27 | 07:28 (6) | 21:25 | 49 | 07:42 (6) | 20:11 | 25 | 19:20 (39) | 18:54 | | 16:43 | 24 | 09:12 (36) | 16:05 |
| 9 | 05:04 | | 07:00 (6) | 05:54 | | 06:52 (6) | 06:53 | | 18:54 (39) | 07:50 | | 07:53 | | 08:47 (36) | 08:47 |
| | 22:13 | 29 | 07:29 (6) | 21:23 | 49 | 07:41 (6) | 20:09 | 27 | 19:21 (39) | 18:52 | | 16:41 | 25 | 09:12 (36) | 16:05 |
| 10 | 05:05 | | 07:00 (6) | 05:56 | | 06:53 (6) | 06:55 | | 18:52 (39) | 07:52 | | 07:55 | | 08:48 (36) | 08:48 |
| | 22:12 | 30 | 07:30 (6) | 21:21 | 47 | 07:40 (6) | 20:06 | 28 | 19:20 (39) | 18:49 | | 16:40 | 25 | 09:13 (36) | 16:04 |
| 11 | 05:07 | | 06:59 (6) | 05:58 | | 06:53 (6) | 06:56 | | 18:52 (39) | 07:54 | | 07:57 | | 08:48 (36) | 08:49 |
| | 22:11 | 31 | 07:30 (6) | 21:19 | 47 | 07:40 (6) | 20:04 | 28 | 19:20 (39) | 18:47 | | 16:38 | 25 | 09:13 (36) | 16:04 |
| 12 | 05:08 | | 06:59 (6) | 06:00 | | 06:53 (6) | 06:58 | | 18:51 (39) | 07:56 | | 07:59 | | 08:47 (36) | 08:50 |
| | 22:10 | 33 | 07:32 (6) | 21:17 | 46 | 07:39 (6) | 20:01 | 29 | 19:20 (39) | 18:44 | | 16:36 | 26 | 09:13 (36) | 16:04 |
| 13 | 05:09 | | 06:59 (6) | 06:02 | | 06:53 (6) | 07:00 | | 18:51 (39) | 07:58 | | 08:01 | | 08:49 (36) | 08:51 |
| | 22:09 | 34 | 07:33 (6) | 21:15 | 45 | 07:38 (6) | 19:58 | 28 | 19:19 (39) | 18:42 | | 16:34 | 24 | 09:13 (36) | 16:04 |
| 14 | 05:11 | | 06:58 (6) | 06:03 | | 06:54 (6) | 07:02 | | 18:51 (39) | 08:00 | | 08:03 | | 08:49 (36) | 08:52 |
| | 22:08 | 35 | 07:33 (6) | 21:12 | 43 | 07:37 (6) | 19:56 | 28 | 19:19 (39) | 18:39 | | 16:32 | 24 | 09:13 (36) | 16:03 |
| 15 | 05:12 | | 06:57 (6) | 06:05 | | 06:55 (6) | 07:04 | | 18:52 (39) | 08:02 | | 08:05 | | 08:49 (36) | 08:53 |
| | 22:06 | 37 | 07:34 (6) | 21:10 | 42 | 07:37 (6) | 19:53 | 26 | 19:18 (39) | 18:37 | | 16:31 | 24 | 09:13 (36) | 16:03 |
| 16 | 05:13 | | 06:57 (6) | 06:07 | | 06:56 (6) | 07:06 | | 18:51 (39) | 08:04 | | 08:07 | | 08:49 (36) | 08:54 |
| | 22:05 | 38 | 07:35 (6) | 21:08 | 40 | 07:36 (6) | 19:51 | 26 | 19:17 (39) | 18:34 | | 16:29 | 23 | 09:12 (36) | 16:03 |
| 17 | 05:15 | | 06:57 (6) | 06:09 | | 06:56 (6) | 07:08 | | 18:52 (39) | 08:06 | | 08:09 | | 08:50 (36) | 08:55 |
| | 22:04 | 39 | 07:36 (6) | 21:05 | 38 | 07:34 (6) | 19:48 | 23 | 19:15 (39) | 18:32 | | 16:27 | 22 | 09:12 (36) | 16:04 |
| 18 | 05:16 | | 06:56 (6) | 06:11 | | 06:58 (6) | 07:10 | | 18:52 (39) | 08:08 | | 08:11 | | 08:52 (36) | 08:56 |
| | 22:03 | 40 | 07:36 (6) | 21:03 | 34 | 07:32 (6) | 19:46 | 22 | 19:14 (39) | 18:29 | | 16:26 | 20 | 09:12 (36) | 16:04 |
| 19 | 05:18 | | 06:56 (6) | 06:13 | | 06:59 (6) | 07:12 | | 18:54 (39) | 08:10 | | 08:13 | | 08:52 (36) | 08:57 |
| | 22:01 | 41 | 07:37 (6) | 21:01 | 32 | 07:31 (6) | 19:43 | 18 | 19:12 (39) | 18:27 | | 16:24 | 19 | 09:11 (36) | 16:04 |
| 20 | 05:19 | | 06:55 (6) | 06:15 | | 07:01 (6) | 07:13 | | 18:56 (39) | 08:12 | | 08:15 | | 08:53 (36) | 08:57 |
| | 22:00 | 43 | 07:38 (6) | 20:58 | 28 | 07:29 (6) | 19:40 | 14 | 19:10 (39) | 18:25 | | 16:23 | 17 | 09:10 (36) | 16:04 |
| 21 | 05:21 | | 06:54 (6) | 06:17 | | 07:02 (6) | 07:15 | | 18:59 (39) | 08:14 | | 08:17 | | 08:55 (36) | 08:58 |
| | 21:58 | 44 | 07:38 (6) | 20:56 | 24 | 07:26 (6) | 19:38 | 7 | 19:06 (39) | 18:22 | | 16:21 | 14 | 09:09 (36) | 16:05 |
| 22 | 05:22 | | 06:55 (6) | 06:19 | | 07:06 (6) | 07:17 | | | 08:16 | | 08:19 | | 08:56 (36) | 08:59 |
| | 21:57 | 44 | 07:39 (6) | 20:54 | 16 | 07:22 (6) | 19:35 | | | 18:20 | | 16:20 | 12 | 09:08 (36) | 16:05 |
| 23 | 05:24 | | 06:54 (6) | 06:21 | | 07:12 (6) | 07:19 | | | 08:18 | | 08:21 | | 08:59 (36) | 08:59 |
| | 21:55 | 45 | 07:39 (6) | 20:51 | 4 | 07:16 (6) | 19:33 | | | 18:18 | | 16:19 | 7 | 09:06 (36) | 16:06 |
| 24 | 05:26 | | 06:54 (6) | 06:22 | | | 07:21 | | | 08:20 | | 08:23 | | | 09:00 |
| | 21:54 | 46 | 07:40 (6) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | | | 16:06 |
| 25 | 05:27 | | 06:53 (6) | 06:24 | | | 07:23 | | | 07:22 | | 08:24 | | | 09:00 |
| | 21:52 | 47 | 07:40 (6) | 20:46 | | | 19:27 | | | 17:13 | | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:53 (6) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | | | 09:00 |
| | 21:50 | 48 | 07:41 (6) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:53 (6) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 |
| | 21:49 | 49 | 07:42 (6) | 20:42 | | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 |
| 28 | 05:32 | | 06:52 (6) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 |
| | 21:47 | 49 | 07:41 (6) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 |
| 29 | 05:34 | | 06:53 (6) | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 |
| | 21:45 | 49 | 07:42 (6) | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 |
| 30 | 05:36 | | 06:52 (6) | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 |
| | 21:43 | 50 | 07:42 (6) | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 |
| 31 | 05:38 | | 06:52 (6) | 06:36 | | | | | | 07:34 | | | | | 09:01 |
| | 21:41 | 50 | 07:42 (6) | 20:32 | | | | | | 17:00 | | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 |
| Total, worst case | | 1121 | | | 937 | | | 411 | | | | | 438 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | |
| Wind dir. red. | | 0,97 | | | 0,97 | | | 1,00 | | | | | 0,73 | | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,39 | | | | | 0,11 | | |
| Total, real | | 515 | | | 456 | | | 159 | | | | | 50 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:37 (36) | 07:26 | | | 07:08 | | 18:56 (39) | 05:55 | | 06:58 (6) | 05:02 | | 07:10 (6) |
| | 16:14 | | | 17:08 | 18 | 09:55 (36) | 18:07 | | | 20:09 | 21 | 19:17 (39) | 21:08 | 57 | 07:55 (6) | 22:02 | 30 | 07:40 (6) |
| 2 | 09:00 | | | 08:26 | | 09:39 (36) | 07:24 | | | 07:05 | | 18:58 (39) | 05:53 | | 06:57 (6) | 05:01 | | 07:11 (6) |
| | 16:15 | | | 17:10 | 15 | 09:54 (36) | 18:09 | | | 20:11 | 17 | 19:15 (39) | 21:10 | 57 | 07:54 (6) | 22:03 | 28 | 07:39 (6) |
| 3 | 09:00 | | | 08:24 | | 09:41 (36) | 07:22 | | | 07:03 | | 18:59 (39) | 05:50 | | 06:57 (6) | 05:00 | | 07:12 (6) |
| | 16:16 | | | 17:12 | 11 | 09:52 (36) | 18:11 | | | 20:13 | 13 | 19:12 (39) | 21:12 | 57 | 07:54 (6) | 22:05 | 26 | 07:38 (6) |
| 4 | 09:00 | | | 08:22 | | | 07:19 | | | 07:00 | | 19:03 (39) | 05:48 | | 06:56 (6) | 04:59 | | 07:14 (6) |
| | 16:17 | | | 17:14 | | | 18:13 | | | 20:15 | 5 | 19:08 (39) | 21:14 | 58 | 07:54 (6) | 22:06 | 24 | 07:38 (6) |
| 5 | 08:59 | | | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | | 06:56 (6) | 04:58 | | 07:15 (6) |
| | 16:19 | | | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 57 | 07:53 (6) | 22:07 | 21 | 07:36 (6) |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 06:57 (6) | 04:57 | | 07:15 (6) |
| | 16:20 | | | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 57 | 07:54 (6) | 22:08 | 20 | 07:35 (6) |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | | 06:52 | | | 05:42 | | 06:57 (6) | 04:56 | | 07:17 (6) |
| | 16:21 | | | 17:21 | | | 18:19 | | | 20:21 | | | 21:20 | 57 | 07:54 (6) | 22:09 | 17 | 07:34 (6) |
| 8 | 08:58 | | 09:37 (36) | 08:14 | | | 07:09 | | | 06:50 | | | 05:40 | | 06:57 (6) | 04:56 | | 07:19 (6) |
| | 16:23 | 3 | 09:40 (36) | 17:23 | | | 18:22 | | | 20:23 | | | 21:22 | 57 | 07:54 (6) | 22:10 | 14 | 07:33 (6) |
| 9 | 08:57 | | 09:35 (36) | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | | 06:57 (6) | 04:55 | | 07:21 (6) |
| | 16:24 | 8 | 09:43 (36) | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 56 | 07:53 (6) | 22:11 | 11 | 07:32 (6) |
| 10 | 08:56 | | 09:34 (36) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:57 (6) | 04:54 | | 07:22 (6) |
| | 16:26 | 11 | 09:45 (36) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 56 | 07:53 (6) | 22:12 | 7 | 07:29 (6) |
| 11 | 08:56 | | 09:33 (36) | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:57 (6) | 04:54 | | |
| | 16:28 | 14 | 09:47 (36) | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 55 | 07:52 (6) | 22:13 | | |
| 12 | 08:55 | | 09:32 (36) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:58 (6) | 04:53 | | |
| | 16:29 | 16 | 09:48 (36) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 55 | 07:53 (6) | 22:14 | | |
| 13 | 08:54 | | 09:32 (36) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:57 (6) | 04:53 | | |
| | 16:31 | 17 | 09:49 (36) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 55 | 07:52 (6) | 22:15 | | |
| 14 | 08:53 | | 09:32 (36) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:57 (6) | 04:53 | | |
| | 16:33 | 19 | 09:51 (36) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 54 | 07:51 (6) | 22:15 | | |
| 15 | 08:52 | | 09:31 (36) | 07:59 | | | 06:51 | | | 06:32 | | 07:21 (6) | 05:26 | | 06:58 (6) | 04:52 | | |
| | 16:34 | 20 | 09:51 (36) | 17:38 | | | 18:36 | | | 20:37 | 16 | 07:37 (6) | 21:35 | 53 | 07:51 (6) | 22:16 | | |
| 16 | 08:51 | | 09:31 (36) | 07:57 | | | 06:49 | | | 06:30 | | 07:17 (6) | 05:25 | | 06:58 (6) | 04:52 | | |
| | 16:36 | 21 | 09:52 (36) | 17:40 | | | 18:38 | | | 20:39 | 24 | 07:41 (6) | 21:37 | 52 | 07:50 (6) | 22:17 | | |
| 17 | 08:50 | | 09:31 (36) | 07:55 | | | 06:46 | | | 06:27 | | 07:14 (6) | 05:23 | | 06:58 (6) | 04:52 | | |
| | 16:38 | 22 | 09:53 (36) | 17:42 | | | 18:40 | | | 20:41 | 30 | 07:44 (6) | 21:39 | 52 | 07:50 (6) | 22:17 | | |
| 18 | 08:49 | | 09:30 (36) | 07:52 | | | 06:44 | | | 06:25 | | 07:11 (6) | 05:21 | | 06:59 (6) | 04:52 | | |
| | 16:40 | 24 | 09:54 (36) | 17:44 | | | 18:42 | | | 20:43 | 34 | 07:45 (6) | 21:40 | 51 | 07:50 (6) | 22:18 | | |
| 19 | 08:47 | | 09:31 (36) | 07:50 | | | 06:41 | | 18:05 (39) | 06:23 | | 07:10 (6) | 05:19 | | 06:59 (6) | 04:52 | | |
| | 16:42 | 24 | 09:55 (36) | 17:46 | | | 18:44 | 12 | 18:17 (39) | 20:45 | 37 | 07:47 (6) | 21:42 | 49 | 07:48 (6) | 22:18 | | |
| 20 | 08:46 | | 09:30 (36) | 07:48 | | | 06:39 | | 18:02 (39) | 06:20 | | 07:08 (6) | 05:18 | | 07:00 (6) | 04:52 | | |
| | 16:44 | 25 | 09:55 (36) | 17:48 | | | 18:46 | 16 | 18:18 (39) | 20:47 | 41 | 07:49 (6) | 21:44 | 48 | 07:48 (6) | 22:18 | | |
| 21 | 08:45 | | 09:31 (36) | 07:46 | | | 06:36 | | 17:59 (39) | 06:18 | | 07:06 (6) | 05:16 | | 07:01 (6) | 04:52 | | |
| | 16:46 | 25 | 09:56 (36) | 17:50 | | | 18:48 | 20 | 18:19 (39) | 20:49 | 43 | 07:49 (6) | 21:45 | 47 | 07:48 (6) | 22:19 | | |
| 22 | 08:43 | | 09:31 (36) | 07:43 | | | 06:33 | | 17:58 (39) | 06:15 | | 07:05 (6) | 05:15 | | 07:01 (6) | 04:52 | | |
| | 16:48 | 25 | 09:56 (36) | 17:53 | | | 18:50 | 23 | 18:21 (39) | 20:51 | 45 | 07:50 (6) | 21:47 | 46 | 07:47 (6) | 22:19 | | |
| 23 | 08:42 | | 09:31 (36) | 07:41 | | | 06:31 | | 17:57 (39) | 06:13 | | 07:04 (6) | 05:13 | | 07:02 (6) | 04:53 | | |
| | 16:50 | 25 | 09:56 (36) | 17:55 | | | 18:52 | 24 | 18:21 (39) | 20:53 | 47 | 07:51 (6) | 21:49 | 45 | 07:47 (6) | 22:19 | | |
| 24 | 08:41 | | 09:32 (36) | 07:38 | | | 06:28 | | 17:56 (39) | 06:11 | | 07:03 (6) | 05:12 | | 07:03 (6) | 04:53 | | |
| | 16:51 | 25 | 09:57 (36) | 17:57 | | | 18:54 | 26 | 18:22 (39) | 20:55 | 49 | 07:52 (6) | 21:50 | 43 | 07:46 (6) | 22:19 | | |
| 25 | 08:39 | | 09:32 (36) | 07:36 | | | 06:26 | | 17:55 (39) | 06:08 | | 07:01 (6) | 05:10 | | 07:03 (6) | 04:53 | | |
| | 16:53 | 25 | 09:57 (36) | 17:59 | | | 18:56 | 27 | 18:22 (39) | 20:57 | 51 | 07:52 (6) | 21:52 | 42 | 07:45 (6) | 22:19 | | |
| 26 | 08:37 | | 09:32 (36) | 07:34 | | | 06:23 | | 17:54 (39) | 06:06 | | 07:01 (6) | 05:09 | | 07:04 (6) | 04:54 | | |
| | 16:56 | 25 | 09:57 (36) | 18:01 | | | 18:57 | 27 | 18:21 (39) | 20:59 | 52 | 07:53 (6) | 21:53 | 40 | 07:44 (6) | 22:19 | | |
| 27 | 08:36 | | 09:32 (36) | 07:31 | | | 06:21 | | 17:55 (39) | 06:04 | | 07:00 (6) | 05:08 | | 07:05 (6) | 04:54 | | |
| | 16:58 | 25 | 09:57 (36) | 18:03 | | | 18:59 | 26 | 18:21 (39) | 21:01 | 53 | 07:53 (6) | 21:55 | 39 | 07:44 (6) | 22:19 | | |
| 28 | 08:34 | | 09:33 (36) | 07:29 | | | 06:18 | | 17:54 (39) | 06:01 | | 07:00 (6) | 05:06 | | 07:06 (6) | 04:55 | | |
| | 17:00 | 23 | 09:56 (36) | 18:05 | | | 19:01 | 26 | 18:20 (39) | 21:03 | 54 | 07:54 (6) | 21:57 | 37 | 07:43 (6) | 22:19 | | |
| 29 | 08:33 | | 09:34 (36) | | | | 07:15 | | 18:55 (39) | 05:59 | | 06:59 (6) | 05:05 | | 07:07 (6) | 04:55 | | |
| | 17:02 | 23 | 09:57 (36) | | | | 20:03 | 25 | 19:20 (39) | 21:05 | 55 | 07:54 (6) | 21:58 | 35 | 07:42 (6) | 22:18 | | |
| 30 | 08:31 | | 09:35 (36) | | | | 07:13 | | 18:55 (39) | 05:57 | | 06:59 (6) | 05:04 | | 07:08 (6) | 04:56 | | |
| | 17:04 | 22 | 09:57 (36) | | | | 20:05 | 24 | 19:19 (39) | 21:06 | 55 | 07:54 (6) | 21:59 | 34 | 07:42 (6) | 22:18 | | |
| 31 | 08:29 | | 09:36 (36) | | | | 07:10 | | 18:56 (39) | | | | 05:03 | | 07:09 (6) | | | |
| | 17:06 | 20 | 09:56 (36) | | | | 20:07 | 22 | 19:18 (39) | | | | 22:01 | 32 | 07:41 (6) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 487 | | | 44 | | | 298 | | | 742 | | | 1533 | | | 198 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,68 | | | 0,68 | | | 1,00 | | | 0,98 | | | 0,98 | | | 0,98 | |
| Total reduction | | 0,12 | | | 0,16 | | | 0,33 | | | 0,38 | | | 0,49 | | | 0,46 | |
| Total, real | | 58 | | | 7 | | | 98 | | | 278 | | | 754 | | | 91 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:08 (6) | 06:38 | | | 07:34 | 07:36 | | | 08:35 | | 09:15 (36) |
| | 22:18 | | | 21:40 | 55 | 08:03 (6) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 14 | 09:29 (36) |
| 2 | 04:57 | | 07:29 (6) | 05:41 | | 07:07 (6) | 06:39 | | | 07:36 | 07:38 | | | 08:36 | | 09:17 (36) |
| | 22:17 | 4 | 07:33 (6) | 21:38 | 56 | 08:03 (6) | 20:27 | | | 19:09 | 16:55 | | | 16:09 | 11 | 09:28 (36) |
| 3 | 04:58 | | 07:26 (6) | 05:43 | | 07:07 (6) | 06:41 | | | 07:38 | 07:41 | | | 08:38 | | 09:19 (36) |
| | 22:17 | 9 | 07:35 (6) | 21:36 | 56 | 08:03 (6) | 20:24 | | | 19:07 | 16:53 | | | 16:08 | 8 | 09:27 (36) |
| 4 | 04:59 | | 07:24 (6) | 05:45 | | 07:07 (6) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:21 (36) |
| | 22:16 | 13 | 07:37 (6) | 21:34 | 57 | 08:04 (6) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 4 | 09:25 (36) |
| 5 | 05:00 | | 07:23 (6) | 05:47 | | 07:06 (6) | 06:45 | | | 07:42 | 07:45 | | | 08:41 | | |
| | 22:16 | 16 | 07:39 (6) | 21:32 | 57 | 08:03 (6) | 20:19 | | | 19:02 | 16:49 | | | 16:07 | | |
| 6 | 05:01 | | 07:22 (6) | 05:49 | | 07:06 (6) | 06:47 | | | 07:44 | 07:47 | | | 08:43 | | |
| | 22:15 | 19 | 07:41 (6) | 21:30 | 57 | 08:03 (6) | 20:16 | | | 18:59 | 16:47 | | | 16:06 | | |
| 7 | 05:02 | | 07:21 (6) | 05:50 | | 07:06 (6) | 06:49 | | | 07:46 | 07:49 | | 09:16 (36) | 08:44 | | |
| | 22:14 | 21 | 07:42 (6) | 21:28 | 58 | 08:04 (6) | 20:14 | | | 18:57 | 16:45 | 1 | 09:17 (36) | 16:05 | | |
| 8 | 05:03 | | 07:20 (6) | 05:52 | | 07:07 (6) | 06:51 | | 18:59 (39) | 07:48 | 07:51 | | 09:11 (36) | 08:45 | | |
| | 22:14 | 23 | 07:43 (6) | 21:25 | 57 | 08:04 (6) | 20:11 | 3 | 19:02 (39) | 18:54 | 16:43 | 11 | 09:22 (36) | 16:05 | | |
| 9 | 05:04 | | 07:20 (6) | 05:54 | | 07:06 (6) | 06:53 | | 18:54 (39) | 07:50 | 07:53 | | 09:08 (36) | 08:47 | | |
| | 22:13 | 25 | 07:45 (6) | 21:23 | 57 | 08:03 (6) | 20:09 | 12 | 19:06 (39) | 18:52 | 16:41 | 16 | 09:24 (36) | 16:05 | | |
| 10 | 05:05 | | 07:19 (6) | 05:56 | | 07:06 (6) | 06:55 | | 18:50 (39) | 07:52 | 07:55 | | 09:08 (36) | 08:48 | | |
| | 22:12 | 27 | 07:46 (6) | 21:21 | 57 | 08:03 (6) | 20:06 | 17 | 19:07 (39) | 18:49 | 16:40 | 18 | 09:26 (36) | 16:04 | | |
| 11 | 05:07 | | 07:18 (6) | 05:58 | | 07:06 (6) | 06:56 | | 18:48 (39) | 07:54 | 07:57 | | 09:07 (36) | 08:49 | | |
| | 22:11 | 29 | 07:47 (6) | 21:19 | 57 | 08:03 (6) | 20:04 | 21 | 19:09 (39) | 18:47 | 16:38 | 20 | 09:27 (36) | 16:04 | | |
| 12 | 05:08 | | 07:18 (6) | 06:00 | | 07:06 (6) | 06:58 | | 18:47 (39) | 07:56 | 07:59 | | 09:06 (36) | 08:50 | | |
| | 22:10 | 31 | 07:49 (6) | 21:17 | 56 | 08:02 (6) | 20:01 | 23 | 19:10 (39) | 18:44 | 16:36 | 21 | 09:27 (36) | 16:04 | | |
| 13 | 05:09 | | 07:17 (6) | 06:02 | | 07:06 (6) | 07:00 | | 18:46 (39) | 07:58 | 08:01 | | 09:06 (36) | 08:51 | | |
| | 22:09 | 33 | 07:50 (6) | 21:15 | 56 | 08:02 (6) | 19:58 | 24 | 19:10 (39) | 18:42 | 16:34 | 23 | 09:29 (36) | 16:04 | | |
| 14 | 05:11 | | 07:16 (6) | 06:03 | | 07:07 (6) | 07:02 | | 18:45 (39) | 08:00 | 08:03 | | 09:06 (36) | 08:52 | | |
| | 22:08 | 34 | 07:50 (6) | 21:12 | 54 | 08:01 (6) | 19:56 | 26 | 19:11 (39) | 18:39 | 16:32 | 23 | 09:29 (36) | 16:03 | | |
| 15 | 05:12 | | 07:15 (6) | 06:05 | | 07:07 (6) | 07:04 | | 18:45 (39) | 08:02 | 08:05 | | 09:05 (36) | 08:53 | | |
| | 22:06 | 36 | 07:51 (6) | 21:10 | 54 | 08:01 (6) | 19:53 | 26 | 19:11 (39) | 18:37 | 16:31 | 25 | 09:30 (36) | 16:03 | | |
| 16 | 05:13 | | 07:15 (6) | 06:07 | | 07:08 (6) | 07:06 | | 18:43 (39) | 08:04 | 08:07 | | 09:05 (36) | 08:54 | | |
| | 22:05 | 38 | 07:53 (6) | 21:08 | 53 | 08:01 (6) | 19:51 | 27 | 19:10 (39) | 18:34 | 16:29 | 25 | 09:30 (36) | 16:03 | | |
| 17 | 05:15 | | 07:14 (6) | 06:09 | | 07:07 (6) | 07:08 | | 18:43 (39) | 08:06 | 08:09 | | 09:05 (36) | 08:55 | | |
| | 22:04 | 39 | 07:53 (6) | 21:05 | 52 | 07:59 (6) | 19:48 | 27 | 19:10 (39) | 18:32 | 16:27 | 25 | 09:30 (36) | 16:04 | | |
| 18 | 05:16 | | 07:13 (6) | 06:11 | | 07:08 (6) | 07:10 | | 18:43 (39) | 08:08 | 08:11 | | 09:06 (36) | 08:56 | | |
| | 22:03 | 41 | 07:54 (6) | 21:03 | 50 | 07:58 (6) | 19:46 | 26 | 19:09 (39) | 18:29 | 16:26 | 25 | 09:31 (36) | 16:04 | | |
| 19 | 05:18 | | 07:13 (6) | 06:13 | | 07:09 (6) | 07:12 | | 18:43 (39) | 08:10 | 08:13 | | 09:06 (36) | 08:57 | | |
| | 22:01 | 43 | 07:56 (6) | 21:01 | 49 | 07:58 (6) | 19:43 | 26 | 19:09 (39) | 18:27 | 16:24 | 25 | 09:31 (36) | 16:04 | | |
| 20 | 05:19 | | 07:12 (6) | 06:15 | | 07:10 (6) | 07:13 | | 18:43 (39) | 08:12 | 08:15 | | 09:06 (36) | 08:57 | | |
| | 22:00 | 44 | 07:56 (6) | 20:58 | 47 | 07:57 (6) | 19:40 | 25 | 19:08 (39) | 18:25 | 16:23 | 25 | 09:31 (36) | 16:04 | | |
| 21 | 05:21 | | 07:12 (6) | 06:17 | | 07:10 (6) | 07:15 | | 18:44 (39) | 08:14 | 08:17 | | 09:06 (36) | 08:58 | | |
| | 21:58 | 44 | 07:56 (6) | 20:56 | 45 | 07:55 (6) | 19:38 | 23 | 19:07 (39) | 18:22 | 16:21 | 25 | 09:31 (36) | 16:05 | | |
| 22 | 05:22 | | 07:12 (6) | 06:19 | | 07:11 (6) | 07:17 | | 18:45 (39) | 08:16 | 08:19 | | 09:06 (36) | 08:59 | | |
| | 21:57 | 46 | 07:58 (6) | 20:54 | 43 | 07:54 (6) | 19:35 | 20 | 19:05 (39) | 18:20 | 16:20 | 25 | 09:31 (36) | 16:05 | | |
| 23 | 05:24 | | 07:11 (6) | 06:21 | | 07:12 (6) | 07:19 | | 18:46 (39) | 08:18 | 08:21 | | 09:07 (36) | 08:59 | | |
| | 21:55 | 47 | 07:58 (6) | 20:51 | 40 | 07:52 (6) | 19:33 | 18 | 19:04 (39) | 18:18 | 16:19 | 24 | 09:31 (36) | 16:06 | | |
| 24 | 05:26 | | 07:11 (6) | 06:22 | | 07:14 (6) | 07:21 | | 18:47 (39) | 08:20 | 08:23 | | 09:08 (36) | 09:00 | | |
| | 21:54 | 48 | 07:59 (6) | 20:49 | 37 | 07:51 (6) | 19:30 | 13 | 19:00 (39) | 18:15 | 16:17 | 23 | 09:31 (36) | 16:06 | | |
| 25 | 05:27 | | 07:10 (6) | 06:24 | | 07:15 (6) | 07:23 | | 18:50 (39) | 07:22 | 08:24 | | 09:08 (36) | 09:00 | | |
| | 21:52 | 49 | 07:59 (6) | 20:46 | 34 | 07:49 (6) | 19:27 | 6 | 18:56 (39) | 17:13 | 16:16 | 23 | 09:31 (36) | 16:07 | | |
| 26 | 05:29 | | 07:10 (6) | 06:26 | | 07:17 (6) | 07:25 | | | 07:24 | 08:26 | | 09:09 (36) | 09:00 | | |
| | 21:50 | 50 | 08:00 (6) | 20:44 | 28 | 07:45 (6) | 19:25 | | | 17:11 | 16:15 | 21 | 09:30 (36) | 16:08 | | |
| 27 | 05:31 | | 07:10 (6) | 06:28 | | 07:19 (6) | 07:27 | | | 07:26 | 08:28 | | 09:10 (36) | 09:00 | | |
| | 21:49 | 51 | 08:01 (6) | 20:42 | 24 | 07:43 (6) | 19:22 | | | 17:08 | 16:14 | 20 | 09:30 (36) | 16:08 | | |
| 28 | 05:32 | | 07:09 (6) | 06:30 | | 07:23 (6) | 07:29 | | | 07:28 | 08:30 | | 09:11 (36) | 09:01 | | |
| | 21:47 | 52 | 08:01 (6) | 20:39 | 16 | 07:39 (6) | 19:20 | | | 17:06 | 16:13 | 19 | 09:30 (36) | 16:09 | | |
| 29 | 05:34 | | 07:09 (6) | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | 09:12 (36) | 09:01 | | |
| | 21:45 | 53 | 08:02 (6) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | 18 | 09:30 (36) | 16:10 | | |
| 30 | 05:36 | | 07:08 (6) | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | 09:13 (36) | 09:01 | | |
| | 21:43 | 54 | 08:02 (6) | 20:34 | | | 19:14 | | | 17:02 | 16:11 | 16 | 09:29 (36) | 16:11 | | |
| 31 | 05:38 | | 07:08 (6) | 06:36 | | | | | | 07:34 | | | | 09:01 | | |
| | 21:41 | 54 | 08:02 (6) | 20:32 | | | | | | 17:00 | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 1073 | | | 1362 | | | 363 | | | | 497 | | | 37 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,98 | | | 1,00 | | | | 0,68 | | | 0,68 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | 0,10 | | | 0,09 | |
| Total, real | | 496 | | | 668 | | | 139 | | | | 52 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:42 (36) | 07:26 | | 07:08 | 18:55 (39) | 05:55 | 07:07 (6) | 05:02 |
| | 16:14 | | 17:08 13 | 09:55 (36) | 18:07 | | 20:09 15 | 19:10 (39) | 21:08 57 | 08:04 (6) | 22:02 |
| 2 | 09:00 | | 08:26 | 09:45 (36) | 07:24 | | 07:05 | 18:59 (39) | 05:53 | 07:06 (6) | 05:01 |
| | 16:15 | | 17:10 7 | 09:52 (36) | 18:09 | | 20:11 9 | 19:08 (39) | 21:10 56 | 08:02 (6) | 22:03 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 05:50 | 07:05 (6) | 05:00 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 57 | 08:02 (6) | 22:05 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:48 | 07:06 (6) | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | | 21:14 56 | 08:02 (6) | 22:06 |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:57 | | 05:46 | 07:06 (6) | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | | 21:16 55 | 08:01 (6) | 22:07 |
| 6 | 08:59 | 09:38 (36) | 08:18 | | 07:14 | | 06:55 | | 05:44 | 07:07 (6) | 04:57 |
| | 16:20 6 | 09:44 (36) | 17:19 | | 18:17 | | 20:19 | | 21:18 55 | 08:02 (6) | 22:08 |
| 7 | 08:58 | 09:36 (36) | 08:16 | | 07:12 | | 06:52 | | 05:42 | 07:07 (6) | 04:56 |
| | 16:21 10 | 09:46 (36) | 17:21 | | 18:19 | | 20:21 | | 21:20 54 | 08:01 (6) | 22:09 |
| 8 | 08:58 | 09:35 (36) | 08:14 | | 07:09 | | 06:50 | | 05:40 | 07:07 (6) | 04:56 |
| | 16:23 12 | 09:47 (36) | 17:23 | | 18:22 | | 20:23 | | 21:22 54 | 08:01 (6) | 22:10 |
| 9 | 08:57 | 09:35 (36) | 08:12 | | 07:07 | | 06:47 | | 05:38 | 07:07 (6) | 04:55 |
| | 16:24 14 | 09:49 (36) | 17:25 | | 18:24 | | 20:25 | | 21:24 53 | 08:00 (6) | 22:11 |
| 10 | 08:56 | 09:34 (36) | 08:10 | | 07:04 | | 06:45 | | 05:36 | 07:07 (6) | 04:54 |
| | 16:26 16 | 09:50 (36) | 17:27 | | 18:26 | | 20:27 | | 21:26 52 | 07:59 (6) | 22:12 |
| 11 | 08:56 | 09:34 (36) | 08:08 | | 07:02 | | 06:42 | 07:31 (6) | 05:34 | 07:07 (6) | 04:54 |
| | 16:28 17 | 09:51 (36) | 17:29 | | 18:28 | | 20:29 17 | 07:48 (6) | 21:28 51 | 07:58 (6) | 22:13 |
| 12 | 08:55 | 09:33 (36) | 08:06 | | 06:59 | | 06:40 | 07:27 (6) | 05:32 | 07:09 (6) | 04:53 |
| | 16:29 19 | 09:52 (36) | 17:31 | | 18:30 | | 20:31 25 | 07:52 (6) | 21:29 49 | 07:58 (6) | 22:14 |
| 13 | 08:54 | 09:33 (36) | 08:03 | | 06:56 | | 06:37 | 07:23 (6) | 05:30 | 07:09 (6) | 04:53 |
| | 16:31 20 | 09:53 (36) | 17:33 | | 18:32 | | 20:33 31 | 07:54 (6) | 21:31 48 | 07:57 (6) | 22:15 |
| 14 | 08:53 | 09:33 (36) | 08:01 | | 06:54 | | 06:35 | 07:21 (6) | 05:28 | 07:09 (6) | 04:53 |
| | 16:33 21 | 09:54 (36) | 17:36 | | 18:34 | | 20:35 35 | 07:56 (6) | 21:33 47 | 07:56 (6) | 22:15 |
| 15 | 08:52 | 09:33 (36) | 07:59 | | 06:51 | | 06:32 | 07:19 (6) | 05:26 | 07:10 (6) | 04:52 |
| | 16:34 21 | 09:54 (36) | 17:38 | | 18:36 | | 20:37 38 | 07:57 (6) | 21:35 46 | 07:56 (6) | 22:16 |
| 16 | 08:51 | 09:33 (36) | 07:57 | | 06:49 | | 06:30 | 07:17 (6) | 05:25 | 07:11 (6) | 04:52 |
| | 16:36 23 | 09:56 (36) | 17:40 | | 18:38 | | 20:39 41 | 07:58 (6) | 21:37 44 | 07:55 (6) | 22:17 |
| 17 | 08:50 | 09:33 (36) | 07:55 | | 06:46 | 18:03 (39) | 06:27 | 07:16 (6) | 05:23 | 07:11 (6) | 04:52 |
| | 16:38 24 | 09:57 (36) | 17:42 | | 18:40 9 | 18:12 (39) | 20:41 44 | 08:00 (6) | 21:39 43 | 07:54 (6) | 22:17 |
| 18 | 08:49 | 09:33 (36) | 07:52 | | 06:44 | 17:59 (39) | 06:25 | 07:14 (6) | 05:21 | 07:12 (6) | 04:52 |
| | 16:40 24 | 09:57 (36) | 17:44 | | 18:42 15 | 18:14 (39) | 20:43 46 | 08:00 (6) | 21:40 41 | 07:53 (6) | 22:18 |
| 19 | 08:47 | 09:33 (36) | 07:50 | | 06:41 | 17:58 (39) | 06:23 | 07:13 (6) | 05:19 | 07:13 (6) | 04:52 |
| | 16:42 25 | 09:58 (36) | 17:46 | | 18:44 19 | 18:17 (39) | 20:45 48 | 08:01 (6) | 21:42 39 | 07:52 (6) | 22:18 |
| 20 | 08:46 | 09:33 (36) | 07:48 | | 06:39 | 17:56 (39) | 06:20 | 07:12 (6) | 05:18 | 07:14 (6) | 04:52 |
| | 16:44 25 | 09:58 (36) | 17:48 | | 18:46 21 | 18:17 (39) | 20:47 50 | 08:02 (6) | 21:44 37 | 07:51 (6) | 22:18 |
| 21 | 08:45 | 09:34 (36) | 07:46 | | 06:36 | 17:54 (39) | 06:18 | 07:11 (6) | 05:16 | 07:16 (6) | 04:52 |
| | 16:46 25 | 09:59 (36) | 17:50 | | 18:48 24 | 18:18 (39) | 20:49 51 | 08:02 (6) | 21:45 35 | 07:51 (6) | 22:19 |
| 22 | 08:43 | 09:34 (36) | 07:43 | | 06:33 | 17:54 (39) | 06:15 | 07:10 (6) | 05:15 | 07:16 (6) | 04:52 |
| | 16:48 25 | 09:59 (36) | 17:53 | | 18:50 25 | 18:19 (39) | 20:51 53 | 08:03 (6) | 21:47 33 | 07:49 (6) | 22:19 |
| 23 | 08:42 | 09:33 (36) | 07:41 | | 06:31 | 17:52 (39) | 06:13 | 07:10 (6) | 05:13 | 07:18 (6) | 04:53 |
| | 16:50 26 | 09:59 (36) | 17:55 | | 18:52 26 | 18:18 (39) | 20:53 53 | 08:03 (6) | 21:49 30 | 07:48 (6) | 22:19 |
| 24 | 08:41 | 09:35 (36) | 07:38 | | 06:28 | 17:52 (39) | 06:11 | 07:09 (6) | 05:12 | 07:19 (6) | 04:53 |
| | 16:51 24 | 09:59 (36) | 17:57 | | 18:54 27 | 18:19 (39) | 20:55 55 | 08:04 (6) | 21:50 28 | 07:47 (6) | 22:19 |
| 25 | 08:39 | 09:35 (36) | 07:36 | | 06:26 | 17:52 (39) | 06:08 | 07:08 (6) | 05:10 | 07:20 (6) | 04:53 |
| | 16:53 24 | 09:59 (36) | 17:59 | | 18:56 26 | 18:18 (39) | 20:57 55 | 08:03 (6) | 21:52 25 | 07:45 (6) | 22:19 |
| 26 | 08:37 | 09:35 (36) | 07:34 | | 06:23 | 17:51 (39) | 06:06 | 07:07 (6) | 05:09 | 07:22 (6) | 04:54 |
| | 16:56 24 | 09:59 (36) | 18:01 | | 18:57 26 | 18:17 (39) | 20:59 56 | 08:03 (6) | 21:53 21 | 07:43 (6) | 22:19 |
| 27 | 08:36 | 09:36 (36) | 07:31 | | 06:21 | 17:51 (39) | 06:04 | 07:07 (6) | 05:08 | 07:24 (6) | 04:54 |
| | 16:58 23 | 09:59 (36) | 18:03 | | 18:59 26 | 18:17 (39) | 21:01 56 | 08:03 (6) | 21:55 17 | 07:41 (6) | 22:19 |
| 28 | 08:34 | 09:36 (36) | 07:29 | | 06:18 | 17:51 (39) | 06:01 | 07:07 (6) | 05:06 | 07:27 (6) | 04:55 |
| | 17:00 22 | 09:58 (36) | 18:05 | | 19:01 25 | 18:16 (39) | 21:03 57 | 08:04 (6) | 21:57 12 | 07:39 (6) | 22:19 |
| 29 | 08:33 | 09:38 (36) | | | 07:15 | 18:52 (39) | 05:59 | 07:07 (6) | 05:05 | 07:32 (6) | 04:55 |
| | 17:02 20 | 09:58 (36) | | | 20:03 24 | 19:16 (39) | 21:05 57 | 08:04 (6) | 21:58 2 | 07:34 (6) | 22:18 |
| 30 | 08:31 | 09:39 (36) | | | 07:13 | 18:53 (39) | 05:57 | 07:07 (6) | 05:04 | | 04:56 |
| | 17:04 19 | 09:58 (36) | | | 20:05 21 | 19:14 (39) | 21:06 57 | 08:04 (6) | 21:59 | | 22:18 |
| 31 | 08:29 | 09:40 (36) | | | 07:10 | 18:54 (39) | | | 05:03 | | |
| | 17:06 17 | 09:57 (36) | | | 20:07 19 | 19:13 (39) | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 |
| Total, worst case | 526 | | 20 | | 333 | | 949 | | 1197 | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | 0,67 | | 0,67 | | 0,99 | | 0,99 | | 0,99 | | |
| Total reduction | 0,12 | | 0,16 | | 0,33 | | 0,38 | | 0,49 | | |
| Total, real | 61 | | 3 | | 109 | | 357 | | 590 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:19 (6) | 06:38 | | 07:30 (6) | 07:34 | 07:36 | | | 08:35 | | 09:16 (36) |
| | 22:18 | | | 21:40 | 50 | 08:09 (6) | 20:29 | 17 | 07:47 (6) | 19:12 | 16:58 | | | 16:10 | 17 | 09:33 (36) |
| 2 | 04:57 | | | 05:41 | | 07:18 (6) | 06:39 | | | 07:36 | 07:38 | | | 08:36 | | 09:17 (36) |
| | 22:17 | | | 21:38 | 51 | 08:09 (6) | 20:27 | | | 19:09 | 16:55 | | | 16:09 | 16 | 09:33 (36) |
| 3 | 04:58 | | | 05:43 | | 07:17 (6) | 06:41 | | | 07:38 | 07:41 | | | 08:38 | | 09:19 (36) |
| | 22:17 | | | 21:36 | 53 | 08:10 (6) | 20:24 | | | 19:07 | 16:53 | | | 16:08 | 14 | 09:33 (36) |
| 4 | 04:59 | | | 05:45 | | 07:17 (6) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:19 (36) |
| | 22:16 | | | 21:34 | 53 | 08:10 (6) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 12 | 09:31 (36) |
| 5 | 05:00 | | | 05:47 | | 07:16 (6) | 06:45 | | | 07:42 | 07:45 | | | 08:41 | | 09:21 (36) |
| | 22:16 | | | 21:32 | 54 | 08:10 (6) | 20:19 | | | 19:02 | 16:49 | | | 16:07 | 10 | 09:31 (36) |
| 6 | 05:01 | | | 05:49 | | 07:16 (6) | 06:47 | | | 07:44 | 07:47 | | | 08:43 | | 09:22 (36) |
| | 22:15 | | | 21:30 | 55 | 08:11 (6) | 20:16 | | | 18:59 | 16:47 | | | 16:06 | 7 | 09:29 (36) |
| 7 | 05:02 | | | 05:50 | | 07:16 (6) | 06:49 | | | 07:46 | 07:49 | | | 08:44 | | |
| | 22:14 | | | 21:28 | 55 | 08:11 (6) | 20:14 | | | 18:57 | 16:45 | | | 16:05 | | |
| 8 | 05:03 | | | 05:52 | | 07:16 (6) | 06:51 | | | 07:48 | 07:51 | | | 08:45 | | |
| | 22:14 | | | 21:25 | 56 | 08:12 (6) | 20:11 | | | 18:54 | 16:43 | | | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 07:15 (6) | 06:53 | | | 07:50 | 07:53 | | 09:15 (36) | 08:47 | | |
| | 22:13 | | | 21:23 | 56 | 08:11 (6) | 20:09 | | | 18:52 | 16:41 | 8 | 09:23 (36) | 16:05 | | |
| 10 | 05:05 | | | 05:56 | | 07:15 (6) | 06:55 | | 18:51 (39) | 07:52 | 07:55 | | 09:13 (36) | 08:48 | | |
| | 22:12 | | | 21:21 | 57 | 08:12 (6) | 20:06 | 8 | 18:59 (39) | 18:49 | 16:40 | 13 | 09:26 (36) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 07:15 (6) | 06:56 | | 18:48 (39) | 07:54 | 07:57 | | 09:11 (36) | 08:49 | | |
| | 22:11 | | | 21:19 | 57 | 08:12 (6) | 20:04 | 14 | 19:02 (39) | 18:47 | 16:38 | 17 | 09:28 (36) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 07:14 (6) | 06:58 | | 18:46 (39) | 07:56 | 07:59 | | 09:10 (36) | 08:50 | | |
| | 22:10 | | | 21:17 | 57 | 08:11 (6) | 20:01 | 18 | 19:04 (39) | 18:44 | 16:36 | 19 | 09:29 (36) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 07:14 (6) | 07:00 | | 18:44 (39) | 07:58 | 08:01 | | 09:10 (36) | 08:51 | | |
| | 22:09 | | | 21:15 | 57 | 08:11 (6) | 19:58 | 21 | 19:05 (39) | 18:42 | 16:34 | 20 | 09:30 (36) | 16:04 | | |
| 14 | 05:10 | | | 06:03 | | 07:14 (6) | 07:02 | | 18:43 (39) | 08:00 | 08:03 | | 09:09 (36) | 08:52 | | |
| | 22:08 | | | 21:12 | 57 | 08:11 (6) | 19:56 | 23 | 19:06 (39) | 18:39 | 16:32 | 22 | 09:31 (36) | 16:03 | | |
| 15 | 05:12 | | 07:37 (6) | 06:05 | | 07:15 (6) | 07:04 | | 18:42 (39) | 08:02 | 08:05 | | 09:08 (36) | 08:53 | | |
| | 22:06 | 9 | 07:46 (6) | 21:10 | 56 | 08:11 (6) | 19:53 | 24 | 19:06 (39) | 18:37 | 16:31 | 24 | 09:32 (36) | 16:03 | | |
| 16 | 05:13 | | 07:35 (6) | 06:07 | | 07:15 (6) | 07:06 | | 18:40 (39) | 08:04 | 08:07 | | 09:08 (36) | 08:54 | | |
| | 22:05 | 15 | 07:50 (6) | 21:08 | 56 | 08:11 (6) | 19:51 | 26 | 19:06 (39) | 18:34 | 16:29 | 24 | 09:32 (36) | 16:03 | | |
| 17 | 05:15 | | 07:32 (6) | 06:09 | | 07:14 (6) | 07:08 | | 18:39 (39) | 08:06 | 08:09 | | 09:08 (36) | 08:55 | | |
| | 22:04 | 20 | 07:52 (6) | 21:05 | 56 | 08:10 (6) | 19:48 | 27 | 19:06 (39) | 18:32 | 16:27 | 24 | 09:32 (36) | 16:04 | | |
| 18 | 05:16 | | 07:30 (6) | 06:11 | | 07:14 (6) | 07:10 | | 18:39 (39) | 08:08 | 08:11 | | 09:09 (36) | 08:56 | | |
| | 22:03 | 23 | 07:53 (6) | 21:03 | 56 | 08:10 (6) | 19:46 | 27 | 19:06 (39) | 18:29 | 16:26 | 24 | 09:33 (36) | 16:04 | | |
| 19 | 05:18 | | 07:30 (6) | 06:13 | | 07:15 (6) | 07:12 | | 18:39 (39) | 08:10 | 08:13 | | 09:08 (36) | 08:57 | | |
| | 22:01 | 26 | 07:56 (6) | 21:01 | 54 | 08:09 (6) | 19:43 | 26 | 19:05 (39) | 18:27 | 16:24 | 26 | 09:34 (36) | 16:04 | | |
| 20 | 05:19 | | 07:28 (6) | 06:15 | | 07:15 (6) | 07:13 | | 18:39 (39) | 08:12 | 08:15 | | 09:09 (36) | 08:57 | | |
| | 22:00 | 29 | 07:57 (6) | 20:58 | 54 | 08:09 (6) | 19:40 | 26 | 19:05 (39) | 18:25 | 16:23 | 25 | 09:34 (36) | 16:04 | | |
| 21 | 05:21 | | 07:26 (6) | 06:17 | | 07:15 (6) | 07:15 | | 18:39 (39) | 08:14 | 08:17 | | 09:09 (36) | 08:58 | | |
| | 21:58 | 32 | 07:58 (6) | 20:56 | 52 | 08:07 (6) | 19:38 | 25 | 19:04 (39) | 18:22 | 16:21 | 25 | 09:34 (36) | 16:05 | | |
| 22 | 05:22 | | 07:26 (6) | 06:19 | | 07:15 (6) | 07:17 | | 18:39 (39) | 08:16 | 08:19 | | 09:09 (36) | 08:59 | | |
| | 21:57 | 34 | 08:00 (6) | 20:54 | 51 | 08:06 (6) | 19:35 | 24 | 19:03 (39) | 18:20 | 16:20 | 25 | 09:34 (36) | 16:05 | | |
| 23 | 05:24 | | 07:25 (6) | 06:21 | | 07:16 (6) | 07:19 | | 18:40 (39) | 08:18 | 08:21 | | 09:09 (36) | 08:59 | | |
| | 21:55 | 35 | 08:00 (6) | 20:51 | 50 | 08:06 (6) | 19:33 | 22 | 19:02 (39) | 18:18 | 16:19 | 25 | 09:34 (36) | 16:06 | | |
| 24 | 05:26 | | 07:24 (6) | 06:22 | | 07:17 (6) | 07:21 | | 18:40 (39) | 08:20 | 08:23 | | 09:10 (36) | 09:00 | | |
| | 21:54 | 38 | 08:02 (6) | 20:49 | 48 | 08:05 (6) | 19:30 | 20 | 19:00 (39) | 18:15 | 16:17 | 24 | 09:34 (36) | 16:06 | | |
| 25 | 05:27 | | 07:23 (6) | 06:24 | | 07:18 (6) | 07:23 | | 18:41 (39) | 07:22 | 08:24 | | 09:10 (36) | 09:00 | | |
| | 21:52 | 40 | 08:03 (6) | 20:46 | 46 | 08:04 (6) | 19:27 | 17 | 18:58 (39) | 17:13 | 16:16 | 24 | 09:34 (36) | 16:07 | | |
| 26 | 05:29 | | 07:22 (6) | 06:26 | | 07:18 (6) | 07:25 | | 18:44 (39) | 07:24 | 08:26 | | 09:11 (36) | 09:00 | | |
| | 21:50 | 42 | 08:04 (6) | 20:44 | 43 | 08:01 (6) | 19:25 | 11 | 18:55 (39) | 17:11 | 16:15 | 23 | 09:34 (36) | 16:08 | | |
| 27 | 05:31 | | 07:22 (6) | 06:28 | | 07:19 (6) | 07:27 | | | 07:26 | 08:28 | | 09:12 (36) | 09:00 | | |
| | 21:49 | 43 | 08:05 (6) | 20:42 | 41 | 08:00 (6) | 19:22 | | | 17:08 | 16:14 | 22 | 09:34 (36) | 16:08 | | |
| 28 | 05:32 | | 07:21 (6) | 06:30 | | 07:21 (6) | 07:29 | | | 07:28 | 08:30 | | 09:13 (36) | 09:01 | | |
| | 21:47 | 45 | 08:06 (6) | 20:39 | 37 | 07:58 (6) | 19:20 | | | 17:06 | 16:13 | 21 | 09:34 (36) | 16:09 | | |
| 29 | 05:34 | | 07:21 (6) | 06:32 | | 07:22 (6) | 07:31 | | | 07:30 | 08:31 | | 09:13 (36) | 09:01 | | |
| | 21:45 | 46 | 08:07 (6) | 20:37 | 35 | 07:57 (6) | 19:17 | | | 17:04 | 16:12 | 20 | 09:33 (36) | 16:10 | | |
| 30 | 05:36 | | 07:19 (6) | 06:34 | | 07:24 (6) | 07:32 | | | 07:32 | 08:33 | | 09:15 (36) | 09:01 | | |
| | 21:43 | 48 | 08:07 (6) | 20:34 | 30 | 07:54 (6) | 19:14 | | | 17:02 | 16:11 | 18 | 09:33 (36) | 16:11 | | |
| 31 | 05:38 | | 07:19 (6) | 06:36 | | 07:26 (6) | | | | 07:34 | | | | 09:01 | | |
| | 21:41 | 49 | 08:08 (6) | 20:32 | 25 | 07:51 (6) | | | | 17:00 | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 574 | | | 1558 | | | 376 | | | | 473 | | | 76 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,99 | | | 0,99 | | | 0,99 | | | | 0,67 | | | 0,67 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | 0,10 | | | 0,09 | |
| Total, real | | 266 | | | 766 | | | 143 | | | | 48 | | | 7 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:49 (36) | 07:26 | | | 07:08 | | 18:58 (39) | 05:55 | | 07:15 (6) | 05:02 | | |
| | 16:14 | | | 17:08 | 4 | 09:53 (36) | 18:07 | | | 20:09 | 4 | 19:02 (39) | 21:08 | 55 | 08:10 (6) | 22:02 | | |
| 2 | 09:00 | | | 08:26 | | | 07:24 | | | 07:05 | | | 05:53 | | 07:14 (6) | 05:01 | | |
| | 16:15 | | | 17:10 | | | 18:09 | | | 20:11 | | | 21:10 | 55 | 08:09 (6) | 22:03 | | |
| 3 | 09:00 | | 09:38 (36) | 08:24 | | | 07:22 | | | 07:03 | | | 05:50 | | 07:14 (6) | 05:00 | | |
| | 16:16 | 5 | 09:43 (36) | 17:12 | | | 18:11 | | | 20:13 | | | 21:12 | 54 | 08:08 (6) | 22:05 | | |
| 4 | 09:00 | | 09:38 (36) | 08:22 | | | 07:19 | | | 07:00 | | | 05:48 | | 07:15 (6) | 04:59 | | |
| | 16:17 | 8 | 09:46 (36) | 17:14 | | | 18:13 | | | 20:15 | | | 21:14 | 53 | 08:08 (6) | 22:06 | | |
| 5 | 08:59 | | 09:37 (36) | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | | 07:15 (6) | 04:58 | | |
| | 16:19 | 10 | 09:47 (36) | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 52 | 08:07 (6) | 22:07 | | |
| 6 | 08:59 | | 09:37 (36) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | | 07:16 (6) | 04:57 | | |
| | 16:20 | 12 | 09:49 (36) | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 51 | 08:07 (6) | 22:08 | | |
| 7 | 08:58 | | 09:36 (36) | 08:16 | | | 07:12 | | | 06:52 | | 07:42 (6) | 05:42 | | 07:17 (6) | 04:56 | | |
| | 16:21 | 14 | 09:50 (36) | 17:21 | | | 18:19 | | | 20:21 | 12 | 07:54 (6) | 21:20 | 49 | 08:06 (6) | 22:09 | | |
| 8 | 08:58 | | 09:36 (36) | 08:14 | | | 07:09 | | | 06:50 | | 07:36 (6) | 05:40 | | 07:17 (6) | 04:56 | | |
| | 16:23 | 15 | 09:51 (36) | 17:23 | | | 18:22 | | | 20:23 | 22 | 07:58 (6) | 21:22 | 48 | 08:05 (6) | 22:10 | | |
| 9 | 08:57 | | 09:35 (36) | 08:12 | | | 07:07 | | | 06:47 | | 07:33 (6) | 05:38 | | 07:18 (6) | 04:55 | | |
| | 16:24 | 17 | 09:52 (36) | 17:25 | | | 18:24 | | | 20:25 | 29 | 08:02 (6) | 21:24 | 46 | 08:04 (6) | 22:11 | | |
| 10 | 08:56 | | 09:35 (36) | 08:10 | | | 07:04 | | | 06:45 | | 07:30 (6) | 05:36 | | 07:18 (6) | 04:54 | | |
| | 16:26 | 18 | 09:53 (36) | 17:27 | | | 18:26 | | | 20:27 | 33 | 08:03 (6) | 21:26 | 45 | 08:03 (6) | 22:12 | | |
| 11 | 08:56 | | 09:35 (36) | 08:08 | | | 07:02 | | | 06:42 | | 07:29 (6) | 05:34 | | 07:19 (6) | 04:54 | | |
| | 16:28 | 19 | 09:54 (36) | 17:29 | | | 18:28 | | | 20:29 | 36 | 08:05 (6) | 21:28 | 43 | 08:02 (6) | 22:13 | | |
| 12 | 08:55 | | 09:35 (36) | 08:06 | | | 06:59 | | | 06:40 | | 07:27 (6) | 05:32 | | 07:20 (6) | 04:53 | | |
| | 16:29 | 20 | 09:55 (36) | 17:31 | | | 18:30 | | | 20:31 | 40 | 08:07 (6) | 21:29 | 42 | 08:02 (6) | 22:14 | | |
| 13 | 08:54 | | 09:35 (36) | 08:03 | | | 06:56 | | | 06:37 | | 07:25 (6) | 05:30 | | 07:21 (6) | 04:53 | | |
| | 16:31 | 21 | 09:56 (36) | 17:33 | | | 18:32 | | | 20:33 | 43 | 08:08 (6) | 21:31 | 39 | 08:00 (6) | 22:15 | | |
| 14 | 08:53 | | 09:35 (36) | 08:01 | | | 06:54 | | | 06:35 | | 07:24 (6) | 05:28 | | 07:21 (6) | 04:53 | | |
| | 16:33 | 22 | 09:57 (36) | 17:36 | | | 18:34 | | | 20:35 | 45 | 08:09 (6) | 21:33 | 38 | 07:59 (6) | 22:15 | | |
| 15 | 08:52 | | 09:34 (36) | 07:59 | | | 06:51 | | | 06:32 | | 07:22 (6) | 05:26 | | 07:23 (6) | 04:52 | | |
| | 16:34 | 23 | 09:57 (36) | 17:38 | | | 18:36 | | | 20:37 | 47 | 08:09 (6) | 21:35 | 35 | 07:58 (6) | 22:16 | | |
| 16 | 08:51 | | 09:35 (36) | 07:57 | | | 06:49 | | 17:58 (39) | 06:30 | | 07:21 (6) | 05:25 | | 07:24 (6) | 04:52 | | |
| | 16:36 | 23 | 09:58 (36) | 17:40 | | | 18:38 | 12 | 18:10 (39) | 20:39 | 49 | 08:10 (6) | 21:37 | 32 | 07:56 (6) | 22:17 | | |
| 17 | 08:50 | | 09:35 (36) | 07:55 | | | 06:46 | | 17:56 (39) | 06:27 | | 07:20 (6) | 05:23 | | 07:25 (6) | 04:52 | | |
| | 16:38 | 24 | 09:59 (36) | 17:42 | | | 18:40 | 17 | 18:13 (39) | 20:41 | 51 | 08:11 (6) | 21:39 | 29 | 07:54 (6) | 22:17 | | |
| 18 | 08:49 | | 09:35 (36) | 07:52 | | | 06:44 | | 17:54 (39) | 06:25 | | 07:19 (6) | 05:21 | | 07:27 (6) | 04:52 | | |
| | 16:40 | 24 | 09:59 (36) | 17:44 | | | 18:42 | 20 | 18:14 (39) | 20:43 | 52 | 08:11 (6) | 21:40 | 26 | 07:53 (6) | 22:18 | | |
| 19 | 08:47 | | 09:35 (36) | 07:50 | | | 06:41 | | 17:53 (39) | 06:23 | | 07:18 (6) | 05:19 | | 07:29 (6) | 04:52 | | |
| | 16:42 | 25 | 10:00 (36) | 17:46 | | | 18:44 | 22 | 18:15 (39) | 20:45 | 53 | 08:11 (6) | 21:42 | 22 | 07:51 (6) | 22:18 | | |
| 20 | 08:46 | | 09:35 (36) | 07:48 | | | 06:39 | | 17:51 (39) | 06:20 | | 07:18 (6) | 05:18 | | 07:31 (6) | 04:52 | | |
| | 16:44 | 25 | 10:00 (36) | 17:48 | | | 18:46 | 24 | 18:15 (39) | 20:47 | 54 | 08:12 (6) | 21:44 | 18 | 07:49 (6) | 22:18 | | |
| 21 | 08:45 | | 09:36 (36) | 07:46 | | | 06:36 | | 17:50 (39) | 06:18 | | 07:16 (6) | 05:16 | | 07:35 (6) | 04:52 | | |
| | 16:46 | 25 | 10:01 (36) | 17:50 | | | 18:48 | 25 | 18:15 (39) | 20:49 | 55 | 08:11 (6) | 21:45 | 11 | 07:46 (6) | 22:19 | | |
| 22 | 08:43 | | 09:36 (36) | 07:43 | | | 06:33 | | 17:50 (39) | 06:15 | | 07:16 (6) | 05:15 | | | 04:52 | | |
| | 16:48 | 25 | 10:01 (36) | 17:53 | | | 18:50 | 26 | 18:16 (39) | 20:51 | 56 | 08:12 (6) | 21:47 | | | 22:19 | | |
| 23 | 08:42 | | 09:36 (36) | 07:41 | | | 06:31 | | 17:49 (39) | 06:13 | | 07:16 (6) | 05:13 | | | 04:53 | | |
| | 16:49 | 25 | 10:01 (36) | 17:55 | | | 18:52 | 26 | 18:15 (39) | 20:53 | 56 | 08:12 (6) | 21:49 | | | 22:19 | | |
| 24 | 08:41 | | 09:37 (36) | 07:38 | | | 06:28 | | 17:49 (39) | 06:11 | | 07:16 (6) | 05:12 | | | 04:53 | | |
| | 16:51 | 24 | 10:01 (36) | 17:57 | | | 18:54 | 27 | 18:16 (39) | 20:55 | 56 | 08:12 (6) | 21:50 | | | 22:19 | | |
| 25 | 08:39 | | 09:38 (36) | 07:36 | | | 06:26 | | 17:49 (39) | 06:08 | | 07:15 (6) | 05:10 | | | 04:53 | | |
| | 16:53 | 23 | 10:01 (36) | 17:59 | | | 18:56 | 26 | 18:15 (39) | 20:57 | 56 | 08:11 (6) | 21:52 | | | 22:19 | | |
| 26 | 08:37 | | 09:38 (36) | 07:34 | | | 06:23 | | 17:48 (39) | 06:06 | | 07:15 (6) | 05:09 | | | 04:54 | | |
| | 16:56 | 22 | 10:00 (36) | 18:01 | | | 18:57 | 26 | 18:14 (39) | 20:59 | 56 | 08:11 (6) | 21:53 | | | 22:19 | | |
| 27 | 08:36 | | 09:39 (36) | 07:31 | | | 06:21 | | 17:49 (39) | 06:04 | | 07:15 (6) | 05:08 | | | 04:54 | | |
| | 16:58 | 21 | 10:00 (36) | 18:03 | | | 18:59 | 24 | 18:13 (39) | 21:01 | 56 | 08:11 (6) | 21:55 | | | 22:19 | | |
| 28 | 08:34 | | 09:40 (36) | 07:29 | | | 06:18 | | 17:49 (39) | 06:01 | | 07:15 (6) | 05:06 | | | 04:55 | | |
| | 17:00 | 19 | 09:59 (36) | 18:05 | | | 19:01 | 23 | 18:12 (39) | 21:03 | 56 | 08:11 (6) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 09:42 (36) | | | | 07:15 | | 18:51 (39) | 05:59 | | 07:15 (6) | 05:05 | | | 04:55 | | |
| | 17:02 | 17 | 09:59 (36) | | | | 20:03 | 20 | 19:11 (39) | 21:05 | 56 | 08:11 (6) | 21:58 | | | 22:18 | | |
| 30 | 08:31 | | 09:43 (36) | | | | 07:13 | | 18:51 (39) | 05:57 | | 07:15 (6) | 05:04 | | | 04:56 | | |
| | 17:04 | 15 | 09:58 (36) | | | | 20:05 | 18 | 19:09 (39) | 21:06 | 56 | 08:11 (6) | 21:59 | | | 22:18 | | |
| 31 | 08:29 | | 09:45 (36) | | | | 07:10 | | 18:54 (39) | | | | 05:03 | | | | | |
| | 17:06 | 11 | 09:56 (36) | | | | 20:07 | 13 | 19:07 (39) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | 552 | | | 4 | | | 349 | | | 1129 | | | 843 | | | | | |
| Sun reduction | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | | |
| Oper. time red. | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | | |
| Wind dir. red. | 0,66 | | | 0,66 | | | 0,99 | | | 0,99 | | | 0,99 | | | | | |
| Total reduction | 0,11 | | | 0,16 | | | 0,32 | | | 0,38 | | | 0,49 | | | | | |
| Total, real | 63 | | | 1 | | | 113 | | | 425 | | | 416 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:30 (6) | 06:38 | | 07:28 (6) | 07:34 | | 07:36 | | | 08:35 | | 09:17 (36) |
| | 22:18 | | | 21:40 | 42 | 08:12 (6) | 20:29 | 36 | 08:04 (6) | 19:12 | | 16:58 | | | 16:10 | 19 | 09:36 (36) |
| 2 | 04:57 | | | 05:41 | | 07:29 (6) | 06:39 | | 07:29 (6) | 07:36 | | 07:38 | | | 08:36 | | 09:18 (36) |
| | 22:17 | | | 21:38 | 44 | 08:13 (6) | 20:27 | 33 | 08:02 (6) | 19:09 | | 16:55 | | | 16:09 | 18 | 09:36 (36) |
| 3 | 04:58 | | | 05:43 | | 07:28 (6) | 06:41 | | 07:31 (6) | 07:38 | | 07:41 | | | 08:38 | | 09:19 (36) |
| | 22:17 | | | 21:36 | 46 | 08:14 (6) | 20:24 | 29 | 08:00 (6) | 19:07 | | 16:53 | | | 16:08 | 17 | 09:36 (36) |
| 4 | 04:59 | | | 05:45 | | 07:28 (6) | 06:43 | | 07:34 (6) | 07:40 | | 07:43 | | | 08:40 | | 09:20 (36) |
| | 22:16 | | | 21:34 | 47 | 08:15 (6) | 20:22 | 22 | 07:56 (6) | 19:04 | | 16:51 | | | 16:07 | 15 | 09:35 (36) |
| 5 | 05:00 | | | 05:47 | | 07:26 (6) | 06:45 | | 07:38 (6) | 07:42 | | 07:45 | | | 08:41 | | 09:21 (36) |
| | 22:16 | | | 21:32 | 49 | 08:15 (6) | 20:19 | 13 | 07:51 (6) | 19:02 | | 16:49 | | | 16:07 | 14 | 09:35 (36) |
| 6 | 05:01 | | | 05:49 | | 07:26 (6) | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | 09:22 (36) |
| | 22:15 | | | 21:30 | 50 | 08:16 (6) | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | 12 | 09:34 (36) |
| 7 | 05:02 | | | 05:50 | | 07:26 (6) | 06:49 | | | 07:46 | | 07:49 | | | 08:44 | | 09:24 (36) |
| | 22:14 | | | 21:28 | 51 | 08:17 (6) | 20:14 | | | 18:57 | | 16:45 | | | 16:05 | 10 | 09:34 (36) |
| 8 | 05:03 | | | 05:52 | | 07:25 (6) | 06:51 | | | 07:48 | | 07:51 | | | 08:45 | | 09:25 (36) |
| | 22:14 | | | 21:25 | 52 | 08:17 (6) | 20:11 | | | 18:54 | | 16:43 | | | 16:05 | 8 | 09:33 (36) |
| 9 | 05:04 | | | 05:54 | | 07:24 (6) | 06:53 | | | 07:50 | | 07:53 | | | 08:47 | | 09:27 (36) |
| | 22:13 | | | 21:23 | 53 | 08:17 (6) | 20:09 | | | 18:52 | | 16:41 | | | 16:05 | 6 | 09:33 (36) |
| 10 | 05:05 | | | 05:56 | | 07:24 (6) | 06:55 | | | 07:52 | | 07:55 | | 09:19 (36) | 08:48 | | |
| | 22:12 | | | 21:21 | 54 | 08:18 (6) | 20:06 | | | 18:49 | | 16:40 | 5 | 09:24 (36) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 07:24 (6) | 06:56 | | | 07:54 | | 07:57 | | 09:16 (36) | 08:49 | | |
| | 22:11 | | | 21:19 | 54 | 08:18 (6) | 20:04 | | | 18:47 | | 16:38 | 11 | 09:27 (36) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 07:22 (6) | 06:58 | | 18:46 (39) | 07:56 | | 07:59 | | 09:14 (36) | 08:50 | | |
| | 22:10 | | | 21:17 | 56 | 08:18 (6) | 20:01 | 12 | 18:58 (39) | 18:44 | | 16:36 | 15 | 09:29 (36) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 07:22 (6) | 07:00 | | 18:43 (39) | 07:58 | | 08:01 | | 09:13 (36) | 08:51 | | |
| | 22:09 | | | 21:15 | 56 | 08:18 (6) | 19:58 | 17 | 19:00 (39) | 18:42 | | 16:34 | 18 | 09:31 (36) | 16:04 | | |
| 14 | 05:10 | | | 06:03 | | 07:22 (6) | 07:02 | | 18:41 (39) | 08:00 | | 08:03 | | 09:12 (36) | 08:52 | | |
| | 22:08 | | | 21:12 | 56 | 08:18 (6) | 19:56 | 20 | 19:01 (39) | 18:39 | | 16:32 | 20 | 09:32 (36) | 16:03 | | |
| 15 | 05:12 | | | 06:05 | | 07:22 (6) | 07:04 | | 18:40 (39) | 08:02 | | 08:05 | | 09:12 (36) | 08:53 | | |
| | 22:06 | | | 21:10 | 57 | 08:19 (6) | 19:53 | 22 | 19:02 (39) | 18:37 | | 16:31 | 21 | 09:33 (36) | 16:03 | | |
| 16 | 05:13 | | | 06:07 | | 07:22 (6) | 07:06 | | 18:38 (39) | 08:04 | | 08:07 | | 09:11 (36) | 08:54 | | |
| | 22:05 | | | 21:08 | 57 | 08:19 (6) | 19:51 | 24 | 19:02 (39) | 18:34 | | 16:29 | 22 | 09:33 (36) | 16:03 | | |
| 17 | 05:15 | | | 06:09 | | 07:21 (6) | 07:08 | | 18:37 (39) | 08:06 | | 08:09 | | 09:11 (36) | 08:55 | | |
| | 22:04 | | | 21:05 | 57 | 08:18 (6) | 19:48 | 25 | 19:02 (39) | 18:32 | | 16:27 | 23 | 09:34 (36) | 16:04 | | |
| 18 | 05:16 | | | 06:11 | | 07:21 (6) | 07:10 | | 18:36 (39) | 08:08 | | 08:11 | | 09:11 (36) | 08:56 | | |
| | 22:03 | | | 21:03 | 57 | 08:18 (6) | 19:46 | 26 | 19:02 (39) | 18:29 | | 16:26 | 24 | 09:35 (36) | 16:04 | | |
| 19 | 05:18 | | | 06:13 | | 07:21 (6) | 07:12 | | 18:36 (39) | 08:10 | | 08:13 | | 09:11 (36) | 08:57 | | |
| | 22:01 | | | 21:01 | 57 | 08:18 (6) | 19:43 | 26 | 19:02 (39) | 18:27 | | 16:24 | 25 | 09:36 (36) | 16:04 | | |
| 20 | 05:19 | | | 06:15 | | 07:22 (6) | 07:13 | | 18:35 (39) | 08:12 | | 08:15 | | 09:11 (36) | 08:57 | | |
| | 22:00 | | | 20:58 | 56 | 08:18 (6) | 19:40 | 27 | 19:02 (39) | 18:25 | | 16:23 | 25 | 09:36 (36) | 16:04 | | |
| 21 | 05:21 | | | 06:17 | | 07:21 (6) | 07:15 | | 18:35 (39) | 08:14 | | 08:17 | | 09:11 (36) | 08:58 | | |
| | 21:58 | | | 20:56 | 55 | 08:16 (6) | 19:38 | 27 | 19:02 (39) | 18:22 | | 16:21 | 25 | 09:36 (36) | 16:05 | | |
| 22 | 05:22 | | 07:48 (6) | 06:19 | | 07:21 (6) | 07:17 | | 18:35 (39) | 08:16 | | 08:19 | | 09:11 (36) | 08:59 | | |
| | 21:57 | 4 | 07:52 (6) | 20:54 | 55 | 08:16 (6) | 19:35 | 26 | 19:01 (39) | 18:20 | | 16:20 | 25 | 09:36 (36) | 16:05 | | |
| 23 | 05:24 | | 07:43 (6) | 06:21 | | 07:22 (6) | 07:19 | | 18:36 (39) | 08:18 | | 08:21 | | 09:11 (36) | 08:59 | | |
| | 21:55 | 14 | 07:57 (6) | 20:51 | 54 | 08:16 (6) | 19:33 | 24 | 19:00 (39) | 18:18 | | 16:19 | 25 | 09:36 (36) | 16:06 | | |
| 24 | 05:26 | | 07:40 (6) | 06:22 | | 07:22 (6) | 07:21 | | 18:35 (39) | 08:20 | | 08:23 | | 09:12 (36) | 09:00 | | |
| | 21:54 | 20 | 08:00 (6) | 20:49 | 53 | 08:15 (6) | 19:30 | 23 | 18:58 (39) | 18:15 | | 16:17 | 24 | 09:36 (36) | 16:06 | | |
| 25 | 05:27 | | 07:38 (6) | 06:24 | | 07:23 (6) | 07:23 | | 18:36 (39) | 07:22 | | 08:24 | | 09:12 (36) | 09:00 | | |
| | 21:52 | 24 | 08:02 (6) | 20:46 | 51 | 08:14 (6) | 19:27 | 21 | 18:57 (39) | 17:13 | | 16:16 | 24 | 09:36 (36) | 16:07 | | |
| 26 | 05:29 | | 07:37 (6) | 06:26 | | 07:22 (6) | 07:25 | | 18:37 (39) | 07:24 | | 08:26 | | 09:13 (36) | 09:00 | | |
| | 21:50 | 27 | 08:04 (6) | 20:44 | 51 | 08:13 (6) | 19:25 | 18 | 18:55 (39) | 17:11 | | 16:15 | 23 | 09:36 (36) | 16:08 | | |
| 27 | 05:31 | | 07:36 (6) | 06:28 | | 07:23 (6) | 07:27 | | 18:39 (39) | 07:26 | | 08:28 | | 09:13 (36) | 09:00 | | |
| | 21:49 | 30 | 08:06 (6) | 20:42 | 49 | 08:12 (6) | 19:22 | 14 | 18:53 (39) | 17:08 | | 16:14 | 23 | 09:36 (36) | 16:08 | | |
| 28 | 05:32 | | 07:34 (6) | 06:30 | | 07:24 (6) | 07:29 | | 18:43 (39) | 07:28 | | 08:30 | | 09:14 (36) | 09:01 | | |
| | 21:47 | 33 | 08:07 (6) | 20:39 | 47 | 08:11 (6) | 19:20 | 5 | 18:48 (39) | 17:06 | | 16:13 | 22 | 09:36 (36) | 16:09 | | |
| 29 | 05:34 | | 07:33 (6) | 06:32 | | 07:25 (6) | 07:31 | | | 07:30 | | 08:31 | | 09:15 (36) | 09:01 | | |
| | 21:45 | 36 | 08:09 (6) | 20:37 | 45 | 08:10 (6) | 19:17 | | | 17:04 | | 16:12 | 21 | 09:36 (36) | 16:10 | | |
| 30 | 05:36 | | 07:31 (6) | 06:34 | | 07:26 (6) | 07:32 | | | 07:32 | | 08:33 | | 09:16 (36) | 09:01 | | |
| | 21:43 | 38 | 08:09 (6) | 20:34 | 42 | 08:08 (6) | 19:14 | | | 17:02 | | 16:11 | 20 | 09:36 (36) | 16:11 | | |
| 31 | 05:38 | | 07:31 (6) | 06:36 | | 07:26 (6) | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | 40 | 08:11 (6) | 20:32 | 40 | 08:06 (6) | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | 266 | | | 1593 | | | 490 | | | | | 441 | | | 119 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,99 | | | 0,99 | | | 0,99 | | | | | 0,66 | | | 0,66 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | | 0,10 | | | 0,09 | |
| Total, real | | 123 | | | 784 | | | 185 | | | | | 44 | | | 10 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (36) | 08:27 | | 07:26 | | | 07:08 | | | 05:55 | | 07:26 (6) | 05:02 | |
| | 16:14 | 10 | 09:48 (36) | 17:08 | | 18:07 | | | 20:09 | | | 21:08 | 50 | 08:16 (6) | 22:02 | |
| 2 | 09:00 | | 09:38 (36) | 08:26 | | 07:24 | | | 07:05 | | | 05:53 | | 07:26 (6) | 05:01 | |
| | 16:15 | 11 | 09:49 (36) | 17:10 | | 18:09 | | | 20:11 | | | 21:10 | 49 | 08:15 (6) | 22:03 | |
| 3 | 09:00 | | 09:37 (36) | 08:24 | | 07:22 | | | 07:03 | | 07:52 (6) | 05:50 | | 07:26 (6) | 05:00 | |
| | 16:16 | 13 | 09:50 (36) | 17:12 | | 18:11 | | | 20:13 | 13 | 08:05 (6) | 21:12 | 48 | 08:14 (6) | 22:05 | |
| 4 | 09:00 | | 09:38 (36) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (6) | 05:48 | | 07:27 (6) | 04:59 | |
| | 16:17 | 14 | 09:52 (36) | 17:14 | | 18:13 | | | 20:15 | 23 | 08:09 (6) | 21:14 | 46 | 08:13 (6) | 22:06 | |
| 5 | 08:59 | | 09:37 (36) | 08:20 | | 07:17 | | | 06:57 | | 07:43 (6) | 05:46 | | 07:28 (6) | 04:58 | |
| | 16:19 | 15 | 09:52 (36) | 17:16 | | 18:15 | | | 20:17 | 29 | 08:12 (6) | 21:16 | 44 | 08:12 (6) | 22:07 | |
| 6 | 08:59 | | 09:38 (36) | 08:18 | | 07:14 | | | 06:55 | | 07:40 (6) | 05:44 | | 07:29 (6) | 04:57 | |
| | 16:20 | 16 | 09:54 (36) | 17:19 | | 18:17 | | | 20:19 | 34 | 08:14 (6) | 21:18 | 42 | 08:11 (6) | 22:08 | |
| 7 | 08:58 | | 09:37 (36) | 08:16 | | 07:12 | | | 06:52 | | 07:39 (6) | 05:42 | | 07:30 (6) | 04:56 | |
| | 16:21 | 18 | 09:55 (36) | 17:21 | | 18:19 | | | 20:21 | 37 | 08:16 (6) | 21:20 | 40 | 08:10 (6) | 22:09 | |
| 8 | 08:58 | | 09:37 (36) | 08:14 | | 07:09 | | | 06:50 | | 07:36 (6) | 05:40 | | 07:31 (6) | 04:56 | |
| | 16:23 | 19 | 09:56 (36) | 17:23 | | 18:22 | | | 20:23 | 41 | 08:17 (6) | 21:22 | 37 | 08:08 (6) | 22:10 | |
| 9 | 08:57 | | 09:37 (36) | 08:12 | | 07:07 | | | 06:47 | | 07:35 (6) | 05:38 | | 07:32 (6) | 04:55 | |
| | 16:24 | 19 | 09:56 (36) | 17:25 | | 18:24 | | | 20:25 | 43 | 08:18 (6) | 21:24 | 35 | 08:07 (6) | 22:11 | |
| 10 | 08:56 | | 09:37 (36) | 08:10 | | 07:04 | | | 06:45 | | 07:33 (6) | 05:36 | | 07:33 (6) | 04:54 | |
| | 16:26 | 20 | 09:57 (36) | 17:27 | | 18:26 | | | 20:27 | 45 | 08:18 (6) | 21:26 | 32 | 08:05 (6) | 22:12 | |
| 11 | 08:56 | | 09:37 (36) | 08:08 | | 07:02 | | | 06:42 | | 07:32 (6) | 05:34 | | 07:35 (6) | 04:54 | |
| | 16:28 | 21 | 09:58 (36) | 17:29 | | 18:28 | | | 20:29 | 48 | 08:20 (6) | 21:28 | 28 | 08:03 (6) | 22:13 | |
| 12 | 08:55 | | 09:37 (36) | 08:06 | | 06:59 | | | 06:40 | | 07:31 (6) | 05:32 | | 07:37 (6) | 04:53 | |
| | 16:29 | 22 | 09:59 (36) | 17:31 | | 18:30 | | | 20:31 | 50 | 08:21 (6) | 21:29 | 25 | 08:02 (6) | 22:14 | |
| 13 | 08:54 | | 09:37 (36) | 08:03 | | 06:56 | | | 06:37 | | 07:30 (6) | 05:30 | | 07:39 (6) | 04:53 | |
| | 16:31 | 23 | 10:00 (36) | 17:33 | | 18:32 | | | 20:33 | 51 | 08:21 (6) | 21:31 | 20 | 07:59 (6) | 22:15 | |
| 14 | 08:53 | | 09:37 (36) | 08:01 | | 06:54 | | 17:58 (39) | 06:35 | | 07:29 (6) | 05:28 | | 07:42 (6) | 04:53 | |
| | 16:33 | 24 | 10:01 (36) | 17:36 | | 18:34 | 8 | 18:06 (39) | 20:35 | 52 | 08:21 (6) | 21:33 | 13 | 07:55 (6) | 22:15 | |
| 15 | 08:52 | | 09:37 (36) | 07:59 | | 06:51 | | 17:54 (39) | 06:32 | | 07:28 (6) | 05:26 | | | 04:52 | |
| | 16:34 | 24 | 10:01 (36) | 17:38 | | 18:36 | 14 | 18:08 (39) | 20:37 | 53 | 08:21 (6) | 21:35 | | | 22:16 | |
| 16 | 08:51 | | 09:37 (36) | 07:57 | | 06:49 | | 17:51 (39) | 06:30 | | 07:27 (6) | 05:25 | | | 04:52 | |
| | 16:36 | 24 | 10:01 (36) | 17:40 | | 18:38 | 19 | 18:10 (39) | 20:39 | 55 | 08:22 (6) | 21:37 | | | 22:17 | |
| 17 | 08:50 | | 09:38 (36) | 07:55 | | 06:46 | | 17:50 (39) | 06:27 | | 07:27 (6) | 05:23 | | | 04:52 | |
| | 16:38 | 24 | 10:02 (36) | 17:42 | | 18:40 | 21 | 18:11 (39) | 20:41 | 55 | 08:22 (6) | 21:39 | | | 22:17 | |
| 18 | 08:49 | | 09:38 (36) | 07:52 | | 06:44 | | 17:48 (39) | 06:25 | | 07:26 (6) | 05:21 | | | 04:52 | |
| | 16:40 | 24 | 10:02 (36) | 17:44 | | 18:42 | 24 | 18:12 (39) | 20:43 | 56 | 08:22 (6) | 21:40 | | | 22:18 | |
| 19 | 08:47 | | 09:38 (36) | 07:50 | | 06:41 | | 17:48 (39) | 06:23 | | 07:26 (6) | 05:19 | | | 04:52 | |
| | 16:42 | 25 | 10:03 (36) | 17:46 | | 18:44 | 25 | 18:13 (39) | 20:45 | 56 | 08:22 (6) | 21:42 | | | 22:18 | |
| 20 | 08:46 | | 09:38 (36) | 07:48 | | 06:39 | | 17:47 (39) | 06:20 | | 07:26 (6) | 05:18 | | | 04:52 | |
| | 16:44 | 25 | 10:03 (36) | 17:48 | | 18:46 | 26 | 18:13 (39) | 20:47 | 56 | 08:22 (6) | 21:44 | | | 22:18 | |
| 21 | 08:45 | | 09:39 (36) | 07:46 | | 06:36 | | 17:46 (39) | 06:18 | | 07:25 (6) | 05:16 | | | 04:52 | |
| | 16:46 | 24 | 10:03 (36) | 17:50 | | 18:48 | 26 | 18:12 (39) | 20:49 | 56 | 08:21 (6) | 21:45 | | | 22:19 | |
| 22 | 08:43 | | 09:39 (36) | 07:43 | | 06:33 | | 17:46 (39) | 06:15 | | 07:25 (6) | 05:15 | | | 04:52 | |
| | 16:48 | 24 | 10:03 (36) | 17:53 | | 18:50 | 27 | 18:13 (39) | 20:51 | 56 | 08:21 (6) | 21:47 | | | 22:19 | |
| 23 | 08:42 | | 09:40 (36) | 07:41 | | 06:31 | | 17:45 (39) | 06:13 | | 07:25 (6) | 05:13 | | | 04:53 | |
| | 16:49 | 23 | 10:03 (36) | 17:55 | | 18:52 | 27 | 18:12 (39) | 20:53 | 56 | 08:21 (6) | 21:49 | | | 22:19 | |
| 24 | 08:41 | | 09:41 (36) | 07:38 | | 06:28 | | 17:46 (39) | 06:11 | | 07:25 (6) | 05:12 | | | 04:53 | |
| | 16:51 | 22 | 10:03 (36) | 17:57 | | 18:54 | 26 | 18:12 (39) | 20:55 | 56 | 08:21 (6) | 21:50 | | | 22:19 | |
| 25 | 08:39 | | 09:41 (36) | 07:36 | | 06:26 | | 17:46 (39) | 06:08 | | 07:24 (6) | 05:10 | | | 04:53 | |
| | 16:53 | 22 | 10:03 (36) | 17:59 | | 18:56 | 24 | 18:10 (39) | 20:57 | 56 | 08:20 (6) | 21:52 | | | 22:19 | |
| 26 | 08:37 | | 09:42 (36) | 07:34 | | 06:23 | | 17:46 (39) | 06:06 | | 07:24 (6) | 05:09 | | | 04:54 | |
| | 16:56 | 20 | 10:02 (36) | 18:01 | | 18:57 | 23 | 18:09 (39) | 20:59 | 55 | 08:19 (6) | 21:53 | | | 22:19 | |
| 27 | 08:36 | | 09:43 (36) | 07:31 | | 06:21 | | 17:47 (39) | 06:04 | | 07:24 (6) | 05:08 | | | 04:54 | |
| | 16:58 | 18 | 10:01 (36) | 18:03 | | 18:59 | 21 | 18:08 (39) | 21:01 | 55 | 08:19 (6) | 21:55 | | | 22:19 | |
| 28 | 08:34 | | 09:44 (36) | 07:29 | | 06:18 | | 17:48 (39) | 06:01 | | 07:25 (6) | 05:06 | | | 04:55 | |
| | 17:00 | 16 | 10:00 (36) | 18:05 | | 19:01 | 18 | 18:06 (39) | 21:03 | 53 | 08:18 (6) | 21:57 | | | 22:19 | |
| 29 | 08:33 | | 09:47 (36) | | | 07:15 | | 18:50 (39) | 05:59 | | 07:25 (6) | 05:05 | | | 04:55 | |
| | 17:02 | 13 | 10:00 (36) | | | 20:03 | 15 | 19:05 (39) | 21:05 | 53 | 08:18 (6) | 21:58 | | | 22:18 | |
| 30 | 08:31 | | 09:49 (36) | | | 07:13 | | 18:53 (39) | 05:57 | | 07:26 (6) | 05:04 | | | 04:56 | |
| | 17:04 | 9 | 09:58 (36) | | | 20:05 | 8 | 19:01 (39) | 21:06 | 51 | 08:17 (6) | 21:59 | | | 22:18 | |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | | | | |
| | 17:06 | | | | | 20:07 | | | | | | 22:01 | | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | |
| Total, worst case | | 582 | | | | | 352 | | | 1344 | | | 509 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,65 | | | | | 0,99 | | | 1,00 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,38 | | | 0,49 | | | |
| Total, real | | 65 | | | | | 113 | | | 505 | | | 251 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:39 | | 07:47 (6) | 06:38 | | 07:31 (6) | 07:34 | | 07:36 | | | 08:35 | | 09:19 (36) |
| | 22:18 | | | 21:40 | 26 | 08:13 (6) | 20:29 | 48 | 08:19 (6) | 19:12 | | 16:58 | | | 16:10 | 21 | 09:40 (36) |
| 2 | 04:57 | | | 05:41 | | 07:44 (6) | 06:39 | | 07:32 (6) | 07:36 | | 07:38 | | | 08:36 | | 09:20 (36) |
| | 22:17 | | | 21:38 | 30 | 08:14 (6) | 20:27 | 45 | 08:17 (6) | 19:09 | | 16:55 | | | 16:09 | 20 | 09:40 (36) |
| 3 | 04:58 | | | 05:43 | | 07:43 (6) | 06:41 | | 07:33 (6) | 07:38 | | 07:41 | | | 08:38 | | 09:21 (36) |
| | 22:17 | | | 21:36 | 33 | 08:16 (6) | 20:24 | 43 | 08:16 (6) | 19:07 | | 16:53 | | | 16:08 | 20 | 09:41 (36) |
| 4 | 04:59 | | | 05:45 | | 07:42 (6) | 06:43 | | 07:34 (6) | 07:40 | | 07:43 | | | 08:40 | | 09:21 (36) |
| | 22:16 | | | 21:34 | 36 | 08:18 (6) | 20:22 | 41 | 08:15 (6) | 19:04 | | 16:51 | | | 16:07 | 19 | 09:40 (36) |
| 5 | 05:00 | | | 05:47 | | 07:40 (6) | 06:45 | | 07:35 (6) | 07:42 | | 07:45 | | | 08:41 | | 09:22 (36) |
| | 22:16 | | | 21:32 | 38 | 08:18 (6) | 20:19 | 37 | 08:12 (6) | 19:02 | | 16:49 | | | 16:07 | 18 | 09:40 (36) |
| 6 | 05:01 | | | 05:49 | | 07:39 (6) | 06:47 | | 07:36 (6) | 07:44 | | 07:47 | | | 08:43 | | 09:23 (36) |
| | 22:15 | | | 21:30 | 41 | 08:20 (6) | 20:16 | 34 | 08:10 (6) | 18:59 | | 16:47 | | | 16:06 | 16 | 09:39 (36) |
| 7 | 05:02 | | | 05:50 | | 07:38 (6) | 06:49 | | 07:38 (6) | 07:46 | | 07:49 | | | 08:44 | | 09:24 (36) |
| | 22:14 | | | 21:28 | 43 | 08:21 (6) | 20:14 | 29 | 08:07 (6) | 18:57 | | 16:45 | | | 16:05 | 16 | 09:40 (36) |
| 8 | 05:03 | | | 05:52 | | 07:38 (6) | 06:51 | | 07:41 (6) | 07:48 | | 07:51 | | | 08:45 | | 09:25 (36) |
| | 22:14 | | | 21:25 | 44 | 08:22 (6) | 20:11 | 23 | 08:04 (6) | 18:54 | | 16:43 | | | 16:05 | 14 | 09:39 (36) |
| 9 | 05:04 | | | 05:54 | | 07:36 (6) | 06:53 | | 07:45 (6) | 07:50 | | 07:53 | | | 08:47 | | 09:26 (36) |
| | 22:13 | | | 21:23 | 46 | 08:22 (6) | 20:09 | 15 | 08:00 (6) | 18:52 | | 16:41 | | | 16:05 | 13 | 09:39 (36) |
| 10 | 05:05 | | | 05:56 | | 07:35 (6) | 06:55 | | | 07:52 | | 07:55 | | | 08:48 | | 09:27 (36) |
| | 22:12 | | | 21:21 | 48 | 08:23 (6) | 20:06 | | | 18:49 | | 16:40 | | | 16:04 | 12 | 09:39 (36) |
| 11 | 05:07 | | | 05:58 | | 07:35 (6) | 06:56 | | | 07:54 | | 07:57 | | | 08:49 | | 09:28 (36) |
| | 22:11 | | | 21:19 | 49 | 08:24 (6) | 20:04 | | | 18:47 | | 16:38 | | | 16:04 | 10 | 09:38 (36) |
| 12 | 05:08 | | | 06:00 | | 07:33 (6) | 06:58 | | | 07:56 | | 07:59 | | 09:20 (36) | 08:50 | | 09:30 (36) |
| | 22:10 | | | 21:17 | 51 | 08:24 (6) | 20:01 | | | 18:44 | | 16:36 | 9 | 09:29 (36) | 16:04 | 8 | 09:38 (36) |
| 13 | 05:09 | | | 06:02 | | 07:33 (6) | 07:00 | | 18:45 (39) | 07:58 | | 08:01 | | 09:19 (36) | 08:51 | | 09:32 (36) |
| | 22:09 | | | 21:15 | 52 | 08:25 (6) | 19:58 | 6 | 18:51 (39) | 18:42 | | 16:34 | 13 | 09:32 (36) | 16:04 | 6 | 09:38 (36) |
| 14 | 05:10 | | | 06:03 | | 07:33 (6) | 07:02 | | 18:41 (39) | 08:00 | | 08:03 | | 09:17 (36) | 08:52 | | 09:33 (36) |
| | 22:08 | | | 21:12 | 53 | 08:26 (6) | 19:56 | 13 | 18:54 (39) | 18:39 | | 16:32 | 16 | 09:33 (36) | 16:03 | 3 | 09:36 (36) |
| 15 | 05:12 | | | 06:05 | | 07:32 (6) | 07:04 | | 18:38 (39) | 08:02 | | 08:05 | | 09:16 (36) | 08:53 | | |
| | 22:06 | | | 21:10 | 54 | 08:26 (6) | 19:53 | 18 | 18:56 (39) | 18:37 | | 16:31 | 18 | 09:34 (36) | 16:03 | | |
| 16 | 05:13 | | | 06:07 | | 07:32 (6) | 07:06 | | 18:36 (39) | 08:04 | | 08:07 | | 09:15 (36) | 08:54 | | |
| | 22:05 | | | 21:08 | 55 | 08:27 (6) | 19:51 | 20 | 18:56 (39) | 18:34 | | 16:29 | 20 | 09:35 (36) | 16:03 | | |
| 17 | 05:15 | | | 06:09 | | 07:31 (6) | 07:08 | | 18:34 (39) | 08:06 | | 08:09 | | 09:14 (36) | 08:55 | | |
| | 22:04 | | | 21:05 | 55 | 08:26 (6) | 19:48 | 23 | 18:57 (39) | 18:32 | | 16:27 | 22 | 09:36 (36) | 16:04 | | |
| 18 | 05:16 | | | 06:11 | | 07:31 (6) | 07:10 | | 18:33 (39) | 08:08 | | 08:11 | | 09:15 (36) | 08:56 | | |
| | 22:03 | | | 21:03 | 55 | 08:26 (6) | 19:46 | 25 | 18:58 (39) | 18:29 | | 16:26 | 22 | 09:37 (36) | 16:04 | | |
| 19 | 05:18 | | | 06:13 | | 07:30 (6) | 07:12 | | 18:33 (39) | 08:10 | | 08:13 | | 09:15 (36) | 08:57 | | |
| | 22:01 | | | 21:01 | 57 | 08:27 (6) | 19:43 | 25 | 18:58 (39) | 18:27 | | 16:24 | 23 | 09:38 (36) | 16:04 | | |
| 20 | 05:19 | | | 06:15 | | 07:30 (6) | 07:13 | | 18:32 (39) | 08:12 | | 08:15 | | 09:14 (36) | 08:57 | | |
| | 22:00 | | | 20:58 | 57 | 08:27 (6) | 19:40 | 26 | 18:58 (39) | 18:25 | | 16:23 | 24 | 09:38 (36) | 16:04 | | |
| 21 | 05:21 | | | 06:17 | | 07:29 (6) | 07:15 | | 18:32 (39) | 08:14 | | 08:17 | | 09:14 (36) | 08:58 | | |
| | 21:58 | | | 20:56 | 57 | 08:26 (6) | 19:38 | 26 | 18:58 (39) | 18:22 | | 16:21 | 24 | 09:38 (36) | 16:05 | | |
| 22 | 05:22 | | | 06:19 | | 07:29 (6) | 07:17 | | 18:31 (39) | 08:16 | | 08:19 | | 09:14 (36) | 08:59 | | |
| | 21:57 | | | 20:54 | 57 | 08:26 (6) | 19:35 | 27 | 18:58 (39) | 18:20 | | 16:20 | 25 | 09:39 (36) | 16:05 | | |
| 23 | 05:24 | | | 06:21 | | 07:29 (6) | 07:19 | | 18:31 (39) | 08:18 | | 08:21 | | 09:14 (36) | 08:59 | | |
| | 21:55 | | | 20:51 | 57 | 08:26 (6) | 19:33 | 26 | 18:57 (39) | 18:18 | | 16:19 | 25 | 09:39 (36) | 16:06 | | |
| 24 | 05:26 | | | 06:22 | | 07:29 (6) | 07:21 | | 18:30 (39) | 08:20 | | 08:23 | | 09:15 (36) | 09:00 | | |
| | 21:54 | | | 20:49 | 57 | 08:26 (6) | 19:30 | 26 | 18:56 (39) | 18:15 | | 16:17 | 24 | 09:39 (36) | 16:06 | | |
| 25 | 05:27 | | | 06:24 | | 07:30 (6) | 07:23 | | 18:31 (39) | 07:22 | | 08:24 | | 09:15 (36) | 09:00 | | |
| | 21:52 | | | 20:46 | 55 | 08:25 (6) | 19:27 | 24 | 18:55 (39) | 17:13 | | 16:16 | 24 | 09:39 (36) | 16:07 | | |
| 26 | 05:29 | | | 06:26 | | 07:29 (6) | 07:25 | | 18:31 (39) | 07:24 | | 08:26 | | 09:15 (36) | 09:00 | | |
| | 21:50 | | | 20:44 | 55 | 08:24 (6) | 19:25 | 23 | 18:54 (39) | 17:11 | | 16:15 | 24 | 09:39 (36) | 16:08 | | |
| 27 | 05:31 | | | 06:28 | | 07:29 (6) | 07:27 | | 18:32 (39) | 07:26 | | 08:28 | | 09:16 (36) | 09:00 | | |
| | 21:49 | | | 20:42 | 54 | 08:23 (6) | 19:22 | 20 | 18:52 (39) | 17:08 | | 16:14 | 24 | 09:40 (36) | 16:08 | | |
| 28 | 05:32 | | | 06:30 | | 07:30 (6) | 07:29 | | 18:34 (39) | 07:28 | | 08:30 | | 09:16 (36) | 09:01 | | |
| | 21:47 | | | 20:39 | 53 | 08:23 (6) | 19:20 | 16 | 18:50 (39) | 17:06 | | 16:13 | 24 | 09:40 (36) | 16:09 | | |
| 29 | 05:34 | | 07:56 (6) | 06:32 | | 07:30 (6) | 07:31 | | 18:36 (39) | 07:30 | | 08:31 | | 09:17 (36) | 09:01 | | |
| | 21:45 | 6 | 08:02 (6) | 20:37 | 52 | 08:22 (6) | 19:17 | 11 | 18:47 (39) | 17:04 | | 16:12 | 23 | 09:40 (36) | 16:10 | | |
| 30 | 05:36 | | 07:51 (6) | 06:34 | | 07:31 (6) | 07:32 | | | 07:32 | | 08:33 | | 09:18 (36) | 09:01 | | 09:40 (36) |
| | 21:43 | 16 | 08:07 (6) | 20:34 | 51 | 08:22 (6) | 19:14 | | | 17:02 | | 16:11 | 22 | 09:40 (36) | 16:11 | 5 | 09:45 (36) |
| 31 | 05:38 | | 07:49 (6) | 06:36 | | 07:30 (6) | | | | 07:34 | | | | | 09:01 | | 09:39 (36) |
| | 21:41 | 21 | 08:10 (6) | 20:32 | 50 | 08:20 (6) | | | | 17:00 | | | | | 16:12 | 8 | 09:47 (36) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | 43 | | | 1521 | | | 670 | | | | | 406 | | | 209 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 1,00 | | | 1,00 | | | 0,99 | | | | | 0,65 | | | 0,65 | |
| Total reduction | | 0,46 | | | 0,49 | | | 0,38 | | | | | 0,10 | | | 0,08 | |
| Total, real | | 20 | | | 748 | | | 252 | | | | | 40 | | | 18 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (36) | 08:27 | | 07:26 | | 07:08 | | 07:54 (6) | 05:55 | | 07:38 (6) | 05:02 |
| | 16:14 | 14 | 09:52 (36) | 17:08 | | 18:07 | | 20:09 | 26 | 08:20 (6) | 21:08 | 42 | 08:20 (6) | 22:02 |
| 2 | 09:00 | | 09:39 (36) | 08:26 | | 07:24 | | 07:05 | | 07:51 (6) | 05:53 | | 07:38 (6) | 05:01 |
| | 16:15 | 15 | 09:54 (36) | 17:10 | | 18:09 | | 20:11 | 32 | 08:23 (6) | 21:10 | 40 | 08:18 (6) | 22:03 |
| 3 | 09:00 | | 09:38 (36) | 08:24 | | 07:22 | | 07:03 | | 07:48 (6) | 05:50 | | 07:39 (6) | 05:00 |
| | 16:16 | 16 | 09:54 (36) | 17:12 | | 18:11 | | 20:13 | 36 | 08:24 (6) | 21:12 | 37 | 08:16 (6) | 22:05 |
| 4 | 09:00 | | 09:39 (36) | 08:22 | | 07:19 | | 07:00 | | 07:46 (6) | 05:48 | | 07:40 (6) | 04:59 |
| | 16:17 | 17 | 09:56 (36) | 17:14 | | 18:13 | | 20:15 | 39 | 08:25 (6) | 21:14 | 34 | 08:14 (6) | 22:06 |
| 5 | 08:59 | | 09:38 (36) | 08:20 | | 07:17 | | 06:57 | | 07:45 (6) | 05:46 | | 07:42 (6) | 04:58 |
| | 16:19 | 18 | 09:56 (36) | 17:16 | | 18:15 | | 20:17 | 42 | 08:27 (6) | 21:16 | 31 | 08:13 (6) | 22:07 |
| 6 | 08:59 | | 09:39 (36) | 08:18 | | 07:14 | | 06:55 | | 07:43 (6) | 05:44 | | 07:44 (6) | 04:57 |
| | 16:20 | 19 | 09:58 (36) | 17:19 | | 18:17 | | 20:19 | 44 | 08:27 (6) | 21:18 | 27 | 08:11 (6) | 22:08 |
| 7 | 08:58 | | 09:39 (36) | 08:16 | | 07:12 | | 06:52 | | 07:42 (6) | 05:42 | | 07:46 (6) | 04:56 |
| | 16:21 | 19 | 09:58 (36) | 17:21 | | 18:19 | | 20:21 | 47 | 08:29 (6) | 21:20 | 23 | 08:09 (6) | 22:09 |
| 8 | 08:58 | | 09:39 (36) | 08:14 | | 07:09 | | 06:50 | | 07:40 (6) | 05:40 | | 07:49 (6) | 04:56 |
| | 16:23 | 20 | 09:59 (36) | 17:23 | | 18:22 | | 20:23 | 49 | 08:29 (6) | 21:22 | 17 | 08:06 (6) | 22:10 |
| 9 | 08:57 | | 09:38 (36) | 08:12 | | 07:07 | | 06:47 | | 07:39 (6) | 05:38 | | 07:53 (6) | 04:55 |
| | 16:24 | 22 | 10:00 (36) | 17:25 | | 18:24 | | 20:25 | 51 | 08:30 (6) | 21:24 | 7 | 08:00 (6) | 22:11 |
| 10 | 08:56 | | 09:38 (36) | 08:10 | | 07:04 | | 06:45 | | 07:38 (6) | 05:36 | | | 04:54 |
| | 16:26 | 22 | 10:00 (36) | 17:27 | | 18:26 | | 20:27 | 52 | 08:30 (6) | 21:26 | | | 22:12 |
| 11 | 08:56 | | 09:39 (36) | 08:08 | | 07:02 | | 06:42 | | 07:37 (6) | 05:34 | | | 04:54 |
| | 16:28 | 22 | 10:01 (36) | 17:29 | | 18:28 | | 20:29 | 53 | 08:30 (6) | 21:28 | | | 22:13 |
| 12 | 08:55 | | 09:39 (36) | 08:06 | | 06:59 | | 06:40 | | 07:37 (6) | 05:32 | | | 04:53 |
| | 16:29 | 23 | 10:02 (36) | 17:31 | | 18:30 | | 20:31 | 54 | 08:31 (6) | 21:29 | | | 22:14 |
| 13 | 08:54 | | 09:39 (36) | 08:03 | | 06:56 | | 17:52 (39) | 06:37 | | 07:36 (6) | 05:30 | | 04:53 |
| | 16:31 | 23 | 10:02 (36) | 17:33 | | 18:32 | 12 | 18:04 (39) | 20:33 | 54 | 08:30 (6) | 21:31 | | 22:15 |
| 14 | 08:53 | | 09:40 (36) | 08:01 | | 06:54 | | 17:50 (39) | 06:35 | | 07:35 (6) | 05:28 | | 04:53 |
| | 16:33 | 23 | 10:03 (36) | 17:36 | | 18:34 | 17 | 18:07 (39) | 20:35 | 56 | 08:31 (6) | 21:33 | | 22:15 |
| 15 | 08:52 | | 09:39 (36) | 07:59 | | 06:51 | | 17:48 (39) | 06:32 | | 07:34 (6) | 05:26 | | 04:52 |
| | 16:34 | 24 | 10:03 (36) | 17:38 | | 18:36 | 20 | 18:08 (39) | 20:37 | 56 | 08:30 (6) | 21:35 | | 22:16 |
| 16 | 08:51 | | 09:40 (36) | 07:57 | | 06:49 | | 17:46 (39) | 06:30 | | 07:34 (6) | 05:25 | | 04:52 |
| | 16:36 | 24 | 10:04 (36) | 17:40 | | 18:38 | 22 | 18:08 (39) | 20:39 | 56 | 08:30 (6) | 21:37 | | 22:17 |
| 17 | 08:50 | | 09:40 (36) | 07:55 | | 06:46 | | 17:45 (39) | 06:27 | | 07:34 (6) | 05:23 | | 04:52 |
| | 16:38 | 25 | 10:05 (36) | 17:42 | | 18:40 | 25 | 18:10 (39) | 20:41 | 57 | 08:31 (6) | 21:39 | | 22:17 |
| 18 | 08:49 | | 09:40 (36) | 07:52 | | 06:44 | | 17:44 (39) | 06:25 | | 07:33 (6) | 05:21 | | 04:52 |
| | 16:40 | 24 | 10:04 (36) | 17:44 | | 18:42 | 25 | 18:09 (39) | 20:43 | 57 | 08:30 (6) | 21:40 | | 22:18 |
| 19 | 08:47 | | 09:41 (36) | 07:50 | | 06:41 | | 17:44 (39) | 06:23 | | 07:33 (6) | 05:19 | | 04:52 |
| | 16:42 | 24 | 10:05 (36) | 17:46 | | 18:44 | 26 | 18:10 (39) | 20:45 | 57 | 08:30 (6) | 21:42 | | 22:18 |
| 20 | 08:46 | | 09:41 (36) | 07:48 | | 06:39 | | 17:43 (39) | 06:20 | | 07:34 (6) | 05:18 | | 04:52 |
| | 16:44 | 24 | 10:05 (36) | 17:48 | | 18:46 | 27 | 18:10 (39) | 20:47 | 55 | 08:29 (6) | 21:44 | | 22:18 |
| 21 | 08:45 | | 09:42 (36) | 07:46 | | 06:36 | | 17:42 (39) | 06:18 | | 07:33 (6) | 05:16 | | 04:52 |
| | 16:46 | 23 | 10:05 (36) | 17:50 | | 18:48 | 27 | 18:09 (39) | 20:49 | 55 | 08:28 (6) | 21:45 | | 22:19 |
| 22 | 08:43 | | 09:42 (36) | 07:43 | | 06:33 | | 17:43 (39) | 06:15 | | 07:33 (6) | 05:15 | | 04:52 |
| | 16:48 | 23 | 10:05 (36) | 17:53 | | 18:50 | 26 | 18:09 (39) | 20:51 | 55 | 08:28 (6) | 21:47 | | 22:19 |
| 23 | 08:42 | | 09:43 (36) | 07:41 | | 06:31 | | 17:43 (39) | 06:13 | | 07:34 (6) | 05:13 | | 04:53 |
| | 16:49 | 21 | 10:04 (36) | 17:55 | | 18:52 | 25 | 18:08 (39) | 20:53 | 54 | 08:28 (6) | 21:49 | | 22:19 |
| 24 | 08:41 | | 09:44 (36) | 07:38 | | 06:28 | | 17:44 (39) | 06:11 | | 07:34 (6) | 05:12 | | 04:53 |
| | 16:51 | 21 | 10:05 (36) | 17:57 | | 18:54 | 24 | 18:08 (39) | 20:55 | 53 | 08:27 (6) | 21:50 | | 22:19 |
| 25 | 08:39 | | 09:45 (36) | 07:36 | | 06:26 | | 17:44 (39) | 06:08 | | 07:34 (6) | 05:10 | | 04:53 |
| | 16:53 | 19 | 10:04 (36) | 17:59 | | 18:56 | 22 | 18:06 (39) | 20:57 | 51 | 08:25 (6) | 21:52 | | 22:19 |
| 26 | 08:37 | | 09:46 (36) | 07:34 | | 06:23 | | 17:44 (39) | 06:06 | | 07:34 (6) | 05:09 | | 04:54 |
| | 16:56 | 17 | 10:03 (36) | 18:01 | | 18:57 | 20 | 18:04 (39) | 20:59 | 51 | 08:25 (6) | 21:53 | | 22:19 |
| 27 | 08:36 | | 09:47 (36) | 07:31 | | 06:21 | | 17:46 (39) | 06:04 | | 07:35 (6) | 05:08 | | 04:54 |
| | 16:58 | 15 | 10:02 (36) | 18:03 | | 18:59 | 17 | 18:03 (39) | 21:01 | 49 | 08:24 (6) | 21:55 | | 22:19 |
| 28 | 08:34 | | 09:49 (36) | 07:29 | | 06:18 | | 17:48 (39) | 06:01 | | 07:35 (6) | 05:06 | | 04:55 |
| | 17:00 | 11 | 10:00 (36) | 18:05 | | 19:01 | 12 | 18:00 (39) | 21:03 | 48 | 08:23 (6) | 21:57 | | 22:19 |
| 29 | 08:33 | | 09:53 (36) | | | 07:15 | | | 05:59 | | 07:36 (6) | 05:05 | | 04:55 |
| | 17:02 | 5 | 09:58 (36) | | | 20:03 | | | 21:05 | 46 | 08:22 (6) | 21:58 | | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:04 (6) | 05:57 | | 07:37 (6) | 05:04 | | 04:56 |
| | 17:04 | | | | | 20:05 | 7 | 08:11 (6) | 21:06 | 44 | 08:21 (6) | 21:59 | | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 07:58 (6) | | | | 05:03 | | |
| | 17:06 | | | | | 20:07 | 19 | 08:17 (6) | | | | 22:01 | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | 520 |
| Total, worst case | | 573 | | | | | 373 | | | 1479 | | | 258 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | | | 0,99 | | | 1,00 | | | 1,00 | |
| Total reduction | | 0,11 | | | | | 0,32 | | | 0,37 | | | 0,49 | |
| Total, real | | 63 | | | | | 119 | | | 553 | | | 127 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:36 (6) | 07:34 | | 18:35 (39) | 07:36 | | | 08:35 | | 09:21 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 53 | 08:29 (6) | 19:12 | 6 | 18:41 (39) | 16:58 | | | 16:10 | 22 | 09:43 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:37 (6) | 07:36 | | | 07:38 | | | 08:36 | | 09:22 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 52 | 08:29 (6) | 19:09 | | | 16:55 | | | 16:09 | 21 | 09:43 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:37 (6) | 07:38 | | | 07:41 | | | 08:38 | | 09:23 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 51 | 08:28 (6) | 19:07 | | | 16:53 | | | 16:08 | 21 | 09:44 (36) |
| 4 | 04:59 | | 05:45 | | 08:02 (6) | 06:43 | | 07:38 (6) | 07:40 | | | 07:43 | | | 08:40 | | 09:23 (36) |
| | 22:16 | | 21:34 | 11 | 08:13 (6) | 20:22 | 49 | 08:27 (6) | 19:04 | | | 16:51 | | | 16:07 | 20 | 09:43 (36) |
| 5 | 05:00 | | 05:47 | | 07:57 (6) | 06:45 | | 07:38 (6) | 07:42 | | | 07:45 | | | 08:41 | | 09:24 (36) |
| | 22:16 | | 21:32 | 19 | 08:16 (6) | 20:19 | 47 | 08:25 (6) | 19:02 | | | 16:49 | | | 16:07 | 19 | 09:43 (36) |
| 6 | 05:01 | | 05:49 | | 07:55 (6) | 06:47 | | 07:39 (6) | 07:44 | | | 07:47 | | | 08:43 | | 09:24 (36) |
| | 22:15 | | 21:30 | 24 | 08:19 (6) | 20:16 | 44 | 08:23 (6) | 18:59 | | | 16:47 | | | 16:06 | 19 | 09:43 (36) |
| 7 | 05:02 | | 05:50 | | 07:53 (6) | 06:49 | | 07:40 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:25 (36) |
| | 22:14 | | 21:28 | 29 | 08:22 (6) | 20:14 | 42 | 08:22 (6) | 18:57 | | | 16:45 | | | 16:05 | 18 | 09:43 (36) |
| 8 | 05:03 | | 05:52 | | 07:51 (6) | 06:51 | | 07:41 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:26 (36) |
| | 22:14 | | 21:25 | 33 | 08:24 (6) | 20:11 | 39 | 08:20 (6) | 18:54 | | | 16:43 | | | 16:05 | 17 | 09:43 (36) |
| 9 | 05:04 | | 05:54 | | 07:49 (6) | 06:53 | | 07:42 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:27 (36) |
| | 22:13 | | 21:23 | 35 | 08:24 (6) | 20:09 | 37 | 08:19 (6) | 18:52 | | | 16:41 | | | 16:05 | 16 | 09:43 (36) |
| 10 | 05:05 | | 05:56 | | 07:48 (6) | 06:55 | | 07:43 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:28 (36) |
| | 22:12 | | 21:21 | 38 | 08:26 (6) | 20:06 | 32 | 08:15 (6) | 18:49 | | | 16:40 | | | 16:04 | 15 | 09:43 (36) |
| 11 | 05:07 | | 05:58 | | 07:47 (6) | 06:56 | | 07:46 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:29 (36) |
| | 22:11 | | 21:19 | 40 | 08:27 (6) | 20:04 | 27 | 08:13 (6) | 18:47 | | | 16:38 | | | 16:04 | 14 | 09:43 (36) |
| 12 | 05:08 | | 06:00 | | 07:45 (6) | 06:58 | | 07:49 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:30 (36) |
| | 22:10 | | 21:17 | 43 | 08:28 (6) | 20:01 | 20 | 08:09 (6) | 18:44 | | | 16:36 | | | 16:04 | 13 | 09:43 (36) |
| 13 | 05:09 | | 06:02 | | 07:44 (6) | 07:00 | | 07:54 (6) | 07:58 | | | 08:01 | | 09:24 (36) | 08:51 | | 09:31 (36) |
| | 22:09 | | 21:15 | 45 | 08:29 (6) | 19:58 | 10 | 08:04 (6) | 18:42 | | | 16:34 | 7 | 09:31 (36) | 16:04 | 12 | 09:43 (36) |
| 14 | 05:10 | | 06:03 | | 07:43 (6) | 07:02 | | | 08:00 | | | 08:03 | | 09:22 (36) | 08:52 | | 09:32 (36) |
| | 22:08 | | 21:12 | 47 | 08:30 (6) | 19:56 | | | 18:39 | | | 16:32 | 11 | 09:33 (36) | 16:03 | 11 | 09:43 (36) |
| 15 | 05:12 | | 06:05 | | 07:43 (6) | 07:04 | | 18:39 (39) | 08:02 | | | 08:05 | | 09:20 (36) | 08:53 | | 09:33 (36) |
| | 22:06 | | 21:10 | 48 | 08:31 (6) | 19:53 | 11 | 18:50 (39) | 18:37 | | | 16:31 | 15 | 09:35 (36) | 16:03 | 10 | 09:43 (36) |
| 16 | 05:13 | | 06:07 | | 07:42 (6) | 07:06 | | 18:35 (39) | 08:04 | | | 08:07 | | 09:19 (36) | 08:54 | | 09:34 (36) |
| | 22:05 | | 21:08 | 50 | 08:32 (6) | 19:51 | 16 | 18:51 (39) | 18:34 | | | 16:29 | 17 | 09:36 (36) | 16:03 | 9 | 09:43 (36) |
| 17 | 05:15 | | 06:09 | | 07:41 (6) | 07:08 | | 18:33 (39) | 08:06 | | | 08:09 | | 09:18 (36) | 08:55 | | 09:35 (36) |
| | 22:04 | | 21:05 | 51 | 08:32 (6) | 19:48 | 19 | 18:52 (39) | 18:32 | | | 16:27 | 19 | 09:37 (36) | 16:04 | 8 | 09:43 (36) |
| 18 | 05:16 | | 06:11 | | 07:40 (6) | 07:10 | | 18:31 (39) | 08:08 | | | 08:11 | | 09:18 (36) | 08:56 | | 09:36 (36) |
| | 22:03 | | 21:03 | 52 | 08:32 (6) | 19:46 | 22 | 18:53 (39) | 18:29 | | | 16:26 | 21 | 09:39 (36) | 16:04 | 7 | 09:43 (36) |
| 19 | 05:18 | | 06:13 | | 07:40 (6) | 07:12 | | 18:30 (39) | 08:10 | | | 08:13 | | 09:18 (36) | 08:57 | | 09:36 (36) |
| | 22:01 | | 21:01 | 53 | 08:33 (6) | 19:43 | 24 | 18:54 (39) | 18:27 | | | 16:24 | 21 | 09:39 (36) | 16:04 | 7 | 09:43 (36) |
| 20 | 05:19 | | 06:15 | | 07:39 (6) | 07:13 | | 18:29 (39) | 08:12 | | | 08:15 | | 09:17 (36) | 08:57 | | 09:37 (36) |
| | 22:00 | | 20:58 | 54 | 08:33 (6) | 19:40 | 25 | 18:54 (39) | 18:25 | | | 16:23 | 23 | 09:40 (36) | 16:04 | 6 | 09:43 (36) |
| 21 | 05:21 | | 06:17 | | 07:38 (6) | 07:15 | | 18:29 (39) | 08:14 | | | 08:17 | | 09:17 (36) | 08:58 | | 09:37 (36) |
| | 21:58 | | 20:56 | 55 | 08:33 (6) | 19:38 | 26 | 18:55 (39) | 18:22 | | | 16:21 | 23 | 09:40 (36) | 16:05 | 6 | 09:43 (36) |
| 22 | 05:22 | | 06:19 | | 07:38 (6) | 07:17 | | 18:28 (39) | 08:16 | | | 08:19 | | 09:17 (36) | 08:59 | | 09:38 (36) |
| | 21:57 | | 20:54 | 55 | 08:33 (6) | 19:35 | 27 | 18:55 (39) | 18:20 | | | 16:20 | 24 | 09:41 (36) | 16:05 | 6 | 09:44 (36) |
| 23 | 05:24 | | 06:21 | | 07:37 (6) | 07:19 | | 18:28 (39) | 08:18 | | | 08:21 | | 09:17 (36) | 08:59 | | 09:38 (36) |
| | 21:55 | | 20:51 | 56 | 08:33 (6) | 19:33 | 26 | 18:54 (39) | 18:18 | | | 16:19 | 24 | 09:41 (36) | 16:06 | 6 | 09:44 (36) |
| 24 | 05:26 | | 06:22 | | 07:37 (6) | 07:21 | | 18:27 (39) | 08:20 | | | 08:23 | | 09:17 (36) | 09:00 | | 09:39 (36) |
| | 21:54 | | 20:49 | 56 | 08:33 (6) | 19:30 | 26 | 18:53 (39) | 18:15 | | | 16:17 | 24 | 09:41 (36) | 16:06 | 6 | 09:45 (36) |
| 25 | 05:27 | | 06:24 | | 07:37 (6) | 07:23 | | 18:27 (39) | 07:22 | | | 08:24 | | 09:17 (36) | 09:00 | | 09:39 (36) |
| | 21:52 | | 20:46 | 56 | 08:33 (6) | 19:27 | 25 | 18:52 (39) | 17:13 | | | 16:16 | 25 | 09:42 (36) | 16:07 | 7 | 09:46 (36) |
| 26 | 05:29 | | 06:26 | | 07:36 (6) | 07:25 | | 18:27 (39) | 07:24 | | | 08:26 | | 09:18 (36) | 09:00 | | 09:39 (36) |
| | 21:50 | | 20:44 | 56 | 08:32 (6) | 19:25 | 25 | 18:52 (39) | 17:11 | | | 16:15 | 24 | 09:42 (36) | 16:08 | 8 | 09:47 (36) |
| 27 | 05:31 | | 06:28 | | 07:36 (6) | 07:27 | | 18:28 (39) | 07:26 | | | 08:28 | | 09:18 (36) | 09:00 | | 09:39 (36) |
| | 21:49 | | 20:42 | 56 | 08:32 (6) | 19:22 | 23 | 18:51 (39) | 17:08 | | | 16:14 | 24 | 09:42 (36) | 16:08 | 8 | 09:47 (36) |
| 28 | 05:32 | | 06:30 | | 07:36 (6) | 07:29 | | 18:28 (39) | 07:28 | | | 08:30 | | 09:19 (36) | 09:01 | | 09:39 (36) |
| | 21:47 | | 20:39 | 56 | 08:32 (6) | 19:20 | 21 | 18:49 (39) | 17:06 | | | 16:13 | 23 | 09:42 (36) | 16:09 | 9 | 09:48 (36) |
| 29 | 05:34 | | 06:32 | | 07:36 (6) | 07:31 | | 18:29 (39) | 07:30 | | | 08:31 | | 09:19 (36) | 09:01 | | 09:39 (36) |
| | 21:45 | | 20:37 | 56 | 08:32 (6) | 19:17 | 18 | 18:47 (39) | 17:04 | | | 16:12 | 24 | 09:43 (36) | 16:10 | 10 | 09:49 (36) |
| 30 | 05:36 | | 06:34 | | 07:37 (6) | 07:32 | | 18:31 (39) | 07:32 | | | 08:33 | | 09:20 (36) | 09:01 | | 09:39 (36) |
| | 21:43 | | 20:34 | 54 | 08:31 (6) | 19:14 | 14 | 18:45 (39) | 17:02 | | | 16:11 | 23 | 09:43 (36) | 16:11 | 12 | 09:51 (36) |
| 31 | 05:38 | | 06:36 | | 07:36 (6) | | | | 07:34 | | | | | | 09:01 | | 09:39 (36) |
| | 21:41 | | 20:32 | 54 | 08:30 (6) | | | | 17:00 | | | | | | 16:12 | 13 | 09:52 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1282 | | | 851 | | | 6 | | | 372 | | | 376 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,99 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | 0,49 | | | 0,37 | | | 0,29 | | | 0,10 | | | 0,08 | |
| Total, real | | | | 627 | | | 318 | | | 2 | | | 36 | | | 31 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:39 (36) | 08:27 | 07:26 | | 07:08 | 07:54 (6) | 05:55 | 07:54 (6) | 05:02 |
| | 16:14 17 | 09:56 (36) | 17:08 | 18:07 | | 20:09 42 | 08:36 (6) | 21:08 26 | 08:20 (6) | 22:02 |
| 2 | 09:00 | 09:40 (36) | 08:26 | 07:24 | | 07:05 | 07:53 (6) | 05:53 | 07:55 (6) | 05:01 |
| | 16:15 18 | 09:58 (36) | 17:10 | 18:09 | | 20:11 45 | 08:38 (6) | 21:10 21 | 08:16 (6) | 22:03 |
| 3 | 09:00 | 09:39 (36) | 08:24 | 07:22 | | 07:03 | 07:51 (6) | 05:50 | 07:59 (6) | 05:00 |
| | 16:16 19 | 09:58 (36) | 17:12 | 18:11 | | 20:13 47 | 08:38 (6) | 21:12 13 | 08:12 (6) | 22:05 |
| 4 | 09:00 | 09:40 (36) | 08:22 | 07:19 | | 07:00 | 07:50 (6) | 05:48 | | 04:59 |
| | 16:17 19 | 09:59 (36) | 17:14 | 18:13 | | 20:15 48 | 08:38 (6) | 21:14 | | 22:06 |
| 5 | 08:59 | 09:40 (36) | 08:20 | 07:17 | | 06:57 | 07:49 (6) | 05:46 | | 04:58 |
| | 16:19 20 | 10:00 (36) | 17:16 | 18:15 | | 20:17 50 | 08:39 (6) | 21:16 | | 22:07 |
| 6 | 08:59 | 09:41 (36) | 08:18 | 07:14 | | 06:55 | 07:48 (6) | 05:44 | | 04:57 |
| | 16:20 20 | 10:01 (36) | 17:19 | 18:17 | | 20:19 51 | 08:39 (6) | 21:18 | | 22:08 |
| 7 | 08:58 | 09:40 (36) | 08:16 | 07:12 | | 06:52 | 07:47 (6) | 05:42 | | 04:56 |
| | 16:21 21 | 10:01 (36) | 17:21 | 18:19 | | 20:21 53 | 08:40 (6) | 21:20 | | 22:09 |
| 8 | 08:58 | 09:40 (36) | 08:14 | 07:09 | | 06:50 | 07:46 (6) | 05:40 | | 04:55 |
| | 16:23 22 | 10:02 (36) | 17:23 | 18:22 | | 20:23 54 | 08:40 (6) | 21:22 | | 22:10 |
| 9 | 08:57 | 09:40 (36) | 08:12 | 07:07 | | 06:47 | 07:46 (6) | 05:38 | | 04:55 |
| | 16:24 23 | 10:03 (36) | 17:25 | 18:24 | | 20:25 54 | 08:40 (6) | 21:24 | | 22:11 |
| 10 | 08:56 | 09:41 (36) | 08:10 | 07:04 | | 06:45 | 07:44 (6) | 05:36 | | 04:54 |
| | 16:26 22 | 10:03 (36) | 17:27 | 18:26 | | 20:27 56 | 08:40 (6) | 21:26 | | 22:12 |
| 11 | 08:56 | 09:41 (36) | 08:08 | 07:02 | 17:51 (39) | 06:42 | 07:44 (6) | 05:34 | | 04:54 |
| | 16:28 23 | 10:04 (36) | 17:29 | 18:28 8 | 17:59 (39) | 20:29 56 | 08:40 (6) | 21:28 | | 22:13 |
| 12 | 08:55 | 09:41 (36) | 08:06 | 06:59 | 17:48 (39) | 06:40 | 07:44 (6) | 05:32 | | 04:53 |
| | 16:29 23 | 10:04 (36) | 17:31 | 18:30 14 | 18:02 (39) | 20:31 56 | 08:40 (6) | 21:29 | | 22:14 |
| 13 | 08:54 | 09:41 (36) | 08:03 | 06:56 | 17:45 (39) | 06:37 | 07:43 (6) | 05:30 | | 04:53 |
| | 16:31 24 | 10:05 (36) | 17:33 | 18:32 19 | 18:04 (39) | 20:33 56 | 08:39 (6) | 21:31 | | 22:15 |
| 14 | 08:53 | 09:42 (36) | 08:01 | 06:54 | 17:44 (39) | 06:35 | 07:44 (6) | 05:28 | | 04:53 |
| | 16:33 24 | 10:06 (36) | 17:36 | 18:34 22 | 18:06 (39) | 20:35 55 | 08:39 (6) | 21:33 | | 22:15 |
| 15 | 08:52 | 09:42 (36) | 07:59 | 06:51 | 17:43 (39) | 06:32 | 07:43 (6) | 05:26 | | 04:52 |
| | 16:34 24 | 10:06 (36) | 17:38 | 18:36 23 | 18:06 (39) | 20:37 55 | 08:38 (6) | 21:35 | | 22:16 |
| 16 | 08:51 | 09:42 (36) | 07:57 | 06:49 | 17:41 (39) | 06:30 | 07:43 (6) | 05:25 | | 04:52 |
| | 16:36 24 | 10:06 (36) | 17:40 | 18:38 25 | 18:06 (39) | 20:39 55 | 08:38 (6) | 21:37 | | 22:17 |
| 17 | 08:50 | 09:43 (36) | 07:55 | 06:46 | 17:41 (39) | 06:27 | 07:43 (6) | 05:23 | | 04:52 |
| | 16:38 24 | 10:07 (36) | 17:42 | 18:40 26 | 18:07 (39) | 20:41 55 | 08:38 (6) | 21:39 | | 22:17 |
| 18 | 08:49 | 09:43 (36) | 07:52 | 06:44 | 17:40 (39) | 06:25 | 07:43 (6) | 05:21 | | 04:52 |
| | 16:40 23 | 10:06 (36) | 17:44 | 18:42 26 | 18:06 (39) | 20:43 54 | 08:37 (6) | 21:40 | | 22:18 |
| 19 | 08:47 | 09:44 (36) | 07:50 | 06:41 | 17:40 (39) | 06:23 | 07:43 (6) | 05:19 | | 04:52 |
| | 16:42 23 | 10:07 (36) | 17:46 | 18:44 27 | 18:07 (39) | 20:45 53 | 08:36 (6) | 21:42 | | 22:18 |
| 20 | 08:46 | 09:44 (36) | 07:48 | 06:39 | 17:40 (39) | 06:20 | 07:44 (6) | 05:18 | | 04:52 |
| | 16:44 23 | 10:07 (36) | 17:48 | 18:46 26 | 18:06 (39) | 20:47 52 | 08:36 (6) | 21:44 | | 22:18 |
| 21 | 08:45 | 09:45 (36) | 07:46 | 06:36 | 17:39 (39) | 06:18 | 07:43 (6) | 05:16 | | 04:52 |
| | 16:46 22 | 10:07 (36) | 17:50 | 18:48 26 | 18:05 (39) | 20:49 51 | 08:34 (6) | 21:45 | | 22:19 |
| 22 | 08:43 | 09:46 (36) | 07:43 | 06:33 | 17:40 (39) | 06:15 | 07:44 (6) | 05:15 | | 04:52 |
| | 16:48 21 | 10:07 (36) | 17:53 | 18:50 25 | 18:05 (39) | 20:51 50 | 08:34 (6) | 21:47 | | 22:19 |
| 23 | 08:42 | 09:46 (36) | 07:41 | 06:31 | 17:40 (39) | 06:13 | 07:45 (6) | 05:13 | | 04:53 |
| | 16:49 20 | 10:06 (36) | 17:55 | 18:52 23 | 18:03 (39) | 20:53 48 | 08:33 (6) | 21:49 | | 22:19 |
| 24 | 08:41 | 09:48 (36) | 07:38 | 06:28 | 17:42 (39) | 06:11 | 07:46 (6) | 05:12 | | 04:53 |
| | 16:51 18 | 10:06 (36) | 17:57 | 18:54 21 | 18:03 (39) | 20:55 46 | 08:32 (6) | 21:50 | | 22:19 |
| 25 | 08:39 | 09:49 (36) | 07:36 | 06:26 | 17:42 (39) | 06:08 | 07:46 (6) | 05:10 | | 04:53 |
| | 16:53 16 | 10:05 (36) | 17:59 | 18:56 19 | 18:01 (39) | 20:57 44 | 08:30 (6) | 21:52 | | 22:19 |
| 26 | 08:37 | 09:50 (36) | 07:34 | 06:23 | 17:44 (39) | 06:06 | 07:47 (6) | 05:09 | | 04:54 |
| | 16:56 14 | 10:04 (36) | 18:01 | 18:57 14 | 17:58 (39) | 20:59 42 | 08:29 (6) | 21:53 | | 22:19 |
| 27 | 08:36 | 09:52 (36) | 07:31 | 06:21 | 07:08 (6) | 06:04 | 07:48 (6) | 05:07 | | 04:54 |
| | 16:58 10 | 10:02 (36) | 18:03 | 18:59 26 | 17:55 (39) | 21:01 39 | 08:27 (6) | 21:55 | | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:04 (6) | 06:01 | 07:49 (6) | 05:06 | | 04:55 |
| | 17:00 | | 18:05 | 19:01 25 | 07:29 (6) | 21:03 37 | 08:26 (6) | 21:57 | | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:01 (6) | 05:59 | 07:50 (6) | 05:05 | | 04:55 |
| | 17:02 | | | 20:03 31 | 08:32 (6) | 21:05 34 | 08:24 (6) | 21:58 | | 22:18 |
| 30 | 08:31 | | | 07:13 | 07:58 (6) | 05:57 | 07:52 (6) | 05:04 | | 04:56 |
| | 17:04 | | | 20:05 35 | 08:33 (6) | 21:06 30 | 08:22 (6) | 21:59 | | 22:18 |
| 31 | 08:29 | | | 07:10 | 07:57 (6) | | | 05:03 | | |
| | 17:06 | | | 20:07 39 | 08:36 (6) | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | | 520 |
| Total, worst case | | 557 | | | 500 | | 1468 | | 60 | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | 0,52 | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,63 | | | 0,99 | | 1,00 | | 1,00 | |
| Total reduction | | 0,11 | | | 0,32 | | 0,37 | | 0,49 | |
| Total, real | | 60 | | | 159 | | 547 | | 29 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:43 (6) | 07:34 | | 18:26 (39) | 07:36 | | | 08:35 | | 09:23 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 56 | 08:39 (6) | 19:12 | 16 | 18:42 (39) | 16:58 | | | 16:10 | 23 | 09:46 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:43 (6) | 07:36 | | 18:28 (39) | 07:38 | | | 08:36 | | 09:24 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 56 | 08:39 (6) | 19:09 | 12 | 18:40 (39) | 16:55 | | | 16:09 | 22 | 09:46 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:44 (6) | 07:38 | | | 07:41 | | | 08:38 | | 09:25 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 54 | 08:38 (6) | 19:07 | | | 16:53 | | | 16:08 | 22 | 09:47 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:44 (6) | 07:40 | | | 07:43 | | | 08:40 | | 09:24 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 54 | 08:38 (6) | 19:04 | | | 16:51 | | | 16:07 | 22 | 09:46 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:43 (6) | 07:42 | | | 07:45 | | | 08:41 | | 09:25 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 53 | 08:36 (6) | 19:02 | | | 16:49 | | | 16:07 | 22 | 09:47 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:44 (6) | 07:44 | | | 07:47 | | | 08:43 | | 09:26 (36) |
| | 22:15 | | 21:30 | | | 20:16 | 51 | 08:35 (6) | 18:59 | | | 16:47 | | | 16:06 | 20 | 09:46 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 07:44 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:27 (36) |
| | 22:14 | | 21:28 | | | 20:14 | 50 | 08:34 (6) | 18:57 | | | 16:45 | | | 16:05 | 20 | 09:47 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:45 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:27 (36) |
| | 22:14 | | 21:25 | | | 20:11 | 48 | 08:33 (6) | 18:54 | | | 16:43 | | | 16:05 | 19 | 09:46 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:46 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:28 (36) |
| | 22:13 | | 21:23 | | | 20:09 | 46 | 08:32 (6) | 18:52 | | | 16:41 | | | 16:05 | 19 | 09:47 (36) |
| 10 | 05:05 | | 05:56 | | 08:07 (6) | 06:55 | | 07:45 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:29 (36) |
| | 22:12 | | 21:21 | 16 | 08:23 (6) | 20:06 | 45 | 08:30 (6) | 18:49 | | | 16:40 | | | 16:04 | 18 | 09:47 (36) |
| 11 | 05:07 | | 05:58 | | 08:04 (6) | 06:56 | | 07:47 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:30 (36) |
| | 22:11 | | 21:19 | 22 | 08:26 (6) | 20:04 | 42 | 08:29 (6) | 18:47 | | | 16:38 | | | 16:04 | 17 | 09:47 (36) |
| 12 | 05:08 | | 06:00 | | 08:01 (6) | 06:58 | | 07:48 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:31 (36) |
| | 22:10 | | 21:17 | 27 | 08:28 (6) | 20:01 | 39 | 08:27 (6) | 18:44 | | | 16:36 | | | 16:04 | 16 | 09:47 (36) |
| 13 | 05:09 | | 06:02 | | 07:59 (6) | 07:00 | | 07:49 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:32 (36) |
| | 22:09 | | 21:15 | 31 | 08:30 (6) | 19:58 | 36 | 08:25 (6) | 18:42 | | | 16:34 | | | 16:04 | 15 | 09:47 (36) |
| 14 | 05:10 | | 06:03 | | 07:57 (6) | 07:02 | | 07:51 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:32 (36) |
| | 22:08 | | 21:12 | 35 | 08:32 (6) | 19:56 | 32 | 08:23 (6) | 18:39 | | | 16:32 | | | 16:03 | 15 | 09:47 (36) |
| 15 | 05:12 | | 06:05 | | 07:56 (6) | 07:04 | | 07:53 (6) | 08:02 | | | 08:05 | | 09:25 (36) | 08:53 | | 09:33 (36) |
| | 22:06 | | 21:10 | 38 | 08:34 (6) | 19:53 | 27 | 08:20 (6) | 18:37 | | | 16:31 | 10 | 09:35 (36) | 16:03 | 14 | 09:47 (36) |
| 16 | 05:13 | | 06:07 | | 07:55 (6) | 07:06 | | 07:56 (6) | 08:04 | | | 08:07 | | 09:23 (36) | 08:54 | | 09:34 (36) |
| | 22:05 | | 21:08 | 40 | 08:35 (6) | 19:51 | 25 | 18:42 (39) | 18:34 | | | 16:29 | 14 | 09:37 (36) | 16:03 | 14 | 09:48 (36) |
| 17 | 05:15 | | 06:09 | | 07:53 (6) | 07:08 | | 08:01 (6) | 08:06 | | | 08:09 | | 09:22 (36) | 08:55 | | 09:35 (36) |
| | 22:04 | | 21:05 | 42 | 08:35 (6) | 19:48 | 21 | 18:46 (39) | 18:32 | | | 16:27 | 16 | 09:38 (36) | 16:04 | 13 | 09:48 (36) |
| 18 | 05:16 | | 06:11 | | 07:52 (6) | 07:10 | | 18:30 (39) | 08:08 | | | 08:11 | | 09:22 (36) | 08:56 | | 09:36 (36) |
| | 22:03 | | 21:03 | 45 | 08:37 (6) | 19:46 | 18 | 18:48 (39) | 18:29 | | | 16:26 | 18 | 09:40 (36) | 16:04 | 12 | 09:48 (36) |
| 19 | 05:18 | | 06:13 | | 07:51 (6) | 07:12 | | 18:28 (39) | 08:10 | | | 08:13 | | 09:21 (36) | 08:57 | | 09:35 (36) |
| | 22:01 | | 21:01 | 47 | 08:38 (6) | 19:43 | 21 | 18:49 (39) | 18:27 | | | 16:24 | 20 | 09:41 (36) | 16:04 | 13 | 09:48 (36) |
| 20 | 05:19 | | 06:15 | | 07:50 (6) | 07:13 | | 18:27 (39) | 08:12 | | | 08:15 | | 09:21 (36) | 08:57 | | 09:36 (36) |
| | 22:00 | | 20:58 | 49 | 08:39 (6) | 19:40 | 23 | 18:50 (39) | 18:25 | | | 16:23 | 21 | 09:42 (36) | 16:04 | 13 | 09:49 (36) |
| 21 | 05:21 | | 06:17 | | 07:49 (6) | 07:15 | | 18:26 (39) | 08:14 | | | 08:17 | | 09:20 (36) | 08:58 | | 09:36 (36) |
| | 21:58 | | 20:56 | 49 | 08:38 (6) | 19:38 | 24 | 18:50 (39) | 18:22 | | | 16:21 | 22 | 09:42 (36) | 16:05 | 12 | 09:48 (36) |
| 22 | 05:22 | | 06:19 | | 07:48 (6) | 07:17 | | 18:25 (39) | 08:16 | | | 08:19 | | 09:20 (36) | 08:59 | | 09:37 (36) |
| | 21:57 | | 20:54 | 51 | 08:39 (6) | 19:35 | 26 | 18:51 (39) | 18:20 | | | 16:20 | 23 | 09:43 (36) | 16:05 | 12 | 09:49 (36) |
| 23 | 05:24 | | 06:21 | | 07:47 (6) | 07:19 | | 18:25 (39) | 08:18 | | | 08:21 | | 09:20 (36) | 08:59 | | 09:37 (36) |
| | 21:55 | | 20:51 | 53 | 08:40 (6) | 19:33 | 26 | 18:51 (39) | 18:18 | | | 16:19 | 23 | 09:43 (36) | 16:06 | 13 | 09:50 (36) |
| 24 | 05:26 | | 06:22 | | 07:47 (6) | 07:21 | | 18:23 (39) | 08:20 | | | 08:23 | | 09:20 (36) | 09:00 | | 09:38 (36) |
| | 21:54 | | 20:49 | 53 | 08:40 (6) | 19:30 | 27 | 18:50 (39) | 18:15 | | | 16:17 | 24 | 09:44 (36) | 16:06 | 13 | 09:51 (36) |
| 25 | 05:27 | | 06:24 | | 07:46 (6) | 07:23 | | 18:23 (39) | 07:22 | | | 08:24 | | 09:20 (36) | 09:00 | | 09:39 (36) |
| | 21:52 | | 20:46 | 55 | 08:41 (6) | 19:27 | 26 | 18:49 (39) | 17:13 | | | 16:16 | 24 | 09:44 (36) | 16:07 | 12 | 09:51 (36) |
| 26 | 05:29 | | 06:26 | | 07:45 (6) | 07:25 | | 18:23 (39) | 07:24 | | | 08:26 | | 09:20 (36) | 09:00 | | 09:39 (36) |
| | 21:50 | | 20:44 | 55 | 08:40 (6) | 19:25 | 26 | 18:49 (39) | 17:11 | | | 16:15 | 24 | 09:44 (36) | 16:08 | 13 | 09:52 (36) |
| 27 | 05:31 | | 06:28 | | 07:45 (6) | 07:27 | | 18:23 (39) | 07:26 | | | 08:28 | | 09:21 (36) | 09:00 | | 09:39 (36) |
| | 21:49 | | 20:42 | 55 | 08:40 (6) | 19:22 | 25 | 18:48 (39) | 17:08 | | | 16:14 | 24 | 09:45 (36) | 16:08 | 13 | 09:52 (36) |
| 28 | 05:32 | | 06:30 | | 07:45 (6) | 07:29 | | 18:23 (39) | 07:28 | | | 08:30 | | 09:21 (36) | 09:01 | | 09:39 (36) |
| | 21:47 | | 20:39 | 55 | 08:40 (6) | 19:20 | 24 | 18:47 (39) | 17:06 | | | 16:13 | 24 | 09:45 (36) | 16:09 | 14 | 09:53 (36) |
| 29 | 05:34 | | 06:32 | | 07:44 (6) | 07:31 | | 18:24 (39) | 07:30 | | | 08:31 | | 09:22 (36) | 09:01 | | 09:39 (36) |
| | 21:45 | | 20:37 | 56 | 08:40 (6) | 19:17 | 22 | 18:46 (39) | 17:04 | | | 16:12 | 23 | 09:45 (36) | 16:10 | 15 | 09:54 (36) |
| 30 | 05:36 | | 06:34 | | 07:44 (6) | 07:32 | | 18:25 (39) | 07:32 | | | 08:33 | | 09:22 (36) | 09:01 | | 09:39 (36) |
| | 21:43 | | 20:34 | 56 | 08:40 (6) | 19:14 | 20 | 18:45 (39) | 17:02 | | | 16:11 | 24 | 09:46 (36) | 16:11 | 16 | 09:55 (36) |
| 31 | 05:38 | | 06:36 | | 07:43 (6) | | | | 07:34 | | | | | | 09:01 | | 09:40 (36) |
| | 21:41 | | 20:32 | 56 | 08:39 (6) | | | | 17:00 | | | | | | 16:12 | 16 | 09:56 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 986 | | | 1043 | | | 28 | | | 334 | | | 498 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | 0,49 | | | 0,37 | | | 0,29 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 480 | | | 389 | | | 8 | | | 32 | | | 40 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:41 (36) | 08:27 | 07:26 | | 07:08 | 07:59 (6) | 05:55 | 05:02 |
| | 16:14 19 | 10:00 (36) | 17:08 | 18:07 | | 20:09 50 | 08:49 (6) | 21:08 | 22:02 |
| 2 | 09:00 | 09:41 (36) | 08:26 | 07:24 | | 07:05 | 07:59 (6) | 05:53 | 05:01 |
| | 16:15 20 | 10:01 (36) | 17:10 | 18:09 | | 20:11 51 | 08:50 (6) | 21:10 | 22:03 |
| 3 | 09:00 | 09:41 (36) | 08:24 | 07:22 | | 07:03 | 07:57 (6) | 05:50 | 05:00 |
| | 16:16 20 | 10:01 (36) | 17:12 | 18:11 | | 20:13 53 | 08:50 (6) | 21:12 | 22:05 |
| 4 | 09:00 | 09:42 (36) | 08:22 | 07:19 | | 07:00 | 07:56 (6) | 05:48 | 04:59 |
| | 16:17 20 | 10:02 (36) | 17:14 | 18:13 | | 20:15 54 | 08:50 (6) | 21:14 | 22:06 |
| 5 | 08:59 | 09:42 (36) | 08:20 | 07:17 | | 06:57 | 07:56 (6) | 05:46 | 04:58 |
| | 16:19 21 | 10:03 (36) | 17:16 | 18:15 | | 20:17 54 | 08:50 (6) | 21:16 | 22:07 |
| 6 | 08:59 | 09:42 (36) | 08:18 | 07:14 | | 06:55 | 07:55 (6) | 05:44 | 04:57 |
| | 16:20 22 | 10:04 (36) | 17:19 | 18:17 | | 20:19 55 | 08:50 (6) | 21:18 | 22:08 |
| 7 | 08:58 | 09:42 (36) | 08:16 | 07:12 | | 06:52 | 07:55 (6) | 05:42 | 04:56 |
| | 16:21 22 | 10:04 (36) | 17:21 | 18:19 | | 20:21 55 | 08:50 (6) | 21:20 | 22:09 |
| 8 | 08:58 | 09:42 (36) | 08:14 | 07:09 | | 06:50 | 07:54 (6) | 05:40 | 04:55 |
| | 16:23 23 | 10:05 (36) | 17:23 | 18:22 | | 20:23 55 | 08:49 (6) | 21:22 | 22:10 |
| 9 | 08:57 | 09:43 (36) | 08:12 | 07:07 | 17:50 (39) | 06:47 | 07:54 (6) | 05:38 | 04:55 |
| | 16:24 22 | 10:05 (36) | 17:25 | 18:24 3 | 17:53 (39) | 20:25 55 | 08:49 (6) | 21:24 | 22:11 |
| 10 | 08:56 | 09:43 (36) | 08:10 | 07:04 | 17:46 (39) | 06:45 | 07:53 (6) | 05:36 | 04:54 |
| | 16:26 23 | 10:06 (36) | 17:27 | 18:26 12 | 17:58 (39) | 20:27 55 | 08:48 (6) | 21:26 | 22:12 |
| 11 | 08:56 | 09:43 (36) | 08:08 | 07:02 | 17:43 (39) | 06:42 | 07:53 (6) | 05:34 | 04:54 |
| | 16:28 23 | 10:06 (36) | 17:29 | 18:28 17 | 18:00 (39) | 20:29 55 | 08:48 (6) | 21:28 | 22:13 |
| 12 | 08:55 | 09:43 (36) | 08:06 | 06:59 | 17:41 (39) | 06:40 | 07:54 (6) | 05:32 | 04:53 |
| | 16:29 24 | 10:07 (36) | 17:31 | 18:30 21 | 18:02 (39) | 20:31 54 | 08:48 (6) | 21:29 | 22:14 |
| 13 | 08:54 | 09:44 (36) | 08:03 | 06:56 | 17:40 (39) | 06:37 | 07:53 (6) | 05:30 | 04:53 |
| | 16:31 24 | 10:08 (36) | 17:33 | 18:32 22 | 18:02 (39) | 20:33 54 | 08:47 (6) | 21:31 | 22:15 |
| 14 | 08:53 | 09:45 (36) | 08:01 | 06:54 | 17:39 (39) | 06:35 | 07:54 (6) | 05:28 | 04:53 |
| | 16:33 23 | 10:08 (36) | 17:36 | 18:34 24 | 18:03 (39) | 20:35 53 | 08:47 (6) | 21:33 | 22:15 |
| 15 | 08:52 | 09:44 (36) | 07:59 | 06:51 | 17:38 (39) | 06:32 | 07:53 (6) | 05:26 | 04:52 |
| | 16:34 24 | 10:08 (36) | 17:38 | 18:36 25 | 18:03 (39) | 20:37 52 | 08:45 (6) | 21:35 | 22:16 |
| 16 | 08:51 | 09:45 (36) | 07:57 | 06:49 | 17:37 (39) | 06:30 | 07:54 (6) | 05:25 | 04:52 |
| | 16:36 23 | 10:08 (36) | 17:40 | 18:38 26 | 18:03 (39) | 20:39 51 | 08:45 (6) | 21:37 | 22:17 |
| 17 | 08:50 | 09:46 (36) | 07:55 | 06:46 | 17:37 (39) | 06:27 | 07:55 (6) | 05:23 | 04:52 |
| | 16:38 23 | 10:09 (36) | 17:42 | 18:40 26 | 18:03 (39) | 20:41 49 | 08:44 (6) | 21:39 | 22:17 |
| 18 | 08:49 | 09:46 (36) | 07:52 | 06:44 | 17:36 (39) | 06:25 | 07:55 (6) | 05:21 | 04:52 |
| | 16:40 22 | 10:08 (36) | 17:44 | 18:42 27 | 18:03 (39) | 20:43 47 | 08:42 (6) | 21:40 | 22:18 |
| 19 | 08:47 | 09:47 (36) | 07:50 | 06:41 | 17:37 (39) | 06:23 | 07:55 (6) | 05:19 | 04:52 |
| | 16:42 22 | 10:09 (36) | 17:46 | 18:44 26 | 18:03 (39) | 20:45 46 | 08:41 (6) | 21:42 | 22:18 |
| 20 | 08:46 | 09:47 (36) | 07:48 | 06:39 | 17:37 (39) | 06:20 | 07:56 (6) | 05:18 | 04:52 |
| | 16:44 21 | 10:08 (36) | 17:48 | 18:46 25 | 18:02 (39) | 20:47 44 | 08:40 (6) | 21:44 | 22:18 |
| 21 | 08:45 | 09:49 (36) | 07:46 | 06:36 | 17:37 (39) | 06:18 | 07:57 (6) | 05:16 | 04:52 |
| | 16:46 20 | 10:09 (36) | 17:50 | 18:48 23 | 18:00 (39) | 20:49 41 | 08:38 (6) | 21:45 | 22:19 |
| 22 | 08:43 | 09:49 (36) | 07:43 | 06:33 | 07:25 (6) | 06:15 | 07:58 (6) | 05:15 | 04:52 |
| | 16:48 19 | 10:08 (36) | 17:53 | 18:50 27 | 18:00 (39) | 20:51 39 | 08:37 (6) | 21:47 | 22:19 |
| 23 | 08:42 | 09:50 (36) | 07:41 | 06:31 | 07:17 (6) | 06:13 | 07:59 (6) | 05:13 | 04:53 |
| | 16:49 17 | 10:07 (36) | 17:55 | 18:52 38 | 17:58 (39) | 20:53 36 | 08:35 (6) | 21:49 | 22:19 |
| 24 | 08:41 | 09:52 (36) | 07:38 | 06:28 | 07:14 (6) | 06:11 | 08:01 (6) | 05:12 | 04:53 |
| | 16:51 15 | 10:07 (36) | 17:57 | 18:54 41 | 17:56 (39) | 20:55 32 | 08:33 (6) | 21:50 | 22:19 |
| 25 | 08:39 | 09:54 (36) | 07:36 | 06:26 | 07:11 (6) | 06:08 | 08:02 (6) | 05:10 | 04:53 |
| | 16:53 11 | 10:05 (36) | 17:59 | 18:56 41 | 17:53 (39) | 20:57 28 | 08:30 (6) | 21:52 | 22:19 |
| 26 | 08:37 | 09:56 (36) | 07:34 | 06:23 | 07:08 (6) | 06:06 | 08:04 (6) | 05:09 | 04:54 |
| | 16:56 6 | 10:02 (36) | 18:01 | 18:57 35 | 07:43 (6) | 20:59 24 | 08:28 (6) | 21:53 | 22:19 |
| 27 | 08:36 | | 07:31 | 06:21 | 07:07 (6) | 06:04 | 08:07 (6) | 05:07 | 04:54 |
| | 16:58 | | 18:03 | 18:59 38 | 07:45 (6) | 21:01 17 | 08:24 (6) | 21:55 | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:04 (6) | 06:01 | 08:13 (6) | 05:06 | 04:55 |
| | 17:00 | | 18:05 | 19:01 42 | 07:46 (6) | 21:03 5 | 08:18 (6) | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:03 (6) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 45 | 08:48 (6) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | 08:01 (6) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 47 | 08:48 (6) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | 08:01 (6) | | | 05:03 | |
| | 17:06 | | | 20:07 48 | 08:49 (6) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 529 | | | 679 | | 1264 | | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,63 | | | 0,99 | | 1,00 | | |
| Total reduction | | 0,11 | | | 0,32 | | 0,37 | | |
| Total, real | | 56 | | | 216 | | 468 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:52 (6) | 07:34 | | 18:20 (39) | 07:36 | | | 08:35 | | 09:25 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 55 | 08:47 (6) | 19:12 | 21 | 18:41 (39) | 16:58 | | | 16:10 | 24 | 09:49 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:52 (6) | 07:36 | | 18:21 (39) | 07:38 | | | 08:36 | | 09:26 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 55 | 08:47 (6) | 19:09 | 19 | 18:40 (39) | 16:55 | | | 16:09 | 23 | 09:49 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:52 (6) | 07:38 | | 18:22 (39) | 07:41 | | | 08:38 | | 09:27 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 55 | 08:47 (6) | 19:07 | 15 | 18:37 (39) | 16:53 | | | 16:08 | 23 | 09:50 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:52 (6) | 07:40 | | 18:25 (39) | 07:43 | | | 08:40 | | 09:27 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 55 | 08:47 (6) | 19:04 | 9 | 18:34 (39) | 16:51 | | | 16:07 | 22 | 09:49 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:51 (6) | 07:42 | | | 07:45 | | | 08:41 | | 09:27 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 55 | 08:46 (6) | 19:02 | | | 16:49 | | | 16:07 | 23 | 09:50 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:51 (6) | 07:44 | | | 07:47 | | | 08:43 | | 09:28 (36) |
| | 22:15 | | 21:30 | | | 20:16 | 55 | 08:46 (6) | 18:59 | | | 16:47 | | | 16:06 | 21 | 09:49 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 07:51 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:29 (36) |
| | 22:14 | | 21:28 | | | 20:14 | 54 | 08:45 (6) | 18:57 | | | 16:45 | | | 16:05 | 21 | 09:50 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:51 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:29 (36) |
| | 22:14 | | 21:25 | | | 20:11 | 54 | 08:45 (6) | 18:54 | | | 16:43 | | | 16:05 | 20 | 09:49 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:51 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:30 (36) |
| | 22:13 | | 21:23 | | | 20:09 | 53 | 08:44 (6) | 18:52 | | | 16:41 | | | 16:05 | 20 | 09:50 (36) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 07:51 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:30 (36) |
| | 22:12 | | 21:21 | | | 20:06 | 51 | 08:42 (6) | 18:49 | | | 16:40 | | | 16:04 | 20 | 09:50 (36) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 07:51 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:32 (36) |
| | 22:11 | | 21:19 | | | 20:04 | 51 | 08:42 (6) | 18:47 | | | 16:38 | | | 16:04 | 19 | 09:51 (36) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 07:52 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:32 (36) |
| | 22:10 | | 21:17 | | | 20:01 | 49 | 08:41 (6) | 18:44 | | | 16:36 | | | 16:04 | 19 | 09:51 (36) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 07:53 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:33 (36) |
| | 22:09 | | 21:15 | | | 19:58 | 47 | 08:40 (6) | 18:42 | | | 16:34 | | | 16:04 | 18 | 09:51 (36) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 07:53 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:33 (36) |
| | 22:08 | | 21:12 | | | 19:56 | 45 | 08:38 (6) | 18:39 | | | 16:32 | | | 16:03 | 18 | 09:51 (36) |
| 15 | 05:12 | | 06:05 | | 08:18 (6) | 07:04 | | 07:54 (6) | 08:02 | | | 08:05 | | | 08:53 | | 09:34 (36) |
| | 22:06 | | 21:10 | 10 | 08:28 (6) | 19:53 | 43 | 08:37 (6) | 18:37 | | | 16:31 | | | 16:03 | 17 | 09:51 (36) |
| 16 | 05:13 | | 06:07 | | 08:14 (6) | 07:06 | | 07:55 (6) | 08:04 | | | 08:07 | | 09:29 (36) | 08:54 | | 09:35 (36) |
| | 22:05 | | 21:08 | 19 | 08:33 (6) | 19:51 | 39 | 08:34 (6) | 18:34 | | | 16:29 | 6 | 09:35 (36) | 16:03 | 17 | 09:52 (36) |
| 17 | 05:15 | | 06:09 | | 08:10 (6) | 07:08 | | 07:56 (6) | 08:06 | | | 08:09 | | 09:27 (36) | 08:55 | | 09:36 (36) |
| | 22:04 | | 21:05 | 25 | 08:35 (6) | 19:48 | 36 | 08:32 (6) | 18:32 | | | 16:27 | 11 | 09:38 (36) | 16:04 | 16 | 09:52 (36) |
| 18 | 05:16 | | 06:11 | | 08:08 (6) | 07:10 | | 07:58 (6) | 08:08 | | | 08:11 | | 09:26 (36) | 08:56 | | 09:36 (36) |
| | 22:03 | | 21:03 | 29 | 08:37 (6) | 19:46 | 40 | 18:39 (39) | 18:29 | | | 16:26 | 15 | 09:41 (36) | 16:04 | 16 | 09:52 (36) |
| 19 | 05:18 | | 06:13 | | 08:06 (6) | 07:12 | | 08:00 (6) | 08:10 | | | 08:13 | | 09:25 (36) | 08:57 | | 09:36 (36) |
| | 22:01 | | 21:01 | 33 | 08:39 (6) | 19:43 | 41 | 18:42 (39) | 18:27 | | | 16:24 | 17 | 09:42 (36) | 16:04 | 16 | 09:52 (36) |
| 20 | 05:19 | | 06:15 | | 08:05 (6) | 07:13 | | 08:03 (6) | 08:12 | | | 08:15 | | 09:24 (36) | 08:57 | | 09:37 (36) |
| | 22:00 | | 20:58 | 36 | 08:41 (6) | 19:40 | 39 | 18:44 (39) | 18:25 | | | 16:23 | 19 | 09:43 (36) | 16:04 | 16 | 09:53 (36) |
| 21 | 05:21 | | 06:17 | | 08:02 (6) | 07:15 | | 08:08 (6) | 08:14 | | | 08:17 | | 09:24 (36) | 08:58 | | 09:37 (36) |
| | 21:58 | | 20:56 | 40 | 08:42 (6) | 19:38 | 32 | 18:45 (39) | 18:22 | | | 16:21 | 20 | 09:44 (36) | 16:05 | 16 | 09:53 (36) |
| 22 | 05:22 | | 06:19 | | 08:01 (6) | 07:17 | | 18:23 (39) | 08:16 | | | 08:19 | | 09:23 (36) | 08:59 | | 09:38 (36) |
| | 21:57 | | 20:54 | 42 | 08:43 (6) | 19:35 | 23 | 18:46 (39) | 18:20 | | | 16:20 | 21 | 09:44 (36) | 16:05 | 16 | 09:54 (36) |
| 23 | 05:24 | | 06:21 | | 08:00 (6) | 07:19 | | 18:22 (39) | 08:18 | | | 08:21 | | 09:23 (36) | 08:59 | | 09:38 (36) |
| | 21:55 | | 20:51 | 44 | 08:44 (6) | 19:33 | 24 | 18:46 (39) | 18:18 | | | 16:19 | 22 | 09:45 (36) | 16:06 | 16 | 09:54 (36) |
| 24 | 05:26 | | 06:22 | | 07:59 (6) | 07:21 | | 18:20 (39) | 08:20 | | | 08:23 | | 09:23 (36) | 09:00 | | 09:39 (36) |
| | 21:54 | | 20:49 | 46 | 08:45 (6) | 19:30 | 25 | 18:45 (39) | 18:15 | | | 16:17 | 22 | 09:45 (36) | 16:06 | 16 | 09:55 (36) |
| 25 | 05:27 | | 06:24 | | 07:58 (6) | 07:23 | | 18:19 (39) | 07:22 | | | 08:24 | | 09:23 (36) | 09:00 | | 09:39 (36) |
| | 21:52 | | 20:46 | 48 | 08:46 (6) | 19:27 | 26 | 18:45 (39) | 17:13 | | | 16:16 | 23 | 09:46 (36) | 16:07 | 16 | 09:55 (36) |
| 26 | 05:29 | | 06:26 | | 07:56 (6) | 07:25 | | 18:19 (39) | 07:24 | | | 08:26 | | 09:23 (36) | 09:00 | | 09:40 (36) |
| | 21:50 | | 20:44 | 50 | 08:46 (6) | 19:25 | 26 | 18:45 (39) | 17:11 | | | 16:15 | 23 | 09:46 (36) | 16:08 | 16 | 09:56 (36) |
| 27 | 05:31 | | 06:28 | | 07:56 (6) | 07:27 | | 18:19 (39) | 07:26 | | | 08:28 | | 09:23 (36) | 09:00 | | 09:40 (36) |
| | 21:49 | | 20:42 | 50 | 08:46 (6) | 19:22 | 26 | 18:45 (39) | 17:08 | | | 16:14 | 24 | 09:47 (36) | 16:08 | 16 | 09:56 (36) |
| 28 | 05:32 | | 06:30 | | 07:55 (6) | 07:29 | | 18:19 (39) | 07:28 | | | 08:30 | | 09:24 (36) | 09:01 | | 09:40 (36) |
| | 21:47 | | 20:39 | 52 | 08:47 (6) | 19:20 | 25 | 18:44 (39) | 17:06 | | | 16:13 | 23 | 09:47 (36) | 16:09 | 17 | 09:57 (36) |
| 29 | 05:34 | | 06:32 | | 07:55 (6) | 07:31 | | 18:19 (39) | 07:30 | | | 08:31 | | 09:24 (36) | 09:01 | | 09:40 (36) |
| | 21:45 | | 20:37 | 52 | 08:47 (6) | 19:17 | 25 | 18:44 (39) | 17:04 | | | 16:12 | 24 | 09:48 (36) | 16:10 | 18 | 09:58 (36) |
| 30 | 05:36 | | 06:34 | | 07:54 (6) | 07:32 | | 18:19 (39) | 07:32 | | | 08:33 | | 09:25 (36) | 09:01 | | 09:41 (36) |
| | 21:43 | | 20:34 | 54 | 08:48 (6) | 19:14 | 24 | 18:43 (39) | 17:02 | | | 16:11 | 23 | 09:48 (36) | 16:11 | 18 | 09:59 (36) |
| 31 | 05:38 | | 06:36 | | 07:53 (6) | | | | 07:34 | | | | | | 09:01 | | 09:41 (36) |
| | 21:41 | | 20:32 | 54 | 08:47 (6) | | | | 17:00 | | | | | | 16:12 | 19 | 10:00 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 684 | | | 1228 | | | 64 | | | 293 | | | 573 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 332 | | | 456 | | | 18 | | | 27 | | | 46 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:43 (36) | 08:27 | 07:26 | | | 07:08 | | 08:06 (6) | 05:55 | 05:02 |
| | 16:14 | 20 | 10:03 (36) | 17:08 | 18:07 | | | 20:09 | 54 | 09:00 (6) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:43 (36) | 08:26 | 07:24 | | | 07:05 | | 08:06 (6) | 05:53 | 05:01 |
| | 16:15 | 21 | 10:04 (36) | 17:10 | 18:09 | | | 20:11 | 55 | 09:01 (6) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:43 (36) | 08:24 | 07:22 | | | 07:03 | | 08:05 (6) | 05:50 | 05:00 |
| | 16:16 | 21 | 10:04 (36) | 17:12 | 18:11 | | | 20:13 | 55 | 09:00 (6) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:44 (36) | 08:22 | 07:19 | | | 07:00 | | 08:04 (6) | 05:48 | 04:59 |
| | 16:17 | 22 | 10:06 (36) | 17:14 | 18:13 | | | 20:15 | 55 | 08:59 (6) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:44 (36) | 08:20 | 07:17 | | | 06:57 | | 08:05 (6) | 05:46 | 04:58 |
| | 16:19 | 22 | 10:06 (36) | 17:16 | 18:15 | | | 20:17 | 54 | 08:59 (6) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:45 (36) | 08:18 | 07:14 | | | 06:55 | | 08:04 (6) | 05:44 | 04:57 |
| | 16:20 | 22 | 10:07 (36) | 17:19 | 18:17 | | | 20:19 | 54 | 08:58 (6) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:45 (36) | 08:16 | 07:12 | | | 06:52 | | 08:04 (6) | 05:42 | 04:56 |
| | 16:21 | 23 | 10:08 (36) | 17:21 | 18:19 | | | 20:21 | 54 | 08:58 (6) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:45 (36) | 08:14 | 07:09 | | 17:43 (39) | 06:50 | | 08:04 (6) | 05:40 | 04:55 |
| | 16:23 | 23 | 10:08 (36) | 17:23 | 18:22 | 11 | 17:54 (39) | 20:23 | 53 | 08:57 (6) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:45 (36) | 08:12 | 07:07 | | 17:40 (39) | 06:47 | | 08:04 (6) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:08 (36) | 17:25 | 18:24 | 15 | 17:55 (39) | 20:25 | 53 | 08:57 (6) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:46 (36) | 08:10 | 07:04 | | 17:38 (39) | 06:45 | | 08:04 (6) | 05:36 | 04:54 |
| | 16:26 | 23 | 10:09 (36) | 17:27 | 18:26 | 20 | 17:58 (39) | 20:27 | 52 | 08:56 (6) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:46 (36) | 08:08 | 07:02 | | 17:37 (39) | 06:42 | | 08:05 (6) | 05:34 | 04:54 |
| | 16:28 | 23 | 10:09 (36) | 17:29 | 18:28 | 21 | 17:58 (39) | 20:29 | 50 | 08:55 (6) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:46 (36) | 08:06 | 06:59 | | 17:36 (39) | 06:40 | | 08:05 (6) | 05:32 | 04:53 |
| | 16:29 | 24 | 10:10 (36) | 17:31 | 18:30 | 24 | 18:00 (39) | 20:31 | 49 | 08:54 (6) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:47 (36) | 08:03 | 06:56 | | 17:35 (39) | 06:37 | | 08:05 (6) | 05:30 | 04:53 |
| | 16:31 | 23 | 10:10 (36) | 17:33 | 18:32 | 25 | 18:00 (39) | 20:33 | 48 | 08:53 (6) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:48 (36) | 08:01 | 06:54 | | 17:35 (39) | 06:35 | | 08:06 (6) | 05:28 | 04:53 |
| | 16:33 | 23 | 10:11 (36) | 17:36 | 18:34 | 25 | 18:00 (39) | 20:35 | 46 | 08:52 (6) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:47 (36) | 07:59 | 06:51 | | 17:34 (39) | 06:32 | | 08:06 (6) | 05:26 | 04:52 |
| | 16:34 | 23 | 10:10 (36) | 17:38 | 18:36 | 26 | 18:00 (39) | 20:37 | 44 | 08:50 (6) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:48 (36) | 07:57 | 06:49 | | 17:33 (39) | 06:30 | | 08:07 (6) | 05:25 | 04:52 |
| | 16:36 | 23 | 10:11 (36) | 17:40 | 18:38 | 26 | 17:59 (39) | 20:39 | 42 | 08:49 (6) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:49 (36) | 07:55 | 06:46 | | 17:33 (39) | 06:27 | | 08:09 (6) | 05:23 | 04:52 |
| | 16:38 | 22 | 10:11 (36) | 17:42 | 18:40 | 26 | 17:59 (39) | 20:41 | 38 | 08:47 (6) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:49 (36) | 07:52 | 06:44 | | 07:34 (6) | 06:25 | | 08:09 (6) | 05:21 | 04:52 |
| | 16:40 | 21 | 10:10 (36) | 17:44 | 18:42 | 33 | 17:58 (39) | 20:43 | 36 | 08:45 (6) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:51 (36) | 07:50 | 06:41 | | 07:28 (6) | 06:23 | | 08:11 (6) | 05:19 | 04:52 |
| | 16:42 | 20 | 10:11 (36) | 17:46 | 18:44 | 44 | 17:58 (39) | 20:45 | 32 | 08:43 (6) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:51 (36) | 07:48 | 06:39 | | 07:24 (6) | 06:20 | | 08:13 (6) | 05:18 | 04:52 |
| | 16:44 | 19 | 10:10 (36) | 17:48 | 18:46 | 49 | 17:56 (39) | 20:47 | 28 | 08:41 (6) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:53 (36) | 07:46 | 06:36 | | 07:21 (6) | 06:18 | | 08:15 (6) | 05:16 | 04:52 |
| | 16:46 | 17 | 10:10 (36) | 17:50 | 18:48 | 52 | 17:55 (39) | 20:49 | 22 | 08:37 (6) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:54 (36) | 07:43 | 06:33 | | 07:19 (6) | 06:15 | | 08:18 (6) | 05:15 | 04:52 |
| | 16:48 | 15 | 10:09 (36) | 17:53 | 18:50 | 52 | 17:53 (39) | 20:51 | 15 | 08:33 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:55 (36) | 07:41 | 06:31 | | 07:17 (6) | 06:13 | | | 05:13 | 04:52 |
| | 16:49 | 12 | 10:07 (36) | 17:55 | 18:52 | 50 | 17:50 (39) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:58 (36) | 07:38 | 06:28 | | 07:15 (6) | 06:11 | | | 05:12 | 04:53 |
| | 16:51 | 8 | 10:06 (36) | 17:57 | 18:54 | 42 | 07:57 (6) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:13 (6) | 06:08 | | | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 45 | 07:58 (6) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | 06:23 | | 07:12 (6) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 46 | 07:58 (6) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:11 (6) | 06:04 | | | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 48 | 07:59 (6) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:09 (6) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 50 | 07:59 (6) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:09 (6) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 51 | 09:00 (6) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:08 (6) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 52 | 09:00 (6) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:07 (6) | | | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:01 (6) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 493 | | | | 887 | | | 989 | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | 0,99 | | | |
| Total reduction | | 0,10 | | | | 0,32 | | | 0,37 | | | |
| Total, real | | 52 | | | | 281 | | | 364 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 08:04 (6) | 07:34 | | 18:15 (39) | 07:36 | | | 08:35 | | 09:28 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 50 | 08:54 (6) | 19:12 | 24 | 18:39 (39) | 16:58 | | | 16:10 | 23 | 09:51 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 08:03 (6) | 07:36 | | 18:15 (39) | 07:38 | | | 08:36 | | 09:29 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 52 | 08:55 (6) | 19:09 | 23 | 18:38 (39) | 16:55 | | | 16:09 | 23 | 09:52 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 08:02 (6) | 07:38 | | 18:16 (39) | 07:41 | | | 08:38 | | 09:29 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 53 | 08:55 (6) | 19:07 | 20 | 18:36 (39) | 16:53 | | | 16:08 | 23 | 09:52 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 08:02 (6) | 07:40 | | 18:17 (39) | 07:43 | | | 08:40 | | 09:29 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 53 | 08:55 (6) | 19:04 | 18 | 18:35 (39) | 16:51 | | | 16:07 | 23 | 09:52 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 08:00 (6) | 07:42 | | 18:19 (39) | 07:45 | | | 08:41 | | 09:30 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 54 | 08:54 (6) | 19:02 | 13 | 18:32 (39) | 16:49 | | | 16:07 | 23 | 09:53 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 08:00 (6) | 07:44 | | 18:22 (39) | 07:47 | | | 08:43 | | 09:30 (36) |
| | 22:15 | | 21:30 | | | 20:16 | 55 | 08:55 (6) | 18:59 | 6 | 18:28 (39) | 16:47 | | | 16:06 | 22 | 09:52 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 08:00 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:31 (36) |
| | 22:14 | | 21:28 | | | 20:14 | 55 | 08:55 (6) | 18:57 | | | 16:45 | | | 16:05 | 22 | 09:53 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 08:00 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:31 (36) |
| | 22:14 | | 21:25 | | | 20:11 | 54 | 08:54 (6) | 18:54 | | | 16:43 | | | 16:05 | 22 | 09:53 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 08:00 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:32 (36) |
| | 22:13 | | 21:23 | | | 20:09 | 54 | 08:54 (6) | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:54 (36) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 07:59 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:32 (36) |
| | 22:12 | | 21:21 | | | 20:06 | 54 | 08:53 (6) | 18:49 | | | 16:40 | | | 16:04 | 22 | 09:54 (36) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 07:59 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:34 (36) |
| | 22:11 | | 21:19 | | | 20:04 | 54 | 08:53 (6) | 18:47 | | | 16:38 | | | 16:04 | 20 | 09:54 (36) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 07:59 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:34 (36) |
| | 22:10 | | 21:17 | | | 20:01 | 53 | 08:52 (6) | 18:44 | | | 16:36 | | | 16:04 | 20 | 09:54 (36) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 07:59 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:35 (36) |
| | 22:09 | | 21:15 | | | 19:58 | 53 | 08:52 (6) | 18:42 | | | 16:34 | | | 16:04 | 20 | 09:55 (36) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 07:59 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:35 (36) |
| | 22:08 | | 21:12 | | | 19:56 | 52 | 08:51 (6) | 18:39 | | | 16:32 | | | 16:03 | 20 | 09:55 (36) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 08:00 (6) | 08:02 | | | 08:05 | | | 08:53 | | 09:36 (36) |
| | 22:06 | | 21:10 | | | 19:53 | 50 | 08:50 (6) | 18:37 | | | 16:31 | | | 16:03 | 19 | 09:55 (36) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 07:59 (6) | 08:04 | | | 08:07 | | | 08:54 | | 09:36 (36) |
| | 22:05 | | 21:08 | | | 19:51 | 49 | 08:48 (6) | 18:34 | | | 16:29 | | | 16:03 | 19 | 09:55 (36) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:00 (6) | 08:06 | | | 08:09 | | | 08:55 | | 09:37 (36) |
| | 22:04 | | 21:05 | | | 19:48 | 47 | 08:47 (6) | 18:32 | | | 16:27 | | | 16:04 | 19 | 09:56 (36) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:01 (6) | 08:08 | | | 08:11 | | 09:32 (36) | 08:56 | | 09:38 (36) |
| | 22:03 | | 21:03 | | | 19:46 | 45 | 08:46 (6) | 18:29 | | | 16:26 | 8 | 09:40 (36) | 16:04 | 18 | 09:56 (36) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:02 (6) | 08:10 | | | 08:13 | | 09:30 (36) | 08:57 | | 09:38 (36) |
| | 22:01 | | 21:01 | | | 19:43 | 42 | 08:44 (6) | 18:27 | | | 16:24 | 12 | 09:42 (36) | 16:04 | 18 | 09:56 (36) |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 08:03 (6) | 08:12 | | | 08:15 | | 09:29 (36) | 08:57 | | 09:39 (36) |
| | 22:00 | | 20:58 | | | 19:40 | 50 | 18:36 (39) | 18:25 | | | 16:23 | 15 | 09:44 (36) | 16:04 | 18 | 09:57 (36) |
| 21 | 05:21 | | 06:17 | | 08:22 (6) | 07:15 | | 08:04 (6) | 08:14 | | | 08:17 | | 09:28 (36) | 08:58 | | 09:39 (36) |
| | 21:58 | | 20:56 | 17 | 08:39 (6) | 19:38 | 52 | 18:38 (39) | 18:22 | | | 16:21 | 17 | 09:45 (36) | 16:05 | 18 | 09:57 (36) |
| 22 | 05:22 | | 06:19 | | 08:19 (6) | 07:17 | | 08:06 (6) | 08:16 | | | 08:19 | | 09:27 (36) | 08:59 | | 09:40 (36) |
| | 21:57 | | 20:54 | 23 | 08:42 (6) | 19:35 | 52 | 18:40 (39) | 18:20 | | | 16:20 | 19 | 09:46 (36) | 16:05 | 18 | 09:58 (36) |
| 23 | 05:24 | | 06:21 | | 08:17 (6) | 07:19 | | 08:08 (6) | 08:18 | | | 08:21 | | 09:27 (36) | 08:59 | | 09:40 (36) |
| | 21:55 | | 20:51 | 28 | 08:45 (6) | 19:33 | 50 | 18:41 (39) | 18:18 | | | 16:19 | 20 | 09:47 (36) | 16:06 | 18 | 09:58 (36) |
| 24 | 05:26 | | 06:22 | | 08:15 (6) | 07:21 | | 08:10 (6) | 08:20 | | | 08:23 | | 09:27 (36) | 09:00 | | 09:41 (36) |
| | 21:54 | | 20:49 | 32 | 08:47 (6) | 19:30 | 45 | 18:40 (39) | 18:15 | | | 16:17 | 20 | 09:47 (36) | 16:06 | 18 | 09:59 (36) |
| 25 | 05:27 | | 06:24 | | 08:13 (6) | 07:23 | | 08:14 (6) | 07:22 | | | 08:24 | | 09:26 (36) | 09:00 | | 09:41 (36) |
| | 21:52 | | 20:46 | 36 | 08:49 (6) | 19:27 | 38 | 18:41 (39) | 17:13 | | | 16:16 | 22 | 09:48 (36) | 16:07 | 18 | 09:59 (36) |
| 26 | 05:29 | | 06:26 | | 08:10 (6) | 07:25 | | 18:15 (39) | 07:24 | | | 08:26 | | 09:26 (36) | 09:00 | | 09:41 (36) |
| | 21:50 | | 20:44 | 39 | 08:49 (6) | 19:25 | 26 | 18:41 (39) | 17:11 | | | 16:15 | 23 | 09:49 (36) | 16:08 | 19 | 10:00 (36) |
| 27 | 05:31 | | 06:28 | | 08:09 (6) | 07:27 | | 18:15 (39) | 07:26 | | | 08:28 | | 09:27 (36) | 09:00 | | 09:41 (36) |
| | 21:49 | | 20:42 | 42 | 08:51 (6) | 19:22 | 26 | 18:41 (39) | 17:08 | | | 16:14 | 22 | 09:49 (36) | 16:08 | 19 | 10:00 (36) |
| 28 | 05:32 | | 06:30 | | 08:08 (6) | 07:29 | | 18:14 (39) | 07:28 | | | 08:30 | | 09:27 (36) | 09:01 | | 09:42 (36) |
| | 21:47 | | 20:39 | 44 | 08:52 (6) | 19:20 | 27 | 18:41 (39) | 17:06 | | | 16:13 | 23 | 09:50 (36) | 16:09 | 19 | 10:01 (36) |
| 29 | 05:34 | | 06:32 | | 08:07 (6) | 07:31 | | 18:14 (39) | 07:30 | | | 08:31 | | 09:27 (36) | 09:01 | | 09:42 (36) |
| | 21:45 | | 20:37 | 46 | 08:53 (6) | 19:17 | 26 | 18:40 (39) | 17:04 | | | 16:12 | 23 | 09:50 (36) | 16:10 | 19 | 10:01 (36) |
| 30 | 05:36 | | 06:34 | | 08:06 (6) | 07:32 | | 18:14 (39) | 07:32 | | | 08:33 | | 09:27 (36) | 09:01 | | 09:42 (36) |
| | 21:43 | | 20:34 | 48 | 08:54 (6) | 19:14 | 26 | 18:40 (39) | 17:02 | | | 16:11 | 24 | 09:51 (36) | 16:11 | 20 | 10:02 (36) |
| 31 | 05:38 | | 06:36 | | 08:04 (6) | | | | 07:34 | | | | | | 09:01 | | 09:43 (36) |
| | 21:41 | | 20:32 | 49 | 08:53 (6) | | | | 17:00 | | | | | | 16:12 | 20 | 10:03 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 404 | | | 1397 | | | 104 | | | 248 | | | 622 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 195 | | | 516 | | | 29 | | | 23 | | | 49 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (36) | 08:27 | 07:26 | | | 07:08 | | 08:16 (6) | 05:55 | 05:02 |
| | 16:14 | 21 | 10:06 (36) | 17:08 | 18:07 | | | 20:09 | 53 | 09:09 (6) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:45 (36) | 08:26 | 07:24 | | | 07:05 | | 08:16 (6) | 05:53 | 05:01 |
| | 16:15 | 22 | 10:07 (36) | 17:10 | 18:09 | | | 20:11 | 53 | 09:09 (6) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:45 (36) | 08:24 | 07:22 | | | 07:03 | | 08:15 (6) | 05:50 | 05:00 |
| | 16:16 | 22 | 10:07 (36) | 17:12 | 18:11 | | | 20:13 | 53 | 09:08 (6) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:46 (36) | 08:22 | 07:19 | | | 07:00 | | 08:15 (6) | 05:48 | 04:59 |
| | 16:17 | 22 | 10:08 (36) | 17:14 | 18:13 | | | 20:15 | 52 | 09:07 (6) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:46 (36) | 08:20 | 07:17 | | | 06:57 | | 08:16 (6) | 05:46 | 04:58 |
| | 16:19 | 23 | 10:09 (36) | 17:16 | 18:15 | | | 20:17 | 51 | 09:07 (6) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:47 (36) | 08:18 | 07:14 | | 17:40 (39) | 06:55 | | 08:15 (6) | 05:44 | 04:57 |
| | 16:20 | 23 | 10:10 (36) | 17:19 | 18:17 | 9 | 17:49 (39) | 20:19 | 50 | 09:05 (6) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:47 (36) | 08:16 | 07:12 | | 17:37 (39) | 06:52 | | 08:16 (6) | 05:42 | 04:56 |
| | 16:21 | 23 | 10:10 (36) | 17:21 | 18:19 | 15 | 17:52 (39) | 20:21 | 49 | 09:05 (6) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:47 (36) | 08:14 | 07:09 | | 17:35 (39) | 06:50 | | 08:16 (6) | 05:40 | 04:55 |
| | 16:23 | 23 | 10:10 (36) | 17:23 | 18:22 | 19 | 17:54 (39) | 20:23 | 47 | 09:03 (6) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:48 (36) | 08:12 | 07:07 | | 17:33 (39) | 06:47 | | 08:17 (6) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:11 (36) | 17:25 | 18:24 | 21 | 17:54 (39) | 20:25 | 45 | 09:02 (6) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:48 (36) | 08:10 | 07:04 | | 17:32 (39) | 06:45 | | 08:17 (6) | 05:36 | 04:54 |
| | 16:26 | 23 | 10:11 (36) | 17:27 | 18:26 | 24 | 17:56 (39) | 20:27 | 43 | 09:00 (6) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:49 (36) | 08:08 | 07:02 | | 17:31 (39) | 06:42 | | 08:19 (6) | 05:34 | 04:54 |
| | 16:28 | 22 | 10:11 (36) | 17:29 | 18:28 | 25 | 17:56 (39) | 20:29 | 40 | 08:59 (6) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:49 (36) | 08:06 | 06:59 | | 17:31 (39) | 06:40 | | 08:20 (6) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:12 (36) | 17:31 | 18:30 | 25 | 17:56 (39) | 20:31 | 38 | 08:58 (6) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:50 (36) | 08:03 | 06:56 | | 17:30 (39) | 06:37 | | 08:21 (6) | 05:30 | 04:53 |
| | 16:31 | 22 | 10:12 (36) | 17:33 | 18:32 | 26 | 17:56 (39) | 20:33 | 34 | 08:55 (6) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:51 (36) | 08:01 | 06:54 | | 07:42 (6) | 06:35 | | 08:23 (6) | 05:28 | 04:53 |
| | 16:33 | 22 | 10:13 (36) | 17:36 | 18:34 | 39 | 17:56 (39) | 20:35 | 30 | 08:53 (6) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:51 (36) | 07:59 | 06:51 | | 07:37 (6) | 06:32 | | 08:24 (6) | 05:26 | 04:52 |
| | 16:34 | 21 | 10:12 (36) | 17:38 | 18:36 | 48 | 17:56 (39) | 20:37 | 26 | 08:50 (6) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (36) | 07:57 | 06:49 | | 07:33 (6) | 06:30 | | 08:27 (6) | 05:25 | 04:52 |
| | 16:36 | 20 | 10:12 (36) | 17:40 | 18:38 | 54 | 17:55 (39) | 20:39 | 20 | 08:47 (6) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (36) | 07:55 | 06:46 | | 07:31 (6) | 06:27 | | 08:32 (6) | 05:23 | 04:52 |
| | 16:38 | 20 | 10:13 (36) | 17:42 | 18:40 | 57 | 17:54 (39) | 20:41 | 10 | 08:42 (6) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:53 (36) | 07:52 | 06:44 | | 07:29 (6) | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 19 | 10:12 (36) | 17:44 | 18:42 | 59 | 17:53 (39) | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 09:55 (36) | 07:50 | 06:41 | | 07:27 (6) | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | 17 | 10:12 (36) | 17:46 | 18:44 | 60 | 17:52 (39) | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 09:55 (36) | 07:48 | 06:39 | | 07:25 (6) | 06:20 | | | 05:18 | 04:52 |
| | 16:44 | 16 | 10:11 (36) | 17:48 | 18:46 | 60 | 17:50 (39) | 20:47 | | | 21:44 | 22:18 |
| 21 | 08:45 | | 09:57 (36) | 07:46 | 06:36 | | 07:23 (6) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 13 | 10:10 (36) | 17:50 | 18:48 | 58 | 17:47 (39) | 20:49 | | | 21:45 | 22:19 |
| 22 | 08:43 | | 09:59 (36) | 07:43 | 06:33 | | 07:23 (6) | 06:15 | | | 05:15 | 04:52 |
| | 16:48 | 10 | 10:09 (36) | 17:53 | 18:50 | 49 | 17:42 (39) | 20:51 | | | 21:47 | 22:19 |
| 23 | 08:42 | | 10:02 (36) | 07:41 | 06:31 | | 07:21 (6) | 06:13 | | | 05:13 | 04:52 |
| | 16:49 | 3 | 10:05 (36) | 17:55 | 18:52 | 49 | 08:10 (6) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | 07:21 (6) | 06:11 | | | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | 50 | 08:11 (6) | 20:55 | | | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:19 (6) | 06:08 | | | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 52 | 08:11 (6) | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | 06:23 | | 07:18 (6) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 52 | 08:10 (6) | 20:59 | | | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:18 (6) | 06:04 | | | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 53 | 08:11 (6) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:17 (6) | 06:01 | | | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 53 | 08:10 (6) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:17 (6) | 05:59 | | | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 54 | 09:11 (6) | 21:05 | | | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:16 (6) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 54 | 09:10 (6) | 21:06 | | | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:16 (6) | | | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:10 (6) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 453 | | | | 1119 | | | 694 | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | 0,98 | | | |
| Total reduction | | 0,10 | | | | 0,32 | | | 0,37 | | | |
| Total, real | | 47 | | | | 353 | | | 253 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 08:18 (6) | 07:34 | | 18:10 (39) | 07:36 | | | 08:35 | | 09:31 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 40 | 08:58 (6) | 19:12 | 26 | 18:36 (39) | 16:58 | | | 16:10 | 23 | 09:54 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 08:16 (6) | 07:36 | | 18:10 (39) | 07:38 | | | 08:36 | | 09:31 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 43 | 08:59 (6) | 19:09 | 25 | 18:35 (39) | 16:55 | | | 16:09 | 23 | 09:54 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 08:15 (6) | 07:38 | | 18:10 (39) | 07:41 | | | 08:38 | | 09:32 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 45 | 09:00 (6) | 19:07 | 24 | 18:34 (39) | 16:53 | | | 16:08 | 23 | 09:55 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 08:14 (6) | 07:40 | | 18:10 (39) | 07:43 | | | 08:40 | | 09:32 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 47 | 09:01 (6) | 19:04 | 23 | 18:33 (39) | 16:51 | | | 16:07 | 22 | 09:54 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 08:12 (6) | 07:42 | | 18:11 (39) | 07:45 | | | 08:41 | | 09:32 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 49 | 09:01 (6) | 19:02 | 21 | 18:32 (39) | 16:49 | | | 16:07 | 23 | 09:55 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 08:11 (6) | 07:44 | | 18:12 (39) | 07:47 | | | 08:43 | | 09:32 (36) |
| | 22:15 | | 21:30 | | | 20:16 | 50 | 09:01 (6) | 18:59 | 17 | 18:29 (39) | 16:47 | | | 16:06 | 23 | 09:55 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 08:11 (6) | 07:46 | | 18:14 (39) | 07:49 | | | 08:44 | | 09:33 (36) |
| | 22:14 | | 21:28 | | | 20:14 | 51 | 09:02 (6) | 18:57 | 13 | 18:27 (39) | 16:45 | | | 16:05 | 23 | 09:56 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 08:10 (6) | 07:48 | | 18:18 (39) | 07:51 | | | 08:45 | | 09:33 (36) |
| | 22:14 | | 21:25 | | | 20:11 | 52 | 09:02 (6) | 18:54 | 4 | 18:22 (39) | 16:43 | | | 16:05 | 23 | 09:56 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 08:10 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (36) |
| | 22:13 | | 21:23 | | | 20:09 | 52 | 09:02 (6) | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:56 (36) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 08:08 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:35 (36) |
| | 22:12 | | 21:21 | | | 20:06 | 54 | 09:02 (6) | 18:49 | | | 16:40 | | | 16:04 | 21 | 09:56 (36) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 08:08 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:36 (36) |
| | 22:11 | | 21:19 | | | 20:04 | 54 | 09:02 (6) | 18:47 | | | 16:38 | | | 16:04 | 21 | 09:57 (36) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 08:08 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:36 (36) |
| | 22:10 | | 21:17 | | | 20:01 | 54 | 09:02 (6) | 18:44 | | | 16:36 | | | 16:04 | 21 | 09:57 (36) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 08:07 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:37 (36) |
| | 22:09 | | 21:15 | | | 19:58 | 54 | 09:01 (6) | 18:42 | | | 16:34 | | | 16:04 | 21 | 09:58 (36) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 08:07 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:37 (36) |
| | 22:08 | | 21:12 | | | 19:56 | 54 | 09:01 (6) | 18:39 | | | 16:32 | | | 16:03 | 21 | 09:58 (36) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 08:07 (6) | 08:02 | | | 08:05 | | | 08:53 | | 09:38 (36) |
| | 22:06 | | 21:10 | | | 19:53 | 54 | 09:01 (6) | 18:37 | | | 16:31 | | | 16:03 | 20 | 09:58 (36) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 08:06 (6) | 08:04 | | | 08:07 | | | 08:54 | | 09:38 (36) |
| | 22:05 | | 21:08 | | | 19:51 | 53 | 08:59 (6) | 18:34 | | | 16:29 | | | 16:03 | 21 | 09:59 (36) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:06 (6) | 08:06 | | | 08:09 | | | 08:55 | | 09:39 (36) |
| | 22:04 | | 21:05 | | | 19:48 | 53 | 08:59 (6) | 18:32 | | | 16:27 | | | 16:04 | 20 | 09:59 (36) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:07 (6) | 08:08 | | | 08:11 | | | 08:56 | | 09:40 (36) |
| | 22:03 | | 21:03 | | | 19:46 | 51 | 08:58 (6) | 18:29 | | | 16:26 | | | 16:04 | 20 | 10:00 (36) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:07 (6) | 08:10 | | | 08:13 | | 09:37 (36) | 08:57 | | 09:39 (36) |
| | 22:01 | | 21:01 | | | 19:43 | 50 | 08:57 (6) | 18:27 | | | 16:24 | 3 | 09:40 (36) | 16:04 | 20 | 09:59 (36) |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 08:08 (6) | 08:12 | | | 08:15 | | 09:34 (36) | 08:57 | | 09:40 (36) |
| | 22:00 | | 20:58 | | | 19:40 | 48 | 08:56 (6) | 18:25 | | | 16:23 | 10 | 09:44 (36) | 16:04 | 20 | 10:00 (36) |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 08:08 (6) | 08:14 | | | 08:17 | | 09:32 (36) | 08:58 | | 09:41 (36) |
| | 21:58 | | 20:56 | | | 19:38 | 47 | 08:55 (6) | 18:22 | | | 16:21 | 13 | 09:45 (36) | 16:05 | 20 | 10:01 (36) |
| 22 | 05:22 | | 06:19 | | | 07:17 | | 08:09 (6) | 08:16 | | | 08:19 | | 09:31 (36) | 08:59 | | 09:41 (36) |
| | 21:57 | | 20:54 | | | 19:35 | 56 | 18:32 (39) | 18:20 | | | 16:20 | 16 | 09:47 (36) | 16:05 | 20 | 10:01 (36) |
| 23 | 05:24 | | 06:20 | | | 07:19 | | 08:10 (6) | 08:18 | | | 08:21 | | 09:31 (36) | 08:59 | | 09:41 (36) |
| | 21:55 | | 20:51 | | | 19:33 | 59 | 18:34 (39) | 18:18 | | | 16:19 | 17 | 09:48 (36) | 16:06 | 20 | 10:01 (36) |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 08:10 (6) | 08:20 | | | 08:23 | | 09:30 (36) | 09:00 | | 09:42 (36) |
| | 21:54 | | 20:49 | | | 19:30 | 59 | 18:34 (39) | 18:15 | | | 16:17 | 19 | 09:49 (36) | 16:06 | 20 | 10:02 (36) |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 08:11 (6) | 07:22 | | | 08:24 | | 09:30 (36) | 09:00 | | 09:43 (36) |
| | 21:52 | | 20:46 | | | 19:27 | 60 | 18:35 (39) | 17:13 | | | 16:16 | 20 | 09:50 (36) | 16:07 | 20 | 10:03 (36) |
| 26 | 05:29 | | 06:26 | | 08:33 (6) | 07:25 | | 08:12 (6) | 07:24 | | | 08:26 | | 09:30 (36) | 09:00 | | 09:43 (36) |
| | 21:50 | | 20:44 | 11 | 08:44 (6) | 19:25 | 59 | 18:36 (39) | 17:11 | | | 16:15 | 20 | 09:50 (36) | 16:08 | 20 | 10:03 (36) |
| 27 | 05:31 | | 06:28 | | 08:29 (6) | 07:27 | | 08:14 (6) | 07:26 | | | 08:28 | | 09:30 (36) | 09:00 | | 09:43 (36) |
| | 21:49 | | 20:42 | 20 | 08:49 (6) | 19:22 | 55 | 18:36 (39) | 17:08 | | | 16:14 | 21 | 09:51 (36) | 16:08 | 20 | 10:03 (36) |
| 28 | 05:32 | | 06:30 | | 08:26 (6) | 07:29 | | 08:17 (6) | 07:28 | | | 08:30 | | 09:30 (36) | 09:01 | | 09:43 (36) |
| | 21:47 | | 20:39 | 26 | 08:52 (6) | 19:20 | 49 | 18:36 (39) | 17:06 | | | 16:13 | 22 | 09:52 (36) | 16:09 | 21 | 10:04 (36) |
| 29 | 05:34 | | 06:32 | | 08:23 (6) | 07:31 | | 08:20 (6) | 07:30 | | | 08:31 | | 09:30 (36) | 09:01 | | 09:44 (36) |
| | 21:45 | | 20:37 | 31 | 08:54 (6) | 19:17 | 43 | 18:36 (39) | 17:04 | | | 16:12 | 22 | 09:52 (36) | 16:10 | 21 | 10:05 (36) |
| 30 | 05:36 | | 06:34 | | 08:22 (6) | 07:32 | | 18:10 (39) | 07:32 | | | 08:33 | | 09:30 (36) | 09:01 | | 09:44 (36) |
| | 21:43 | | 20:34 | 34 | 08:56 (6) | 19:14 | 26 | 18:36 (39) | 17:02 | | | 16:11 | 23 | 09:53 (36) | 16:11 | 21 | 10:05 (36) |
| 31 | 05:38 | | 06:36 | | 08:19 (6) | | | | 07:34 | | | | | | 09:01 | | 09:45 (36) |
| | 21:41 | | 20:32 | 37 | 08:56 (6) | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 159 | | | 1521 | | | 153 | | | 206 | | | 655 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | | 0,98 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 76 | | | 558 | | | 43 | | | 19 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:50 (36) | 08:27 | 07:26 | | 07:08 | 08:12 (6) | 05:55 | 05:02 |
| | 16:14 23 | 10:13 (36) | 17:08 | 18:07 | | 20:09 60 | 09:12 (6) | 21:08 | 22:02 |
| 2 | 09:00 | 09:51 (36) | 08:26 | 07:24 | | 07:05 | 08:12 (6) | 05:53 | 05:01 |
| | 16:15 23 | 10:14 (36) | 17:10 | 18:09 | | 20:11 60 | 09:12 (6) | 21:10 | 22:03 |
| 3 | 09:00 | 09:51 (36) | 08:24 | 07:22 | | 07:03 | 08:11 (6) | 05:50 | 05:00 |
| | 16:16 23 | 10:14 (36) | 17:12 | 18:11 | | 20:13 61 | 09:12 (6) | 21:12 | 22:05 |
| 4 | 09:00 | 09:52 (36) | 08:22 | 07:19 | | 07:00 | 08:11 (6) | 05:48 | 04:59 |
| | 16:17 23 | 10:15 (36) | 17:14 | 18:13 | | 20:15 60 | 09:11 (6) | 21:14 | 22:06 |
| 5 | 08:59 | 09:52 (36) | 08:20 | 07:17 | | 06:57 | 08:11 (6) | 05:46 | 04:58 |
| | 16:19 23 | 10:15 (36) | 17:16 | 18:15 | | 20:17 60 | 09:11 (6) | 21:16 | 22:07 |
| 6 | 08:59 | 09:53 (36) | 08:18 | 07:14 | | 06:55 | 08:10 (6) | 05:44 | 04:57 |
| | 16:20 24 | 10:17 (36) | 17:19 | 18:17 | | 20:19 60 | 09:10 (6) | 21:18 | 22:08 |
| 7 | 08:58 | 09:53 (36) | 08:16 | 07:12 | | 06:52 | 08:10 (6) | 05:42 | 04:56 |
| | 16:21 24 | 10:17 (36) | 17:21 | 18:19 | | 20:21 60 | 09:10 (6) | 21:20 | 22:09 |
| 8 | 08:58 | 09:53 (36) | 08:14 | 07:09 | 17:45 (39) | 06:50 | 08:10 (6) | 05:40 | 04:55 |
| | 16:23 24 | 10:17 (36) | 17:23 | 18:22 9 | 17:54 (39) | 20:23 59 | 09:09 (6) | 21:22 | 22:10 |
| 9 | 08:57 | 09:54 (36) | 08:12 | 07:07 | 17:41 (39) | 06:47 | 08:10 (6) | 05:38 | 04:55 |
| | 16:24 23 | 10:17 (36) | 17:25 | 18:24 14 | 17:55 (39) | 20:25 59 | 09:09 (6) | 21:24 | 22:11 |
| 10 | 08:56 | 09:54 (36) | 08:10 | 07:04 | 17:40 (39) | 06:45 | 08:10 (6) | 05:36 | 04:54 |
| | 16:26 24 | 10:18 (36) | 17:27 | 18:26 18 | 17:58 (39) | 20:27 57 | 09:07 (6) | 21:26 | 22:12 |
| 11 | 08:56 | 09:55 (36) | 08:08 | 07:02 | 17:38 (39) | 06:42 | 08:10 (6) | 05:34 | 04:54 |
| | 16:28 23 | 10:18 (36) | 17:29 | 18:28 21 | 17:59 (39) | 20:29 57 | 09:07 (6) | 21:28 | 22:13 |
| 12 | 08:55 | 09:55 (36) | 08:06 | 06:59 | 17:38 (39) | 06:40 | 08:11 (6) | 05:32 | 04:53 |
| | 16:29 23 | 10:18 (36) | 17:31 | 18:30 22 | 18:00 (39) | 20:31 55 | 09:06 (6) | 21:29 | 22:14 |
| 13 | 08:54 | 09:56 (36) | 08:03 | 06:56 | 17:36 (39) | 06:37 | 08:11 (6) | 05:30 | 04:53 |
| | 16:31 22 | 10:18 (36) | 17:33 | 18:32 24 | 18:00 (39) | 20:33 54 | 09:05 (6) | 21:31 | 22:15 |
| 14 | 08:53 | 09:57 (36) | 08:01 | 06:54 | 17:36 (39) | 06:35 | 08:12 (6) | 05:28 | 04:53 |
| | 16:33 22 | 10:19 (36) | 17:36 | 18:34 25 | 18:01 (39) | 20:35 52 | 09:04 (6) | 21:33 | 22:15 |
| 15 | 08:52 | 09:57 (36) | 07:59 | 06:51 | 17:35 (39) | 06:32 | 08:11 (6) | 05:26 | 04:52 |
| | 16:34 21 | 10:18 (36) | 17:38 | 18:36 26 | 18:01 (39) | 20:37 51 | 09:02 (6) | 21:35 | 22:16 |
| 16 | 08:51 | 09:58 (36) | 07:57 | 06:49 | 17:35 (39) | 06:30 | 08:12 (6) | 05:25 | 04:52 |
| | 16:36 20 | 10:18 (36) | 17:40 | 18:38 25 | 18:00 (39) | 20:39 49 | 09:01 (6) | 21:37 | 22:17 |
| 17 | 08:50 | 09:59 (36) | 07:55 | 06:46 | 07:39 (6) | 06:27 | 08:14 (6) | 05:23 | 04:52 |
| | 16:38 19 | 10:18 (36) | 17:42 | 18:40 41 | 18:00 (39) | 20:41 46 | 09:00 (6) | 21:39 | 22:17 |
| 18 | 08:49 | 10:00 (36) | 07:52 | 06:44 | 07:34 (6) | 06:25 | 08:14 (6) | 05:21 | 04:52 |
| | 16:40 17 | 10:17 (36) | 17:44 | 18:42 49 | 17:59 (39) | 20:43 44 | 08:58 (6) | 21:40 | 22:18 |
| 19 | 08:47 | 10:01 (36) | 07:50 | 06:41 | 07:31 (6) | 06:23 | 08:15 (6) | 05:19 | 04:52 |
| | 16:42 16 | 10:17 (36) | 17:46 | 18:44 53 | 17:58 (39) | 20:45 41 | 08:56 (6) | 21:42 | 22:18 |
| 20 | 08:46 | 10:02 (36) | 07:48 | 06:39 | 07:28 (6) | 06:20 | 08:17 (6) | 05:18 | 04:52 |
| | 16:44 14 | 10:16 (36) | 17:48 | 18:46 57 | 17:57 (39) | 20:47 38 | 08:55 (6) | 21:44 | 22:18 |
| 21 | 08:45 | 10:05 (36) | 07:46 | 06:36 | 07:26 (6) | 06:18 | 08:17 (6) | 05:16 | 04:52 |
| | 16:46 10 | 10:15 (36) | 17:50 | 18:48 57 | 17:55 (39) | 20:49 35 | 08:52 (6) | 21:45 | 22:19 |
| 22 | 08:43 | 10:08 (36) | 07:43 | 06:33 | 07:24 (6) | 06:15 | 08:20 (6) | 05:15 | 04:52 |
| | 16:48 4 | 10:12 (36) | 17:53 | 18:50 57 | 17:53 (39) | 20:51 30 | 08:50 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 07:41 | 06:31 | 07:22 (6) | 06:13 | 08:22 (6) | 05:13 | 04:52 |
| | 16:49 | | 17:55 | 18:52 53 | 17:49 (39) | 20:53 25 | 08:47 (6) | 21:49 | 22:19 |
| 24 | 08:41 | | 07:38 | 06:28 | 07:21 (6) | 06:11 | 08:25 (6) | 05:12 | 04:53 |
| | 16:51 | | 17:57 | 18:54 49 | 08:10 (6) | 20:55 18 | 08:43 (6) | 21:50 | 22:19 |
| 25 | 08:39 | | 07:36 | 06:26 | 07:19 (6) | 06:08 | 08:31 (6) | 05:10 | 04:53 |
| | 16:53 | | 17:59 | 18:56 51 | 08:10 (6) | 20:57 4 | 08:35 (6) | 21:52 | 22:19 |
| 26 | 08:37 | | 07:34 | 06:23 | 07:17 (6) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | | 18:01 | 18:57 53 | 08:10 (6) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | | 07:31 | 06:21 | 07:17 (6) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | | 18:03 | 18:59 54 | 08:11 (6) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:15 (6) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | | 18:05 | 19:01 56 | 08:11 (6) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:15 (6) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 57 | 09:12 (6) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | 08:14 (6) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 58 | 09:12 (6) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | 08:14 (6) | | | 05:03 | |
| | 17:06 | | | 20:07 58 | 09:12 (6) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 445 | | | 987 | | 1195 | | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,59 | | | 0,98 | | 0,99 | | |
| Total reduction | | 0,10 | | | 0,32 | | 0,37 | | |
| Total, real | | 44 | | | 313 | | 438 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 08:09 (6) | 07:34 | | 18:16 (39) | 07:36 | | | 08:35 | | 09:37 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 57 | 09:06 (6) | 19:12 | 24 | 18:40 (39) | 16:58 | | | 16:10 | 23 | 10:00 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 08:09 (6) | 07:36 | | 18:17 (39) | 07:38 | | | 08:36 | | 09:37 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 57 | 09:06 (6) | 19:09 | 22 | 18:39 (39) | 16:55 | | | 16:09 | 24 | 10:01 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 08:08 (6) | 07:38 | | 18:17 (39) | 07:41 | | | 08:38 | | 09:38 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 59 | 09:07 (6) | 19:07 | 20 | 18:37 (39) | 16:53 | | | 16:08 | 23 | 10:01 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 08:08 (6) | 07:40 | | 18:19 (39) | 07:43 | | | 08:40 | | 09:37 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 59 | 09:07 (6) | 19:04 | 16 | 18:35 (39) | 16:51 | | | 16:07 | 24 | 10:01 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 08:06 (6) | 07:42 | | 18:20 (39) | 07:45 | | | 08:41 | | 09:38 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 60 | 09:06 (6) | 19:02 | 12 | 18:32 (39) | 16:49 | | | 16:07 | 24 | 10:02 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 08:06 (6) | 07:44 | | 18:24 (39) | 07:47 | | | 08:43 | | 09:38 (36) |
| | 22:15 | | 21:30 | | | 20:16 | 60 | 09:06 (6) | 18:59 | 5 | 18:29 (39) | 16:47 | | | 16:06 | 24 | 10:02 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 08:06 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:39 (36) |
| | 22:14 | | 21:28 | | | 20:14 | 60 | 09:06 (6) | 18:57 | | | 16:45 | | | 16:05 | 24 | 10:03 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 08:06 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:39 (36) |
| | 22:14 | | 21:25 | | | 20:11 | 60 | 09:06 (6) | 18:54 | | | 16:43 | | | 16:05 | 23 | 10:02 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 08:06 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:40 (36) |
| | 22:13 | | 21:23 | | | 20:09 | 60 | 09:06 (6) | 18:52 | | | 16:41 | | | 16:05 | 23 | 10:03 (36) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 08:05 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:40 (36) |
| | 22:12 | | 21:21 | | | 20:06 | 60 | 09:05 (6) | 18:49 | | | 16:40 | | | 16:04 | 23 | 10:03 (36) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 08:05 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:41 (36) |
| | 22:11 | | 21:19 | | | 20:04 | 59 | 09:04 (6) | 18:47 | | | 16:38 | | | 16:04 | 24 | 10:05 (36) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 08:05 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:41 (36) |
| | 22:10 | | 21:17 | | | 20:01 | 59 | 09:04 (6) | 18:44 | | | 16:36 | | | 16:04 | 24 | 10:05 (36) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 08:05 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:42 (36) |
| | 22:09 | | 21:15 | | | 19:58 | 58 | 09:03 (6) | 18:42 | | | 16:34 | | | 16:04 | 23 | 10:05 (36) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 08:05 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:42 (36) |
| | 22:08 | | 21:12 | | | 19:56 | 58 | 09:03 (6) | 18:39 | | | 16:32 | | | 16:03 | 23 | 10:05 (36) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 08:06 (6) | 08:02 | | | 08:05 | | | 08:53 | | 09:43 (36) |
| | 22:06 | | 21:10 | | | 19:53 | 56 | 09:02 (6) | 18:37 | | | 16:31 | | | 16:03 | 22 | 10:05 (36) |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 08:05 (6) | 08:04 | | | 08:07 | | | 08:54 | | 09:43 (36) |
| | 22:05 | | 21:08 | | | 19:51 | 55 | 09:00 (6) | 18:34 | | | 16:29 | | | 16:03 | 23 | 10:06 (36) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:06 (6) | 08:06 | | | 08:09 | | | 08:55 | | 09:44 (36) |
| | 22:04 | | 21:05 | | | 19:48 | 53 | 08:59 (6) | 18:32 | | | 16:27 | | | 16:04 | 22 | 10:06 (36) |
| 18 | 05:16 | | 06:11 | | 08:35 (6) | 07:10 | | 08:06 (6) | 08:08 | | | 08:11 | | | 08:56 | | 09:45 (36) |
| | 22:03 | | 21:03 | 9 | 08:44 (6) | 19:46 | 52 | 08:58 (6) | 18:29 | | | 16:26 | | | 16:04 | 22 | 10:07 (36) |
| 19 | 05:18 | | 06:13 | | 08:30 (6) | 07:12 | | 08:07 (6) | 08:10 | | | 08:13 | | | 08:57 | | 09:45 (36) |
| | 22:01 | | 21:01 | 20 | 08:50 (6) | 19:43 | 49 | 08:56 (6) | 18:27 | | | 16:24 | | | 16:04 | 22 | 10:07 (36) |
| 20 | 05:19 | | 06:15 | | 08:27 (6) | 07:13 | | 08:08 (6) | 08:12 | | | 08:15 | | 09:43 (36) | 08:57 | | 09:45 (36) |
| | 22:00 | | 20:58 | 26 | 08:53 (6) | 19:40 | 49 | 18:33 (39) | 18:25 | | | 16:23 | 4 | 09:47 (36) | 16:04 | 23 | 10:08 (36) |
| 21 | 05:21 | | 06:17 | | 08:24 (6) | 07:15 | | 08:09 (6) | 08:14 | | | 08:17 | | 09:40 (36) | 08:58 | | 09:45 (36) |
| | 21:58 | | 20:56 | 31 | 08:55 (6) | 19:38 | 56 | 18:38 (39) | 18:22 | | | 16:21 | 10 | 09:50 (36) | 16:05 | 22 | 10:07 (36) |
| 22 | 05:22 | | 06:19 | | 08:22 (6) | 07:17 | | 08:11 (6) | 08:16 | | | 08:19 | | 09:39 (36) | 08:59 | | 09:46 (36) |
| | 21:57 | | 20:54 | 35 | 08:57 (6) | 19:35 | 58 | 18:40 (39) | 18:20 | | | 16:20 | 13 | 09:52 (36) | 16:05 | 22 | 10:08 (36) |
| 23 | 05:24 | | 06:20 | | 08:20 (6) | 07:19 | | 08:12 (6) | 08:18 | | | 08:21 | | 09:38 (36) | 08:59 | | 09:46 (36) |
| | 21:55 | | 20:51 | 39 | 08:59 (6) | 19:33 | 57 | 18:41 (39) | 18:18 | | | 16:19 | 15 | 09:53 (36) | 16:06 | 22 | 10:08 (36) |
| 24 | 05:26 | | 06:22 | | 08:19 (6) | 07:21 | | 08:13 (6) | 08:20 | | | 08:23 | | 09:37 (36) | 09:00 | | 09:47 (36) |
| | 21:54 | | 20:49 | 41 | 09:00 (6) | 19:30 | 55 | 18:41 (39) | 18:15 | | | 16:17 | 17 | 09:54 (36) | 16:06 | 23 | 10:10 (36) |
| 25 | 05:27 | | 06:24 | | 08:17 (6) | 07:23 | | 08:16 (6) | 07:22 | | | 08:24 | | 09:36 (36) | 09:00 | | 09:48 (36) |
| | 21:52 | | 20:46 | 45 | 09:02 (6) | 19:27 | 50 | 18:41 (39) | 17:13 | | | 16:16 | 19 | 09:55 (36) | 16:07 | 22 | 10:10 (36) |
| 26 | 05:29 | | 06:26 | | 08:15 (6) | 07:25 | | 08:19 (6) | 07:24 | | | 08:26 | | 09:36 (36) | 09:00 | | 09:48 (36) |
| | 21:50 | | 20:44 | 47 | 09:02 (6) | 19:25 | 45 | 18:42 (39) | 17:11 | | | 16:15 | 20 | 09:56 (36) | 16:08 | 22 | 10:10 (36) |
| 27 | 05:31 | | 06:28 | | 08:14 (6) | 07:27 | | 08:27 (6) | 07:26 | | | 08:28 | | 09:36 (36) | 09:00 | | 09:48 (36) |
| | 21:49 | | 20:42 | 49 | 09:03 (6) | 19:22 | 29 | 18:42 (39) | 17:08 | | | 16:14 | 21 | 09:57 (36) | 16:08 | 23 | 10:11 (36) |
| 28 | 05:32 | | 06:30 | | 08:13 (6) | 07:29 | | 18:16 (39) | 07:28 | | | 08:30 | | 09:36 (36) | 09:01 | | 09:49 (36) |
| | 21:47 | | 20:39 | 51 | 09:04 (6) | 19:20 | 25 | 18:41 (39) | 17:06 | | | 16:13 | 22 | 09:58 (36) | 16:09 | 22 | 10:11 (36) |
| 29 | 05:34 | | 06:32 | | 08:12 (6) | 07:31 | | 18:16 (39) | 07:30 | | | 08:31 | | 09:36 (36) | 09:01 | | 09:49 (36) |
| | 21:45 | | 20:37 | 53 | 09:05 (6) | 19:17 | 25 | 18:41 (39) | 17:04 | | | 16:12 | 23 | 09:59 (36) | 16:10 | 23 | 10:12 (36) |
| 30 | 05:36 | | 06:34 | | 08:12 (6) | 07:32 | | 18:16 (39) | 07:32 | | | 08:33 | | 09:36 (36) | 09:01 | | 09:50 (36) |
| | 21:43 | | 20:34 | 54 | 09:06 (6) | 19:14 | 25 | 18:41 (39) | 17:02 | | | 16:11 | 23 | 09:59 (36) | 16:11 | 23 | 10:13 (36) |
| 31 | 05:38 | | 06:36 | | 08:10 (6) | | | | 07:34 | | | | | | 09:01 | | 09:50 (36) |
| | 21:41 | | 20:32 | 55 | 09:05 (6) | | | | 17:00 | | | | | | 16:12 | 23 | 10:13 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 555 | | | 1565 | | | 99 | | | 187 | | | 710 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,98 | | | 0,97 | | | 0,59 | | | 0,59 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | 0,28 | | | 0,09 | | | 0,07 | |
| Total, real | | | | 266 | | | 577 | | | 28 | | | 16 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:24 (36) | 07:26 | | | 07:08 | | 19:03 (39) | 05:55 | | 06:43 (6) | 05:02 | | 06:34 (6) |
| | 16:14 | | | 17:08 | 25 | 09:49 (36) | 18:07 | | | 20:09 | 27 | 19:30 (39) | 21:08 | 37 | 07:20 (6) | 22:02 | 53 | 07:27 (6) |
| 2 | 09:00 | | | 08:26 | | 09:24 (36) | 07:24 | | | 07:05 | | 19:03 (39) | 05:53 | | 06:40 (6) | 05:01 | | 06:35 (6) |
| | 16:15 | | | 17:10 | 25 | 09:49 (36) | 18:09 | | | 20:11 | 27 | 19:30 (39) | 21:10 | 40 | 07:20 (6) | 22:03 | 52 | 07:27 (6) |
| 3 | 09:00 | | | 08:24 | | 09:25 (36) | 07:22 | | | 07:03 | | 19:03 (39) | 05:50 | | 06:39 (6) | 05:00 | | 06:35 (6) |
| | 16:16 | | | 17:12 | 24 | 09:49 (36) | 18:11 | | | 20:13 | 26 | 19:29 (39) | 21:12 | 42 | 07:21 (6) | 22:05 | 52 | 07:27 (6) |
| 4 | 09:00 | | | 08:22 | | 09:25 (36) | 07:19 | | | 07:00 | | 19:03 (39) | 05:48 | | 06:38 (6) | 04:59 | | 06:36 (6) |
| | 16:17 | | | 17:14 | 22 | 09:47 (36) | 18:13 | | | 20:15 | 24 | 19:27 (39) | 21:14 | 44 | 07:22 (6) | 22:06 | 52 | 07:28 (6) |
| 5 | 08:59 | | | 08:20 | | 09:26 (36) | 07:17 | | | 06:57 | | 19:04 (39) | 05:46 | | 06:37 (6) | 04:58 | | 06:36 (6) |
| | 16:19 | | | 17:16 | 20 | 09:46 (36) | 18:15 | | | 20:17 | 23 | 19:27 (39) | 21:16 | 46 | 07:23 (6) | 22:07 | 51 | 07:27 (6) |
| 6 | 08:59 | | | 08:18 | | 09:28 (36) | 07:14 | | | 06:55 | | 19:04 (39) | 05:44 | | 06:37 (6) | 04:57 | | 06:36 (6) |
| | 16:20 | | | 17:19 | 17 | 09:45 (36) | 18:17 | | | 20:19 | 21 | 19:25 (39) | 21:18 | 48 | 07:25 (6) | 22:08 | 51 | 07:27 (6) |
| 7 | 08:58 | | | 08:16 | | 09:30 (36) | 07:12 | | | 06:52 | | 19:06 (39) | 05:42 | | 06:36 (6) | 04:56 | | 06:37 (6) |
| | 16:21 | | | 17:21 | 14 | 09:44 (36) | 18:19 | | | 20:21 | 17 | 19:23 (39) | 21:20 | 49 | 07:25 (6) | 22:09 | 50 | 07:27 (6) |
| 8 | 08:58 | | | 08:14 | | 09:32 (36) | 07:09 | | | 06:50 | | 19:08 (39) | 05:40 | | 06:35 (6) | 04:56 | | 06:37 (6) |
| | 16:23 | | | 17:23 | 9 | 09:41 (36) | 18:22 | | | 20:23 | 12 | 19:20 (39) | 21:22 | 51 | 07:26 (6) | 22:10 | 50 | 07:27 (6) |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | | 06:47 | | 19:13 (39) | 05:38 | | 06:35 (6) | 04:55 | | 06:37 (6) |
| | 16:24 | | | 17:25 | | | 18:24 | | | 20:25 | 3 | 19:16 (39) | 21:24 | 51 | 07:26 (6) | 22:11 | 50 | 07:27 (6) |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:34 (6) | 04:54 | | 06:37 (6) |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 52 | 07:26 (6) | 22:12 | 50 | 07:27 (6) |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:33 (6) | 04:54 | | 06:38 (6) |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 53 | 07:26 (6) | 22:13 | 49 | 07:27 (6) |
| 12 | 08:55 | | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:34 (6) | 04:53 | | 06:39 (6) |
| | 16:29 | | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 53 | 07:27 (6) | 22:14 | 48 | 07:27 (6) |
| 13 | 08:54 | | | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:33 (6) | 04:53 | | 06:38 (6) |
| | 16:31 | | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 54 | 07:27 (6) | 22:15 | 49 | 07:27 (6) |
| 14 | 08:53 | | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:32 (6) | 04:53 | | 06:39 (6) |
| | 16:33 | | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 55 | 07:27 (6) | 22:15 | 48 | 07:27 (6) |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:33 (6) | 04:52 | | 06:39 (6) |
| | 16:34 | | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 55 | 07:28 (6) | 22:16 | 48 | 07:27 (6) |
| 16 | 08:51 | | 09:28 (36) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:32 (6) | 04:52 | | 06:40 (6) |
| | 16:36 | 8 | 09:36 (36) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 56 | 07:28 (6) | 22:17 | 47 | 07:27 (6) |
| 17 | 08:50 | | 09:27 (36) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:32 (6) | 04:52 | | 06:40 (6) |
| | 16:38 | 12 | 09:39 (36) | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 55 | 07:27 (6) | 22:17 | 48 | 07:28 (6) |
| 18 | 08:49 | | 09:25 (36) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:32 (6) | 04:52 | | 06:40 (6) |
| | 16:40 | 15 | 09:40 (36) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 56 | 07:28 (6) | 22:18 | 48 | 07:28 (6) |
| 19 | 08:47 | | 09:25 (36) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:32 (6) | 04:52 | | 06:40 (6) |
| | 16:42 | 17 | 09:42 (36) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 56 | 07:28 (6) | 22:18 | 48 | 07:28 (6) |
| 20 | 08:46 | | 09:24 (36) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | 06:32 (6) | 04:52 | | 06:41 (6) |
| | 16:44 | 19 | 09:43 (36) | 17:48 | | | 18:46 | | | 20:47 | | | 21:44 | 56 | 07:28 (6) | 22:18 | 47 | 07:28 (6) |
| 21 | 08:45 | | 09:24 (36) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:32 (6) | 04:52 | | 06:41 (6) |
| | 16:46 | 20 | 09:44 (36) | 17:50 | | | 18:48 | | | 20:49 | | | 21:45 | 57 | 07:29 (6) | 22:19 | 47 | 07:28 (6) |
| 22 | 08:43 | | 09:23 (36) | 07:43 | | | 06:33 | | | 06:15 | | | 05:15 | | 06:32 (6) | 04:52 | | 06:41 (6) |
| | 16:48 | 22 | 09:45 (36) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 56 | 07:28 (6) | 22:19 | 47 | 07:28 (6) |
| 23 | 08:42 | | 09:22 (36) | 07:41 | | | 06:31 | | 18:16 (39) | 06:13 | | | 05:13 | | 06:32 (6) | 04:53 | | 06:42 (6) |
| | 16:50 | 23 | 09:45 (36) | 17:55 | | | 18:52 | 7 | 18:23 (39) | 20:53 | | | 21:49 | 56 | 07:28 (6) | 22:19 | 47 | 07:29 (6) |
| 24 | 08:41 | | 09:23 (36) | 07:38 | | | 06:28 | | 18:12 (39) | 06:11 | | | 05:12 | | 06:33 (6) | 04:53 | | 06:41 (6) |
| | 16:51 | 24 | 09:47 (36) | 17:57 | | | 18:54 | 15 | 18:27 (39) | 20:55 | | | 21:50 | 55 | 07:28 (6) | 22:19 | 48 | 07:29 (6) |
| 25 | 08:39 | | 09:22 (36) | 07:36 | | | 06:26 | | 18:09 (39) | 06:08 | | | 05:10 | | 06:32 (6) | 04:53 | | 06:42 (6) |
| | 16:53 | 25 | 09:47 (36) | 17:59 | | | 18:56 | 19 | 18:28 (39) | 20:57 | | | 21:52 | 56 | 07:28 (6) | 22:19 | 48 | 07:30 (6) |
| 26 | 08:37 | | 09:22 (36) | 07:34 | | | 06:23 | | 18:07 (39) | 06:06 | | 06:56 (6) | 05:09 | | 06:33 (6) | 04:54 | | 06:42 (6) |
| | 16:56 | 26 | 09:48 (36) | 18:01 | | | 18:57 | 22 | 18:29 (39) | 20:59 | 12 | 07:08 (6) | 21:53 | 55 | 07:28 (6) | 22:19 | 48 | 07:30 (6) |
| 27 | 08:36 | | 09:22 (36) | 07:31 | | | 06:21 | | 18:07 (39) | 06:04 | | 06:51 (6) | 05:08 | | 06:33 (6) | 04:54 | | 06:41 (6) |
| | 16:58 | 26 | 09:48 (36) | 18:03 | | | 18:59 | 23 | 18:30 (39) | 21:01 | 21 | 07:12 (6) | 21:55 | 55 | 07:28 (6) | 22:19 | 48 | 07:29 (6) |
| 28 | 08:34 | | 09:22 (36) | 07:29 | | | 06:18 | | 18:05 (39) | 06:02 | | 06:49 (6) | 05:06 | | 06:33 (6) | 04:55 | | 06:42 (6) |
| | 17:00 | 26 | 09:48 (36) | 18:05 | | | 19:01 | 25 | 18:30 (39) | 21:03 | 26 | 07:15 (6) | 21:56 | 55 | 07:28 (6) | 22:19 | 48 | 07:30 (6) |
| 29 | 08:33 | | 09:23 (36) | | | | 07:15 | | 19:05 (39) | 05:59 | | 06:46 (6) | 05:05 | | 06:34 (6) | 04:55 | | 06:43 (6) |
| | 17:02 | 26 | 09:49 (36) | | | | 20:03 | 26 | 19:31 (39) | 21:05 | 31 | 07:17 (6) | 21:58 | 54 | 07:28 (6) | 22:18 | 48 | 07:31 (6) |
| 30 | 08:31 | | 09:23 (36) | | | | 07:13 | | 19:04 (39) | 05:57 | | 06:44 (6) | 05:04 | | 06:34 (6) | 04:56 | | 06:42 (6) |
| | 17:04 | 26 | 09:49 (36) | | | | 20:05 | 26 | 19:30 (39) | 21:06 | 35 | 07:19 (6) | 21:59 | 54 | 07:28 (6) | 22:18 | 49 | 07:31 (6) |
| 31 | 08:29 | | 09:23 (36) | | | | 07:10 | | 19:04 (39) | | | | 05:03 | | 06:34 (6) | | | |
| | 17:06 | 26 | 09:49 (36) | | | | 20:07 | 27 | 19:31 (39) | | | | 22:01 | 54 | 07:28 (6) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 341 | | | 156 | | | 190 | | | 305 | | | 1616 | | | 1469 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,71 | | | 0,71 | | | 1,00 | | | 0,98 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,13 | | | 0,17 | | | 0,33 | | | 0,38 | | | 0,48 | | | 0,45 | |
| Total, real | | 43 | | | 27 | | | 63 | | | 115 | | | 779 | | | 661 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilė / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:42 (6) | 05:39 | | 06:44 (6) | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | |
| | 22:18 | 49 | 07:31 (6) | 21:40 | 54 | 07:38 (6) | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | |
| 2 | 04:57 | | 06:43 (6) | 05:41 | | 06:44 (6) | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | |
| | 22:17 | 49 | 07:32 (6) | 21:38 | 53 | 07:37 (6) | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | |
| 3 | 04:58 | | 06:42 (6) | 05:43 | | 06:44 (6) | 06:41 | | 19:11 (39) | 07:38 | | 07:41 | | 09:02 (36) | 08:38 | |
| | 22:17 | 50 | 07:32 (6) | 21:36 | 52 | 07:36 (6) | 20:24 | 3 | 19:14 (39) | 19:07 | | 16:53 | 9 | 09:11 (36) | 16:08 | |
| 4 | 04:59 | | 06:42 (6) | 05:45 | | 06:45 (6) | 06:43 | | 19:06 (39) | 07:40 | | 07:43 | | 08:59 (36) | 08:40 | |
| | 22:16 | 50 | 07:32 (6) | 21:34 | 51 | 07:36 (6) | 20:22 | 12 | 19:18 (39) | 19:04 | | 16:51 | 15 | 09:14 (36) | 16:07 | |
| 5 | 05:00 | | 06:42 (6) | 05:47 | | 06:45 (6) | 06:45 | | 19:02 (39) | 07:42 | | 07:45 | | 08:57 (36) | 08:41 | |
| | 22:16 | 51 | 07:33 (6) | 21:32 | 50 | 07:35 (6) | 20:19 | 17 | 19:19 (39) | 19:02 | | 16:49 | 18 | 09:15 (36) | 16:07 | |
| 6 | 05:01 | | 06:42 (6) | 05:49 | | 06:46 (6) | 06:47 | | 19:01 (39) | 07:44 | | 07:47 | | 08:57 (36) | 08:43 | |
| | 22:15 | 51 | 07:33 (6) | 21:30 | 48 | 07:34 (6) | 20:16 | 20 | 19:21 (39) | 18:59 | | 16:47 | 20 | 09:17 (36) | 16:06 | |
| 7 | 05:02 | | 06:42 (6) | 05:50 | | 06:47 (6) | 06:49 | | 18:59 (39) | 07:46 | | 07:49 | | 08:56 (36) | 08:44 | |
| | 22:14 | 51 | 07:33 (6) | 21:28 | 47 | 07:34 (6) | 20:14 | 23 | 19:22 (39) | 18:57 | | 16:45 | 22 | 09:18 (36) | 16:06 | |
| 8 | 05:03 | | 06:42 (6) | 05:52 | | 06:48 (6) | 06:51 | | 18:58 (39) | 07:48 | | 07:51 | | 08:55 (36) | 08:45 | |
| | 22:14 | 52 | 07:34 (6) | 21:25 | 45 | 07:33 (6) | 20:11 | 24 | 19:22 (39) | 18:54 | | 16:43 | 23 | 09:18 (36) | 16:05 | |
| 9 | 05:04 | | 06:42 (6) | 05:54 | | 06:48 (6) | 06:53 | | 18:57 (39) | 07:50 | | 07:53 | | 08:54 (36) | 08:47 | |
| | 22:13 | 52 | 07:34 (6) | 21:23 | 43 | 07:31 (6) | 20:09 | 26 | 19:23 (39) | 18:52 | | 16:41 | 25 | 09:19 (36) | 16:05 | |
| 10 | 05:05 | | 06:42 (6) | 05:56 | | 06:49 (6) | 06:55 | | 18:56 (39) | 07:52 | | 07:55 | | 08:55 (36) | 08:48 | |
| | 22:12 | 53 | 07:35 (6) | 21:21 | 42 | 07:31 (6) | 20:06 | 26 | 19:22 (39) | 18:49 | | 16:40 | 25 | 09:20 (36) | 16:04 | |
| 11 | 05:07 | | 06:42 (6) | 05:58 | | 06:50 (6) | 06:56 | | 18:55 (39) | 07:54 | | 07:57 | | 08:54 (36) | 08:49 | |
| | 22:11 | 53 | 07:35 (6) | 21:19 | 40 | 07:30 (6) | 20:04 | 27 | 19:22 (39) | 18:47 | | 16:38 | 26 | 09:20 (36) | 16:04 | |
| 12 | 05:08 | | 06:43 (6) | 06:00 | | 06:51 (6) | 06:58 | | 18:55 (39) | 07:56 | | 07:59 | | 08:54 (36) | 08:50 | |
| | 22:10 | 53 | 07:36 (6) | 21:17 | 36 | 07:27 (6) | 20:01 | 27 | 19:22 (39) | 18:44 | | 16:36 | 26 | 09:20 (36) | 16:04 | |
| 13 | 05:09 | | 06:42 (6) | 06:02 | | 06:52 (6) | 07:00 | | 18:55 (39) | 07:58 | | 08:01 | | 08:54 (36) | 08:51 | |
| | 22:09 | 54 | 07:36 (6) | 21:15 | 34 | 07:26 (6) | 19:58 | 27 | 19:22 (39) | 18:42 | | 16:34 | 26 | 09:20 (36) | 16:04 | |
| 14 | 05:11 | | 06:42 (6) | 06:03 | | 06:54 (6) | 07:02 | | 18:55 (39) | 08:00 | | 08:03 | | 08:55 (36) | 08:52 | |
| | 22:08 | 54 | 07:36 (6) | 21:12 | 30 | 07:24 (6) | 19:56 | 26 | 19:21 (39) | 18:39 | | 16:32 | 26 | 09:21 (36) | 16:03 | |
| 15 | 05:12 | | 06:42 (6) | 06:05 | | 06:57 (6) | 07:04 | | 18:55 (39) | 08:02 | | 08:05 | | 08:55 (36) | 08:53 | |
| | 22:06 | 54 | 07:36 (6) | 21:10 | 25 | 07:22 (6) | 19:53 | 25 | 19:20 (39) | 18:37 | | 16:31 | 26 | 09:21 (36) | 16:03 | |
| 16 | 05:13 | | 06:43 (6) | 06:07 | | 07:00 (6) | 07:06 | | 18:55 (39) | 08:04 | | 08:07 | | 08:55 (36) | 08:54 | |
| | 22:05 | 54 | 07:37 (6) | 21:08 | 19 | 07:19 (6) | 19:51 | 24 | 19:19 (39) | 18:34 | | 16:29 | 26 | 09:21 (36) | 16:03 | |
| 17 | 05:15 | | 06:42 (6) | 06:09 | | 07:04 (6) | 07:08 | | 18:56 (39) | 08:06 | | 08:09 | | 08:55 (36) | 08:55 | |
| | 22:04 | 55 | 07:37 (6) | 21:05 | 9 | 07:13 (6) | 19:48 | 21 | 19:17 (39) | 18:32 | | 16:27 | 25 | 09:20 (36) | 16:04 | |
| 18 | 05:16 | | 06:42 (6) | 06:11 | | | 07:10 | | 18:57 (39) | 08:08 | | 08:11 | | 08:57 (36) | 08:56 | |
| | 22:03 | 55 | 07:37 (6) | 21:03 | | | 19:46 | 19 | 19:16 (39) | 18:29 | | 16:26 | 24 | 09:21 (36) | 16:04 | |
| 19 | 05:18 | | 06:42 (6) | 06:13 | | | 07:12 | | 18:58 (39) | 08:10 | | 08:13 | | 08:57 (36) | 08:57 | |
| | 22:01 | 56 | 07:38 (6) | 21:01 | | | 19:43 | 16 | 19:14 (39) | 18:27 | | 16:24 | 23 | 09:20 (36) | 16:04 | |
| 20 | 05:19 | | 06:42 (6) | 06:15 | | | 07:13 | | 19:01 (39) | 08:12 | | 08:15 | | 08:58 (36) | 08:57 | |
| | 22:00 | 56 | 07:38 (6) | 20:58 | | | 19:40 | 9 | 19:10 (39) | 18:25 | | 16:23 | 22 | 09:20 (36) | 16:04 | |
| 21 | 05:21 | | 06:42 (6) | 06:17 | | | 07:15 | | | 08:14 | | 08:17 | | 08:59 (36) | 08:58 | |
| | 21:58 | 56 | 07:38 (6) | 20:56 | | | 19:38 | | | 18:22 | | 16:21 | 20 | 09:19 (36) | 16:05 | |
| 22 | 05:22 | | 06:42 (6) | 06:19 | | | 07:17 | | | 08:16 | | 08:19 | | 09:00 (36) | 08:59 | |
| | 21:57 | 56 | 07:38 (6) | 20:54 | | | 19:35 | | | 18:20 | | 16:20 | 19 | 09:19 (36) | 16:05 | |
| 23 | 05:24 | | 06:42 (6) | 06:21 | | | 07:19 | | | 08:18 | | 08:21 | | 09:01 (36) | 08:59 | |
| | 21:55 | 56 | 07:38 (6) | 20:51 | | | 19:33 | | | 18:18 | | 16:19 | 17 | 09:18 (36) | 16:06 | |
| 24 | 05:26 | | 06:42 (6) | 06:22 | | | 07:21 | | | 08:20 | | 08:23 | | 09:02 (36) | 09:00 | |
| | 21:54 | 56 | 07:38 (6) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | 15 | 09:17 (36) | 16:06 | |
| 25 | 05:27 | | 06:42 (6) | 06:24 | | | 07:23 | | | 07:22 | | 08:24 | | 09:04 (36) | 09:00 | |
| | 21:52 | 56 | 07:38 (6) | 20:46 | | | 19:27 | | | 17:13 | | 16:16 | 12 | 09:16 (36) | 16:07 | |
| 26 | 05:29 | | 06:42 (6) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | | 09:06 (36) | 09:00 | |
| | 21:50 | 56 | 07:38 (6) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | 8 | 09:14 (36) | 16:08 | |
| 27 | 05:31 | | 06:43 (6) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | | | 09:00 | |
| | 21:49 | 56 | 07:39 (6) | 20:42 | | | 19:22 | | | 17:08 | | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 06:43 (6) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | | | 09:01 | |
| | 21:47 | 55 | 07:38 (6) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | | | 16:09 | |
| 29 | 05:34 | | 06:43 (6) | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | | 09:01 | |
| | 21:45 | 55 | 07:38 (6) | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | | | 16:10 | |
| 30 | 05:36 | | 06:43 (6) | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | | 09:01 | |
| | 21:43 | 54 | 07:37 (6) | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | | | 16:11 | |
| 31 | 05:38 | | 06:43 (6) | 06:36 | | | | | | 07:34 | | | | | 09:01 | |
| | 21:41 | 55 | 07:38 (6) | 20:32 | | | | | | 17:00 | | | | | 16:12 | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 | |
| Total, worst case | | 1663 | | | 678 | | | 372 | | | | | 498 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 1,00 | | | | | 0,71 | | | |
| Total reduction | | 0,45 | | | 0,48 | | | 0,39 | | | | | 0,11 | | | |
| Total, real | | 753 | | | 326 | | | 144 | | | | | 55 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:31 (36) | 07:26 | | | 07:08 | | 19:03 (39) | 05:55 | | 06:46 (6) | 05:02 | | 06:31 (6) |
| | 16:14 | | | 17:08 | 24 | 09:55 (36) | 18:07 | | | 20:09 | 26 | 19:29 (39) | 21:08 | 31 | 07:17 (6) | 22:02 | 60 | 07:31 (6) |
| 2 | 09:00 | | | 08:26 | | 09:31 (36) | 07:24 | | | 07:05 | | 19:04 (39) | 05:53 | | 06:43 (6) | 05:01 | | 06:31 (6) |
| | 16:15 | | | 17:10 | 23 | 09:54 (36) | 18:09 | | | 20:11 | 25 | 19:29 (39) | 21:10 | 35 | 07:18 (6) | 22:03 | 60 | 07:31 (6) |
| 3 | 09:00 | | | 08:24 | | 09:32 (36) | 07:22 | | | 07:03 | | 19:04 (39) | 05:50 | | 06:41 (6) | 05:00 | | 06:31 (6) |
| | 16:16 | | | 17:12 | 22 | 09:54 (36) | 18:11 | | | 20:13 | 24 | 19:28 (39) | 21:12 | 38 | 07:19 (6) | 22:05 | 59 | 07:30 (6) |
| 4 | 09:00 | | | 08:22 | | 09:33 (36) | 07:19 | | | 07:00 | | 19:04 (39) | 05:48 | | 06:39 (6) | 04:59 | | 06:32 (6) |
| | 16:17 | | | 17:14 | 19 | 09:52 (36) | 18:13 | | | 20:15 | 22 | 19:26 (39) | 21:14 | 41 | 07:20 (6) | 22:06 | 59 | 07:31 (6) |
| 5 | 08:59 | | | 08:20 | | 09:34 (36) | 07:17 | | | 06:57 | | 19:05 (39) | 05:46 | | 06:38 (6) | 04:58 | | 06:32 (6) |
| | 16:19 | | | 17:16 | 17 | 09:51 (36) | 18:15 | | | 20:17 | 20 | 19:25 (39) | 21:16 | 44 | 07:22 (6) | 22:07 | 59 | 07:31 (6) |
| 6 | 08:59 | | | 08:18 | | 09:37 (36) | 07:14 | | | 06:55 | | 19:06 (39) | 05:44 | | 06:38 (6) | 04:57 | | 06:32 (6) |
| | 16:20 | | | 17:19 | 12 | 09:49 (36) | 18:17 | | | 20:19 | 17 | 19:23 (39) | 21:18 | 45 | 07:23 (6) | 22:08 | 59 | 07:31 (6) |
| 7 | 08:58 | | | 08:16 | | 09:41 (36) | 07:12 | | | 06:52 | | 19:08 (39) | 05:42 | | 06:37 (6) | 04:56 | | 06:33 (6) |
| | 16:21 | | | 17:21 | 3 | 09:44 (36) | 18:19 | | | 20:21 | 13 | 19:21 (39) | 21:20 | 47 | 07:24 (6) | 22:09 | 58 | 07:31 (6) |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | | 06:50 | | 19:12 (39) | 05:40 | | 06:36 (6) | 04:56 | | 06:32 (6) |
| | 16:23 | | | 17:23 | | | 18:22 | | | 20:23 | 4 | 19:16 (39) | 21:22 | 49 | 07:25 (6) | 22:10 | 59 | 07:31 (6) |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | | 06:47 | | | 05:38 | | 06:35 (6) | 04:55 | | 06:33 (6) |
| | 16:24 | | | 17:25 | | | 18:24 | | | 20:25 | | | 21:24 | 50 | 07:25 (6) | 22:11 | 58 | 07:31 (6) |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | | 06:34 (6) | 04:54 | | 06:33 (6) |
| | 16:26 | | | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 52 | 07:26 (6) | 22:12 | 58 | 07:31 (6) |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | | 06:33 (6) | 04:54 | | 06:33 (6) |
| | 16:28 | | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 53 | 07:26 (6) | 22:13 | 58 | 07:31 (6) |
| 12 | 08:55 | | 09:35 (36) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | | 06:33 (6) | 04:53 | | 06:34 (6) |
| | 16:29 | 3 | 09:38 (36) | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 55 | 07:28 (6) | 22:14 | 58 | 07:32 (6) |
| 13 | 08:54 | | 09:33 (36) | 08:03 | | | 06:56 | | | 06:37 | | | 05:30 | | 06:32 (6) | 04:53 | | 06:34 (6) |
| | 16:31 | 9 | 09:42 (36) | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 56 | 07:28 (6) | 22:15 | 57 | 07:31 (6) |
| 14 | 08:53 | | 09:32 (36) | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | | 06:31 (6) | 04:53 | | 06:34 (6) |
| | 16:33 | 12 | 09:44 (36) | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 57 | 07:28 (6) | 22:15 | 57 | 07:31 (6) |
| 15 | 08:52 | | 09:30 (36) | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | | 06:32 (6) | 04:52 | | 06:34 (6) |
| | 16:34 | 15 | 09:45 (36) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 57 | 07:29 (6) | 22:16 | 58 | 07:32 (6) |
| 16 | 08:51 | | 09:30 (36) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 06:31 (6) | 04:52 | | 06:35 (6) |
| | 16:36 | 17 | 09:47 (36) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 58 | 07:29 (6) | 22:17 | 57 | 07:32 (6) |
| 17 | 08:50 | | 09:29 (36) | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | | 06:30 (6) | 04:52 | | 06:35 (6) |
| | 16:38 | 20 | 09:49 (36) | 17:42 | | | 18:40 | | | 20:41 | | | 21:38 | 59 | 07:29 (6) | 22:17 | 57 | 07:32 (6) |
| 18 | 08:49 | | 09:28 (36) | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | | 06:30 (6) | 04:52 | | 06:35 (6) |
| | 16:40 | 21 | 09:49 (36) | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 59 | 07:29 (6) | 22:18 | 57 | 07:32 (6) |
| 19 | 08:47 | | 09:29 (36) | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | | 06:30 (6) | 04:52 | | 06:36 (6) |
| | 16:42 | 22 | 09:51 (36) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 59 | 07:29 (6) | 22:18 | 56 | 07:32 (6) |
| 20 | 08:46 | | 09:28 (36) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | 06:30 (6) | 04:52 | | 06:36 (6) |
| | 16:44 | 23 | 09:51 (36) | 17:48 | | | 18:46 | | | 20:47 | | | 21:44 | 60 | 07:30 (6) | 22:18 | 56 | 07:32 (6) |
| 21 | 08:45 | | 09:28 (36) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:30 (6) | 04:52 | | 06:36 (6) |
| | 16:46 | 24 | 09:52 (36) | 17:50 | | | 18:48 | | | 20:49 | | | 21:45 | 60 | 07:30 (6) | 22:19 | 57 | 07:33 (6) |
| 22 | 08:43 | | 09:28 (36) | 07:43 | | | 06:33 | | | 06:15 | | | 05:15 | | 06:30 (6) | 04:52 | | 06:36 (6) |
| | 16:48 | 25 | 09:53 (36) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 60 | 07:30 (6) | 22:19 | 56 | 07:32 (6) |
| 23 | 08:42 | | 09:27 (36) | 07:41 | | | 06:31 | | 18:14 (39) | 06:13 | | | 05:13 | | 06:30 (6) | 04:53 | | 06:37 (6) |
| | 16:50 | 26 | 09:53 (36) | 17:55 | | | 18:52 | 10 | 18:24 (39) | 20:53 | | | 21:49 | 60 | 07:30 (6) | 22:19 | 56 | 07:33 (6) |
| 24 | 08:41 | | 09:28 (36) | 07:38 | | | 06:28 | | 18:11 (39) | 06:11 | | | 05:12 | | 06:30 (6) | 04:53 | | 06:36 (6) |
| | 16:51 | 26 | 09:54 (36) | 17:57 | | | 18:54 | 16 | 18:27 (39) | 20:55 | | | 21:50 | 61 | 07:31 (6) | 22:19 | 57 | 07:33 (6) |
| 25 | 08:39 | | 09:28 (36) | 07:36 | | | 06:26 | | 18:09 (39) | 06:08 | | | 05:10 | | 06:29 (6) | 04:53 | | 06:37 (6) |
| | 16:53 | 26 | 09:54 (36) | 17:59 | | | 18:56 | 19 | 18:28 (39) | 20:57 | | | 21:52 | 61 | 07:30 (6) | 22:19 | 57 | 07:34 (6) |
| 26 | 08:37 | | 09:28 (36) | 07:34 | | | 06:23 | | 18:07 (39) | 06:06 | | | 05:09 | | 06:30 (6) | 04:54 | | 06:37 (6) |
| | 16:56 | 27 | 09:55 (36) | 18:01 | | | 18:57 | 22 | 18:29 (39) | 20:59 | | | 21:53 | 60 | 07:30 (6) | 22:19 | 57 | 07:34 (6) |
| 27 | 08:36 | | 09:28 (36) | 07:31 | | | 06:21 | | 18:06 (39) | 06:04 | | | 05:08 | | 06:30 (6) | 04:54 | | 06:37 (6) |
| | 16:58 | 27 | 09:55 (36) | 18:03 | | | 18:59 | 24 | 18:30 (39) | 21:01 | | | 21:55 | 60 | 07:30 (6) | 22:19 | 57 | 07:34 (6) |
| 28 | 08:34 | | 09:28 (36) | 07:29 | | | 06:18 | | 18:05 (39) | 06:01 | | 06:56 (6) | 05:06 | | 06:30 (6) | 04:55 | | 06:37 (6) |
| | 17:00 | 27 | 09:55 (36) | 18:05 | | | 19:01 | 25 | 18:30 (39) | 21:03 | 11 | 07:07 (6) | 21:56 | 61 | 07:31 (6) | 22:19 | 58 | 07:35 (6) |
| 29 | 08:33 | | 09:29 (36) | | | | 07:15 | | 19:05 (39) | 05:59 | | 06:51 (6) | 05:05 | | 06:30 (6) | 04:55 | | 06:38 (6) |
| | 17:02 | 27 | 09:56 (36) | | | | 20:03 | 25 | 19:30 (39) | 21:05 | 21 | 07:12 (6) | 21:58 | 61 | 07:31 (6) | 22:18 | 57 | 07:35 (6) |
| 30 | 08:31 | | 09:29 (36) | | | | 07:13 | | 19:04 (39) | 05:57 | | 06:48 (6) | 05:04 | | 06:31 (6) | 04:56 | | 06:37 (6) |
| | 17:04 | 26 | 09:55 (36) | | | | 20:05 | 26 | 19:30 (39) | 21:06 | 27 | 07:15 (6) | 21:59 | 60 | 07:31 (6) | 22:18 | 58 | 07:35 (6) |
| 31 | 08:29 | | 09:30 (36) | | | | 07:10 | | 19:04 (39) | | | | 05:03 | | 06:31 (6) | | | |
| | 17:06 | 25 | 09:55 (36) | | | | 20:07 | 26 | 19:30 (39) | | | | 22:01 | 60 | 07:31 (6) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 428 | | | 120 | | | 193 | | | 210 | | | 1669 | | | 1730 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,69 | | | 1,00 | | | 0,98 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,12 | | | 0,17 | | | 0,33 | | | 0,38 | | | 0,48 | | | 0,45 | |
| Total, real | | 52 | | | 20 | | | 64 | | | 79 | | | 798 | | | 773 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:38 (6) | 05:39 | | 06:43 (6) | 06:38 | | | 07:34 | | 07:36 | | | 08:35 |
| | 22:18 | 57 | 07:35 (6) | 21:40 | 55 | 07:38 (6) | 20:29 | | | 19:12 | | 16:58 | | | 16:10 |
| 2 | 04:57 | | 06:38 (6) | 05:41 | | 06:43 (6) | 06:39 | | | 07:36 | | 07:38 | | | 08:36 |
| | 22:17 | 58 | 07:36 (6) | 21:38 | 53 | 07:36 (6) | 20:27 | | | 19:09 | | 16:55 | | | 16:09 |
| 3 | 04:58 | | 06:37 (6) | 05:43 | | 06:44 (6) | 06:41 | | | 07:38 | | 07:41 | | | 08:38 |
| | 22:17 | 59 | 07:36 (6) | 21:36 | 52 | 07:36 (6) | 20:24 | | | 19:07 | | 16:53 | | | 16:08 |
| 4 | 04:59 | | 06:38 (6) | 05:45 | | 06:45 (6) | 06:43 | | 19:10 (39) | 07:40 | | 07:43 | | 09:10 (36) | 08:40 |
| | 22:16 | 58 | 07:36 (6) | 21:34 | 51 | 07:36 (6) | 20:22 | 4 | 19:14 (39) | 19:04 | | 16:51 | 5 | 09:15 (36) | 16:07 |
| 5 | 05:00 | | 06:38 (6) | 05:47 | | 06:45 (6) | 06:45 | | 19:04 (39) | 07:42 | | 07:45 | | 09:06 (36) | 08:41 |
| | 22:16 | 58 | 07:36 (6) | 21:32 | 49 | 07:34 (6) | 20:19 | 13 | 19:17 (39) | 19:02 | | 16:49 | 13 | 09:19 (36) | 16:07 |
| 6 | 05:01 | | 06:38 (6) | 05:49 | | 06:46 (6) | 06:47 | | 19:02 (39) | 07:44 | | 07:47 | | 09:05 (36) | 08:43 |
| | 22:15 | 59 | 07:37 (6) | 21:30 | 47 | 07:33 (6) | 20:16 | 17 | 19:19 (39) | 18:59 | | 16:47 | 16 | 09:21 (36) | 16:06 |
| 7 | 05:02 | | 06:38 (6) | 05:50 | | 06:47 (6) | 06:49 | | 19:00 (39) | 07:46 | | 07:49 | | 09:03 (36) | 08:44 |
| | 22:14 | 59 | 07:37 (6) | 21:28 | 46 | 07:33 (6) | 20:14 | 20 | 19:20 (39) | 18:57 | | 16:45 | 20 | 09:23 (36) | 16:06 |
| 8 | 05:03 | | 06:38 (6) | 05:52 | | 06:49 (6) | 06:51 | | 18:59 (39) | 07:48 | | 07:51 | | 09:02 (36) | 08:45 |
| | 22:14 | 59 | 07:37 (6) | 21:25 | 43 | 07:32 (6) | 20:11 | 22 | 19:21 (39) | 18:54 | | 16:43 | 22 | 09:24 (36) | 16:05 |
| 9 | 05:04 | | 06:38 (6) | 05:54 | | 06:49 (6) | 06:53 | | 18:58 (39) | 07:50 | | 07:53 | | 09:01 (36) | 08:47 |
| | 22:13 | 60 | 07:38 (6) | 21:23 | 40 | 07:29 (6) | 20:09 | 24 | 19:22 (39) | 18:52 | | 16:41 | 23 | 09:24 (36) | 16:05 |
| 10 | 05:05 | | 06:38 (6) | 05:56 | | 06:51 (6) | 06:55 | | 18:56 (39) | 07:52 | | 07:55 | | 09:01 (36) | 08:48 |
| | 22:12 | 60 | 07:38 (6) | 21:21 | 37 | 07:28 (6) | 20:06 | 25 | 19:21 (39) | 18:49 | | 16:40 | 25 | 09:26 (36) | 16:04 |
| 11 | 05:07 | | 06:38 (6) | 05:58 | | 06:53 (6) | 06:56 | | 18:56 (39) | 07:54 | | 07:57 | | 09:01 (36) | 08:49 |
| | 22:11 | 60 | 07:38 (6) | 21:19 | 34 | 07:27 (6) | 20:04 | 25 | 19:21 (39) | 18:47 | | 16:38 | 25 | 09:26 (36) | 16:04 |
| 12 | 05:08 | | 06:39 (6) | 06:00 | | 06:54 (6) | 06:58 | | 18:55 (39) | 07:56 | | 07:59 | | 09:00 (36) | 08:50 |
| | 22:10 | 60 | 07:39 (6) | 21:17 | 30 | 07:24 (6) | 20:01 | 26 | 19:21 (39) | 18:44 | | 16:36 | 26 | 09:26 (36) | 16:04 |
| 13 | 05:09 | | 06:39 (6) | 06:02 | | 06:56 (6) | 07:00 | | 18:55 (39) | 07:58 | | 08:01 | | 09:00 (36) | 08:51 |
| | 22:09 | 60 | 07:39 (6) | 21:15 | 25 | 07:21 (6) | 19:58 | 26 | 19:21 (39) | 18:42 | | 16:34 | 27 | 09:27 (36) | 16:04 |
| 14 | 05:11 | | 06:39 (6) | 06:03 | | 07:00 (6) | 07:02 | | 18:55 (39) | 08:00 | | 08:03 | | 09:01 (36) | 08:52 |
| | 22:08 | 60 | 07:39 (6) | 21:12 | 18 | 07:18 (6) | 19:56 | 26 | 19:21 (39) | 18:39 | | 16:32 | 27 | 09:28 (36) | 16:03 |
| 15 | 05:12 | | 06:39 (6) | 06:05 | | 07:06 (6) | 07:04 | | 18:55 (39) | 08:02 | | 08:05 | | 09:01 (36) | 08:53 |
| | 22:06 | 60 | 07:39 (6) | 21:10 | 6 | 07:12 (6) | 19:53 | 25 | 19:20 (39) | 18:37 | | 16:31 | 27 | 09:28 (36) | 16:03 |
| 16 | 05:13 | | 06:40 (6) | 06:07 | | | 07:06 | | 18:55 (39) | 08:04 | | 08:07 | | 09:01 (36) | 08:54 |
| | 22:05 | 60 | 07:40 (6) | 21:08 | | | 19:51 | 23 | 19:18 (39) | 18:34 | | 16:29 | 27 | 09:28 (36) | 16:03 |
| 17 | 05:15 | | 06:39 (6) | 06:09 | | | 07:08 | | 18:55 (39) | 08:06 | | 08:09 | | 09:01 (36) | 08:55 |
| | 22:04 | 61 | 07:40 (6) | 21:05 | | | 19:48 | 22 | 19:17 (39) | 18:32 | | 16:27 | 26 | 09:27 (36) | 16:04 |
| 18 | 05:16 | | 06:39 (6) | 06:11 | | | 07:10 | | 18:56 (39) | 08:08 | | 08:11 | | 09:02 (36) | 08:56 |
| | 22:03 | 61 | 07:40 (6) | 21:03 | | | 19:46 | 20 | 19:16 (39) | 18:29 | | 16:26 | 26 | 09:28 (36) | 16:04 |
| 19 | 05:18 | | 06:40 (6) | 06:13 | | | 07:12 | | 18:57 (39) | 08:10 | | 08:13 | | 09:02 (36) | 08:57 |
| | 22:01 | 60 | 07:40 (6) | 21:01 | | | 19:43 | 17 | 19:14 (39) | 18:27 | | 16:24 | 26 | 09:28 (36) | 16:04 |
| 20 | 05:19 | | 06:40 (6) | 06:15 | | | 07:13 | | 19:00 (39) | 08:12 | | 08:15 | | 09:03 (36) | 08:57 |
| | 22:00 | 60 | 07:40 (6) | 20:58 | | | 19:40 | 11 | 19:11 (39) | 18:25 | | 16:23 | 25 | 09:28 (36) | 16:04 |
| 21 | 05:21 | | 06:39 (6) | 06:17 | | | 07:15 | | | 08:14 | | 08:17 | | 09:03 (36) | 08:58 |
| | 21:58 | 61 | 07:40 (6) | 20:56 | | | 19:38 | | | 18:22 | | 16:21 | 24 | 09:27 (36) | 16:05 |
| 22 | 05:22 | | 06:40 (6) | 06:19 | | | 07:17 | | | 08:16 | | 08:19 | | 09:04 (36) | 08:59 |
| | 21:57 | 60 | 07:40 (6) | 20:54 | | | 19:35 | | | 18:20 | | 16:20 | 23 | 09:27 (36) | 16:05 |
| 23 | 05:24 | | 06:40 (6) | 06:21 | | | 07:19 | | | 08:18 | | 08:21 | | 09:05 (36) | 08:59 |
| | 21:55 | 60 | 07:40 (6) | 20:51 | | | 19:33 | | | 18:18 | | 16:19 | 22 | 09:27 (36) | 16:06 |
| 24 | 05:26 | | 06:40 (6) | 06:22 | | | 07:21 | | | 08:20 | | 08:23 | | 09:05 (36) | 09:00 |
| | 21:54 | 60 | 07:40 (6) | 20:49 | | | 19:30 | | | 18:15 | | 16:17 | 21 | 09:26 (36) | 16:06 |
| 25 | 05:27 | | 06:40 (6) | 06:24 | | | 07:23 | | | 07:22 | | 08:24 | | 09:06 (36) | 09:00 |
| | 21:52 | 59 | 07:39 (6) | 20:46 | | | 19:27 | | | 17:13 | | 16:16 | 20 | 09:26 (36) | 16:07 |
| 26 | 05:29 | | 06:41 (6) | 06:26 | | | 07:25 | | | 07:24 | | 08:26 | | 09:08 (36) | 09:00 |
| | 21:50 | 59 | 07:40 (6) | 20:44 | | | 19:25 | | | 17:11 | | 16:15 | 17 | 09:25 (36) | 16:08 |
| 27 | 05:31 | | 06:42 (6) | 06:28 | | | 07:27 | | | 07:26 | | 08:28 | | 09:09 (36) | 09:00 |
| | 21:49 | 58 | 07:40 (6) | 20:42 | | | 19:22 | | | 17:08 | | 16:14 | 15 | 09:24 (36) | 16:08 |
| 28 | 05:32 | | 06:41 (6) | 06:30 | | | 07:29 | | | 07:28 | | 08:30 | | 09:11 (36) | 09:01 |
| | 21:47 | 58 | 07:39 (6) | 20:39 | | | 19:20 | | | 17:06 | | 16:13 | 12 | 09:23 (36) | 16:09 |
| 29 | 05:34 | | 06:42 (6) | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | 09:13 (36) | 09:01 |
| | 21:45 | 57 | 07:39 (6) | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | 9 | 09:22 (36) | 16:10 |
| 30 | 05:36 | | 06:42 (6) | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | 09:16 (36) | 09:01 |
| | 21:43 | 56 | 07:38 (6) | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | 4 | 09:20 (36) | 16:11 |
| 31 | 05:38 | | 06:43 (6) | 06:36 | | | | | | 07:34 | | | | | 09:01 |
| | 21:41 | 55 | 07:38 (6) | 20:32 | | | | | | 17:00 | | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | 253 | | | 224 |
| Total, worst case | | 1832 | | | 586 | | | 346 | | | | | 553 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | | 1,00 | | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 1,00 | | | | | 0,69 | | |
| Total reduction | | 0,45 | | | 0,48 | | | 0,39 | | | | | 0,11 | | |
| Total, real | | 823 | | | 279 | | | 134 | | | | | 59 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | | 09:25 (6) | 07:08 | 10:23 (6) | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | 93 | 10:58 (6) | 20:09 | 70 11:33 (6) | 21:08 | 22:02 |
| 2 | 09:00 | 08:26 | | 07:24 | | 09:24 (6) | 07:05 | 10:23 (6) | 05:53 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | 94 | 10:58 (6) | 20:11 | 67 11:30 (6) | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | | 09:24 (6) | 07:03 | 10:25 (6) | 05:50 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | 95 | 10:59 (6) | 20:13 | 63 11:28 (6) | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | | 09:23 (6) | 07:00 | 10:26 (6) | 05:48 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | 97 | 17:45 (39) | 20:15 | 58 11:24 (6) | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | | 09:23 (6) | 06:57 | 10:28 (6) | 05:46 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | 103 | 17:48 (39) | 20:17 | 54 11:22 (6) | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | | 09:22 (6) | 06:55 | 10:29 (6) | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | 107 | 17:49 (39) | 20:19 | 49 11:18 (6) | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 10:11 (6) | 07:12 | | 09:22 (6) | 06:52 | 10:32 (6) | 05:42 | 04:56 |
| | 16:21 | 17:21 | 2 10:13 (6) | 18:19 | 112 | 17:52 (39) | 20:21 | 42 11:14 (6) | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 10:01 (6) | 07:09 | | 09:21 (6) | 06:50 | 10:34 (6) | 05:40 | 04:55 |
| | 16:23 | 17:23 | 23 10:24 (6) | 18:21 | 116 | 17:54 (39) | 20:23 | 35 11:09 (6) | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 09:57 (6) | 07:07 | | 09:20 (6) | 06:47 | 10:39 (6) | 05:38 | 04:55 |
| | 16:24 | 17:25 | 32 10:29 (6) | 18:24 | 119 | 17:55 (39) | 20:25 | 25 11:04 (6) | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 | 09:53 (6) | 07:04 | | 09:20 (6) | 06:45 | 10:47 (6) | 05:36 | 04:54 |
| | 16:26 | 17:27 | 39 10:32 (6) | 18:26 | 120 | 17:56 (39) | 20:27 | 5 10:52 (6) | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 09:50 (6) | 07:02 | | 09:19 (6) | 06:42 | | 05:34 | 04:54 |
| | 16:28 | 17:29 | 45 10:35 (6) | 18:28 | 119 | 17:55 (39) | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 09:48 (6) | 06:59 | | 09:19 (6) | 06:40 | | 05:32 | 04:53 |
| | 16:29 | 17:31 | 50 10:38 (6) | 18:30 | 120 | 17:55 (39) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 | 09:46 (6) | 06:56 | | 09:19 (6) | 06:37 | | 05:30 | 04:53 |
| | 16:31 | 17:33 | 54 10:40 (6) | 18:32 | 118 | 17:54 (39) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 09:43 (6) | 06:54 | | 09:19 (6) | 06:35 | | 05:28 | 04:53 |
| | 16:33 | 17:36 | 59 10:42 (6) | 18:34 | 117 | 17:54 (39) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 09:42 (6) | 06:51 | | 09:18 (6) | 06:32 | | 05:26 | 04:52 |
| | 16:34 | 17:38 | 62 10:44 (6) | 18:36 | 114 | 17:52 (39) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 09:40 (6) | 06:49 | | 09:18 (6) | 06:30 | | 05:25 | 04:52 |
| | 16:36 | 17:40 | 66 10:46 (6) | 18:38 | 109 | 17:49 (39) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 09:38 (6) | 06:46 | | 09:18 (6) | 06:27 | | 05:23 | 04:52 |
| | 16:38 | 17:42 | 69 10:47 (6) | 18:40 | 98 | 10:56 (6) | 20:41 | | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 | 09:37 (6) | 06:44 | | 09:18 (6) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 17:44 | 72 10:49 (6) | 18:42 | 97 | 10:55 (6) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | 09:36 (6) | 06:41 | | 09:18 (6) | 06:23 | | 05:19 | 04:52 |
| | 16:42 | 17:46 | 74 10:50 (6) | 18:44 | 96 | 10:54 (6) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 09:34 (6) | 06:39 | | 09:18 (6) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 17:48 | 77 10:51 (6) | 18:46 | 95 | 10:53 (6) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 09:33 (6) | 06:36 | | 09:17 (6) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 17:50 | 79 10:52 (6) | 18:48 | 95 | 10:52 (6) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 | 09:32 (6) | 06:33 | | 09:18 (6) | 06:15 | | 05:15 | 04:52 |
| | 16:47 | 17:53 | 81 10:53 (6) | 18:50 | 93 | 10:51 (6) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 09:31 (6) | 06:31 | | 09:18 (6) | 06:13 | | 05:13 | 04:52 |
| | 16:49 | 17:55 | 83 10:54 (6) | 18:52 | 91 | 10:49 (6) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 | 09:29 (6) | 06:28 | | 09:19 (6) | 06:11 | | 05:12 | 04:53 |
| | 16:51 | 17:57 | 86 10:55 (6) | 18:54 | 90 | 10:49 (6) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 09:29 (6) | 06:26 | | 09:19 (6) | 06:08 | | 05:10 | 04:53 |
| | 16:53 | 17:59 | 87 10:56 (6) | 18:55 | 88 | 10:47 (6) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 | 09:27 (6) | 06:23 | | 09:18 (6) | 06:06 | | 05:09 | 04:54 |
| | 16:55 | 18:01 | 89 10:56 (6) | 18:57 | 87 | 10:45 (6) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 | 09:27 (6) | 06:21 | | 09:19 (6) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | 18:03 | 90 10:57 (6) | 18:59 | 85 | 10:44 (6) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 09:25 (6) | 06:18 | | 09:20 (6) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | 18:05 | 92 10:57 (6) | 19:01 | 82 | 10:42 (6) | 21:03 | | 21:56 | 22:19 |
| 29 | 08:33 | | | 07:15 | | 10:21 (6) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 79 | 11:40 (6) | 21:04 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | | 10:21 (6) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 77 | 11:38 (6) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | | 10:22 (6) | | | 05:03 | |
| | 17:06 | | | 20:07 | 74 | 11:36 (6) | | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | 520 |
| Total, worst case | | | 1411 | | 3080 | | | 468 | | |
| Sun reduction | | | 0,25 | | 0,34 | | | 0,39 | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | 0,69 | | 0,71 | | | 0,69 | | |
| Total reduction | | | 0,17 | | 0,24 | | | 0,27 | | |
| Total, real | | | 238 | | 741 | | | 127 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 09:58 (6) | 07:36 | | 09:23 (6) | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 119 | 18:34 (39) | 16:58 | 38 | 10:01 (6) | 16:10 |
| 2 | 04:57 | | 05:41 | | 06:39 | | 10:46 (6) | 07:36 | | 09:58 (6) | 07:38 | | 09:27 (6) | 08:36 |
| | 22:17 | | 21:38 | | 20:27 | 5 | 10:51 (6) | 19:09 | 119 | 18:34 (39) | 16:55 | 31 | 09:58 (6) | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:41 | | 10:37 (6) | 07:38 | | 09:58 (6) | 07:40 | | 09:32 (6) | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | 25 | 11:02 (6) | 19:07 | 120 | 18:34 (39) | 16:53 | 21 | 09:53 (6) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:43 | | 10:32 (6) | 07:40 | | 09:58 (6) | 07:43 | | | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | 35 | 11:07 (6) | 19:04 | 120 | 18:34 (39) | 16:51 | | | 16:07 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 10:28 (6) | 07:42 | | 09:58 (6) | 07:45 | | | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | 42 | 11:10 (6) | 19:02 | 117 | 18:32 (39) | 16:49 | | | 16:07 |
| 6 | 05:01 | | 05:48 | | 06:47 | | 10:25 (6) | 07:44 | | 09:57 (6) | 07:47 | | | 08:43 |
| | 22:15 | | 21:30 | | 20:16 | 49 | 11:14 (6) | 18:59 | 114 | 18:29 (39) | 16:47 | | | 16:06 |
| 7 | 05:02 | | 05:50 | | 06:49 | | 10:23 (6) | 07:46 | | 09:57 (6) | 07:49 | | | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | 54 | 11:17 (6) | 18:57 | 111 | 18:27 (39) | 16:45 | | | 16:05 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 10:21 (6) | 07:48 | | 09:58 (6) | 07:51 | | | 08:45 |
| | 22:14 | | 21:25 | | 20:11 | 58 | 11:19 (6) | 18:54 | 106 | 18:24 (39) | 16:43 | | | 16:05 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 10:19 (6) | 07:50 | | 09:58 (6) | 07:53 | | | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | 63 | 11:22 (6) | 18:52 | 101 | 18:22 (39) | 16:41 | | | 16:05 |
| 10 | 05:05 | | 05:56 | | 06:55 | | 10:17 (6) | 07:52 | | 09:58 (6) | 07:55 | | | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | 66 | 11:23 (6) | 18:49 | 95 | 11:33 (6) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:58 | | 06:56 | | 10:15 (6) | 07:54 | | 09:58 (6) | 07:57 | | | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | 70 | 11:25 (6) | 18:47 | 95 | 11:33 (6) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | | 10:14 (6) | 07:56 | | 09:58 (6) | 07:59 | | | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | 73 | 11:27 (6) | 18:44 | 94 | 11:32 (6) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | | 10:12 (6) | 07:58 | | 09:58 (6) | 08:01 | | | 08:51 |
| | 22:09 | | 21:15 | | 19:58 | 77 | 11:29 (6) | 18:42 | 93 | 11:31 (6) | 16:34 | | | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 10:11 (6) | 08:00 | | 09:59 (6) | 08:03 | | | 08:52 |
| | 22:08 | | 21:12 | | 19:56 | 79 | 11:30 (6) | 18:39 | 91 | 11:30 (6) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 10:10 (6) | 08:02 | | 09:59 (6) | 08:05 | | | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | 82 | 11:32 (6) | 18:37 | 90 | 11:29 (6) | 16:31 | | | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 10:08 (6) | 08:04 | | 10:00 (6) | 08:07 | | | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | 84 | 11:32 (6) | 18:34 | 88 | 11:28 (6) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 10:07 (6) | 08:06 | | 10:00 (6) | 08:09 | | | 08:55 |
| | 22:04 | | 21:05 | | 19:48 | 86 | 11:33 (6) | 18:32 | 87 | 11:27 (6) | 16:27 | | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 10:06 (6) | 08:08 | | 10:02 (6) | 08:11 | | | 08:56 |
| | 22:03 | | 21:03 | | 19:45 | 88 | 11:34 (6) | 18:29 | 84 | 11:26 (6) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 10:05 (6) | 08:10 | | 10:02 (6) | 08:13 | | | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | 90 | 11:35 (6) | 18:27 | 83 | 11:25 (6) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 10:05 (6) | 08:12 | | 10:03 (6) | 08:15 | | | 08:57 |
| | 22:00 | | 20:58 | | 19:40 | 91 | 11:36 (6) | 18:25 | 81 | 11:24 (6) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 10:04 (6) | 08:14 | | 10:04 (6) | 08:17 | | | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | 92 | 11:36 (6) | 18:22 | 78 | 11:22 (6) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 10:03 (6) | 08:16 | | 10:05 (6) | 08:19 | | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | 94 | 11:37 (6) | 18:20 | 76 | 11:21 (6) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:20 | | 07:19 | | 10:02 (6) | 08:18 | | 10:06 (6) | 08:21 | | | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | 96 | 11:38 (6) | 18:18 | 73 | 11:19 (6) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 10:01 (6) | 08:20 | | 10:08 (6) | 08:23 | | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 96 | 11:37 (6) | 18:15 | 70 | 11:18 (6) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 10:00 (6) | 07:22 | | 09:09 (6) | 08:24 | | | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | 97 | 11:37 (6) | 17:13 | 68 | 10:17 (6) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 10:00 (6) | 07:24 | | 09:10 (6) | 08:26 | | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | 98 | 11:38 (6) | 17:11 | 65 | 10:15 (6) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 09:59 (6) | 07:26 | | 09:12 (6) | 08:28 | | | 09:00 |
| | 21:49 | | 20:42 | | 19:22 | 108 | 18:30 (39) | 17:08 | 61 | 10:13 (6) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 06:30 | | 07:29 | | 09:59 (6) | 07:28 | | 09:13 (6) | 08:30 | | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | 112 | 18:32 (39) | 17:06 | 58 | 10:11 (6) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 06:32 | | 07:31 | | 09:59 (6) | 07:30 | | 09:16 (6) | 08:31 | | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | 115 | 18:33 (39) | 17:04 | 53 | 10:09 (6) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 06:34 | | 07:32 | | 09:58 (6) | 07:32 | | 09:18 (6) | 08:33 | | | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | 119 | 18:34 (39) | 17:02 | 49 | 10:07 (6) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | 09:20 (6) | | | | 09:01 |
| | 21:41 | | 20:32 | | | | | 17:00 | 44 | 10:04 (6) | | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | | | | | 2244 | | | 2703 | | | 90 | | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | | 0,70 | | | 0,70 | | | 0,69 | | |
| Total reduction | | | | | | 0,28 | | | 0,22 | | | 0,11 | | |
| Total, real | | | | | | 617 | | | 583 | | | 10 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:20 (36) | 08:27 | | | 07:26 | | 08:39 (6) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 10:33 (36) | 17:08 | | | 18:07 | 78 | 17:39 (39) | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 10:22 (36) | 08:26 | | | 07:24 | | 08:38 (6) | 07:05 | 05:53 | 05:00 |
| | 16:15 | 12 | 10:34 (36) | 17:10 | | | 18:09 | 80 | 17:39 (39) | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 10:22 (36) | 08:24 | | | 07:22 | | 08:38 (6) | 07:03 | 05:50 | 05:00 |
| | 16:16 | 11 | 10:33 (36) | 17:12 | | | 18:11 | 81 | 17:40 (39) | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 10:24 (36) | 08:22 | | | 07:19 | | 08:37 (6) | 07:00 | 05:48 | 04:59 |
| | 16:17 | 9 | 10:33 (36) | 17:14 | | | 18:13 | 81 | 17:39 (39) | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 10:25 (36) | 08:20 | | | 07:17 | | 08:38 (6) | 06:57 | 05:46 | 04:58 |
| | 16:19 | 7 | 10:32 (36) | 17:16 | | | 18:15 | 81 | 17:40 (39) | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | 08:37 (6) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | 81 | 17:39 (39) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | 08:38 (6) | 06:52 | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | 79 | 17:39 (39) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | 08:38 (6) | 06:50 | 05:40 | 04:55 |
| | 16:23 | | | 17:23 | | | 18:21 | 76 | 17:38 (39) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | 08:37 (6) | 06:47 | 05:38 | 04:55 |
| | 16:24 | | | 17:25 | | | 18:24 | 74 | 17:36 (39) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | 08:38 (6) | 06:45 | 05:36 | 04:54 |
| | 16:26 | | | 17:27 | | | 18:26 | 70 | 17:35 (39) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | 08:38 (6) | 06:42 | 05:34 | 04:54 |
| | 16:28 | | | 17:29 | | | 18:28 | 64 | 17:32 (39) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:03 (6) | 06:59 | | 08:39 (6) | 06:40 | 05:32 | 04:53 |
| | 16:29 | | | 17:31 | 12 | 09:15 (6) | 18:30 | 52 | 17:27 (39) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | | 08:03 | | 08:59 (6) | 06:56 | | 08:40 (6) | 06:37 | 05:30 | 04:53 |
| | 16:31 | | | 17:33 | 21 | 09:20 (6) | 18:32 | 48 | 09:28 (6) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | | 08:01 | | 08:55 (6) | 06:54 | | 08:41 (6) | 06:35 | 05:28 | 04:53 |
| | 16:33 | | | 17:36 | 27 | 09:22 (6) | 18:34 | 46 | 09:27 (6) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | | 07:59 | | 08:53 (6) | 06:51 | | 08:41 (6) | 06:32 | 05:26 | 04:52 |
| | 16:34 | | | 17:38 | 32 | 09:25 (6) | 18:36 | 44 | 09:25 (6) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | | 07:57 | | 08:51 (6) | 06:49 | | 08:42 (6) | 06:30 | 05:25 | 04:52 |
| | 16:36 | | | 17:40 | 36 | 09:27 (6) | 18:38 | 41 | 09:23 (6) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | 08:49 (6) | 06:46 | | 08:44 (6) | 06:27 | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | 39 | 09:28 (6) | 18:40 | 37 | 09:21 (6) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | | 07:52 | | 08:48 (6) | 06:44 | | 08:45 (6) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | 42 | 09:30 (6) | 18:42 | 33 | 09:18 (6) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | | 07:50 | | 08:47 (6) | 06:41 | | 08:48 (6) | 06:23 | 05:19 | 04:52 |
| | 16:42 | | | 17:46 | 44 | 09:31 (6) | 18:44 | 27 | 09:15 (6) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | | 07:48 | | 08:45 (6) | 06:39 | | 08:51 (6) | 06:20 | 05:18 | 04:52 |
| | 16:44 | | | 17:48 | 47 | 09:32 (6) | 18:46 | 20 | 09:11 (6) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | | 07:46 | | 08:44 (6) | 06:36 | | 08:56 (6) | 06:18 | 05:16 | 04:52 |
| | 16:46 | | | 17:50 | 49 | 09:33 (6) | 18:48 | 8 | 09:04 (6) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | | 07:43 | | 08:43 (6) | 06:33 | | | 06:15 | 05:15 | 04:52 |
| | 16:48 | | | 17:53 | 50 | 09:33 (6) | 18:50 | | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | 08:42 (6) | 06:31 | | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | 53 | 09:35 (6) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | 08:41 (6) | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 54 | 09:35 (6) | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 08:41 (6) | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 57 | 17:30 (39) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | | 08:39 (6) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | | 18:01 | 66 | 17:32 (39) | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 08:39 (6) | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 71 | 17:35 (39) | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 08:38 (6) | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 75 | 17:36 (39) | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 52 | | | 775 | | | 1201 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,49 | | | 0,84 | | | 0,86 | | | | |
| Total reduction | | 0,09 | | | 0,20 | | | 0,29 | | | | |
| Total, real | | 5 | | | 157 | | | 343 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | | 07:34 | | 09:19 (6) | 07:36 | | 08:35 | | |
| | 22:18 | | 21:40 | | 20:29 | | | 19:12 | 49 | 10:08 (6) | 16:58 | | 16:10 | | |
| 2 | 04:57 | | 05:41 | | 06:39 | | | 07:36 | | 09:17 (6) | 07:38 | | 08:36 | | |
| | 22:17 | | 21:38 | | 20:27 | | | 19:09 | 61 | 18:10 (39) | 16:55 | | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:41 | | | 07:38 | | 09:17 (6) | 07:41 | | 08:38 | | |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | 66 | 18:12 (39) | 16:53 | | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:43 | | | 07:40 | | 09:16 (6) | 07:43 | | 08:40 | | |
| | 22:16 | | 21:34 | | 20:22 | | | 19:04 | 71 | 18:13 (39) | 16:51 | | 16:07 | | |
| 5 | 05:00 | | 05:47 | | 06:45 | | | 07:42 | | 09:15 (6) | 07:45 | | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | | | 19:02 | 75 | 18:14 (39) | 16:49 | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | | 07:44 | | 09:14 (6) | 07:47 | | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | | | 18:59 | 78 | 18:15 (39) | 16:47 | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | | 07:46 | | 09:14 (6) | 07:49 | | 08:44 | | 10:13 (36) |
| | 22:14 | | 21:28 | | 20:14 | | | 18:57 | 80 | 18:15 (39) | 16:45 | | 16:05 | 6 | 10:19 (36) |
| 8 | 05:03 | | 05:52 | | 06:51 | | | 07:48 | | 09:13 (6) | 07:51 | | 08:45 | | 10:11 (36) |
| | 22:14 | | 21:25 | | 20:11 | | | 18:54 | 81 | 18:15 (39) | 16:43 | | 16:05 | 9 | 10:20 (36) |
| 9 | 05:04 | | 05:54 | | 06:53 | | | 07:50 | | 09:13 (6) | 07:53 | | 08:47 | | 10:11 (36) |
| | 22:13 | | 21:23 | | 20:09 | | | 18:52 | 81 | 18:15 (39) | 16:41 | | 16:05 | 11 | 10:22 (36) |
| 10 | 05:05 | | 05:56 | | 06:55 | | | 07:52 | | 09:12 (6) | 07:55 | | 08:48 | | 10:11 (36) |
| | 22:12 | | 21:21 | | 20:06 | | | 18:49 | 81 | 18:14 (39) | 16:40 | | 16:04 | 12 | 10:23 (36) |
| 11 | 05:07 | | 05:58 | | 06:56 | | | 07:54 | | 09:12 (6) | 07:57 | | 08:49 | | 10:11 (36) |
| | 22:11 | | 21:19 | | 20:04 | | | 18:47 | 81 | 18:14 (39) | 16:38 | | 16:04 | 13 | 10:24 (36) |
| 12 | 05:08 | | 06:00 | | 06:58 | | | 07:56 | | 09:12 (6) | 07:59 | | 08:50 | | 10:11 (36) |
| | 22:10 | | 21:17 | | 20:01 | | | 18:44 | 80 | 18:13 (39) | 16:36 | | 16:04 | 14 | 10:25 (36) |
| 13 | 05:09 | | 06:02 | | 07:00 | | | 07:58 | | 09:12 (6) | 08:01 | | 08:51 | | 10:11 (36) |
| | 22:09 | | 21:15 | | 19:58 | | | 18:42 | 76 | 18:11 (39) | 16:34 | | 16:04 | 15 | 10:26 (36) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | 09:12 (6) | 08:03 | | 08:52 | | 10:11 (36) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | 73 | 18:08 (39) | 16:32 | | 16:03 | 15 | 10:26 (36) |
| 15 | 05:12 | | 06:05 | | 07:04 | | | 08:02 | | 09:12 (6) | 08:05 | | 08:53 | | 10:11 (36) |
| | 22:06 | | 21:10 | | 19:53 | | | 18:37 | 68 | 18:06 (39) | 16:31 | | 16:03 | 16 | 10:27 (36) |
| 16 | 05:13 | | 06:07 | | 07:06 | | | 08:04 | | 09:12 (6) | 08:07 | | 08:54 | | 10:12 (36) |
| | 22:05 | | 21:08 | | 19:51 | | | 18:34 | 62 | 18:03 (39) | 16:29 | | 16:03 | 16 | 10:28 (36) |
| 17 | 05:15 | | 06:09 | | 07:08 | | | 08:06 | | 09:12 (6) | 08:09 | | 08:55 | | 10:12 (36) |
| | 22:04 | | 21:05 | | 19:48 | | | 18:32 | 54 | 10:06 (6) | 16:27 | | 16:04 | 17 | 10:29 (36) |
| 18 | 05:16 | | 06:11 | | 07:10 | | | 08:08 | | 09:13 (6) | 08:11 | | 08:56 | | 10:13 (36) |
| | 22:03 | | 21:03 | | 19:46 | | | 18:29 | 54 | 10:07 (6) | 16:26 | | 16:04 | 16 | 10:29 (36) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 09:14 (6) | 08:13 | | 08:57 | | 10:12 (36) |
| | 22:01 | | 21:01 | | 19:43 | | | 18:27 | 51 | 10:05 (6) | 16:24 | | 16:04 | 17 | 10:29 (36) |
| 20 | 05:19 | | 06:15 | | 07:13 | | | 08:12 | | 09:14 (6) | 08:15 | | 08:57 | | 10:13 (36) |
| | 22:00 | | 20:58 | | 19:40 | | | 18:25 | 50 | 10:04 (6) | 16:23 | | 16:04 | 17 | 10:30 (36) |
| 21 | 05:21 | | 06:17 | | 07:15 | | | 08:14 | | 09:15 (6) | 08:17 | | 08:58 | | 10:14 (36) |
| | 21:58 | | 20:56 | | 19:38 | | | 18:22 | 48 | 10:03 (6) | 16:21 | | 16:05 | 17 | 10:31 (36) |
| 22 | 05:22 | | 06:19 | | 07:17 | | | 08:16 | | 09:15 (6) | 08:19 | | 08:59 | | 10:14 (36) |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | 47 | 10:02 (6) | 16:20 | | 16:05 | 17 | 10:31 (36) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 09:37 (6) | 08:18 | | 09:16 (6) | 08:21 | | 08:59 | | 10:14 (36) |
| | 21:55 | | 20:51 | | 19:33 | 17 | 09:54 (6) | 18:18 | 44 | 10:00 (6) | 16:19 | | 16:06 | 17 | 10:31 (36) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 09:32 (6) | 08:20 | | 09:18 (6) | 08:23 | | 09:00 | | 10:15 (36) |
| | 21:54 | | 20:49 | | 19:30 | 25 | 09:57 (6) | 18:15 | 42 | 10:00 (6) | 16:17 | | 16:06 | 17 | 10:32 (36) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 09:29 (6) | 07:22 | | 08:20 (6) | 08:24 | | 09:00 | | 10:16 (36) |
| | 21:52 | | 20:46 | | 19:27 | 31 | 10:00 (6) | 17:13 | 38 | 08:58 (6) | 16:16 | | 16:07 | 16 | 10:32 (36) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 09:26 (6) | 07:24 | | 08:21 (6) | 08:26 | | 09:00 | | 10:16 (36) |
| | 21:50 | | 20:44 | | 19:25 | 36 | 10:02 (6) | 17:11 | 35 | 08:56 (6) | 16:15 | | 16:08 | 17 | 10:33 (36) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 09:24 (6) | 07:26 | | 08:23 (6) | 08:28 | | 09:00 | | 10:16 (36) |
| | 21:49 | | 20:42 | | 19:22 | 40 | 10:04 (6) | 17:08 | 31 | 08:54 (6) | 16:14 | | 16:08 | 17 | 10:33 (36) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 09:23 (6) | 07:28 | | 08:25 (6) | 08:30 | | 09:01 | | 10:17 (36) |
| | 21:47 | | 20:39 | | 19:20 | 42 | 10:05 (6) | 17:06 | 26 | 08:51 (6) | 16:13 | | 16:09 | 16 | 10:33 (36) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 09:21 (6) | 07:30 | | 08:29 (6) | 08:31 | | 09:01 | | 10:18 (36) |
| | 21:45 | | 20:37 | | 19:17 | 45 | 10:06 (6) | 17:04 | 19 | 08:48 (6) | 16:12 | | 16:10 | 15 | 10:33 (36) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 09:20 (6) | 07:32 | | 08:34 (6) | 08:33 | | 09:01 | | 10:19 (36) |
| | 21:43 | | 20:34 | | 19:14 | 47 | 10:07 (6) | 17:02 | 9 | 08:43 (6) | 16:11 | | 16:11 | 15 | 10:34 (36) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | 09:01 | | 10:20 (36) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | 16:12 | 14 | 10:34 (36) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | 224 | | |
| Total, worst case | | | | | | 283 | | | 1711 | | | | | 372 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | | | 1,00 | |
| Wind dir. red. | | | | | | 0,84 | | | 0,85 | | | | | 0,49 | |
| Total reduction | | | | | | 0,32 | | | 0,26 | | | | | 0,07 | |
| Total, real | | | | | | 92 | | | 439 | | | | | 24 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 08:59 (24) | 07:26 | | 17:22 (18) | 07:07 | | | 05:55 | | | 05:01 | | 20:06 (20) |
| | 16:13 | | | 17:08 | 99 | 16:21 (7) | 18:07 | 17 | 17:39 (18) | 20:09 | | | 21:08 | | | 22:02 | 38 | 20:44 (20) |
| 2 | 09:00 | | | 08:25 | | 08:58 (24) | 07:24 | | 17:21 (18) | 07:05 | | | 05:52 | | 20:17 (20) | 05:00 | | 20:06 (20) |
| | 16:15 | | | 17:10 | 102 | 16:21 (7) | 18:09 | 20 | 17:41 (18) | 20:11 | | | 21:10 | 14 | 20:31 (20) | 22:03 | 38 | 20:44 (20) |
| 3 | 09:00 | | | 08:23 | | 08:58 (24) | 07:21 | | 17:21 (18) | 07:02 | | | 05:50 | | 20:14 (20) | 04:59 | | 20:06 (20) |
| | 16:16 | | | 17:12 | 105 | 16:39 (19) | 18:11 | 22 | 17:43 (18) | 20:13 | | | 21:12 | 19 | 20:33 (20) | 22:04 | 38 | 20:44 (20) |
| 4 | 08:59 | | | 08:22 | | 08:58 (24) | 07:19 | | 17:20 (18) | 07:00 | | 19:38 (17) | 05:48 | | 20:12 (20) | 04:58 | | 20:07 (20) |
| | 16:17 | | | 17:14 | 110 | 16:41 (19) | 18:13 | 23 | 17:43 (18) | 20:15 | 9 | 19:47 (17) | 21:14 | 23 | 20:35 (20) | 22:06 | 36 | 20:43 (20) |
| 5 | 08:59 | | | 08:20 | | 08:58 (24) | 07:16 | | 17:20 (18) | 06:57 | | 19:36 (17) | 05:46 | | 20:10 (20) | 04:58 | | 20:08 (20) |
| | 16:18 | | | 17:16 | 111 | 16:44 (19) | 18:15 | 22 | 17:42 (18) | 20:17 | 13 | 19:49 (17) | 21:16 | 27 | 20:37 (20) | 22:07 | 36 | 20:44 (20) |
| 6 | 08:59 | | | 08:18 | | 08:58 (24) | 07:14 | | 17:20 (18) | 06:55 | | 19:34 (17) | 05:44 | | 20:09 (20) | 04:57 | | 20:08 (20) |
| | 16:20 | | | 17:18 | 115 | 16:46 (19) | 18:17 | 22 | 17:42 (18) | 20:19 | 17 | 19:51 (17) | 21:18 | 29 | 20:38 (20) | 22:08 | 36 | 20:44 (20) |
| 7 | 08:58 | | | 08:16 | | 08:59 (24) | 07:11 | | 17:20 (18) | 06:52 | | 19:33 (17) | 05:42 | | 20:07 (20) | 04:56 | | 20:09 (20) |
| | 16:21 | | | 17:20 | 117 | 16:49 (19) | 18:19 | 26 | 17:46 (21) | 20:21 | 20 | 19:53 (17) | 21:20 | 32 | 20:39 (20) | 22:09 | 35 | 20:44 (20) |
| 8 | 08:57 | | | 08:14 | | 08:59 (24) | 07:09 | | 17:21 (18) | 06:50 | | 19:31 (17) | 05:40 | | 20:07 (20) | 04:55 | | 20:09 (20) |
| | 16:23 | | | 17:23 | 117 | 16:51 (19) | 18:21 | 29 | 17:50 (21) | 20:23 | 24 | 19:55 (17) | 21:22 | 34 | 20:41 (20) | 22:10 | 35 | 20:44 (20) |
| 9 | 08:57 | | | 08:12 | | 08:59 (24) | 07:06 | | 17:22 (18) | 06:47 | | 19:30 (17) | 05:38 | | 20:06 (20) | 04:55 | | 20:09 (20) |
| | 16:24 | | | 17:25 | 119 | 16:53 (19) | 18:23 | 30 | 17:52 (21) | 20:25 | 26 | 19:56 (17) | 21:24 | 35 | 20:41 (20) | 22:11 | 34 | 20:43 (20) |
| 10 | 08:56 | | | 08:10 | | 08:59 (24) | 07:04 | | 17:24 (18) | 06:45 | | 19:29 (17) | 05:36 | | 20:05 (20) | 04:54 | | 20:10 (20) |
| | 16:26 | | | 17:27 | 117 | 16:54 (19) | 18:25 | 30 | 17:54 (21) | 20:27 | 26 | 19:55 (17) | 21:25 | 37 | 20:42 (20) | 22:12 | 33 | 20:43 (20) |
| 11 | 08:55 | | | 08:07 | | 09:00 (24) | 07:01 | | 17:27 (21) | 06:42 | | 19:29 (17) | 05:34 | | 20:04 (20) | 04:54 | | 20:11 (20) |
| | 16:27 | | | 17:29 | 110 | 16:54 (19) | 18:27 | 28 | 17:55 (21) | 20:29 | 27 | 19:56 (17) | 21:27 | 38 | 20:42 (20) | 22:13 | 33 | 20:44 (20) |
| 12 | 08:55 | | | 08:05 | | 09:01 (24) | 06:59 | | 17:25 (21) | 06:40 | | 19:28 (17) | 05:32 | | 20:04 (20) | 04:53 | | 20:10 (20) |
| | 16:29 | | | 17:31 | 107 | 16:54 (19) | 18:29 | 30 | 17:55 (21) | 20:31 | 27 | 19:55 (17) | 21:29 | 38 | 20:42 (20) | 22:14 | 33 | 20:43 (20) |
| 13 | 08:54 | | 15:15 (43) | 08:03 | | 09:02 (24) | 06:56 | | 17:25 (21) | 06:37 | | 19:28 (17) | 05:30 | | 20:04 (20) | 04:53 | | 20:11 (20) |
| | 16:31 | 8 | 15:23 (43) | 17:33 | 98 | 16:53 (19) | 18:31 | 32 | 17:57 (21) | 20:33 | 27 | 19:55 (17) | 21:31 | 39 | 20:43 (20) | 22:14 | 32 | 20:43 (20) |
| 14 | 08:53 | | 15:13 (43) | 08:01 | | 09:03 (24) | 06:54 | | 17:23 (21) | 06:35 | | 19:29 (17) | 05:28 | | 20:03 (20) | 04:52 | | 20:12 (20) |
| | 16:32 | 13 | 15:26 (43) | 17:35 | 88 | 16:52 (19) | 18:33 | 34 | 17:57 (21) | 20:35 | 26 | 19:55 (17) | 21:33 | 41 | 20:44 (20) | 22:15 | 31 | 20:43 (20) |
| 15 | 08:52 | | 15:12 (43) | 07:59 | | 09:06 (24) | 06:51 | | 17:23 (21) | 06:32 | | 19:28 (17) | 05:26 | | 20:03 (20) | 04:52 | | 20:12 (20) |
| | 16:34 | 17 | 15:29 (43) | 17:38 | 75 | 16:51 (19) | 18:35 | 34 | 17:57 (21) | 20:37 | 26 | 19:54 (17) | 21:35 | 40 | 20:43 (20) | 22:16 | 32 | 20:44 (20) |
| 16 | 08:51 | | 15:11 (43) | 07:57 | | 09:08 (24) | 06:49 | | 17:22 (21) | 06:30 | | 19:29 (17) | 05:24 | | 20:03 (20) | 04:52 | | 20:13 (20) |
| | 16:36 | 20 | 15:31 (43) | 17:40 | 56 | 16:49 (19) | 18:37 | 35 | 17:57 (21) | 20:39 | 24 | 19:53 (17) | 21:36 | 41 | 20:44 (20) | 22:16 | 31 | 20:44 (20) |
| 17 | 08:49 | | 15:09 (43) | 07:54 | | 15:19 (43) | 06:46 | | 17:22 (21) | 06:27 | | 19:29 (17) | 05:23 | | 20:02 (20) | 04:52 | | 20:13 (20) |
| | 16:38 | 23 | 15:32 (43) | 17:42 | 25 | 16:11 (7) | 18:39 | 36 | 17:58 (21) | 20:41 | 23 | 19:52 (17) | 21:38 | 42 | 20:44 (20) | 22:17 | 31 | 20:44 (20) |
| 18 | 08:48 | | 15:09 (43) | 07:52 | | | 06:43 | | 17:22 (21) | 06:25 | | 19:30 (17) | 05:21 | | 20:03 (20) | 04:52 | | 20:13 (20) |
| | 16:40 | 25 | 15:34 (43) | 17:44 | | | 18:41 | 35 | 17:57 (21) | 20:43 | 21 | 19:51 (17) | 21:40 | 42 | 20:45 (20) | 22:17 | 31 | 20:44 (20) |
| 19 | 08:47 | | 15:08 (43) | 07:50 | | | 06:41 | | 17:21 (21) | 06:22 | | 19:31 (17) | 05:19 | | 20:02 (20) | 04:52 | | 20:14 (20) |
| | 16:42 | 27 | 15:35 (43) | 17:46 | | | 18:43 | 35 | 17:56 (21) | 20:45 | 19 | 19:50 (17) | 21:42 | 42 | 20:44 (20) | 22:18 | 30 | 20:44 (20) |
| 20 | 08:46 | | 15:07 (43) | 07:48 | | | 06:38 | | 17:22 (21) | 06:20 | | 19:32 (17) | 05:18 | | 20:03 (20) | 04:52 | | 20:14 (20) |
| | 16:43 | 30 | 15:37 (43) | 17:48 | | | 18:45 | 34 | 17:56 (21) | 20:47 | 15 | 19:47 (17) | 21:43 | 42 | 20:45 (20) | 22:18 | 30 | 20:44 (20) |
| 21 | 08:45 | | 15:06 (43) | 07:45 | | | 06:36 | | 17:21 (21) | 06:18 | | 19:35 (17) | 05:16 | | 20:02 (20) | 04:52 | | 20:14 (20) |
| | 16:45 | 32 | 15:38 (43) | 17:50 | | | 18:47 | 34 | 17:55 (21) | 20:49 | 9 | 19:44 (17) | 21:45 | 42 | 20:44 (20) | 22:18 | 30 | 20:44 (20) |
| 22 | 08:43 | | 15:07 (43) | 07:43 | | | 06:33 | | 17:22 (21) | 06:15 | | | 05:14 | | 20:03 (20) | 04:52 | | 20:14 (20) |
| | 16:47 | 43 | 16:08 (7) | 17:52 | | | 18:49 | 33 | 17:55 (21) | 20:50 | | | 21:47 | 42 | 20:45 (20) | 22:18 | 30 | 20:44 (20) |
| 23 | 08:42 | | 15:06 (43) | 07:41 | | | 06:31 | | 17:22 (21) | 06:13 | | | 05:13 | | 20:03 (20) | 04:52 | | 20:15 (20) |
| | 16:49 | 49 | 16:10 (7) | 17:54 | | | 18:51 | 32 | 17:54 (21) | 20:52 | | | 21:48 | 42 | 20:45 (20) | 22:19 | 30 | 20:45 (20) |
| 24 | 08:40 | | 15:05 (43) | 07:38 | | | 06:28 | | 17:22 (21) | 06:11 | | | 05:11 | | 20:03 (20) | 04:53 | | 20:14 (20) |
| | 16:51 | 54 | 16:12 (7) | 17:57 | | | 18:53 | 30 | 17:52 (21) | 20:54 | | | 21:50 | 41 | 20:44 (20) | 22:19 | 31 | 20:45 (20) |
| 25 | 08:39 | | 15:06 (43) | 07:36 | | | 06:25 | | 17:24 (21) | 06:08 | | | 05:10 | | 20:03 (20) | 04:53 | | 20:14 (20) |
| | 16:53 | 59 | 16:15 (7) | 17:59 | | | 18:55 | 27 | 17:51 (21) | 20:56 | | | 21:52 | 42 | 20:45 (20) | 22:19 | 31 | 20:45 (20) |
| 26 | 08:37 | | 09:08 (24) | 07:33 | | 17:26 (18) | 06:23 | | 17:25 (21) | 06:06 | | | 05:09 | | 20:04 (20) | 04:53 | | 20:15 (20) |
| | 16:55 | 70 | 16:16 (7) | 18:01 | 6 | 17:32 (18) | 18:57 | 24 | 17:49 (21) | 20:58 | | | 21:53 | 41 | 20:45 (20) | 22:19 | 31 | 20:46 (20) |
| 27 | 08:36 | | 09:06 (24) | 07:31 | | 17:25 (18) | 06:20 | | 17:27 (21) | 06:04 | | | 05:07 | | 20:04 (20) | 04:54 | | 20:14 (20) |
| | 16:57 | 77 | 16:17 (7) | 18:03 | 10 | 17:35 (18) | 18:59 | 20 | 17:47 (21) | 21:00 | | | 21:55 | 41 | 20:45 (20) | 22:19 | 32 | 20:46 (20) |
| 28 | 08:34 | | 09:04 (24) | 07:29 | | 17:23 (18) | 06:18 | | 17:29 (21) | 06:01 | | | 05:06 | | 20:04 (20) | 04:54 | | 20:15 (20) |
| | 16:59 | 84 | 16:18 (7) | 18:05 | 13 | 17:36 (18) | 19:01 | 15 | 17:44 (21) | 21:02 | | | 21:56 | 41 | 20:45 (20) | 22:18 | 32 | 20:47 (20) |
| 29 | 08:32 | | 09:02 (24) | | | | 07:15 | | 18:34 (21) | 05:59 | | | 05:05 | | 20:05 (20) | 04:55 | | 20:14 (20) |
| | 17:01 | 89 | 16:19 (7) | | | | 20:03 | 4 | 18:38 (21) | 21:04 | | | 21:58 | 40 | 20:45 (20) | 22:18 | 32 | 20:46 (20) |
| 30 | 08:31 | | 09:00 (24) | | | | 07:13 | | | 05:57 | | | 05:04 | | 20:05 (20) | 04:56 | | 20:15 (20) |
| | 17:04 | 93 | 16:19 (7) | | | | 20:05 | | | 21:06 | | | 21:59 | 40 | 20:45 (20) | 22:18 | 32 | 20:47 (20) |
| 31 | 08:29 | | 08:59 (24) | | | | 07:10 | | | | | | 05:02 | | 20:05 (20) | | | |
| | 17:06 | 96 | 16:20 (7) | | | | 20:07 | | | | | | 22:00 | 40 | 20:45 (20) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 909 | | | 1700 | | | 793 | | | 379 | | | 1107 | | | 984 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,67 | | | 0,72 | | | 0,96 | | | 0,99 | | | 0,93 | | | 0,93 | |
| Total reduction | | 0,11 | | | 0,17 | | | 0,31 | | | 0,37 | | | 0,46 | | | 0,43 | |
| Total, real | | 104 | | | 285 | | | 248 | | | 141 | | | 504 | | | 419 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | 20:15 (20) | 05:39 | | 20:14 (20) | 06:37 | | 19:28 (17) | 07:34 | | 18:05 (21) | 07:36 | | 08:29 (24) | 08:35 |
| | 22:17 | 33 | 20:48 (20) | 21:39 | 39 | 20:53 (20) | 20:29 | 27 | 19:55 (17) | 19:12 | 31 | 18:36 (21) | 16:57 | 115 | 16:24 (19) | 16:10 |
| 2 | 04:57 | | 20:14 (20) | 05:41 | | 20:15 (20) | 06:39 | | 19:28 (17) | 07:36 | | 18:06 (21) | 07:38 | | 08:28 (24) | 08:36 |
| | 22:17 | 33 | 20:47 (20) | 21:37 | 37 | 20:52 (20) | 20:26 | 26 | 19:54 (17) | 19:09 | 28 | 18:34 (21) | 16:55 | 117 | 16:22 (19) | 16:09 |
| 3 | 04:58 | | 20:14 (20) | 05:43 | | 20:16 (20) | 06:41 | | 19:28 (17) | 07:38 | | 18:04 (18) | 07:40 | | 08:29 (24) | 08:38 |
| | 22:17 | 34 | 20:48 (20) | 21:35 | 36 | 20:52 (20) | 20:24 | 26 | 19:54 (17) | 19:07 | 29 | 18:33 (21) | 16:53 | 117 | 16:21 (19) | 16:08 |
| 4 | 04:59 | | 20:14 (20) | 05:45 | | 20:16 (20) | 06:43 | | 19:28 (17) | 07:40 | | 18:01 (18) | 07:42 | | 08:28 (24) | 08:39 |
| | 22:16 | 35 | 20:49 (20) | 21:33 | 34 | 20:50 (20) | 20:21 | 24 | 19:52 (17) | 19:04 | 30 | 18:31 (21) | 16:51 | 115 | 16:18 (19) | 16:07 |
| 5 | 05:00 | | 20:14 (20) | 05:46 | | 20:17 (20) | 06:45 | | 19:29 (17) | 07:42 | | 17:59 (18) | 07:44 | | 08:28 (24) | 08:41 |
| | 22:15 | 35 | 20:49 (20) | 21:31 | 33 | 20:50 (20) | 20:19 | 20 | 19:49 (17) | 19:01 | 30 | 18:29 (21) | 16:49 | 114 | 16:16 (19) | 16:06 |
| 6 | 05:01 | | 20:14 (20) | 05:48 | | 20:18 (20) | 06:47 | | 19:30 (17) | 07:44 | | 17:58 (18) | 07:46 | | 08:28 (24) | 08:42 |
| | 22:15 | 36 | 20:50 (20) | 21:29 | 31 | 20:49 (20) | 20:16 | 17 | 19:47 (17) | 18:59 | 27 | 18:25 (21) | 16:47 | 111 | 16:13 (19) | 16:06 |
| 7 | 05:02 | | 20:14 (20) | 05:50 | | 20:19 (20) | 06:49 | | 19:31 (17) | 07:46 | | 17:57 (18) | 07:48 | | 08:29 (24) | 08:44 |
| | 22:14 | 36 | 20:50 (20) | 21:27 | 29 | 20:48 (20) | 20:14 | 14 | 19:45 (17) | 18:56 | 21 | 18:18 (18) | 16:45 | 109 | 16:12 (19) | 16:05 |
| 8 | 05:03 | | 20:14 (20) | 05:52 | | 20:20 (20) | 06:51 | | 19:33 (17) | 07:48 | | 17:56 (18) | 07:51 | | 08:29 (24) | 08:45 |
| | 22:13 | 37 | 20:51 (20) | 21:25 | 26 | 20:46 (20) | 20:11 | 9 | 19:42 (17) | 18:54 | 22 | 18:18 (18) | 16:43 | 103 | 16:09 (19) | 16:05 |
| 9 | 05:04 | | 20:14 (20) | 05:54 | | 20:22 (20) | 06:52 | | | 07:50 | | 17:55 (18) | 07:53 | | 08:29 (24) | 08:46 |
| | 22:12 | 37 | 20:51 (20) | 21:23 | 22 | 20:44 (20) | 20:09 | | | 18:51 | 23 | 18:18 (18) | 16:41 | 101 | 15:52 (7) | 16:04 |
| 10 | 05:05 | | 20:14 (20) | 05:56 | | 20:24 (20) | 06:54 | | | 07:52 | | 17:55 (18) | 07:55 | | 08:30 (24) | 08:48 |
| | 22:11 | 37 | 20:51 (20) | 21:21 | 18 | 20:42 (20) | 20:06 | | | 18:49 | 23 | 18:18 (18) | 16:39 | 98 | 15:51 (7) | 16:04 |
| 11 | 05:06 | | 20:13 (20) | 05:58 | | 20:27 (20) | 06:56 | | | 07:54 | | 17:55 (18) | 07:57 | | 08:31 (24) | 08:49 |
| | 22:11 | 39 | 20:52 (20) | 21:19 | 11 | 20:38 (20) | 20:03 | | | 18:46 | 21 | 18:16 (18) | 16:38 | 96 | 15:52 (7) | 16:04 |
| 12 | 05:08 | | 20:13 (20) | 05:59 | | | 06:58 | | | 07:56 | | 17:55 (18) | 07:59 | | 08:32 (24) | 08:50 |
| | 22:09 | 39 | 20:52 (20) | 21:17 | | | 20:01 | | | 18:44 | 19 | 18:14 (18) | 16:36 | 93 | 15:51 (7) | 16:04 |
| 13 | 05:09 | | 20:14 (20) | 06:01 | | | 07:00 | | | 07:58 | | 17:56 (18) | 08:01 | | 08:34 (24) | 08:51 |
| | 22:08 | 39 | 20:53 (20) | 21:14 | | | 19:58 | | | 18:41 | 15 | 18:11 (18) | 16:34 | 87 | 15:50 (7) | 16:03 |
| 14 | 05:10 | | 20:13 (20) | 06:03 | | | 07:02 | | | 08:00 | | 17:56 (18) | 08:03 | | 08:36 (24) | 08:52 |
| | 22:07 | 40 | 20:53 (20) | 21:12 | | | 19:56 | | | 18:39 | 12 | 18:08 (18) | 16:32 | 84 | 15:50 (7) | 16:03 |
| 15 | 05:12 | | 20:13 (20) | 06:05 | | | 07:04 | | 18:19 (21) | 08:02 | | 17:57 (18) | 08:05 | | 08:39 (24) | 08:53 |
| | 22:06 | 40 | 20:53 (20) | 21:10 | | | 19:53 | 14 | 18:33 (21) | 18:36 | 9 | 18:06 (18) | 16:30 | 77 | 15:50 (7) | 16:03 |
| 16 | 05:13 | | 20:13 (20) | 06:07 | | | 07:06 | | 18:16 (21) | 08:04 | | 17:59 (18) | 08:07 | | 08:41 (24) | 08:54 |
| | 22:05 | 40 | 20:53 (20) | 21:08 | | | 19:50 | 19 | 18:35 (21) | 18:34 | 4 | 18:03 (18) | 16:29 | 70 | 15:49 (7) | 16:03 |
| 17 | 05:15 | | 20:13 (20) | 06:09 | | | 07:08 | | 18:14 (21) | 08:06 | | | 08:09 | | 14:38 (43) | 08:55 |
| | 22:04 | 41 | 20:54 (20) | 21:05 | | | 19:48 | 23 | 18:37 (21) | 18:32 | | | 16:27 | 59 | 15:48 (7) | 16:03 |
| 18 | 05:16 | | 20:13 (20) | 06:11 | | | 07:09 | | 18:12 (21) | 08:08 | | | 08:11 | | 14:39 (43) | 08:56 |
| | 22:02 | 41 | 20:54 (20) | 21:03 | | | 19:45 | 26 | 18:38 (21) | 18:29 | | | 16:26 | 54 | 15:46 (7) | 16:04 |
| 19 | 05:17 | | 20:12 (20) | 06:13 | | | 07:11 | | 18:10 (21) | 08:10 | | | 08:13 | | 14:40 (43) | 08:56 |
| | 22:01 | 42 | 20:54 (20) | 21:01 | | | 19:43 | 29 | 18:39 (21) | 18:27 | | | 16:24 | 49 | 15:44 (7) | 16:04 |
| 20 | 05:19 | | 20:13 (20) | 06:15 | | | 07:13 | | 18:09 (21) | 08:12 | | | 08:15 | | 14:42 (43) | 08:57 |
| | 21:59 | 42 | 20:55 (20) | 20:58 | | | 19:40 | 31 | 18:40 (21) | 18:24 | | | 16:23 | 43 | 15:43 (7) | 16:04 |
| 21 | 05:21 | | 20:12 (20) | 06:16 | | | 07:15 | | 18:08 (21) | 08:14 | | | 08:17 | | 14:42 (43) | 08:58 |
| | 21:58 | 42 | 20:54 (20) | 20:56 | | | 19:37 | 32 | 18:40 (21) | 18:22 | | | 16:21 | 32 | 15:14 (43) | 16:05 |
| 22 | 05:22 | | 20:13 (20) | 06:18 | | 19:39 (17) | 07:17 | | 18:06 (21) | 08:16 | | | 08:18 | | 14:43 (43) | 08:58 |
| | 21:57 | 42 | 20:55 (20) | 20:53 | 11 | 19:50 (17) | 19:35 | 34 | 18:40 (21) | 18:20 | | | 16:20 | 30 | 15:13 (43) | 16:05 |
| 23 | 05:24 | | 20:13 (20) | 06:20 | | 19:37 (17) | 07:19 | | 18:05 (21) | 08:18 | | | 08:20 | | 14:45 (43) | 08:59 |
| | 21:55 | 42 | 20:55 (20) | 20:51 | 15 | 19:52 (17) | 19:32 | 35 | 18:40 (21) | 18:17 | | | 16:18 | 27 | 15:12 (43) | 16:06 |
| 24 | 05:25 | | 20:13 (20) | 06:22 | | 19:35 (17) | 07:21 | | 18:05 (21) | 08:20 | | 15:53 (43) | 08:22 | | 14:46 (43) | 08:59 |
| | 21:53 | 42 | 20:55 (20) | 20:49 | 19 | 19:54 (17) | 19:30 | 35 | 18:40 (21) | 18:15 | 7 | 16:00 (43) | 16:17 | 26 | 15:12 (43) | 16:06 |
| 25 | 05:27 | | 20:13 (20) | 06:24 | | 19:32 (17) | 07:23 | | 18:04 (21) | 07:22 | | 14:48 (43) | 08:24 | | 14:47 (43) | 09:00 |
| | 21:52 | 42 | 20:55 (20) | 20:46 | 22 | 19:54 (17) | 19:27 | 36 | 18:40 (21) | 17:13 | 34 | 16:16 (19) | 16:16 | 24 | 15:11 (43) | 16:07 |
| 26 | 05:29 | | 20:13 (20) | 06:26 | | 19:31 (17) | 07:25 | | 18:04 (21) | 07:24 | | 08:37 (24) | 08:26 | | 14:49 (43) | 09:00 |
| | 21:50 | 42 | 20:55 (20) | 20:44 | 24 | 19:55 (17) | 19:25 | 35 | 18:39 (21) | 17:11 | 62 | 16:20 (19) | 16:15 | 21 | 15:10 (43) | 16:07 |
| 27 | 05:30 | | 20:13 (20) | 06:28 | | 19:31 (17) | 07:26 | | 18:04 (21) | 07:26 | | 08:34 (24) | 08:28 | | 14:51 (43) | 09:00 |
| | 21:48 | 41 | 20:54 (20) | 20:41 | 24 | 19:55 (17) | 19:22 | 35 | 18:39 (21) | 17:08 | 80 | 16:21 (19) | 16:14 | 17 | 15:08 (43) | 16:08 |
| 28 | 05:32 | | 20:13 (20) | 06:30 | | 19:30 (17) | 07:28 | | 18:04 (21) | 07:28 | | 08:32 (24) | 08:29 | | 14:53 (43) | 09:00 |
| | 21:47 | 42 | 20:55 (20) | 20:39 | 26 | 19:56 (17) | 19:19 | 34 | 18:38 (21) | 17:06 | 92 | 16:22 (19) | 16:12 | 14 | 15:07 (43) | 16:09 |
| 29 | 05:34 | | 20:14 (20) | 06:32 | | 19:29 (17) | 07:30 | | 18:04 (21) | 07:30 | | 08:31 (24) | 08:31 | | 14:56 (43) | 09:00 |
| | 21:45 | 41 | 20:55 (20) | 20:36 | 27 | 19:56 (17) | 19:17 | 34 | 18:38 (21) | 17:04 | 99 | 16:22 (19) | 16:11 | 8 | 15:04 (43) | 16:10 |
| 30 | 05:36 | | 20:14 (20) | 06:34 | | 19:28 (17) | 07:32 | | 18:04 (21) | 07:32 | | 08:31 (24) | 08:33 | | | 09:00 |
| | 21:43 | 40 | 20:54 (20) | 20:34 | 27 | 19:55 (17) | 19:14 | 33 | 18:37 (21) | 17:02 | 105 | 16:24 (19) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:14 (20) | 06:35 | | 19:28 (17) | | | | 07:34 | | 08:30 (24) | | | | 09:00 |
| | 21:41 | 40 | 20:54 (20) | 20:31 | 27 | 19:55 (17) | | | | 16:59 | 112 | 16:24 (19) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 1212 | | | 538 | | | 648 | | | 935 | | | 2011 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,93 | | | 0,96 | | | 0,98 | | | 0,81 | | | 0,69 | | |
| Total reduction | | 0,43 | | | 0,47 | | | 0,37 | | | 0,24 | | | 0,10 | | |
| Total, real | | 519 | | | 251 | | | 238 | | | 220 | | | 208 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | | 09:18 (24) | | 07:26 | | 09:08 (24) | | 07:07 | |
| | 16:13 | | 17:08 | 27 | 09:45 (24) | | 18:07 | 54 | 17:39 (7) | | 20:09 | |
| 2 | 09:00 | | 08:25 | | 09:17 (24) | | 07:24 | | 09:09 (24) | | 07:05 | |
| | 16:15 | | 17:10 | 30 | 09:47 (24) | | 18:09 | 57 | 17:41 (19) | | 20:11 | |
| 3 | 09:00 | | 08:23 | | 09:15 (24) | | 07:21 | | 09:10 (24) | | 07:02 | |
| | 16:16 | | 17:12 | 34 | 09:49 (24) | | 18:11 | 58 | 17:43 (19) | | 20:13 | 6 |
| 4 | 08:59 | | 08:21 | | 09:14 (24) | | 07:19 | | 09:11 (24) | | 07:00 | |
| | 16:17 | | 17:14 | 37 | 09:51 (24) | | 18:13 | 58 | 17:45 (19) | | 20:15 | 10 |
| 5 | 08:59 | | 08:20 | | 09:13 (24) | | 07:16 | | 09:12 (24) | | 06:57 | |
| | 16:18 | | 17:16 | 39 | 09:52 (24) | | 18:15 | 60 | 17:47 (19) | | 20:17 | 14 |
| 6 | 08:59 | | 08:18 | | 09:12 (24) | | 07:14 | | 09:14 (24) | | 06:55 | |
| | 16:20 | | 17:18 | 42 | 09:54 (24) | | 18:17 | 60 | 17:49 (19) | | 20:19 | 17 |
| 7 | 08:58 | | 08:16 | | 09:11 (24) | | 07:11 | | 09:16 (24) | | 06:52 | |
| | 16:21 | | 17:20 | 44 | 09:55 (24) | | 18:19 | 58 | 17:50 (19) | | 20:21 | 20 |
| 8 | 08:57 | | 08:14 | | 09:10 (24) | | 07:09 | | 09:20 (24) | | 06:50 | |
| | 16:23 | | 17:23 | 46 | 09:56 (24) | | 18:21 | 52 | 17:50 (19) | | 20:23 | 23 |
| 9 | 08:57 | | 08:12 | | 09:09 (24) | | 07:06 | | 17:14 (43) | | 06:47 | |
| | 16:24 | | 17:25 | 47 | 09:56 (24) | | 18:23 | 34 | 17:48 (19) | | 20:25 | 23 |
| 10 | 08:56 | | 08:10 | | 09:08 (24) | | 07:04 | | 17:14 (43) | | 06:45 | |
| | 16:26 | | 17:27 | 49 | 09:57 (24) | | 18:25 | 34 | 17:48 (7) | | 20:27 | 23 |
| 11 | 08:55 | | 08:07 | | 09:08 (24) | | 07:01 | | 17:13 (43) | | 06:42 | |
| | 16:27 | | 17:29 | 50 | 09:58 (24) | | 18:27 | 34 | 17:47 (7) | | 20:29 | 23 |
| 12 | 08:54 | | 08:05 | | 09:08 (24) | | 06:59 | | 17:11 (43) | | 06:40 | |
| | 16:29 | | 17:31 | 51 | 09:59 (24) | | 18:29 | 35 | 17:46 (7) | | 20:31 | 23 |
| 13 | 08:54 | | 08:03 | | 09:06 (24) | | 06:56 | | 17:11 (43) | | 06:37 | |
| | 16:31 | | 17:33 | 53 | 09:59 (24) | | 18:31 | 34 | 17:45 (7) | | 20:33 | 22 |
| 14 | 08:53 | | 08:01 | | 09:06 (24) | | 06:54 | | 17:11 (43) | | 06:35 | |
| | 16:32 | | 17:35 | 54 | 10:00 (24) | | 18:33 | 33 | 17:44 (7) | | 20:35 | 20 |
| 15 | 08:52 | | 07:59 | | 09:06 (24) | | 06:51 | | 17:11 (43) | | 06:32 | |
| | 16:34 | | 17:37 | 54 | 10:00 (24) | | 18:35 | 32 | 17:43 (43) | | 20:37 | 18 |
| 16 | 08:51 | | 07:57 | | 09:05 (24) | | 06:49 | | 17:10 (43) | | 06:30 | |
| | 16:36 | | 17:40 | 55 | 10:00 (24) | | 18:37 | 33 | 17:43 (43) | | 20:39 | 15 |
| 17 | 08:49 | | 07:54 | | 09:05 (24) | | 06:46 | | 17:10 (43) | | 06:27 | |
| | 16:38 | | 17:42 | 55 | 10:00 (24) | | 18:39 | 32 | 17:42 (43) | | 20:41 | 11 |
| 18 | 08:48 | | 07:52 | | 09:06 (24) | | 06:43 | | 17:11 (43) | | 06:25 | |
| | 16:40 | | 17:44 | 55 | 10:01 (24) | | 18:41 | 30 | 17:41 (43) | | 20:43 | |
| 19 | 08:47 | | 07:50 | | 09:05 (24) | | 06:41 | | 17:11 (43) | | 06:22 | |
| | 16:42 | | 17:46 | 55 | 10:00 (24) | | 18:43 | 29 | 17:40 (43) | | 20:45 | 5 |
| 20 | 08:46 | | 07:48 | | 09:05 (24) | | 06:38 | | 17:12 (43) | | 06:20 | |
| | 16:43 | | 17:48 | 56 | 10:01 (24) | | 18:45 | 30 | 18:18 (18) | | 20:47 | 8 |
| 21 | 08:44 | | 07:45 | | 09:05 (24) | | 06:36 | | 17:13 (43) | | 06:18 | |
| | 16:45 | | 17:50 | 55 | 10:00 (24) | | 18:47 | 32 | 18:20 (18) | | 20:48 | 11 |
| 22 | 08:43 | | 07:43 | | 09:05 (24) | | 06:33 | | 17:15 (43) | | 06:15 | |
| | 16:47 | | 17:52 | 55 | 10:00 (24) | | 18:49 | 30 | 18:22 (18) | | 20:50 | 13 |
| 23 | 08:42 | | 07:41 | | 09:06 (24) | | 06:31 | | 17:16 (43) | | 06:13 | |
| | 16:49 | | 17:54 | 54 | 10:00 (24) | | 18:51 | 30 | 18:24 (18) | | 20:52 | 15 |
| 24 | 08:40 | | 07:38 | | 09:05 (24) | | 06:28 | | 17:19 (43) | | 06:10 | |
| | 16:51 | | 17:56 | 54 | 09:59 (24) | | 18:53 | 26 | 18:26 (18) | | 20:54 | 17 |
| 25 | 08:39 | | 07:36 | | 09:06 (24) | | 06:25 | | 18:12 (18) | | 06:08 | |
| | 16:53 | | 17:59 | 53 | 09:59 (24) | | 18:55 | 16 | 18:28 (18) | | 20:56 | 18 |
| 26 | 08:37 | | 07:33 | | 09:06 (24) | | 06:23 | | 18:11 (18) | | 06:06 | |
| | 16:55 | | 18:01 | 51 | 09:57 (24) | | 18:57 | 16 | 18:27 (18) | | 20:58 | 18 |
| 27 | 08:36 | | 07:31 | | 09:07 (24) | | 06:20 | | 18:12 (18) | | 06:04 | |
| | 16:57 | | 18:03 | 50 | 09:57 (24) | | 18:59 | 15 | 18:27 (18) | | 21:00 | 16 |
| 28 | 08:34 | | 07:29 | | 09:07 (24) | | 06:18 | | 18:13 (18) | | 06:01 | |
| | 16:59 | | 18:05 | 48 | 09:55 (24) | | 19:01 | 12 | 18:25 (18) | | 21:02 | 16 |
| 29 | 08:32 | | | | | | 07:15 | | 19:15 (18) | | 05:59 | |
| | 17:01 | | | | | | 20:03 | 6 | 19:21 (18) | | 21:04 | 12 |
| 30 | 08:31 | 09:24 (24) | | | | | 07:13 | | | | 05:57 | |
| | 17:04 | 15 09:39 (24) | | | | | 20:05 | | | | 21:06 | 10 |
| 31 | 08:29 | 09:21 (24) | | | | | 07:10 | | | | | |
| | 17:06 | 21 09:42 (24) | | | | | 20:07 | | | | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 | |
| Total, worst case | 36 | | 1353 | | 1030 | | 427 | | 441 | | 123 | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | 0,48 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,76 | | 0,76 | | 0,91 | | 0,98 | | 0,88 | | 0,88 | |
| Total reduction | 0,13 | | 0,18 | | 0,31 | | 0,38 | | 0,45 | | 0,42 | |
| Total, real | 5 | | 247 | | 315 | | 162 | | 197 | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | | 05:39 | | 20:55 (20) | 06:37 | | 19:30 (21) | 07:34 | | 17:51 (43) | 07:36 | | 08:38 (24) | 08:34 |
| | 22:17 | | | 21:39 | 11 | 21:06 (20) | 20:29 | 23 | 19:53 (21) | 19:12 | 34 | 18:25 (7) | 16:57 | 49 | 09:27 (24) | 16:10 |
| 2 | 04:57 | | | 05:41 | | 20:57 (20) | 06:39 | | 19:30 (21) | 07:36 | | 17:51 (43) | 07:38 | | 08:38 (24) | 08:36 |
| | 22:17 | | | 21:37 | 7 | 21:04 (20) | 20:26 | 23 | 19:53 (21) | 19:09 | 35 | 18:26 (7) | 16:55 | 48 | 09:26 (24) | 16:09 |
| 3 | 04:58 | | 20:58 (20) | 05:43 | | 20:59 (20) | 06:41 | | 19:30 (21) | 07:38 | | 17:52 (43) | 07:40 | | 08:40 (24) | 08:38 |
| | 22:17 | 6 | 21:04 (20) | 21:35 | 4 | 21:03 (20) | 20:24 | 23 | 19:53 (21) | 19:06 | 34 | 18:26 (7) | 16:53 | 46 | 09:26 (24) | 16:08 |
| 4 | 04:59 | | 20:57 (20) | 05:45 | | | 06:43 | | 19:29 (21) | 07:40 | | 17:52 (43) | 07:42 | | 08:41 (24) | 08:39 |
| | 22:16 | 8 | 21:05 (20) | 21:33 | | | 20:21 | 23 | 19:52 (21) | 19:04 | 33 | 18:25 (19) | 16:51 | 43 | 09:24 (24) | 16:07 |
| 5 | 05:00 | | 20:57 (20) | 05:46 | | | 06:45 | | 19:29 (21) | 07:42 | | 09:59 (24) | 07:44 | | 08:42 (24) | 08:41 |
| | 22:15 | 10 | 21:07 (20) | 21:31 | | | 20:19 | 20 | 19:49 (21) | 19:01 | 46 | 18:26 (19) | 16:49 | 41 | 09:23 (24) | 16:06 |
| 6 | 05:01 | | 20:56 (20) | 05:48 | | | 06:47 | | 19:30 (21) | 07:44 | | 09:54 (24) | 07:46 | | 08:43 (24) | 08:42 |
| | 22:15 | 12 | 21:08 (20) | 21:29 | | | 20:16 | 17 | 19:47 (21) | 18:59 | 55 | 18:26 (19) | 16:47 | 39 | 09:22 (24) | 16:06 |
| 7 | 05:02 | | 20:56 (20) | 05:50 | | | 06:49 | | 19:30 (21) | 07:46 | | 09:51 (24) | 07:48 | | 08:45 (24) | 08:44 |
| | 22:14 | 13 | 21:09 (20) | 21:27 | | | 20:14 | 15 | 19:45 (21) | 18:56 | 60 | 18:26 (19) | 16:45 | 36 | 09:21 (24) | 16:05 |
| 8 | 05:03 | | 20:55 (20) | 05:52 | | | 06:51 | | 19:32 (21) | 07:48 | | 09:49 (24) | 07:51 | | 08:46 (24) | 08:45 |
| | 22:13 | 14 | 21:09 (20) | 21:25 | | | 20:11 | 10 | 19:42 (21) | 18:54 | 60 | 18:24 (19) | 16:43 | 34 | 09:20 (24) | 16:05 |
| 9 | 05:04 | | 20:54 (20) | 05:54 | | | 06:52 | | 19:33 (21) | 07:50 | | 09:47 (24) | 07:53 | | 08:48 (24) | 08:46 |
| | 22:12 | 16 | 21:10 (20) | 21:23 | | | 20:08 | 6 | 19:39 (21) | 18:51 | 60 | 18:22 (19) | 16:41 | 30 | 09:18 (24) | 16:04 |
| 10 | 05:05 | | 20:54 (20) | 05:56 | | | 06:54 | | | 07:52 | | 09:45 (24) | 07:55 | | 08:50 (24) | 08:48 |
| | 22:11 | 17 | 21:11 (20) | 21:21 | | | 20:06 | | | 18:49 | 59 | 18:19 (19) | 16:39 | 25 | 09:15 (24) | 16:04 |
| 11 | 05:06 | | 20:53 (20) | 05:58 | | | 06:56 | | | 07:54 | | 09:44 (24) | 07:57 | | 08:49 (24) | 08:49 |
| | 22:10 | 18 | 21:11 (20) | 21:19 | | | 20:03 | | | 18:46 | 57 | 18:16 (19) | 16:37 | 21 | 09:14 (24) | 16:04 |
| 12 | 05:08 | | 20:53 (20) | 05:59 | | 20:21 (17) | 06:58 | | | 07:56 | | 09:42 (24) | 07:59 | | 08:56 (24) | 08:50 |
| | 22:09 | 19 | 21:12 (20) | 21:16 | 5 | 20:26 (17) | 20:01 | | | 18:44 | 56 | 18:14 (19) | 16:36 | 14 | 09:10 (24) | 16:03 |
| 13 | 05:09 | | 20:53 (20) | 06:01 | | 20:18 (17) | 07:00 | | | 07:58 | | 09:41 (24) | 08:01 | | | 08:51 |
| | 22:08 | 20 | 21:13 (20) | 21:14 | 11 | 20:29 (17) | 19:58 | | | 18:41 | 47 | 10:28 (24) | 16:34 | | | 16:03 |
| 14 | 05:10 | | 20:53 (20) | 06:03 | | 20:17 (17) | 07:02 | | 19:07 (18) | 07:59 | | 09:40 (24) | 08:03 | | | 08:52 |
| | 22:07 | 21 | 21:14 (20) | 21:12 | 13 | 20:30 (17) | 19:56 | 5 | 19:12 (18) | 18:39 | 49 | 10:29 (24) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 20:52 (20) | 06:05 | | 20:16 (17) | 07:04 | | 19:03 (18) | 08:01 | | 09:39 (24) | 08:05 | | | 08:53 |
| | 22:06 | 22 | 21:14 (20) | 21:10 | 15 | 20:31 (17) | 19:53 | 11 | 19:14 (18) | 18:36 | 50 | 10:29 (24) | 16:30 | | | 16:03 |
| 16 | 05:13 | | 20:52 (20) | 06:07 | | 20:14 (17) | 07:06 | | 19:01 (18) | 08:03 | | 09:38 (24) | 08:07 | | | 08:54 |
| | 22:05 | 22 | 21:14 (20) | 21:07 | 17 | 20:31 (17) | 19:50 | 14 | 19:15 (18) | 18:34 | 52 | 10:30 (24) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 20:52 (20) | 06:09 | | 20:13 (17) | 07:07 | | 19:00 (18) | 08:05 | | 09:37 (24) | 08:09 | | | 08:55 |
| | 22:04 | 23 | 21:15 (20) | 21:05 | 19 | 20:32 (17) | 19:48 | 16 | 19:16 (18) | 18:32 | 53 | 10:30 (24) | 16:27 | | | 16:03 |
| 18 | 05:16 | | 20:52 (20) | 06:11 | | 20:13 (17) | 07:09 | | 18:59 (18) | 08:07 | | 09:36 (24) | 08:11 | | | 08:56 |
| | 22:02 | 23 | 21:15 (20) | 21:03 | 19 | 20:32 (17) | 19:45 | 17 | 19:16 (18) | 18:29 | 54 | 10:30 (24) | 16:26 | | | 16:04 |
| 19 | 05:17 | | 20:51 (20) | 06:13 | | 20:13 (17) | 07:11 | | 18:07 (43) | 08:09 | | 09:36 (24) | 08:13 | | | 08:56 |
| | 22:01 | 24 | 21:15 (20) | 21:01 | 17 | 20:30 (17) | 19:43 | 24 | 19:14 (18) | 18:27 | 54 | 10:30 (24) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 20:52 (20) | 06:15 | | 20:12 (17) | 07:13 | | 18:03 (43) | 08:12 | | 09:36 (24) | 08:15 | | | 08:57 |
| | 21:59 | 24 | 21:16 (20) | 20:58 | 15 | 20:27 (17) | 19:40 | 30 | 19:11 (18) | 18:24 | 55 | 10:31 (24) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 20:51 (20) | 06:16 | | 20:12 (17) | 07:15 | | 18:01 (43) | 08:14 | | 09:36 (24) | 08:17 | | | 08:58 |
| | 21:58 | 25 | 21:16 (20) | 20:56 | 13 | 20:25 (17) | 19:37 | 31 | 19:09 (18) | 18:22 | 55 | 10:31 (24) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 20:52 (20) | 06:18 | | 20:13 (17) | 07:17 | | 17:58 (43) | 08:16 | | 09:35 (24) | 08:18 | | | 08:58 |
| | 21:56 | 24 | 21:16 (20) | 20:53 | 10 | 20:23 (17) | 19:35 | 31 | 19:05 (18) | 18:20 | 56 | 10:31 (24) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 20:51 (20) | 06:20 | | 20:14 (17) | 07:19 | | 17:56 (43) | 08:18 | | 09:35 (24) | 08:20 | | | 08:59 |
| | 21:55 | 25 | 21:16 (20) | 20:51 | 7 | 20:21 (17) | 19:32 | 31 | 19:03 (18) | 18:17 | 56 | 10:31 (24) | 16:18 | | | 16:06 |
| 24 | 05:25 | | 20:52 (20) | 06:22 | | 20:15 (17) | 07:21 | | 17:55 (43) | 08:20 | | 09:35 (24) | 08:22 | | | 08:59 |
| | 21:53 | 24 | 21:16 (20) | 20:49 | 4 | 20:19 (17) | 19:30 | 28 | 18:23 (43) | 18:15 | 55 | 10:30 (24) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 20:52 (20) | 06:24 | | 19:42 (21) | 07:23 | | 17:54 (43) | 07:22 | | 08:35 (24) | 08:24 | | | 09:00 |
| | 21:52 | 24 | 21:16 (20) | 20:46 | 3 | 19:45 (21) | 19:27 | 30 | 18:24 (43) | 17:13 | 55 | 09:30 (24) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:52 (20) | 06:26 | | 19:38 (21) | 07:25 | | 17:53 (43) | 07:24 | | 08:36 (24) | 08:26 | | | 09:00 |
| | 21:50 | 24 | 21:16 (20) | 20:44 | 11 | 19:49 (21) | 19:24 | 31 | 18:24 (43) | 17:10 | 54 | 09:30 (24) | 16:15 | | | 16:07 |
| 27 | 05:30 | | 20:52 (20) | 06:28 | | 19:35 (21) | 07:26 | | 17:52 (43) | 07:26 | | 08:36 (24) | 08:28 | | | 09:00 |
| | 21:48 | 22 | 21:14 (20) | 20:41 | 16 | 19:51 (21) | 19:22 | 32 | 18:24 (43) | 17:08 | 54 | 09:30 (24) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 20:53 (20) | 06:30 | | 19:34 (21) | 07:28 | | 17:52 (43) | 07:28 | | 08:36 (24) | 08:29 | | | 09:00 |
| | 21:47 | 20 | 21:13 (20) | 20:39 | 18 | 19:52 (21) | 19:19 | 32 | 18:24 (43) | 17:06 | 53 | 09:29 (24) | 16:12 | | | 16:09 |
| 29 | 05:34 | | 20:54 (20) | 06:32 | | 19:32 (21) | 07:30 | | 17:51 (43) | 07:30 | | 08:36 (24) | 08:31 | | | 09:00 |
| | 21:45 | 18 | 21:12 (20) | 20:36 | 20 | 19:52 (21) | 19:17 | 33 | 18:24 (43) | 17:04 | 52 | 09:28 (24) | 16:11 | | | 16:10 |
| 30 | 05:36 | | 20:54 (20) | 06:34 | | 19:31 (21) | 07:32 | | 17:51 (43) | 07:32 | | 08:37 (24) | 08:33 | | | 09:00 |
| | 21:43 | 15 | 21:09 (20) | 20:34 | 22 | 19:53 (21) | 19:14 | 34 | 18:25 (7) | 17:02 | 52 | 09:29 (24) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:55 (20) | 06:35 | | 19:30 (21) | | | | 07:34 | | 08:38 (24) | | | | 09:00 |
| | 21:41 | 13 | 21:08 (20) | 20:31 | 23 | 19:53 (21) | | | | 16:59 | 50 | 09:28 (24) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 546 | | | 300 | | | 590 | | | 1595 | | | 426 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,88 | | | 0,97 | | | 0,97 | | | 0,81 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,49 | | | 0,38 | | | 0,24 | | | 0,12 | | |
| Total, real | | 230 | | | 147 | | | 223 | | | 387 | | | 50 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | | 07:32 (9) | 05:55 | | | 05:02 | 05:37 (8) |
| | 16:14 | 17:08 | 18:07 | | 20:10 | 14 | 07:46 (9) | 21:09 | | | 22:02 | 20 05:57 (8) |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | | 07:30 (9) | 05:53 | | | 05:01 | 05:37 (8) |
| | 16:15 | 17:10 | 18:10 | | 20:12 | 18 | 07:48 (9) | 21:11 | | | 22:04 | 22 05:59 (8) |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | | 07:27 (9) | 05:51 | | | 05:00 | 05:36 (8) |
| | 16:16 | 17:13 | 18:12 | | 20:14 | 22 | 07:49 (9) | 21:13 | | | 22:05 | 24 06:00 (8) |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | | 07:26 (9) | 05:49 | | | 04:59 | 05:36 (8) |
| | 16:18 | 17:15 | 18:14 | | 20:16 | 24 | 07:50 (9) | 21:14 | | | 22:06 | 24 06:00 (8) |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | | 07:24 (9) | 05:46 | | | 04:58 | 05:35 (8) |
| | 16:19 | 17:17 | 18:16 | | 20:17 | 26 | 07:50 (9) | 21:16 | | | 22:07 | 26 06:01 (8) |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | | 07:24 (9) | 05:44 | | | 04:57 | 05:35 (8) |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 27 | 07:51 (9) | 21:18 | | | 22:08 | 27 06:02 (8) |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | | 07:23 (9) | 05:42 | | | 04:57 | 05:35 (8) |
| | 16:22 | 17:21 | 18:20 | | 20:21 | 28 | 07:51 (9) | 21:20 | | | 22:09 | 27 06:02 (8) |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | | 07:23 (9) | 05:40 | | | 04:56 | 05:35 (8) |
| | 16:23 | 17:23 | 18:22 | | 20:23 | 28 | 07:51 (9) | 21:22 | | | 22:10 | 28 06:03 (8) |
| 9 | 08:57 | 08:12 | 07:07 | | 06:48 | | 07:22 (9) | 05:38 | | | 04:55 | 05:34 (8) |
| | 16:25 | 17:25 | 18:24 | | 20:25 | 28 | 07:50 (9) | 21:24 | | | 22:11 | 29 06:03 (8) |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | | 07:22 (9) | 05:36 | | | 04:55 | 05:35 (8) |
| | 16:26 | 17:27 | 18:26 | | 20:27 | 28 | 07:50 (9) | 21:26 | | | 22:12 | 29 06:04 (8) |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | | 07:22 (9) | 05:34 | | | 04:54 | 05:34 (8) |
| | 16:28 | 17:30 | 18:28 | | 20:29 | 27 | 07:49 (9) | 21:28 | | | 22:13 | 30 06:04 (8) |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 07:22 (9) | 05:32 | | | 04:54 | 05:34 (8) |
| | 16:30 | 17:32 | 18:30 | | 20:31 | 27 | 07:49 (9) | 21:30 | | | 22:14 | 31 06:05 (8) |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | | 07:22 (9) | 05:30 | | | 04:53 | 05:35 (8) |
| | 16:31 | 17:34 | 18:32 | | 20:33 | 25 | 07:47 (9) | 21:31 | | | 22:15 | 30 06:05 (8) |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | | 07:23 (9) | 05:29 | | | 04:53 | 05:34 (8) |
| | 16:33 | 17:36 | 18:34 | | 20:35 | 23 | 07:46 (9) | 21:33 | | | 22:16 | 31 06:05 (8) |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | | 07:24 (9) | 05:27 | | | 04:53 | 05:34 (8) |
| | 16:35 | 17:38 | 18:36 | | 20:37 | 21 | 07:45 (9) | 21:35 | | | 22:16 | 31 06:05 (8) |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 06:55 (10) | 05:25 | | | 04:53 | 05:34 (8) |
| | 16:37 | 17:40 | 18:38 | | 20:39 | 20 | 07:43 (9) | 21:37 | | | 22:17 | 32 06:06 (8) |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | | 06:53 (10) | 05:23 | | | 04:52 | 05:35 (8) |
| | 16:38 | 17:42 | 18:40 | | 20:41 | 21 | 07:41 (9) | 21:39 | | | 22:17 | 31 06:06 (8) |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | | 06:51 (10) | 05:22 | | | 04:52 | 05:35 (8) |
| | 16:40 | 17:44 | 18:42 | | 20:43 | 18 | 07:38 (9) | 21:40 | | | 22:18 | 31 06:06 (8) |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | | 06:48 (10) | 05:20 | | | 04:52 | 05:35 (8) |
| | 16:42 | 17:47 | 18:44 | | 20:45 | 13 | 07:01 (10) | 21:42 | | | 22:18 | 32 06:07 (8) |
| 20 | 08:46 | 07:48 | 06:39 | | 06:21 | | 06:46 (10) | 05:18 | | | 04:52 | 05:35 (8) |
| | 16:44 | 17:49 | 18:46 | | 20:47 | 16 | 07:02 (10) | 21:44 | | | 22:18 | 32 06:07 (8) |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 06:44 (10) | 05:17 | | | 04:52 | 05:36 (8) |
| | 16:46 | 17:51 | 18:48 | | 20:49 | 19 | 07:03 (10) | 21:46 | | | 22:19 | 32 06:08 (8) |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | | 06:41 (10) | 05:15 | | | 04:53 | 05:36 (8) |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 21 | 07:02 (10) | 21:47 | | | 22:19 | 32 06:08 (8) |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | | 06:41 (10) | 05:14 | | | 04:53 | 05:36 (8) |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 21 | 07:02 (10) | 21:49 | | | 22:19 | 32 06:08 (8) |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | | 06:41 (10) | 05:12 | | | 04:53 | 05:36 (8) |
| | 16:52 | 17:57 | 18:54 | | 20:55 | 21 | 07:02 (10) | 21:51 | | | 22:19 | 32 06:08 (8) |
| 25 | 08:39 | 07:36 | 06:26 | | 06:09 | | 06:41 (10) | 05:11 | | | 04:54 | 05:37 (8) |
| | 16:54 | 17:59 | 18:56 | | 20:57 | 21 | 07:02 (10) | 21:52 | | | 22:19 | 31 06:08 (8) |
| 26 | 08:38 | 07:34 | 06:23 | | 06:06 | | 06:41 (10) | 05:09 | | | 04:54 | 05:36 (8) |
| | 16:56 | 18:01 | 18:58 | | 20:59 | 19 | 07:00 (10) | 21:54 | | | 22:19 | 32 06:08 (8) |
| 27 | 08:36 | 07:32 | 06:21 | | 06:04 | | 06:41 (10) | 05:08 | | | 04:54 | 05:37 (8) |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 19 | 07:00 (10) | 21:55 | | | 22:19 | 32 06:09 (8) |
| 28 | 08:34 | 07:29 | 06:18 | | 06:02 | | 06:42 (10) | 05:07 | | 05:43 (8) | 04:55 | 05:37 (8) |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 17 | 06:59 (10) | 21:57 | 8 | 05:51 (8) | 22:19 | 31 06:08 (8) |
| 29 | 08:33 | | 07:16 | | 06:00 | | 06:44 (10) | 05:05 | | 05:41 (8) | 04:56 | 05:38 (8) |
| | 17:02 | | 20:04 | | 21:05 | 13 | 06:57 (10) | 21:58 | 13 | 05:54 (8) | 22:19 | 31 06:09 (8) |
| 30 | 08:31 | | 07:13 | | 05:57 | | 06:45 (10) | 05:04 | | 05:39 (8) | 04:56 | 05:39 (8) |
| | 17:04 | | 20:06 | | 21:07 | 10 | 06:55 (10) | 22:00 | 16 | 05:55 (8) | 22:18 | 30 06:09 (8) |
| 31 | 08:29 | | 07:11 | 07:35 (9) | | | | 05:03 | | 05:38 (8) | | |
| | 17:06 | | 20:08 | 9 07:44 (9) | | | | 22:01 | 18 | 05:56 (8) | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | | 501 | | | 520 | |
| Total, worst case | | | | 9 | | 635 | | | 55 | | | 882 |
| Sun reduction | | | | 0,34 | | 0,39 | | | 0,52 | | | 0,48 |
| Oper. time red. | | | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 |
| Wind dir. red. | | | | 1,00 | | 0,98 | | | 0,81 | | | 0,81 |
| Total reduction | | | | 0,34 | | 0,39 | | | 0,42 | | | 0,40 |
| Total, real | | | | 3 | | 248 | | | 23 | | | 349 |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:38 (8) | 05:40 | | 06:38 | 07:21 (9) | 07:35 | 07:37 | 08:35 |
| | 22:18 30 | 06:08 (8) | 21:40 | | 20:29 27 | 07:48 (9) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 05:39 (8) | 05:42 | | 06:40 | 07:20 (9) | 07:37 | 07:39 | 08:37 |
| | 22:18 30 | 06:09 (8) | 21:38 | | 20:27 28 | 07:48 (9) | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 | 05:40 (8) | 05:43 | | 06:42 | 07:20 (9) | 07:39 | 07:41 | 08:38 |
| | 22:17 29 | 06:09 (8) | 21:36 | | 20:24 28 | 07:48 (9) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:40 (8) | 05:45 | | 06:44 | 07:20 (9) | 07:40 | 07:43 | 08:40 |
| | 22:16 29 | 06:09 (8) | 21:34 | | 20:22 28 | 07:48 (9) | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 | 05:41 (8) | 05:47 | | 06:45 | 07:20 (9) | 07:42 | 07:45 | 08:41 |
| | 22:16 28 | 06:09 (8) | 21:32 | | 20:19 28 | 07:48 (9) | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | 05:41 (8) | 05:49 | | 06:47 | 07:19 (9) | 07:44 | 07:47 | 08:43 |
| | 22:15 27 | 06:08 (8) | 21:30 | | 20:17 27 | 07:46 (9) | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | 05:41 (8) | 05:51 | | 06:49 | 07:19 (9) | 07:46 | 07:49 | 08:44 |
| | 22:14 26 | 06:07 (8) | 21:28 | | 20:14 26 | 07:45 (9) | 18:57 | 16:46 | 16:06 |
| 8 | 05:04 | 05:42 (8) | 05:53 | | 06:51 | 07:20 (9) | 07:48 | 07:51 | 08:46 |
| | 22:14 25 | 06:07 (8) | 21:26 | | 20:12 24 | 07:44 (9) | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | 05:44 (8) | 05:54 | | 06:53 | 07:21 (9) | 07:50 | 07:53 | 08:47 |
| | 22:13 24 | 06:08 (8) | 21:24 | | 20:09 22 | 07:43 (9) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:44 (8) | 05:56 | | 06:55 | 07:23 (9) | 07:52 | 07:55 | 08:48 |
| | 22:12 23 | 06:07 (8) | 21:21 | | 20:06 19 | 07:42 (9) | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 | 05:45 (8) | 05:58 | | 06:57 | 07:25 (9) | 07:54 | 07:57 | 08:49 |
| | 22:11 21 | 06:06 (8) | 21:19 | | 20:04 15 | 07:40 (9) | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 05:46 (8) | 06:00 | 06:56 (10) | 06:59 | 07:26 (9) | 07:56 | 07:59 | 08:50 |
| | 22:10 19 | 06:05 (8) | 21:17 5 | 07:01 (10) | 20:01 10 | 07:36 (9) | 18:44 | 16:36 | 16:04 |
| 13 | 05:10 | 05:47 (8) | 06:02 | 06:53 (10) | 07:01 | | 07:58 | 08:01 | 08:52 |
| | 22:09 17 | 06:04 (8) | 21:15 11 | 07:04 (10) | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 05:48 (8) | 06:04 | 06:51 (10) | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 15 | 06:03 (8) | 21:13 14 | 07:05 (10) | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 05:51 (8) | 06:06 | 06:50 (10) | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 11 | 06:02 (8) | 21:10 16 | 07:06 (10) | 19:54 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | 05:54 (8) | 06:08 | 06:49 (10) | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 22:05 5 | 05:59 (8) | 21:08 18 | 07:07 (10) | 19:51 | | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:09 | 06:48 (10) | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 20 | 07:08 (10) | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:17 | | 06:11 | 06:47 (10) | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 20 | 07:07 (10) | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | 06:47 (10) | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 21 | 07:08 (10) | 19:43 | | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | | 06:15 | 06:46 (10) | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 22 | 07:08 (10) | 19:41 | | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | | 06:17 | 06:47 (10) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 21 | 07:08 (10) | 19:38 | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | | 06:19 | 06:49 (10) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 18 | 07:07 (10) | 19:35 | | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | | 06:21 | 06:50 (10) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:52 16 | 07:06 (10) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:23 | 06:52 (10) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 13 | 07:05 (10) | 19:30 | | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | | 06:25 | 06:54 (10) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | 20:47 19 | 07:41 (9) | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:27 | 06:56 (10) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | 20:44 21 | 07:44 (9) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | 06:28 | 06:57 (10) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 21 | 07:45 (9) | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | 06:30 | 07:25 (9) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 21 | 07:46 (9) | 19:20 | | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | | 06:32 | 07:24 (9) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 23 | 07:47 (9) | 19:17 | | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | | 06:34 | 07:23 (9) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 25 | 07:48 (9) | 19:15 | | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | | 06:36 | 07:22 (9) | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 27 | 07:49 (9) | | | 17:00 | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | 359 | | 372 | | 282 | | | | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | | |
| Wind dir. red. | 0,81 | | 0,98 | | 1,00 | | | | |
| Total reduction | 0,40 | | 0,51 | | 0,40 | | | | |
| Total, real | 143 | | 188 | | 112 | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:32 (34) | 05:02 | 04:57 | 05:40 | | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | 19 06:51 (34) | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:33 (34) | 05:01 | 04:58 | 05:42 | | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | | 21:11 | 18 06:51 (34) | 22:04 | 22:17 | 21:38 | | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:33 (34) | 05:00 | 04:59 | 05:43 | | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | | 21:12 | 17 06:50 (34) | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:49 | 06:34 (34) | 04:59 | 04:59 | 05:45 | | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | | 21:14 | 15 06:49 (34) | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 05:46 | 06:35 (34) | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | 12 06:47 (34) | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 06:37 (34) | 04:57 | 05:01 | 05:49 | 06:48 (34) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | 8 06:45 (34) | 22:08 | 22:15 | 21:30 | 4 06:52 (34) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 05:42 | | 04:57 | 05:02 | 05:51 | 06:45 (34) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:09 | 22:14 | 21:28 | 10 06:55 (34) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | | 04:56 | 05:04 | 05:53 | 06:44 (34) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:10 | 22:14 | 21:26 | 13 06:57 (34) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 05:38 | | 04:55 | 05:05 | 05:54 | 06:43 (34) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:11 | 22:13 | 21:23 | 16 06:59 (34) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 05:36 | | 04:55 | 05:06 | 05:56 | 06:41 (34) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | 22:12 | 21:21 | 17 06:58 (34) | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | | 05:34 | | 04:54 | 05:07 | 05:58 | 06:41 (34) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | | 21:28 | | 22:13 | 22:11 | 21:19 | 18 06:59 (34) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | | 04:54 | 05:08 | 06:00 | 06:41 (34) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | | 21:30 | | 22:14 | 22:10 | 21:17 | 19 07:00 (34) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 05:30 | | 04:53 | 05:10 | 06:02 | 06:40 (34) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | 21:31 | | 22:15 | 22:09 | 21:15 | 20 07:00 (34) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:29 | | 04:53 | 05:11 | 06:04 | 06:39 (34) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | | 22:15 | 22:08 | 21:13 | 20 06:59 (34) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 05:27 | | 04:53 | 05:12 | 06:06 | 06:40 (34) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | | 22:16 | 22:07 | 21:10 | 19 06:59 (34) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | | 04:53 | 05:14 | 06:08 | 06:40 (34) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | | 21:37 | | 22:17 | 22:05 | 21:08 | 19 06:59 (34) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | | 05:23 | | 04:52 | 05:15 | 06:09 | 06:40 (34) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | | 22:17 | 22:04 | 21:06 | 19 06:59 (34) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:22 | | 04:52 | 05:17 | 06:11 | 06:41 (34) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | | 22:18 | 22:03 | 21:03 | 16 06:57 (34) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | | 04:52 | 05:18 | 06:13 | 06:43 (34) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | | 21:42 | | 22:18 | 22:01 | 21:01 | 13 06:56 (34) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | | 05:18 | | 04:52 | 05:20 | 06:15 | 06:45 (34) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | | 21:44 | | 22:18 | 22:00 | 20:59 | 9 06:54 (34) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:17 | | 04:52 | 05:21 | 06:17 | 06:47 (34) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | | 22:19 | 21:58 | 20:56 | 5 06:52 (34) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:41 (34) | 05:15 | | 04:53 | 05:23 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 6 06:47 (34) | 21:47 | | 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:39 (34) | 05:14 | | 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 10 06:49 (34) | 21:49 | | 22:19 | 21:55 | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 06:37 (34) | 05:12 | | 04:53 | 05:26 | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 13 06:50 (34) | 21:50 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:35 (34) | 05:11 | | 04:54 | 05:28 | 06:25 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 16 06:51 (34) | 21:52 | | 22:19 | 21:52 | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 06:33 (34) | 05:09 | | 04:54 | 05:29 | 06:27 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 18 06:51 (34) | 21:54 | | 22:19 | 21:51 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 06:32 (34) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 19 06:51 (34) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:32 (34) | 05:07 | | 04:55 | 05:33 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 20 06:52 (34) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 06:32 (34) | 05:05 | | 04:56 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 20 06:52 (34) | 21:58 | | 22:19 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:32 (34) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 20 06:52 (34) | 22:00 | | 22:18 | 21:43 | 20:34 | | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | | 05:03 | | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | | 21:42 | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 142 | | 89 | | | | 237 | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,95 | | 0,95 | | | | 0,95 | | | | |
| Total reduction | | | | | 0,37 | | 0,49 | | | | 0,49 | | | | |
| Total, real | | | | | 53 | | 44 | | | | 116 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:53 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:55 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 11:50 (34) | 07:27 | 11:54 (34) | 07:08 | 18:30 (10) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 75 | 13:05 (34) | 18:07 | 93 17:35 (9) | 20:09 | 65 19:42 (8) | 21:09 | 22:02 |
| 2 | 09:00 | | 08:26 | | 11:49 (34) | 07:24 | 11:55 (34) | 07:05 | 18:30 (10) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 77 | 13:06 (34) | 18:09 | 92 17:36 (9) | 20:11 | 67 19:44 (8) | 21:10 | 22:04 |
| 3 | 09:00 | 12:13 (34) | 08:24 | | 11:49 (34) | 07:22 | 11:56 (34) | 07:03 | 18:30 (10) | 05:51 | 05:00 |
| | 16:16 | 9 12:22 (34) | 17:12 | 77 | 13:06 (34) | 18:11 | 88 17:35 (9) | 20:13 | 68 19:45 (8) | 21:12 | 22:05 |
| 4 | 09:00 | 12:11 (34) | 08:22 | | 11:49 (34) | 07:19 | 11:58 (34) | 07:00 | 18:30 (10) | 05:48 | 04:59 |
| | 16:18 | 15 12:26 (34) | 17:14 | 78 | 13:07 (34) | 18:14 | 84 17:35 (9) | 20:15 | 70 19:46 (8) | 21:14 | 22:06 |
| 5 | 08:59 | 12:08 (34) | 08:20 | | 11:48 (34) | 07:17 | 12:00 (34) | 06:58 | 18:29 (10) | 05:46 | 04:58 |
| | 16:19 | 20 12:28 (34) | 17:17 | 78 | 13:06 (34) | 18:16 | 80 17:35 (9) | 20:17 | 70 19:45 (8) | 21:16 | 22:07 |
| 6 | 08:59 | 12:08 (34) | 08:18 | | 11:48 (34) | 07:14 | 12:02 (34) | 06:55 | 18:30 (10) | 05:44 | 04:57 |
| | 16:20 | 23 12:31 (34) | 17:19 | 79 | 13:07 (34) | 18:18 | 73 17:34 (9) | 20:19 | 69 19:45 (8) | 21:18 | 22:08 |
| 7 | 08:58 | 12:06 (34) | 08:16 | | 11:47 (34) | 07:12 | 12:06 (34) | 06:53 | 18:29 (10) | 05:42 | 04:56 |
| | 16:22 | 27 12:33 (34) | 17:21 | 81 | 13:08 (34) | 18:20 | 66 17:34 (9) | 20:21 | 68 19:44 (8) | 21:20 | 22:09 |
| 8 | 08:58 | 12:05 (34) | 08:14 | | 11:47 (34) | 07:09 | 12:10 (34) | 06:50 | 18:30 (10) | 05:40 | 04:56 |
| | 16:23 | 30 12:35 (34) | 17:23 | 81 | 13:08 (34) | 18:22 | 55 17:33 (9) | 20:23 | 64 19:43 (8) | 21:22 | 22:10 |
| 9 | 08:57 | 12:04 (34) | 08:12 | | 11:47 (34) | 07:07 | 12:18 (34) | 06:48 | 18:30 (10) | 05:38 | 04:55 |
| | 16:25 | 32 12:36 (34) | 17:25 | 82 | 13:09 (34) | 18:24 | 37 17:32 (9) | 20:25 | 62 19:42 (8) | 21:24 | 22:11 |
| 10 | 08:57 | 12:03 (34) | 08:10 | | 11:48 (34) | 07:04 | 17:08 (9) | 06:45 | 18:31 (10) | 05:36 | 04:55 |
| | 16:26 | 35 12:38 (34) | 17:27 | 81 | 13:09 (34) | 18:26 | 23 17:31 (9) | 20:27 | 57 19:40 (8) | 21:26 | 22:12 |
| 11 | 08:56 | 12:02 (34) | 08:08 | | 11:47 (34) | 07:02 | 17:09 (9) | 06:43 | 18:31 (10) | 05:34 | 04:54 |
| | 16:28 | 38 12:40 (34) | 17:29 | 82 | 13:09 (34) | 18:28 | 20 17:29 (9) | 20:29 | 53 19:38 (8) | 21:28 | 22:13 |
| 12 | 08:55 | 12:01 (34) | 08:06 | | 11:47 (34) | 06:59 | 17:11 (9) | 06:40 | 18:32 (10) | 05:32 | 04:54 |
| | 16:30 | 41 12:42 (34) | 17:32 | 82 | 13:09 (34) | 18:30 | 16 17:27 (9) | 20:31 | 43 19:34 (8) | 21:30 | 22:14 |
| 13 | 08:54 | 12:00 (34) | 08:04 | | 11:47 (34) | 06:57 | 17:14 (9) | 06:38 | 18:33 (10) | 05:30 | 04:53 |
| | 16:31 | 43 12:43 (34) | 17:34 | 82 | 13:09 (34) | 18:32 | 9 17:23 (9) | 20:33 | 35 19:08 (10) | 21:31 | 22:15 |
| 14 | 08:53 | 12:00 (34) | 08:01 | | 11:46 (34) | 06:54 | | 06:35 | 18:34 (10) | 05:28 | 04:53 |
| | 16:33 | 45 12:45 (34) | 17:36 | 83 | 13:09 (34) | 18:34 | | 20:35 | 33 19:07 (10) | 21:33 | 22:15 |
| 15 | 08:52 | 11:58 (34) | 07:59 | | 11:47 (34) | 06:52 | | 06:33 | 18:36 (10) | 05:27 | 04:53 |
| | 16:35 | 48 12:46 (34) | 17:38 | 82 | 13:09 (34) | 18:36 | | 20:37 | 29 19:05 (10) | 21:35 | 22:16 |
| 16 | 08:51 | 11:58 (34) | 07:57 | | 11:47 (34) | 06:49 | | 06:30 | 18:37 (10) | 05:25 | 04:52 |
| | 16:36 | 50 12:48 (34) | 17:40 | 82 | 13:09 (34) | 18:38 | | 20:39 | 26 19:03 (10) | 21:37 | 22:17 |
| 17 | 08:50 | 11:58 (34) | 07:55 | | 11:47 (34) | 06:46 | | 06:28 | 18:40 (10) | 05:23 | 04:52 |
| | 16:38 | 51 12:49 (34) | 17:42 | 81 | 13:08 (34) | 18:40 | | 20:41 | 20 19:00 (10) | 21:39 | 22:17 |
| 18 | 08:49 | 11:56 (34) | 07:53 | | 11:47 (34) | 06:44 | | 06:25 | 18:43 (10) | 05:21 | 04:52 |
| | 16:40 | 54 12:50 (34) | 17:44 | 81 | 13:08 (34) | 18:42 | | 20:43 | 13 18:56 (10) | 21:40 | 22:18 |
| 19 | 08:48 | 11:56 (34) | 07:50 | | 11:48 (34) | 06:41 | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 56 12:52 (34) | 17:46 | 80 | 13:08 (34) | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 11:55 (34) | 07:48 | | 11:48 (34) | 06:39 | 17:49 (10) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 58 12:53 (34) | 17:49 | 79 | 13:07 (34) | 18:46 | 17 18:06 (10) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 11:55 (34) | 07:46 | | 11:48 (34) | 06:36 | 17:46 (10) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 59 12:54 (34) | 17:51 | 79 | 13:07 (34) | 18:48 | 23 18:09 (10) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 11:54 (34) | 07:43 | | 11:48 (34) | 06:34 | 17:43 (10) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 61 12:55 (34) | 17:53 | 78 | 13:06 (34) | 18:50 | 28 18:11 (10) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 11:53 (34) | 07:41 | | 11:49 (34) | 06:31 | 17:40 (10) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 63 12:56 (34) | 17:55 | 85 | 17:26 (9) | 18:52 | 32 18:12 (10) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 11:53 (34) | 07:39 | | 11:49 (34) | 06:28 | 17:39 (10) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 65 12:58 (34) | 17:57 | 90 | 17:28 (9) | 18:54 | 35 18:14 (10) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 11:52 (34) | 07:36 | | 11:50 (34) | 06:26 | 17:37 (10) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 67 12:59 (34) | 17:59 | 92 | 17:30 (9) | 18:56 | 38 18:15 (10) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | 11:52 (34) | 07:34 | | 11:51 (34) | 06:23 | 17:36 (10) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 67 12:59 (34) | 18:01 | 95 | 17:33 (9) | 18:58 | 40 18:16 (10) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 11:51 (34) | 07:31 | | 11:52 (34) | 06:21 | 17:34 (10) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 69 13:00 (34) | 18:03 | 95 | 17:34 (9) | 19:00 | 42 18:16 (10) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 11:51 (34) | 07:29 | | 11:53 (34) | 06:18 | 17:33 (10) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 71 13:02 (34) | 18:05 | 94 | 17:35 (9) | 19:02 | 43 18:16 (10) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 11:51 (34) | | | | 07:16 | 18:33 (10) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 72 13:03 (34) | | | | 20:04 | 50 19:36 (8) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | 11:50 (34) | | | | 07:13 | 18:31 (10) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 73 13:03 (34) | | | | 20:06 | 57 19:38 (8) | 21:07 | | 21:59 | 22:18 |
| 31 | 08:29 | 11:50 (34) | | | | 07:10 | 18:31 (10) | | | 05:03 | |
| | 17:06 | 74 13:04 (34) | | | | 20:08 | 60 19:40 (8) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 | |
| Total, worst case | | 1416 | | 2311 | | 1201 | | 912 | | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,10 | | 0,14 | | 0,67 | | 0,99 | | | |
| Total reduction | | 0,01 | | 0,03 | | 0,18 | | 0,31 | | | |
| Total, real | | 19 | | 61 | | 214 | | 280 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 (be 6 VE)Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 18:30 (10) | 07:35 | | 17:51 (9) | 07:37 | | 11:16 (34) | 08:35 | | 11:44 (34) |
| | 22:18 | | 21:40 | | | 20:29 | 53 | 19:37 (8) | 19:12 | 14 | 18:05 (9) | 16:58 | 82 | 12:38 (34) | 16:10 | 38 | 12:22 (34) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 18:29 (10) | 07:36 | | 17:49 (9) | 07:39 | | 11:17 (34) | 08:37 | | 11:46 (34) |
| | 22:17 | | 21:38 | | | 20:27 | 57 | 19:38 (8) | 19:09 | 18 | 18:07 (9) | 16:56 | 81 | 12:38 (34) | 16:09 | 35 | 12:21 (34) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 18:28 (10) | 07:38 | | 17:47 (9) | 07:41 | | 11:17 (34) | 08:38 | | 11:48 (34) |
| | 22:17 | | 21:36 | | | 20:24 | 62 | 19:40 (8) | 19:07 | 21 | 18:08 (9) | 16:54 | 81 | 12:38 (34) | 16:08 | 33 | 12:21 (34) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:27 (10) | 07:40 | | 17:45 (9) | 07:43 | | 11:17 (34) | 08:40 | | 11:49 (34) |
| | 22:16 | | 21:34 | | | 20:22 | 64 | 19:40 (8) | 19:04 | 24 | 18:09 (9) | 16:52 | 80 | 12:37 (34) | 16:08 | 30 | 12:19 (34) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:27 (10) | 07:42 | | 12:50 (34) | 07:45 | | 11:18 (34) | 08:41 | | 11:51 (34) |
| | 22:16 | | 21:32 | | | 20:19 | 67 | 19:41 (8) | 19:02 | 48 | 18:10 (9) | 16:49 | 80 | 12:38 (34) | 16:07 | 27 | 12:18 (34) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 18:25 (10) | 07:44 | | 12:44 (34) | 07:47 | | 11:18 (34) | 08:43 | | 11:54 (34) |
| | 22:15 | | 21:30 | | | 20:17 | 69 | 19:40 (8) | 18:59 | 61 | 18:10 (9) | 16:47 | 79 | 12:37 (34) | 16:06 | 23 | 12:17 (34) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 18:24 (10) | 07:46 | | 12:40 (34) | 07:49 | | 11:19 (34) | 08:44 | | 11:55 (34) |
| | 22:14 | | 21:28 | | | 20:14 | 70 | 19:40 (8) | 18:57 | 70 | 18:10 (9) | 16:46 | 78 | 12:37 (34) | 16:06 | 20 | 12:15 (34) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:24 (10) | 07:48 | | 12:37 (34) | 07:51 | | 11:19 (34) | 08:45 | | 11:59 (34) |
| | 22:14 | | 21:26 | | | 20:11 | 70 | 19:40 (8) | 18:54 | 76 | 18:10 (9) | 16:44 | 77 | 12:36 (34) | 16:05 | 15 | 12:14 (34) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:24 (10) | 07:50 | | 12:34 (34) | 07:53 | | 11:20 (34) | 08:47 | | 12:02 (34) |
| | 22:13 | | 21:23 | | | 20:09 | 70 | 19:40 (8) | 18:52 | 82 | 18:10 (9) | 16:42 | 76 | 12:36 (34) | 16:05 | 9 | 12:11 (34) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 18:24 (10) | 07:52 | | 12:32 (34) | 07:55 | | 11:20 (34) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 67 | 19:38 (8) | 18:49 | 86 | 18:10 (9) | 16:40 | 76 | 12:36 (34) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 18:23 (10) | 07:54 | | 12:30 (34) | 07:57 | | 11:21 (34) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 64 | 19:34 (8) | 18:47 | 89 | 18:09 (9) | 16:38 | 74 | 12:35 (34) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:59 | | 18:23 (10) | 07:56 | | 12:28 (34) | 07:59 | | 11:21 (34) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 61 | 19:32 (8) | 18:44 | 92 | 18:09 (9) | 16:36 | 73 | 12:34 (34) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:23 (10) | 07:58 | | 12:26 (34) | 08:01 | | 11:23 (34) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:59 | 56 | 19:29 (8) | 18:42 | 94 | 18:08 (9) | 16:34 | 72 | 12:35 (34) | 16:04 | | |
| 14 | 05:11 | | 06:04 | | | 07:02 | | 18:23 (10) | 08:00 | | 12:25 (34) | 08:03 | | 11:23 (34) | 08:53 | | |
| | 22:08 | | 21:12 | | | 19:56 | 51 | 19:27 (8) | 18:39 | 95 | 18:07 (9) | 16:33 | 71 | 12:34 (34) | 16:04 | | |
| 15 | 05:12 | | 06:06 | | | 07:04 | | 18:23 (10) | 08:02 | | 12:23 (34) | 08:05 | | 11:24 (34) | 08:54 | | |
| | 22:07 | | 21:10 | | | 19:53 | 45 | 19:24 (8) | 18:37 | 94 | 18:05 (9) | 16:31 | 69 | 12:33 (34) | 16:04 | | |
| 16 | 05:14 | | 06:07 | | | 07:06 | | 18:24 (10) | 08:04 | | 12:22 (34) | 08:07 | | 11:25 (34) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 42 | 19:06 (10) | 18:34 | 93 | 18:03 (9) | 16:29 | 67 | 12:32 (34) | 16:04 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:23 (10) | 08:06 | | 12:22 (34) | 08:09 | | 11:26 (34) | 08:55 | | |
| | 22:04 | | 21:06 | | | 19:48 | 41 | 19:04 (10) | 18:32 | 92 | 18:02 (9) | 16:28 | 67 | 12:33 (34) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:24 (10) | 08:08 | | 12:21 (34) | 08:11 | | 11:27 (34) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 38 | 19:02 (10) | 18:30 | 88 | 17:59 (9) | 16:26 | 65 | 12:32 (34) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:25 (10) | 08:10 | | 12:20 (34) | 08:13 | | 11:28 (34) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 36 | 19:01 (10) | 18:27 | 80 | 17:55 (9) | 16:25 | 63 | 12:31 (34) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 18:26 (10) | 08:12 | | 12:19 (34) | 08:15 | | 11:29 (34) | 08:58 | | |
| | 22:00 | | 20:59 | | | 19:40 | 33 | 18:59 (10) | 18:25 | 79 | 13:38 (34) | 16:23 | 61 | 12:30 (34) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:28 (10) | 08:14 | | 12:18 (34) | 08:17 | | 11:30 (34) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 29 | 18:57 (10) | 18:22 | 80 | 13:38 (34) | 16:22 | 59 | 12:29 (34) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | | 07:17 | | 18:30 (10) | 08:16 | | 12:18 (34) | 08:19 | | 11:31 (34) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 25 | 18:55 (10) | 18:20 | 80 | 13:38 (34) | 16:20 | 58 | 12:29 (34) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:32 (10) | 08:18 | | 12:17 (34) | 08:21 | | 11:32 (34) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 20 | 18:52 (10) | 18:18 | 81 | 13:38 (34) | 16:19 | 56 | 12:28 (34) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | | 07:21 | | 18:37 (10) | 08:20 | | 12:18 (34) | 08:23 | | 11:33 (34) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 9 | 18:46 (10) | 18:15 | 81 | 13:39 (34) | 16:18 | 54 | 12:27 (34) | 16:07 | | |
| 25 | 05:28 | | 06:24 | | 18:46 (10) | 07:23 | | | 07:22 | | 11:17 (34) | 08:24 | | 11:36 (34) | 09:00 | | |
| | 21:52 | | 20:47 | 14 | 19:00 (10) | 19:28 | | | 17:13 | 82 | 12:39 (34) | 16:16 | 51 | 12:27 (34) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 18:43 (10) | 07:25 | | | 07:24 | | 11:17 (34) | 08:26 | | 11:37 (34) | 09:00 | | |
| | 21:50 | | 20:44 | 20 | 19:03 (10) | 19:25 | | | 17:11 | 82 | 12:39 (34) | 16:15 | 50 | 12:27 (34) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 18:39 (10) | 07:27 | | | 07:26 | | 11:16 (34) | 08:28 | | 11:38 (34) | 09:01 | | |
| | 21:49 | | 20:42 | 26 | 19:05 (10) | 19:22 | | | 17:09 | 82 | 12:38 (34) | 16:14 | 48 | 12:26 (34) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 18:37 (10) | 07:29 | | | 07:28 | | 11:16 (34) | 08:30 | | 11:39 (34) | 09:01 | | |
| | 21:47 | | 20:39 | 29 | 19:06 (10) | 19:20 | | | 17:06 | 82 | 12:38 (34) | 16:13 | 45 | 12:24 (34) | 16:10 | | |
| 29 | 05:34 | | 06:32 | | 18:35 (10) | 07:31 | | | 07:30 | | 11:17 (34) | 08:32 | | 11:40 (34) | 09:01 | | |
| | 21:45 | | 20:37 | 33 | 19:08 (10) | 19:17 | | | 17:04 | 82 | 12:39 (34) | 16:12 | 43 | 12:23 (34) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 18:34 (10) | 07:33 | | 17:56 (9) | 07:32 | | 11:16 (34) | 08:33 | | 11:42 (34) | 09:01 | | |
| | 21:43 | | 20:34 | 35 | 19:09 (10) | 19:15 | 4 | 18:00 (9) | 17:02 | 82 | 12:38 (34) | 16:11 | 41 | 12:23 (34) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 18:32 (10) | | | | 07:34 | | 11:16 (34) | | | | 09:01 | | |
| | 21:42 | | 20:32 | 44 | 19:35 (8) | | | | 17:00 | 82 | 12:38 (34) | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 201 | | | 1203 | | | 2292 | | | 1977 | | | 230 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,25 | | | 0,10 | | | 0,10 | |
| Total reduction | | | | 0,40 | | | 0,31 | | | 0,06 | | | 0,01 | | | 0,01 | |
| Total, real | | | | 81 | | | 371 | | | 140 | | | 24 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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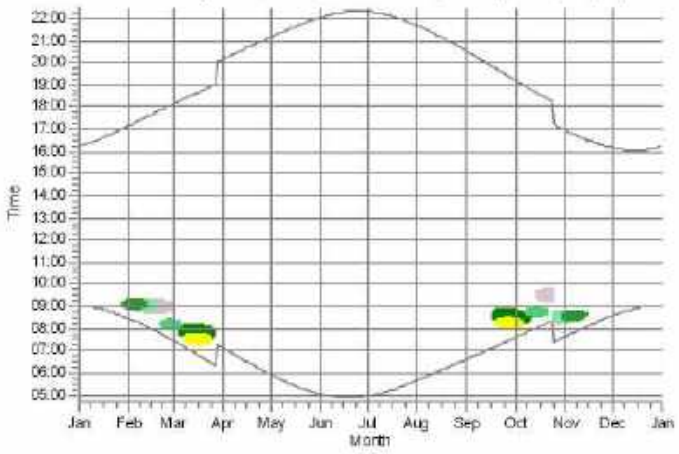
Calculated:
2021.12.03 12:07/3.5.552

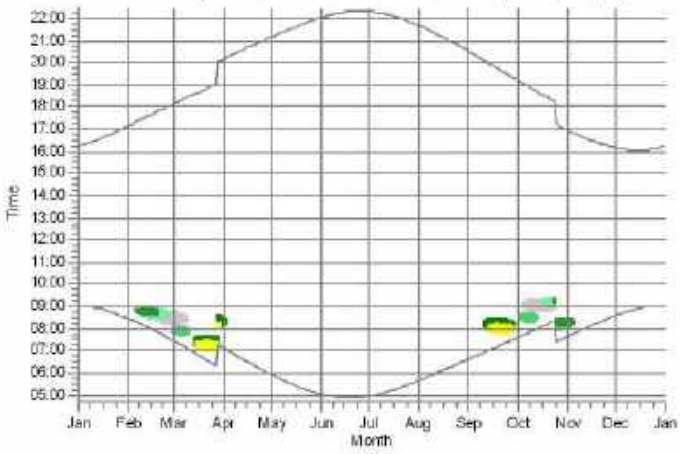
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 (be 6 VE)

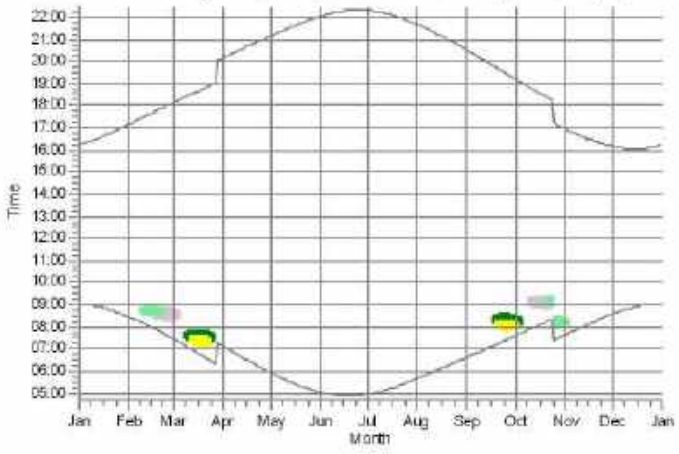
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)



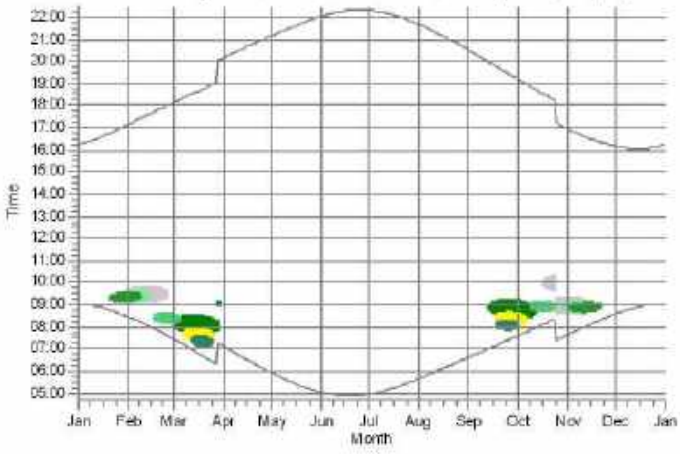

B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)



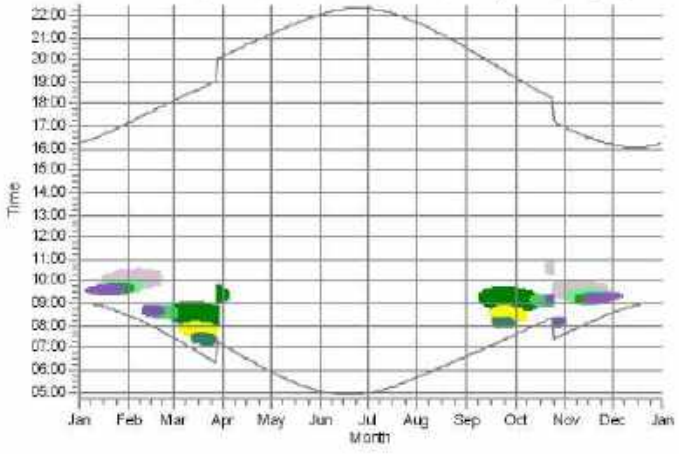

C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)



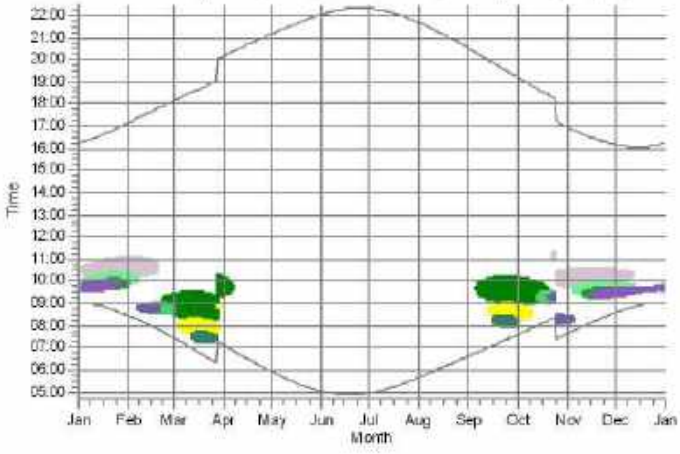

D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)




E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)




F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
44: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

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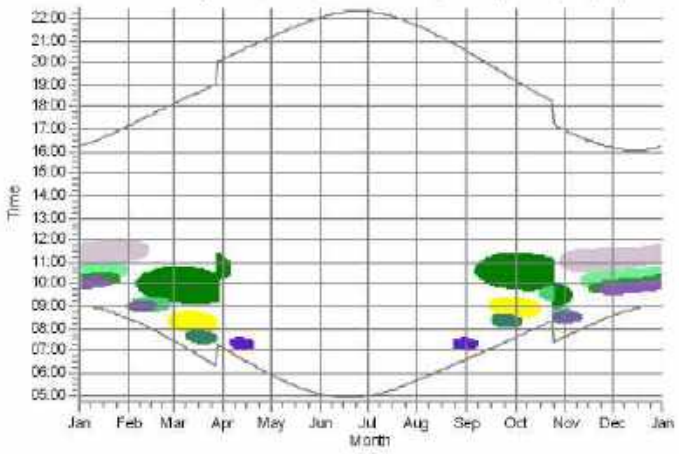
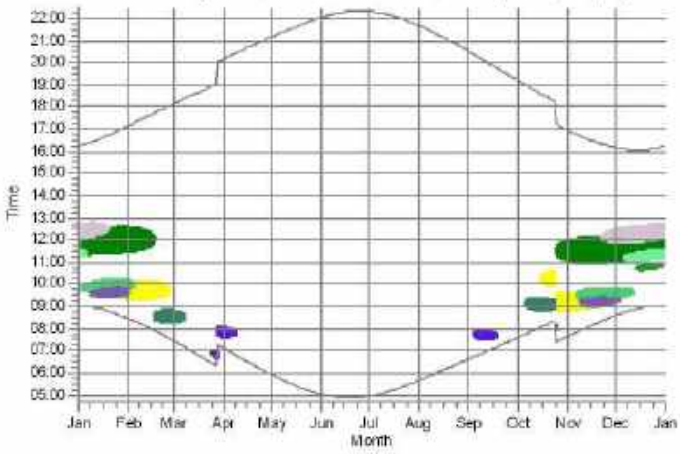
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 (be 6 VE)

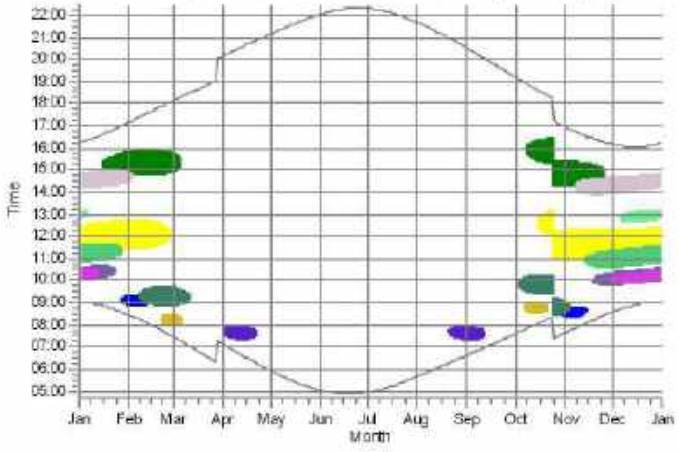
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)



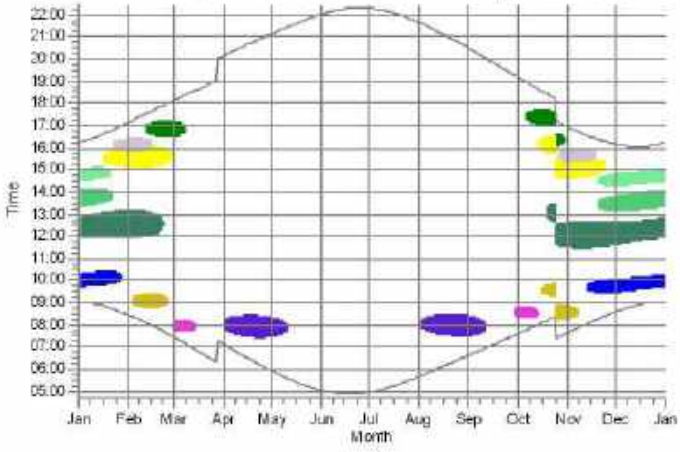

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)



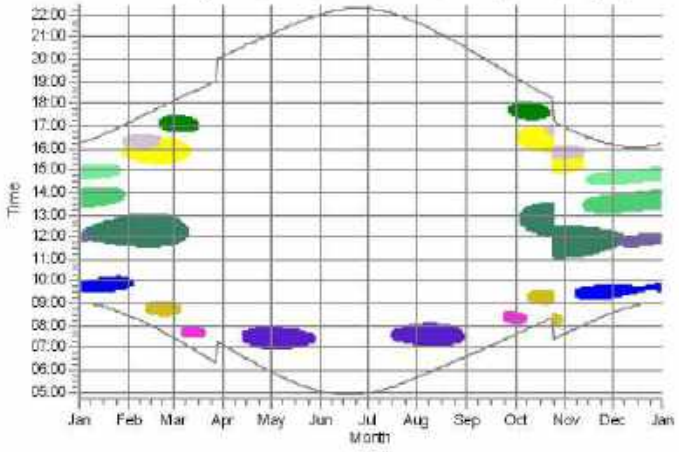

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)



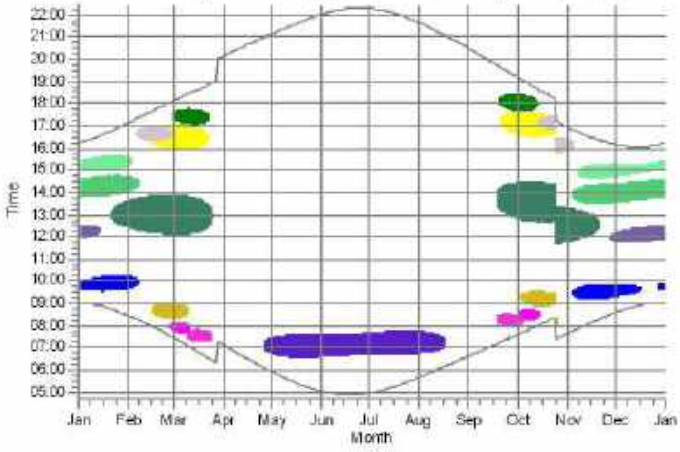

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)
44: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)
47: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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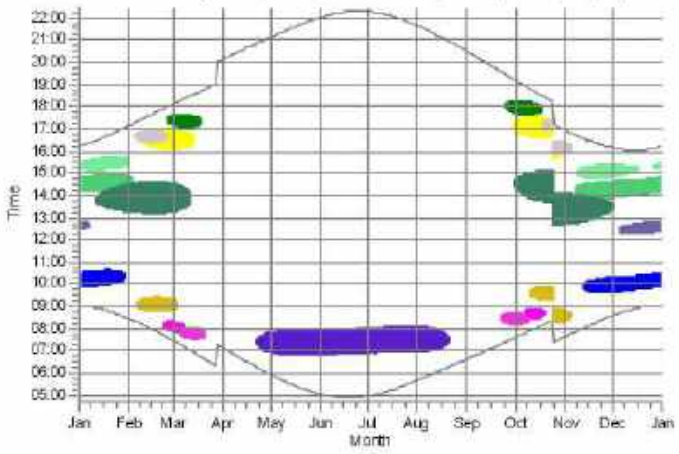
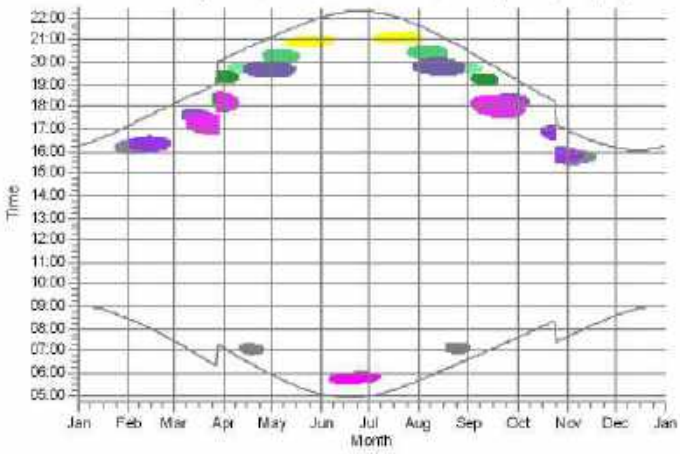
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

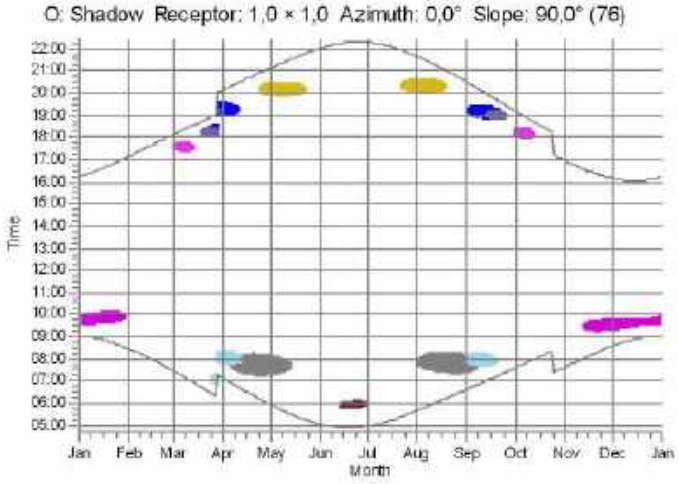
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)



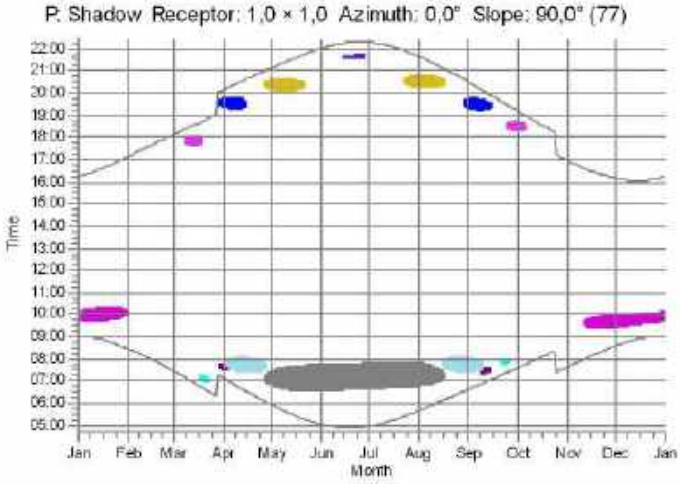

N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)



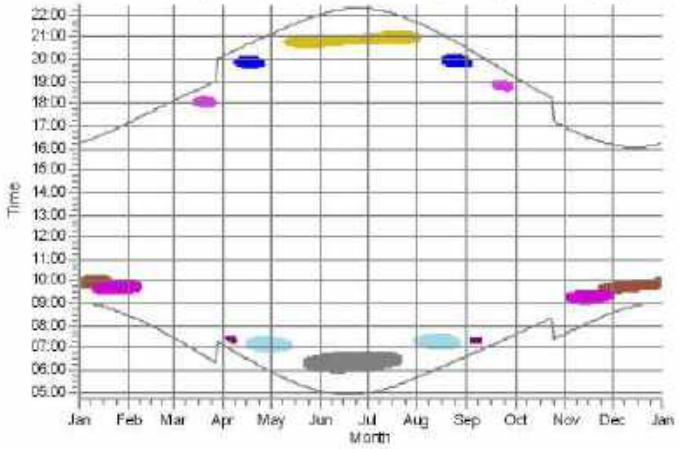

O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)



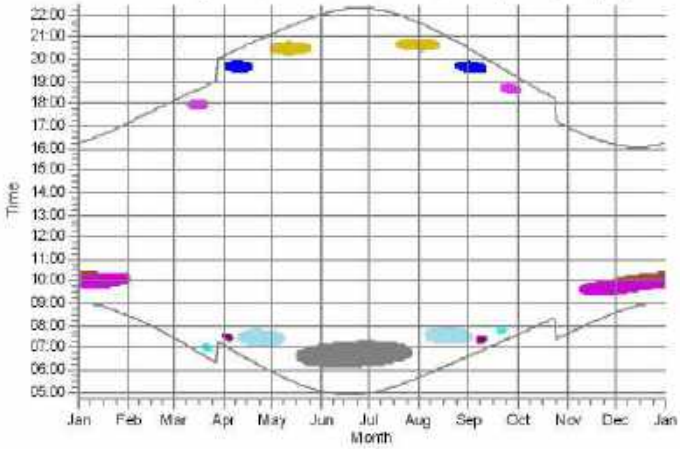

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)




Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)




R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)
33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)
44: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)
46: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)
47: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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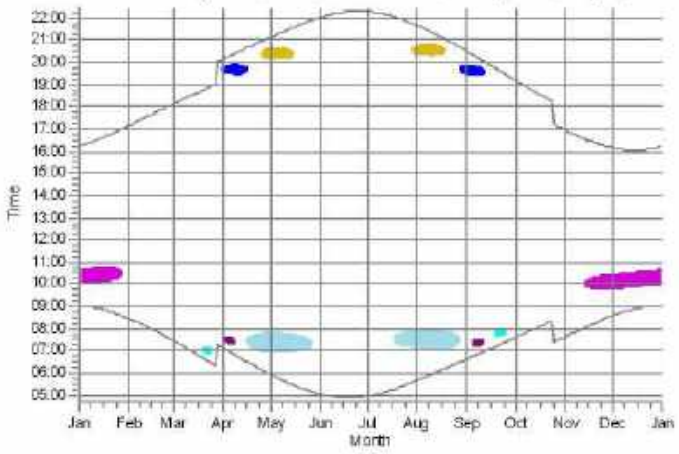
Calculated:
2021.12.03 12:07/3.5.552

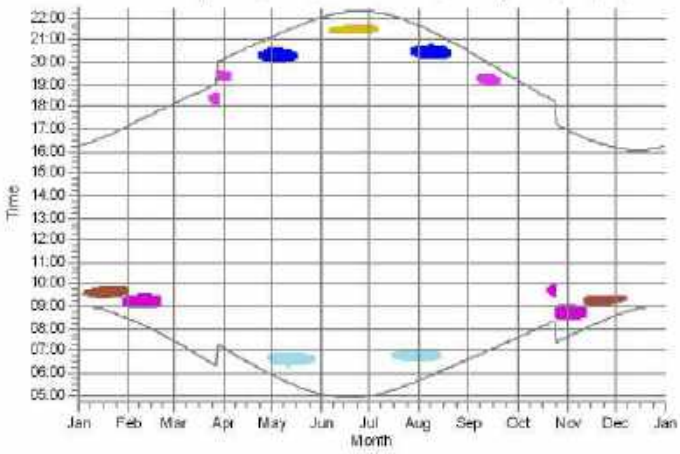
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

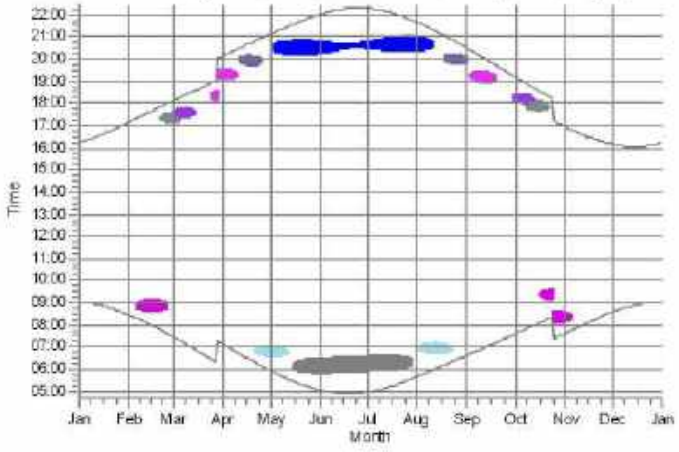
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)



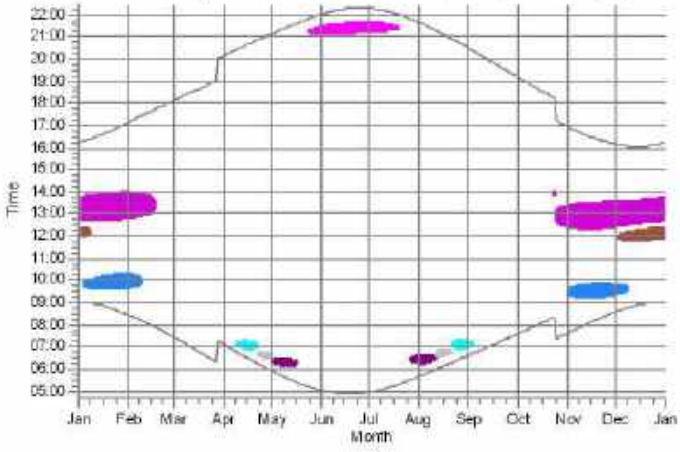

T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)



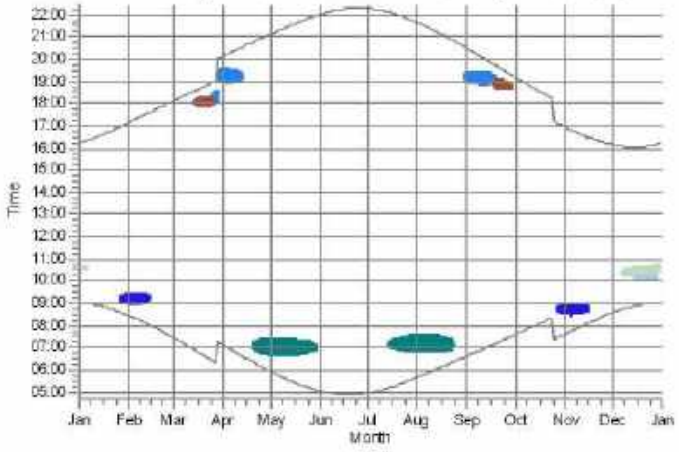

U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)



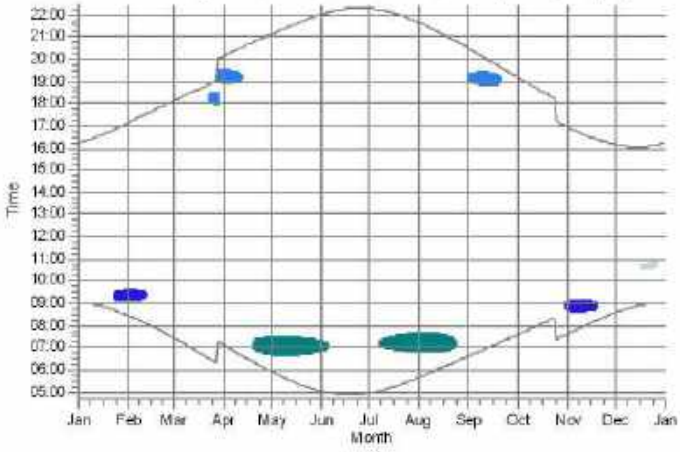

V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)




W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)




X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)




WTGs

- 3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
- 4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
- 5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
- 6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)
- 11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
- 12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)
- 13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
- 14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)
- 15: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)
- 30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
- 33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
- 36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
- 38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
- 39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)
- 40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
- 41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
- 44: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)
- 46: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)
- 47: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

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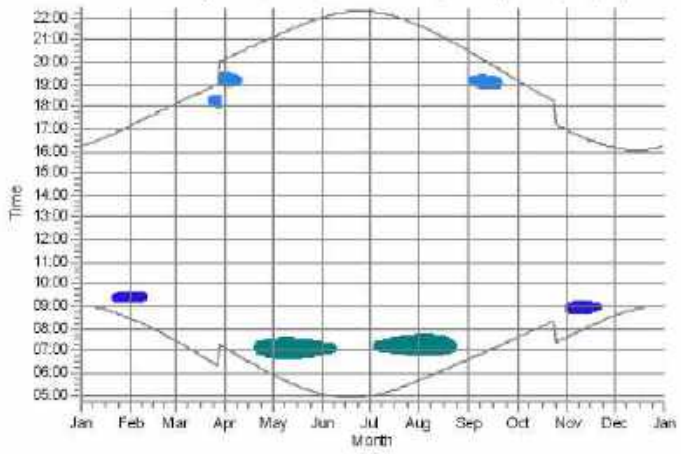
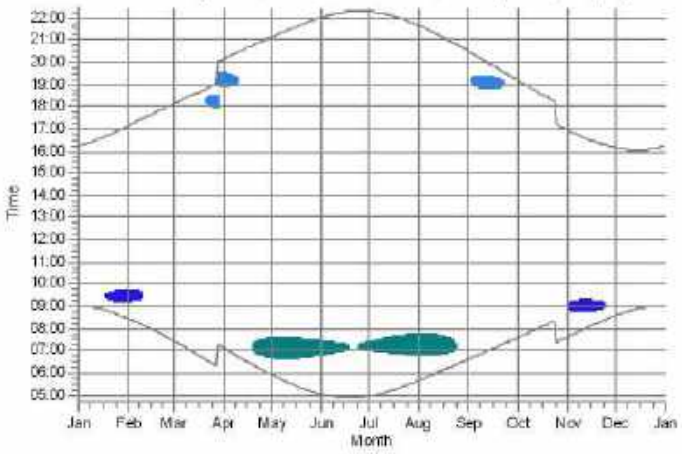
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

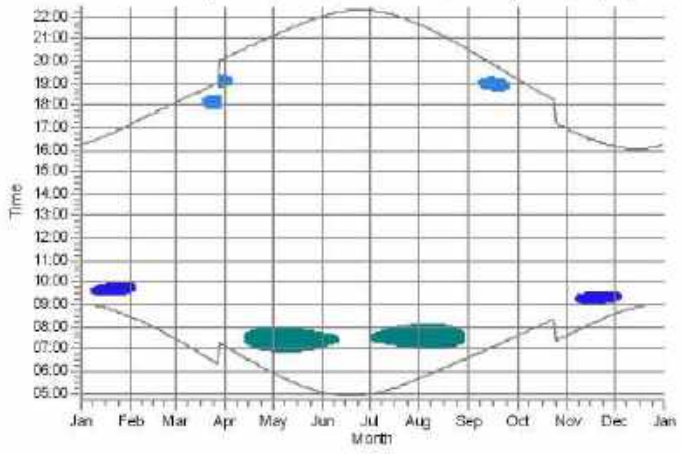
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)



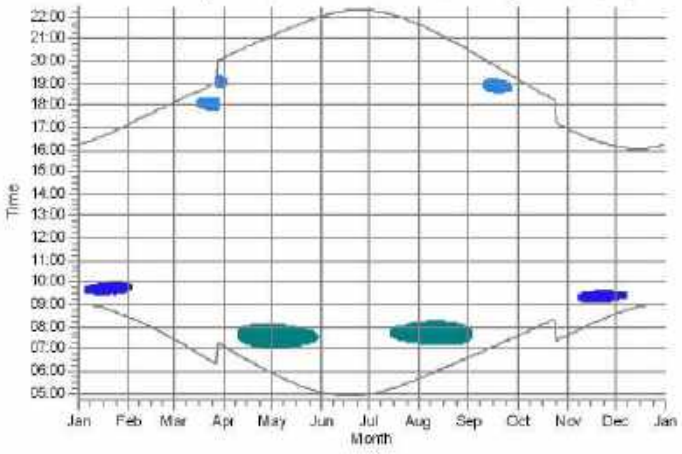

Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)



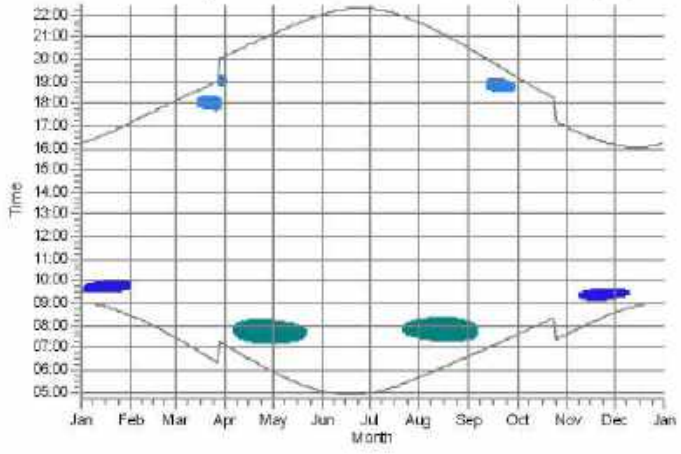

AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)



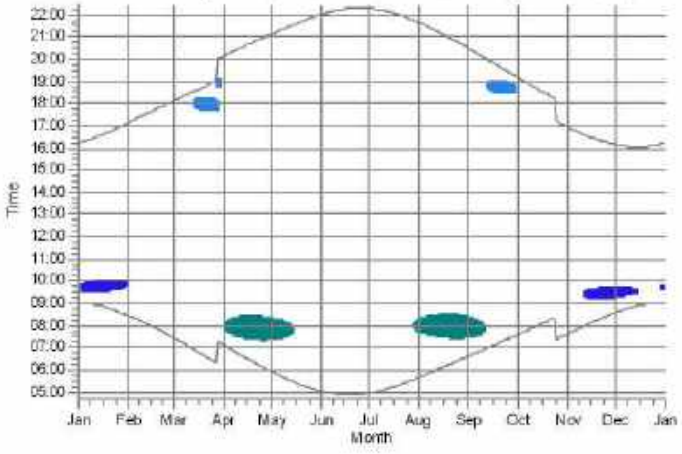

AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)




AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)




AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

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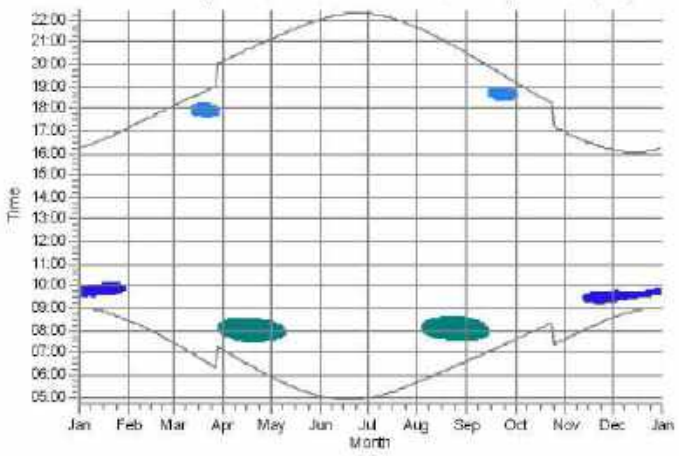
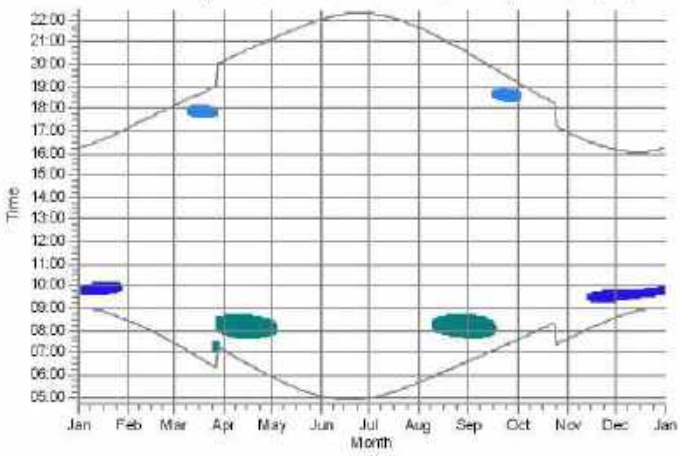
# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 (be 6 VE)

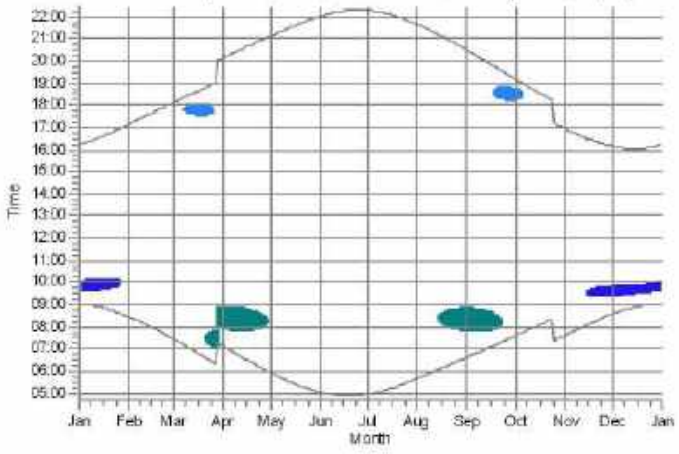
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)



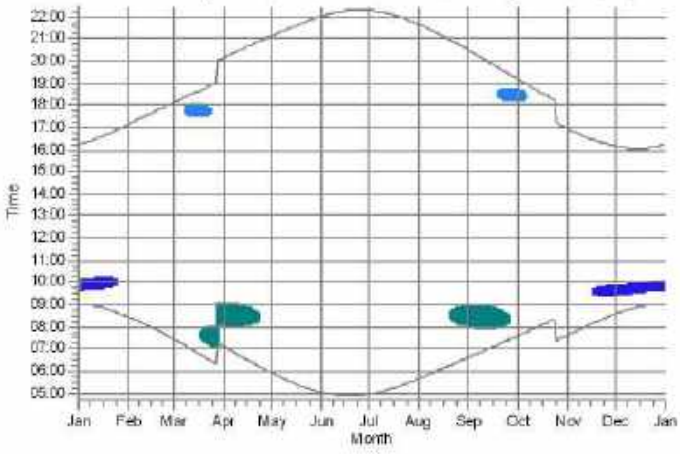

AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)



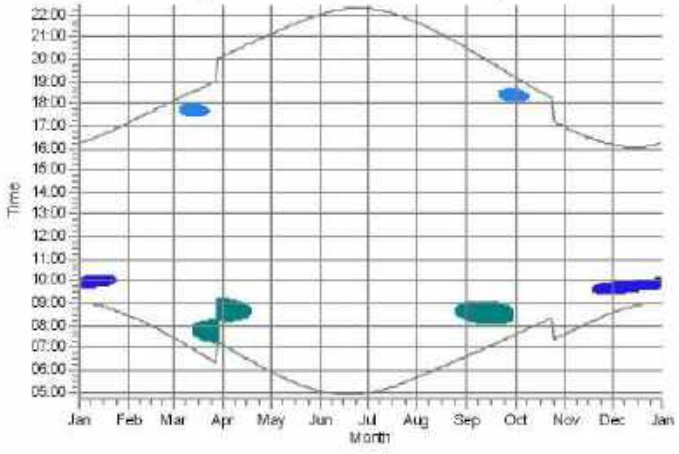

AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)



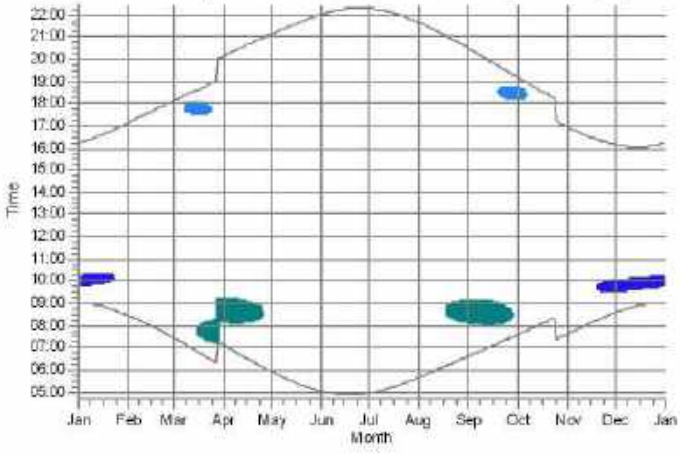

AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)




AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)




AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

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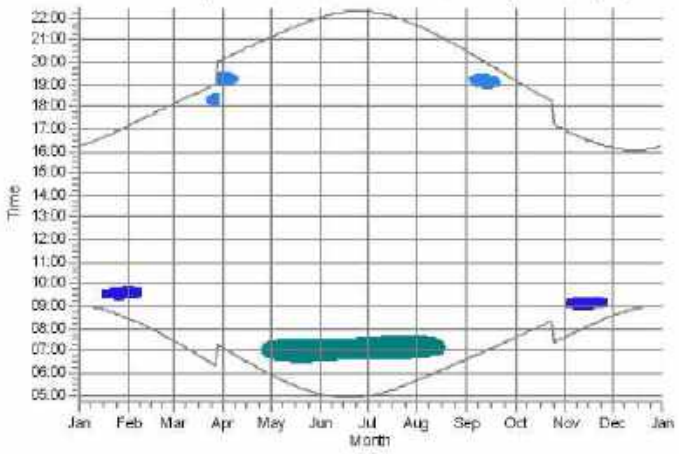
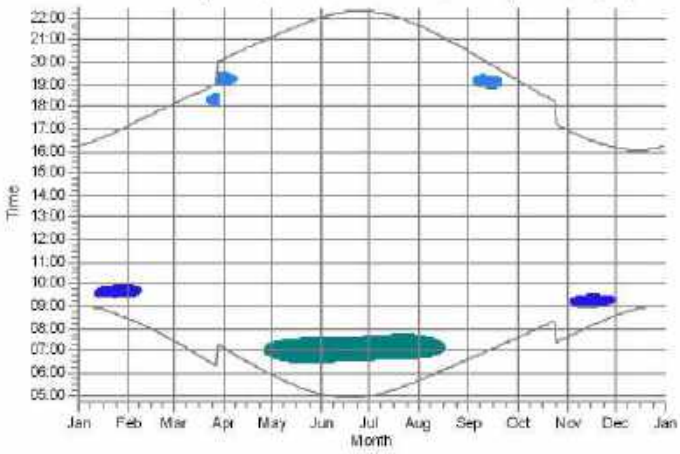
# SHADOW - Calendar, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

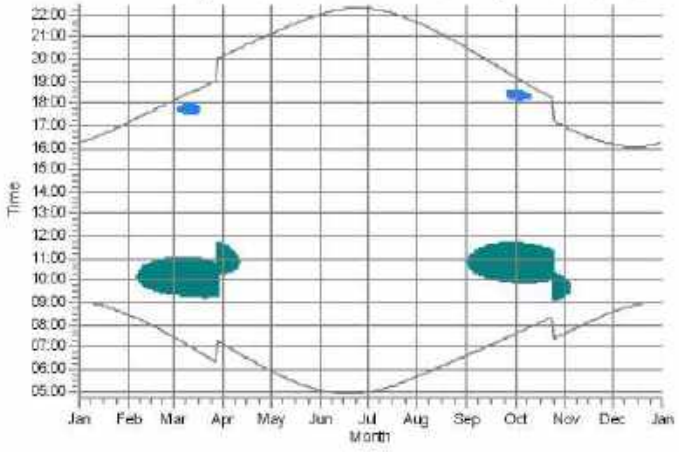
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)



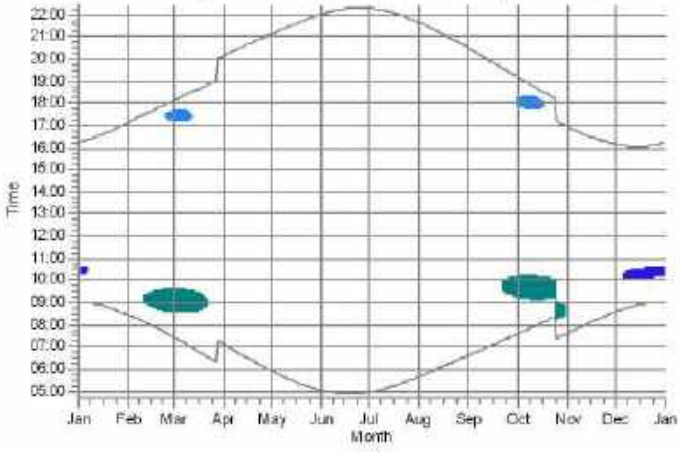

AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)



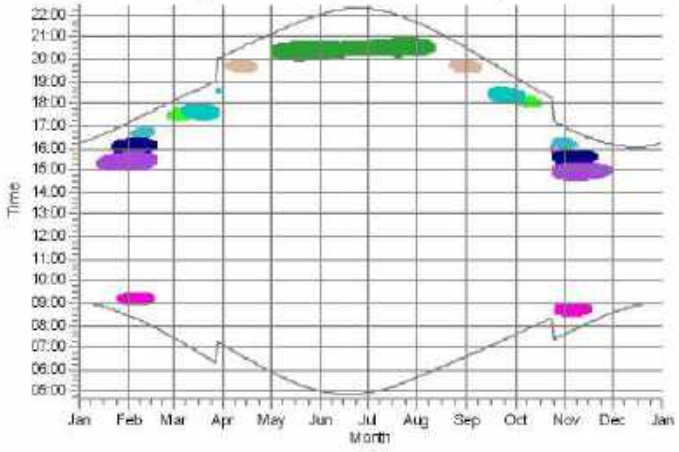

AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)



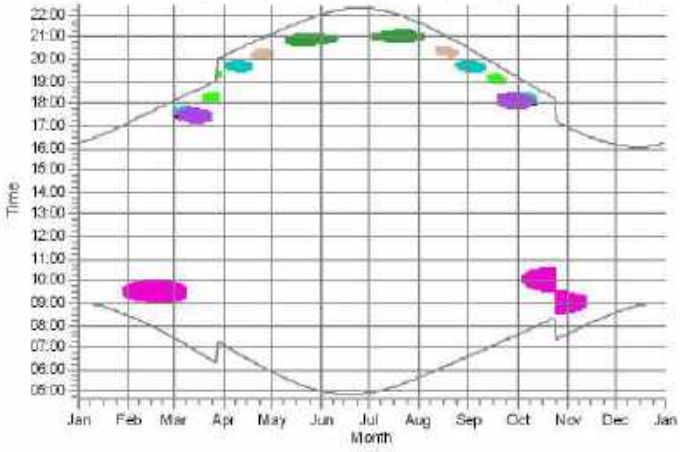

AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)




AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)




AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)
17: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)
18: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)
20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)
21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)
24: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)
36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)
43: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

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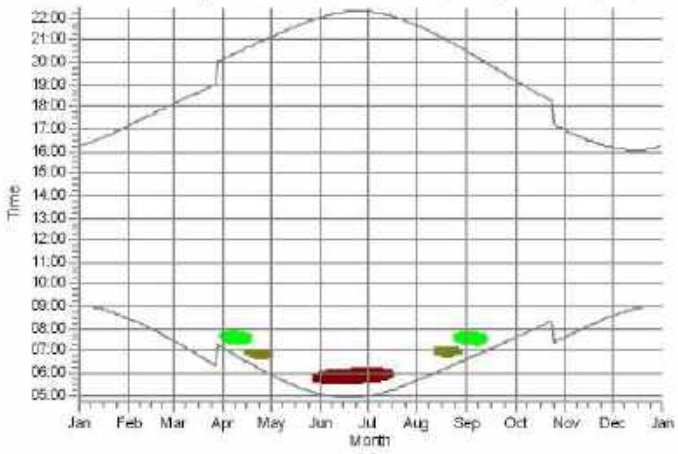
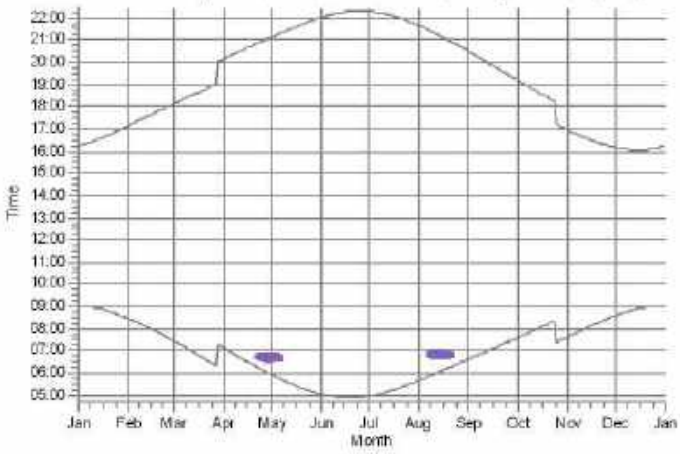
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 (be 6 VE)

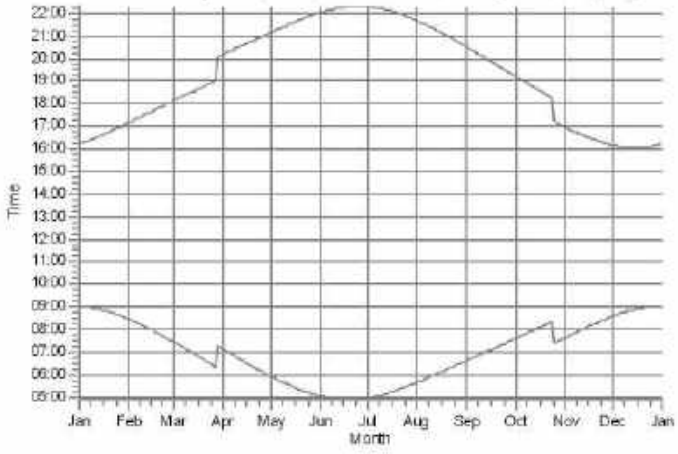
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)



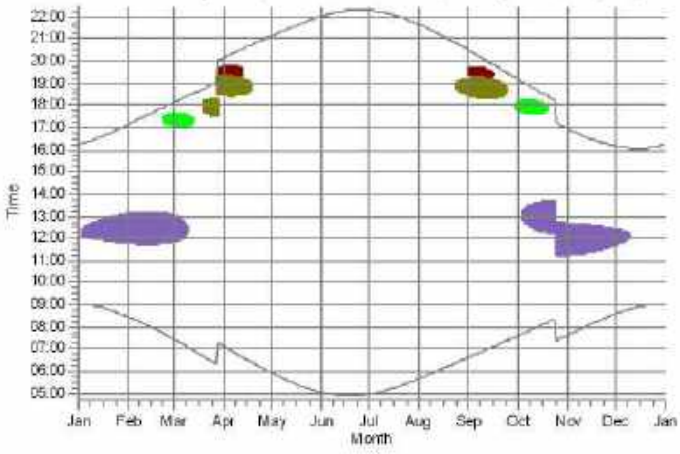

AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)




AS: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)




AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)




WTGs

8: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)
9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)
10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)
34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62 | 08:28 14:52-15:47/55 | 07:27 16:35-17:35/60 08:17-10:43/146 | 07:08 10:21-11:08/47 08:11-08:28/17 | 05:55 | 05:02 |
| | 16:14 | 17:08 11:28-12:33/65 | 18:07 15:00-15:40/40 | 20:10 09:08-10:11/63 | 21:09 | 22:03 |
| 2 | 09:01 11:20-12:22/62 | 08:26 14:51-15:47/56 | 07:24 16:36-17:37/61 08:05-10:43/158 | 07:05 10:24-11:05/41 08:14-08:25/11 | 05:53 | 05:01 |
| | 16:15 | 17:10 11:29-12:33/64 | 18:10 15:03-15:38/35 | 20:12 09:11-10:09/58 | 21:11 | 22:04 |
| 3 | 09:01 11:20-12:23/63 | 08:24 14:51-15:48/57 | 07:22 16:36-17:38/62 08:00-10:43/163 | 07:03 10:26-11:00/34 | 05:51 | 05:00 |
| | 16:16 | 17:12 11:30-12:32/62 | 18:12 15:06-15:35/29 | 20:14 09:15-10:06/51 | 21:13 | 22:05 |
| 4 | 09:00 11:20-12:23/63 | 08:22 14:51-15:49/58 | 07:19 16:38-17:40/62 07:58-10:44/166 | 07:00 10:30-10:56/26 | 05:49 | 04:59 |
| | 16:18 | 17:15 11:30-12:32/62 | 18:14 15:10-15:32/22 | 20:16 09:28-10:03/35 | 21:15 | 22:06 |
| 5 | 09:00 11:21-12:24/63 | 08:20 14:50-15:50/60 | 07:17 16:39-17:41/62 07:48-10:43/175 | 06:58 10:37-10:46/9 | 05:46 | 04:58 |
| | 16:19 | 17:17 11:31-12:32/61 | 18:16 15:16-15:25/9 | 20:18 09:30-09:59/29 | 21:17 | 22:08 |
| 6 | 08:59 11:21-12:25/64 | 08:18 14:50-15:50/60 | 07:15 16:42-17:42/60 | 06:55 09:34-09:55/21 | 05:44 | 04:57 |
| | 16:20 | 17:19 11:32-12:31/59 | 18:18 07:45-10:44/179 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 11:21-12:25/64 | 08:16 14:50-15:51/61 09:54-10:08/14 | 07:12 16:45-17:43/58 | 06:53 09:42-09:46/4 | 05:42 | 04:56 |
| | 16:22 | 17:21 11:33-12:30/57 | 18:20 07:42-10:43/181 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 11:21-12:25/64 | 08:14 14:49-15:51/62 09:47-10:13/26 | 07:10 16:47-17:43/56 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 11:33-12:29/56 | 18:22 07:39-10:43/184 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 11:22-12:27/65 | 08:12 14:49-15:51/62 09:44-10:17/33 | 07:07 16:48-17:43/55 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 11:35-12:28/53 | 18:24 07:33-10:43/190 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 11:22-12:28/66 | 08:10 14:49-15:52/63 09:41-10:20/39 | 07:04 16:48-17:43/55 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 11:36-12:27/51 | 18:26 07:29-10:42/193 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 11:22-12:28/66 | 08:08 14:49-15:52/63 09:39-10:23/44 | 07:02 16:50-17:44/54 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 11:38-12:26/48 | 18:28 07:27-10:42/195 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 11:22-12:28/66 | 08:06 14:49-15:51/62 09:36-10:25/49 | 06:59 16:50-17:43/53 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 11:39-12:23/44 | 18:30 07:25-10:41/196 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 11:22-12:29/67 | 08:04 16:46-16:58/12 11:41-12:21/40 | 06:57 16:51-17:42/51 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 14:49-15:52/63 09:34-10:27/53 | 18:32 07:24-10:41/197 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 11:22-12:29/67 | 08:02 16:43-17:01/18 11:44-12:19/35 | 06:54 16:54-17:42/48 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 14:49-15:52/63 09:32-10:29/57 | 18:34 07:22-10:40/198 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 11:23-12:30/67 | 08:00 16:40-17:02/22 11:46-12:16/30 | 06:52 16:56-17:41/45 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 14:49-15:51/62 09:30-10:30/60 | 18:36 07:18-10:39/201 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 11:22-12:30/68 | 07:57 16:39-17:04/25 11:50-12:12/22 | 06:49 17:08-17:41/33 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 14:49-15:51/62 09:29-10:32/63 | 18:38 07:16-10:39/203 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 15:09-15:21/12 | 07:55 16:38-17:06/28 11:58-12:05/7 | 06:47 17:08-17:40/32 | 06:28 | 05:23 | 04:52 |
| | 16:38 11:23-12:31/68 | 17:42 14:50-15:52/62 09:28-10:34/66 | 18:40 07:13-10:38/205 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 15:07-15:25/18 | 07:53 16:37-17:06/29 09:26-10:35/69 | 06:44 17:09-17:38/29 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:24-12:32/68 | 17:44 14:50-15:51/61 | 18:42 07:12-10:37/205 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 15:04-15:28/24 | 07:51 16:36-17:07/31 09:25-10:36/71 | 06:42 17:10-17:37/27 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:23-12:32/69 | 17:47 14:50-15:51/61 | 18:44 07:11-10:36/205 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 15:03-15:30/27 | 07:48 16:36-17:08/32 09:24-10:38/74 | 06:39 17:11-17:35/24 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:24-12:32/68 | 17:49 14:51-15:51/60 | 18:46 07:09-10:34/205 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 15:01-15:32/31 | 07:46 16:35-17:14/39 09:22-10:38/76 | 06:36 17:14-17:33/19 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:24-12:32/68 | 17:51 14:51-15:49/58 | 18:48 07:09-10:33/204 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:59-15:34/35 | 07:44 16:35-17:17/42 09:22-10:39/77 | 06:34 17:16-17:30/14 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:24-12:32/68 | 17:53 14:52-15:49/57 08:50-09:09/19 | 18:50 07:08-10:31/203 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:59-15:36/37 | 07:41 16:34-17:19/45 09:20-10:40/80 | 06:31 07:08-10:30/202 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:25-12:33/68 | 17:55 14:53-15:48/55 08:45-09:13/28 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:57-15:37/40 | 07:39 16:34-17:21/47 09:20-10:41/81 | 06:29 07:07-10:28/201 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:25-12:33/68 | 17:57 14:54-15:47/53 08:42-09:16/34 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:56-15:39/43 | 07:36 16:34-17:21/47 08:39-10:41/122 | 06:26 07:06-10:26/200 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:25-12:33/68 | 17:59 14:54-15:46/52 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 14:56-15:41/45 | 07:34 16:34-17:30/56 08:29-10:42/133 | 06:23 07:42-10:25/163 | 06:06 | 05:09 | 04:54 |
| | 16:56 11:26-12:34/68 | 18:01 14:56-15:45/49 | 18:58 07:07-07:38/31 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 14:55-15:42/47 | 07:32 16:34-17:32/58 08:23-10:42/139 | 06:21 07:51-10:22/151 | 06:04 | 05:08 | 04:54 |
| | 16:58 11:26-12:34/68 | 18:03 14:57-15:43/46 | 19:00 07:07-07:36/29 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:54-15:43/49 | 07:29 16:35-17:34/59 08:20-10:43/143 | 06:18 07:54-10:20/146 | 06:02 | 05:06 | 04:55 |
| | 17:00 11:27-12:34/67 | 18:05 14:59-15:42/43 | 19:02 07:07-07:36/29 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:54-15:44/50 | | 07:16 08:58-11:18/140 | 06:00 | 05:05 | 04:55 |
| | 17:02 11:27-12:34/67 | | 20:04 08:08-08:34/26 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:53-15:45/52 | | 07:13 10:19-11:15/56 08:09-08:33/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 11:27-12:34/67 | | 20:06 09:06-10:16/70 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:52-15:46/54 | | 07:11 10:20-11:12/52 08:09-08:31/22 | | 05:03 | |
| | 17:06 11:28-12:33/65 | | 20:08 09:07-10:13/66 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 4682 | 6915 | 446 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 17:30-18:22/52 | 07:37 14:19-15:21/62 09:11-09:49/38 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 08:03-11:20/197 | 16:58 11:06-11:57/51 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 17:28-18:22/54 | 07:39 14:19-15:21/62 09:14-09:46/32 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-11:20/196 | 16:56 11:04-11:58/54 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 17:27-18:21/54 | 07:41 14:19-15:20/61 09:17-09:42/25 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-11:20/194 | 16:54 11:03-11:58/55 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 17:26-18:21/55 | 07:43 14:20-15:21/61 09:25-09:36/11 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-11:20/192 | 16:52 11:03-12:00/57 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 09:40-09:41/1 | 07:43 17:25-18:20/55 | 07:45 14:20-15:20/60 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-11:20/184 | 16:50 11:02-12:01/59 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 09:31-09:51/20 | 07:44 17:24-18:19/55 | 07:47 14:20-15:19/59 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-11:19/182 | 16:48 11:01-12:01/60 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 10:34-10:40/6 | 07:46 17:19-18:18/59 | 07:49 14:20-15:19/59 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 09:26-09:54/28 | 18:57 08:19-11:19/180 | 16:46 11:00-12:02/62 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 10:25-10:49/24 | 07:48 17:15-18:17/62 | 07:51 14:22-15:19/57 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 09:23-09:57/34 | 18:54 08:21-11:19/178 | 16:44 11:00-12:03/63 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 10:21-10:54/33 | 07:50 17:13-18:15/62 08:31-11:18/167 | 07:53 14:22-15:18/56 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 09:09-10:00/51 | 18:52 15:47-16:03/16 08:26-08:30/4 | 16:42 11:00-12:04/64 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 10:17-10:58/41 08:07-08:18/11 | 07:52 17:11-18:13/62 08:33-11:18/165 | 07:55 14:23-15:17/54 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 09:05-10:02/57 | 18:49 15:42-16:07/25 | 16:40 10:59-12:04/65 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 10:15-11:01/46 08:04-08:21/17 | 07:54 17:10-18:11/61 08:35-11:17/162 | 07:57 14:23-15:16/53 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 09:02-10:04/62 | 18:47 15:38-16:10/32 | 16:38 10:59-12:04/65 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 10:11-11:03/52 08:02-08:23/21 | 07:56 17:08-18:09/61 08:49-11:16/147 | 07:59 14:25-15:17/52 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 08:59-10:05/66 | 18:44 15:35-16:12/37 08:41-08:46/5 | 16:36 10:59-12:05/66 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 10:09-11:05/56 07:59-08:23/24 | 07:58 17:07-18:08/61 08:51-11:15/144 | 08:01 14:25-15:16/51 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 08:56-10:06/70 | 18:42 15:33-16:13/40 | 16:34 10:59-12:06/67 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 10:08-11:08/60 07:58-08:24/26 | 08:00 17:06-18:06/60 08:54-11:16/142 | 08:03 14:26-15:15/49 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 08:49-10:07/78 | 18:39 15:31-16:16/45 | 16:33 10:58-12:06/68 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 08:44-11:10/146 | 08:02 17:07-18:04/57 08:58-11:15/137 | 08:06 14:27-15:14/47 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 07:57-08:25/28 | 18:37 15:29-16:17/48 | 16:31 10:58-12:06/68 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 08:41-11:11/150 | 08:04 17:06-18:01/55 09:10-11:14/124 | 08:08 14:29-15:14/45 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 07:56-08:25/29 | 18:35 15:28-16:17/49 09:05-09:08/3 | 16:29 10:59-12:07/68 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 08:31-11:13/162 | 08:06 17:06-17:53/47 09:51-11:13/82 | 08:10 14:30-15:12/42 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 07:55-08:26/31 | 18:32 15:26-16:18/52 09:12-09:49/37 | 16:28 10:59-12:07/68 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-11:14/199 | 08:08 17:05-17:51/46 09:51-11:12/81 | 08:11 14:31-15:11/40 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 15:25-16:19/54 09:14-09:46/32 | 16:26 10:59-12:07/68 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-11:15/201 | 08:10 17:05-17:49/44 09:52-11:11/79 | 08:13 14:33-15:10/37 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 15:24-16:19/55 09:17-09:43/26 | 16:25 10:59-12:07/68 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-11:16/203 | 08:12 17:05-17:47/42 09:52-11:09/77 | 08:15 14:34-15:09/35 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 15:22-16:20/58 09:22-09:38/16 | 16:23 10:59-12:07/68 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:02-18:14/12 | 08:14 17:05-17:43/38 09:53-11:08/75 | 08:17 14:37-15:08/31 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 07:53-11:17/204 | 18:23 15:21-16:20/59 | 16:22 11:00-12:08/68 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 17:59-18:17/18 | 08:16 17:06-17:38/32 09:55-11:08/73 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 07:53-11:18/205 | 18:20 15:21-16:21/60 | 16:20 11:00-12:08/68 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 17:56-18:19/23 | 08:18 17:07-17:37/30 09:56-11:06/70 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 07:54-11:18/204 | 18:18 15:21-16:21/60 | 16:19 11:00-12:09/69 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 17:54-18:20/26 | 08:20 17:07-17:36/29 09:56-11:05/69 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 07:54-11:19/205 | 18:16 15:20-16:21/61 | 16:18 11:01-12:09/68 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 17:53-18:21/28 | 07:22 16:08-16:35/27 11:24-11:37/13 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 07:55-11:20/205 | 17:13 14:19-15:21/62 08:57-10:03/66 | 16:16 11:01-12:09/68 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 17:52-18:22/30 | 07:24 16:09-16:33/24 11:18-11:43/25 | 08:27 11:02-12:09/67 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 07:56-11:20/204 | 17:11 14:19-15:21/62 08:59-10:01/62 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 17:49-18:22/33 | 07:26 16:11-16:32/21 11:15-11:47/32 | 08:28 11:02-12:09/67 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 07:57-11:21/204 | 17:09 14:19-15:22/63 09:01-10:00/59 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 17:39-18:22/43 | 07:29 16:13-16:30/17 11:13-11:49/36 | 08:30 11:03-12:09/66 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 07:59-11:20/201 | 17:07 14:19-15:22/63 09:02-09:58/56 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 17:35-18:22/47 | 07:31 16:16-16:26/10 11:10-11:51/41 | 08:32 11:03-12:10/67 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 08:01-11:20/199 | 17:04 14:18-15:21/63 09:04-09:56/52 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 17:32-18:22/50 | 07:33 14:18-15:21/63 09:06-09:54/48 | 08:34 11:04-12:10/66 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 08:03-11:20/197 | 17:02 11:08-11:53/45 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 14:19-15:22/63 09:09-09:52/43 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 11:07-11:55/48 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 4371 | 6568 | 3199 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:13-16:06/53 09:23-10:05/42<br>17:08 11:27-12:44/77 | 07:27 15:27-16:57/90<br>18:07 08:07-08:34/27 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02 20:50-21:07/17<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:12-16:08/56 09:22-10:06/44<br>17:10 11:27-12:44/77 | 07:24 15:28-16:58/90<br>18:10 08:05-08:36/31 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01 20:51-21:06/15<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 15:12-16:10/58 09:22-10:06/44<br>17:12 11:27-12:44/77 | 07:22 15:28-16:58/90<br>18:12 08:03-08:37/34 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00 20:52-21:07/15<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 15:12-16:12/60 09:22-10:07/45<br>17:15 11:28-12:44/76 | 07:19 15:30-16:58/88<br>18:14 08:02-08:39/37 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59 20:53-21:06/13<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 15:12-16:13/61 09:22-10:08/46<br>17:17 11:28-12:44/76 | 07:17 15:31-16:57/86<br>18:16 07:51-08:39/48 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58 20:53-21:05/12<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 15:12-16:15/63 09:21-10:08/47<br>17:19 11:28-12:44/76 | 07:14 15:33-16:58/85<br>18:18 07:47-08:41/54 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57 20:55-21:05/10<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 15:11-16:15/64 09:22-10:09/47<br>17:21 11:29-12:44/75 | 07:12 15:35-16:57/82<br>18:20 07:41-08:41/60 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56 20:56-21:04/8<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 15:11-16:17/66 09:21-10:08/47<br>17:23 11:28-12:43/75 | 07:09 15:36-16:56/80<br>18:22 07:35-08:41/66 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56 20:57-21:02/5<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 15:11-16:18/67 09:21-10:08/47<br>17:25 11:29-12:43/74 | 07:07 15:40-16:56/76<br>18:24 07:32-08:42/70 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 15:12-16:19/67 09:21-10:09/48<br>17:27 11:30-12:43/73 | 07:04 16:01-16:55/54 07:29-08:41/72<br>18:26 15:44-16:00/16 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14 11:31-12:43/72<br>17:29 15:12-16:20/68 09:21-10:09/48 | 07:02 16:02-16:55/53<br>18:28 07:27-08:42/75 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:22-16:43/21 11:30-12:41/71<br>17:32 15:12-16:20/68 09:21-10:08/47 | 06:59 16:02-16:53/51<br>18:30 07:24-08:41/77 | 06:40<br>20:31 | 05:32 20:51-20:57/6<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 15:12-16:46/94 09:21-10:08/47<br>17:34 11:31-12:41/70 | 06:57 16:02-16:52/50<br>18:32 07:22-08:42/80 | 06:38<br>20:33 | 05:30 20:50-20:58/8<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 15:13-16:48/95 09:22-10:08/46<br>17:36 11:32-12:40/68 | 06:54 16:04-16:51/47<br>18:34 07:19-08:41/82 | 06:35<br>20:35 | 05:29 20:48-21:00/12<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 15:13-16:49/96 09:22-10:07/45<br>17:38 11:32-12:39/67 | 06:52 16:04-16:50/46<br>18:36 07:16-08:40/84 | 06:33<br>20:37 | 05:27 20:48-21:02/14<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 15:14-16:51/97 09:23-10:06/43<br>17:40 11:34-12:38/64 | 06:49 16:06-16:49/43<br>18:38 07:14-08:40/86 | 06:30<br>20:39 | 05:25 20:47-21:03/16<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 15:15-16:53/98 09:24-10:06/42<br>17:42 11:35-12:37/62 | 06:47 16:07-16:47/40<br>18:40 07:11-08:39/88 | 06:28<br>20:41 | 05:23 20:47-21:05/18<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 15:15-16:53/98 09:24-10:05/41<br>17:44 11:36-12:35/59 | 06:44 16:08-16:44/36<br>18:42 07:09-08:39/90 | 06:25<br>20:43 | 05:21 20:47-21:07/20<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 15:16-16:54/98 09:25-10:04/39<br>17:47 11:37-12:34/57 | 06:41 16:11-16:43/32<br>18:44 07:06-08:37/91 | 06:23<br>20:45 | 05:20 20:47-21:09/22<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 15:17-16:55/98 09:26-10:03/37<br>17:49 11:39-12:33/54 | 06:39 16:13-16:39/26<br>18:46 07:03-08:36/93 | 06:21<br>20:47 | 05:18 20:46-21:08/22<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 15:18-16:55/97 09:27-10:01/34<br>17:51 11:40-12:30/50 | 06:36 16:17-16:36/19<br>18:48 07:03-08:35/92 | 06:18<br>20:49 | 05:16 20:47-21:09/22<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 15:20-16:56/96 09:29-10:00/31<br>17:53 11:43-12:28/45 | 06:34 16:25-16:27/2<br>18:50 07:02-08:33/91 | 06:16<br>20:51 | 05:15 20:46-21:08/22<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 15:21-16:56/95 09:30-09:57/27<br>17:55 11:44-12:25/41 | 06:31 07:02-08:32/90<br>18:52 | 06:13<br>20:53 | 05:13 20:46-21:09/23<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 15:24-16:57/93 09:33-09:55/22<br>17:57 11:48-12:22/34 | 06:29 07:30-08:30/60<br>18:54 07:02-07:25/23 | 06:11<br>20:55 | 05:12 20:47-21:09/22<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 15:24-16:56/92 09:36-09:50/14<br>17:59 11:51-12:17/26 | 06:26 07:33-08:27/54<br>18:56 07:02-07:22/20 | 06:09<br>20:57 | 05:10 20:47-21:09/22<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 15:25-16:57/92<br>18:01 12:00-12:09/9 | 06:23 07:35-08:25/50<br>18:58 07:03-07:22/19 | 06:06<br>20:59 | 05:09 20:47-21:08/21<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 15:25-16:57/92<br>18:03 08:13-08:28/15 | 06:21 08:04-08:21/17 07:03-07:20/17<br>19:00 07:37-08:03/26 | 06:04<br>21:01 | 05:08 20:47-21:08/21<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 15:26-16:58/92<br>18:05 08:10-08:32/22 | 06:18 07:44-08:01/17<br>19:02 07:05-07:18/13 | 06:02<br>21:03 | 05:06 20:48-21:08/20<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 08:08-08:14/6 | 06:00<br>21:05 | 05:05 20:48-21:08/20<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04 20:49-21:08/19<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03 20:49-21:07/18<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 4971 | 3229 | 0 | 370 | 95 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:07/5<br>21:40 | 06:38<br>20:30 | 07:35 16:42-17:32/50<br>19:12 08:02-09:20/78 | 07:37 14:41-15:48/67 08:51-09:38/47<br>16:58 10:59-12:12/73 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 16:40-17:32/52<br>19:10 08:04-09:20/76 | 07:39 14:41-15:47/66 08:50-09:38/48<br>16:56 10:59-12:13/74 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 16:39-17:33/54 08:06-09:20/74<br>19:07 16:25-16:35/10 | 07:41 14:41-15:46/65 08:50-09:38/48<br>16:54 10:58-12:13/75 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59 21:04-21:08/4<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 16:19-17:33/74<br>19:05 08:08-09:19/71 | 07:43 14:42-15:46/64 08:51-09:38/47<br>16:52 10:58-12:14/76 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00 21:02-21:09/7<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 16:15-17:33/78<br>19:02 08:10-09:18/68 | 07:45 14:42-15:44/62 08:51-09:38/47<br>16:50 10:58-12:14/76 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01 21:01-21:10/9<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 16:12-17:33/81<br>18:59 08:14-09:17/63 | 07:47 14:42-15:43/61 08:51-09:37/46<br>16:48 10:58-12:14/76 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02 21:00-21:11/11<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 16:09-17:33/84<br>18:57 08:20-09:16/56 | 07:49 14:42-15:41/59 08:51-09:37/46<br>16:46 10:57-12:14/77 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03 20:59-21:12/13<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 16:07-17:33/86<br>18:54 08:25-09:15/50 | 07:51 14:43-15:41/58 08:53-09:37/44<br>16:44 10:58-12:15/77 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04 20:59-21:13/14<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 16:05-17:32/87<br>18:52 08:29-09:14/45 | 07:53 14:43-15:39/56 08:53-09:36/43<br>16:42 10:58-12:15/77 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06 20:58-21:13/15<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 16:03-17:32/89<br>18:49 08:36-09:12/36 | 07:55 14:44-15:36/52 08:53-09:36/43<br>16:40 10:58-12:14/76 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07 20:59-21:15/16<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 16:02-17:31/89<br>18:47 08:38-09:11/33 | 07:57 14:44-15:34/50 08:54-09:35/41<br>16:38 10:57-12:14/77 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08 20:58-21:16/18<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 16:00-17:31/91<br>18:44 08:39-09:09/30 | 07:59 14:46-15:31/45 08:56-09:35/39<br>16:36 10:58-12:15/77 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09 20:58-21:16/18<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 15:59-17:30/91<br>18:42 08:41-09:06/25 | 08:01 14:46-15:29/43 08:56-09:34/38<br>16:34 10:58-12:15/77 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11 20:57-21:16/19<br>22:08 | 06:04<br>21:13 | 07:02 08:41-08:43/2<br>19:56 07:59-08:04/5 | 08:00 15:58-17:30/92<br>18:39 08:44-09:04/20 | 08:03 14:47-15:28/41 08:57-09:33/36<br>16:33 10:58-12:15/77 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12 20:57-21:16/19<br>22:07 | 06:06<br>21:10 | 07:04 08:34-08:49/15<br>19:54 07:55-08:07/12 | 08:02 15:58-17:30/92<br>18:37 08:48-09:00/12 | 08:05 14:48-15:27/39 08:58-09:32/34<br>16:31 10:58-12:15/77 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14 20:57-21:18/21<br>22:06 | 06:08<br>21:08 | 07:06 08:55-09:09/14 07:53-08:09/16<br>19:51 08:27-08:52/25 | 08:04 15:57-17:29/92 10:13-10:18/5<br>18:35 12:28-12:45/17 | 08:07 14:50-15:27/37 09:00-09:32/32<br>16:29 11:00-12:15/75 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15 20:57-21:18/21<br>22:04 | 06:09<br>21:06 | 07:08 08:24-09:13/49<br>19:48 07:51-08:10/19 | 08:06 15:56-17:28/92 10:06-10:24/18<br>18:32 12:22-12:51/29 | 08:09 14:51-15:26/35 09:01-09:31/30<br>16:28 11:00-12:15/75 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16 20:56-21:18/22<br>22:03 | 06:11<br>21:04 | 07:10 08:22-09:15/53<br>19:46 07:50-08:11/21 | 08:08 15:54-17:28/94 10:03-10:27/24<br>18:30 12:18-12:54/36 | 08:11 14:52-15:25/33 09:03-09:29/26<br>16:26 11:00-12:15/75 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18 20:57-21:19/22<br>22:02 | 06:13<br>21:01 | 07:12 08:17-09:16/59<br>19:43 07:48-08:10/22 | 08:10 15:52-17:27/95 10:01-10:29/28<br>18:27 12:15-12:57/42 | 08:13 14:53-15:24/31 09:04-09:28/24<br>16:25 11:00-12:15/75 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19 20:56-21:18/22<br>22:00 | 06:15<br>20:59 | 07:14 07:48-09:17/89<br>19:41 | 08:12 15:50-17:26/96 09:59-10:30/31<br>18:25 12:12-12:59/47 | 08:15 14:54-15:23/29 09:06-09:26/20<br>16:23 11:01-12:15/74 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21 20:57-21:19/22<br>21:59 | 06:17<br>20:56 | 07:16 07:47-09:19/92<br>19:38 | 08:14 15:48-17:25/97 09:57-10:32/35<br>18:23 12:10-13:01/51 | 08:17 14:57-15:22/25 09:10-09:25/15<br>16:22 11:02-12:15/73 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 20:56-21:19/23<br>21:57 | 06:19<br>20:54 | 07:18 17:03-17:19/16<br>19:35 07:47-09:20/93 | 08:16 15:47-17:25/98 09:56-10:34/38<br>18:20 12:09-13:04/55 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-12:15/73 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24 20:57-21:19/22<br>21:56 | 06:21<br>20:52 | 07:19 16:59-17:23/24<br>19:33 07:47-09:20/93 | 08:18 15:46-17:24/98 09:55-10:35/40<br>18:18 12:07-13:05/58 | 08:21 15:01-15:19/18<br>16:19 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 20:57-21:19/22<br>21:54 | 06:23<br>20:49 | 07:21 16:56-17:26/30<br>19:30 07:49-09:21/92 | 08:20 15:45-17:23/98 09:54-10:35/41<br>18:16 12:06-13:06/60 | 08:23 15:05-15:16/11<br>16:18 11:03-12:15/72 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28 20:57-21:18/21<br>21:52 | 06:25<br>20:47 | 07:23 16:53-17:27/34<br>19:28 07:51-09:21/90 | 08:22 14:44-16:22/98 08:53-09:36/43<br>17:13 11:04-12:07/63 | 08:25 11:04-12:15/71<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29 20:57-21:16/19<br>21:51 | 06:26<br>20:44 | 07:25 16:51-17:29/38<br>19:25 07:53-09:22/89 | 08:24 14:43-16:20/97 08:52-09:36/44<br>17:11 11:03-12:08/65 | 08:27 11:05-12:15/70<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31 20:58-21:15/17<br>21:49 | 06:28<br>20:42 | 07:27 16:48-17:29/41<br>19:23 07:55-09:22/87 | 08:26 14:43-16:19/96 08:52-09:37/45<br>17:09 11:03-12:09/66 | 08:28 11:05-12:15/70<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33 20:58-21:13/15<br>21:47 | 06:30<br>20:39 | 07:29 16:46-17:30/44<br>19:20 07:57-09:21/84 | 08:29 14:42-16:17/95 08:52-09:37/45<br>17:07 11:02-12:10/68 | 08:30 11:06-12:15/69<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34 20:59-21:12/13<br>21:46 | 06:32<br>20:37 | 07:31 16:44-17:31/47<br>19:17 07:58-09:21/83 | 08:31 14:42-16:15/93 08:51-09:38/47<br>17:04 11:01-12:10/69 | 08:32 11:07-12:15/68<br>16:12 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36 21:00-21:10/10<br>21:44 | 06:34<br>20:35 | 07:33 16:43-17:31/48<br>19:15 08:00-09:21/81 | 08:33 15:52-16:12/20 11:00-12:11/71<br>17:02 14:41-15:49/68 08:50-09:38/48 | 08:34 11:08-12:15/67<br>16:11 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38 21:00-21:08/8<br>21:42 | 06:36<br>20:32 | | 08:35 15:56-16:08/12 11:00-12:12/72<br>17:00 14:41-15:48/67 08:51-09:38/47 | | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 463 | 5 | 1607 | 4891 | 4091 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:11/26<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:42/39<br>20:10 | 05:55 20:08-20:34/26<br>21:09 | 05:02 20:20-20:46/26<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:03-19:44/41<br>20:12 | 05:53 20:07-20:34/27<br>21:11 | 05:01 20:21-20:46/25<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:03-19:46/43<br>20:14 | 05:51 20:07-20:38/31<br>21:13 | 05:00 20:22-20:46/24<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:04-19:48/44<br>20:16 | 05:48 20:07-20:41/34<br>21:15 | 04:59 20:23-20:46/23<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:03-19:49/46<br>20:18 | 05:46 20:07-20:42/35<br>21:16 | 04:58 20:23-20:45/22<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:05-19:52/47<br>20:19 | 05:44 20:07-20:44/37<br>21:18 | 04:57 20:23-20:44/21<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:05-19:53/48<br>20:21 | 05:42 20:07-20:45/38<br>21:20 | 04:56 20:25-20:44/19<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:07-19:54/47<br>20:23 | 05:40 20:07-20:46/39<br>21:22 | 04:56 20:25-20:43/18<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:08-19:57/49<br>20:25 | 05:38 20:07-20:46/39<br>21:24 | 04:55 20:26-20:43/17<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:21-19:59/38<br>20:27 19:13-19:18/5 | 05:36 20:08-20:47/39<br>21:26 | 04:54 20:27-20:42/15<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:21-20:01/40<br>20:29 | 05:34 20:08-20:47/39<br>21:28 | 04:54 20:28-20:42/14<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:23-20:03/40<br>20:31 | 05:32 20:10-20:48/38<br>21:30 | 04:54 20:29-20:42/13<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:24-20:04/40<br>20:33 | 05:30 20:11-20:48/37<br>21:32 | 04:53 20:29-20:41/12<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:26-20:06/40<br>20:35 | 05:28 20:12-20:48/36<br>21:33 | 04:53 20:30-20:41/11<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:31-20:06/35<br>20:37 | 05:27 20:14-20:49/35<br>21:35 | 04:53 20:31-20:41/10<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:32-20:06/34<br>20:39 | 05:25 20:15-20:49/34<br>21:37 | 04:52 20:32-20:40/8<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:34-20:06/32<br>20:41 | 05:23 20:15-20:49/34<br>21:39 | 04:52 20:33-20:40/7<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:15-20:49/34<br>21:41 | 04:52 20:34-20:40/6<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20 20:15-20:49/34<br>21:42 | 04:52 20:34-20:39/5<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18 20:15-20:49/34<br>21:44 | 04:52 20:35-20:39/4<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16 20:16-20:49/33<br>21:46 | 04:52 20:35-20:39/4<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15 20:15-20:48/33<br>21:47 | 04:52 20:36-20:40/4<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13 20:16-20:49/33<br>21:49 | 04:53 20:36-20:40/4<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12 20:16-20:49/33<br>21:51 | 04:53 20:35-20:40/5<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:13-20:26/13<br>20:57 19:44-19:58/14 | 05:10 20:17-20:49/32<br>21:52 | 04:53 20:35-20:42/7<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 20:12-20:28/16<br>20:59 19:46-19:55/9 | 05:09 20:17-20:48/31<br>21:54 | 04:54 20:35-20:42/7<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:10-20:30/20<br>21:01 | 05:08 20:17-20:48/31<br>21:55 | 04:54 20:35-20:44/9<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:09-20:32/23<br>21:03 | 05:06 20:18-20:47/29<br>21:57 | 04:55 20:34-20:44/10<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:09-20:33/24<br>21:05 | 05:05 20:18-20:47/29<br>21:58 | 04:55 20:34-20:45/11<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:38/34<br>20:06 | 05:57 20:08-20:34/26<br>21:07 | 05:04 20:19-20:47/28<br>22:00 | 04:56 20:33-20:45/12<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:40/36<br>20:08 | | 05:03 20:20-20:47/27<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 353 | 207 | 1022 | 1039 | 373 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 20:32-20:46/14<br>22:18 | 05:40 20:20-20:58/38<br>21:40 | 06:38 19:20-20:00/40<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58 20:32-20:47/15<br>22:18 | 05:41 20:18-20:57/39<br>21:38 | 06:40 19:19-19:57/38<br>20:27 19:10-19:16/6 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58 20:32-20:48/16<br>22:17 | 05:43 20:18-20:57/39<br>21:36 | 06:42 19:06-19:55/49<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59 20:31-20:48/17<br>22:17 | 05:45 20:18-20:56/38<br>21:34 | 06:43 19:04-19:51/47<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00 20:30-20:49/19<br>22:16 | 05:47 20:17-20:56/39<br>21:32 | 06:45 19:02-19:50/48<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01 20:30-20:50/20<br>22:15 | 05:49 20:16-20:54/38<br>21:30 | 06:47 19:00-19:47/47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02 20:30-20:51/21<br>22:15 | 05:51 20:16-20:53/37<br>21:28 | 06:49 18:59-19:45/46<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03 20:29-20:52/23<br>22:14 | 05:52 20:16-20:51/35<br>21:26 | 06:51 18:58-19:42/44<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04 20:29-20:52/23<br>22:13 | 05:54 20:15-20:48/33<br>21:24 | 06:53 18:57-19:40/43<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06 20:28-20:53/25<br>22:12 | 05:56 20:15-20:45/30<br>21:21 | 06:55 18:57-19:38/41<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07 20:29-20:54/25<br>22:11 | 05:58 20:16-20:43/27<br>21:19 | 06:57 18:55-19:34/39<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08 20:28-20:55/27<br>22:10 | 06:00 20:16-20:43/27<br>21:17 | 06:59 18:55-19:32/37<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09 20:28-20:55/27<br>22:09 | 06:02 20:16-20:41/25<br>21:15 | 07:00 18:55-19:29/34<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11 20:27-20:56/29<br>22:08 | 06:04 20:16-20:41/25<br>21:13 | 07:02 19:24-19:27/3<br>19:56 18:55-19:22/27 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12 20:27-20:56/29<br>22:07 | 06:06 20:17-20:39/22<br>21:10 | 07:04 18:56-19:22/26<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13 20:27-20:57/30<br>22:06 | 06:07 20:18-20:37/19<br>21:08 | 07:06 18:56-19:21/25<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15 20:26-20:57/31<br>22:04 | 06:09 20:18-20:34/16<br>21:06 19:52-20:03/11 | 07:08 18:57-19:19/22<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16 20:26-20:57/31<br>22:03 | 06:11 20:20-20:32/12<br>21:03 19:50-20:05/15 | 07:10 18:57-19:16/19<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18 20:26-20:58/32<br>22:02 | 06:13 20:23-20:30/7<br>21:01 19:48-20:06/18 | 07:12 18:59-19:14/15<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19 20:26-20:58/32<br>22:00 | 06:15 19:47-20:08/21<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21 20:26-20:59/33<br>21:59 | 06:17 19:46-20:08/22<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23 20:25-20:59/34<br>21:57 | 06:19 19:44-20:08/24<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24 20:26-20:59/33<br>21:56 | 06:21 19:44-20:09/25<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26 20:25-20:59/34<br>21:54 | 06:23 19:43-20:09/26<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:26-21:00/34<br>21:52 | 06:25 19:40-20:09/29<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29 20:25-20:59/34<br>21:51 | 06:26 19:37-20:09/32<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:26-21:00/34<br>21:49 | 06:28 19:34-20:08/34<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:25-20:59/34<br>21:47 | 06:30 19:32-20:07/35<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:24-20:59/35<br>21:45 | 06:32 19:27-20:07/40<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:22-20:59/37<br>21:44 | 06:34 19:24-20:05/41<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:21-20:58/37<br>21:42 | 06:36 19:23-20:03/40<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 865 | 959 | 705 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:52-08:05/73 | 05:02 | 05:51-07:40/109 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:50-08:04/74 | 05:01 | 05:51-07:40/109 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:48-08:03/75 | 05:00 | 05:52-07:41/109 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | 06:46-08:02/76 | 04:59 | 05:52-07:41/109 |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | 06:45-08:01/76 | 04:58 | 05:51-07:41/110 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-07:59/76 | 04:57 | 05:51-07:40/109 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-07:58/76 | 04:56 | 05:52-07:41/109 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-07:56/75 | 04:56 | 05:52-07:41/109 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-07:54/74 | 04:55 | 05:52-07:41/109 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-07:52/73 | 04:54 | 05:52-07:41/109 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:49/71 | 04:54 | 05:52-07:41/109 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:36/58 | 04:53 | 05:53-07:42/109 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | 07:37-07:45/8 | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:36/59 | 04:53 | 05:52-07:41/109 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:36/60 | 04:53 | 05:53-07:42/109 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 07:24-08:10/46 | 05:27 | 06:04-06:11/7 | 04:52 | 05:53-07:42/109 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 06:58-07:14/16 | 21:35 | 06:37-07:37/60 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 07:22-08:10/48 | 05:25 | 06:00-06:14/14 | 04:52 | 05:54-07:42/108 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 06:55-07:14/19 | 21:37 | 06:36-07:37/61 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 07:22-08:10/48 | 05:23 | 05:59-06:16/17 | 04:52 | 05:54-07:42/108 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 06:54-07:14/20 | 21:39 | 06:36-07:38/62 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 07:21-08:10/49 | 05:21 | 05:57-06:17/20 | 04:52 | 05:54-07:43/109 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 06:53-07:14/21 | 21:40 | 06:29-07:38/69 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 07:20-08:10/50 | 05:20 | 05:56-06:19/23 | 04:52 | 05:54-07:43/109 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 06:53-07:14/21 | 21:42 | 06:26-07:39/73 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 07:20-08:11/51 | 05:18 | 05:55-06:20/25 | 04:52 | 05:54-07:43/109 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 06:54-07:13/19 | 21:44 | 06:23-07:39/76 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 07:19-08:10/51 | 05:16 | 05:54-07:39/105 | 04:52 | 05:54-07:43/109 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 06:54-07:13/19 | 21:46 | | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 07:19-08:10/51 | 05:15 | 05:53-07:39/106 | 04:52 | 05:55-07:44/109 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 06:54-07:11/17 | 21:47 | | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 07:19-08:10/51 | 05:13 | 05:53-07:39/106 | 04:53 | 05:55-07:44/109 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 06:55-07:10/15 | 21:49 | | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 07:19-08:10/51 | 05:12 | 05:53-07:40/107 | 04:53 | 05:55-07:44/109 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 06:57-07:09/12 | 21:51 | | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 07:19-08:08/49 | 05:10 | 05:53-07:39/106 | 04:53 | 05:56-07:44/108 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 06:59-07:06/7 | 21:52 | | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 07:19-08:08/49 | 05:09 | 05:52-07:39/107 | 04:54 | 05:56-07:44/108 |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 07:19-08:08/49 | 05:08 | 05:51-07:40/109 | 04:54 | 05:56-07:45/109 |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-07:40/109 | 04:55 | 05:56-07:45/109 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 07:20-08:07/47 | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:19/21 | 05:05 | 05:51-07:40/109 | 04:55 | 05:57-07:45/108 |
| | 17:02 | | 20:04 | 21:05 | 07:20-08:07/47 | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-08:06/72 | 05:04 | 05:51-07:40/109 | 04:56 | 05:56-07:45/109 |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-07:40/109 | | |
| | 17:06 | | 20:08 | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 1377 | | 2693 | | 3266 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:57-07:46/109 | 05:40 06:49-07:58/69 | 06:38 07:27-08:06/39 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 05:57-07:46/109 | 05:41 06:49-08:00/71 | 06:40 07:28-08:05/37 | 07:36 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 05:58-07:47/109 | 05:43 06:50-08:03/73 | 06:41 07:29-08:03/34 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 05:57-07:46/109 | 05:45 06:51-08:05/74 | 06:43 07:31-08:01/30 | 07:40 | 07:43 | 08:40 |
| | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 05:57-07:46/109 | 05:47 06:52-08:07/75 | 06:45 07:33-07:59/26 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 05:58-07:47/109 | 05:49 06:52-08:08/76 | 06:47 07:35-07:54/19 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 05:58-07:47/109 | 05:50 06:53-08:09/76 | 06:49 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 05:58-07:47/109 | 05:52 06:55-08:11/76 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 05:58-07:47/109 | 05:54 06:55-08:11/76 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 05:58-07:48/110 | 05:56 06:57-08:12/75 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 05:59-07:49/110 | 05:58 06:59-08:13/74 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 06:00-07:49/109 | 06:00 07:01-08:14/73 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 06:00-07:49/109 | 06:02 07:03-08:13/70 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 06:00-07:49/109 | 06:04 07:06-07:25/19 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 07:27-08:14/47 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 06:00-07:49/109 | 06:05 07:13-07:18/5 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 07:27-08:15/48 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 06:01-07:49/108 | 06:07 07:27-08:15/48 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 06:01-07:49/108 | 06:09 07:25-08:15/50 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 06:01-07:49/108 | 06:11 07:25-08:15/50 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 07:04-07:12/8 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 06:02-07:49/107 | 06:13 07:25-08:15/50 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 07:02-07:15/13 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 06:02-07:49/107 | 06:15 07:25-08:15/50 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 07:01-07:16/15 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 06:04-07:50/106 | 06:17 07:25-08:15/50 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:59 | 20:56 07:00-07:17/17 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 06:04-07:49/105 | 06:19 07:24-08:14/50 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 06:58-07:17/19 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 06:05-06:31/26 | 06:21 07:24-08:14/50 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 06:33-07:49/76 | 20:52 06:57-07:17/20 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:06-06:30/24 | 06:23 07:24-08:14/50 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 06:34-07:49/75 | 20:49 06:57-07:17/20 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 06:07-06:29/22 | 06:24 07:24-08:14/50 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 06:37-07:49/72 | 20:47 06:57-07:17/20 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:08-06:27/19 | 06:26 07:25-08:13/48 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 06:41-07:48/67 | 20:44 06:57-07:17/20 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:10-06:26/16 | 06:28 07:24-08:12/48 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 06:47-07:48/61 | 20:42 06:57-07:16/19 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 06:12-06:23/11 | 06:30 07:25-08:11/46 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 06:46-07:48/62 | 20:39 06:59-07:15/16 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 06:47-07:48/61 | 06:32 07:25-08:10/45 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 07:01-07:14/13 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 06:48-07:47/59 | 06:34 07:26-08:09/43 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 07:03-07:13/10 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 06:48-07:46/58 | 06:36 07:27-08:08/41 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 07:05-07:11/6 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 3095 | 2062 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:52-08:15/23 | 07:08 | 05:55 | 05:02 21:11-21:26/15 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 07:50-08:15/25 | 07:05 | 05:53 | 05:01 21:11-21:27/16 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 07:47-08:14/27 | 07:03 | 05:51 | 05:00 21:11-21:28/17 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 07:45-08:14/29 | 07:00 | 05:48 | 04:59 21:12-21:29/17 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 07:44-08:12/28 | 06:58 | 05:46 | 04:58 21:11-21:30/19 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:11/27 | 06:55 | 05:44 | 04:57 21:11-21:31/20 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 |
| 7 | 08:59 | 08:16 | 07:12 07:44-08:06/22 | 06:53 | 05:42 | 04:56 21:12-21:32/20 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 |
| 8 | 08:58 | 08:14 | 07:09 07:44-08:01/17 | 06:50 | 05:40 | 04:56 21:11-21:33/22 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 |
| 9 | 08:57 | 08:12 | 07:07 07:46-08:00/14 | 06:48 | 05:38 | 04:55 21:12-21:34/22 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 |
| 10 | 08:57 | 08:10 | 07:04 07:47-07:57/10 | 06:45 | 05:36 | 04:54 21:12-21:34/22 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:35-05:52/17 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:35-05:53/18 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:34-05:53/19 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:34-05:54/20 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:34-05:55/21 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:55/21 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:55/21 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:56/22 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:56/22 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:56/22 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:57/22 |
| 23 | 08:42 | 07:41 08:07-08:12/5 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:57/22 |
| 24 | 08:41 | 07:39 08:05-08:14/9 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:35-05:57/22 |
| 25 | 08:39 | 07:36 08:02-08:14/12 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:57/21 |
| 26 | 08:38 | 07:34 08:00-08:16/16 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:36-05:57/21 |
| 27 | 08:36 | 07:32 07:57-08:15/18 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:57/20 |
| 28 | 08:35 | 07:29 07:55-08:16/21 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:37-05:57/20 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:38-05:57/19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:38-05:56/18 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 81 | 222 | 0 | 54 | 1083 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | September | October | | November | December |
|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 21:16-21:39/23 | 05:40 | 06:38 | 07:35 | | 07:37 | 08:35 |
| | 22:18 | 05:39-05:56/17 | 21:40 | 20:29 | 19:12 | | 16:58 | 16:10 |
| 2 | 04:57 | 21:17-21:39/22 | 05:41 | 06:40 | 07:37 | | 07:39 | 08:37 |
| | 22:18 | 05:40-05:56/16 | 21:38 | 20:27 | 19:10 | | 16:56 | 16:09 |
| 3 | 04:58 | 21:17-21:40/23 | 05:43 | 06:42 | 07:38 | 08:26-08:34/8 | 07:41 | 08:38 |
| | 22:17 | 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | 21:17-21:38/21 | 05:45 | 06:43 | 07:40 | 08:24-08:36/12 | 07:43 | 08:40 |
| | 22:17 | 05:43-05:54/11 | 21:34 | 20:22 | 19:04 | | 16:51 | 16:07 |
| 5 | 05:00 | 21:17-21:38/21 | 05:47 | 06:45 | 07:42 | 08:22-08:37/15 | 07:45 | 08:41 |
| | 22:16 | 05:44-05:52/8 | 21:32 | 20:19 | 19:02 | | 16:49 | 16:07 |
| 6 | 05:01 | 21:17-21:38/21 | 05:49 | 06:47 | 07:44 | 08:21-08:38/17 | 07:47 | 08:43 |
| | 22:15 | 05:48-05:49/1 | 21:30 | 20:17 | 18:59 | | 16:47 | 16:06 |
| 7 | 05:02 | 21:18-21:37/19 | 05:51 | 06:49 | 07:46 | 08:20-08:44/24 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | 20:14 | 18:57 | | 16:45 | 16:06 |
| 8 | 05:03 | 21:18-21:36/18 | 05:52 | 06:51 | 07:48 | 08:19-08:46/27 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | 20:12 | 18:54 | | 16:44 | 16:05 |
| 9 | 05:04 | 21:18-21:35/17 | 05:54 | 06:53 | 07:50 | 08:19-08:48/29 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | 20:09 | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | 21:19-21:35/16 | 05:56 | 06:55 | 07:52 | 08:20-08:48/28 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | 20:06 | 18:49 | | 16:40 | 16:04 |
| 11 | 05:07 | 21:19-21:34/15 | 05:58 | 06:57 | 07:54 | 08:22-08:49/27 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | 20:04 | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | 21:20-21:34/14 | 06:00 | 06:59 | 07:56 | 08:24-08:49/25 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | 20:01 | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | 21:20-21:33/13 | 06:02 | 07:00 | 07:58 | 08:26-08:48/22 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | 19:59 | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | 21:21-21:31/10 | 06:04 | 07:02 | 08:00 | 08:28-08:48/20 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | 19:56 | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | 21:21-21:30/9 | 06:06 | 07:04 | 08:02 | 08:31-08:48/17 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | 19:54 | 18:37 | | 16:31 | 16:04 |
| 16 | 05:13 | 21:22-21:30/8 | 06:07 | 07:06 | 08:04 | 08:33-08:47/14 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | 19:51 | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | 21:23-21:28/5 | 06:09 | 07:08 | 08:06 | 08:35-08:46/11 | 08:09 | 08:56 |
| | 22:04 | | 21:06 | 19:48 | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | 21:24-21:27/3 | 06:11 | 07:10 | 08:08 | 08:37-08:45/8 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | 19:46 | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | 07:12 | 08:10 | 08:39-08:42/3 | 08:13 | 08:57 |
| | 22:02 | | 21:01 | 19:43 | 18:27 | | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | 07:14 | 08:12 | | 08:15 | 08:58 |
| | 22:00 | | 20:59 | 19:41 | 18:25 | | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | 07:16 | 08:14 | | 08:17 | 08:58 |
| | 21:59 | | 20:56 | 19:38 | 18:22 | | 16:22 | 16:05 |
| 22 | 05:22 | | 06:19 | 07:17 | 08:16 | | 08:19 | 08:59 |
| | 21:57 | | 20:54 | 19:35 | 18:20 | | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | 07:19 | 08:18 | | 08:21 | 08:59 |
| | 21:56 | | 20:52 | 19:33 | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | | 06:23 | 07:21 | 08:20 | | 08:23 | 09:00 |
| | 21:54 | | 20:49 | 19:30 | 18:15 | | 16:17 | 16:06 |
| 25 | 05:27 | | 06:24 | 07:23 | 07:22 | | 08:25 | 09:00 |
| | 21:52 | | 20:47 | 19:28 | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | 07:25 | 07:24 | | 08:26 | 09:01 |
| | 21:51 | | 20:44 | 19:25 | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | | 06:28 | 07:27 | 07:26 | | 08:28 | 09:01 |
| | 21:49 | | 20:42 | 19:22 | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | | 06:30 | 07:29 | 07:28 | | 08:30 | 09:01 |
| | 21:47 | | 20:39 | 19:20 | 17:06 | | 16:13 | 16:09 |
| 29 | 05:34 | | 06:32 | 07:31 | 07:30 | | 08:32 | 09:01 |
| | 21:45 | | 20:37 | 19:17 | 17:04 | | 16:12 | 16:10 |
| 30 | 05:36 | | 06:34 | 07:33 | 07:32 | | 08:33 | 09:01 |
| | 21:44 | | 20:34 | 19:15 | 17:02 | | 16:11 | 16:11 |
| 31 | 05:38 | | 06:36 | | 07:35 | | | 09:01 |
| | 21:42 | | 20:32 | | 17:00 | | | 16:12 |
| Potential sun hours | 521 | | 465 | 383 | 326 | | 253 | 224 |
| Sum of minutes with flicker | | 344 | 0 | 0 | | 307 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27<br>17:08 | 07:26 08:39-10:58/139<br>18:07 | 07:08 10:23-11:33/70<br>20:09 07:54-09:12/78 | 05:55 06:41-08:20/99<br>21:08 | 05:02 06:31-07:40/69<br>22:02 |
| 2 | 09:00<br>16:15 | 08:25<br>17:10 | 07:24 08:38-10:58/140<br>18:09 | 07:05 10:23-11:30/67<br>20:11 07:51-09:12/81 | 05:53 06:40-08:18/98<br>21:10 | 05:00 06:31-07:39/68<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:38-10:59/141<br>18:11 | 07:03 10:25-11:28/63<br>20:13 07:48-09:12/84 | 05:50 06:39-08:16/97<br>21:12 | 05:00 06:31-07:38/67<br>22:05 |
| 4 | 09:00<br>16:17 | 08:22<br>17:14 | 07:19 08:37-10:59/142<br>18:13 | 07:00 10:26-11:24/58<br>20:15 07:46-09:11/85 | 05:48 06:38-08:14/96<br>21:14 | 04:59 06:32-07:38/66<br>22:06 |
| 5 | 08:59<br>16:19 | 08:20<br>17:16 | 07:17 08:38-10:59/141<br>18:15 | 06:57 10:28-11:22/54<br>20:17 07:43-09:11/88 | 05:46 06:37-08:13/96<br>21:16 | 04:58 06:32-07:36/64<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14 08:37-10:59/142<br>18:17 | 06:55 10:29-11:18/49<br>20:19 07:40-09:10/90 | 05:44 06:37-08:11/94<br>21:18 | 04:57 06:32-07:35/63<br>22:08 |
| 7 | 08:58<br>16:21 | 08:16 10:11-10:13/2<br>17:21 | 07:12 08:38-11:00/142<br>18:19 | 06:52 10:32-11:14/42<br>20:21 07:39-09:10/91 | 05:42 06:36-08:10/94<br>21:20 | 04:56 06:33-07:34/61<br>22:09 |
| 8 | 08:58<br>16:23 | 08:14 10:01-10:24/23<br>17:23 | 07:09 08:38-10:59/141<br>18:21 | 06:50 10:34-11:09/35<br>20:23 07:36-09:09/93 | 05:40 06:35-08:08/93<br>21:22 | 04:55 06:32-07:33/61<br>22:10 |
| 9 | 08:57<br>16:24 | 08:12 09:57-10:29/32<br>17:25 | 07:07 08:37-10:59/142<br>18:24 | 06:47 10:39-11:04/25<br>20:25 07:33-09:09/96 | 05:38 06:35-08:07/92<br>21:24 | 04:55 06:33-07:32/59<br>22:11 |
| 10 | 08:56<br>16:26 | 08:10 09:53-10:32/39<br>17:27 | 07:04 08:38-10:59/141<br>18:26 | 06:45 10:47-10:52/5<br>20:27 07:30-09:07/97 | 05:36 06:34-08:05/91<br>21:26 | 04:54 06:33-07:31/58<br>22:12 |
| 11 | 08:56<br>16:28 | 08:08 09:50-10:35/45<br>17:29 | 07:02 08:38-10:58/140<br>18:28 | 06:42 07:29-09:07/98<br>20:29 | 05:34 06:33-08:03/90<br>21:28 | 04:54 06:33-07:31/58<br>22:13 |
| 12 | 08:55<br>16:29 | 08:06 09:03-09:15/12<br>17:31 09:48-10:38/50 | 06:59 08:39-10:59/140<br>18:30 | 06:40 07:27-09:06/99<br>20:31 | 05:32 06:33-08:02/89<br>21:29 | 04:53 06:34-07:32/58<br>22:14 |
| 13 | 08:54<br>16:31 | 08:03 08:59-09:20/21<br>17:33 09:46-10:40/54 | 06:56 08:40-10:58/138<br>18:32 | 06:37 07:23-09:05/102<br>20:33 | 05:30 06:32-08:00/88<br>21:31 | 04:53 06:34-07:31/57<br>22:15 |
| 14 | 08:53<br>16:33 | 08:01 08:55-09:22/27<br>17:36 09:43-10:42/59 | 06:54 08:41-10:58/137<br>18:34 07:42-07:55/13 | 06:35 07:21-09:04/103<br>20:35 | 05:28 06:31-07:59/88<br>21:33 | 04:53 06:34-07:31/57<br>22:15 |
| 15 | 08:52<br>16:34 | 07:59 08:53-09:25/32<br>17:38 09:42-10:44/62 | 06:51 08:41-10:57/136<br>18:36 07:37-07:59/22 | 06:32 07:19-09:02/103<br>20:37 | 05:26 06:32-07:58/86<br>21:35 | 04:52 06:34-07:32/58<br>22:16 |
| 16 | 08:51<br>16:36 | 07:57 08:51-09:27/36<br>17:40 09:40-10:46/66 | 06:49 08:42-10:56/134<br>18:38 07:33-08:01/28 | 06:30 07:17-09:01/104<br>20:39 | 05:25 06:31-07:56/85<br>21:37 | 04:52 06:35-07:32/57<br>22:17 |
| 17 | 08:50<br>16:38 | 07:55 08:49-09:28/39<br>17:42 09:38-10:47/69 | 06:46 08:44-10:56/132<br>18:40 07:31-08:04/33 | 06:27 07:14-09:00/106<br>20:41 | 05:23 06:30-07:54/84<br>21:38 | 04:52 06:35-07:32/57<br>22:17 |
| 18 | 08:49<br>16:40 | 07:52 08:48-09:30/42<br>17:44 09:37-10:49/72 | 06:44 08:45-10:55/130<br>18:42 07:29-08:05/36 | 06:25 07:11-08:58/107<br>20:43 | 05:21 06:30-07:53/83<br>21:40 | 04:52 06:35-07:32/57<br>22:18 |
| 19 | 08:47<br>16:42 | 07:50 08:47-09:31/44<br>17:46 09:36-10:50/74 | 06:41 08:48-09:15/27 07:27-08:07/40<br>18:44 09:18-10:54/96 | 06:23 07:10-08:56/106<br>20:45 | 05:19 06:30-07:52/82<br>21:42 | 04:52 06:36-07:32/56<br>22:18 |
| 20 | 08:46<br>16:44 | 07:48 08:45-09:32/47<br>17:48 09:34-10:51/77 | 06:39 08:51-09:11/20 07:24-08:08/44<br>18:46 09:18-10:53/95 | 06:20 06:59-08:55/116<br>20:47 | 05:18 06:30-07:51/81<br>21:44 | 04:52 06:36-07:32/56<br>22:18 |
| 21 | 08:45<br>16:46 | 07:45 08:44-10:52/128<br>17:50 | 06:36 08:56-09:04/8 07:21-08:08/47<br>18:48 09:17-10:52/95 | 06:18 06:54-08:52/118<br>20:49 | 05:16 06:30-07:51/81<br>21:45 | 04:52 06:36-07:33/57<br>22:19 |
| 22 | 08:43<br>16:47 | 07:43 08:43-10:53/130<br>17:53 | 06:33 09:18-10:51/93<br>18:50 07:19-08:10/51 | 06:15 06:52-08:50/118<br>20:51 | 05:15 06:30-07:49/79<br>21:47 | 04:52 06:36-07:32/56<br>22:19 |
| 23 | 08:42<br>16:49 | 07:41 08:42-10:54/132<br>17:55 | 06:31 09:18-10:49/91<br>18:52 07:17-08:10/53 | 06:13 06:50-08:47/117<br>20:53 | 05:13 06:30-07:48/78<br>21:49 | 04:52 06:37-07:33/56<br>22:19 |
| 24 | 08:41<br>16:51 | 07:38 08:41-10:55/134<br>17:57 | 06:28 09:19-10:49/90<br>18:54 07:14-08:11/57 | 06:11 06:48-08:43/115<br>20:55 | 05:12 06:30-07:47/77<br>21:50 | 04:53 06:36-07:33/57<br>22:19 |
| 25 | 08:39<br>16:53 | 07:36 08:41-10:56/135<br>17:59 | 06:26 09:19-10:47/88<br>18:55 07:11-08:11/60 | 06:08 08:31-08:35/4<br>20:57 06:46-08:30/104 | 05:10 06:29-07:45/76<br>21:52 | 04:53 06:37-07:34/57<br>22:19 |
| 26 | 08:37<br>16:55 | 07:34 08:39-10:56/137<br>18:01 | 06:23 09:18-10:45/87<br>18:57 07:08-08:10/62 | 06:06 06:45-08:29/104<br>20:59 | 05:09 06:30-07:44/74<br>21:53 | 04:54 06:37-07:34/57<br>22:19 |
| 27 | 08:36<br>16:58 | 07:31 08:39-10:57/138<br>18:03 | 06:21 09:19-10:44/85<br>18:59 07:07-08:11/64 | 06:04 06:44-08:27/103<br>21:01 | 05:07 06:30-07:44/74<br>21:55 | 04:54 06:37-07:34/57<br>22:19 |
| 28 | 08:34<br>17:00 | 07:29 08:38-10:57/139<br>18:05 | 06:18 09:20-10:42/82<br>19:01 07:04-08:11/67 | 06:01 06:43-08:26/103<br>21:03 | 05:06 06:30-07:43/73<br>21:56 | 04:55 06:37-07:35/58<br>22:19 |
| 29 | 08:33<br>17:02 | | 07:15 10:21-11:40/79<br>20:03 08:01-09:12/71 | 05:59 06:43-08:24/101<br>21:04 | 05:05 06:30-07:42/72<br>21:58 | 04:55 06:38-07:35/57<br>22:18 |
| 30 | 08:31<br>17:04 | | 07:13 10:21-11:38/77<br>20:05 07:58-09:12/74 | 05:57 06:42-08:22/100<br>21:06 | 05:04 06:31-07:42/71<br>21:59 | 04:56 06:37-07:35/58<br>22:18 |
| 31 | 08:29<br>17:06 | | 07:10 10:22-11:36/74<br>20:07 07:57-09:12/75 | | 05:03 06:31-07:41/70<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 2097 | 4582 | 3482 | 2631 | 1777 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 06:38-07:35/57<br>22:18 | 05:39 06:43-08:13/90<br>21:39 | 06:38 07:28-09:06/98<br>20:29 | 07:34 09:19-11:38/139<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57 06:38-07:36/58<br>22:17 | 05:41 06:43-08:14/91<br>21:38 | 06:39 10:46-10:51/5<br>20:27 07:29-09:06/97 | 07:36 09:17-11:37/140<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58 06:37-07:36/59<br>22:17 | 05:43 06:44-08:16/92<br>21:36 | 06:41 10:37-11:02/25<br>20:24 07:31-09:07/96 | 07:38 09:17-11:37/140<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59 06:38-07:37/59<br>22:16 | 05:45 06:45-08:18/93<br>21:34 | 06:43 10:32-11:07/35<br>20:22 07:34-09:07/93 | 07:40 09:16-11:37/141<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00 06:38-07:39/61<br>22:16 | 05:47 06:45-08:18/93<br>21:32 | 06:45 10:28-11:10/42<br>20:19 07:35-09:06/91 | 07:42 09:15-11:36/141<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01 06:38-07:41/63<br>22:15 | 05:48 06:46-08:20/94<br>21:30 | 06:47 10:25-11:14/49<br>20:16 07:36-09:06/90 | 07:44 09:14-11:36/142<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02 06:38-07:42/64<br>22:14 | 05:50 06:47-08:22/95<br>21:27 | 06:49 10:23-11:17/54<br>20:14 07:38-09:06/88 | 07:46 09:14-11:35/141<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03 06:38-07:43/65<br>22:13 | 05:52 06:48-08:24/96<br>21:25 | 06:51 10:21-11:19/58<br>20:11 07:41-09:06/85 | 07:48 09:13-11:35/142<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04 06:38-07:45/67<br>22:13 | 05:54 06:48-08:24/96<br>21:23 | 06:53 10:19-11:22/63<br>20:09 07:42-09:06/84 | 07:50 09:13-11:34/141<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05 06:38-07:46/68<br>22:12 | 05:56 06:49-08:26/97<br>21:21 | 06:55 10:17-11:23/66<br>20:06 07:43-09:05/82 | 07:52 09:12-11:33/141<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07 06:38-07:47/69<br>22:11 | 05:58 06:50-08:27/97<br>21:19 | 06:56 10:15-11:25/70<br>20:04 07:46-09:04/78 | 07:54 09:12-11:33/141<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-07:49/70<br>22:10 | 06:00 06:49-08:28/99<br>21:17 | 06:58 10:14-11:27/73<br>20:01 07:48-09:04/76 | 07:56 09:12-11:32/140<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-07:50/71<br>22:09 | 06:02 06:50-08:30/100<br>21:15 | 07:00 10:12-11:29/77<br>19:58 07:49-09:03/74 | 07:58 09:12-11:31/139<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-07:50/71<br>22:08 | 06:03 06:50-08:32/102<br>21:12 | 07:02 10:11-11:30/79<br>19:56 07:51-09:03/72 | 08:00 09:12-11:30/138<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12 06:39-07:51/72<br>22:06 | 06:05 06:51-08:34/103<br>21:10 | 07:04 10:10-11:32/82<br>19:53 07:53-09:02/69 | 08:02 09:12-11:29/137<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13 06:40-07:53/73<br>22:05 | 06:07 06:52-08:35/103<br>21:08 | 07:06 10:08-11:32/84<br>19:51 07:55-09:00/65 | 08:04 09:12-11:28/136<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-07:53/74<br>22:04 | 06:09 06:52-08:35/103<br>21:05 | 07:08 10:07-11:33/86<br>19:48 07:56-08:59/63 | 08:06 09:12-11:27/135<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-07:54/75<br>22:03 | 06:11 06:53-08:44/111<br>21:03 | 07:10 10:06-11:34/88<br>19:45 07:58-08:58/60 | 08:08 09:13-11:26/133<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-07:56/76<br>22:01 | 06:13 06:54-08:50/116<br>21:01 | 07:11 10:05-11:35/90<br>19:43 08:00-08:57/57 | 08:10 09:14-11:25/131<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-07:57/77<br>22:00 | 06:15 06:56-08:53/117<br>20:58 | 07:13 10:05-11:36/91<br>19:40 08:03-08:56/53 | 08:12 09:14-11:24/130<br>18:25 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-07:58/79<br>21:58 | 06:17 06:57-08:55/118<br>20:56 | 07:15 10:04-11:36/92<br>19:38 08:04-08:55/51 | 08:14 09:15-10:03/48<br>18:22 10:04-11:22/78 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-08:00/80<br>21:57 | 06:19 06:59-08:57/118<br>20:54 | 07:17 10:03-11:37/94<br>19:35 08:06-08:54/48 | 08:16 09:15-10:02/47<br>18:20 10:05-11:21/76 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-08:00/80<br>21:55 | 06:20 07:04-08:59/115<br>20:51 | 07:19 09:37-09:54/17 08:08-08:53/45<br>19:32 10:02-11:38/96 | 08:18 09:16-10:00/44<br>18:18 10:06-11:19/73 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-08:02/82<br>21:54 | 06:22 07:14-09:00/106<br>20:49 | 07:21 09:32-09:57/25 08:10-08:50/40<br>19:30 10:01-11:37/96 | 08:20 09:18-10:00/42<br>18:15 10:08-11:18/70 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-08:03/83<br>21:52 | 06:24 07:15-09:02/107<br>20:46 | 07:23 09:29-11:37/128<br>19:27 08:11-08:49/38 | 07:22 08:20-08:58/38<br>17:13 09:09-10:17/68 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-08:04/83<br>21:50 | 06:26 07:17-09:02/105<br>20:44 | 07:25 09:26-11:38/132<br>19:25 08:12-08:47/35 | 07:24 08:21-08:56/35<br>17:11 09:10-10:15/65 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-08:06/84<br>21:49 | 06:28 07:19-09:03/104<br>20:42 | 07:27 09:24-11:38/134<br>19:22 08:14-08:44/30 | 07:26 08:23-08:54/31<br>17:08 09:12-10:13/61 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-08:07/86<br>21:47 | 06:30 07:21-09:04/103<br>20:39 | 07:29 09:23-11:38/135<br>19:20 08:17-08:41/24 | 07:28 08:25-08:51/26<br>17:06 09:13-10:11/58 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-08:09/87<br>21:45 | 06:32 07:22-09:05/103<br>20:37 | 07:31 09:21-11:38/137<br>19:17 08:20-08:37/17 | 07:30 08:29-08:48/19<br>17:04 09:16-10:09/53 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-08:09/87<br>21:43 | 06:34 07:24-09:06/102<br>20:34 | 07:32 09:20-11:38/138<br>19:14 | 07:32 08:34-08:43/9<br>17:02 09:18-10:07/49 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-08:11/88<br>21:41 | 06:36 07:26-09:05/99<br>20:32 | | 07:34 09:20-10:04/44<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2268 | 3168 | 4340 | 3802 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 15:20-15:51/31 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 15:19-15:51/32 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 15:19-15:52/33 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 15:19-15:52/33 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 15:19-15:52/33 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 15:18-15:52/34 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:19-15:53/34 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 15:19-15:52/33 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:19-15:52/33 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:19-15:51/32 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:21-15:52/31 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:21-15:51/30 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:22-15:50/28 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:22-15:50/28 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:24-15:50/26 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:25-15:49/24 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:26-15:48/22 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:28-15:46/18 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:29-15:44/15 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 15:21-15:51/30 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 435 | 560 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 8 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27<br>18:07 | 07:08 19:24-19:42/18<br>20:10 | 05:55<br>21:09 | 05:02 05:37-05:57/20<br>22:02 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24<br>18:09 | 07:05 19:24-19:44/20<br>20:12 | 05:53<br>21:11 | 05:01 05:37-05:59/22<br>22:04 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22<br>18:12 | 07:03 19:23-19:45/22<br>20:13 | 05:51<br>21:13 | 05:00 05:36-06:00/24<br>22:05 |
| 4 | 09:00<br>16:18 | 08:22<br>17:15 | 07:19<br>18:14 | 07:00 19:23-19:46/23<br>20:15 | 05:49<br>21:14 | 04:59 05:36-06:00/24<br>22:06 |
| 5 | 09:00<br>16:19 | 08:20<br>17:17 | 07:17<br>18:16 | 06:58 19:22-19:45/23<br>20:17 | 05:46<br>21:16 | 04:58 05:35-06:01/26<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18<br>17:19 | 07:14<br>18:18 | 06:55 19:22-19:45/23<br>20:19 | 05:44<br>21:18 | 04:57 05:35-06:02/27<br>22:08 |
| 7 | 08:59<br>16:22 | 08:16<br>17:21 | 07:12<br>18:20 | 06:53 19:22-19:44/22<br>20:21 | 05:42<br>21:20 | 04:57 05:35-06:02/27<br>22:09 |
| 8 | 08:58<br>16:23 | 08:14<br>17:23 | 07:09<br>18:22 | 06:50 19:23-19:43/20<br>20:23 | 05:40<br>21:22 | 04:56 05:35-06:03/28<br>22:10 |
| 9 | 08:57<br>16:25 | 08:12<br>17:25 | 07:07<br>18:24 | 06:48 19:23-19:42/19<br>20:25 | 05:38<br>21:24 | 04:55 05:34-06:03/29<br>22:11 |
| 10 | 08:57<br>16:26 | 08:10<br>17:27 | 07:04<br>18:26 | 06:45 19:24-19:40/16<br>20:27 | 05:36<br>21:26 | 04:55 05:35-06:04/29<br>22:12 |
| 11 | 08:56<br>16:28 | 08:08<br>17:29 | 07:02<br>18:28 | 06:43 19:25-19:38/13<br>20:29 | 05:34<br>21:28 | 04:54 05:34-06:04/30<br>22:13 |
| 12 | 08:55<br>16:30 | 08:06<br>17:32 | 06:59<br>18:30 | 06:40 19:29-19:34/5<br>20:31 | 05:32<br>21:30 | 04:54 05:34-06:05/31<br>22:14 |
| 13 | 08:54<br>16:31 | 08:04<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53 05:35-06:05/30<br>22:15 |
| 14 | 08:53<br>16:33 | 08:01<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53 05:34-06:05/31<br>22:15 |
| 15 | 08:52<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53 05:34-06:05/31<br>22:16 |
| 16 | 08:51<br>16:37 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52 05:34-06:06/32<br>22:17 |
| 17 | 08:50<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52 05:35-06:06/31<br>22:17 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52 05:35-06:06/31<br>22:18 |
| 19 | 08:48<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52 05:35-06:07/32<br>22:18 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52 05:35-06:07/32<br>22:18 |
| 21 | 08:45<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:17<br>21:46 | 04:52 05:36-06:08/32<br>22:19 |
| 22 | 08:44<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:53 05:36-06:08/32<br>22:19 |
| 23 | 08:42<br>16:50 | 07:41<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53 05:36-06:08/32<br>22:19 |
| 24 | 08:41<br>16:52 | 07:39<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53 05:36-06:08/32<br>22:19 |
| 25 | 08:39<br>16:54 | 07:36<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 | 05:11<br>21:52 | 04:53 05:37-06:08/31<br>22:19 |
| 26 | 08:38<br>16:56 | 07:34<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54 05:36-06:08/32<br>22:19 |
| 27 | 08:36<br>16:58 | 07:32<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54 05:37-06:09/32<br>22:19 |
| 28 | 08:34<br>17:00 | 07:29<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:07 05:43-05:51/8<br>21:57 | 04:55 05:37-06:08/31<br>22:19 |
| 29 | 08:33<br>17:02 | | 07:16 19:30-19:36/6<br>20:04 | 06:00<br>21:05 | 05:05 05:41-05:54/13<br>21:58 | 04:56 05:38-06:09/31<br>22:19 |
| 30 | 08:31<br>17:04 | | 07:13 19:27-19:38/11<br>20:06 | 05:57<br>21:07 | 05:04 05:39-05:55/16<br>22:00 | 04:56 05:39-06:09/30<br>22:18 |
| 31 | 08:29<br>17:06 | | 07:11 19:26-19:40/14<br>20:08 | | 05:03 05:38-05:56/18<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 0 | 31 | 224 | 55 | 882 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 8 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:38-06:08/30 | 05:40 | 06:38 19:24-19:37/13 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:39-06:09/30 | 05:42 | 06:40 19:22-19:38/16 | 07:37 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:40-06:09/29 | 05:43 | 06:42 19:21-19:40/19 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:40-06:09/29 | 05:45 | 06:44 19:20-19:40/20 | 07:40 | 07:43 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:41-06:09/28 | 05:47 | 06:45 19:19-19:41/22 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:41-06:08/27 | 05:49 | 06:47 19:17-19:40/23 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:41-06:07/26 | 05:51 | 06:49 19:17-19:40/23 | 07:46 | 07:49 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:42-06:07/25 | 05:53 | 06:51 19:17-19:40/23 | 07:48 | 07:51 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:44-06:08/24 | 05:54 | 06:53 19:17-19:40/23 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:44-06:07/23 | 05:56 | 06:55 19:17-19:38/21 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:06/21 | 05:58 | 06:57 19:16-19:34/18 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:46-06:05/19 | 06:00 | 06:59 19:17-19:32/15 | 07:56 | 07:59 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:47-06:04/17 | 06:02 | 07:00 19:18-19:29/11 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:48-06:03/15 | 06:04 | 07:02 19:20-19:27/7 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:51-06:02/11 | 06:06 | 07:04 19:23-19:24/1 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:54-05:59/5 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 19:29-19:35/6 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 359 | 6 | 255 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 17:07-17:35/28 | 07:08 07:32-07:46/14 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 17:07-17:36/29 | 07:05 07:30-07:48/18 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 17:06-17:35/29 | 07:03 07:27-07:49/22 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 17:06-17:35/29 | 07:00 07:26-07:50/24 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 17:06-17:35/29 | 06:58 07:24-07:50/26 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 17:06-17:34/28 | 06:55 07:24-07:51/27 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 17:06-17:34/28 | 06:53 07:23-07:51/28 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 17:06-17:33/27 | 06:50 07:23-07:51/28 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 17:07-17:32/25 | 06:48 07:22-07:50/28 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 17:08-17:31/23 | 06:45 07:22-07:50/28 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 17:09-17:29/20 | 06:43 07:22-07:49/27 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 17:11-17:27/16 | 06:40 07:22-07:49/27 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:14-17:23/9 | 06:38 07:22-07:47/25 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:23-07:46/23 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 07:24-07:45/21 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:25-07:43/18 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 07:27-07:41/14 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 07:30-07:38/8 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 17:18-17:26/8 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 17:14-17:28/14 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:54 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 17:11-17:33/22 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 17:09-17:34/25 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 17:09-17:35/26 | 06:18 | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:10 07:35-07:44/9 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 113 | 329 | 406 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | | 06:38 | 07:21-07:48/27 | 07:35 | 17:51-18:05/14 | 07:37 | 08:35 |
| | 22:18 | 21:40 | | 20:29 | | 19:12 | | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | | 06:40 | 07:20-07:48/28 | 07:37 | 17:49-18:07/18 | 07:39 | 08:37 |
| | 22:17 | 21:38 | | 20:27 | | 19:10 | | 16:56 | 16:09 |
| 3 | 04:59 | 05:43 | | 06:42 | 07:20-07:48/28 | 07:38 | 17:47-18:08/21 | 07:41 | 08:38 |
| | 22:17 | 21:36 | | 20:24 | | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | | 06:43 | 07:20-07:48/28 | 07:40 | 17:45-18:09/24 | 07:43 | 08:40 |
| | 22:16 | 21:34 | | 20:22 | | 19:04 | | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | | 06:45 | 07:20-07:48/28 | 07:42 | 17:44-18:10/26 | 07:45 | 08:41 |
| | 22:16 | 21:32 | | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | | 06:47 | 07:19-07:46/27 | 07:44 | 17:43-18:10/27 | 07:47 | 08:43 |
| | 22:15 | 21:30 | | 20:17 | | 18:59 | | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | | 06:49 | 07:19-07:45/26 | 07:46 | 17:42-18:10/28 | 07:49 | 08:44 |
| | 22:14 | 21:28 | | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | | 06:51 | 07:20-07:44/24 | 07:48 | 17:41-18:10/29 | 07:51 | 08:45 |
| | 22:14 | 21:26 | | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | | 06:53 | 07:21-07:43/22 | 07:50 | 17:41-18:10/29 | 07:53 | 08:47 |
| | 22:13 | 21:23 | | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | | 06:55 | 07:23-07:42/19 | 07:52 | 17:41-18:10/29 | 07:55 | 08:48 |
| | 22:12 | 21:21 | | 20:06 | | 18:49 | | 16:40 | 16:05 |
| 11 | 05:07 | 05:58 | | 06:57 | 07:25-07:40/15 | 07:54 | 17:40-18:09/29 | 07:57 | 08:49 |
| | 22:11 | 21:19 | | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | | 06:59 | 07:26-07:36/10 | 07:56 | 17:40-18:09/29 | 07:59 | 08:50 |
| | 22:10 | 21:17 | | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | | 07:00 | | 07:58 | 17:41-18:08/27 | 08:01 | 08:52 |
| | 22:09 | 21:15 | | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | | 07:02 | | 08:00 | 17:41-18:07/26 | 08:03 | 08:53 |
| | 22:08 | 21:12 | | 19:56 | | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | | 07:04 | | 08:02 | 17:42-18:05/23 | 08:05 | 08:54 |
| | 22:07 | 21:10 | | 19:53 | | 18:37 | | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | | 07:06 | | 08:04 | 17:43-18:03/20 | 08:07 | 08:54 |
| | 22:05 | 21:08 | | 19:51 | | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | | 07:08 | | 08:06 | 17:45-18:02/17 | 08:09 | 08:55 |
| | 22:04 | 21:06 | | 19:48 | | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | | 07:10 | | 08:08 | 17:47-17:59/12 | 08:11 | 08:56 |
| | 22:03 | 21:03 | | 19:46 | | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | | 07:12 | | 08:10 | 17:52-17:55/3 | 08:13 | 08:57 |
| | 22:01 | 21:01 | | 19:43 | | 18:27 | | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | | 07:14 | | 08:12 | | 08:15 | 08:58 |
| | 22:00 | 20:59 | | 19:41 | | 18:25 | | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 08:58 |
| | 21:58 | 20:56 | | 19:38 | | 18:23 | | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | | 07:17 | | 08:16 | | 08:19 | 08:59 |
| | 21:57 | 20:54 | | 19:35 | | 18:20 | | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | | 07:19 | | 08:18 | | 08:21 | 08:59 |
| | 21:55 | 20:51 | | 19:33 | | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | | 07:21 | | 08:20 | | 08:23 | 09:00 |
| | 21:54 | 20:49 | | 19:30 | | 18:16 | | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:32-07:41/9 | 07:23 | | 07:22 | | 08:25 | 09:00 |
| | 21:52 | 20:47 | | 19:28 | | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:29-07:44/15 | 07:25 | | 07:24 | | 08:26 | 09:00 |
| | 21:50 | 20:44 | | 19:25 | | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:26-07:45/19 | 07:27 | | 07:26 | | 08:28 | 09:01 |
| | 21:49 | 20:42 | | 19:22 | | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:25-07:46/21 | 07:29 | | 07:28 | | 08:30 | 09:01 |
| | 21:47 | 20:39 | | 19:20 | | 17:07 | | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:24-07:47/23 | 07:31 | | 07:30 | | 08:32 | 09:01 |
| | 21:45 | 20:37 | | 19:17 | | 17:04 | | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:23-07:48/25 | 07:33 | 17:56-18:00/4 | 07:32 | | 08:33 | 09:01 |
| | 21:43 | 20:34 | | 19:15 | | 17:02 | | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 | 07:22-07:49/27 | | | 07:34 | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | | | 16:13 |
| Potential sun hours | 521 | 465 | | 383 | | 326 | | 253 | 224 |
| Sum of minutes with flicker | 0 | 139 | | 286 | | 431 | | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 18:30-19:17/47 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 18:30-19:10/40 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 18:30-19:17/47 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 18:29-19:10/41 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 18:30-19:16/46 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 18:28-19:11/43 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 18:30-19:17/47 | 05:49 | 04:59 | 04:59 | 05:45 | 06:43 18:27-19:11/44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 18:29-19:16/47 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 18:27-19:12/45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 18:30-19:16/46 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 18:25-19:11/46 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 18:29-19:15/46 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 18:24-19:11/47 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 18:30-19:14/44 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 18:24-19:11/47 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 18:30-19:13/43 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 18:24-19:11/47 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 18:31-19:12/41 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 18:24-19:10/46 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 18:31-19:11/40 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 18:23-19:09/46 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 18:32-19:10/38 | 05:32 | 04:54 | 05:08 | 06:00 06:56-07:01/5 | 06:59 18:23-19:09/46 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 18:33-19:08/35 | 05:30 | 04:53 | 05:09 | 06:02 06:53-07:04/11 | 07:00 18:23-19:08/45 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 18:34-19:07/33 | 05:29 | 04:53 | 05:11 | 06:04 06:51-07:05/14 | 07:02 18:23-19:07/44 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 18:36-19:05/29 | 05:27 | 04:53 | 05:12 | 06:06 06:50-07:06/16 | 07:04 18:23-19:07/44 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 18:37-19:03/26 | 05:25 | 04:52 | 05:14 | 06:07 06:49-07:07/18 | 07:06 18:24-19:06/42 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 06:55-06:57/2 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 18:40-19:00/20 | 05:23 | 04:52 | 05:15 | 06:09 06:48-07:08/20 | 07:08 18:23-19:04/41 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 06:53-07:00/7 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 18:43-18:56/13 | 05:21 | 04:52 | 05:16 | 06:11 06:47-07:07/20 | 07:10 18:24-19:02/38 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 06:51-07:01/10 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:48-07:01/13 | 05:20 | 04:52 | 05:18 | 06:13 06:47-07:08/21 | 07:12 18:25-19:01/36 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 17:49-18:06/17 | 06:20 06:46-07:02/16 | 05:18 | 04:52 | 05:19 | 06:15 06:46-07:08/22 | 07:14 18:26-18:59/33 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 17:46-18:09/23 | 06:18 06:44-07:03/19 | 05:16 | 04:52 | 05:21 | 06:17 06:47-07:08/21 | 07:16 18:28-18:57/29 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 17:43-18:11/28 | 06:16 06:41-07:02/21 | 05:15 | 04:53 | 05:23 | 06:19 06:49-07:07/18 | 07:17 18:30-18:55/25 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:40-18:12/32 | 06:13 06:41-07:02/21 | 05:13 | 04:53 | 05:24 | 06:21 06:50-07:06/16 | 07:19 18:32-18:52/20 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 17:39-18:14/35 | 06:11 06:41-07:02/21 | 05:12 | 04:53 | 05:26 | 06:23 06:52-07:05/13 | 07:21 18:37-18:46/9 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 17:37-18:15/38 | 06:09 06:41-07:02/21 | 05:11 | 04:53 | 05:28 | 06:25 18:46-19:00/14 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 06:54-07:04/10 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 17:36-18:16/40 | 06:06 06:41-07:00/19 | 05:09 | 04:54 | 05:29 | 06:26 18:43-19:03/20 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 06:56-07:02/6 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 17:34-18:16/42 | 06:04 06:41-07:00/19 | 05:08 | 04:54 | 05:31 | 06:28 18:39-19:05/26 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 06:57-06:59/2 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 17:33-18:16/43 | 06:02 06:42-06:59/17 | 05:06 | 04:55 | 05:33 | 06:30 18:37-19:06/29 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 18:33-19:17/44 | 05:59 06:44-06:57/13 | 05:05 | 04:56 | 05:34 | 06:32 18:35-19:08/33 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 18:31-19:17/46 | 05:57 06:45-06:55/10 | 05:04 | 04:56 | 05:36 | 06:34 18:34-19:09/35 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 18:31-19:17/46 | | 05:03 | | 05:38 | 06:36 18:32-19:10/38 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 434 | 917 | 0 | 0 | 0 | 428 | 944 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | | 07:08 | 07:32-07:39/7 | 05:55 | | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 07:30-07:38/8 | 05:53 | 06:20-06:22/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:10 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:27-07:36/9 | 05:50 | 06:18-06:24/6 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:25-07:33/8 | 05:48 | 06:16-06:24/8 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:58 | 07:22-07:32/10 | 05:46 | 06:14-06:25/11 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:20-07:31/11 | 05:44 | 06:12-06:25/13 | 04:57 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 07:17-07:28/11 | 05:42 | 06:10-06:25/15 | 04:56 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:17-07:23/6 | 05:40 | 06:08-06:25/17 | 04:55 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 05:38 | 06:07-06:25/18 | 04:55 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | | 05:36 | 06:07-06:24/17 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 05:34 | 06:07-06:24/17 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 05:32 | 06:08-06:24/16 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | | 05:30 | 06:08-06:23/15 | 04:53 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | | 21:31 | | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 05:28 | 06:09-06:22/13 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:15 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 05:26 | 06:11-06:21/10 | 04:52 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 05:25 | 06:12-06:19/7 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 05:23 | | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 05:21 | | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | | 22:18 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 05:19 | | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 05:18 | | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 05:16 | | 04:52 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | | 21:46 | | 22:19 |
| 22 | 08:44 | 07:43 | 06:33 | | 06:15 | | 05:15 | | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | | 05:13 | | 04:52 |
| | 16:49 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | | 05:12 | | 04:53 |
| | 16:51 | 17:57 | 18:54 | | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | | 06:08 | | 05:10 | | 04:53 |
| | 16:53 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | | 06:06 | | 05:09 | | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | | 06:04 | | 05:07 | | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:01 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:15 | | 05:59 | | 05:05 | | 04:55 |
| | 17:02 | | 20:03 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:37-07:40/3 | 05:57 | | 05:04 | | 04:56 |
| | 17:04 | | 20:05 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:35-07:40/5 | | | 05:03 | | |
| | 17:06 | | 20:07 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 8 | | 70 | | 185 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:18-06:34/16 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:17-06:34/17 | 06:39 | | 07:36 | 07:39 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:17-06:35/18 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:17-06:35/18 | 06:43 | 07:14-07:20/6 | 07:40 | 07:43 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:18-06:34/16 | 06:45 | 07:14-07:25/11 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:20-06:34/14 | 06:47 | 07:15-07:26/11 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:22-06:34/12 | 06:49 | 07:17-07:27/10 | 07:46 | 07:49 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 05:03 | | 05:52 | 06:24-06:34/10 | 06:51 | 07:19-07:27/8 | 07:48 | 07:51 | 08:45 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:25-06:33/8 | 06:53 | 07:21-07:30/9 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:27-06:32/5 | 06:55 | 07:23-07:32/9 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:29-06:30/1 | 06:56 | 07:24-07:31/7 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 07:26-07:31/5 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 07:28-07:31/3 | 07:58 | 08:01 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 21:52 | | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:25-06:27/2 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:22-06:30/8 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:20-06:32/12 | 06:32 | | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:19-06:32/13 | 06:34 | | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:18-06:33/15 | 06:36 | | | | 07:34 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 50 | | 135 | | 79 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 06:32-06:38/6 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 06:39-06:47/8 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 06:37-06:48/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 06:36-06:49/13 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 06:36-06:49/13 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 06:38-06:50/12 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 06:39-06:49/10 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 06:41-06:49/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 06:43-06:49/6 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 06:45-06:48/3 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39-06:42/3 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 06:37-06:43/6 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:34-06:42/8 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:32-06:42/10 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:30-06:42/12 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:28-06:42/14 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:29-06:41/12 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:30-06:40/10 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 75 | 6 | 0 | 0 | 84 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 07:06-07:11/5 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 07:08-07:09/1 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 07:10-07:11/1 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:07-07:12/5 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05-07:13/8 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 07:02-07:13/11 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:00-07:14/14 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 06:57-07:13/16 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:56-07:13/17 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 06:56-07:13/17 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:08-07:10/2 | 06:25 06:56-07:11/15 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:06-07:10/4 | 06:23 06:57-07:10/13 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 07:42-07:49/7 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:03-07:09/6 | 06:20 06:59-07:09/10 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 07:41-07:50/9 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:01-07:08/7 | 06:18 07:01-07:04/3 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 07:43-07:51/8 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 06:58-07:05/7 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 07:05-07:10/5 | 07:17 07:45-07:52/7 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 06:55-07:04/9 | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 07:02-07:13/11 | 07:19 07:47-07:53/6 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 06:55-07:03/8 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 07:01-07:14/13 | 07:21 07:49-07:54/5 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 07:00-07:15/15 | 07:23 07:51-07:53/2 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 06:58-07:15/17 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 06:57-07:15/18 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 06:59-07:15/16 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 07:01-07:15/14 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 07:03-07:14/11 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 07:04-07:12/8 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 43 | 130 | 0 | 0 | 0 | 128 | 50 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:27-10:41/14 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 10:29-10:41/12 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 10:30-10:40/10 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 10:32-10:40/8 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 10:34-10:37/3 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | 10:22-10:24/2 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | 10:19-10:27/8 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | 10:19-10:29/10 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | 10:18-10:30/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | 10:18-10:31/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | 10:18-10:33/15 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | 10:18-10:33/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | 10:18-10:34/16 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:18-10:35/17 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:18-10:36/18 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:19-10:37/18 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:39-10:43/4 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | 10:19-10:37/18 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:38-10:43/5 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | 10:19-10:37/18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:20-10:44/24 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:19-10:44/25 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:20-10:45/25 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:21-10:45/24 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:41-10:46/5 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | 10:22-10:40/18 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:42-10:46/4 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | 10:22-10:40/18 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:43-10:45/2 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | 10:23-10:40/17 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:23-10:41/18 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 | 10:24-10:41/17 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | 10:25-10:41/16 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | 10:26-10:41/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | 10:27-10:42/15 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 | 08:24 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:05-10:06/1 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:04-10:08/4 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:04-10:10/6 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:04-10:11/7 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:04-10:11/7 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:04-10:12/8 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:04-10:12/8 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:05-10:13/8 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:05-10:13/8 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:06-10:14/8 |
| | 16:52 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:07-10:14/7 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:08-10:14/6 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:09-10:13/4 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 | 10:10-10:13/3 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:14 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 20:14-20:15/1 | 05:01 | 04:56 | 05:39 | 06:37 19:28-19:55/27 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:28-19:54/26 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:28-19:54/26 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:38-19:47/9 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:28-19:52/24 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:36-19:49/13 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:31-19:45/14 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:31-19:55/24 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:33-19:42/9 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 19:30-19:56/26 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 19:29-19:55/26 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 | 06:42 19:29-19:56/27 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 19:28-19:55/27 | 05:32 | 04:53 | 05:08 | 06:00 20:21-20:26/5 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 19:28-19:55/27 | 05:30 | 04:53 | 05:09 | 06:01 20:18-20:29/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 19:29-19:55/26 | 05:28 | 04:52 | 05:10 | 06:03 20:17-20:30/13 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 19:28-19:54/26 | 05:26 | 04:52 | 05:12 | 06:05 20:16-20:31/15 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 19:29-19:53/24 | 05:24 | 04:52 | 05:13 | 06:07 20:14-20:31/17 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 19:29-19:52/23 | 05:23 | 04:52 | 05:15 | 06:09 20:13-20:32/19 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 19:30-19:51/21 | 05:21 | 04:52 | 05:16 | 06:11 20:13-20:32/19 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 20:11-20:16/5 | 05:19 | 04:52 | 05:18 | 06:13 20:13-20:30/17 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 19:31-19:50/19 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 20:09-20:17/8 | 05:18 | 04:52 | 05:19 | 06:15 20:12-20:27/15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 19:32-19:47/15 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 20:08-20:19/11 | 05:16 | 04:52 | 05:21 | 06:17 20:12-20:25/13 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 19:35-19:44/9 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 20:08-20:21/13 | 05:15 | 04:52 | 05:22 | 06:18 20:13-20:23/10 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 19:39-19:50/11 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 20:08-20:23/15 | 05:13 | 04:52 | 05:24 | 06:20 20:14-20:21/7 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 19:37-19:52/15 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 20:07-20:24/17 | 05:12 | 04:53 | 05:25 | 06:22 20:15-20:19/4 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 19:35-19:54/19 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 20:07-20:25/18 | 05:10 | 04:53 | 05:27 | 06:24 19:32-19:54/22 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 20:07-20:25/18 | 05:09 | 04:53 | 05:29 | 06:26 19:31-19:55/24 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 20:08-20:24/16 | 05:07 | 04:54 | 05:31 | 06:28 19:31-19:55/24 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 20:08-20:24/16 | 05:06 | 04:54 | 05:32 | 06:30 19:30-19:56/26 | 07:28 | 07:28 | 08:30 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 20:09-20:21/12 | 05:05 | 04:55 | 05:34 | 06:32 19:29-19:56/27 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:10-20:20/10 | 05:04 | 04:56 | 05:36 | 06:34 19:28-19:55/27 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:28-19:55/27 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 538 | 1 | 0 | 0 | 387 | 163 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 18 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 17:22-17:39/17 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:21-17:41/20 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 17:21-17:43/22 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:04-18:14/10 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 17:20-17:43/23 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:01-18:16/15 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 17:20-17:42/22 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 17:59-18:17/18 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 17:20-17:42/22 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 17:58-18:17/19 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:20-17:41/21 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:18/21 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:21-17:40/19 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 17:56-18:18/22 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:22-17:38/16 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 17:55-18:18/23 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:24-17:37/13 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 17:55-18:18/23 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 17:27-17:33/6 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 17:55-18:16/21 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 17:55-18:14/19 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 17:56-18:11/15 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 19:07-19:12/5 | 08:00 17:56-18:08/12 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 19:03-19:14/11 | 08:02 17:57-18:06/9 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 19:01-19:15/14 | 08:04 17:59-18:03/4 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 19:00-19:16/16 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:59-19:16/17 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:59-19:14/15 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 18:15-18:18/3 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:58-19:11/13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 18:13-18:20/7 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:58-19:09/11 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 18:13-18:22/9 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:58-19:05/7 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:12-18:24/12 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:59-19:03/4 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 18:11-18:26/15 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:12-18:28/16 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 17:26-17:32/6 | 06:23 18:11-18:27/16 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 17:25-17:35/10 | 06:20 18:12-18:27/15 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 17:23-17:36/13 | 06:18 18:13-18:25/12 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 19:15-19:21/6 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 29 | 312 | 0 | 0 | 0 | 0 | 0 | 113 | 231 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 19 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 16:03-16:24/21 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:37-17:41/4 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 16:03-16:22/19 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 16:37-16:39/2 | 07:21 17:36-17:43/7 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:18-18:23/5 | 07:40 16:04-16:21/17 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:22 16:35-16:41/6 | 07:19 17:35-17:45/10 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:15-18:25/10 | 07:42 16:04-16:18/14 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 16:35-16:44/9 | 07:16 17:34-17:47/13 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:12-18:26/14 | 07:44 16:04-16:16/12 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 16:34-16:46/12 | 07:14 17:35-17:49/14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 18:11-18:26/15 | 07:46 16:05-16:13/8 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 16:34-16:49/15 | 07:11 17:34-17:50/16 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 18:10-18:26/16 | 07:49 16:06-16:12/6 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 16:34-16:51/17 | 07:09 17:35-17:50/15 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 18:10-18:24/14 | 07:51 16:08-16:09/1 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 16:33-16:53/20 | 07:06 17:36-17:48/12 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 18:10-18:22/12 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 16:33-16:54/21 | 07:04 17:39-17:46/7 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 18:10-18:19/9 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 16:34-16:54/20 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 18:11-18:16/5 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 16:34-16:54/20 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 18:11-18:14/3 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 16:34-16:53/19 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 16:36-16:52/16 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 16:37-16:51/14 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 16:38-16:49/11 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:55 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 16:11-16:16/5 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 16:08-16:20/12 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 16:06-16:21/15 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 16:05-16:22/17 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 16:04-16:22/18 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 16:04-16:24/20 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 16:03-16:24/21 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 202 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 98 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 20 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 20:46-21:04/18 | 04:56 20:15-20:48/33 | 05:39 20:55-21:06/11 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 20:06-20:44/38 | 22:18 | 21:39 20:14-20:53/39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 20:17-20:31/14 | 05:00 20:46-21:04/18 | 04:57 20:14-20:47/33 | 05:41 20:57-21:04/7 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 20:06-20:44/38 | 22:17 | 21:37 20:15-20:52/37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 20:14-20:33/19 | 04:59 20:47-21:03/16 | 04:58 20:58-21:04/6 | 05:43 20:59-21:03/4 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 20:06-20:44/38 | 22:17 20:14-20:48/34 | 21:35 20:16-20:52/36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 20:12-20:35/23 | 04:58 20:47-21:02/15 | 04:59 20:57-21:05/8 | 05:45 20:16-20:50/34 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 20:07-20:43/36 | 22:16 20:14-20:49/35 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 20:10-20:37/27 | 04:58 20:49-21:03/14 | 05:00 20:57-21:07/10 | 05:47 20:17-20:50/33 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 20:08-20:44/36 | 22:15 20:14-20:49/35 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 20:09-20:38/29 | 04:57 20:49-21:02/13 | 05:01 20:56-21:08/12 | 05:48 20:18-20:49/31 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 20:08-20:44/36 | 22:15 20:14-20:50/36 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 20:07-20:39/32 | 04:56 20:50-21:01/11 | 05:02 20:56-21:09/13 | 05:50 20:19-20:48/29 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 20:09-20:44/35 | 22:14 20:14-20:50/36 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 20:07-20:41/34 | 04:55 20:52-21:00/8 | 05:03 20:55-21:09/14 | 05:52 20:20-20:46/26 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 20:09-20:44/35 | 22:13 20:14-20:51/37 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 20:06-20:41/35 | 04:55 20:52-20:59/7 | 05:04 20:54-21:10/16 | 05:54 20:22-20:44/22 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 20:09-20:43/34 | 22:12 20:14-20:51/37 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 20:48-20:53/5 | 04:54 20:55-20:58/3 | 05:05 20:54-21:11/17 | 05:56 20:24-20:42/18 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 20:05-20:42/37 | 22:12 20:10-20:43/33 | 22:12 20:14-20:51/37 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 20:46-20:54/8 | 04:54 20:11-20:44/33 | 05:06 20:53-21:11/18 | 05:58 20:27-20:38/11 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 20:04-20:42/38 | 22:13 | 22:11 20:13-20:52/39 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 20:44-20:56/12 | 04:53 20:10-20:43/33 | 05:08 20:53-21:12/19 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 20:04-20:42/38 | 22:14 | 22:10 20:13-20:52/39 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 20:44-20:58/14 | 04:53 20:11-20:43/32 | 05:09 20:14-21:13/59 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 20:04-20:43/39 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 20:03-21:00/57 | 04:52 20:12-20:43/31 | 05:10 20:13-21:14/61 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 20:03-21:01/58 | 04:52 20:12-20:44/32 | 05:12 20:13-21:14/61 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 20:03-21:03/60 | 04:52 20:13-20:44/31 | 05:13 20:13-21:14/61 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 20:02-21:04/62 | 04:52 20:13-20:44/31 | 05:15 20:13-21:15/62 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 20:03-21:06/63 | 04:52 20:13-20:44/31 | 05:16 20:13-21:15/62 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:18 20:12-21:15/63 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
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| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:19 20:13-21:16/63 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:21 20:12-21:16/64 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:14 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:22 20:13-21:16/63 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 20:03-21:06/63 | 04:52 20:15-20:45/30 | 05:24 20:13-21:16/63 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:11 20:03-21:05/62 | 04:53 20:14-20:45/31 | 05:25 20:13-21:16/63 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
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| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 20:03-21:06/63 | 04:53 20:14-20:45/31 | 05:27 20:13-21:16/63 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 20:04-21:06/62 | 04:53 20:15-20:46/31 | 05:29 20:13-21:16/63 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 20:04-21:06/62 | 04:54 20:14-20:46/32 | 05:30 20:13-21:14/61 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 20:04-21:05/61 | 04:54 20:15-20:47/32 | 05:32 20:13-21:13/60 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 20:05-21:05/60 | 04:55 20:14-20:46/32 | 05:34 20:14-21:12/58 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 20:05-21:05/60 | 04:56 20:15-20:47/32 | 05:36 20:14-21:09/55 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:02 20:05-21:05/60 | | 05:37 20:55-21:08/13 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 20:14-20:54/40 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 1509 | 1107 | 1722 | 338 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 21 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 19:30-19:53/23 | 07:34 18:05-18:36/31 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:30-19:53/23 | 07:36 18:06-18:34/28 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 19:40-19:46/6 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:30-19:53/23 | 07:38 18:07-18:33/26 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:37-19:47/10 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:29-19:52/23 | 07:40 18:08-18:31/23 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:35-19:49/14 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 18:10-18:29/19 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 18:12-18:25/13 | 07:46 | 08:42 |
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| 8 | 08:58 | 08:14 | 07:09 17:34-17:50/16 | 06:50 19:32-19:55/23 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:32-19:42/10 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:31-17:52/21 | 06:47 19:32-19:55/23 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 19:33-19:39/6 | 07:50 | 07:53 | 08:46 |
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| 10 | 08:56 | 08:10 | 07:04 17:29-17:54/25 | 06:45 19:31-19:54/23 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
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| 12 | 08:55 | 08:05 | 06:59 17:25-17:55/30 | 06:40 19:30-19:53/23 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
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| 14 | 08:53 | 08:01 | 06:54 17:23-17:57/34 | 06:35 19:31-19:51/20 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
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| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
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| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:30-19:53/23 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 622 | 268 | 0 | 0 | 0 | 113 | 645 | 140 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 22 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 225 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 23 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:50 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:05 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:09 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:26 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 24 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00<br>16:13 | 08:27 08:59-09:45/46<br>17:08 | 07:26 09:08-09:55/47<br>18:07 | 07:07<br>20:09 | 05:55<br>21:08 | 05:01<br>22:02 | 04:56<br>22:17 | 05:39<br>21:39 | 06:37<br>20:29 | 07:34<br>19:12 | 07:36 08:29-09:27/58<br>16:57 | 08:34<br>16:10 |
| 2 | 09:00<br>16:15 | 08:25 08:58-09:47/49<br>17:10 | 07:24 09:09-09:53/44<br>18:09 | 07:05<br>20:11 | 05:52<br>21:10 | 05:00<br>22:03 | 04:57<br>22:17 | 05:41<br>21:37 | 06:39<br>20:26 | 07:36<br>19:09 | 07:38 08:28-09:26/58<br>16:55 | 08:36<br>16:09 |
| 3 | 09:00<br>16:16 | 08:23 08:58-09:49/51<br>17:12 | 07:21 09:10-09:52/42<br>18:11 | 07:02<br>20:13 | 05:50<br>21:12 | 04:59<br>22:04 | 04:58<br>22:16 | 05:43<br>21:35 | 06:41<br>20:24 | 07:38<br>19:06 | 07:40 08:29-09:26/57<br>16:53 | 08:38<br>16:08 |
| 4 | 08:59<br>16:17 | 08:21 08:58-09:51/53<br>17:14 | 07:19 09:11-09:49/38<br>18:13 | 07:00<br>20:15 | 05:48<br>21:14 | 04:58<br>22:06 | 04:59<br>22:16 | 05:45<br>21:33 | 06:43<br>20:21 | 07:40<br>19:04 | 07:42 08:28-09:24/56<br>16:51 | 08:39<br>16:07 |
| 5 | 08:59<br>16:18 | 08:20 08:58-09:52/54<br>17:16 | 07:16 09:12-09:47/35<br>18:15 | 06:57<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 | 05:00<br>22:15 | 05:46<br>21:31 | 06:45<br>20:19 | 07:42 09:59-10:11/12<br>19:01 | 07:44 08:28-09:23/55<br>16:49 | 08:41<br>16:06 |
| 6 | 08:59<br>16:20 | 08:18 08:58-09:54/56<br>17:18 | 07:14 09:14-09:45/31<br>18:17 | 06:55<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 | 05:01<br>22:15 | 05:48<br>21:29 | 06:47<br>20:16 | 07:44 09:54-10:16/22<br>18:59 | 07:46 08:28-09:22/54<br>16:47 | 08:42<br>16:06 |
| 7 | 08:58<br>16:21 | 08:16 08:59-09:55/56<br>17:20 | 07:11 09:16-09:41/25<br>18:19 | 06:52<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 | 05:02<br>22:14 | 05:50<br>21:27 | 06:49<br>20:14 | 07:46 09:51-10:19/28<br>18:56 | 07:48 08:29-09:21/52<br>16:45 | 08:44<br>16:05 |
| 8 | 08:57<br>16:23 | 08:14 08:59-09:56/57<br>17:23 | 07:09 09:20-09:38/18<br>18:21 | 06:50<br>20:23 | 05:40<br>21:22 | 04:55<br>22:10 | 05:03<br>22:13 | 05:52<br>21:25 | 06:51<br>20:11 | 07:48 09:49-10:22/33<br>18:54 | 07:50 08:29-09:20/51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:24 | 08:12 08:59-09:56/57<br>17:25 | 07:06<br>18:23 | 06:47<br>20:25 | 05:38<br>21:23 | 04:55<br>22:11 | 05:04<br>22:12 | 05:54<br>21:23 | 06:52<br>20:08 | 07:50 09:47-10:24/37<br>18:51 | 07:53 08:29-09:18/49<br>16:41 | 08:46<br>16:04 |
| 10 | 08:56<br>16:26 | 08:09 08:59-09:57/58<br>17:27 | 07:04<br>18:25 | 06:45<br>20:27 | 05:36<br>21:25 | 04:54<br>22:12 | 05:05<br>22:11 | 05:56<br>21:21 | 06:54<br>20:06 | 07:52 09:45-10:25/40<br>18:49 | 07:55 08:30-09:15/45<br>16:39 | 08:48<br>16:04 |
| 11 | 08:55<br>16:27 | 08:07 09:00-09:58/58<br>17:29 | 07:01<br>18:27 | 06:42<br>20:29 | 05:34<br>21:27 | 04:54<br>22:13 | 05:06<br>22:10 | 05:58<br>21:19 | 06:56<br>20:03 | 07:54 09:44-10:26/42<br>18:46 | 07:57 08:31-09:14/43<br>16:37 | 08:49<br>16:04 |
| 12 | 08:54<br>16:29 | 08:05 09:01-09:59/58<br>17:31 | 06:59<br>18:29 | 06:40<br>20:31 | 05:32<br>21:29 | 04:53<br>22:13 | 05:08<br>22:09 | 05:59<br>21:16 | 06:58<br>20:01 | 07:56 09:42-10:27/45<br>18:44 | 07:59 08:56-09:10/14<br>16:36 | 08:50<br>16:03 |
| 13 | 08:54<br>16:31 | 08:03 09:02-09:59/57<br>17:33 | 06:56<br>18:31 | 06:37<br>20:33 | 05:30<br>21:31 | 04:53<br>22:14 | 05:09<br>22:08 | 06:01<br>21:14 | 07:00<br>19:58 | 07:57 09:41-10:28/47<br>18:41 | 08:01 08:34-08:53/19<br>16:34 | 08:51<br>16:03 |
| 14 | 08:53<br>16:32 | 08:01 09:03-10:00/57<br>17:35 | 06:54<br>18:33 | 06:35<br>20:35 | 05:28<br>21:33 | 04:52<br>22:15 | 05:10<br>22:07 | 06:03<br>21:12 | 07:02<br>19:56 | 07:59 09:40-10:29/49<br>18:39 | 08:03 08:36-08:52/16<br>16:32 | 08:52<br>16:03 |
| 15 | 08:52<br>16:34 | 07:59 09:06-10:00/54<br>17:37 | 06:51<br>18:35 | 06:32<br>20:37 | 05:26<br>21:35 | 04:52<br>22:16 | 05:12<br>22:06 | 06:05<br>21:10 | 07:04<br>19:53 | 08:01 09:39-10:29/50<br>18:36 | 08:05 08:39-08:51/12<br>16:30 | 08:53<br>16:03 |
| 16 | 08:51<br>16:36 | 07:57 09:05-10:00/55<br>17:40 | 06:49<br>18:37 | 06:30<br>20:39 | 05:24<br>21:36 | 04:52<br>22:16 | 05:13<br>22:05 | 06:07<br>21:07 | 07:06<br>19:50 | 08:03 09:38-10:30/52<br>18:34 | 08:07 08:41-08:49/8<br>16:29 | 08:54<br>16:03 |
| 17 | 08:49<br>16:38 | 07:54 09:05-10:00/55<br>17:42 | 06:46<br>18:39 | 06:27<br>20:41 | 05:23<br>21:38 | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:05 | 07:07<br>19:48 | 08:05 09:37-10:30/53<br>18:32 | 08:09<br>16:27 | 08:55<br>16:03 |
| 18 | 08:48<br>16:40 | 07:52 09:06-10:01/55<br>17:44 | 06:43<br>18:41 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:17 | 05:16<br>22:02 | 06:11<br>21:03 | 07:09<br>19:45 | 08:07 09:36-10:30/54<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:47<br>16:42 | 07:50 09:05-10:00/55<br>17:46 | 06:41<br>18:43 | 06:22<br>20:44 | 05:19<br>21:42 | 04:52<br>22:18 | 05:17<br>22:01 | 06:13<br>21:00 | 07:11<br>19:43 | 08:09 09:36-10:30/54<br>18:27 | 08:13<br>16:24 | 08:56<br>16:04 |
| 20 | 08:46<br>16:43 | 07:47 09:05-10:01/56<br>17:48 | 06:38<br>18:45 | 06:20<br>20:46 | 05:18<br>21:43 | 04:52<br>22:18 | 05:19<br>21:59 | 06:15<br>20:58 | 07:13<br>19:40 | 08:11 09:36-10:31/55<br>18:24 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 08:44<br>16:45 | 07:45 09:05-10:00/55<br>17:50 | 06:36<br>18:47 | 06:18<br>20:48 | 05:16<br>21:45 | 04:52<br>22:18 | 05:21<br>21:58 | 06:16<br>20:56 | 07:15<br>19:37 | 08:13 09:36-10:31/55<br>18:22 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 08:43<br>16:47 | 07:43 09:05-10:00/55<br>17:52 | 06:33<br>18:49 | 06:15<br>20:50 | 05:14<br>21:47 | 04:52<br>22:18 | 05:22<br>21:56 | 06:18<br>20:53 | 07:17<br>19:35 | 08:16 09:35-10:31/56<br>18:20 | 08:18<br>16:20 | 08:58<br>16:05 |
| 23 | 08:42<br>16:49 | 07:41 09:06-10:00/54<br>17:54 | 06:31<br>18:51 | 06:13<br>20:52 | 05:13<br>21:48 | 04:52<br>22:18 | 05:24<br>21:55 | 06:20<br>20:51 | 07:19<br>19:32 | 08:18 09:35-10:31/56<br>18:17 | 08:20<br>16:18 | 08:59<br>16:06 |
| 24 | 08:40<br>16:51 | 07:38 09:05-09:59/54<br>17:56 | 06:28<br>18:53 | 06:10<br>20:54 | 05:11<br>21:50 | 04:53<br>22:19 | 05:25<br>21:53 | 06:22<br>20:49 | 07:21<br>19:30 | 08:20 09:35-10:30/55<br>18:15 | 08:22<br>16:17 | 08:59<br>16:06 |
| 25 | 08:39<br>16:53 | 07:36 09:06-09:59/53<br>17:59 | 06:25<br>18:55 | 06:08<br>20:56 | 05:10<br>21:52 | 04:53<br>22:19 | 05:27<br>21:52 | 06:24<br>20:46 | 07:23<br>19:27 | 07:22 08:35-09:30/55<br>17:13 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 08:37 09:08-09:16/8<br>16:55 | 07:33 09:06-09:57/51<br>18:01 | 06:23<br>18:57 | 06:06<br>20:58 | 05:09<br>21:53 | 04:53<br>22:19 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:24 | 07:24 08:36-09:30/54<br>17:10 | 08:26<br>16:15 | 09:00<br>16:07 |
| 27 | 08:36 09:06-09:18/12<br>16:57 | 07:31 09:07-09:57/50<br>18:03 | 06:20<br>18:59 | 06:04<br>21:00 | 05:07<br>21:55 | 04:54<br>22:18 | 05:30<br>21:48 | 06:28<br>20:41 | 07:26<br>19:22 | 07:26 08:34-09:30/56<br>17:08 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 08:34 09:04-09:20/16<br>16:59 | 07:29 09:07-09:55/48<br>18:05 | 06:18<br>19:01 | 06:01<br>21:02 | 05:06<br>21:56 | 04:54<br>22:18 | 05:32<br>21:47 | 06:30<br>20:39 | 07:28<br>19:19 | 07:28 08:32-09:29/57<br>17:06 | 08:29<br>16:12 | 09:00<br>16:09 |
| 29 | 08:32 09:02-09:21/19<br>17:01 | | 07:15<br>20:03 | 05:59<br>21:04 | 05:05<br>21:58 | 04:55<br>22:18 | 05:34<br>21:45 | 06:32<br>20:36 | 07:30<br>19:17 | 08:31-09:28/57<br>17:04 | 08:31<br>16:11 | 09:00<br>16:10 |
| 30 | 08:31 09:24-09:39/15<br>17:04 09:00-09:22/22 | | 07:13<br>20:05 | 05:57<br>21:06 | 05:04<br>21:59 | 04:56<br>22:18 | 05:36<br>21:43 | 06:34<br>20:34 | 07:32<br>19:14 | 07:32 08:31-09:29/58<br>17:02 | 08:33<br>16:10 | 09:00<br>16:11 |
| 31 | 08:29 08:59-09:42/43<br>17:06 | | 07:10<br>20:07 | | 05:02<br>22:00 | | 05:37<br>21:41 | 06:35<br>20:31 | | 07:34 08:30-09:28/58<br>16:59 | | 09:00<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 135 | 1517 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 1290 | 669 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 25 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:14-14:50/36 10:59-11:45/46 | 08:28 15:55-16:27/32 11:07-11:56/49 09:16-09:39/23 | 07:27 08:14-08:44/30 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:05-12:43/38 10:25-10:32/7 | 17:08 14:32-14:53/21 09:45-11:03/78 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:14-14:50/36 10:58-11:45/47 | 08:26 15:55-16:29/34 11:07-11:56/49 09:15-09:41/26 | 07:24 08:14-08:43/29 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:06-12:43/37 10:23-10:34/11 | 17:10 14:35-14:51/16 09:45-11:03/78 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:15-14:51/36 10:59-11:46/47 | 08:24 15:55-16:30/35 11:08-11:56/48 09:14-09:42/28 | 07:22 08:14-08:41/27 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:07-12:44/37 10:22-10:36/14 | 17:12 14:39-14:47/8 09:45-11:03/78 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:14-14:51/37 10:59-11:46/47 | 08:22 15:55-16:31/36 09:45-11:04/79 | 07:19 08:15-08:41/26 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:07-12:44/37 10:21-10:37/16 | 17:15 11:09-11:55/46 09:13-09:43/30 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:15-14:53/38 11:00-11:48/48 | 08:20 15:55-16:32/37 09:45-11:03/78 | 07:17 08:15-08:39/24 | 06:58 | 05:46 | 04:58 |
| | 16:19 12:08-12:44/36 10:20-10:40/20 | 17:17 11:10-11:54/44 09:13-09:44/31 | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 14:15-14:53/38 11:00-11:48/48 | 08:18 16:37-16:42/5 11:12-11:53/41 | 07:15 08:17-08:38/21 | 06:55 | 05:44 | 04:57 |
| | 16:20 12:09-12:44/35 10:19-10:41/22 | 17:19 15:56-16:33/37 09:12-11:03/111 | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 14:15-14:53/38 10:59-11:48/49 | 08:16 15:55-16:45/50 09:12-11:03/111 | 07:12 08:18-08:36/18 | 06:53 | 05:42 | 04:56 |
| | 16:22 12:09-12:44/35 10:19-10:42/23 | 17:21 11:13-11:52/39 08:55-09:05/10 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:15-14:54/39 10:59-11:49/50 | 08:14 15:56-16:47/51 09:11-11:02/111 | 07:10 08:20-08:34/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 12:10-12:44/34 10:18-10:44/26 | 17:23 11:14-11:50/36 08:52-09:07/15 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:17-14:55/38 11:00-11:51/51 | 08:12 15:57-16:49/52 09:11-11:02/111 | 07:07 08:24-08:29/5 | 06:48 | 05:38 | 04:55 |
| | 16:25 12:12-12:45/33 10:18-10:46/28 | 17:25 11:16-11:49/33 08:50-09:09/19 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:17-14:56/39 11:01-11:51/50 | 08:10 15:58-16:50/52 08:49-11:01/132 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 12:13-12:45/32 10:18-10:47/29 | 17:27 11:18-11:47/29 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:17-14:56/39 11:01-11:52/51 | 08:08 15:59-16:51/52 08:48-11:01/133 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 12:14-12:44/30 10:17-10:48/31 | 17:30 11:21-11:44/23 | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 14:17-14:56/39 11:00-11:52/52 | 08:06 16:00-16:51/51 08:46-10:59/133 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 12:14-12:43/29 10:16-10:49/33 | 17:32 11:24-11:39/15 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:17-14:57/40 11:00-11:52/52 | 08:04 16:02-16:52/50 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 12:15-12:43/28 10:15-10:50/35 | 17:34 08:46-10:58/132 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:17-14:57/40 11:01-11:53/52 | 08:02 16:06-16:52/46 08:46-09:47/61 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 12:17-12:43/26 10:15-10:51/36 | 17:36 09:48-10:57/69 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:18-14:58/40 11:01-11:54/53 | 08:00 16:07-16:52/45 08:45-09:46/61 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 12:18-12:42/24 10:15-10:53/38 | 17:38 09:48-10:54/66 08:33-08:38/5 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:18-14:58/40 11:01-11:54/53 09:58-10:07/9 | 07:57 16:08-16:53/45 08:45-09:46/61 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 12:19-12:40/21 10:14-10:53/39 | 17:40 09:50-10:53/63 08:28-08:41/13 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:19-14:58/39 11:01-11:55/54 09:56-10:10/14 | 07:55 16:09-16:53/44 09:51-10:24/33 08:27-08:44/17 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 12:22-12:39/17 10:14-10:54/40 | 17:42 10:27-10:50/23 08:45-09:46/61 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:19-14:59/40 11:02-11:56/54 09:54-10:13/19 | 07:53 16:10-16:53/43 09:52-10:22/30 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 12:25-12:38/13 10:14-10:56/42 | 17:44 10:30-10:46/16 08:24-09:45/81 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:19-14:59/40 11:01-11:55/54 | 07:51 16:13-16:53/40 08:24-09:44/80 | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 12:29-12:34/5 09:52-10:56/64 | 17:47 09:54-10:20/26 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:20-14:59/39 09:52-10:58/66 | 07:48 16:26-16:53/27 09:57-10:18/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:02-11:56/54 | 17:49 16:17-16:23/6 08:22-09:44/82 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:20-14:59/39 09:50-10:58/68 | 07:46 16:26-16:52/26 09:15-09:42/27 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 11:02-11:56/54 | 17:51 10:00-10:13/13 08:20-09:14/54 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:21-14:59/38 09:49-10:58/69 | 07:44 16:27-16:51/24 08:18-09:14/56 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:02-11:56/54 | 17:53 09:16-09:40/24 | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:22-14:59/37 09:49-11:00/71 | 07:41 16:27-16:50/23 08:17-09:12/55 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:03-11:57/54 | 17:55 09:18-09:38/20 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 16:02-16:11/9 11:03-11:57/54 | 07:39 16:29-16:49/20 08:16-09:12/56 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 14:22-14:59/37 09:48-11:00/72 | 17:57 09:21-09:35/14 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 15:59-16:13/14 11:03-11:57/54 | 07:36 16:30-16:46/16 08:48-09:10/22 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 14:23-14:58/35 09:47-11:00/73 | 17:59 08:15-08:47/32 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:59-16:15/16 11:04-11:58/54 | 07:34 16:33-16:44/11 08:50-09:08/18 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:24-14:59/35 09:47-11:02/75 | 18:01 08:15-08:47/32 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:58-16:17/19 11:04-11:58/54 | 07:32 08:14-08:46/32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 14:25-14:58/33 09:47-11:02/75 | 18:03 08:52-09:05/13 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:57-16:18/21 11:05-11:58/53 | 07:29 08:14-08:45/31 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 14:26-14:58/32 09:46-11:02/76 | 18:05 08:57-09:00/3 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:56-16:19/23 11:05-11:57/52 09:23-09:31/8 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 14:27-14:57/30 09:46-11:03/77 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:56-16:22/26 11:06-11:57/51 09:20-09:35/15 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 14:29-14:56/27 09:45-11:03/78 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:55-16:25/30 11:06-11:57/51 09:18-09:37/19 | | 07:11 | | 05:03 | |
| | 17:06 14:30-14:54/24 09:45-11:03/78 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4956 | 4405 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 25 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 15:27-16:19/52 08:19-10:31/132 | 08:35 13:58-14:37/39 10:42-11:33/51 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 10:47-11:17/30 | 16:10 11:56-12:26/30 09:59-10:31/32 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 15:26-16:18/52 08:40-10:31/111 | 08:37 13:59-14:38/39 10:43-11:33/50 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 10:45-11:18/33 08:20-08:39/19 | 16:09 11:55-12:27/32 10:00-10:29/29 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 | 07:41 15:25-16:16/51 08:40-10:32/112 | 08:38 14:00-14:38/38 10:44-11:34/50 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 10:43-11:20/37 08:22-08:36/14 | 16:08 11:55-12:28/33 10:01-10:29/28 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 15:26-16:15/49 08:42-10:33/111 | 08:40 14:01-14:39/38 10:45-11:34/49 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 10:43-11:22/39 08:26-08:34/8 | 16:08 11:55-12:29/34 10:03-10:29/26 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 08:58-09:09/11 | 07:45 16:07-16:11/4 10:41-11:23/42 | 08:42 14:00-14:39/39 10:45-11:34/49 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 15:25-16:02/37 08:42-10:33/111 | 16:07 11:54-12:29/35 10:04-10:27/23 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 08:55-09:11/16 | 07:47 15:25-16:02/37 09:15-10:33/78 | 08:43 14:01-14:39/38 10:46-11:34/48 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 10:40-11:24/44 08:42-09:14/32 | 16:06 11:55-12:30/35 10:05-10:27/22 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 08:53-09:13/20 | 07:49 15:25-16:01/36 09:15-10:33/78 | 08:44 14:01-14:39/38 10:46-11:34/48 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 10:39-11:25/46 08:43-09:13/30 | 16:06 11:54-12:30/36 10:06-10:26/20 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 08:51-09:14/23 | 07:51 15:26-16:01/35 10:39-11:26/47 08:45-09:13/28 | 08:46 14:03-14:40/37 10:47-11:34/47 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 14:09-14:18/9 09:16-10:34/78 | 16:05 11:55-12:32/37 10:09-10:26/17 |
| 9 | 05:05 | 05:54 | 06:53 | 07:50 08:50-09:15/25 | 07:53 15:26-15:59/33 10:38-11:27/49 08:46-09:11/25 | 08:47 14:03-14:39/36 10:47-11:34/47 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 14:05-14:22/17 09:16-10:34/78 | 16:05 11:55-12:32/37 10:10-10:24/14 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 08:49-09:15/26 | 07:55 15:26-15:58/32 10:37-11:27/50 08:47-09:10/23 | 08:48 14:04-14:40/36 10:48-11:35/47 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 14:03-14:24/21 09:16-10:34/78 | 16:05 11:56-12:33/37 10:13-10:24/11 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 08:48-09:15/27 | 07:57 15:26-15:56/30 10:37-11:28/51 08:49-09:08/19 | 08:50 14:04-14:40/36 10:49-11:35/46 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 14:01-14:25/24 09:16-10:34/78 | 16:04 11:56-12:33/37 10:15-10:22/7 |
| 12 | 05:08 | 06:00 | 06:59 | 07:56 08:47-09:16/29 | 07:59 15:27-15:53/26 10:37-11:29/52 08:52-09:07/15 | 08:51 14:05-14:40/35 10:49-11:35/46 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 14:00-14:28/28 09:17-10:35/78 | 16:04 11:56-12:34/38 |
| 13 | 05:09 | 06:02 | 07:01 | 07:58 08:48-09:18/30 | 08:01 15:28-15:51/23 10:37-11:29/52 08:55-09:03/8 | 08:52 14:05-14:40/35 10:50-11:35/45 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 13:59-14:29/30 09:18-10:35/77 | 16:04 11:56-12:34/38 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 08:47-09:19/32 | 08:03 15:29-15:50/21 10:37-11:30/53 | 08:53 14:06-14:41/35 10:50-11:35/45 |
| | 22:08 | 21:13 | 19:56 | 18:39 09:27-09:36/9 | 16:33 13:58-14:29/31 09:18-10:34/76 | 16:04 11:56-12:35/39 |
| 15 | 05:12 | 06:06 | 07:04 | 08:02 17:08-17:13/5 09:24-09:39/15 | 08:06 15:30-15:49/19 10:36-11:30/54 | 08:54 14:06-14:41/35 10:52-11:36/44 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:47-09:19/32 | 16:31 13:57-14:30/33 09:19-10:34/75 | 16:04 11:57-12:36/39 |
| 16 | 05:14 | 06:08 | 07:06 | 08:04 17:04-17:17/13 09:21-09:41/20 | 08:08 15:32-15:48/16 10:37-11:31/54 | 08:55 14:07-14:41/34 10:52-11:36/44 |
| | 22:06 | 21:08 | 19:51 | 18:35 08:47-09:19/32 | 16:29 13:57-14:32/35 09:20-10:35/75 | 16:04 11:57-12:36/39 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 17:01-17:19/18 08:47-09:42/55 | 08:09 15:33-15:47/14 10:37-11:31/54 | 08:56 14:08-14:42/34 10:52-11:36/44 |
| | 22:04 | 21:06 | 19:48 | 18:32 09:55-10:04/9 | 16:28 13:57-14:32/35 09:21-10:34/73 | 16:04 11:57-12:36/39 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 16:59-17:20/21 08:48-09:43/55 | 08:11 15:36-15:45/9 10:37-11:31/54 | 08:56 14:08-14:42/34 10:53-11:37/44 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-10:07/16 | 16:26 13:56-14:33/37 09:22-10:34/72 | 16:04 11:58-12:37/39 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 16:58-17:21/23 08:48-09:44/56 | 08:13 13:56-14:33/37 09:23-10:34/71 | 08:57 14:09-14:43/34 10:54-11:37/43 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:48-10:10/22 | 16:25 10:37-11:31/54 | 16:04 11:59-12:38/39 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 16:57-17:22/25 08:49-09:44/55 | 08:15 13:56-14:34/38 09:24-10:33/69 | 08:58 14:09-14:43/34 10:54-11:37/43 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:46-10:11/25 | 16:23 10:37-11:31/54 | 16:05 11:58-12:38/40 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 16:56-17:22/26 08:50-10:12/82 | 08:17 13:56-14:35/39 09:26-10:34/68 | 08:59 14:10-14:44/34 10:55-11:38/43 |
| | 21:59 | 20:57 | 19:38 | 18:23 10:29-10:45/16 | 16:22 10:38-11:32/54 | 16:05 11:59-12:39/40 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 16:56-17:23/27 10:27-10:49/22 | 08:19 13:56-14:35/39 09:28-10:34/66 | 08:59 14:10-14:44/34 10:56-11:39/43 |
| | 21:57 | 20:54 | 19:35 | 18:20 16:46-16:55/9 08:53-10:14/81 | 16:20 10:38-11:32/54 | 16:05 12:00-12:40/40 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 16:42-17:23/41 10:24-10:51/27 | 08:21 13:56-14:36/40 10:38-11:33/55 | 09:00 14:11-14:45/34 10:56-11:39/43 |
| | 21:56 | 20:52 | 19:33 | 18:18 11:05-11:12/7 08:54-10:15/81 | 16:19 12:06-12:10/4 09:29-10:33/64 | 16:06 12:00-12:40/40 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 16:40-17:23/43 10:22-10:53/31 | 08:23 13:56-14:36/40 10:39-11:33/54 09:31-09:50/19 | 09:00 14:11-14:45/34 10:56-11:39/43 |
| | 21:54 | 20:49 | 19:30 | 18:16 10:59-11:18/19 08:55-10:15/80 | 16:18 12:02-12:15/13 09:51-10:33/42 | 16:07 12:01-12:40/39 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 15:38-16:23/45 09:20-09:54/34 07:56-08:12/16 | 08:25 13:57-14:36/39 10:39-11:33/54 09:34-09:49/15 | 09:00 14:11-14:45/34 10:56-11:40/44 |
| | 21:52 | 20:47 | 19:28 | 17:13 09:56-10:21/25 08:14-09:16/62 | 16:16 12:00-12:17/17 09:52-10:33/41 | 16:07 12:01-12:40/39 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 15:37-16:22/45 08:14-09:16/62 | 08:27 13:57-14:37/40 10:40-11:33/53 09:37-09:46/9 | 09:01 14:12-14:47/35 10:57-11:41/44 |
| | 21:51 | 20:44 | 19:25 | 17:11 09:19-10:23/64 07:59-08:10/11 | 16:15 11:58-12:19/21 09:53-10:32/39 | 16:08 12:02-12:41/39 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 15:37-16:23/46 08:15-09:17/62 | 08:28 13:57-14:37/40 10:40-11:33/53 | 09:01 14:13-14:47/34 10:57-11:42/45 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:19-10:25/66 | 16:14 11:57-12:21/24 09:54-10:32/38 | 16:09 12:03-12:42/39 |
| 28 | 05:33 | 06:30 | 07:29 | 07:29 15:35-16:22/47 08:15-09:17/62 | 08:30 13:58-14:37/39 10:41-11:33/52 | 09:01 14:13-14:48/35 10:58-11:42/44 |
| | 21:47 | 20:40 | 19:20 | 17:07 09:18-10:27/69 | 16:13 11:57-12:23/26 09:55-10:31/36 | 16:10 12:03-12:42/39 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 15:31-16:21/50 | 08:32 13:58-14:38/40 10:41-11:33/52 | 09:01 14:13-14:48/35 10:58-11:43/45 |
| | 21:46 | 20:37 | 19:17 | 17:04 08:16-10:28/132 | 16:12 11:56-12:24/28 09:57-10:31/34 | 16:11 12:04-12:43/39 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 15:29-16:20/51 08:16-10:29/133 | 08:34 13:59-14:38/39 10:42-11:34/52 | 09:01 14:13-14:48/35 10:58-11:43/45 |
| | 21:44 | 20:35 | 19:15 | 17:02 10:53-11:10/17 | 16:11 11:56-12:25/29 09:58-10:31/33 | 16:11 12:04-12:42/38 |
| 31 | 05:38 | 06:36 | | 07:35 15:28-16:19/51 08:18-10:30/132 | | 09:01 14:13-14:49/36 10:58-11:44/46 |
| | 21:42 | 20:32 | | 17:00 10:50-11:14/24 | | 16:13 12:04-12:43/39 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 2643 | 5426 | 3912 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:33-15:27/54 11:14-11:29/15 09:53-10:02/9 | 08:28 15:16-15:36/20 08:57-09:07/10 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:53-13:10/17 10:13-10:45/32 | 17:08 09:10-10:20/70 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:33-15:28/55 11:15-11:29/14 09:51-10:03/12 | 08:26 15:19-15:30/11 08:55-09:09/14 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:53-13:09/16 10:12-10:45/33 | 17:10 09:10-10:19/69 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:34-15:29/55 11:17-11:29/12 09:51-10:04/13 | 08:24 08:54-10:18/84 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:55-13:09/14 10:13-10:47/34 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:34-15:30/56 11:18-11:27/9 09:50-10:05/15 | 08:22 08:53-10:17/84 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:56-13:08/12 10:13-10:47/34 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:35-15:32/57 11:21-11:26/5 09:50-10:07/17 | 08:20 08:53-10:15/82 | 07:17 | 06:58 19:46-19:49/3 | 05:46 | 04:58 |
| | 16:19 12:59-13:07/8 10:14-10:48/34 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:35-15:32/57 09:50-10:08/18 | 08:18 10:04-10:12/8 08:52-09:37/45 | 07:14 | 06:55 19:42-19:52/10 | 05:44 | 04:57 |
| | 16:20 10:14-10:48/34 | 17:19 09:38-10:00/22 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:36-15:33/57 09:49-10:09/20 | 08:16 09:40-09:59/19 | 07:12 | 06:53 19:40-19:53/13 | 05:42 | 04:56 |
| | 16:22 10:14-10:48/34 | 17:21 08:52-09:37/45 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:36-15:34/58 09:49-10:10/21 | 08:14 09:41-09:56/15 08:42-08:45/3 | 07:09 | 06:50 19:39-19:56/17 | 05:40 | 04:56 |
| | 16:23 10:14-10:49/35 | 17:23 08:51-09:35/44 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:37-15:35/58 09:49-10:12/23 | 08:12 09:44-09:53/9 08:40-08:49/9 | 07:07 | 06:48 19:37-19:56/19 | 05:38 | 04:55 |
| | 16:25 10:15-10:50/35 | 17:25 08:51-09:35/44 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:38-15:37/59 09:49-10:13/24 | 08:10 08:52-09:34/42 | 07:04 | 06:45 19:37-19:57/20 | 05:36 | 04:55 |
| | 16:26 10:16-10:51/35 | 17:27 08:38-08:51/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:38-15:36/58 09:49-10:14/25 | 08:08 08:36-09:33/57 | 07:02 | 06:43 19:36-19:56/20 | 05:34 | 04:54 |
| | 16:28 10:16-10:51/35 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 14:39-15:37/58 09:48-10:14/26 | 08:06 09:16-09:31/15 | 06:59 | 06:40 19:36-19:56/20 | 05:32 | 04:54 |
| | 16:30 10:15-10:51/36 | 17:32 08:33-09:14/41 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:40-15:38/58 09:48-10:15/27 | 08:04 09:19-09:29/10 | 06:57 | 06:38 19:35-19:55/20 | 05:30 | 04:53 |
| | 16:31 10:16-10:51/35 09:38-09:47/9 | 17:34 08:32-09:13/41 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:41-15:39/58 09:37-10:16/39 | 08:02 08:31-09:13/42 | 06:54 | 06:35 19:36-19:55/19 | 05:29 | 04:53 |
| | 16:33 10:17-10:52/35 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:42-15:40/58 | 07:59 08:31-08:54/23 | 06:52 | 06:33 19:37-19:54/17 | 05:27 | 04:53 |
| | 16:35 09:36-10:52/76 | 17:38 08:55-09:12/17 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:43-15:40/57 | 07:57 08:29-08:53/24 | 06:49 | 06:30 19:37-19:53/16 | 05:25 | 04:52 |
| | 16:37 09:35-10:52/77 | 17:40 08:56-09:10/14 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:44-15:41/57 | 07:55 08:29-08:54/25 | 06:47 | 06:28 19:39-19:51/12 | 05:23 | 04:52 |
| | 16:38 09:34-10:53/79 | 17:42 08:59-09:07/8 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:46-15:42/56 | 07:53 08:29-08:52/23 | 06:44 | 06:25 19:40-19:48/8 | 05:21 | 04:52 |
| | 16:40 09:34-10:53/79 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:47-15:42/55 | 07:50 08:29-08:52/23 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:33-10:53/80 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:48-15:42/54 | 07:48 08:30-08:51/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 09:33-10:53/80 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:49-15:42/53 | 07:46 08:30-08:49/19 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:33-10:53/80 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:49-15:42/53 | 07:44 08:31-08:49/18 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:32-10:52/80 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 14:51-15:43/52 | 07:41 08:31-08:47/16 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:32-10:52/80 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:53-15:43/50 09:32-10:22/50 | 07:39 08:33-08:46/13 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 10:23-10:52/29 09:17-09:25/8 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:55-15:42/47 09:32-10:21/49 | 07:36 08:36-08:42/6 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 10:23-10:51/28 09:15-09:28/13 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:09-15:43/34 10:25-10:51/26 09:14-09:30/16 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:58-15:06/8 09:33-10:22/49 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:10-15:42/32 09:32-10:22/50 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:26-10:50/24 09:13-09:31/18 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:11-15:42/31 09:12-10:22/70 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 10:28-10:49/21 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:11-15:41/30 09:11-10:22/71 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 10:30-10:47/17 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:13-15:40/27 09:11-10:21/70 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 10:32-10:44/12 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:14-15:38/24 | | 07:11 | | 05:03 | |
| | 17:06 09:10-10:21/71 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3880 | 1218 | 0 | 214 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38 19:35-19:55/20<br>20:30 | 07:35<br>19:12 | 07:37 08:21-09:04/43<br>16:58 08:08-08:20/12 | 08:35 14:20-15:19/59 09:31-09:56/25<br>16:10 09:57-10:32/35 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40 19:35-19:55/20<br>20:27 | 07:37<br>19:10 | 07:39 09:13-09:24/11 08:10-08:18/8<br>16:56 08:21-09:05/44 | 08:37 14:20-15:19/59 09:31-09:55/24<br>16:09 09:58-10:33/35 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42 19:35-19:54/19<br>20:24 | 07:39<br>19:07 | 07:41 09:10-09:26/16 08:12-08:14/2<br>16:54 08:21-09:05/44 | 08:38 14:21-15:19/58 09:32-09:55/23<br>16:08 09:58-10:33/35 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44 19:36-19:53/17<br>20:22 | 07:41<br>19:05 | 07:43 09:09-09:29/20<br>16:52 08:22-09:06/44 | 08:40 14:21-15:19/58 09:34-09:55/21<br>16:08 09:59-10:34/35 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45 19:37-19:50/13<br>20:19 | 07:42<br>19:02 | 07:45 09:33-09:42/9 08:22-09:06/44<br>16:50 09:08-09:30/22 | 08:41 14:21-15:18/57 09:34-09:54/20<br>16:07 09:59-10:34/35 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47 19:37-19:47/10<br>20:17 | 07:44<br>18:59 | 07:47 08:23-09:45/82<br>16:48 | 08:43 14:22-15:19/57 09:36-09:54/18<br>16:06 10:00-10:34/34 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49 19:41-19:45/4<br>20:14 | 07:46<br>18:57 | 07:49 08:23-09:47/84<br>16:46 | 08:44 14:21-15:18/57 11:07-11:12/5 09:36-09:53/17<br>16:06 12:45-12:53/8 10:00-10:34/34 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:25-09:49/84<br>16:44 | 08:46 14:22-15:18/56 11:06-11:15/9 09:38-09:54/16<br>16:05 12:44-12:56/12 10:01-10:35/34 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 14:49-15:01/12 08:26-08:40/14<br>16:42 08:41-09:50/69 | 08:47 14:22-15:18/56 11:05-11:17/12 09:39-09:53/14<br>16:05 12:43-12:57/14 10:01-10:35/34 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 14:47-15:07/20 08:28-08:37/9<br>16:40 08:41-09:51/70 | 08:48 14:23-15:18/55 11:05-11:19/14 09:41-09:53/12<br>16:04 12:43-12:59/16 10:02-10:36/34 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 14:45-15:09/24<br>16:38 08:41-09:52/71 | 08:50 14:23-15:18/55 11:04-11:19/15 09:43-09:52/9<br>16:04 12:43-13:00/17 10:03-10:36/33 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 14:44-15:12/28 08:43-09:53/70<br>16:36 10:04-10:16/12 | 08:51 14:24-15:17/53 11:04-11:20/16 09:44-09:51/7<br>16:04 12:42-13:01/19 10:03-10:36/33 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 14:43-15:13/30 08:43-09:54/71<br>16:34 10:02-10:19/17 | 08:52 14:24-15:17/53 11:04-11:21/17 09:47-09:48/1<br>16:04 12:42-13:01/19 10:04-10:36/32 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00<br>18:39 | 08:03 14:42-15:14/32 08:44-09:54/70<br>16:33 10:00-10:21/21 | 08:53 14:24-15:16/52 11:04-11:22/18<br>16:04 12:42-13:02/20 10:04-10:36/32 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02<br>18:37 | 08:05 14:42-15:14/32 09:04-09:54/50<br>16:31 09:58-10:22/24 08:45-09:03/18 | 08:54 14:25-15:16/51 11:05-11:24/19<br>16:04 12:42-13:03/21 10:06-10:37/31 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04<br>18:35 | 08:07 14:42-15:16/34 09:58-10:24/26 08:47-09:03/16<br>16:29 14:31-14:39/8 09:05-09:55/50 | 08:55 14:25-15:15/50 11:04-11:23/19<br>16:04 12:42-13:04/22 10:05-10:37/32 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 09:07-09:15/8<br>18:32 | 08:09 14:28-15:16/48 09:06-09:55/49<br>16:28 09:57-10:25/28 08:49-09:01/12 | 08:56 15:00-15:12/12 12:43-13:05/22 10:06-10:37/31<br>16:04 14:26-14:59/33 11:04-11:24/20 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 09:04-09:18/14<br>18:30 | 08:11 14:27-15:17/50 09:06-09:56/50<br>16:26 09:57-10:26/29 08:51-08:59/8 | 08:56 15:01-15:12/11 12:43-13:05/22 10:07-10:38/31<br>16:04 14:26-15:00/34 11:05-11:25/20 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 09:02-09:19/17<br>18:27 | 08:13 14:25-15:17/52<br>16:25 09:06-10:26/80 | 08:57 15:02-15:13/11 12:44-13:06/22 10:07-10:39/32<br>16:04 14:27-15:01/34 11:06-11:26/20 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 09:01-09:19/18<br>18:25 | 08:15 14:24-15:17/53<br>16:23 09:07-10:27/80 | 08:58 15:02-15:12/10 12:44-13:06/22 10:07-10:38/31<br>16:05 14:27-15:00/33 11:05-11:26/21 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 09:00-09:20/20<br>18:23 | 08:17 14:25-15:18/53<br>16:22 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:08-10:39/31<br>16:05 14:28-15:01/33 11:06-11:27/21 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 09:00-09:22/22<br>18:20 | 08:19 14:24-15:19/55<br>16:20 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:09-10:40/31<br>16:05 14:28-15:01/33 11:07-11:28/21 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:59-09:23/24<br>18:18 | 08:21 14:24-15:19/55<br>16:19 09:10-10:30/80 | 09:00 15:04-15:14/10 12:45-13:08/23 10:09-10:40/31<br>16:06 14:29-15:02/33 11:07-11:28/21 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:59-09:23/24<br>18:16 | 08:23 14:23-15:19/56<br>16:18 09:11-10:30/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:40/31<br>16:07 14:29-15:02/33 11:07-11:28/21 |
| 25 | 05:28<br>21:52 | 06:25 19:43-19:52/9<br>20:47 | 07:23<br>19:28 | 07:22 07:59-08:23/24<br>17:13 08:28-08:38/10 | 08:25 14:22-15:19/57<br>16:16 09:12-10:31/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:41/32<br>16:07 14:29-15:03/34 11:08-11:28/20 |
| 26 | 05:29<br>21:51 | 06:27 19:41-19:54/13<br>20:44 | 07:25<br>19:25 | 07:24 07:59-08:23/24<br>17:11 08:25-08:40/15 | 08:27 14:22-15:19/57<br>16:15 09:14-10:31/77 | 09:01 15:05-15:17/12 12:48-13:10/22 10:11-10:42/31<br>16:08 14:31-15:04/33 11:09-11:29/20 |
| 27 | 05:31<br>21:49 | 06:28 19:39-19:54/15<br>20:42 | 07:27<br>19:23 | 07:26 08:00-08:42/42<br>17:09 | 08:28 14:21-15:19/58<br>16:14 09:15-10:31/76 | 09:01 14:31-15:20/49 11:10-11:29/19<br>16:09 12:48-13:10/22 10:11-10:43/32 |
| 28 | 05:33<br>21:47 | 06:30 19:38-19:55/17<br>20:39 | 07:29<br>19:20 | 07:29 08:01-08:43/42<br>17:07 | 08:30 14:21-15:19/58 09:17-09:56/39<br>16:13 09:57-10:32/35 | 09:01 14:31-15:22/51 11:11-11:30/19<br>16:10 12:49-13:10/21 10:11-10:43/32 |
| 29 | 05:34<br>21:45 | 06:32 19:37-19:56/19<br>20:37 | 07:31<br>19:17 | 07:31 08:47-08:59/12<br>17:04 08:01-08:43/42 | 08:32 14:21-15:19/58 09:29-09:56/27<br>16:12 09:57-10:32/35 09:19-09:28/9 | 09:01 14:32-15:24/52 11:11-11:30/19<br>16:11 12:50-13:10/20 10:12-10:44/32 |
| 30 | 05:36<br>21:44 | 06:34 19:36-19:56/20<br>20:35 | 07:33<br>19:15 | 07:33 08:45-09:01/16<br>17:02 08:03-08:43/40 | 08:34 14:21-15:19/58 09:30-09:56/26<br>16:11 09:58-10:33/35 | 09:01 14:32-15:24/52 11:11-11:29/18<br>16:11 12:50-13:09/19 10:11-10:44/33 |
| 31 | 05:38<br>21:42 | 06:36 19:36-19:56/20<br>20:32 | | 07:35 08:22-09:03/41<br>17:00 08:06-08:21/15 | | 09:01 14:32-15:25/53 11:13-11:29/16 09:53-09:59/6<br>16:13 12:51-13:10/19 10:12-10:44/32 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 113 | 103 | 470 | 3328 | 3740 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:59-14:33/34 09:41-09:49/8 | 08:28 09:33-09:49/16 | 07:27 | 07:08 19:09-19:32/23 | 05:55 | 05:02 |
| | 16:14 09:56-10:21/25 | 17:08 08:57-09:32/35 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:00-14:32/32 09:40-09:50/10 | 08:26 09:34-09:47/13 | 07:24 | 07:05 19:09-19:33/24 | 05:53 | 05:01 |
| | 16:15 09:55-10:21/26 | 17:10 08:55-09:32/37 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 14:01-14:33/32 09:40-09:51/11 | 08:24 09:37-09:45/8 | 07:22 | 07:03 19:08-19:32/24 | 05:51 | 05:00 |
| | 16:16 09:56-10:22/26 | 17:12 08:55-09:31/36 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:01-14:33/32 09:39-09:52/13 | 08:22 08:55-09:31/36 | 07:19 | 07:00 19:09-19:32/23 | 05:49 | 04:59 |
| | 16:18 09:56-10:22/26 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:03-14:33/30 09:39-09:54/15 | 08:20 08:56-09:30/34 | 07:17 | 06:58 19:09-19:30/21 | 05:46 | 04:58 |
| | 16:19 09:57-10:23/26 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:04-14:32/28 09:39-09:55/16 | 08:18 08:56-09:29/33 | 07:14 | 06:55 19:10-19:29/19 | 05:44 | 04:57 |
| | 16:20 09:57-10:24/27 | 17:19 08:47-08:50/3 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:05-14:32/27 09:38-09:56/18 | 08:16 09:18-09:27/9 08:57-09:15/18 | 07:12 | 06:53 19:10-19:27/17 | 05:42 | 04:56 |
| | 16:22 09:57-10:24/27 | 17:21 08:45-08:52/7 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:06-14:31/25 09:38-09:56/18 | 08:14 08:42-08:52/10 | 07:09 | 06:50 19:12-19:26/14 | 05:40 | 04:56 |
| | 16:23 09:57-10:24/27 | 17:23 08:56-09:13/17 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 14:22-14:30/8 09:59-10:26/27 | 08:12 08:40-08:54/14 | 07:07 | 06:48 19:14-19:22/8 | 05:38 | 04:55 |
| | 16:25 14:08-14:19/11 09:39-09:58/19 | 17:25 08:58-09:13/15 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:11-14:18/7 | 08:10 08:38-08:54/16 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 09:39-10:26/47 | 17:27 08:59-09:12/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:39-10:26/47 | 08:08 08:37-08:55/18 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 09:32-09:38/6 | 17:30 09:01-09:10/9 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:30-10:26/56 | 08:06 08:37-08:55/18 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:29-10:26/57 | 08:04 08:37-08:55/18 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:29-10:27/58 | 08:02 08:37-08:55/18 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:28-10:27/59 | 07:59 08:38-08:55/17 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:27-10:26/59 | 07:57 08:38-08:53/15 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:27-10:27/60 | 07:55 08:40-08:52/12 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-10:27/59 | 07:53 08:41-08:49/8 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:27-10:26/59 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 09:27-10:27/60 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:06-10:26/20 09:17-09:22/5 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:27-10:05/38 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:07-10:24/17 09:16-09:25/9 | 07:44 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:27-10:05/38 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:09-10:24/15 09:14-09:26/12 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:27-10:05/38 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 10:11-10:22/11 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:12-10:05/53 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 10:14-10:19/5 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:11-10:04/53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:11-10:05/54 | 07:34 | 06:23 18:17-18:29/12 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:11-10:04/53 | 07:32 | 06:21 18:14-18:30/16 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:11-10:03/52 | 07:29 | 06:18 18:13-18:32/19 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:05-09:07/2 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:10-10:02/52 | | 07:16 19:11-19:32/21 | 06:00 | 05:05 | 04:55 |
| | 17:02 09:03-09:09/6 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:01-10:01/60 | | 07:13 19:10-19:32/22 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 09:51-09:58/7 | | 07:11 19:10-19:33/23 | | 05:03 | |
| | 17:06 08:59-09:50/51 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1909 | 503 | 113 | 173 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 08:08-08:24/16 | 08:35 09:14-10:07/53 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 08:28-08:41/13 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 08:10-08:23/13 | 08:37 13:54-14:00/6 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 08:27-08:42/15 | 16:09 09:21-10:08/47 |
| 3 | 04:58 | 05:43 | 06:42 19:13-19:20/7 | 07:39 | 07:41 08:50-08:53/3 08:26-08:43/17 | 08:38 14:06-14:14/8 09:42-10:09/27 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 08:12-08:22/10 | 16:08 13:52-14:02/10 09:22-09:41/19 |
| 4 | 04:59 | 05:45 | 06:44 19:09-19:23/14 | 07:41 | 07:43 08:47-08:57/10 08:26-08:44/18 | 08:40 13:51-14:16/25 09:23-09:42/19 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 08:15-08:21/6 | 16:08 09:43-10:09/26 |
| 5 | 05:00 | 05:47 | 06:45 19:07-19:24/17 | 07:42 | 07:45 08:45-08:59/14 08:26-08:44/18 | 08:41 13:50-14:17/27 09:24-09:41/17 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 08:17-08:19/2 | 16:07 09:42-10:09/27 |
| 6 | 05:01 | 05:49 | 06:47 19:05-19:24/19 | 07:44 | 07:47 08:25-09:00/35 | 08:43 13:50-14:18/28 09:25-09:41/16 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 09:43-10:10/27 |
| 7 | 05:02 | 05:51 | 06:49 19:04-19:25/21 | 07:46 | 07:49 08:25-09:01/36 | 08:44 13:49-14:19/30 09:25-09:40/15 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 09:43-10:10/27 |
| 8 | 05:03 | 05:53 | 06:51 19:03-19:26/23 | 07:48 | 07:51 09:07-09:16/9 | 08:46 13:50-14:21/31 09:27-09:40/13 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 9 | 05:05 | 05:54 | 06:53 19:02-19:26/24 | 07:50 | 07:53 09:05-09:18/13 | 08:47 13:49-14:21/32 09:28-09:40/12 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 10 | 05:06 | 05:56 | 06:55 19:02-19:26/24 | 07:52 | 07:55 09:03-09:20/17 | 08:48 13:50-14:23/33 09:30-09:40/10 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 08:28-09:02/34 | 16:04 09:45-10:11/26 |
| 11 | 05:07 | 05:58 | 06:57 19:02-19:26/24 | 07:54 | 07:57 08:31-09:29/58 | 08:50 13:49-14:23/34 09:31-09:39/8 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:46-10:11/25 |
| 12 | 05:08 | 06:00 | 06:59 19:01-19:24/23 | 07:56 | 07:59 08:33-09:33/60 | 08:51 13:49-14:24/35 09:32-09:38/6 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:46-10:11/25 |
| 13 | 05:09 | 06:02 | 07:01 19:01-19:24/23 | 07:58 | 08:01 08:42-09:34/52 | 08:52 13:49-14:24/35 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 08:35-08:41/6 | 16:04 09:46-10:12/26 |
| 14 | 05:11 | 06:04 | 07:02 19:02-19:23/21 | 08:00 | 08:03 08:42-09:35/53 | 08:53 13:50-14:25/35 10:42-10:44/2 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 08:37-08:39/2 | 16:04 13:42-13:43/1 09:47-10:12/25 |
| 15 | 05:12 | 06:06 | 07:04 19:02-19:22/20 | 08:02 | 08:05 08:43-09:36/53 | 08:54 13:50-14:25/35 10:42-10:47/5 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 13:40-13:46/6 09:48-10:13/25 |
| 16 | 05:14 | 06:08 | 07:06 19:03-19:20/17 | 08:04 | 08:07 08:44-09:38/54 | 08:55 13:50-14:26/36 10:40-10:47/7 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 13:40-13:47/7 09:48-10:13/25 |
| 17 | 05:15 | 06:09 | 07:08 19:05-19:18/13 | 08:06 | 08:09 09:48-09:53/5 | 08:56 13:51-14:27/36 10:40-10:49/9 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 08:45-09:38/53 | 16:04 13:40-13:48/8 09:49-10:13/24 |
| 18 | 05:16 | 06:11 | 07:10 19:07-19:13/6 | 08:08 | 08:11 09:45-09:56/11 | 08:56 13:51-14:27/36 10:41-10:50/9 |
| | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 08:46-09:39/53 | 16:04 13:40-13:49/9 09:49-10:14/25 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 09:43-09:58/15 08:48-09:00/12 | 08:57 13:52-14:28/36 10:41-10:51/10 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 09:01-09:39/38 | 16:04 13:40-13:50/10 09:50-10:14/24 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 09:42-09:59/17 08:50-08:59/9 | 08:58 13:52-14:28/36 10:41-10:51/10 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 09:02-09:40/38 | 16:05 13:40-13:50/10 09:50-10:14/24 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 09:42-10:02/20 08:53-08:58/5 | 08:58 13:52-14:29/37 10:42-10:52/10 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 09:03-09:41/38 | 16:05 13:41-13:51/10 09:51-10:15/24 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 09:03-10:03/60 | 08:59 13:52-14:29/37 10:43-10:53/10 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 13:41-13:51/10 09:52-10:16/24 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 09:04-10:03/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 13:42-13:52/10 09:52-10:16/24 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 09:11-09:20/9 | 08:23 09:05-10:04/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 13:42-13:52/10 09:52-10:16/24 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 08:09-08:22/13 | 08:25 09:05-10:05/60 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 13:43-13:52/9 09:52-10:17/25 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 08:08-08:23/15 | 08:27 09:06-10:05/59 | 09:01 13:55-14:32/37 10:45-10:54/9 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 13:44-13:53/9 09:54-10:18/24 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 08:08-08:24/16 | 08:28 09:07-10:06/59 | 09:01 13:56-14:32/36 10:46-10:54/8 |
| | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 16:09 13:45-13:53/8 09:54-10:18/24 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 08:07-08:24/17 | 08:30 09:09-10:07/58 | 09:01 13:56-14:32/36 10:47-10:53/6 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 13:47-13:53/6 09:54-10:19/25 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 08:06-08:24/18 | 08:32 09:10-10:07/57 | 09:01 13:57-14:32/35 10:49-10:53/4 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 13:49-13:52/3 09:55-10:20/25 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 08:06-08:24/18 | 08:34 09:12-10:08/56 | 09:01 13:57-14:32/35 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 09:54-10:19/25 |
| 31 | 05:38 | 06:36 | | 07:35 08:07-08:25/18 | | 09:01 13:58-14:32/34 09:42-09:46/4 |
| | 21:42 | 20:32 | | 17:00 08:30-08:40/10 | | 16:13 09:55-10:20/25 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 296 | 134 | 1550 | 2202 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:22-14:49/87 09:47-09:53/6 | 08:28 14:06-14:52/46 | 07:27 08:02-08:49/47 | 07:08 | 05:55 20:07-20:31/24 | 05:02 |
| | 16:14 10:52-11:32/40 | 17:08 09:49-10:10/21 | 18:07 07:52-08:00/8 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 13:22-14:49/87 09:46-09:54/8 | 08:26 14:08-14:50/42 | 07:24 08:03-08:40/37 | 07:05 | 05:53 20:07-20:31/24 | 05:01 |
| | 16:15 10:52-11:32/40 | 17:10 09:51-10:09/18 | 18:10 07:50-08:02/12 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 13:22-14:50/88 09:45-09:56/11 | 08:24 14:09-14:47/38 | 07:22 08:03-08:28/25 | 07:03 | 05:51 20:06-20:32/26 | 05:00 |
| | 16:16 10:53-11:33/40 | 17:12 09:53-10:07/14 | 18:12 07:47-08:02/15 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 13:22-14:50/88 09:44-09:57/13 | 08:22 14:12-14:35/23 09:02-09:09/7 | 07:19 08:20-08:24/4 08:05-08:17/12 | 07:00 | 05:49 20:06-20:32/26 | 04:59 |
| | 16:18 10:53-11:33/40 | 17:15 09:56-10:04/8 | 18:14 07:46-08:03/17 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 13:24-14:51/87 09:44-09:59/15 | 08:20 14:15-14:33/18 | 07:17 07:45-08:03/18 | 06:58 | 05:46 20:06-20:32/26 | 04:58 |
| | 16:19 10:54-11:34/40 | 17:17 08:59-09:13/14 | 18:16 08:07-08:14/7 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 13:24-14:52/88 09:44-10:00/16 | 08:18 14:19-14:29/10 | 07:14 07:45-08:03/18 | 06:55 | 05:44 20:05-20:32/27 | 04:57 |
| | 16:20 10:54-11:34/40 | 17:19 08:57-09:15/18 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 13:24-14:52/88 09:43-10:01/18 | 08:16 08:55-09:17/22 | 07:12 07:45-08:02/17 | 06:53 | 05:42 20:05-20:31/26 | 04:56 |
| | 16:22 10:54-11:34/40 | 17:21 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 13:24-14:52/88 09:43-10:02/19 | 08:14 08:53-09:17/24 | 07:09 07:46-08:02/16 | 06:50 | 05:40 20:05-20:31/26 | 04:56 |
| | 16:23 10:55-11:35/40 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 13:25-14:53/88 09:43-10:04/21 | 08:12 08:53-09:18/25 | 07:07 07:46-08:00/14 | 06:48 | 05:38 20:06-20:30/24 | 04:55 |
| | 16:25 10:56-11:36/40 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 13:26-14:54/88 09:43-10:05/22 | 08:10 08:52-09:19/27 | 07:04 07:47-07:58/11 | 06:45 | 05:36 20:06-20:30/24 | 04:55 |
| | 16:26 10:57-11:36/39 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 13:26-14:54/88 09:43-10:06/23 | 08:08 08:52-09:20/28 | 07:02 07:50-07:55/5 | 06:43 | 05:34 20:07-20:30/23 | 04:54 |
| | 16:28 10:57-11:36/39 | 17:29 08:43-08:50/7 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 13:26-14:55/89 09:42-10:06/24 | 08:06 08:39-09:20/41 | 06:59 | 06:40 | 05:32 20:07-20:29/22 | 04:54 |
| | 16:30 10:57-11:36/39 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 13:27-14:55/88 09:42-10:07/25 | 08:04 08:37-09:21/44 | 06:57 | 06:38 | 05:30 20:08-20:28/20 | 04:53 |
| | 16:31 10:58-11:36/38 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 13:28-14:56/88 09:42-10:08/26 | 08:02 08:34-09:21/47 | 06:54 | 06:35 | 05:29 20:09-20:27/18 | 04:53 |
| | 16:33 10:58-11:36/38 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 13:29-14:57/88 09:42-10:09/27 | 07:59 08:30-09:21/51 | 06:52 | 06:33 | 05:27 20:10-20:26/16 | 04:53 |
| | 16:35 10:59-11:37/38 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 13:29-14:56/87 09:42-10:09/27 | 07:57 08:28-09:21/53 | 06:49 | 06:30 | 05:25 20:11-20:24/13 | 04:52 |
| | 16:36 10:59-11:36/37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 13:30-14:57/87 09:42-10:10/28 | 07:55 08:27-09:21/54 | 06:47 | 06:28 | 05:23 20:14-20:23/9 | 04:52 |
| | 16:38 11:00-11:36/36 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 13:31-14:58/87 09:43-10:11/28 | 07:53 08:20-09:20/60 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:02-11:36/34 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 13:31-14:57/86 09:42-10:11/29 | 07:50 08:17-09:20/63 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:02-11:36/34 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 13:33-14:58/85 09:43-10:12/29 | 07:48 08:16-09:19/63 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:04-11:36/32 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 13:33-14:58/85 09:43-10:12/29 | 07:46 08:12-09:18/66 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:04-11:35/31 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 13:34-14:57/83 09:42-10:12/30 | 07:44 08:10-09:17/67 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 11:05-11:34/29 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 13:36-14:58/82 09:43-10:13/30 | 07:41 08:07-09:15/68 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:07-11:34/27 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 13:37-14:58/81 09:43-10:13/30 | 07:39 08:05-09:13/68 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:08-11:32/24 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 13:38-14:57/79 09:44-10:13/29 | 07:36 09:00-09:09/9 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:10-11:31/21 | 17:59 08:03-08:57/54 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 13:41-14:58/77 09:45-10:14/29 | 07:34 08:03-08:56/53 | 06:23 | 06:06 20:14-20:25/11 | 05:09 | 04:54 |
| | 16:56 11:13-11:30/17 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 13:43-14:57/74 09:45-10:13/28 | 07:32 08:02-08:54/52 | 06:21 | 06:04 20:12-20:27/15 | 05:08 | 04:54 |
| | 16:58 11:16-11:26/10 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:02-14:56/54 09:46-10:13/27 | 07:29 08:02-08:52/50 | 06:18 | 06:02 20:10-20:28/18 | 05:06 | 04:55 |
| | 17:00 13:46-14:01/15 | 18:05 07:55-07:59/4 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:03-14:56/53 09:46-10:12/26 | | 07:16 | 06:00 20:09-20:30/21 | 05:05 | 04:55 |
| | 17:02 13:52-13:55/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:04-14:55/51 | | 07:13 | 05:57 20:08-20:30/22 | 05:04 | 04:56 |
| | 17:04 09:47-10:12/25 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:05-14:54/49 | | 07:11 | | 05:03 | |
| | 17:06 09:48-10:11/23 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4180 | 1377 | 283 | 87 | 374 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:17-20:40/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:22-08:49/27<br>16:58 | 08:35 13:08-14:36/88 09:25-09:48/23<br>16:10 10:38-11:17/39 |
| 2 | 04:58<br>22:18 | 05:41 20:17-20:41/24<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:23-08:48/25<br>16:56 | 08:37 13:08-14:37/89 09:25-09:47/22<br>16:09 10:39-11:18/39 |
| 3 | 04:58<br>22:17 | 05:43 20:16-20:40/24<br>21:36 | 06:42<br>20:24 | 07:39 08:26-08:35/9<br>19:07 | 07:41 08:23-08:47/24<br>16:54 | 08:38 13:09-14:37/88 09:26-09:47/21<br>16:08 10:39-11:19/40 |
| 4 | 04:59<br>22:17 | 05:45 20:16-20:41/25<br>21:34 | 06:44<br>20:22 | 07:41 08:24-08:37/13<br>19:05 | 07:43 08:25-08:46/21<br>16:52 | 08:40 13:09-14:38/89 09:28-09:47/19<br>16:08 10:40-11:20/40 |
| 5 | 05:00<br>22:16 | 05:47 20:16-20:41/25<br>21:32 | 06:45<br>20:19 | 07:42 08:22-08:38/16<br>19:02 | 07:45 13:48-13:59/11<br>16:50 08:27-08:44/17 | 08:41 13:09-14:37/88 09:28-09:46/18<br>16:07 10:39-11:20/41 |
| 6 | 05:01<br>22:15 | 05:49 20:15-20:41/26<br>21:30 | 06:47<br>20:17 | 07:44 08:21-08:38/17<br>18:59 | 07:47 13:44-14:03/19<br>16:48 08:29-08:42/13 | 08:43 13:10-14:38/88 09:30-09:46/16<br>16:06 10:40-11:20/40 |
| 7 | 05:02<br>22:15 | 05:51 20:15-20:41/26<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:38/18<br>18:57 | 07:49 13:41-14:05/24 08:32-08:38/6<br>16:46 09:26-09:34/8 | 08:44 13:10-14:37/87 09:30-09:45/15<br>16:06 10:40-11:20/40 |
| 8 | 05:03<br>22:14 | 05:52 20:15-20:41/26<br>21:26 | 06:51<br>20:12 | 07:48 08:20-08:38/18<br>18:54 | 07:51 13:40-14:19/39<br>16:44 09:24-09:38/14 | 08:46 13:11-14:38/87 09:32-09:45/13<br>16:05 10:41-11:21/40 |
| 9 | 05:04<br>22:13 | 05:54 20:14-20:40/26<br>21:24 | 06:53<br>20:09 | 07:50 08:20-08:38/18<br>18:52 08:40-08:51/11 | 07:53 13:38-14:21/43<br>16:42 09:22-09:40/18 | 08:47 13:11-14:38/87 09:33-09:44/11<br>16:05 10:41-11:21/40 |
| 10 | 05:06<br>22:12 | 05:56 20:15-20:40/25<br>21:22 | 06:55<br>20:07 | 07:52 08:38-09:00/22<br>18:49 08:20-08:37/17 | 07:55 13:37-14:23/46<br>16:40 09:20-09:41/21 | 08:48 13:12-14:39/87 09:35-09:44/9<br>16:04 10:42-11:22/40 |
| 11 | 05:07<br>22:11 | 05:58 20:15-20:40/25<br>21:19 | 06:57<br>20:04 | 07:54 09:05-09:11/6 08:22-08:36/14<br>18:47 08:37-09:03/26 | 07:57 13:36-14:25/49<br>16:38 09:19-09:42/23 | 08:50 13:12-14:39/87 09:37-09:43/6<br>16:04 10:42-11:23/41 |
| 12 | 05:08<br>22:10 | 06:00 20:16-20:39/23<br>21:17 | 06:59<br>20:01 | 07:56 08:24-09:14/50<br>18:44 | 07:59 13:35-14:27/52<br>16:36 09:19-09:44/25 | 08:51 13:12-14:39/87<br>16:04 10:42-11:23/41 |
| 13 | 05:09<br>22:09 | 06:02 20:16-20:38/22<br>21:15 | 07:01<br>19:59 | 07:58 08:36-09:23/47<br>18:42 08:27-08:34/7 | 08:01 13:35-14:28/53 09:18-09:44/26<br>16:34 13:23-13:28/5 | 08:52 13:12-14:39/87<br>16:04 10:43-11:23/40 |
| 14 | 05:11<br>22:08 | 06:04 20:17-20:37/20<br>21:13 | 07:02<br>19:56 | 08:00 08:35-09:26/51<br>18:39 | 08:03 13:34-14:28/54 09:18-09:45/27<br>16:33 13:18-13:33/15 | 08:53 13:13-14:39/86<br>16:04 10:43-11:23/40 |
| 15 | 05:12<br>22:07 | 06:06 20:18-20:36/18<br>21:10 | 07:04<br>19:54 | 08:02 08:35-09:28/53<br>18:37 | 08:05 13:15-14:29/74 09:17-09:45/28<br>16:31 10:48-10:58/10 | 08:54 13:13-14:40/87<br>16:04 10:44-11:24/40 |
| 16 | 05:14<br>22:06 | 06:08 20:20-20:34/14<br>21:08 | 07:06<br>19:51 | 08:04 08:35-09:29/54<br>18:35 | 08:07 13:14-14:31/77 09:18-09:47/29<br>16:29 10:46-11:03/17 | 08:55 13:14-14:40/86<br>16:04 10:44-11:24/40 |
| 17 | 05:15<br>22:04 | 06:09 20:22-20:31/9<br>21:06 | 07:08<br>19:48 | 08:06 09:31-09:43/12<br>18:32 08:35-09:29/54 | 08:09 13:12-14:31/79 09:18-09:47/29<br>16:28 10:44-11:05/21 | 08:56 13:14-14:40/86<br>16:04 10:45-11:25/40 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 08:37-09:45/68<br>18:30 | 08:11 13:11-14:32/81 09:17-09:47/30<br>16:26 10:42-11:06/24 | 08:56 13:15-14:41/86<br>16:04 10:45-11:25/40 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 08:39-09:47/68<br>18:27 | 08:13 13:10-14:32/82 09:17-09:47/30<br>16:25 10:41-11:08/27 | 08:57 13:16-14:42/86<br>16:04 10:46-11:26/40 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 08:41-09:48/67<br>18:25 | 08:15 13:09-14:32/83 09:17-09:47/30<br>16:23 10:40-11:09/29 | 08:58 13:16-14:41/85<br>16:05 10:46-11:26/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 08:45-09:48/63<br>18:23 | 08:17 13:09-14:34/85 09:19-09:48/29<br>16:22 10:40-11:11/31 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 08:47-09:50/63<br>18:20 | 08:19 13:09-14:34/85 09:19-09:48/29<br>16:20 10:40-11:12/32 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:48-09:50/62<br>18:18 | 08:21 13:09-14:34/85 09:19-09:48/29<br>16:19 10:39-11:13/34 | 09:00 13:17-14:43/86<br>16:06 10:48-11:28/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:51-09:50/59<br>18:16 | 08:23 13:08-14:35/87 09:20-09:48/28<br>16:18 10:39-11:13/34 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 07:56-08:50/54<br>17:13 | 08:25 13:08-14:35/87 09:20-09:48/28<br>16:16 10:39-11:14/35 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 26 | 05:29 20:26-20:31/5<br>21:51 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 07:58-08:50/52<br>17:11 | 08:27 13:08-14:35/87 09:21-09:48/27<br>16:15 10:38-11:15/37 | 09:01 13:19-14:45/86<br>16:08 10:50-11:30/40 |
| 27 | 05:31 20:23-20:34/11<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 08:01-08:51/50<br>17:09 | 08:28 13:08-14:36/88 09:21-09:48/27<br>16:14 10:38-11:16/38 | 09:01 13:19-14:46/87<br>16:09 10:50-11:30/40 |
| 28 | 05:33 20:21-20:35/14<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 08:06-08:51/45<br>17:07 | 08:30 13:08-14:36/88 09:22-09:48/26<br>16:13 10:39-11:16/37 | 09:01 13:20-14:46/86<br>16:10 10:50-11:31/41 |
| 29 | 05:34 20:20-20:37/17<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 08:07-08:50/43<br>17:04 | 08:32 13:08-14:36/88 09:23-09:48/25<br>16:12 10:39-11:17/38 | 09:01 13:20-14:47/87<br>16:10 10:51-11:31/40 |
| 30 | 05:36 20:19-20:38/19<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 08:09-08:50/41<br>17:02 | 08:34 13:08-14:37/89 09:24-09:48/24<br>16:11 10:39-11:18/39 | 09:01 13:20-14:47/87<br>16:11 10:50-11:31/41 |
| 31 | 05:38 20:18-20:39/21<br>21:42 | 06:36<br>20:32 | | 07:35 08:22-08:50/28<br>17:00 08:14-08:18/4 | | 09:01 13:21-14:48/87<br>16:12 10:51-11:31/40 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 87 | 381 | 0 | 1300 | 2981 | 4107 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:59-12:48/49<br>16:14 | 08:28 11:39-14:28/169<br>17:08 | 07:27 11:43-14:29/166 08:18-08:46/28<br>18:07 08:56-09:39/43 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:58-12:48/50<br>16:15 | 08:26 11:39-14:29/170<br>17:10 | 07:24 11:45-14:28/163 08:19-08:46/27<br>18:09 08:57-09:38/41 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:59-12:49/50<br>16:16 | 08:24 11:39-14:30/171<br>17:12 | 07:22 11:46-14:27/161 08:19-08:45/26<br>18:12 08:57-09:37/40 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:58-12:50/52<br>16:18 | 08:22 11:38-14:30/172<br>17:15 | 07:19 11:48-14:26/158 08:20-08:44/24<br>18:14 08:58-09:36/38 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:59-12:51/52<br>16:19 | 08:20 11:38-14:31/173<br>17:17 | 07:17 11:49-14:24/155 08:21-08:42/21<br>18:16 08:58-09:34/36 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 |
| 6 | 08:59 11:59-12:52/53<br>16:20 | 08:18 11:38-14:32/174<br>17:19 | 07:14 11:52-14:23/151 08:23-08:40/17<br>18:18 09:00-09:33/33 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 11:57-12:52/55<br>16:22 | 08:16 11:37-14:32/175<br>17:21 | 07:12 11:55-14:20/145 08:25-08:37/12<br>18:20 09:01-09:30/29 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:56-12:53/57<br>16:23 | 08:14 11:37-14:33/176<br>17:23 09:13-09:24/11 | 07:09 11:58-14:17/139<br>18:22 09:02-09:27/25 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:54-12:54/60<br>16:25 | 08:12 11:37-14:33/176<br>17:25 09:09-09:28/19 | 07:07 12:06-14:15/129<br>18:24 09:05-09:25/20 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:54-12:55/61<br>16:26 | 08:10 11:37-14:34/177<br>17:27 09:07-09:31/24 | 07:04 12:13-14:11/118 07:36-07:44/8<br>18:26 09:09-09:19/10 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 11:52-12:55/63<br>16:28 | 08:08 11:37-14:34/177<br>17:29 09:05-09:33/28 | 07:02 12:14-14:07/113<br>18:28 07:33-07:48/15 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 13:45-13:50/5<br>16:29 11:51-12:56/65 | 08:06 11:37-14:34/177<br>17:32 09:03-09:34/31 | 06:59 12:14-13:44/90<br>18:30 07:30-07:49/19 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 13:40-13:56/16<br>16:31 11:51-12:57/66 | 08:04 11:37-14:35/178<br>17:34 09:02-09:36/34 | 06:57 12:14-13:42/88<br>18:32 07:22-07:51/29 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 13:38-14:00/22<br>16:33 11:50-12:58/68 | 08:02 11:37-14:35/178<br>17:36 09:01-09:37/36 | 06:54 12:16-13:41/85<br>18:34 07:19-07:51/32 | 06:35<br>20:35 | 05:28<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 13:36-14:03/27<br>16:35 11:49-12:59/70 | 07:59 11:36-14:35/179<br>17:38 08:59-09:38/39 | 06:52 12:16-13:40/84<br>18:36 07:16-07:51/35 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 13:33-14:04/31<br>16:36 11:48-12:59/71 | 07:57 11:37-14:35/178<br>17:40 08:59-09:39/40 | 06:49 12:18-13:39/81<br>18:38 07:14-07:52/38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 13:32-14:07/35<br>16:38 11:48-13:00/72 | 07:55 11:37-14:35/178 08:30-08:39/9<br>17:42 08:58-09:40/42 | 06:47 12:19-13:36/77<br>18:40 07:13-07:52/39 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 13:31-14:09/38<br>16:40 11:47-13:01/74 | 07:53 11:37-14:35/178 08:26-08:41/15<br>17:44 08:57-09:40/43 | 06:44 12:20-13:34/74<br>18:42 07:13-07:52/39 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 13:30-14:11/41<br>16:42 11:46-13:02/76 | 07:50 11:37-14:35/178 08:24-08:43/19<br>17:46 08:57-09:41/44 | 06:41 12:23-13:32/69<br>18:44 07:12-07:51/39 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 13:29-14:13/44<br>16:44 11:46-13:03/77 | 07:48 11:38-14:35/177 08:23-08:45/22<br>17:49 08:57-09:41/44 | 06:39 12:25-13:30/65<br>18:46 07:11-07:50/39 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 13:28-14:14/46<br>16:46 11:45-13:03/78 | 07:46 11:38-14:34/176 08:21-08:46/25<br>17:51 08:56-09:41/45 | 06:36 12:28-13:27/59<br>18:48 07:12-07:50/38 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 13:26-14:16/50<br>16:48 11:44-13:07/83 | 07:44 11:39-14:34/175 08:21-08:47/26<br>17:53 08:56-09:42/46 | 06:34 12:31-13:23/52<br>18:50 07:12-07:49/37 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 13:26-14:18/52<br>16:50 11:44-13:13/89 | 07:41 11:38-14:33/175 08:19-08:47/28<br>17:55 08:55-09:41/46 | 06:31 12:35-13:19/44<br>18:52 07:13-07:48/35 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 13:25-14:19/54<br>16:52 11:43-13:16/93 | 07:39 11:39-14:33/174 08:19-08:48/29<br>17:57 08:55-09:41/46 | 06:29 12:41-13:13/32<br>18:54 07:14-07:46/32 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 13:24-14:20/56<br>16:54 11:42-13:18/96 | 07:36 11:40-14:32/172 08:18-08:47/29<br>17:59 08:55-09:41/46 | 06:26 12:55-12:59/4<br>18:56 07:14-07:44/30 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 13:24-14:22/58<br>16:56 11:43-13:22/99 | 07:34 11:41-14:32/171 08:19-08:48/29<br>18:01 08:55-09:41/46 | 06:23 07:17-07:42/25<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:42-14:23/161<br>16:58 | 07:32 11:41-14:31/170 08:18-08:47/29<br>18:03 08:55-09:40/45 | 06:21 07:33-07:36/3<br>19:00 07:20-07:31/11 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 11:41-14:24/163<br>17:00 | 07:29 11:42-14:30/168 08:18-08:47/29<br>18:05 08:56-09:40/44 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:41-14:25/164<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 11:40-14:26/166<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 11:40-14:27/167<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3175 | 5980 | 3515 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35 12:53-14:22/89<br>19:12 08:07-08:28/21 | 07:37 11:07-14:03/176<br>16:58 08:37-09:00/23 | 08:35 11:34-12:37/63<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 14:24-14:42/18 08:10-08:26/16<br>19:10 12:52-14:23/91 | 07:39 11:07-14:03/176<br>16:56 08:40-08:57/17 | 08:37 11:36-12:38/62<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 12:51-14:47/116<br>19:07 08:12-08:24/12 | 07:41 11:07-14:02/175<br>16:54 08:44-08:53/9 | 08:38 11:38-12:38/60<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 12:50-14:51/121<br>19:04 09:44-10:00/16 | 07:43 11:08-14:02/174<br>16:52 | 08:40 11:41-12:38/57<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:38-14:53/135<br>19:02 09:41-10:03/22 | 07:45 11:08-14:02/174<br>16:50 | 08:41 11:42-12:37/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 12:33-14:55/142 09:03-09:11/8<br>18:59 09:38-10:05/27 | 07:47 11:08-14:01/173<br>16:48 | 08:43 11:45-12:38/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 12:29-14:57/148 08:59-09:14/15<br>18:57 09:36-10:07/31 | 07:49 11:08-14:00/172<br>16:46 | 08:44 11:45-12:37/52<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 12:26-14:58/152 08:57-09:16/19<br>18:54 09:34-10:08/34 | 07:51 11:10-14:00/170<br>16:44 | 08:46 11:46-12:38/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 12:23-14:59/156 08:55-09:18/23<br>18:52 09:33-10:09/36 | 07:53 11:10-14:00/170<br>16:42 | 08:47 11:47-12:37/50<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 12:21-15:00/159 08:54-09:18/24<br>18:49 09:31-10:10/39 | 07:55 11:10-13:59/169<br>16:40 | 08:48 11:48-12:38/50<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 12:19-15:01/162 08:53-09:19/26<br>18:47 09:30-10:11/41 | 07:57 11:11-13:58/167<br>16:38 | 08:50 11:49-12:38/49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 12:17-15:02/165 08:52-09:19/27<br>18:44 09:29-10:11/42 | 07:59 11:12-13:58/166<br>16:36 | 08:51 11:49-12:38/49<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 12:15-15:02/167 08:51-09:19/28<br>18:42 09:28-10:12/44 | 08:01 11:13-13:57/164<br>16:34 | 08:52 11:50-12:38/48<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 12:14-15:03/169 08:51-09:20/29<br>18:39 09:29-10:13/44 | 08:03 11:13-13:56/163<br>16:33 | 08:53 11:50-12:38/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 12:14-15:04/170 08:51-09:20/29<br>18:37 09:28-10:13/45 | 08:05 11:14-13:55/161<br>16:31 | 08:54 11:51-12:38/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 08:10-08:19/9<br>19:51 | 08:04 12:12-15:04/172 08:51-09:20/29<br>18:35 09:27-10:13/46 | 08:07 12:57-13:55/58<br>16:29 11:16-12:55/99 | 08:55 11:52-12:38/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 08:06-08:30/24<br>19:48 | 08:06 12:11-15:05/174 08:51-09:19/28<br>18:32 09:27-10:13/46 | 08:09 12:58-13:54/56<br>16:28 11:16-12:52/96 | 08:56 11:53-12:39/46<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 08:03-08:32/29<br>19:46 | 08:08 12:10-15:05/175 08:51-09:19/28<br>18:30 09:27-10:13/46 | 08:11 12:59-13:53/54<br>16:26 11:17-12:50/93 | 08:56 11:53-12:39/46<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 13:29-13:58/29<br>19:43 08:01-08:32/31 | 08:10 12:10-15:05/175 08:51-09:18/27<br>18:27 09:26-10:12/46 | 08:13 13:00-13:52/52<br>16:25 11:18-12:47/89 | 08:57 11:54-12:40/46<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 13:22-14:04/42<br>19:41 07:59-08:34/35 | 08:12 12:09-15:05/176 08:51-09:17/26<br>18:25 09:26-10:12/46 | 08:15 13:01-13:51/50<br>16:23 11:19-12:42/83 | 08:58 11:54-12:40/46<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 13:17-14:08/51<br>19:38 07:58-08:34/36 | 08:14 12:08-15:05/177 08:52-09:16/24<br>18:23 09:26-10:11/45 | 08:17 13:04-13:50/46<br>16:22 11:21-12:39/78 | 08:59 11:55-12:40/45<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18 13:13-14:11/58<br>19:35 07:57-08:35/38 | 08:16 12:08-15:05/177 08:54-09:15/21<br>18:20 09:27-10:12/45 | 08:19 13:05-13:49/44<br>16:20 11:22-12:39/77 | 08:59 11:55-12:40/45<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 13:10-14:13/63<br>19:33 07:56-08:35/39 | 08:18 12:08-15:05/177 08:55-09:13/18<br>18:18 09:27-10:11/44 | 08:21 13:07-13:48/41<br>16:19 11:23-12:39/76 | 09:00 11:56-12:42/46<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21 13:07-14:16/69<br>19:30 07:55-08:35/40 | 08:20 12:07-15:05/178 08:57-09:11/14<br>18:16 09:28-10:10/42 | 08:23 13:08-13:47/39<br>16:18 11:24-12:39/75 | 09:00 11:56-12:42/46<br>16:07 |
| 25 | 05:27<br>21:52 | 06:25<br>20:47 | 07:23 13:05-14:17/72<br>19:28 07:55-08:35/40 | 07:22 11:07-14:05/178 08:00-08:07/7<br>17:13 08:28-09:09/41 | 08:25 13:10-13:45/35<br>16:16 11:26-12:38/72 | 09:00 11:56-12:42/46<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 13:03-14:19/76<br>19:25 07:55-08:34/39 | 07:24 11:06-14:04/178<br>17:11 08:28-09:08/40 | 08:27 13:12-13:44/32<br>16:15 11:27-12:38/71 | 09:01 11:58-12:44/46<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 13:00-14:19/79<br>19:22 07:56-08:34/38 | 07:26 11:07-14:05/178<br>17:09 08:30-09:08/38 | 08:28 13:15-13:42/27<br>16:14 11:28-12:38/70 | 09:01 11:58-12:44/46<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 12:58-14:20/82<br>19:20 07:57-08:32/35 | 07:28 11:07-14:05/178<br>17:07 08:31-09:06/35 | 08:30 13:18-13:40/22<br>16:13 11:30-12:38/68 | 09:01 11:58-12:45/47<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31 12:56-14:21/85<br>19:17 07:58-08:31/33 | 07:31 11:06-14:04/178<br>17:04 08:32-09:05/33 | 08:32 13:21-13:37/16<br>16:12 11:32-12:38/66 | 09:01 11:58-12:46/48<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33 12:55-14:22/87<br>19:15 08:00-08:30/30 | 07:33 11:06-14:04/178<br>17:02 08:33-09:03/30 | 08:34 13:26-13:33/7<br>16:11 11:33-12:38/65 | 09:01 11:58-12:45/47<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 11:06-14:03/177<br>17:00 08:35-09:02/27 | | 09:01 11:58-12:46/48<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1289 | 6556 | 4356 | 1535 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28<br>17:08 | 07:27 08:24-09:13/49<br>18:07 08:02-08:23/21 | 07:08<br>20:10 | 05:55 19:59-20:36/37<br>21:09 | 05:02 20:37-21:02/25<br>22:02 |
| 2 | 09:01<br>16:15 | 08:26<br>17:10 | 07:24 08:57-09:10/13 08:03-08:23/20<br>18:09 08:25-08:56/31 | 07:05<br>20:12 | 05:53 19:59-20:38/39<br>21:11 | 05:01 20:38-21:02/24<br>22:04 |
| 3 | 09:00<br>16:16 | 08:24<br>17:12 | 07:22 08:24-08:55/31<br>18:12 08:03-08:22/19 | 07:03<br>20:14 | 05:51 19:58-20:40/42<br>21:13 | 05:00 20:39-21:03/24<br>22:05 |
| 4 | 09:00<br>16:18 | 08:22 09:01-09:07/6<br>17:14 | 07:19 08:25-08:55/30<br>18:14 08:04-08:21/17 | 07:00<br>20:16 | 05:48 19:58-20:41/43<br>21:15 | 04:59 20:39-21:02/23<br>22:06 |
| 5 | 09:00<br>16:19 | 08:20 08:58-09:11/13<br>17:17 | 07:17 08:26-08:53/27<br>18:16 08:04-08:19/15 | 06:58<br>20:17 | 05:46 19:57-20:42/45<br>21:16 | 04:58 20:39-21:02/23<br>22:07 |
| 6 | 08:59<br>16:20 | 08:18 08:56-09:13/17<br>17:19 | 07:14 08:27-08:52/25<br>18:18 08:07-08:17/10 | 06:55<br>20:19 | 05:44 19:57-20:43/46<br>21:18 | 04:57 20:39-21:01/22<br>22:09 |
| 7 | 08:59<br>16:22 | 08:16 08:54-09:14/20<br>17:21 | 07:12 08:28-08:50/22<br>18:20 | 06:53<br>20:21 | 05:42 19:57-20:43/46<br>21:20 | 04:56 21:25-21:27/2<br>22:10 20:40-21:02/22 |
| 8 | 08:58<br>16:23 | 08:14 08:53-09:16/23<br>17:23 | 07:09 08:30-08:47/17<br>18:22 | 06:50<br>20:23 | 05:40 19:57-20:43/46<br>21:22 | 04:56 21:22-21:29/7<br>22:11 20:40-21:01/21 |
| 9 | 08:57<br>16:25 | 08:12 08:52-09:17/25<br>17:25 | 07:07 08:33-08:44/11<br>18:24 | 06:48<br>20:25 | 05:38 19:57-20:43/46<br>21:24 | 04:55 21:22-21:31/9<br>22:12 20:41-21:02/21 |
| 10 | 08:57<br>16:26 | 08:10 08:52-09:18/26<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36 19:57-20:43/46<br>21:26 | 04:54 21:21-21:32/11<br>22:13 20:41-21:01/20 |
| 11 | 08:56<br>16:28 | 08:08 08:51-09:19/28<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34 19:57-20:43/46<br>21:28 20:46-20:50/4 | 04:54 21:21-21:33/12<br>22:13 20:42-21:01/19 |
| 12 | 08:55<br>16:29 | 08:06 08:50-09:19/29<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32 19:58-20:54/56<br>21:30 | 04:53 21:21-21:34/13<br>22:14 20:43-21:02/19 |
| 13 | 08:54<br>16:31 | 08:04 08:41-09:20/39<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30 19:58-20:56/58<br>21:32 | 04:53 21:20-21:34/14<br>22:15 20:43-21:01/18 |
| 14 | 08:53<br>16:33 | 08:02 08:38-09:21/43<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:28 19:58-20:57/59<br>21:33 | 04:53 21:20-21:35/15<br>22:16 20:43-21:01/18 |
| 15 | 08:52<br>16:35 | 07:59 08:36-09:21/45<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27 20:00-20:59/59<br>21:35 | 04:53 21:20-21:35/15<br>22:16 20:44-21:01/17 |
| 16 | 08:51<br>16:36 | 07:57 08:35-09:22/47<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25 20:00-20:59/59<br>21:37 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 17 | 08:50<br>16:38 | 07:55 08:34-09:23/49<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23 20:01-21:00/59<br>21:39 | 04:52 21:20-21:36/16<br>22:17 20:45-21:01/16 |
| 18 | 08:49<br>16:40 | 07:53 08:32-09:22/50<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21 20:02-21:00/58<br>21:41 | 04:52 21:20-21:37/17<br>22:18 20:45-21:01/16 |
| 19 | 08:48<br>16:42 | 07:50 08:30-09:23/53<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 20:04-21:01/57<br>21:42 | 04:52 21:20-21:37/17<br>22:18 20:46-21:01/15 |
| 20 | 08:46<br>16:44 | 07:48 08:29-09:23/54<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18 20:05-21:01/56<br>21:44 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 21 | 08:45<br>16:46 | 07:46 08:27-09:22/55<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16 20:21-21:02/41<br>21:46 20:07-20:18/11 | 04:52 21:20-21:37/17<br>22:19 20:46-21:01/15 |
| 22 | 08:44<br>16:48 | 07:43 08:27-09:22/55<br>17:53 08:10-08:19/9 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15 20:24-21:02/38<br>21:47 20:10-20:15/5 | 04:52 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 23 | 08:42<br>16:50 | 07:41 08:26-09:21/55<br>17:55 08:07-08:20/13 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13 20:26-21:02/36<br>21:49 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 24 | 08:41<br>16:52 | 07:39 08:25-09:21/56<br>17:57 08:05-08:22/17 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12 20:28-20:35/7<br>21:51 20:36-21:03/27 | 04:53 21:21-21:38/17<br>22:19 20:47-21:02/15 |
| 25 | 08:39<br>16:54 | 07:36 08:24-09:19/55<br>17:59 08:04-08:22/18 | 06:26<br>18:56 | 06:09 20:09-20:17/8<br>20:57 | 05:10 20:35-21:02/27<br>21:52 | 04:53 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 26 | 08:38<br>16:56 | 07:34 08:25-09:19/54<br>18:01 08:03-08:23/20 | 06:23<br>18:58 | 06:06 20:23-20:28/5<br>20:59 20:06-20:21/15 | 05:09 20:36-21:02/26<br>21:54 | 04:54 21:22-21:38/16<br>22:19 20:47-21:03/16 |
| 27 | 08:36<br>16:58 | 07:32 08:24-09:17/53<br>18:03 08:02-08:23/21 | 06:21<br>19:00 | 06:04 20:04-20:30/26<br>21:01 | 05:08 20:36-21:02/26<br>21:55 | 04:54 21:23-21:39/16<br>22:19 20:47-21:04/17 |
| 28 | 08:35<br>17:00 | 07:29 08:03-09:15/72<br>18:05 | 06:18<br>19:02 | 06:02 20:02-20:32/30<br>21:03 | 05:06 20:36-21:03/27<br>21:57 | 04:55 21:23-21:38/15<br>22:19 20:47-21:04/17 |
| 29 | 08:33<br>17:02 | | 07:16<br>20:04 | 05:59 20:01-20:34/33<br>21:05 | 05:05 20:37-21:03/26<br>21:58 | 04:55 21:24-21:38/14<br>22:19 20:47-21:05/18 |
| 30 | 08:31<br>17:04 | | 07:13<br>20:06 | 05:57 20:00-20:36/36<br>21:07 | 05:04 20:37-21:03/26<br>22:00 | 04:56 21:24-21:37/13<br>22:19 20:46-21:05/19 |
| 31 | 08:29<br>17:06 | | 07:11<br>20:08 | | 05:03 20:37-21:02/25<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 1120 | 358 | 153 | 1355 | 896 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:25-21:37/12 | 05:40 20:08-20:54/46 | 06:38 | 07:35 | 07:37 08:21-08:47/26 | 08:35 |
| | 22:18 20:47-21:05/18 | 21:40 20:55-21:04/9 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 21:26-21:37/11 | 05:41 20:07-20:53/46 | 06:40 | 07:37 | 07:39 08:22-08:46/24 | 08:37 |
| | 22:18 20:47-21:06/19 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:27-21:37/10 | 05:43 20:07-20:53/46 | 06:42 | 07:39 | 07:41 08:23-08:45/22 | 08:38 |
| | 22:17 20:47-21:07/20 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:27-21:35/8 | 05:45 20:07-20:53/46 | 06:43 | 07:40 09:13-09:18/5 | 07:43 08:24-08:45/21 | 08:40 |
| | 22:17 20:46-21:07/21 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 21:29-21:34/5 | 05:47 20:07-20:53/46 | 06:45 | 07:42 09:08-09:23/15 | 07:45 08:26-08:43/17 | 08:41 |
| | 22:16 20:46-21:07/21 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 20:46-21:08/22 | 05:49 20:06-20:52/46 | 06:47 | 07:44 09:05-09:25/20 | 07:47 08:28-08:41/13 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 20:46-21:08/22 | 05:51 20:07-20:52/45 | 06:49 | 07:46 09:03-09:26/23 | 07:49 08:31-08:37/6 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:43-08:51/8 | 16:45 | 16:06 |
| 8 | 05:03 20:46-21:09/23 | 05:52 20:07-20:51/44 | 06:51 | 07:48 09:01-09:27/26 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:40-08:53/13 | 16:44 | 16:05 |
| 9 | 05:04 20:45-21:09/24 | 05:54 20:06-20:49/43 | 06:53 | 07:50 09:00-09:28/28 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:39-08:55/16 | 16:42 | 16:05 |
| 10 | 05:06 20:45-21:09/24 | 05:56 20:07-20:48/41 | 06:55 | 07:52 08:59-09:29/30 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 08:37-08:55/18 | 16:40 | 16:04 |
| 11 | 05:07 20:46-21:11/25 | 05:58 20:07-20:46/39 | 06:57 | 07:54 09:33-09:41/8 08:36-08:56/20 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:58-09:29/31 | 16:38 | 16:04 |
| 12 | 05:08 20:46-21:11/25 | 06:00 20:08-20:44/36 | 06:59 | 07:56 08:57-09:44/47 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:35-08:56/21 | 16:36 | 16:04 |
| 13 | 05:09 20:46-21:11/25 | 06:02 20:08-20:43/35 | 07:00 | 07:58 08:57-09:47/50 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:35-08:56/21 | 16:34 | 16:04 |
| 14 | 05:11 20:45-21:11/26 | 06:04 20:09-20:41/32 | 07:02 | 08:00 08:36-09:48/72 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 20:45-21:11/26 | 06:06 20:10-20:39/29 | 07:04 | 08:02 08:57-09:50/53 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:36-08:56/20 | 16:31 | 16:04 |
| 16 | 05:13 20:46-21:12/26 | 06:07 20:12-20:37/25 | 07:06 | 08:04 08:57-09:51/54 | 08:07 | 08:55 |
| | 22:06 | 21:08 | 19:51 | 18:34 08:36-08:55/19 | 16:29 | 16:04 |
| 17 | 05:15 20:45-21:12/27 | 06:09 20:31-20:34/3 | 07:08 | 08:06 08:57-09:52/55 | 08:09 | 08:56 |
| | 22:04 | 21:06 20:13-20:27/14 | 19:48 | 18:32 08:36-08:54/18 | 16:28 | 16:04 |
| 18 | 05:16 20:45-21:12/27 | 06:11 20:17-20:23/6 | 07:10 | 08:08 08:57-09:52/55 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 08:37-08:53/16 | 16:26 | 16:04 |
| 19 | 05:18 20:39-20:43/4 | 06:13 | 07:12 | 08:10 08:57-09:52/55 | 08:13 | 08:57 |
| | 22:02 20:46-21:12/26 | 21:01 | 19:43 | 18:27 08:39-08:51/12 | 16:25 | 16:04 |
| 20 | 05:19 20:36-21:12/36 | 06:15 | 07:14 | 08:12 08:57-09:52/55 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 08:41-08:48/7 | 16:23 | 16:05 |
| 21 | 05:21 20:35-21:12/37 | 06:17 | 07:16 | 08:14 08:58-09:52/54 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 20:34-21:12/38 | 06:19 | 07:17 | 08:16 09:00-09:53/53 | 08:19 | 08:59 |
| | 21:57 20:18-20:27/9 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 20:16-21:12/56 | 06:21 | 07:19 | 08:18 09:01-09:53/52 | 08:21 | 09:00 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 20:14-21:11/57 | 06:23 | 07:21 | 08:20 09:03-09:52/49 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 20:14-21:12/58 | 06:25 | 07:23 | 07:22 08:04-08:52/48 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 20:12-21:11/59 | 06:26 | 07:25 | 07:24 08:05-08:51/46 | 08:27 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 20:11-21:10/59 | 06:28 | 07:27 | 07:26 08:07-08:51/44 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 20:10-21:09/59 | 06:30 | 07:29 | 07:28 08:08-08:50/42 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 20:10-21:09/59 | 06:32 | 07:31 | 07:30 08:11-08:49/38 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 20:09-21:08/59 | 06:34 | 07:33 | 07:33 08:20-08:48/28 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 20:08-21:06/58 | 06:36 | | 07:35 08:20-08:47/27 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1141 | 677 | 0 | 1372 | 129 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:53-08:03/10 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 08:04-08:42/38 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 07:51-08:05/14 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 08:06-08:43/37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 07:49-08:06/17 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 08:09-08:44/35 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 07:48-08:08/20 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 08:10-08:44/34 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 07:47-08:08/21 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 08:11-08:44/33 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:08/24 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 08:13-08:44/31 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 07:38-08:08/30 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 08:15-08:44/29 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 07:35-08:07/32 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 08:20-08:43/23 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 07:34-08:07/33 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 08:22-08:42/20 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 07:32-08:06/34 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 08:22-08:41/19 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 07:29-08:05/36 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:23-08:40/17 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 07:26-08:03/37 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 08:25-08:38/13 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 07:24-08:01/37 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 08:27-08:34/7 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 07:23-07:59/36 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 07:22-07:58/36 | 06:33 | 05:27 | 04:52 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 07:22-07:58/36 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 07:21-07:56/35 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 07:20-07:55/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 07:20-07:53/33 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:12-08:22/10 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:20-07:50/30 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:09-08:24/15 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:21-07:42/21 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 08:07-08:25/18 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 07:21-07:40/19 | 06:16 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 08:06-08:26/20 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:23-07:39/16 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:05-08:34/29 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 07:25-07:36/11 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:04-08:36/32 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 08:04-08:38/34 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 08:03-08:39/36 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:02-08:38/36 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:02-08:39/37 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:03-08:39/36 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:03-08:40/37 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 653 | 0 | 0 | 0 | 0 | 0 | 340 | 336 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 32 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | | 04:57 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | 22:05 | | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:51-05:56/5 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | | 22:08 | 21:13 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 05:50-05:58/8 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:50-05:59/9 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:49-06:00/11 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:49-06:00/11 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:49-06:01/12 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:49-06:01/12 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:19 | | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:49-06:01/12 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | | 21:59 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:50-06:02/12 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:50-06:02/12 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:50-06:01/11 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:51-06:02/11 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:51-06:01/10 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:53-06:01/8 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:54-06:00/6 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:57-05:58/1 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 151 | | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:50-08:19/29 | 05:55 | 06:31-07:45/74 | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:50-08:19/29 | 05:53 | 06:29-07:45/76 | 05:01 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:11 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:49-08:18/29 | 05:51 | 06:28-07:45/77 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:41-08:19/38 | 05:48 | 06:27-07:45/78 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:37-08:17/40 | 05:46 | 06:26-07:45/79 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:35-08:17/42 | 05:44 | 06:25-07:45/80 | 04:57 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:33-08:16/43 | 05:42 | 06:24-07:44/80 | 04:56 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:32-08:15/43 | 05:40 | 06:24-06:55/31 | 04:56 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | 06:56-07:44/48 | 22:11 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 07:30-08:13/43 | 05:38 | 06:23-06:54/31 | 04:55 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | 06:57-07:43/46 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:29-08:11/42 | 05:36 | 06:23-06:52/29 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | 06:58-07:42/44 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 07:27-08:08/41 | 05:34 | 06:22-06:52/30 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | 06:59-07:42/43 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:22-08:05/43 | 05:32 | 06:23-06:52/29 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | 07:01-07:42/41 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | 07:19-08:01/42 | 05:30 | 06:23-06:52/29 | 04:53 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:31 | 07:02-07:41/39 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 07:17-08:01/44 | 05:28 | 06:23-06:52/29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | 07:02-07:40/38 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 | | 06:32 | 07:16-08:01/45 | 05:27 | 06:24-06:52/28 | 04:52 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | 07:03-07:40/37 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:14-08:00/46 | 05:25 | 06:23-06:51/28 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | 07:04-07:39/35 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:28 | 07:08-08:00/52 | 05:23 | 06:24-06:51/27 | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | 07:05-07:38/33 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:03-07:59/56 | 05:21 | 06:24-06:51/27 | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | 07:05-07:37/32 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:01-07:58/57 | 05:20 | 06:25-06:51/26 | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | 07:06-07:35/29 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:00-07:58/58 | 05:18 | 06:25-06:49/24 | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | 07:07-07:35/28 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 06:57-07:56/59 | 05:16 | 06:27-06:49/22 | 04:52 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | 07:09-07:34/25 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 06:46-06:52/6 | 05:15 | 06:27-06:48/21 | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 06:56-07:55/59 | 21:47 | 07:09-07:32/23 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 06:43-06:55/12 | 05:13 | 06:28-06:47/19 | 04:53 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 06:56-07:54/58 | 21:49 | 07:11-07:31/20 | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | 06:41-07:53/72 | 05:12 | 06:29-06:47/18 | 04:53 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | 07:13-07:29/16 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 07:01-07:13/12 | 06:08 | 06:40-07:50/70 | 05:10 | 06:30-06:45/15 | 04:53 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | 07:15-07:26/11 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:58-07:16/18 | 06:06 | 06:38-07:47/69 | 05:09 | 06:31-06:44/13 | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | 06:56-07:17/21 | 06:04 | 06:37-07:44/67 | 05:08 | 06:33-06:42/9 | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:54-07:17/23 | 06:02 | 06:37-07:45/68 | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:16 | 07:53-08:18/25 | 05:59 | 06:36-07:45/69 | 05:05 | | 04:55 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:51-08:18/27 | 05:57 | 06:33-07:45/72 | 05:04 | | 04:56 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:51-08:19/28 | | | 05:03 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 154 | | 1543 | | 1617 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 06:34-07:03/29 | 06:38 | 07:26-08:07/41 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | 07:12-07:52/40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:33-07:02/29 | 06:40 | 07:27-08:09/42 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | 07:09-07:52/43 | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:33-07:03/30 | 06:41 | 07:28-08:11/43 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | 07:08-07:53/45 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:34-07:05/31 | 06:43 | 07:29-08:12/43 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | 07:07-07:54/47 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:34-07:54/80 | 06:45 | 07:30-08:13/43 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:34-07:54/80 | 06:47 | 07:30-08:12/42 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:35-07:54/79 | 06:49 | 07:32-08:12/40 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 05:52 | 06:35-07:54/79 | 06:51 | 07:35-08:13/38 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:35-07:54/79 | 06:53 | 07:43-08:13/30 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:37-07:54/77 | 06:55 | 07:43-08:12/29 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:38-07:54/76 | 06:57 | 07:42-08:11/29 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | 06:40-07:54/74 | 06:58 | 07:42-08:11/29 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | 06:42-07:53/71 | 07:00 | 07:42-08:10/28 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:04 | 06:44-07:52/68 | 07:02 | 07:43-08:09/26 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | | 06:05 | 06:44-07:52/68 | 07:04 | 07:44-08:08/24 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:44-06:50/6 | 06:07 | 06:45-07:52/67 | 07:06 | 07:45-08:06/21 | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:42-06:53/11 | 06:09 | 06:45-07:55/70 | 07:08 | 07:46-08:04/18 | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:40-06:54/14 | 06:11 | 06:46-07:57/71 | 07:10 | 07:47-08:01/14 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 07:27-07:34/7 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:39-06:56/17 | 06:13 | 06:47-07:58/71 | 07:12 | 07:52-07:55/3 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 07:24-07:38/14 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:38-06:57/19 | 06:15 | 06:49-08:00/71 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 07:22-07:40/18 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:38-06:58/20 | 06:17 | 06:53-06:57/4 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 07:21-07:42/21 | 20:56 | 07:02-08:01/59 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:37-06:59/22 | 06:19 | 07:02-08:01/59 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 07:19-07:43/24 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:37-07:00/23 | 06:21 | 07:03-08:01/58 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 07:19-07:45/26 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:36-07:00/24 | 06:23 | 07:05-08:02/57 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 07:17-07:46/29 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:36-07:01/25 | 06:24 | 07:07-08:02/55 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 07:17-07:47/30 | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:35-07:01/26 | 06:26 | 07:12-08:03/51 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 07:15-07:48/33 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:35-07:02/27 | 06:28 | 07:16-08:02/46 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 07:15-07:49/34 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:34-07:02/28 | 06:30 | 07:17-08:02/45 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 07:14-07:49/35 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:34-07:02/28 | 06:32 | 07:18-08:02/44 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | 07:13-07:51/38 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34-07:03/29 | 06:34 | 07:20-08:01/41 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | 07:13-07:52/39 | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:33-07:02/29 | 06:36 | 07:22-08:05/43 | | | 07:34 | | 09:01 |
| | 21:42 | 07:12-07:52/40 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 736 | | 2037 | | 583 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 11:50-13:05/75<br>17:08 | 07:27 11:54-12:59/65<br>18:07 | 07:08<br>20:09 | 05:55 06:32-06:51/19<br>21:09 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 11:49-13:06/77<br>17:10 | 07:24 11:55-12:58/63<br>18:09 | 07:05<br>20:11 | 05:53 06:33-06:51/18<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00 12:13-12:22/9<br>16:16 | 08:24 11:49-13:06/77<br>17:12 | 07:22 11:56-12:55/59<br>18:11 | 07:03<br>20:13 | 05:51 06:33-06:50/17<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 12:11-12:26/15<br>16:18 | 08:22 11:49-13:07/78<br>17:15 | 07:19 11:58-12:53/55<br>18:14 | 07:00<br>20:15 | 05:48 06:34-06:49/15<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 12:08-12:28/20<br>16:19 | 08:20 11:48-13:06/78<br>17:17 | 07:17 12:00-12:51/51<br>18:16 | 06:58<br>20:17 | 05:46 06:35-06:47/12<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 12:08-12:31/23<br>16:20 | 08:18 11:48-13:07/79<br>17:19 | 07:14 12:02-12:47/45<br>18:18 | 06:55<br>20:19 | 05:44 06:37-06:45/8<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 12:06-12:33/27<br>16:22 | 08:16 11:47-13:08/81<br>17:21 | 07:12 12:06-12:44/38<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 12:05-12:35/30<br>16:23 | 08:14 11:47-13:08/81<br>17:23 | 07:09 12:10-12:38/28<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 12:04-12:36/32<br>16:25 | 08:12 11:47-13:09/82<br>17:25 | 07:07 12:18-12:30/12<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 12:03-12:38/35<br>16:26 | 08:10 11:48-13:09/81<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:12 |
| 11 | 08:56 12:02-12:40/38<br>16:28 | 08:08 11:47-13:09/82<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 12:01-12:42/41<br>16:30 | 08:06 11:47-13:09/82<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 12:00-12:43/43<br>16:31 | 08:04 11:47-13:09/82<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 12:00-12:45/45<br>16:33 | 08:01 11:46-13:09/83<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 11:58-12:46/48<br>16:35 | 07:59 11:47-13:09/82<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:58-12:48/50<br>16:36 | 07:57 11:47-13:09/82<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:58-12:49/51<br>16:38 | 07:55 11:47-13:08/81<br>17:42 | 06:46<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 11:56-12:50/54<br>16:40 | 07:53 11:47-13:08/81<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 11:56-12:52/56<br>16:42 | 07:50 11:48-13:08/80<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 11:55-12:53/58<br>16:44 | 07:48 11:48-13:07/79<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 11:55-12:54/59<br>16:46 | 07:46 11:48-13:07/79<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 11:54-12:55/61<br>16:48 | 07:43 11:48-13:06/78<br>17:53 | 06:34<br>18:50 | 06:16 06:41-06:47/6<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 |
| 23 | 08:42 11:53-12:56/63<br>16:50 | 07:41 11:49-13:06/77<br>17:55 | 06:31<br>18:52 | 06:13 06:39-06:49/10<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 11:53-12:58/65<br>16:52 | 07:39 11:49-13:05/76<br>17:57 | 06:28<br>18:54 | 06:11 06:37-06:50/13<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 11:52-12:59/67<br>16:54 | 07:36 11:50-13:04/74<br>17:59 | 06:26<br>18:56 | 06:09 06:35-06:51/16<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 11:52-12:59/67<br>16:56 | 07:34 11:51-13:04/73<br>18:01 | 06:23<br>18:58 | 06:06 06:33-06:51/18<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:51-13:00/69<br>16:58 | 07:31 11:52-13:02/70<br>18:03 | 06:21<br>19:00 | 06:04 06:32-06:51/19<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 11:51-13:02/71<br>17:00 | 07:29 11:53-13:01/68<br>18:05 | 06:18<br>19:02 | 06:02 06:32-06:52/20<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:51-13:03/72<br>17:02 | | 07:16<br>20:04 | 05:59 06:32-06:52/20<br>21:05 | 05:05<br>21:58 | 04:56<br>22:18 |
| 30 | 08:31 11:50-13:03/73<br>17:04 | | 07:13<br>20:06 | 05:57 06:32-06:52/20<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 11:50-13:04/74<br>17:06 | | 07:10<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1416 | 2198 | 416 | 142 | 89 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:36 11:16-12:38/82<br>16:58 | 08:35 11:44-12:22/38<br>16:10 |
| 2 | 04:58<br>22:17 | 05:41<br>21:38 | 06:40<br>20:27 | 07:36<br>19:09 | 07:39 11:17-12:38/81<br>16:56 | 08:37 11:46-12:21/35<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:38<br>19:07 | 07:41 11:17-12:38/81<br>16:54 | 08:38 11:48-12:21/33<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 11:17-12:37/80<br>16:52 | 08:40 11:49-12:19/30<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:50-13:12/22<br>19:02 | 07:45 11:18-12:38/80<br>16:49 | 08:41 11:51-12:18/27<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 06:48-06:52/4<br>21:30 | 06:47<br>20:17 | 07:44 12:44-13:18/34<br>18:59 | 07:47 11:18-12:37/79<br>16:47 | 08:43 11:54-12:17/23<br>16:06 |
| 7 | 05:02<br>22:14 | 05:51 06:45-06:55/10<br>21:28 | 06:49<br>20:14 | 07:46 12:40-13:22/42<br>18:57 | 07:49 11:19-12:37/78<br>16:46 | 08:44 11:55-12:15/20<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 06:44-06:57/13<br>21:26 | 06:51<br>20:11 | 07:48 12:37-13:24/47<br>18:54 | 07:51 11:19-12:36/77<br>16:44 | 08:45 11:59-12:14/15<br>16:05 |
| 9 | 05:05<br>22:13 | 05:54 06:43-06:59/16<br>21:23 | 06:53<br>20:09 | 07:50 12:34-13:27/53<br>18:52 | 07:53 11:20-12:36/76<br>16:42 | 08:47 12:02-12:11/9<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 06:41-06:58/17<br>21:21 | 06:55<br>20:06 | 07:52 12:32-13:29/57<br>18:49 | 07:55 11:20-12:36/76<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:41-06:59/18<br>21:19 | 06:57<br>20:04 | 07:54 12:30-13:30/60<br>18:47 | 07:57 11:21-12:35/74<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 06:41-07:00/19<br>21:17 | 06:59<br>20:01 | 07:56 12:28-13:31/63<br>18:44 | 07:59 11:21-12:34/73<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 06:40-07:00/20<br>21:15 | 07:00<br>19:59 | 07:58 12:26-13:33/67<br>18:42 | 08:01 11:23-12:35/72<br>16:34 | 08:51<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 06:39-06:59/20<br>21:12 | 07:02<br>19:56 | 08:00 12:25-13:34/69<br>18:39 | 08:03 11:23-12:34/71<br>16:33 | 08:52<br>16:04 |
| 15 | 05:12<br>22:06 | 06:06 06:40-06:59/19<br>21:10 | 07:04<br>19:53 | 08:02 12:23-13:34/71<br>18:37 | 08:05 11:24-12:33/69<br>16:31 | 08:53<br>16:04 |
| 16 | 05:14<br>22:05 | 06:07 06:40-06:59/19<br>21:08 | 07:06<br>19:51 | 08:04 12:22-13:35/73<br>18:34 | 08:07 11:25-12:32/67<br>16:29 | 08:54<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09 06:40-06:59/19<br>21:06 | 07:08<br>19:48 | 08:06 12:22-13:37/75<br>18:32 | 08:09 11:26-12:33/67<br>16:28 | 08:55<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 06:41-06:57/16<br>21:03 | 07:10<br>19:46 | 08:08 12:21-13:37/76<br>18:30 | 08:11 11:27-12:32/65<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18<br>22:01 | 06:13 06:43-06:56/13<br>21:01 | 07:12<br>19:43 | 08:10 12:20-13:37/77<br>18:27 | 08:13 11:28-12:31/63<br>16:25 | 08:57<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15 06:45-06:54/9<br>20:59 | 07:14<br>19:40 | 08:12 12:19-13:38/79<br>18:25 | 08:15 11:29-12:30/61<br>16:23 | 08:58<br>16:05 |
| 21 | 05:21<br>21:58 | 06:17 06:47-06:52/5<br>20:56 | 07:15<br>19:38 | 08:14 12:18-13:38/80<br>18:22 | 08:17 11:30-12:29/59<br>16:22 | 08:58<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16 12:18-13:38/80<br>18:20 | 08:19 11:31-12:29/58<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24<br>21:55 | 06:21<br>20:51 | 07:19<br>19:33 | 08:18 12:17-13:38/81<br>18:18 | 08:21 11:32-12:28/56<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 12:18-13:39/81<br>18:16 | 08:23 11:33-12:27/54<br>16:18 | 09:00<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 11:17-12:39/82<br>17:13 | 08:24 11:36-12:27/51<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 11:17-12:39/82<br>17:11 | 08:26 11:37-12:27/50<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 11:16-12:38/82<br>17:09 | 08:28 11:38-12:26/48<br>16:14 | 09:01<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 11:16-12:38/82<br>17:06 | 08:30 11:39-12:24/45<br>16:13 | 09:01<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:30 11:17-12:39/82<br>17:04 | 08:32 11:40-12:23/43<br>16:12 | 09:01<br>16:11 |
| 30 | 05:36<br>21:43 | 06:34<br>20:34 | 07:33<br>19:15 | 07:32 11:16-12:38/82<br>17:02 | 08:33 11:42-12:23/41<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:34 11:16-12:38/82<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 237 | 0 | 1861 | 1977 | 230 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:20-10:33/13 | 08:27 09:03-09:55/52 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 08:33-09:01/28 | 08:35 09:15-10:00/45 |
| | 16:14 09:38-10:13/35 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 10:22-10:34/12 | 08:25 09:02-09:54/52 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:33-09:05/32 | 08:36 09:17-10:01/44 |
| | 16:15 09:38-10:14/36 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 10:22-10:33/11 | 08:24 09:02-09:54/52 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:32-09:11/39 | 08:38 09:19-10:01/42 |
| | 16:16 09:37-10:14/37 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 10:24-10:33/9 | 08:22 09:01-09:52/51 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:32-09:15/43 | 08:39 09:19-10:01/42 |
| | 16:17 09:38-10:15/37 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 10:25-10:32/7 | 08:20 09:01-09:51/50 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 08:31-09:19/48 | 08:41 09:21-10:02/41 |
| | 16:19 09:37-10:15/38 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 09:37-10:17/40 | 08:18 09:02-09:49/47 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 08:32-09:21/49 | 08:42 09:22-10:02/40 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 09:36-10:17/41 | 08:16 09:02-09:44/42 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 08:32-09:23/51 | 08:44 10:13-10:19/6 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:05 09:24-10:03/39 |
| 8 | 08:58 09:35-10:17/42 | 08:14 09:03-09:41/38 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 08:32-09:24/52 | 08:45 10:11-10:20/9 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 09:25-10:02/37 |
| 9 | 08:57 09:35-10:17/42 | 08:12 09:03-09:35/32 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 08:32-09:24/52 | 08:47 10:11-10:22/11 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 09:26-10:03/37 |
| 10 | 08:56 09:34-10:18/44 | 08:10 09:03-09:30/27 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 08:34-09:26/52 | 08:48 10:11-10:23/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 09:27-10:03/36 |
| 11 | 08:56 09:33-10:18/45 | 08:08 09:05-09:27/22 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 08:34-09:28/54 | 08:49 10:11-10:24/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-10:05/37 |
| 12 | 08:55 09:32-10:18/46 | 08:06 09:06-09:22/16 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 08:35-09:29/54 | 08:50 10:11-10:25/14 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:30-10:05/35 |
| 13 | 08:54 09:32-10:18/46 | 08:03 09:08-09:20/12 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 08:37-09:32/55 | 08:51 10:11-10:26/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 09:31-10:05/34 |
| 14 | 08:53 09:32-10:19/47 | 08:01 09:11-09:16/5 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 08:38-09:33/55 | 08:52 10:11-10:26/15 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 09:32-10:05/33 |
| 15 | 08:52 09:30-10:18/48 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 08:40-09:35/55 | 08:53 10:11-10:27/16 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 09:33-10:05/32 |
| 16 | 08:51 09:28-10:18/50 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 08:44-09:37/53 | 08:54 10:12-10:28/16 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 09:34-10:06/32 |
| 17 | 08:50 09:27-10:18/51 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 08:45-09:38/53 | 08:55 10:12-10:29/17 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 09:35-10:06/31 |
| 18 | 08:49 09:25-10:17/52 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 08:48-09:41/53 | 08:56 10:13-10:29/16 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 09:36-10:07/31 |
| 19 | 08:47 09:23-10:17/54 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 08:50-09:42/52 | 08:57 10:12-10:29/17 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:35-10:07/32 |
| 20 | 08:46 09:20-10:16/56 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 08:52-09:47/55 | 08:57 10:13-10:30/17 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 09:36-10:08/32 |
| 21 | 08:45 09:19-10:15/56 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 08:54-09:50/56 | 08:58 10:14-10:31/17 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 09:36-10:07/31 |
| 22 | 08:43 09:17-10:12/55 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 08:56-09:52/56 | 08:59 10:14-10:31/17 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:37-10:08/31 |
| 23 | 08:42 09:15-10:07/52 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 08:59-09:53/54 | 08:59 10:14-10:31/17 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 09:37-10:08/31 |
| 24 | 08:40 09:14-10:07/53 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 09:02-09:54/52 | 08:59 10:15-10:32/17 |
| | 16:51 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 09:38-10:10/32 |
| 25 | 08:39 09:12-10:05/53 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 09:04-09:55/51 | 09:00 10:16-10:32/16 |
| | 16:53 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 09:39-10:10/31 |
| 26 | 08:37 09:11-10:04/53 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 09:06-09:56/50 | 09:00 10:16-10:33/17 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 09:39-10:10/31 |
| 27 | 08:36 09:07-10:02/55 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 09:09-09:57/48 | 09:00 10:16-10:33/17 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 09:39-10:11/32 |
| 28 | 08:34 09:05-10:00/55 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 08:39-08:47/8 | 08:30 09:11-09:58/47 | 09:01 10:17-10:33/16 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 09:39-10:11/32 |
| 29 | 08:33 09:05-10:00/55 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:37-08:50/13 | 08:31 09:12-09:59/47 | 09:01 10:18-10:33/15 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 09:39-10:12/33 |
| 30 | 08:31 09:04-09:58/54 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:35-08:52/17 | 08:33 09:13-09:59/46 | 09:01 10:19-10:34/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 09:39-10:13/34 |
| 31 | 08:29 09:03-09:57/54 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 08:34-08:57/23 | | 09:01 10:20-10:34/14 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 09:39-10:13/34 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1534 | 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 1492 | 1456 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 37 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Project:
8 VE Ðilutës r.

Description:
Vëjo elektriniø (Ðilutës raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt
Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 38 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:28 16:00-16:26/26<br>17:08 | 07:27 17:11-17:30/19<br>18:07 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:02 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 15:29-15:57/28<br>16:58 | 08:35<br>16:10 |
| 2 | 09:01<br>16:15 | 08:26 15:59-16:26/27<br>17:10 | 07:24 17:12-17:30/18<br>18:10 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 15:29-15:57/28<br>16:56 | 08:37<br>16:09 |
| 3 | 09:00<br>16:16 | 08:24 15:59-16:27/28<br>17:12 | 07:22 17:12-17:29/17<br>18:12 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 | 04:59<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 15:28-15:57/29<br>16:54 | 08:38<br>16:08 |
| 4 | 09:00<br>16:18 | 08:22 15:59-16:28/29<br>17:15 | 07:19 17:14-17:28/14<br>18:14 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41<br>19:05 | 07:43 15:28-15:57/29<br>16:52 | 08:40<br>16:08 |
| 5 | 09:00<br>16:19 | 08:20 15:59-16:28/29<br>17:17 | 07:17 17:15-17:25/10<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 15:29-15:58/29<br>16:50 | 08:41<br>16:07 |
| 6 | 08:59<br>16:20 | 08:18 15:59-16:28/29<br>17:19 | 07:14<br>18:18 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 15:29-15:58/29<br>16:48 | 08:43<br>16:06 |
| 7 | 08:59<br>16:22 | 08:16 15:58-16:28/30<br>17:21 | 07:12<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 15:29-15:57/28<br>16:46 | 08:44<br>16:06 |
| 8 | 08:58<br>16:23 | 08:14 15:59-16:28/29<br>17:23 | 07:09<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48 17:52-17:59/7<br>18:54 | 07:51 15:30-15:58/28<br>16:44 | 08:46<br>16:05 |
| 9 | 08:57<br>16:25 | 08:12 15:59-16:28/29<br>17:25 | 07:07<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 17:49-18:01/12<br>18:52 | 07:53 15:30-15:57/27<br>16:42 | 08:47<br>16:05 |
| 10 | 08:57<br>16:26 | 08:10 16:00-16:28/28<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 | 05:06<br>22:12 | 05:56<br>21:21 | 06:55<br>20:07 | 07:52 17:47-18:02/15<br>18:49 | 07:55 15:30-15:56/26<br>16:40 | 08:48<br>16:05 |
| 11 | 08:56<br>16:28 | 08:08 16:01-16:27/26<br>17:30 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:45-18:03/18<br>18:47 | 07:57 15:31-15:56/25<br>16:38 | 08:49<br>16:04 |
| 12 | 08:55<br>16:30 | 08:06 16:01-16:26/25<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:44-18:04/20<br>18:44 | 07:59 15:33-15:56/23<br>16:36 | 08:51<br>16:04 |
| 13 | 08:54<br>16:31 | 08:04 16:02-16:26/24<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:44-18:04/20<br>18:42 | 08:01 15:34-15:54/20<br>16:34 | 08:52<br>16:04 |
| 14 | 08:53<br>16:33 | 08:02 16:04-16:25/21<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:16 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 17:43-18:04/21<br>18:39 | 08:03 15:35-15:53/18<br>16:33 | 08:53<br>16:04 |
| 15 | 08:52<br>16:35 | 07:59 16:04-16:22/18<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 17:43-18:03/20<br>18:37 | 08:05 15:36-15:51/15<br>16:31 | 08:54<br>16:04 |
| 16 | 08:51<br>16:37 | 07:57 16:07-16:21/14<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04 17:44-18:04/20<br>18:35 | 08:07 15:39-15:50/11<br>16:29 | 08:55<br>16:04 |
| 17 | 08:50<br>16:38 | 07:55 16:12-16:17/5<br>17:42 | 06:47<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 17:44-18:01/17<br>18:32 | 08:09 15:44-15:45/1<br>16:28 | 08:56<br>16:04 |
| 18 | 08:49<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 | 05:16<br>22:03 | 06:11<br>21:03 | 07:10<br>19:46 | 08:08 17:45-17:59/14<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:48<br>16:42 | 07:50<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 17:45-17:56/11<br>18:27 | 08:13<br>16:25 | 08:57<br>16:04 |
| 20 | 08:46<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 | 05:20<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 17:47-17:54/7<br>18:25 | 08:15<br>16:23 | 08:58<br>16:05 |
| 21 | 08:45<br>16:46 | 07:46 17:18-17:21/3<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:17<br>21:46 | 04:52<br>22:19 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 17:50-17:51/1<br>18:23 | 08:17<br>16:22 | 08:58<br>16:05 |
| 22 | 08:44<br>16:48 | 07:44 17:16-17:24/8<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 08:42<br>16:50 | 07:41 17:14-17:26/12<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 08:41<br>16:52 | 07:39 17:13-17:28/15<br>17:57 | 06:29<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23<br>16:18 | 09:00<br>16:07 |
| 25 | 08:39 16:10-16:12/2<br>16:54 | 07:36 17:12-17:30/18<br>17:59 | 06:26<br>18:56 | 06:09<br>20:57 | 05:11<br>21:52 | 04:53<br>22:19 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 15:39-15:48/9<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 08:38 16:05-16:16/11<br>16:56 | 07:34 17:12-17:32/20<br>18:01 | 06:23<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 | 05:29<br>21:51 | 06:27<br>20:44 | 07:25<br>19:25 | 07:24 15:36-15:51/15<br>17:11 | 08:27<br>16:15 | 09:01<br>16:08 |
| 27 | 08:36 16:04-16:20/16<br>16:58 | 07:32 17:11-17:31/20<br>18:03 | 06:21<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 15:33-15:52/19<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 08:35 16:03-16:21/18<br>17:00 | 07:29 17:11-17:31/20<br>18:05 | 06:18<br>19:02 | 06:02<br>21:03 | 05:07<br>21:57 | 04:55<br>22:19 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 15:33-15:54/21<br>17:07 | 08:30<br>16:13 | 09:01<br>16:10 |
| 29 | 08:33 16:02-16:23/21<br>17:02 | | 07:16<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:56<br>22:19 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 15:31-15:55/24<br>17:04 | 08:32<br>16:12 | 09:01<br>16:11 |
| 30 | 08:31 16:01-16:24/23<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 15:30-15:56/26<br>17:02 | 08:33<br>16:11 | 09:01<br>16:12 |
| 31 | 08:29 16:00-16:25/25<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 15:29-15:56/27<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 116 | 533 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 394 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 09:43-10:16/33<br>17:08 | 07:27 17:18-17:39/21<br>18:07 | 07:08 18:55-19:32/37<br>20:09 | 05:55<br>21:08 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 09:44-10:15/31<br>17:10 | 07:24 17:17-17:39/22<br>18:09 | 07:05 18:58-19:33/35<br>20:11 | 05:53<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24 09:45-10:15/30<br>17:12 | 07:22 17:17-17:40/23<br>18:11 | 07:03 18:59-19:32/33<br>20:13 | 05:51<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 09:48-09:53/5<br>16:17 | 08:22 09:46-10:14/28<br>17:14 | 07:19 17:16-17:39/23<br>18:13 17:44-17:45/1 | 07:00 18:59-19:31/32<br>20:15 | 05:48<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 09:46-09:55/9<br>16:19 | 08:20 09:47-10:13/26<br>17:16 | 07:17 17:16-17:40/24<br>18:15 17:41-17:48/7 | 06:58 19:00-19:31/31<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:45-09:58/13<br>16:20 | 08:18 09:48-10:11/23<br>17:19 | 07:14 17:16-17:49/33<br>18:18 | 06:55 19:00-19:30/30<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 09:44-09:59/15<br>16:22 | 08:16 09:50-10:09/19<br>17:21 | 07:12 17:17-17:52/35<br>18:20 | 06:52 19:01-19:30/29<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 09:43-10:01/18<br>16:23 | 08:14 09:52-10:07/15<br>17:23 | 07:09 17:17-17:54/37<br>18:22 | 06:50 19:01-19:28/27<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 09:43-10:02/19<br>16:25 | 08:12 09:56-10:04/8<br>17:25 | 07:07 17:17-17:55/38<br>18:24 | 06:47 19:02-19:28/26<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 09:42-10:03/21<br>16:26 | 08:10<br>17:27 | 07:04 17:19-17:58/39<br>18:26 | 06:45 19:02-19:26/24<br>20:27 | 05:36<br>21:26 | 04:54<br>22:12 |
| 11 | 08:56 09:42-10:04/22<br>16:28 | 08:08<br>17:29 | 07:02 17:20-18:00/40<br>18:28 | 06:42 19:04-19:24/20<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:42-10:06/24<br>16:29 | 08:06<br>17:31 | 06:59 17:26-17:27/1<br>18:30 17:31-18:02/31 | 06:40 19:06-19:23/17<br>20:31 | 05:32<br>21:30 | 04:53<br>22:14 |
| 13 | 08:54 09:41-10:07/26<br>16:31 | 08:04<br>17:34 | 06:57 17:30-18:04/34<br>18:32 | 06:37 19:08-19:19/11<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 09:41-10:08/27<br>16:33 | 08:01<br>17:36 | 06:54 17:30-18:07/37<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 09:40-10:08/28<br>16:35 | 07:59<br>17:38 | 06:51 17:30-18:08/38<br>18:36 | 06:32<br>20:37 | 05:27<br>21:35 | 04:52<br>22:16 |
| 16 | 08:51 09:40-10:10/30<br>16:36 | 07:57<br>17:40 | 06:49 17:29-18:10/41<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:41-10:11/30<br>16:38 | 07:55<br>17:42 | 06:46 17:30-18:13/43<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:40-10:11/31<br>16:40 | 07:52<br>17:44 | 06:44 17:30-18:14/44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 09:40-10:12/32<br>16:42 | 07:50<br>17:46 | 06:41 17:32-18:17/45<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:40-10:12/32<br>16:44 | 07:48<br>17:48 | 06:39 17:33-18:18/45<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 09:40-10:14/34<br>16:46 | 07:46<br>17:51 | 06:36 17:34-18:19/45<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 09:40-10:14/34<br>16:48 | 07:43<br>17:53 | 06:34 17:37-18:21/44<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:40-10:14/34<br>16:50 | 07:41<br>17:55 | 06:31 17:39-18:24/45<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:41-10:15/34<br>16:52 | 07:39<br>17:57 | 06:28 17:41-18:27/46<br>18:54 | 06:11<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:15/35<br>16:54 | 07:36 17:27-17:30/3<br>17:59 | 06:26 17:42-18:28/46<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:40-10:15/35<br>16:56 | 07:34 17:22-17:32/10<br>18:01 | 06:23 17:44-18:29/45<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:41-10:15/34<br>16:58 | 07:31 17:21-17:35/14<br>18:03 | 06:21 17:46-18:30/44<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 09:42-10:16/34<br>17:00 | 07:29 17:19-17:36/17<br>18:05 | 06:18 17:48-18:30/42<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 09:42-10:16/34<br>17:02 | | 07:15 18:50-19:31/41<br>20:03 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:42-10:16/34<br>17:04 | | 07:13 18:51-19:31/40<br>20:05 | 05:57<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 09:43-10:16/33<br>17:06 | | 07:10 18:54-19:32/38<br>20:07 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 757 | 257 | 1178 | 352 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 19:03-19:23/20 | 07:34 18:10-18:42/32 | 07:36 | 08:35 09:24-09:47/23 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 | 06:40 19:01-19:25/24 | 07:36 18:01-18:40/39 | 07:39 09:25-09:34/9 | 08:37 09:25-09:46/21 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 19:00-19:26/26 | 07:38 17:58-18:37/39 | 07:41 09:22-09:37/15 | 08:38 09:27-09:46/19 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 18:59-19:26/27 | 07:40 17:56-18:35/39 | 07:43 09:19-09:39/20 | 08:40 09:27-09:45/18 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 18:57-19:26/29 | 07:42 17:54-18:32/38 | 07:45 09:18-09:42/24 | 08:41 09:29-09:45/16 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 18:56-19:26/30 | 07:44 17:53-18:29/36 | 07:47 09:17-09:43/26 | 08:43 09:31-09:44/13 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 18:56-19:26/30 | 07:46 17:52-18:27/35 | 07:49 09:16-09:44/28 | 08:44 09:33-09:43/10 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 18:55-19:26/31 | 07:48 17:52-18:24/32 | 07:51 09:15-09:44/29 | 08:45 09:36-09:41/5 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 18:54-19:26/32 | 07:50 17:51-18:15/24 | 07:53 09:15-09:46/31 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 18:17-18:22/5 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 18:50-19:25/35 | 07:52 17:51-18:14/23 | 07:55 09:14-09:46/32 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 18:48-19:24/36 | 07:54 17:51-18:14/23 | 07:57 09:14-09:47/33 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 18:46-19:24/38 | 07:56 17:51-18:13/22 | 07:59 09:13-09:47/34 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:00 18:43-19:23/40 | 07:58 17:52-18:11/19 | 08:01 09:14-09:48/34 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:41-19:22/41 | 08:00 17:52-18:08/16 | 08:03 09:14-09:48/34 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | 06:05 | 07:04 18:38-19:20/42 | 08:02 17:54-18:06/12 | 08:05 09:13-09:48/35 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:07 | 07:06 18:35-19:19/44 | 08:04 17:56-18:03/7 | 08:07 09:13-09:48/35 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 18:33-19:17/44 | 08:06 | 08:09 09:14-09:49/35 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 18:30-19:16/46 | 08:08 | 08:11 09:15-09:49/34 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 18:28-19:14/46 | 08:10 | 08:13 09:15-09:49/34 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:26-19:11/45 | 08:12 | 08:15 09:15-09:49/34 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 18:23-19:07/44 | 08:14 | 08:17 09:15-09:49/34 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 18:21-19:05/44 | 08:16 | 08:19 09:16-09:49/33 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:18-19:04/46 | 08:18 | 08:21 09:16-09:48/32 | 08:59 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:22 | 07:21 18:15-19:00/45 | 08:20 | 08:23 09:18-09:49/31 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 18:13-18:58/45 | 07:22 | 08:24 09:19-09:49/30 | 09:00 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:12-18:55/43 | 07:24 | 08:26 09:20-09:49/29 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:11-18:53/42 | 07:26 | 08:28 09:20-09:49/29 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:30 | 07:29 18:11-18:50/39 | 07:28 | 08:30 09:21-09:48/27 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 18:10-18:47/37 | 07:30 | 08:32 09:21-09:47/26 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 19:09-19:20/11 | 07:33 18:10-18:45/35 | 07:32 | 08:33 09:23-09:47/24 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 19:05-19:22/17 | | 07:34 | | 09:01 |
| | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 28 | 1126 | 441 | 851 | 125 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:58-12:21/23 09:46-10:22/36 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 10:24-10:36/12 | 17:08 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:00 12:00-12:21/21 09:46-10:22/36 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 10:24-10:36/12 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 |
| 3 | 09:00 12:01-12:21/20 09:47-10:22/35 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 10:26-10:36/10 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:02-12:20/18 09:47-10:22/35 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 10:27-10:34/7 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 12:03-12:19/16 10:29-10:32/3 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:35-09:37/2 09:47-10:22/35 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:06-12:19/13 09:48-10:23/35 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:35-09:39/4 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 12:07-12:18/11 09:48-10:22/34 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:34-09:41/7 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:11-12:14/3 09:48-10:22/34 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:33-09:42/9 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 09:32-09:43/11 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:49-10:22/33 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 09:31-09:44/13 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:49-10:21/32 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 09:30-09:45/15 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:50-10:20/30 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-09:46/17 09:51-10:11/20 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 10:13-10:19/6 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-09:47/19 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:52-10:11/19 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 09:28-09:48/20 | 08:01 | 06:54 18:04-18:07/3 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:53-10:11/18 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 09:28-09:49/21 | 07:59 | 06:52 18:01-18:08/7 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:54-10:11/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:28-09:49/21 | 07:57 | 06:49 17:59-18:10/11 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:54-10:10/16 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:28-09:50/22 | 07:55 | 06:46 17:58-18:13/15 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:56-10:10/14 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-09:50/22 | 07:53 | 06:44 17:57-18:14/17 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:57-10:09/12 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 09:28-09:51/23 | 07:50 | 06:41 17:57-18:17/20 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:59-10:08/9 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:28-09:51/23 | 07:48 | 06:39 17:56-18:17/21 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 09:29-09:52/23 | 07:46 | 06:36 17:56-18:16/20 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:29-09:51/22 | 07:43 | 06:34 17:56-18:16/20 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:30-09:52/22 | 07:41 | 06:31 17:56-18:14/18 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:30-09:52/22 | 07:39 | 06:28 17:58-18:13/15 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 09:31-09:51/20 | 07:36 | 06:26 17:59-18:11/12 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:31-09:51/20 | 07:34 | 06:23 18:01-18:07/6 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:33-09:51/18 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 09:34-09:50/16 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:36-09:49/13 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:38-09:47/9 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 | | 05:03 | |
| | 17:06 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1109 | 0 | 185 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:36 | 08:35 09:12-09:27/15 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 09:32-10:02/30 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 09:14-09:27/13 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 09:32-10:04/32 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 09:16-09:27/11 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 09:33-10:06/33 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 11:56-11:58/2 09:32-10:06/34 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 09:17-09:26/9 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 11:53-12:03/10 09:33-10:07/34 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 09:19-09:26/7 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 11:52-12:05/13 09:34-10:09/35 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 09:21-09:26/5 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 11:50-12:06/16 10:17-10:19/2 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 09:22-09:24/2 09:34-10:09/35 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 11:50-12:08/18 09:35-10:10/35 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 10:15-10:22/7 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 11:50-12:09/19 09:35-10:10/35 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 10:14-10:24/10 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 11:49-12:10/21 09:35-10:11/36 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 10:13-10:25/12 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 11:49-12:12/23 09:36-10:12/36 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 10:14-10:26/12 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 09:09-09:18/9 | 08:50 11:49-12:12/23 09:36-10:12/36 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 10:14-10:27/13 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 09:08-09:21/13 | 08:51 11:49-12:13/24 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:37-10:28/51 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:06-09:22/16 | 08:53 11:49-12:14/25 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 09:37-10:29/52 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 09:05-09:23/18 | 08:54 11:49-12:14/25 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 09:37-10:29/52 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 09:04-09:24/20 | 08:54 11:49-12:15/26 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 09:38-10:30/52 |
| 17 | 05:15 | 06:09 | 07:08 18:51-18:55/4 | 08:06 | 08:09 09:05-09:25/20 | 08:55 11:50-12:16/26 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 09:39-10:31/52 |
| 18 | 05:16 | 06:11 | 07:10 18:47-18:58/11 | 08:08 | 08:11 09:04-09:26/22 | 08:56 11:50-12:17/27 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:39-10:32/53 |
| 19 | 05:18 | 06:13 | 07:12 18:45-19:00/15 | 08:10 | 08:13 09:04-09:26/22 | 08:57 11:50-12:17/27 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:40-10:32/52 |
| 20 | 05:19 | 06:15 | 07:14 18:43-19:01/18 | 08:12 | 08:15 09:04-09:26/22 | 08:58 11:51-12:18/27 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 09:40-10:32/52 |
| 21 | 05:21 | 06:17 | 07:15 18:42-19:01/19 | 08:14 | 08:17 09:04-09:27/23 | 08:58 11:52-12:18/26 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 09:41-10:33/52 |
| 22 | 05:23 | 06:19 | 07:17 18:41-19:01/20 | 08:16 | 08:19 09:04-09:27/23 | 08:59 11:52-12:18/26 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:41-10:33/52 |
| 23 | 05:24 | 06:21 | 07:19 18:41-19:01/20 | 08:18 | 08:21 09:05-09:28/23 | 08:59 11:53-12:19/26 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 09:36-09:45/9 | 16:06 09:42-10:34/52 |
| 24 | 05:26 | 06:23 | 07:21 18:40-19:00/20 | 08:20 | 08:23 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 09:35-09:47/12 | 16:06 09:42-10:34/52 |
| 25 | 05:27 | 06:24 | 07:23 18:40-18:58/18 | 07:22 | 08:24 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 09:34-09:48/14 | 16:07 09:42-10:34/52 |
| 26 | 05:29 | 06:26 | 07:25 18:40-18:55/15 | 07:24 | 08:26 09:07-09:28/21 | 09:00 11:54-12:20/26 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 09:33-09:49/16 | 16:08 09:42-10:35/53 |
| 27 | 05:31 | 06:28 | 07:27 18:40-18:53/13 | 07:26 | 08:28 09:07-09:28/21 | 09:01 11:54-12:20/26 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:33-09:50/17 | 16:09 09:43-10:35/52 |
| 28 | 05:33 | 06:30 | 07:29 18:41-18:50/9 | 07:28 | 08:30 09:08-09:28/20 | 09:01 11:55-12:20/25 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 09:33-09:51/18 | 16:09 09:43-10:35/52 |
| 29 | 05:34 | 06:32 | 07:31 18:43-18:47/4 | 07:30 | 08:32 09:09-09:28/19 | 09:01 11:56-12:21/25 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 09:33-09:52/19 | 16:10 09:44-10:35/51 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 09:10-09:27/17 09:32-09:52/20 | 09:01 11:57-12:21/24 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 09:54-10:00/6 | 16:11 09:44-10:36/52 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:01 11:58-12:21/23 09:45-10:21/36 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 10:22-10:36/14 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 186 | 0 | 504 | 2148 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:44-13:42/58 | 08:27 12:52-13:57/65 10:04-10:09/5 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:39-10:37/58 | 17:08 09:03-09:23/20 09:32-10:00/28 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:01 12:45-13:43/58 | 08:26 12:53-13:56/63 09:33-09:59/26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:38-10:37/59 | 17:10 09:02-09:24/22 | 18:09 | 20:11 | 21:11 | 22:04 |
| 3 | 09:00 12:46-13:45/59 | 08:24 12:53-13:56/63 09:34-09:59/25 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 09:39-10:38/59 | 17:12 09:01-09:26/25 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:45-13:45/60 | 08:22 12:54-13:56/62 09:35-09:58/23 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 09:38-10:38/60 | 17:14 09:01-09:27/26 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 12:45-13:45/60 | 08:20 12:55-13:56/61 09:36-09:57/21 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:39-10:38/59 | 17:17 09:00-09:28/28 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:46-13:46/60 | 08:18 12:55-13:54/59 09:37-09:55/18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:39-10:39/60 | 17:19 08:59-09:27/28 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 12:46-13:47/61 | 08:16 12:56-13:54/58 08:59-09:28/29 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:38-10:39/61 | 17:21 08:46-08:55/9 09:39-09:53/14 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:46-13:47/61 | 08:14 12:57-13:53/56 08:59-09:29/30 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:38-10:40/62 | 17:23 08:44-08:58/14 09:43-09:50/7 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 12:46-13:48/62 | 08:12 12:58-13:52/54 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:38-10:40/62 | 17:25 08:42-09:29/47 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 12:46-13:49/63 | 08:10 13:00-13:52/52 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:38-10:40/62 | 17:27 08:41-09:29/48 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 12:46-13:49/63 | 08:08 13:00-13:50/50 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:35-10:41/66 | 17:29 08:40-09:29/49 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:47-13:50/63 | 08:06 13:02-13:49/47 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 09:34-10:41/67 | 17:31 08:39-09:29/50 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:47-13:51/64 | 08:04 13:04-13:47/43 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:33-10:42/69 | 17:34 08:39-09:29/50 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 12:47-13:52/65 | 08:01 13:07-13:46/39 | 06:54 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:33-10:42/69 | 17:36 08:39-09:29/50 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 12:47-13:51/64 | 07:59 13:09-13:43/34 | 06:52 | 06:33 | 05:27 | 04:52 |
| | 16:35 09:32-10:42/70 | 17:38 08:38-09:27/49 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 12:47-13:52/65 | 07:57 13:12-13:40/28 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:31-10:42/71 | 17:40 08:38-09:27/49 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 12:48-13:53/65 | 07:55 13:16-13:35/19 | 06:46 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:31-10:42/71 | 17:42 08:39-09:26/47 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 12:47-13:53/66 | 07:53 08:38-09:24/46 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:30-10:42/72 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 12:48-13:54/66 | 07:50 08:39-09:04/25 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:30-10:42/72 | 17:46 09:05-09:23/18 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 12:48-13:54/66 | 07:48 08:39-09:03/24 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 09:29-10:41/72 | 17:48 09:07-09:19/12 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 12:48-13:55/67 | 07:46 08:40-09:02/22 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 09:30-10:41/71 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 12:48-13:55/67 | 07:43 08:42-09:01/19 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 09:29-10:41/72 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 12:48-13:55/67 | 07:41 08:42-08:59/17 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:30-10:41/71 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 12:49-13:56/67 | 07:39 08:45-08:57/12 | 06:28 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:30-10:39/69 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 12:49-13:56/67 09:29-10:18/49 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 10:20-10:38/18 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 12:49-13:56/67 09:29-10:18/49 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 10:21-10:36/15 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 12:49-13:56/67 09:30-10:18/48 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:25-10:34/9 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 12:51-13:57/66 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:31-10:17/46 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 12:51-13:57/66 09:31-10:16/45 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 09:11-09:14/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 12:51-13:57/66 09:31-10:15/44 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 09:07-09:19/12 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 12:52-13:57/65 09:32-10:13/41 | | 07:10 | | 05:03 | |
| | 17:06 09:05-09:21/16 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3960 | 1885 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | 12:28-13:20/52 | 08:35 | 12:28-13:31/63 |
| | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 08:11-08:59/48 | 16:10 | 09:17-10:23/66 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | | 07:39 | 12:28-13:22/54 | 08:37 | 12:29-13:32/63 |
| | 22:17 | 21:38 | 20:27 | 19:09 | | 16:56 | 08:12-08:59/47 | 16:09 | 09:21-10:23/62 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:41 | 12:27-13:23/56 09:12-09:20/8 | 08:38 | 12:30-13:32/62 |
| | 22:17 | 21:36 | 20:24 | 19:07 | | 16:53 | 08:14-08:58/44 | 16:08 | 09:22-10:24/62 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:43 | 12:25-13:23/58 08:28-08:58/30 | 08:40 | 12:30-13:32/62 |
| | 22:16 | 21:34 | 20:22 | 19:04 | | 16:51 | 08:16-08:24/8 09:08-09:23/15 | 16:07 | 09:22-10:24/62 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | 12:25-13:25/60 09:07-09:26/19 | 08:41 | 12:31-13:32/61 |
| | 22:16 | 21:32 | 20:19 | 19:02 | | 16:49 | 08:30-08:58/28 | 16:07 | 09:23-10:24/61 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | 12:25-13:25/60 09:06-09:27/21 | 08:43 | 12:32-13:33/61 |
| | 22:15 | 21:30 | 20:17 | 18:59 | | 16:47 | 08:30-08:57/27 | 16:06 | 09:25-10:25/60 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | 12:24-13:26/62 09:04-09:28/24 | 08:44 | 12:32-13:32/60 |
| | 22:14 | 21:28 | 20:14 | 18:57 | | 16:45 | 08:31-08:56/25 | 16:06 | 09:25-10:25/60 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | 12:23-13:26/63 09:03-09:29/26 | 08:45 | 12:33-13:33/60 |
| | 22:14 | 21:26 | 20:11 | 18:54 | | 16:43 | 08:31-08:55/24 | 16:05 | 09:26-10:26/60 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | 12:23-13:27/64 09:04-09:30/26 | 08:47 | 12:34-13:33/59 |
| | 22:13 | 21:23 | 20:09 | 18:52 | | 16:42 | 08:33-08:55/22 | 16:05 | 09:27-10:26/59 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | | 07:55 | 12:23-13:27/64 09:34-09:41/7 | 08:48 | 12:34-13:33/59 |
| | 22:12 | 21:21 | 20:06 | 18:49 | | 16:40 | 08:34-08:54/20 09:03-09:31/28 | 16:04 | 09:28-10:26/58 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | | 07:57 | 12:22-13:28/66 09:02-09:44/42 | 08:49 | 12:35-13:33/58 |
| | 22:11 | 21:19 | 20:04 | 18:47 | | 16:38 | 08:36-08:52/16 | 16:04 | 09:29-10:27/58 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | | 07:59 | 12:22-13:28/66 09:02-09:46/44 | 08:50 | 12:36-13:34/58 |
| | 22:10 | 21:17 | 20:01 | 18:44 | | 16:36 | 08:38-08:49/11 | 16:04 | 09:29-10:27/58 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | | 08:01 | 12:23-13:29/66 | 08:52 | 12:36-13:34/58 |
| | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 09:03-09:48/45 | 16:04 | 09:30-10:27/57 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | | 08:03 | 12:23-13:29/66 | 08:53 | 12:37-13:34/57 |
| | 22:08 | 21:12 | 19:56 | 18:39 | | 16:33 | 09:02-09:49/47 | 16:04 | 09:31-10:27/56 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | | 08:05 | 12:22-13:29/67 09:02-09:50/48 | 08:54 | 12:37-13:34/57 |
| | 22:07 | 21:10 | 19:53 | 18:37 | | 16:31 | 09:57-10:06/9 | 16:04 | 09:32-10:28/56 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | | 08:07 | 12:22-13:29/67 09:02-09:51/49 | 08:54 | 12:38-13:34/56 |
| | 22:05 | 21:08 | 19:51 | 18:34 | | 16:29 | 09:54-10:09/15 | 16:04 | 09:33-10:28/55 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 09:19-09:26/7 | 08:09 | 12:23-13:30/67 09:03-09:52/49 | 08:55 | 12:39-13:35/56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | | 16:28 | 09:54-10:12/18 | 16:04 | 09:34-10:29/55 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 09:15-09:29/14 | 08:11 | 12:23-13:30/67 | 08:56 | 12:39-13:36/57 |
| | 22:03 | 21:03 | 19:46 | 18:30 | | 16:26 | 09:04-10:13/69 | 16:04 | 09:35-10:29/54 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 09:13-09:31/18 | 08:13 | 12:23-13:30/67 | 08:57 | 12:39-13:35/56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 09:04-10:15/71 | 16:04 | 09:36-10:30/54 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 09:11-09:32/21 | 08:15 | 12:23-13:30/67 | 08:58 | 12:40-13:36/56 |
| | 22:00 | 20:59 | 19:40 | 18:25 | | 16:23 | 09:04-10:16/72 | 16:04 | 09:36-10:30/54 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 09:10-09:33/23 | 08:17 | 12:23-13:30/67 | 08:58 | 12:41-13:37/56 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 09:41-09:47/6 | 16:22 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 09:09-09:33/24 | 08:19 | 12:24-13:30/66 | 08:59 | 12:41-13:37/56 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 09:36-09:51/15 | 16:20 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 09:09-09:34/25 | 08:21 | 12:24-13:30/66 | 08:59 | 12:42-13:38/56 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 09:35-09:54/19 | 16:19 | 09:07-10:19/72 | 16:06 | 09:38-10:32/54 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 13:54-13:59/5 | 08:23 | 12:25-13:31/66 | 09:00 | 12:42-13:38/56 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 09:09-09:55/46 | 16:17 | 09:08-10:20/72 | 16:06 | 09:38-10:32/54 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 12:45-13:07/22 | 08:25 | 12:26-13:31/65 | 09:00 | 12:42-13:38/56 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 08:08-08:56/48 | 16:16 | 09:09-10:20/71 | 16:07 | 09:38-10:32/54 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 12:41-13:10/29 | 08:26 | 12:26-13:31/65 | 09:00 | 12:43-13:39/56 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 08:08-08:57/49 | 16:15 | 09:10-10:21/71 | 16:08 | 09:38-10:33/55 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 12:37-13:13/36 | 08:28 | 12:27-13:31/64 | 09:01 | 12:43-13:39/56 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 08:08-08:57/49 | 16:14 | 09:11-10:21/70 | 16:09 | 09:38-10:33/55 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 12:36-13:16/40 | 08:30 | 12:27-13:32/65 | 09:01 | 12:43-13:40/57 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 08:09-08:58/49 | 16:13 | 09:13-10:22/69 | 16:09 | 09:38-10:34/56 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 12:33-13:17/44 | 08:32 | 12:27-13:31/64 | 09:01 | 12:44-13:41/57 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 08:09-08:58/49 | 16:12 | 09:14-10:23/69 | 16:10 | 09:38-10:34/56 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 12:32-13:18/46 | 08:33 | 12:28-13:31/63 | 09:01 | 12:44-13:41/57 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 08:09-08:58/49 | 16:11 | 09:15-10:22/67 | 16:11 | 09:38-10:35/57 |
| 31 | 05:38 | 06:36 | | 07:34 | 12:30-13:20/50 | | | 09:01 | 12:45-13:42/57 |
| | 21:42 | 20:32 | | 17:00 | 08:10-08:58/48 | | | 16:12 | 09:38-10:36/58 |
| Potential sun hours | 521 | 465 | 383 | 326 | | 253 | | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 831 | | 3717 | | 3573 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:38-08:01/23 | 05:55 | 06:49-08:15/86 | 05:02 | 06:38-07:53/75 |
| | 16:14 | 17:08 | 18:07 | | 20:10 | | 21:09 | | 22:03 | |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:36-08:01/25 | 05:53 | 06:47-08:13/86 | 05:01 | 06:38-07:53/75 |
| | 16:15 | 17:10 | 18:09 | | 20:12 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:32-08:07/35 | 05:51 | 06:46-08:12/86 | 05:00 | 06:39-07:54/75 |
| | 16:16 | 17:12 | 18:12 | | 20:14 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:31-08:11/40 | 05:48 | 06:44-08:11/87 | 04:59 | 06:39-07:54/75 |
| | 16:17 | 17:14 | 18:14 | | 20:16 | | 21:15 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:29-08:13/44 | 05:46 | 06:43-08:09/86 | 04:58 | 06:39-07:53/74 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:28-08:16/48 | 05:44 | 06:42-08:08/86 | 04:57 | 06:40-07:54/74 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 07:20-07:26/6 | 21:18 | | 22:09 | |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:17-08:17/60 | 05:42 | 06:41-08:06/85 | 04:56 | 06:40-07:53/73 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:15-08:19/64 | 05:40 | 06:40-08:03/83 | 04:56 | 06:40-07:53/73 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | 07:12-08:19/67 | 05:38 | 06:39-08:01/82 | 04:55 | 06:41-07:53/72 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:10-08:20/70 | 05:36 | 06:39-07:57/78 | 04:54 | 06:41-07:53/72 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:13 | |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 07:09-08:20/71 | 05:34 | 06:39-07:53/74 | 04:54 | 06:41-07:53/72 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:09-08:21/72 | 05:32 | 06:38-07:53/75 | 04:53 | 06:42-07:54/72 |
| | 16:29 | 17:32 | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 07:09-08:21/72 | 05:30 | 06:37-07:53/76 | 04:53 | 06:43-07:54/71 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 07:08-08:22/74 | 05:28 | 06:37-07:53/76 | 04:53 | 06:42-07:53/71 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | 07:09-08:22/73 | 05:27 | 06:37-07:54/77 | 04:52 | 21:37-21:38/1 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 | 06:43-07:53/70 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:09-08:22/73 | 05:25 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 | 06:43-07:54/71 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 07:10-08:22/72 | 05:23 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 | 06:43-07:54/71 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:11-08:23/72 | 05:21 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:41 | | 22:18 | 06:44-07:54/70 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:11-08:22/71 | 05:20 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 | 06:44-07:54/70 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:10-08:22/72 | 05:18 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | | 21:44 | | 22:19 | 06:44-07:54/70 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 07:09-08:22/73 | 05:16 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | | 22:19 | 06:44-07:54/70 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 07:07-08:21/74 | 05:15 | 06:36-07:54/78 | 04:52 | 21:37-21:41/4 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 | 06:45-07:55/70 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 07:06-08:20/74 | 05:13 | 06:36-07:54/78 | 04:53 | 21:37-21:41/4 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 | 06:45-07:55/70 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 07:06-08:20/74 | 05:12 | 06:37-07:54/77 | 04:53 | 21:37-21:41/4 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | | 22:19 | 06:45-07:55/70 |
| 25 | 08:39 | 07:36 | 06:26 | 06:50-06:54/4 | 06:09 | 07:05-08:20/75 | 05:10 | 06:37-07:54/77 | 04:53 | 21:38-21:41/3 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 | 06:45-07:56/71 |
| 26 | 08:38 | 07:34 | 06:23 | 06:48-06:58/10 | 06:06 | 07:03-08:18/75 | 05:09 | 06:36-07:53/77 | 04:54 | 21:38-21:41/3 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 | 06:45-07:56/71 |
| 27 | 08:36 | 07:32 | 06:21 | 06:45-06:59/14 | 06:04 | 07:01-08:18/77 | 05:08 | 06:37-07:54/77 | 04:54 | 21:40-21:41/1 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 | 06:46-07:57/71 |
| 28 | 08:35 | 07:29 | 06:18 | 06:43-07:01/18 | 06:02 | 06:56-08:17/81 | 05:06 | 06:37-07:54/77 | 04:55 | 06:45-07:56/71 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 07:40-08:01/21 | 05:59 | 06:53-08:16/83 | 05:05 | 06:37-07:54/77 | 04:55 | 06:46-07:57/71 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 07:40-08:02/22 | 05:57 | 06:51-08:15/84 | 05:04 | 06:38-07:54/76 | 04:56 | 06:45-07:57/72 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:19 | |
| 31 | 08:29 | | 07:11 | 07:39-08:01/22 | | | 05:03 | 06:38-07:53/75 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 111 | | 1974 | | 2456 | | 2195 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 06:46-07:57/71<br>22:18 | 05:40 06:49-08:03/74<br>21:40 | 06:38 07:09-08:19/70<br>20:29 | 07:35<br>19:12 | 07:37<br>16:58 | 08:35<br>16:10 |
| 2 | 04:58 06:46-07:58/72<br>22:18 | 05:41 06:49-08:03/74<br>21:38 | 06:40 07:08-08:18/70<br>20:27 | 07:37<br>19:10 | 07:39<br>16:56 | 08:37<br>16:09 |
| 3 | 04:58 06:46-07:59/73<br>22:17 | 05:43 06:49-08:09/80<br>21:36 | 06:42 07:10-08:17/67<br>20:24 | 07:39<br>19:07 | 07:41<br>16:54 | 08:38<br>16:08 |
| 4 | 04:59 06:46-07:59/73<br>22:17 | 05:45 06:50-08:12/82<br>21:34 | 06:43 07:12-08:16/64<br>20:22 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00 06:46-07:59/73<br>22:16 | 05:47 06:51-08:15/84<br>21:32 | 06:45 07:14-08:14/60<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01 06:46-07:59/73<br>22:15 | 05:49 06:51-08:16/85<br>21:30 | 06:47 07:24-08:11/47<br>20:17 07:16-07:22/6 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02 06:46-07:59/73<br>22:15 | 05:51 06:52-08:18/86<br>21:28 | 06:49 07:24-08:09/45<br>20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:06 |
| 8 | 05:03 06:46-08:00/74<br>22:14 | 05:52 06:53-08:19/86<br>21:26 | 06:51 07:25-08:06/41<br>20:12 | 07:48<br>18:54 | 07:51<br>16:44 | 08:46<br>16:05 |
| 9 | 05:04 06:46-08:00/74<br>22:13 | 05:54 06:53-08:20/87<br>21:24 | 06:53 07:26-08:01/35<br>20:09 | 07:50<br>18:52 | 07:53<br>16:42 | 08:47<br>16:05 |
| 10 | 05:06 06:46-08:00/74<br>22:12 | 05:56 06:54-08:21/87<br>21:22 | 06:55 07:29-07:54/25<br>20:07 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07 06:47-08:02/75<br>22:11 | 05:58 06:56-08:22/86<br>21:19 | 06:57 07:31-07:54/23<br>20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:50<br>16:04 |
| 12 | 05:08 06:46-08:02/76<br>22:10 | 06:00 06:58-08:23/85<br>21:17 | 06:59 07:30-07:53/23<br>20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:51<br>16:04 |
| 13 | 05:09 06:46-08:02/76<br>22:09 | 06:02 06:59-08:23/84<br>21:15 | 07:00 07:30-07:52/22<br>19:59 | 07:58<br>18:42 | 08:01<br>16:34 | 08:52<br>16:04 |
| 14 | 05:11 06:46-08:02/76<br>22:08 | 06:04 07:01-08:24/83<br>21:13 | 07:02 07:31-07:51/20<br>19:56 | 08:00<br>18:39 | 08:03<br>16:33 | 08:53<br>16:04 |
| 15 | 05:12 06:46-08:02/76<br>22:07 | 06:06 07:05-08:25/80<br>21:10 | 07:04 07:32-07:50/18<br>19:54 | 08:02<br>18:37 | 08:05<br>16:31 | 08:54<br>16:04 |
| 16 | 05:13 06:46-08:03/77<br>22:06 | 06:07 07:11-08:25/74<br>21:08 | 07:06 07:34-07:49/15<br>19:51 | 08:04<br>18:34 | 08:07<br>16:29 | 08:55<br>16:04 |
| 17 | 05:15 06:46-08:03/77<br>22:04 | 06:09 07:11-08:26/75<br>21:06 | 07:08 07:36-07:47/11<br>19:48 | 08:06<br>18:32 | 08:09<br>16:28 | 08:56<br>16:04 |
| 18 | 05:16 06:46-08:03/77<br>22:03 | 06:11 07:11-08:25/74<br>21:03 | 07:10 07:38-07:44/6<br>19:46 | 08:08<br>18:30 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:46-08:04/78<br>22:02 | 06:13 07:11-08:26/75<br>21:01 | 07:12<br>19:43 | 08:10<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:46-08:04/78<br>22:00 | 06:15 07:12-08:26/74<br>20:59 | 07:14<br>19:41 | 08:12<br>18:25 | 08:15<br>16:23 | 08:58<br>16:04 |
| 21 | 05:21 06:47-08:04/77<br>21:59 | 06:17 07:13-08:26/73<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17<br>16:22 | 08:58<br>16:05 |
| 22 | 05:23 06:46-08:04/78<br>21:57 | 06:19 07:13-08:25/72<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:47-08:05/78<br>21:56 | 06:21 07:14-08:26/72<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21<br>16:19 | 09:00<br>16:06 |
| 24 | 05:26 06:47-08:04/77<br>21:54 | 06:23 07:15-08:25/70<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23<br>16:18 | 09:00<br>16:06 |
| 25 | 05:27 06:47-08:05/78<br>21:52 | 06:25 07:14-08:25/71<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:47-08:04/77<br>21:51 | 06:26 07:13-08:25/72<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27<br>16:15 | 09:01<br>16:08 |
| 27 | 05:31 06:47-08:04/77<br>21:49 | 06:28 07:11-08:24/73<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28<br>16:14 | 09:01<br>16:09 |
| 28 | 05:33 06:47-08:04/77<br>21:47 | 06:30 07:10-08:23/73<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:48-08:04/76<br>21:45 | 06:32 07:09-08:23/74<br>20:37 | 07:31<br>19:17 | 07:31<br>17:04 | 08:32<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:48-08:04/76<br>21:44 | 06:34 07:09-08:22/73<br>20:34 | 07:33<br>19:15 | 07:33<br>17:02 | 08:34<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:48-08:03/75<br>21:42 | 06:36 07:09-08:21/72<br>20:32 | | 07:35<br>17:00 | | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2342 | 2410 | 668 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 43 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:04-15:46/42 | 07:26 | | 07:07 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:04-15:46/42 | 07:24 | | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:04-15:46/42 | 07:21 | | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:04-15:46/42 | 07:19 | | 07:00 | 05:48 | 04:58 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:05-15:46/41 | 07:16 | 17:22-17:35/13 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:05-15:46/41 | 07:14 | 17:20-17:39/19 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:06-15:46/40 | 07:11 | 17:17-17:40/23 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:20 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:57 | | 08:14 | 15:07-15:46/39 | 07:09 | 17:16-17:42/26 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:06-15:45/39 | 07:06 | 17:14-17:42/28 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:07-15:45/38 | 07:04 | 17:14-17:43/29 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:09-15:44/35 | 07:01 | 17:13-17:43/30 | 06:42 | 05:34 | 04:54 |
| | 16:27 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:10-15:44/34 | 06:59 | 17:11-17:43/32 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 15:15-15:23/8 | 08:03 | 15:10-15:42/32 | 06:56 | 17:11-17:44/33 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | 15:13-15:26/13 | 08:01 | 15:12-15:41/29 | 06:54 | 17:11-17:43/32 | 06:35 | 05:28 | 04:52 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 15:12-15:29/17 | 07:59 | 15:14-15:40/26 | 06:51 | 17:11-17:43/32 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 15:11-15:31/20 | 07:57 | 15:16-15:37/21 | 06:49 | 17:10-17:43/33 | 06:30 | 05:24 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | 15:09-15:32/23 | 07:54 | 15:19-15:34/15 | 06:46 | 17:10-17:42/32 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | 15:09-15:34/25 | 07:52 | | 06:43 | 17:11-17:41/30 | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | 15:08-15:35/27 | 07:50 | | 06:41 | 17:11-17:40/29 | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 15:07-15:37/30 | 07:48 | | 06:38 | 17:12-17:39/27 | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | 15:06-15:38/32 | 07:45 | | 06:36 | 17:13-17:38/25 | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:07-15:40/33 | 07:43 | | 06:33 | 17:15-17:36/21 | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:50 | 21:47 | 22:18 |
| 23 | 08:42 | 15:06-15:40/34 | 07:41 | | 06:31 | 17:16-17:34/18 | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:05-15:41/36 | 07:38 | | 06:28 | 17:19-17:30/11 | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:06-15:43/37 | 07:36 | | 06:25 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:05-15:43/38 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:53 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:05-15:44/39 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:04-15:44/40 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:04-15:45/41 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:04-15:45/41 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:04-15:45/41 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 575 | | 598 | | 523 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 43 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | 05:39 | 06:37 | | 07:34 | 17:51-18:23/32 | 07:36 | 14:37-15:14/37 | 08:35 |
| | 22:17 | 21:39 | 20:29 | | 19:12 | | 16:57 | | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | | 07:36 | 17:51-18:22/31 | 07:38 | 14:36-15:15/39 | 08:36 |
| | 22:17 | 21:37 | 20:26 | | 19:09 | | 16:55 | | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | | 07:38 | 17:52-18:22/30 | 07:40 | 14:36-15:16/40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | | 19:07 | | 16:53 | | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | | 07:40 | 17:52-18:21/29 | 07:42 | 14:36-15:16/40 | 08:39 |
| | 22:16 | 21:33 | 20:21 | | 19:04 | | 16:51 | | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | | 07:42 | 17:52-18:18/26 | 07:44 | 14:35-15:16/41 | 08:41 |
| | 22:15 | 21:31 | 20:19 | | 19:01 | | 16:49 | | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | | 07:44 | 17:53-18:17/24 | 07:46 | 14:35-15:16/41 | 08:42 |
| | 22:15 | 21:29 | 20:16 | | 18:59 | | 16:47 | | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | | 07:46 | 17:54-18:15/21 | 07:49 | 14:35-15:17/42 | 08:44 |
| | 22:14 | 21:27 | 20:14 | | 18:56 | | 16:45 | | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | | 07:48 | 17:57-18:13/16 | 07:51 | 14:35-15:17/42 | 08:45 |
| | 22:13 | 21:25 | 20:11 | | 18:54 | | 16:43 | | 16:05 |
| 9 | 05:04 | 05:54 | 06:52 | | 07:50 | 18:00-18:09/9 | 07:53 | 14:35-15:17/42 | 08:46 |
| | 22:12 | 21:23 | 20:09 | | 18:51 | | 16:41 | | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | | 07:52 | | 07:55 | 14:35-15:16/41 | 08:48 |
| | 22:11 | 21:21 | 20:06 | | 18:49 | | 16:39 | | 16:04 |
| 11 | 05:06 | 05:58 | 06:56 | | 07:54 | | 07:57 | 14:36-15:17/41 | 08:49 |
| | 22:10 | 21:19 | 20:03 | | 18:46 | | 16:38 | | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | | 07:56 | | 07:59 | 14:36-15:17/41 | 08:50 |
| | 22:09 | 21:17 | 20:01 | | 18:44 | | 16:36 | | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | | 07:58 | | 08:01 | 14:36-15:16/40 | 08:51 |
| | 22:08 | 21:14 | 19:58 | | 18:41 | | 16:34 | | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | | 08:00 | | 08:03 | 14:36-15:16/40 | 08:52 |
| | 22:07 | 21:12 | 19:56 | | 18:39 | | 16:32 | | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | | 08:02 | | 08:05 | 14:38-15:17/39 | 08:53 |
| | 22:06 | 21:10 | 19:53 | | 18:36 | | 16:31 | | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | | 08:04 | | 08:07 | 14:38-15:16/38 | 08:54 |
| | 22:05 | 21:08 | 19:50 | | 18:34 | | 16:29 | | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | | 08:06 | | 08:09 | 14:38-15:15/37 | 08:55 |
| | 22:04 | 21:05 | 19:48 | | 18:32 | | 16:27 | | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | | 08:08 | | 08:11 | 14:39-15:15/36 | 08:56 |
| | 22:02 | 21:03 | 19:45 | | 18:29 | | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 18:07-18:16/9 | 08:10 | | 08:13 | 14:40-15:14/34 | 08:56 |
| | 22:01 | 21:01 | 19:43 | | 18:27 | | 16:24 | | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 18:03-18:20/17 | 08:12 | | 08:15 | 14:42-15:15/33 | 08:57 |
| | 21:59 | 20:58 | 19:40 | | 18:24 | | 16:23 | | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 18:01-18:21/20 | 08:14 | | 08:17 | 14:42-15:14/32 | 08:58 |
| | 21:58 | 20:56 | 19:37 | | 18:22 | | 16:21 | | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 17:58-18:22/24 | 08:16 | | 08:18 | 14:43-15:13/30 | 08:58 |
| | 21:57 | 20:53 | 19:35 | | 18:20 | | 16:20 | | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 17:56-18:23/27 | 08:18 | | 08:20 | 14:45-15:12/27 | 08:59 |
| | 21:55 | 20:51 | 19:32 | | 18:17 | | 16:19 | | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 17:55-18:23/28 | 08:20 | 15:53-16:00/7 | 08:22 | 14:46-15:12/26 | 08:59 |
| | 21:53 | 20:49 | 19:30 | | 18:15 | | 16:17 | | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 17:54-18:24/30 | 07:22 | 14:48-15:05/17 | 08:24 | 14:47-15:11/24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | | 17:13 | | 16:16 | | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 17:53-18:24/31 | 07:24 | 14:46-15:08/22 | 08:26 | 14:49-15:10/21 | 09:00 |
| | 21:50 | 20:44 | 19:25 | | 17:11 | | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 17:52-18:24/32 | 07:26 | 14:43-15:10/27 | 08:28 | 14:51-15:08/17 | 09:00 |
| | 21:48 | 20:41 | 19:22 | | 17:08 | | 16:14 | | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 | 17:52-18:24/32 | 07:28 | 14:41-15:11/30 | 08:29 | 14:53-15:07/14 | 09:00 |
| | 21:47 | 20:39 | 19:19 | | 17:06 | | 16:13 | | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 | 17:51-18:24/33 | 07:30 | 14:40-15:12/32 | 08:31 | 14:56-15:04/8 | 09:00 |
| | 21:45 | 20:36 | 19:17 | | 17:04 | | 16:12 | | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 | 17:51-18:24/33 | 07:32 | 14:39-15:13/34 | 08:33 | | 09:00 |
| | 21:43 | 20:34 | 19:14 | | 17:02 | | 16:11 | | 16:11 |
| 31 | 05:37 | 06:35 | | | 07:34 | 14:38-15:14/36 | | | 09:00 |
| | 21:41 | 20:31 | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | | 326 | | 253 | | 224 |
| Sum of minutes with flicker | 0 | 0 | 316 | | 423 | | 983 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 44 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:29-12:48/19 10:05-10:33/28 | 08:28 09:38-09:41/3 | 07:27 | 07:08 | 05:55 19:22-20:00/38 | 05:02 |
| | 16:14 11:47-12:28/41 | 17:08 08:58-09:02/4 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 12:29-12:47/18 10:05-10:33/28 | 08:26 08:55-09:06/11 | 07:24 | 07:05 | 05:53 19:22-20:00/38 | 05:01 |
| | 16:15 11:48-12:28/40 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 12:31-12:47/16 10:06-10:34/28 | 08:24 08:53-09:07/14 | 07:22 | 07:03 | 05:51 19:22-19:59/37 | 05:00 |
| | 16:16 11:49-12:28/39 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 12:32-12:46/14 10:06-10:34/28 | 08:22 08:52-09:09/17 | 07:19 | 07:00 | 05:49 19:23-19:59/36 | 04:59 |
| | 16:18 11:50-12:28/38 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 12:34-12:46/12 10:07-10:35/28 | 08:20 08:52-09:10/18 | 07:17 | 06:58 | 05:46 19:23-19:58/35 | 04:58 |
| | 16:19 11:52-12:28/36 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 12:36-12:44/8 10:07-10:35/28 | 08:18 08:51-09:11/20 | 07:14 | 06:55 | 05:44 19:24-19:58/34 | 04:57 |
| | 16:20 11:53-12:28/35 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 11:55-12:27/32 | 08:16 08:45-09:12/27 | 07:12 | 06:53 | 05:42 19:24-19:57/33 | 04:56 |
| | 16:22 10:08-10:35/27 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 12:05-12:27/22 | 08:14 08:42-09:11/29 | 07:09 | 06:50 | 05:40 19:25-19:56/31 | 04:56 |
| | 16:23 10:08-10:35/27 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 12:06-12:26/20 09:33-09:34/1 | 08:12 08:40-09:12/32 | 07:07 | 06:48 | 05:38 19:25-19:55/30 | 04:55 |
| | 16:25 10:09-10:36/27 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 12:09-12:27/18 09:32-09:38/6 | 08:10 08:38-09:12/34 | 07:04 | 06:45 | 05:36 19:26-19:53/27 | 04:55 |
| | 16:26 10:10-10:37/27 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 12:09-12:25/16 09:31-09:39/8 | 08:08 08:36-09:12/36 | 07:02 | 06:43 | 05:34 19:28-19:53/25 | 04:54 |
| | 16:28 10:10-10:37/27 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:12-12:23/11 09:29-09:40/11 | 08:06 08:33-09:11/38 | 06:59 | 06:40 19:54-20:03/9 | 05:32 19:30-19:51/21 | 04:54 |
| | 16:30 10:10-10:36/26 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:16-12:20/4 09:28-09:41/13 | 08:04 08:31-09:11/40 | 06:57 | 06:38 19:51-20:04/13 | 05:30 19:31-19:49/18 | 04:53 |
| | 16:31 10:11-10:37/26 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 10:12-10:37/25 | 08:02 08:31-09:10/39 | 06:54 | 06:35 19:50-20:06/16 | 05:29 19:33-19:47/14 | 04:53 |
| | 16:33 09:27-09:43/16 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 10:13-10:37/24 | 07:59 08:30-09:08/38 | 06:52 | 06:33 19:39-20:07/28 | 05:27 19:37-19:44/7 | 04:53 |
| | 16:35 09:27-09:44/17 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 10:13-10:36/23 | 07:57 08:30-09:07/37 | 06:49 | 06:30 19:35-20:07/32 | 05:25 | 04:52 |
| | 16:36 09:26-09:44/18 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 10:14-10:36/22 | 07:55 08:59-09:04/5 | 06:47 | 06:28 19:32-20:08/36 | 05:23 | 04:52 |
| | 16:38 09:26-09:45/19 | 17:42 08:31-08:56/25 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 10:15-10:37/22 | 07:53 08:30-08:55/25 | 06:44 | 06:25 19:30-20:07/37 | 05:21 | 04:52 |
| | 16:40 09:27-09:47/20 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 10:16-10:35/19 | 07:50 08:31-08:54/23 | 06:41 18:11-18:17/6 | 06:23 19:28-20:07/39 | 05:20 | 04:52 |
| | 16:42 09:26-09:47/21 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 10:18-10:35/17 | 07:48 08:33-08:52/19 | 06:39 18:08-18:18/10 | 06:20 19:27-20:07/40 | 05:18 | 04:52 |
| | 16:44 09:27-09:48/21 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:19-10:34/15 | 07:46 08:33-08:45/12 | 06:36 18:07-18:21/14 | 06:18 19:26-20:06/40 | 05:16 | 04:52 |
| | 16:46 09:26-09:48/22 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:21-10:32/11 | 07:44 08:36-08:43/7 | 06:34 18:06-18:22/16 | 06:16 19:25-20:05/40 | 05:15 | 04:52 |
| | 16:48 09:26-09:48/22 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:25-10:30/5 | 07:41 | 06:31 18:05-18:22/17 | 06:13 19:24-20:04/40 | 05:13 | 04:53 |
| | 16:50 09:27-09:49/22 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:27-09:49/22 | 07:39 | 06:29 18:05-18:23/18 | 06:11 19:24-20:02/38 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 09:28-09:48/20 | 07:36 | 06:26 18:04-18:22/18 | 06:09 19:23-20:01/38 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:29-09:49/20 | 07:34 | 06:23 18:05-18:22/17 | 06:06 19:22-20:00/38 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:29-09:49/20 | 07:32 | 06:21 18:05-18:20/15 | 06:04 19:22-20:00/38 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:30-09:48/18 | 07:29 | 06:18 18:06-18:18/12 | 06:02 19:22-20:00/38 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:31-09:47/16 | | 07:16 19:09-19:16/7 | 06:00 19:22-20:00/38 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:32-09:46/14 | | 07:13 | 05:57 19:22-20:00/38 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:29 09:34-09:45/11 | | 07:11 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1355 | 553 | 150 | 636 | 424 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 44 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 19:39-20:02/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:08-08:42/34<br>16:58 | 08:35 11:52-12:07/15 09:13-09:22/9<br>16:10 09:51-10:18/27 |
| 2 | 04:58<br>22:18 | 05:41 19:38-20:04/26<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:10-08:41/31<br>16:56 | 08:37 11:51-12:09/18 09:14-09:20/6<br>16:09 09:52-10:19/27 |
| 3 | 04:58<br>22:17 | 05:43 19:36-20:04/28<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:12-08:41/29<br>16:54 | 08:38 11:50-12:10/20 09:16-09:18/2<br>16:08 09:52-10:20/28 |
| 4 | 04:59<br>22:17 | 05:45 19:35-20:05/30<br>21:34 | 06:44<br>20:22 | 07:40<br>19:04 | 07:43 08:21-08:41/20<br>16:52 08:15-08:20/5 | 08:40 11:50-12:12/22<br>16:08 09:53-10:20/27 |
| 5 | 05:00<br>22:16 | 05:47 19:35-20:06/31<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 08:21-08:41/20<br>16:50 | 08:41 11:40-12:12/32<br>16:07 09:53-10:20/27 |
| 6 | 05:01<br>22:15 | 05:49 19:33-20:06/33<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 08:22-08:40/18<br>16:48 | 08:43 12:23-12:30/7 09:53-10:21/28<br>16:06 11:39-12:14/35 |
| 7 | 05:02<br>22:15 | 05:51 19:33-20:07/34<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 08:22-08:39/17<br>16:46 | 08:44 12:21-12:32/11 09:53-10:21/28<br>16:06 11:38-12:14/36 |
| 8 | 05:03<br>22:14 | 05:52 19:32-20:08/36<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:24-08:38/14<br>16:44 | 08:46 12:20-12:34/14 09:54-10:22/28<br>16:05 11:38-12:16/38 |
| 9 | 05:04<br>22:13 | 05:54 19:31-20:07/36<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 08:26-08:36/10<br>16:42 | 08:47 12:19-12:35/16 09:54-10:22/28<br>16:05 11:37-12:16/39 |
| 10 | 05:06<br>22:12 | 05:56 19:31-20:08/37<br>21:21 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 09:08-09:13/5<br>16:40 08:30-08:32/2 | 08:48 12:20-12:37/17 09:55-10:23/28<br>16:04 11:38-12:18/40 |
| 11 | 05:07<br>22:11 | 05:58 19:30-20:08/38<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:05-09:16/11<br>16:38 | 08:49 12:19-12:38/19 09:56-10:23/27<br>16:04 11:37-12:18/41 |
| 12 | 05:08<br>22:10 | 06:00 19:30-20:09/39<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:04-09:18/14<br>16:36 | 08:51 11:37-12:39/62<br>16:04 09:56-10:23/27 |
| 13 | 05:09<br>22:09 | 06:02 19:29-20:08/39<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 09:03-09:19/16<br>16:34 | 08:52 11:37-12:39/62<br>16:04 09:56-10:23/27 |
| 14 | 05:11<br>22:08 | 06:04 19:29-20:08/39<br>21:13 | 07:02 19:00-19:05/5<br>19:56 | 08:00<br>18:39 | 08:03 09:02-09:20/18<br>16:33 | 08:53 11:37-12:40/63<br>16:04 09:57-10:24/27 |
| 15 | 05:12<br>22:07 | 06:06 19:29-20:08/39<br>21:10 | 07:04 18:57-19:08/11<br>19:54 | 08:02<br>18:37 | 08:05 09:01-09:21/20<br>16:31 | 08:54 11:37-12:41/64<br>16:04 09:57-10:24/27 |
| 16 | 05:14<br>22:06 | 06:08 19:29-20:08/39<br>21:08 | 07:06 18:55-19:09/14<br>19:51 | 08:04<br>18:35 | 08:07 09:02-09:22/20<br>16:29 | 08:55 11:37-12:42/65<br>16:04 09:58-10:24/26 |
| 17 | 05:15<br>22:04 | 06:09 19:30-20:08/38<br>21:06 | 07:08 18:54-19:10/16<br>19:48 | 08:06<br>18:32 | 08:09 09:02-09:22/20<br>16:28 | 08:56 11:38-12:42/64<br>16:04 09:58-10:25/27 |
| 18 | 05:16<br>22:03 | 06:11 19:29-20:06/37<br>21:03 | 07:10 18:52-19:09/17<br>19:46 | 08:08<br>18:30 | 08:11 09:01-09:23/22<br>16:26 | 08:56 11:38-12:43/65<br>16:04 09:59-10:26/27 |
| 19 | 05:18<br>22:02 | 06:13 19:29-20:08/39<br>21:01 | 07:12 18:52-19:09/17<br>19:43 | 08:10<br>18:27 | 08:13 09:59-10:04/5<br>16:25 09:01-09:23/22 | 08:57 11:39-12:44/65<br>16:04 10:00-10:26/26 |
| 20 | 05:19<br>22:00 | 06:15 19:30-20:09/39<br>20:59 | 07:14 18:51-19:09/18<br>19:41 | 08:12 09:05-09:14/9<br>18:25 | 08:15 09:56-10:07/11<br>16:23 09:01-09:23/22 | 08:58 11:39-12:44/65<br>16:05 10:00-10:26/26 |
| 21 | 05:21<br>21:59 | 06:17 19:30-20:10/40<br>20:56 | 07:16 18:51-19:09/18<br>19:38 | 08:14 09:03-09:19/16<br>18:23 | 08:17 09:55-10:10/15<br>16:22 09:03-09:24/21 | 08:58 11:40-12:45/65<br>16:05 10:00-10:27/27 |
| 22 | 05:23<br>21:57 | 06:19 19:30-20:10/40<br>20:54 | 07:18 18:52-19:06/14<br>19:35 | 08:16 09:02-09:23/21<br>18:20 | 08:19 09:54-10:11/17<br>16:20 09:03-09:24/21 | 08:59 11:40-12:45/65<br>16:05 10:00-10:27/27 |
| 23 | 05:24<br>21:56 | 06:21 19:31-20:10/39<br>20:52 | 07:19 18:52-19:04/12<br>19:33 | 08:18 09:01-09:25/24<br>18:18 | 08:21 09:53-10:13/20<br>16:19 09:03-09:24/21 | 09:00 11:41-12:46/65<br>16:06 10:02-10:28/26 |
| 24 | 05:26<br>21:54 | 06:23 19:32-20:11/39<br>20:49 | 07:21 18:54-19:01/7<br>19:30 | 08:20 09:01-09:25/24<br>18:16 | 08:23 09:52-10:14/22<br>16:18 09:04-09:24/20 | 09:00 11:41-12:46/65<br>16:07 10:02-10:28/26 |
| 25 | 05:28<br>21:52 | 06:25 19:34-20:11/37<br>20:47 | 07:23 18:56-18:59/3<br>19:28 | 07:22 08:27-08:34/7<br>17:13 08:00-08:26/26 | 08:25 09:52-10:14/22<br>16:16 09:04-09:23/19 | 09:00 11:41-12:46/65<br>16:07 10:02-10:28/26 |
| 26 | 05:29<br>21:51 | 06:26 19:35-20:10/35<br>20:44 | 07:25<br>19:25 | 07:24 08:00-08:37/37<br>17:11 | 08:27 09:52-10:15/23<br>16:15 09:05-09:23/18 | 09:01 11:43-12:47/64<br>16:08 10:03-10:30/27 |
| 27 | 05:31<br>21:49 | 06:28 19:37-20:09/32<br>20:42 | 07:27<br>19:22 | 07:26 08:00-08:39/39<br>17:09 | 08:28 09:52-10:16/24<br>16:14 09:06-09:23/17 | 09:01 11:43-12:48/65<br>16:09 10:03-10:30/27 |
| 28 | 05:33<br>21:47 | 06:30 19:40-20:08/28<br>20:39 | 07:29<br>19:20 | 07:28 08:00-08:40/40<br>17:07 | 08:30 09:52-10:17/25<br>16:13 09:07-09:23/16 | 09:01 11:44-12:48/64<br>16:10 10:04-10:31/27 |
| 29 | 05:34 19:46-19:56/10<br>21:45 | 06:32 19:51-20:07/16<br>20:37 | 07:31<br>19:17 | 07:31 08:01-08:40/39<br>17:04 | 08:32 11:57-12:01/4 09:09-09:23/14<br>16:12 09:52-10:18/26 | 09:01 11:45-12:48/63<br>16:10 10:04-10:31/27 |
| 30 | 05:36 19:43-19:59/16<br>21:44 | 06:34 19:52-20:05/13<br>20:34 | 07:33<br>19:15 | 07:33 08:03-08:41/38<br>17:02 | 08:34 11:54-12:05/11 09:11-09:22/11<br>16:11 09:52-10:18/26 | 09:01 11:45-12:47/62<br>16:11 10:04-10:31/27 |
| 31 | 05:38 19:41-20:01/20<br>21:42 | 06:36 19:54-20:03/9<br>20:32 | | 07:35 08:06-08:42/36<br>17:00 | | 09:01 11:46-12:48/62<br>16:12 10:05-10:32/27 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 46 | 1028 | 152 | 356 | 819 | 2554 |

Table layout: For each day in each month the following matrix apply

| Day in month | | |
|---|---|---|
| | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 45 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:50-10:11/21 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:38-09:49/11 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 09:50-10:11/21 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:37-09:49/12 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 09:37-10:12/35 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 09:36-10:12/36 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 09:36-10:13/37 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 09:35-10:13/38 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 09:34-10:13/39 | 08:16 | 07:12 17:33-17:45/12 | 06:53 | 05:42 | 04:56 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 |
| 8 | 08:58 09:33-10:14/41 | 08:14 | 07:09 17:30-17:47/17 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 09:33-10:15/42 | 08:12 | 07:07 17:29-17:49/20 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 09:32-10:15/43 | 08:10 | 07:04 17:27-17:49/22 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:31-10:15/44 | 08:08 | 07:02 17:26-17:51/25 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-10:14/45 | 08:06 | 06:59 17:25-17:51/26 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-10:14/46 | 08:04 | 06:57 17:24-17:51/27 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:28-10:14/46 | 08:02 | 06:54 17:24-17:51/27 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:59-10:14/15 | 07:59 | 06:52 17:23-17:51/28 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:28-09:58/30 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:59-10:13/14 | 07:57 | 06:49 17:23-17:51/28 | 06:30 | 05:25 | 04:52 |
| | 16:37 09:28-09:58/30 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 10:01-10:13/12 | 07:55 | 06:47 17:23-17:50/27 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:28-09:58/30 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 10:03-10:12/9 | 07:53 | 06:44 17:23-17:49/26 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:29-09:59/30 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:28-09:58/30 | 07:50 | 06:41 17:24-17:48/24 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:29-09:59/30 | 07:48 | 06:39 17:24-17:47/23 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 09:29-09:58/29 | 07:46 | 06:36 17:26-17:46/20 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:30-09:57/27 | 07:44 | 06:34 17:27-17:43/16 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:31-09:57/26 | 07:41 | 06:31 17:29-17:40/11 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:31-09:55/24 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 09:49-09:52/3 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:32-09:47/15 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:34-09:47/13 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:36-09:46/10 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:38-09:43/5 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:29 | | 07:11 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 939 | 0 | 379 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 45 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35 18:03-18:30/27<br>19:12 | 07:37<br>16:58 | 08:35 09:13-09:56/43<br>16:10 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37 18:04-18:29/25<br>19:10 | 07:39<br>16:56 | 08:37 09:14-09:57/43<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 18:04-18:28/24<br>19:07 | 07:41<br>16:54 | 08:38 09:16-09:58/42<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 18:05-18:26/21<br>19:05 | 07:43<br>16:52 | 08:40 09:18-09:59/41<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 18:06-18:25/19<br>19:02 | 07:45<br>16:50 | 08:41 09:19-09:59/40<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 18:08-18:22/14<br>18:59 | 07:47<br>16:48 | 08:43 09:21-09:59/38<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 18:11-18:18/7<br>18:57 | 07:49<br>16:46 | 08:44 09:22-09:59/37<br>16:06 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51<br>16:44 | 08:46 09:24-10:00/36<br>16:05 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53<br>16:42 | 08:47 09:25-10:00/35<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55<br>16:40 | 08:48 09:27-10:01/34<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57<br>16:38 | 08:49 09:40-10:01/21<br>16:04 09:28-09:39/11 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59<br>16:36 | 08:51 09:41-10:02/21<br>16:04 09:29-09:39/10 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01<br>16:34 | 08:52 09:41-10:02/21<br>16:04 09:30-09:39/9 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00<br>18:39 | 08:03 09:10-09:15/5<br>16:33 | 08:53 09:41-10:02/21<br>16:04 09:31-09:39/8 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02<br>18:37 | 08:05 09:07-09:18/11<br>16:31 | 08:54 09:43-10:04/21<br>16:04 09:33-09:40/7 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04<br>18:35 | 08:07 09:07-09:20/13<br>16:29 | 08:55 09:42-10:03/21<br>16:04 09:33-09:39/6 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06<br>18:32 | 08:09 09:23-09:26/3<br>16:28 09:06-09:21/15 | 08:56 09:43-10:04/21<br>16:04 09:34-09:39/5 |
| 18 | 05:16<br>22:03 | 06:11<br>21:03 | 07:10<br>19:46 | 08:08<br>18:30 | 08:11 09:05-09:29/24<br>16:26 | 08:56 09:44-10:04/20<br>16:04 09:35-09:40/5 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10<br>18:27 | 08:13 09:05-09:31/26<br>16:25 | 08:57 09:45-10:05/20<br>16:04 09:36-09:40/4 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 18:16-18:26/10<br>19:41 | 08:12<br>18:25 | 08:15 09:05-09:32/27<br>16:23 | 08:58 09:44-10:05/21<br>16:05 09:36-09:40/4 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 18:13-18:28/15<br>19:38 | 08:14<br>18:23 | 08:17 09:05-09:34/29<br>16:22 | 08:58 09:45-10:06/21<br>16:05 09:37-09:41/4 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18 18:11-18:30/19<br>19:35 | 08:16<br>18:20 | 08:19 09:05-09:35/30<br>16:20 | 08:59 09:46-10:07/21<br>16:05 09:38-09:42/4 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 18:09-18:31/22<br>19:33 | 08:18<br>18:18 | 08:21 09:06-09:35/29<br>16:19 | 09:00 09:46-10:07/21<br>16:06 09:38-09:42/4 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21 18:08-18:32/24<br>19:30 | 08:20<br>18:16 | 08:23 09:41-09:49/8<br>16:18 09:06-09:36/30 | 09:00 09:46-10:07/21<br>16:07 09:38-09:42/4 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23 18:07-18:32/25<br>19:28 | 07:22<br>17:13 | 08:25 09:39-09:51/12<br>16:16 09:06-09:36/30 | 09:00 09:47-10:07/20<br>16:07 09:38-09:43/5 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 18:06-18:32/26<br>19:25 | 07:24<br>17:11 | 08:27 09:38-09:52/14<br>16:15 09:07-09:37/30 | 09:01 09:48-10:08/20<br>16:08 09:39-09:44/5 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 18:04-18:32/28<br>19:22 | 07:26<br>17:09 | 08:28 09:38-09:53/15<br>16:14 09:07-09:37/30 | 09:01 09:48-10:09/21<br>16:09 09:39-09:45/6 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 18:04-18:31/27<br>19:20 | 07:28<br>17:07 | 08:30 09:08-09:54/46<br>16:13 | 09:01 09:49-10:09/20<br>16:10 09:39-09:46/7 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31 18:03-18:31/28<br>19:17 | 07:31<br>17:04 | 08:32 09:09-09:55/46<br>16:12 | 09:01 09:49-10:10/21<br>16:11 09:39-09:47/8 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33 18:03-18:31/28<br>19:15 | 07:33<br>17:02 | 08:34 09:11-09:56/45<br>16:11 | 09:01 09:49-10:10/21<br>16:11 09:38-09:47/9 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35<br>17:00 | | 09:01 09:49-10:10/21<br>16:13 09:38-09:48/10 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 252 | 137 | 518 | 960 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 46 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 18:08-18:22/14 | 07:37 15:35-16:05/30 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 16:17-16:22/5 | 07:24 17:34-17:42/8 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 18:06-18:23/17 | 07:39 15:35-16:04/29 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 16:13-16:26/13 | 07:22 17:31-17:43/12 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:39 18:05-18:23/18 | 07:41 15:36-16:03/27 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 16:11-16:29/18 | 07:19 17:30-17:46/16 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:40 18:04-18:24/20 | 07:43 15:36-16:02/26 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 16:09-16:31/22 | 07:17 17:29-17:47/18 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:04-18:24/20 | 07:45 15:38-16:02/24 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 16:08-16:32/24 | 07:14 17:27-17:47/20 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 18:03-18:23/20 | 07:47 15:39-16:00/21 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 16:07-16:32/25 | 07:12 17:27-17:47/20 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 18:03-18:23/20 | 07:49 15:41-15:58/17 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 16:06-16:34/28 | 07:09 17:27-17:47/20 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 18:03-18:22/19 | 07:51 15:44-15:57/13 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 16:06-16:35/29 | 07:07 17:27-17:47/20 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 18:04-18:21/17 | 07:53 15:49-15:52/3 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 16:05-16:35/30 | 07:04 17:27-17:46/19 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 18:05-18:19/14 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:07 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 16:05-16:36/31 | 07:02 17:28-17:45/17 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 18:06-18:16/10 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 16:04-16:36/32 | 06:59 17:28-17:44/16 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 18:09-18:14/5 | 07:59 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 16:04-16:36/32 | 06:57 17:29-17:41/12 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 16:04-16:37/33 | 06:54 17:33-17:38/5 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 16:04-16:36/32 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 16:04-16:36/32 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 16:05-16:36/31 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 16:47-16:57/10 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 16:05-16:35/30 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 16:43-17:00/17 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 16:06-16:35/29 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 16:41-17:01/20 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 16:06-16:33/27 | 06:39 | 06:21 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 | 08:12 16:39-17:03/24 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 16:07-16:33/26 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 16:37-17:03/26 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 16:09-16:32/23 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 16:36-17:04/28 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 16:10-16:30/20 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 16:36-17:05/29 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 16:13-16:28/15 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 16:35-17:06/31 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 16:17-16:22/5 | 06:26 | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 15:34-16:06/32 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 15:34-16:06/32 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 15:33-16:06/33 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 15:34-16:06/32 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 15:34-16:06/32 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 18:10-18:20/10 | 07:33 15:34-16:05/31 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 15:34-16:05/31 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 592 | 203 | 0 | 0 | 0 | 0 | 0 | 10 | 602 | 190 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 47 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 10:06-10:25/19 | 08:28 | 07:27 17:35-17:39/4 | 07:08 19:07-19:31/24 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 17:50-18:33/43 | 21:09 | 22:02 |
| 2 | 09:01 10:06-10:25/19 | 08:26 | 07:24 17:32-17:42/10 | 07:05 19:07-19:31/24 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 17:52-18:32/40 | 21:11 | 22:04 |
| 3 | 09:00 10:07-10:25/18 | 08:24 | 07:22 17:30-17:43/13 | 07:03 19:06-19:30/24 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:14 17:52-18:31/39 | 21:13 | 22:05 |
| 4 | 09:00 10:07-10:25/18 | 08:22 | 07:19 17:29-17:46/17 | 07:00 19:07-19:29/22 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:16 17:54-18:30/36 | 21:15 | 22:06 |
| 5 | 09:00 10:08-10:26/18 | 08:20 | 07:17 17:28-17:46/18 | 06:58 19:07-19:28/21 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:18 17:55-18:27/32 | 21:17 | 22:07 |
| 6 | 08:59 10:09-10:25/16 | 08:18 | 07:14 17:27-17:46/19 | 06:55 19:08-19:27/19 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 17:57-18:26/29 | 21:18 | 22:09 |
| 7 | 08:59 10:10-10:25/15 | 08:16 | 07:12 17:27-17:46/19 | 06:53 19:09-19:25/16 | 05:42 | 04:56 |
| | 16:22 | 17:21 | 18:20 | 20:21 17:58-18:23/25 | 21:20 | 22:10 |
| 8 | 08:58 10:10-10:25/15 | 08:14 | 07:09 17:48-17:54/6 | 06:50 19:11-19:23/12 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 17:26-17:46/20 | 20:23 18:02-18:20/18 | 21:22 | 22:11 |
| 9 | 08:57 10:12-10:25/13 | 08:12 | 07:07 17:47-17:56/9 | 06:48 19:15-19:17/2 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 17:27-17:46/19 | 20:25 18:06-18:14/8 | 21:24 | 22:12 |
| 10 | 08:57 10:14-10:25/11 | 08:10 | 07:04 17:45-17:58/13 17:09-17:26/17 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 17:27-17:44/17 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 10:15-10:24/9 | 08:08 | 07:02 17:44-18:01/17 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 17:06-17:43/37 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 10:17-10:22/5 | 08:06 | 06:59 17:43-18:02/19 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 17:03-17:41/38 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:42-18:04/22 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 17:00-17:38/38 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | 06:54 17:43-18:07/24 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 16:59-17:35/36 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 17:43-18:08/25 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 16:57-17:36/39 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 17:44-18:11/27 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 | 18:38 16:56-17:37/41 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:47 17:44-18:13/29 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 16:54-17:37/43 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 17:46-18:14/28 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 16:53-17:38/45 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 17:51-18:15/24 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 16:53-17:39/46 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 17:52-18:15/23 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 16:51-17:38/47 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | 06:36 17:54-18:15/21 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 16:51-17:39/48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 17:56-18:14/18 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 16:50-17:39/49 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 17:56-18:13/17 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 16:49-17:38/49 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:29 18:22-18:27/5 16:50-17:39/49 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 17:57-18:12/15 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 18:17-18:28/11 16:49-17:38/49 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 17:58-18:10/12 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 18:14-18:31/17 16:49-17:38/49 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 18:01-18:07/6 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 06:21 18:12-18:32/20 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 16:49-17:37/48 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 | 07:29 | 06:18 18:10-18:32/22 | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 16:49-17:37/48 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 19:09-19:33/24 | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 17:49-18:36/47 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 19:08-19:32/24 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 17:49-18:35/46 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:11 19:08-19:32/24 | | 05:03 | |
| | 17:06 | | 20:08 17:50-18:35/45 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 176 | 0 | 1612 | 434 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:07/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 (be 6 VE)WTG: 47 - NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 18:22-18:42/20 | 07:37 | 08:35 09:56-10:05/9 |
| | 22:18 | 21:40 | 20:29 | 19:12 17:41-18:19/38 | 16:58 | 16:10 |
| 2 | 04:58 | 05:41 | 06:40 | 07:37 18:22-18:40/18 | 07:39 | 08:37 09:56-10:07/11 |
| | 22:18 | 21:38 | 20:27 | 19:10 17:43-18:21/38 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 19:14-19:15/1 | 07:39 17:46-18:37/51 | 07:41 | 08:38 09:55-10:08/13 |
| | 22:17 | 21:36 | 20:24 18:04-18:12/8 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 19:08-19:20/12 | 07:40 18:23-18:35/12 17:50-18:01/11 | 07:43 | 08:40 09:55-10:10/15 |
| | 22:17 | 21:34 | 20:22 17:59-18:17/18 | 19:04 18:04-18:22/18 | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 19:06-19:22/16 | 07:42 18:24-18:32/8 | 07:45 | 08:41 09:55-10:10/15 |
| | 22:16 | 21:32 | 20:19 17:56-18:20/24 | 19:02 18:03-18:23/20 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 19:04-19:22/18 | 07:44 18:27-18:29/2 | 07:47 | 08:43 09:55-10:12/17 |
| | 22:15 | 21:30 | 20:17 17:52-18:21/29 | 18:59 18:03-18:22/19 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 19:02-19:23/21 | 07:46 18:03-18:22/19 | 07:49 | 08:44 09:55-10:12/17 |
| | 22:15 | 21:28 | 20:14 17:50-18:22/32 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 19:01-19:24/23 | 07:48 18:03-18:22/19 | 07:51 | 08:46 09:55-10:13/18 |
| | 22:14 | 21:26 | 20:12 17:48-18:24/36 | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 19:01-19:24/23 | 07:50 18:03-18:21/18 | 07:53 | 08:47 09:55-10:13/18 |
| | 22:13 | 21:24 | 20:09 17:46-18:25/39 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 19:00-19:24/24 | 07:52 18:03-18:19/16 | 07:55 | 08:48 09:56-10:15/19 |
| | 22:12 | 21:21 | 20:07 17:45-18:26/41 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 19:00-19:24/24 | 07:54 18:04-18:16/12 | 07:57 | 08:49 09:56-10:15/19 |
| | 22:11 | 21:19 | 20:04 17:44-18:26/42 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 18:59-19:24/25 | 07:56 18:06-18:14/8 | 07:59 | 08:51 09:56-10:15/19 |
| | 22:10 | 21:17 | 20:01 17:42-18:26/44 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 18:59-19:23/24 | 07:58 | 08:01 | 08:52 09:56-10:16/20 |
| | 22:09 | 21:15 | 19:59 17:41-18:26/45 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:59-19:23/24 | 08:00 | 08:03 | 08:53 09:56-10:16/20 |
| | 22:08 | 21:13 | 19:56 17:40-18:26/46 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 19:00-19:22/22 | 08:02 | 08:05 | 08:54 09:57-10:17/20 |
| | 22:07 | 21:10 | 19:54 17:39-18:27/48 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 19:01-19:22/21 | 08:04 | 08:07 | 08:55 09:57-10:17/20 |
| | 22:06 | 21:08 | 19:51 17:38-18:27/49 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 19:02-19:20/18 17:38-18:27/49 | 08:06 | 08:09 | 08:56 09:58-10:18/20 |
| | 22:04 | 21:06 | 19:48 18:51-18:55/4 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 19:03-19:16/13 17:36-18:26/50 | 08:08 | 08:11 | 08:56 09:58-10:19/21 |
| | 22:03 | 21:03 | 19:46 18:46-18:57/11 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 19:07-19:14/7 17:36-18:25/49 | 08:10 | 08:13 | 08:57 09:59-10:19/20 |
| | 22:02 | 21:01 | 19:43 18:44-18:58/14 | 18:27 | 16:25 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:43-18:59/16 | 08:12 | 08:15 | 08:58 09:59-10:19/20 |
| | 22:00 | 20:59 | 19:41 17:36-18:25/49 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 18:42-19:00/18 | 08:14 | 08:17 | 08:58 10:00-10:20/20 |
| | 21:59 | 20:56 | 19:38 17:36-18:24/48 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 18:39-19:00/21 | 08:16 | 08:19 | 08:59 10:00-10:20/20 |
| | 21:57 | 20:54 | 19:35 17:36-18:24/48 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:37-19:00/23 | 08:18 | 08:21 | 08:59 10:01-10:21/20 |
| | 21:56 | 20:52 | 19:33 17:36-18:23/47 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 18:35-18:59/24 | 08:20 | 08:23 | 09:00 10:01-10:21/20 |
| | 21:54 | 20:49 | 19:30 17:36-18:22/46 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 18:31-18:59/28 | 07:22 | 08:25 | 09:00 10:01-10:21/20 |
| | 21:52 | 20:47 | 19:28 17:36-18:22/46 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:27-18:55/28 | 07:24 | 08:27 | 09:01 10:02-10:23/21 |
| | 21:51 | 20:44 | 19:25 17:37-18:21/44 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:25-18:53/28 | 07:26 | 08:28 | 09:01 10:03-10:23/20 |
| | 21:49 | 20:42 | 19:22 17:37-18:18/41 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 18:24-18:50/26 | 07:28 | 08:30 | 09:01 10:03-10:23/20 |
| | 21:47 | 20:39 | 19:20 17:37-18:17/40 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 18:23-18:47/24 | 07:30 | 08:32 | 09:01 10:04-10:24/20 |
| | 21:45 | 20:37 | 19:17 17:38-18:15/37 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 18:22-18:45/23 | 07:33 | 08:33 09:59-10:03/4 | 09:01 10:04-10:23/19 |
| | 21:44 | 20:34 | 19:15 17:40-18:14/34 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 | | 09:01 10:04-10:24/20 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1733 | 347 | 4 | 571 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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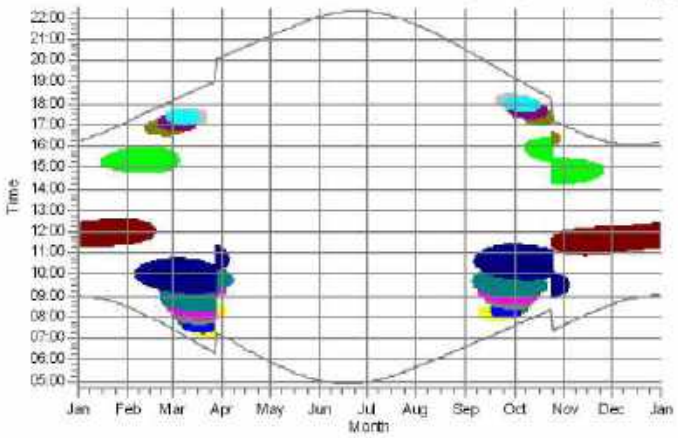
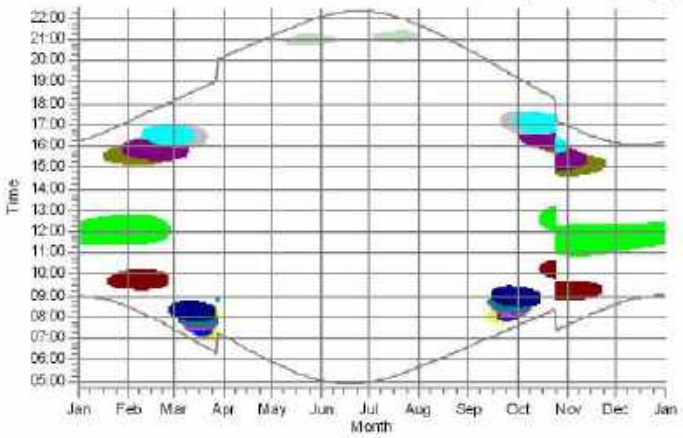
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

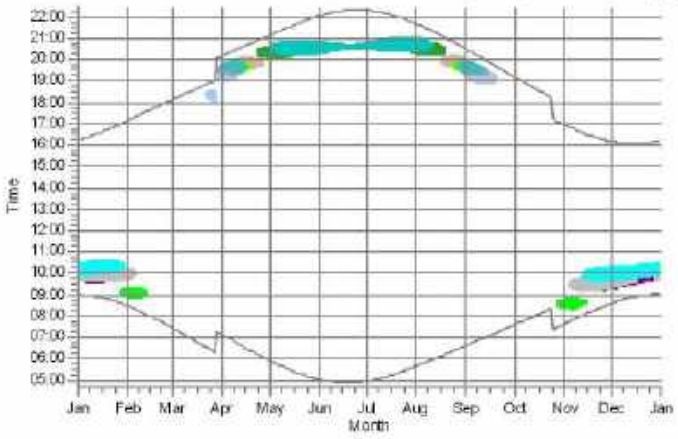
1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1



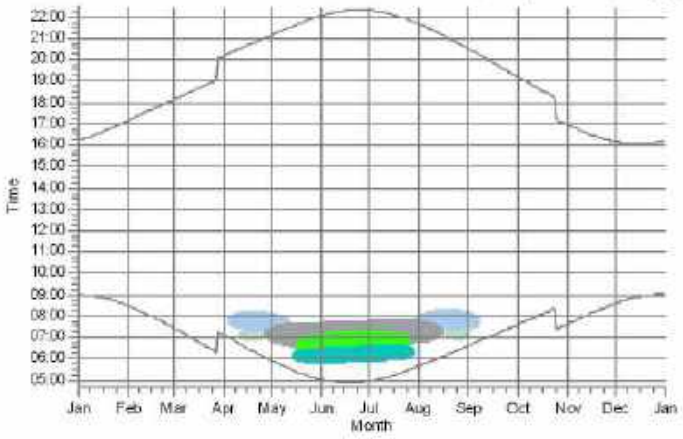

2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (2



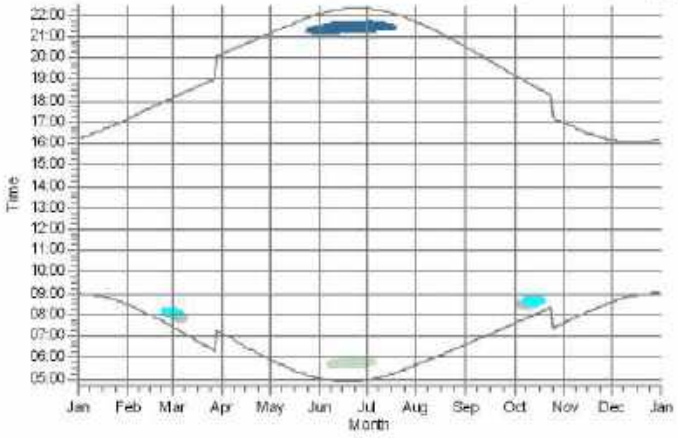

3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3



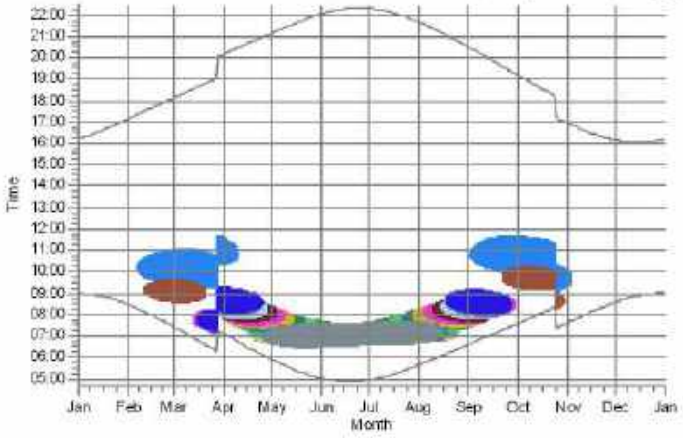

4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (4




5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5




6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130.3 m (TOT: 199,5 m) (7




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

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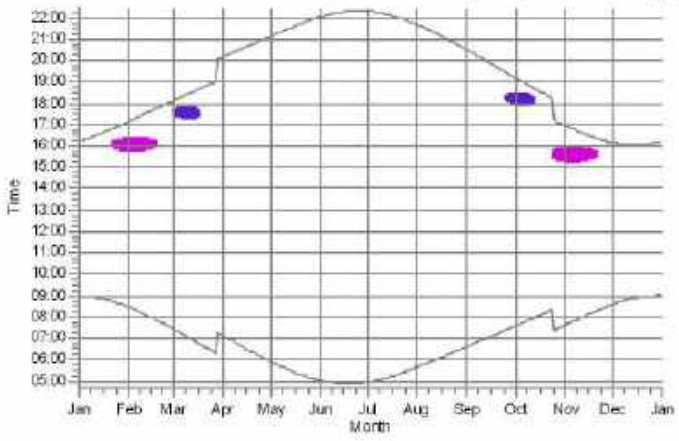
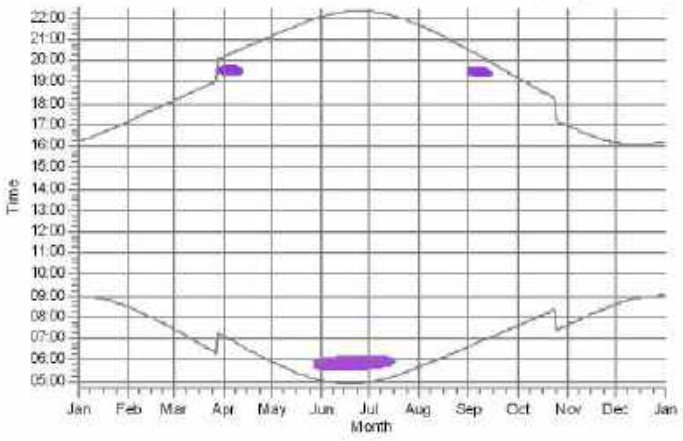
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 (be 6 VE)

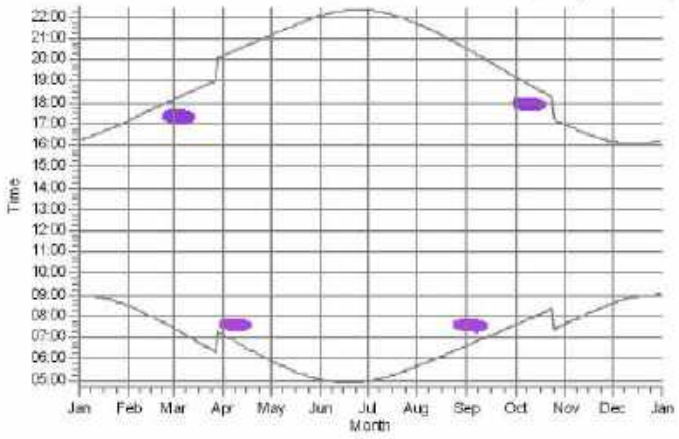
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8



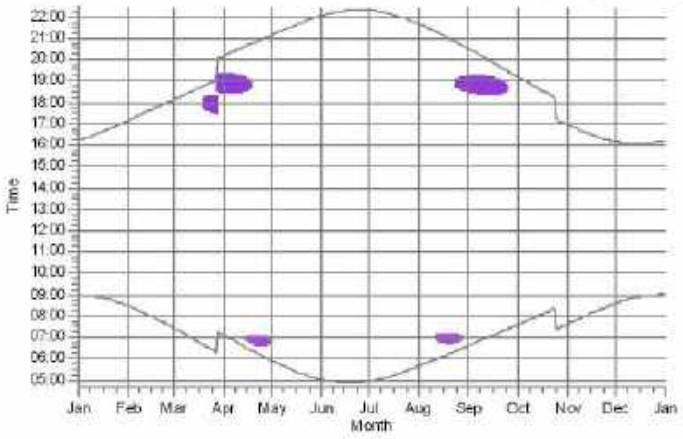

8: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0



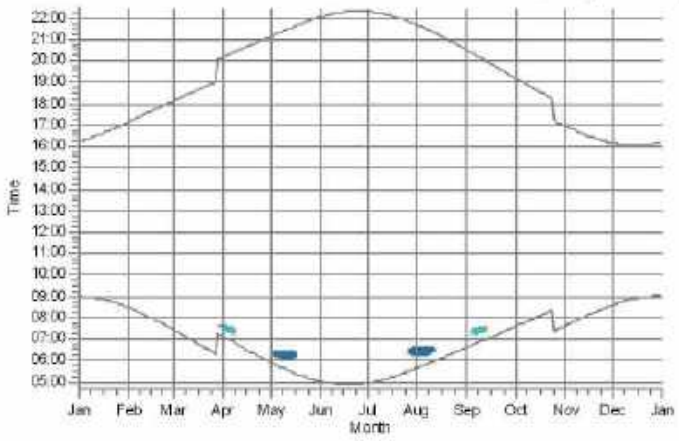

9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0



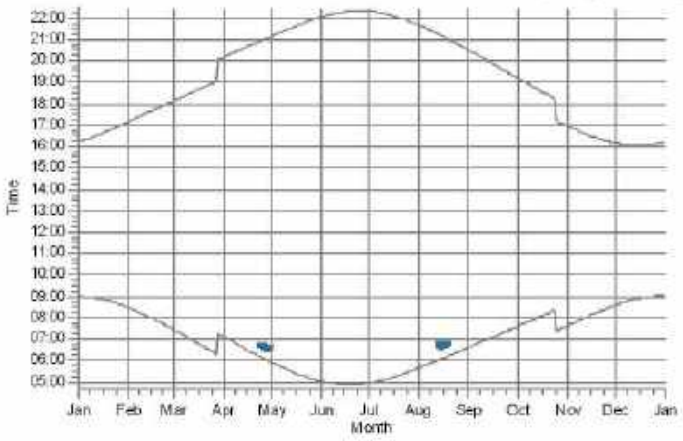

10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170.




12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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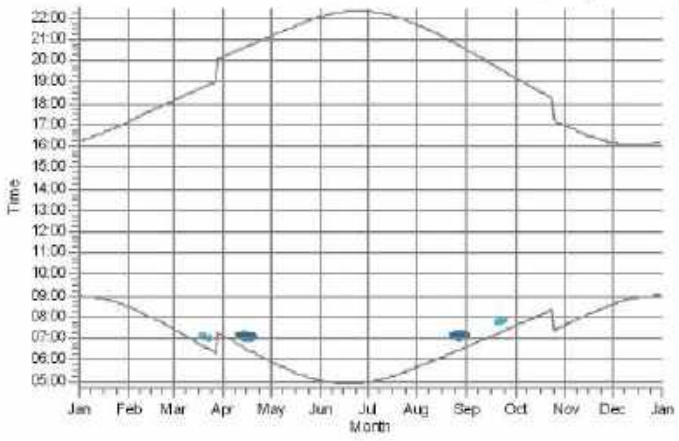
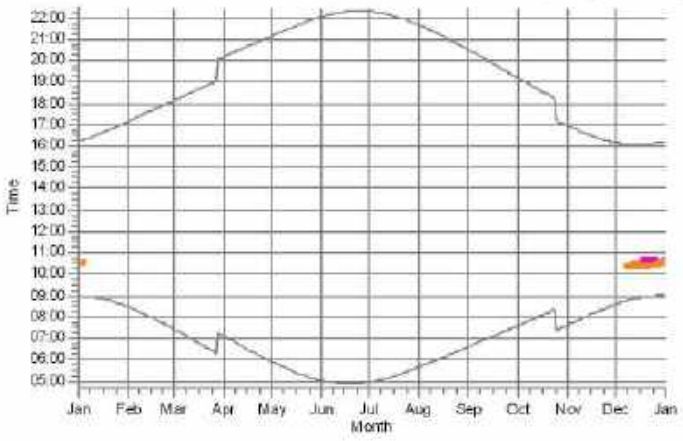
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 (be 6 VE)

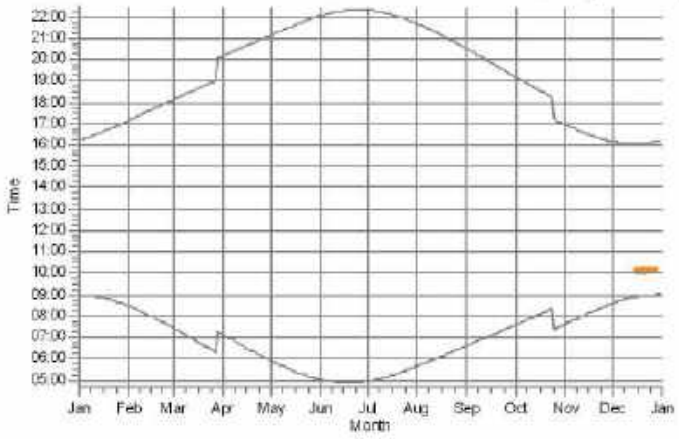
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



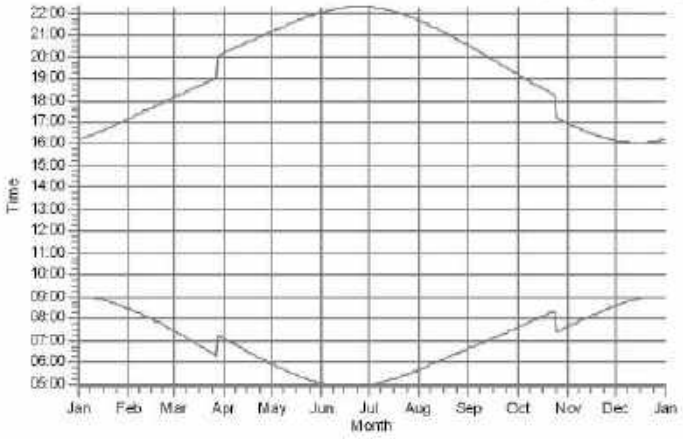

14: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



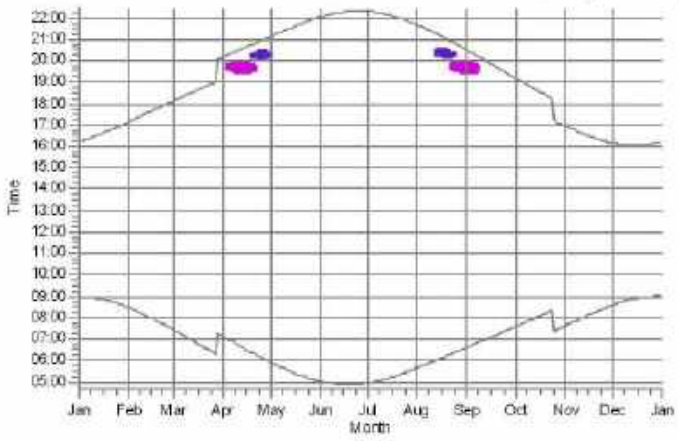

15: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



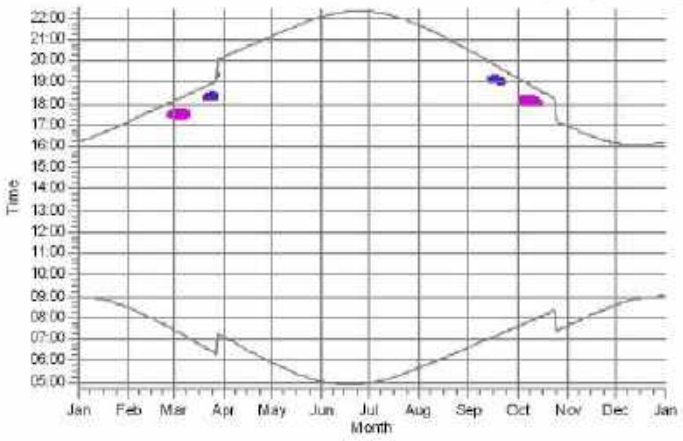

16: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




17: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




18: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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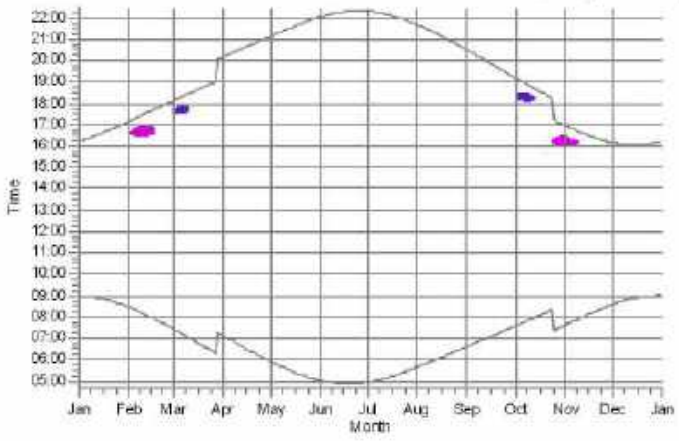
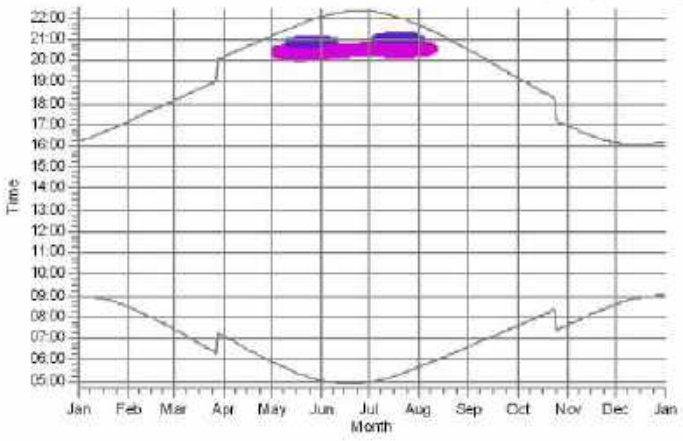
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

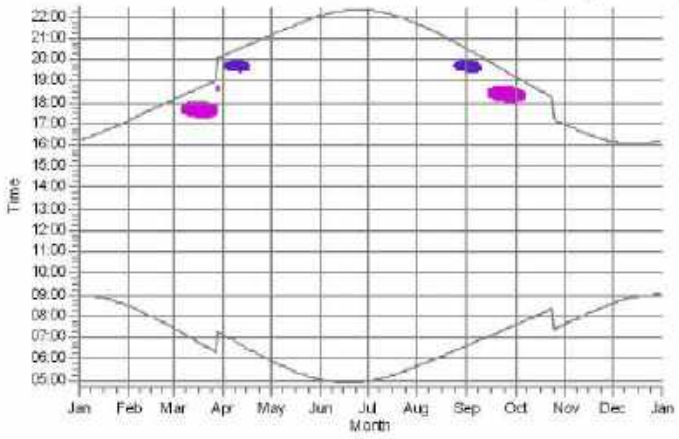
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



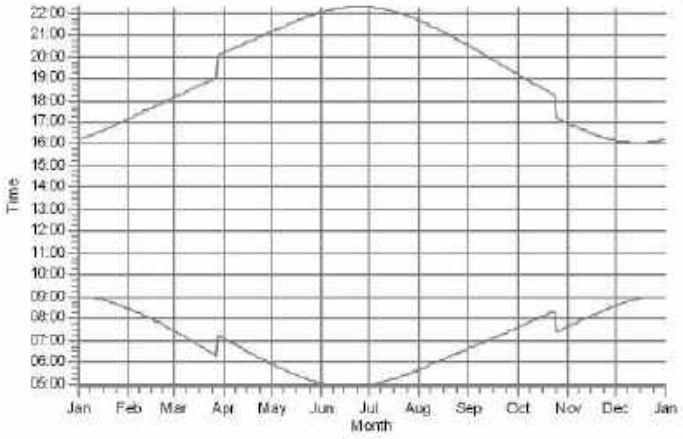

20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



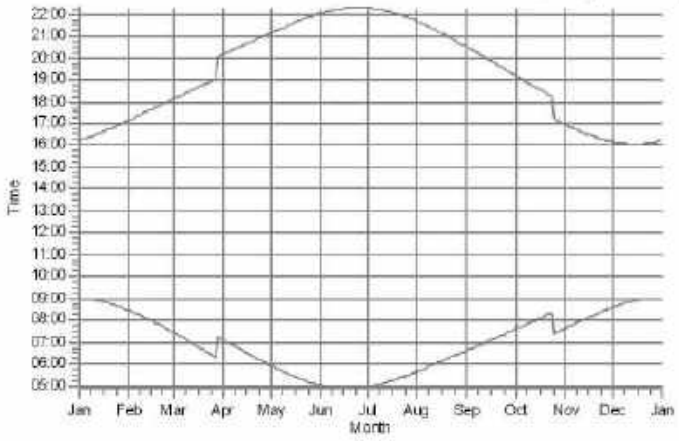

21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.



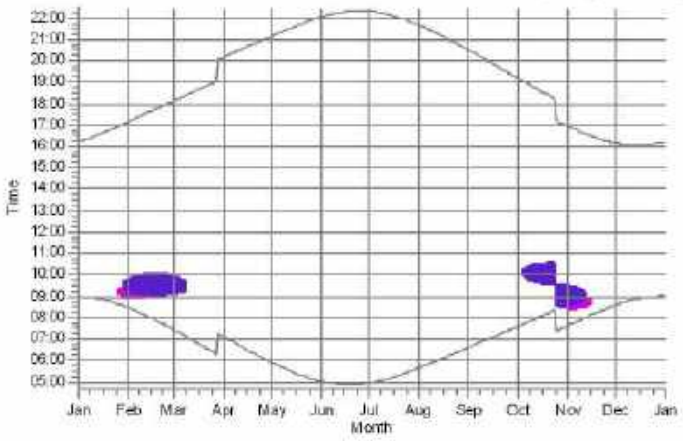

22: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




23: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110.0 m (TOT: 170.




24: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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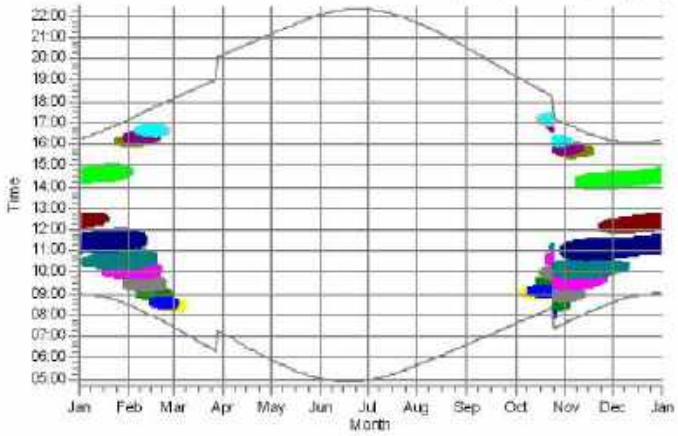
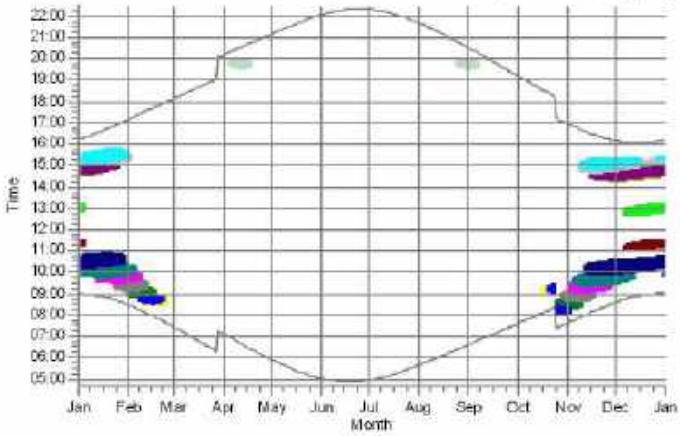
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

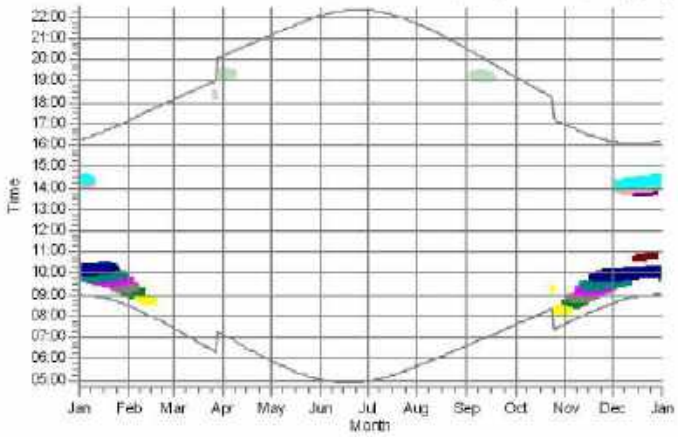
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)



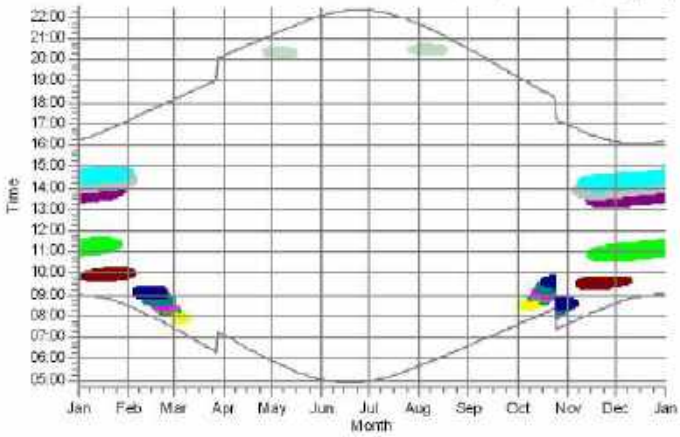

26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)



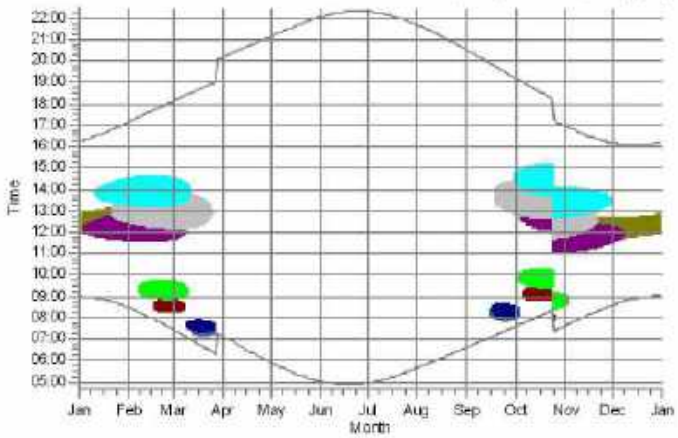

27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)



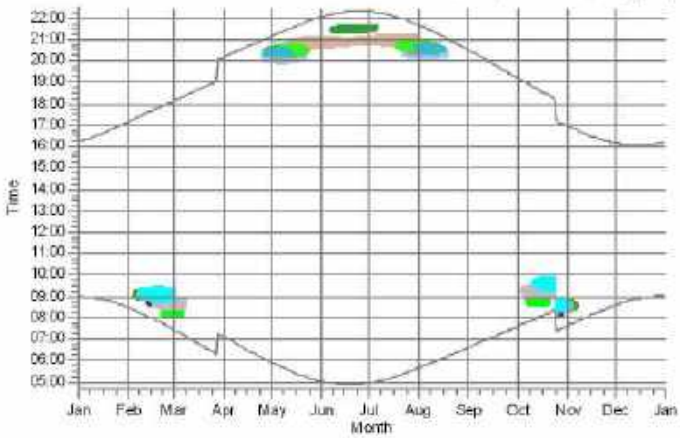

28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)




29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)




30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)




Shadow receptors

- A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)
- B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)
- C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)
- D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)
- E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
- F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
- G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
- H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
- I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
- J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
- O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
- T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

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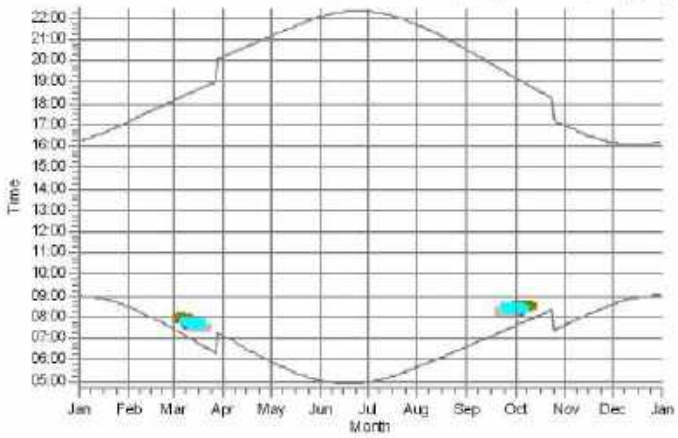
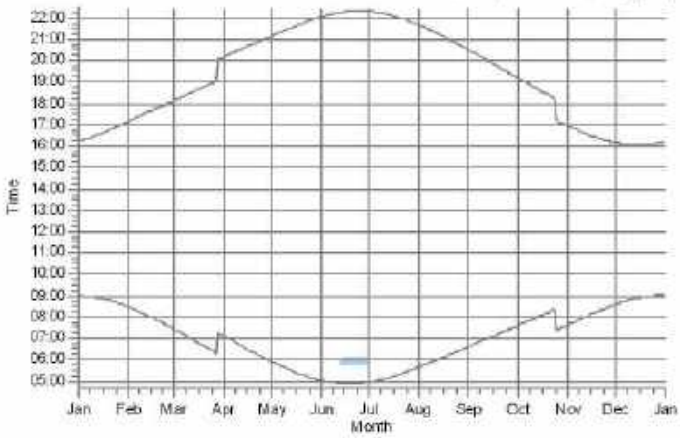
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

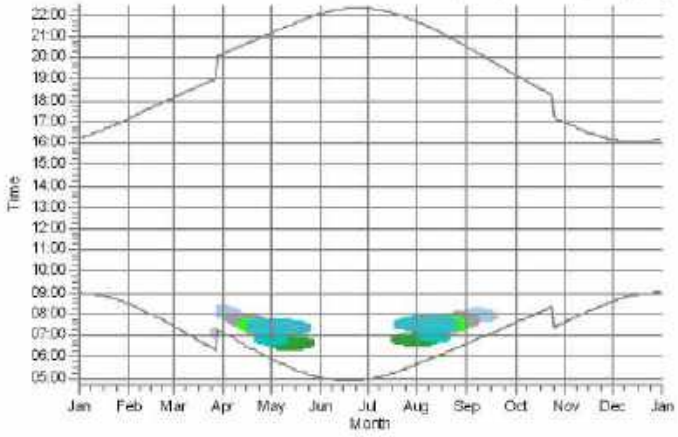
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)



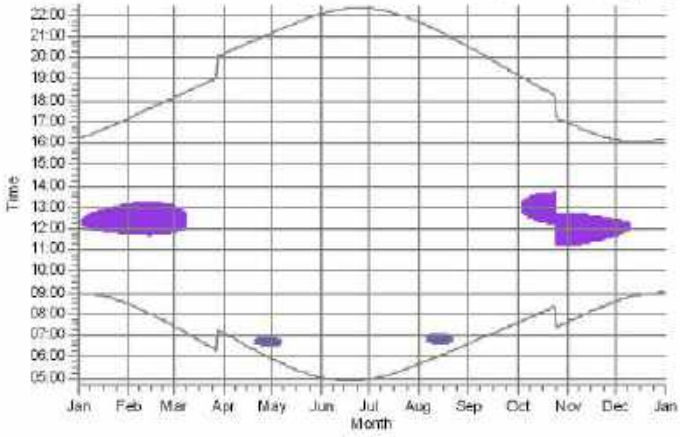

32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)



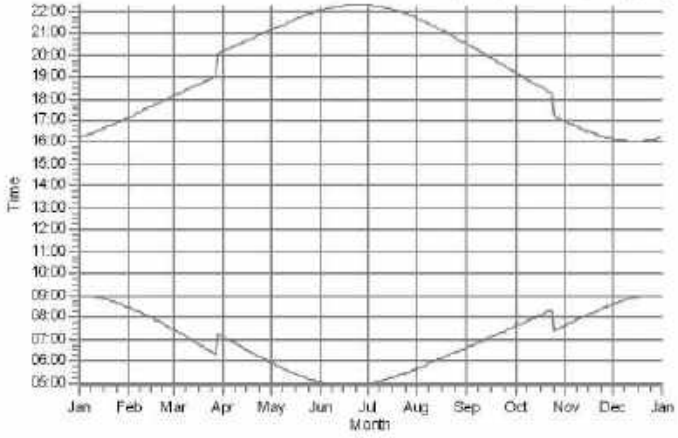

33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)



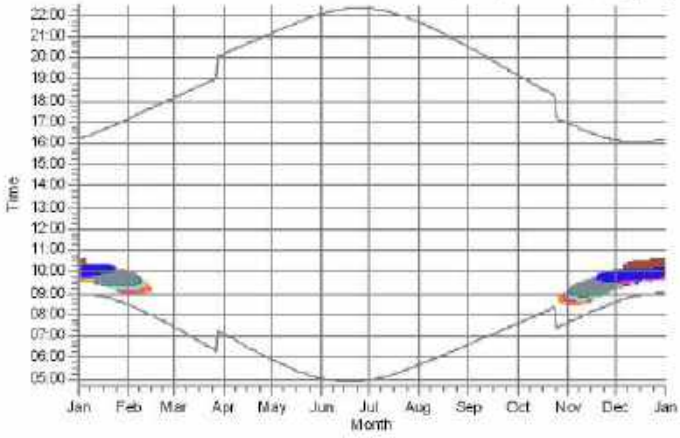

34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)




35: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)




36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)




Shadow receptors

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)
AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

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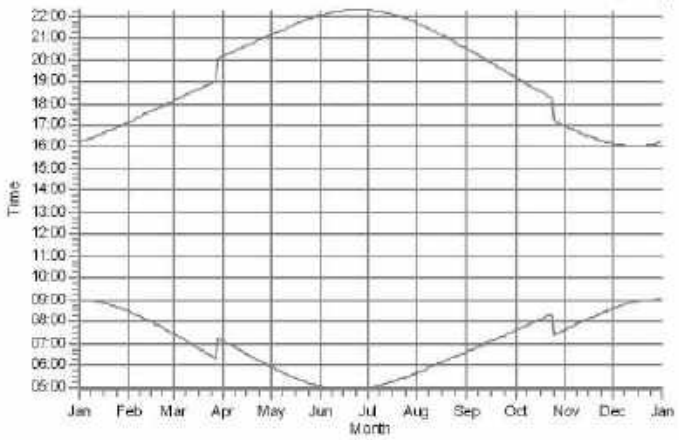
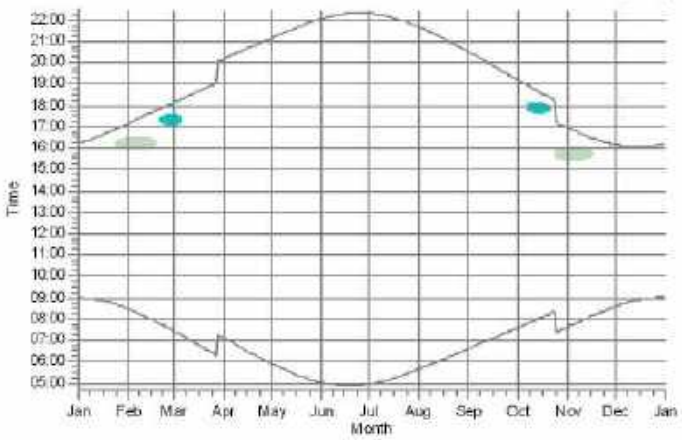
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

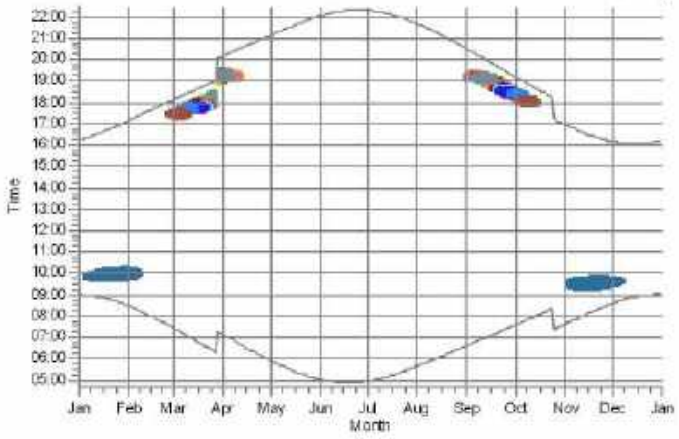
37: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



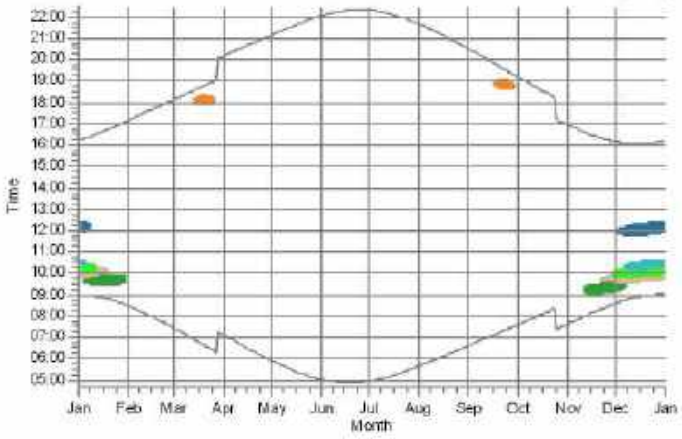

38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



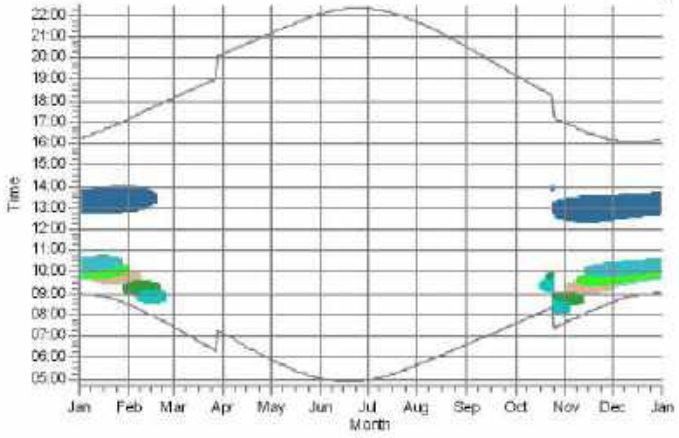

39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



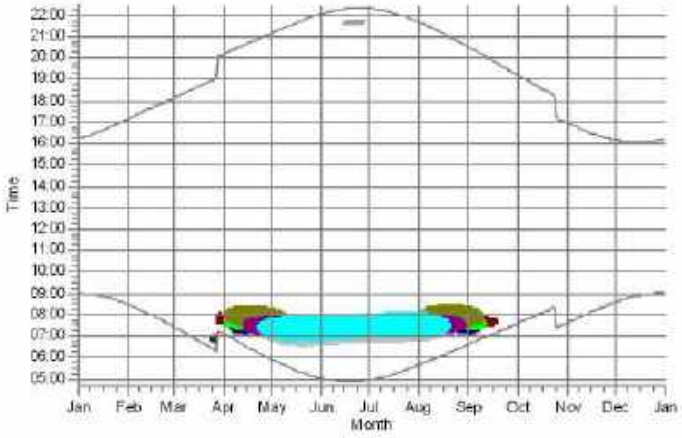

40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




Shadow receptors

G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

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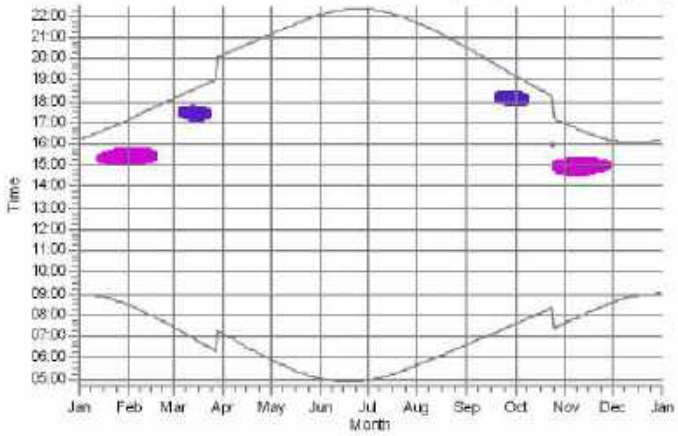
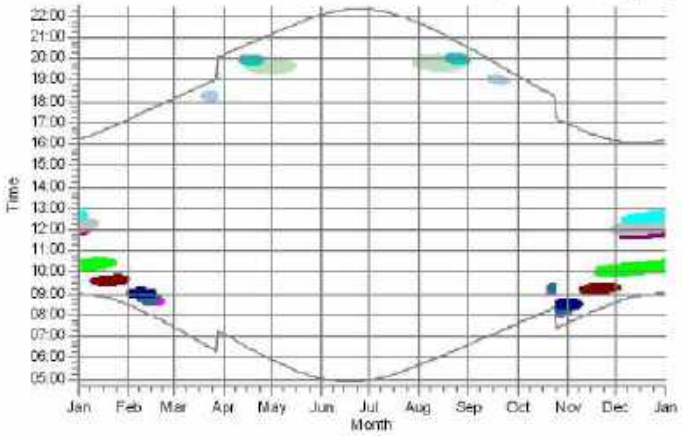
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)

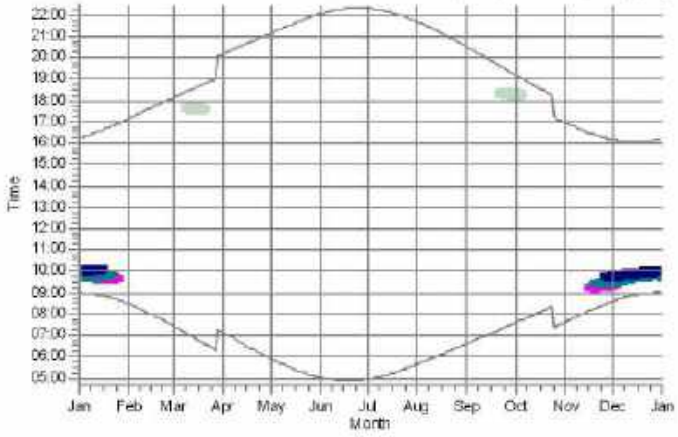
43: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (37)



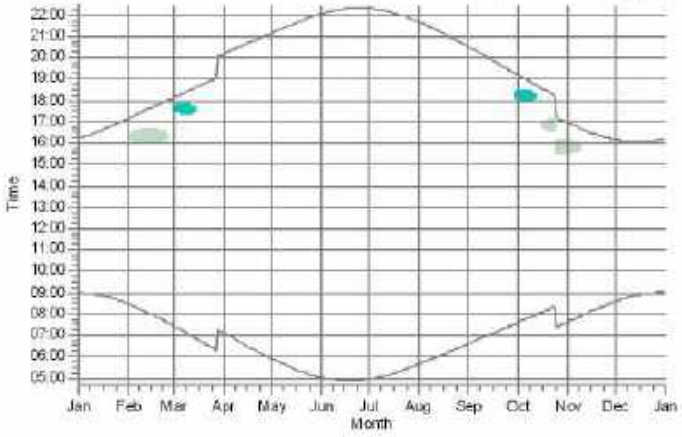

44: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (38)



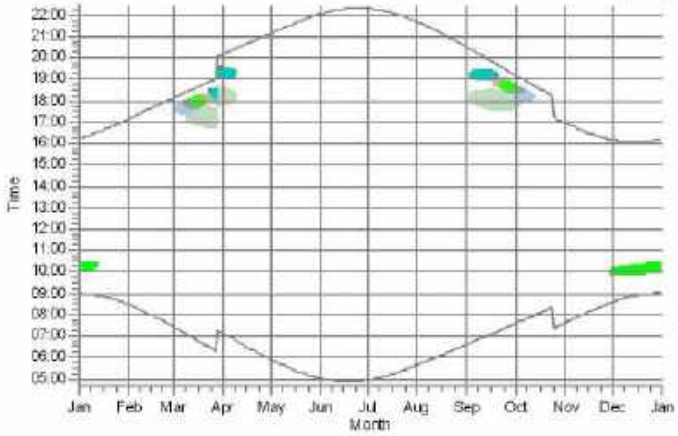

45: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (39)




46: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (40)




47: NORDEX N131/3000 3000 131.0 !O! hub: 144,0 m (TOT: 209,5 m) (41)




Shadow receptors

E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

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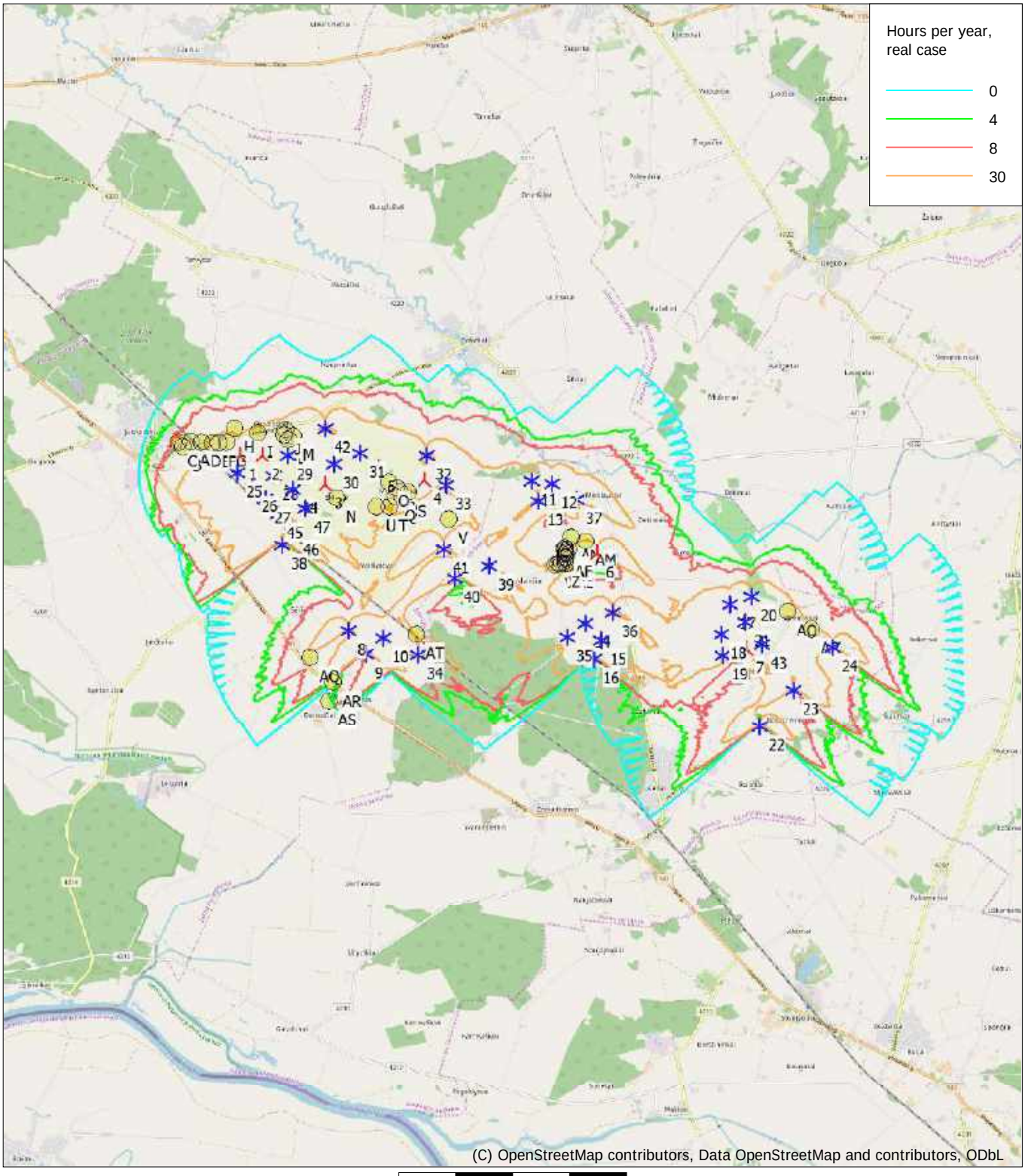
# SHADOW - Map

## Calculation: Suminis poveikis Enercon E138 (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:100.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.580 North: 6.127.900

New WTG Existing WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

Time step: 3 minutes, Day step: 7 days, Map resolution: 20 m, Visibility resolution: 10 m, Eye height: 1,5 m

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

### Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

| | |
|---|---|
| Minimum sun height over horizon for influence | 3 ° |
| Day step for calculation | 1 days |
| Time step for calculation | 1 minutes |

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

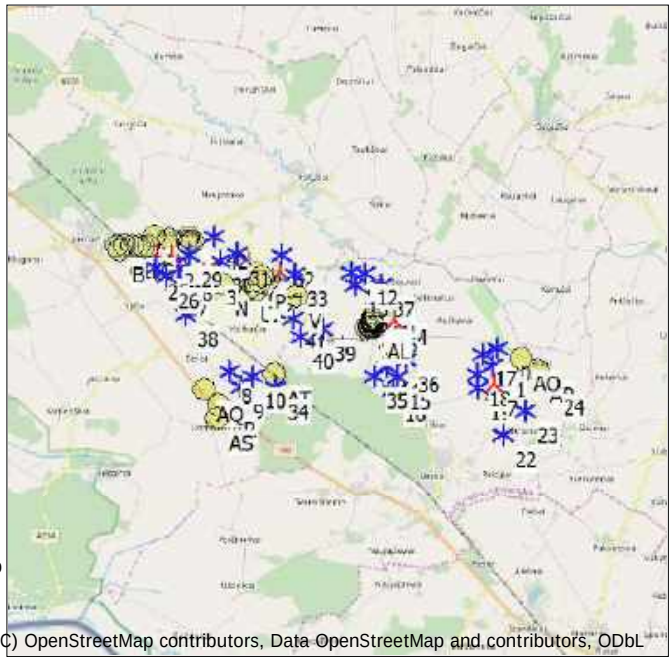
Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

Flicker curtailment according to specified plan

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_8 VE Đilutės r_0.wpo
Obstacles used in calculation
Receptor grid resolution: 1,0 m

All coordinates are in
Lithuanian TM LKS94-LKS94 (LT)




Scale 1:200.000

New WTG | Existing WTG | Shadow receptor

### WTGs

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 1 | 347.959 | 6.130.426 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 2 | 348.347 | 6.130.399 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 3 | 349.441 | 6.129.870 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 4 | 351.193 | 6.129.888 | 14,5 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 5 | 350.375 | 6.130.124 | 10,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 6 | 354.189 | 6.128.475 | 20,0 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 7 | 356.778 | 6.126.724 | 19,1 | ENERCON E-138 EP3 ... | Yes | ENERCON | E-138 EP3 E2-4.200 | 4.200 | 138,3 | 130,3 | 1.681 | 13,0 |
| 8 | 349.769 | 6.127.272 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 9 | 350.063 | 6.126.861 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 10 | 350.378 | 6.127.132 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 11 | 353.077 | 6.129.802 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 12 | 353.433 | 6.129.747 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 13 | 353.187 | 6.129.451 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 14 | 353.940 | 6.127.269 | 12,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 15 | 354.220 | 6.126.961 | 11,8 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 16 | 354.072 | 6.126.642 | 10,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 17 | 356.502 | 6.127.510 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 18 | 356.340 | 6.126.996 | 18,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 19 | 356.345 | 6.126.632 | 16,9 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 20 | 356.894 | 6.127.642 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 21 | 356.763 | 6.127.201 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 22 | 356.962 | 6.125.361 | 14,6 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 23 | 357.576 | 6.125.978 | 18,1 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 24 | 358.296 | 6.126.693 | 20,0 | GE WIND ENERGY G... | No | GE WIND ENERGY | GE 2.5-120-2.500 | 2.500 | 120,0 | 110,0 | 2.500 | 13,0 |
| 25 | 347.893 | 6.130.110 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 26 | 348.159 | 6.129.855 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 27 | 348.376 | 6.129.641 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 28 | 348.530 | 6.130.045 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 29 | 348.792 | 6.130.399 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 30 | 349.611 | 6.130.212 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 31 | 350.073 | 6.130.387 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 32 | 351.242 | 6.130.311 | 13,9 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 33 | 351.581 | 6.129.780 | 17,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 34 | 350.979 | 6.126.820 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

...continued from previous page

| | Y | X | Z | Row data/Description | WTG type Valid | Manufact. | Type-generator | Power, rated | Rotor diameter | Hub height | Shadow data Calculation distance | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | | | | | [kW] | [m] | [m] | [m] | [RPM] |
| 35 | 353.612 | 6.127.037 | 10,0 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 36 | 354.438 | 6.127.441 | 17,5 | NORDEX N131/3000 ... | Yes | NORDEX | N131/3000-3.000 | 3.000 | 131,0 | 141,0 | 1.721 | 10,3 |
| 37 | 353.861 | 6.129.449 | 20,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 38 | 348.643 | 6.128.817 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 39 | 352.272 | 6.128.320 | 14,6 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 40 | 351.676 | 6.128.135 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 41 | 351.495 | 6.128.640 | 11,8 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |
| 42 | 349.475 | 6.130.849 | 10,0 | GE WIND ENERGY 5.... | No | GE WIND ENERGY | 5.5-158 Thrust 700-5.500 | 5.500 | 158,0 | 159,0 | 1.816 | 0,0 |

## Shadow receptor-Input

| No. | Y | X | Z | Width | Height | Elevation a.g.l. | Slope of window | Direction mode | Eye height (ZVI) a.g.l. |
|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | [m] | [m] | [°] | | [m] |
| A | 347.094 | 6.130.693 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| B | 346.953 | 6.130.603 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| C | 346.888 | 6.130.681 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| D | 347.290 | 6.130.678 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| E | 347.483 | 6.130.653 | 10,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| F | 347.592 | 6.130.646 | 10,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| G | 347.734 | 6.130.663 | 11,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| H | 347.883 | 6.130.901 | 13,1 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| I | 348.287 | 6.130.811 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| J | 348.782 | 6.130.851 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| K | 348.756 | 6.130.753 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| L | 348.822 | 6.130.676 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| M | 348.913 | 6.130.737 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| N | 349.644 | 6.129.613 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| O | 350.562 | 6.129.862 | 10,9 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| P | 350.707 | 6.129.756 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Q | 350.664 | 6.129.608 | 12,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| R | 350.753 | 6.129.689 | 12,4 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| S | 350.909 | 6.129.678 | 13,3 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| T | 350.561 | 6.129.434 | 11,7 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| U | 350.332 | 6.129.441 | 10,2 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| V | 351.604 | 6.129.188 | 16,8 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| W | 353.453 | 6.128.301 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| X | 353.509 | 6.128.319 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Y | 353.532 | 6.128.326 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| Z | 353.556 | 6.128.333 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AA | 353.630 | 6.128.393 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AB | 353.629 | 6.128.419 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AC | 353.628 | 6.128.442 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AD | 353.629 | 6.128.469 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AE | 353.629 | 6.128.493 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AF | 353.629 | 6.128.519 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AG | 353.628 | 6.128.547 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AH | 353.629 | 6.128.576 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AI | 353.627 | 6.128.607 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AJ | 353.687 | 6.128.582 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AK | 353.621 | 6.128.318 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AL | 353.662 | 6.128.322 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AM | 353.996 | 6.128.697 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AN | 353.751 | 6.128.788 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AO | 357.524 | 6.127.357 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AP | 357.932 | 6.127.034 | 20,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AQ | 349.081 | 6.126.826 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AR | 349.464 | 6.126.383 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AS | 349.383 | 6.126.053 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |
| AT | 350.960 | 6.127.173 | 10,0 | 1,0 | 1,0 | 1,0 | 90,0 | "Green house mode" | 2,0 |

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

### Calculation Results

Shadow receptor

| No. | Shadow, expected values: Shadow hours per year [h/year] | Avoided hours per year [h/year] |
|---|---|---|
| A* | 10:08 | 5:20 |
| AA* | 10:13 | 34:33 |
| AB* | 11:10 | 28:40 |
| AC* | 11:14 | 25:31 |
| AD* | 11:22 | 22:51 |
| AE* | 10:53 | 21:06 |
| AF* | 10:09 | 19:39 |
| AG* | 9:19 | 18:23 |
| AH* | 9:45 | 16:00 |
| AI* | 10:40 | 13:07 |
| AJ* | 9:14 | 20:27 |
| AK* | 7:23 | 42:34 |
| AL* | 7:05 | 44:58 |
| AM* | 8:35 | 29:59 |
| AN* | 5:44 | 12:00 |
| AO* | 48:09 | 1:05 |
| AP | 30:19 | |
| AQ | 17:45 | |
| AR | 3:32 | |
| AS | 0:00 | |
| AT | 19:52 | |
| B* | 11:16 | 2:52 |
| C* | 8:12 | 1:54 |
| D* | 11:33 | 12:12 |
| E* | 17:54 | 18:50 |
| F* | 22:51 | 25:47 |
| G* | 23:34 | 38:06 |
| H* | 10:46 | 7:32 |
| I* | 23:36 | 12:24 |
| J* | 31:45 | 11:22 |
| K* | 41:14 | 16:49 |
| L* | 58:28 | 20:25 |
| M* | 72:29 | 14:21 |
| N* | 21:18 | 8:22 |
| O* | 24:48 | 20:20 |
| P* | 27:01 | 46:21 |
| Q* | 28:24 | 19:32 |
| R* | 23:57 | 27:40 |
| S* | 28:34 | 2:07 |
| T* | 17:14 | 7:27 |
| U* | 11:49 | 32:49 |
| V* | 13:12 | 1:50 |
| W* | 12:24 | 18:55 |
| X* | 9:08 | 24:16 |
| Y* | 8:51 | 27:11 |
| Z* | 8:34 | 31:27 |

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

| No. | Name | Worst case [h/year] | Stopped due to flicker curtailment [h/year] | Expected [h/year] |
|---|---|---|---|---|
| 1 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1) | 158:11 | 353:39 | 23:40 |
| 2 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2) | 99:08 | 308:56 | 8:39 |
| 3 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3) | 96:42 | 72:03 | 13:45 |
| 4 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4) | 38:58 | 172:29 | 17:56 |
| 5 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5) | 15:46 | 19:05 | 6:13 |
| 6 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7) | 90:24 | 380:13 | 27:31 |
| 7 | ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8) | 26:53 | 8:57 | 6:20 |
| 8 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1) | 30:12 | | 11:54 |
| 9 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2) | 28:24 | | 9:56 |

To be continued on next page...

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# SHADOW - Main Result

## Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

...continued from previous page

| No. | Name | Worst case [h/year] | Stopped due to flicker curtailment [h/year] | Expected [h/year] |
|---|---|---|---|---|
| 10 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3) | 45:23 | | 18:09 |
| 11 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4) | 8:47 | | 3:52 |
| 12 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5) | 2:45 | | 1:11 |
| 13 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6) | 5:51 | | 2:28 |
| 14 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7) | 7:59 | | 0:30 |
| 15 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8) | 1:25 | | 0:06 |
| 16 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9) | 0:00 | | 0:00 |
| 17 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10) | 18:09 | | 7:48 |
| 18 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11) | 11:25 | | 3:40 |
| 19 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12) | 10:09 | | 2:23 |
| 20 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13) | 77:56 | | 35:00 |
| 21 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14) | 29:48 | | 10:59 |
| 22 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15) | 0:00 | | 0:00 |
| 23 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16) | 0:00 | | 0:00 |
| 24 | GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17) | 64:51 | | 12:34 |
| 25 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18) | 358:56 | | 38:01 |
| 26 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19) | 217:46 | | 24:32 |
| 27 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20) | 114:40 | | 14:14 |
| 28 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21) | 252:37 | | 32:14 |
| 29 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22) | 440:06 | | 40:32 |
| 30 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23) | 120:01 | | 43:37 |
| 31 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24) | 22:09 | | 7:26 |
| 32 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25) | 2:31 | | 0:59 |
| 33 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26) | 111:10 | | 50:29 |
| 34 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27) | 142:46 | | 6:31 |
| 35 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28) | 0:00 | | 0:00 |
| 36 | NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29) | 84:01 | | 9:16 |
| 37 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30) | 0:00 | | 0:00 |
| 38 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31) | 24:25 | | 4:41 |
| 39 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32) | 85:15 | | 22:20 |
| 40 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33) | 68:52 | | 6:53 |
| 41 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34) | 232:46 | | 17:08 |
| 42 | GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35) | 202:36 | | 93:59 |

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 08:57 (27) | 07:27 | 08:02 (28) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 16 | 09:13 (27) | 18:08 | 18 | 08:20 (28) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 08:55 (27) | 07:24 | | 08:03 (28) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 18 | 09:13 (27) | 18:10 | 17 | 08:20 (28) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 08:54 (26) | 07:22 | | 08:03 (28) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:13 | 20 | 09:14 (27) | 18:12 | 16 | 08:19 (28) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 08:53 (26) | 07:20 | | 08:05 (28) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 21 | 09:14 (27) | 18:14 | 12 | 08:17 (28) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 08:53 (26) | 07:17 | | 07:48 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 22 | 09:15 (27) | 18:16 | 18 | 08:14 (28) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 08:52 (26) | 07:15 | | 07:45 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 23 | 09:15 (27) | 18:18 | 13 | 07:58 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 08:52 (26) | 07:12 | | 07:42 (1) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 23 | 09:15 (27) | 18:20 | 13 | 07:55 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 08:51 (26) | 07:10 | | 07:39 (1) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 23 | 09:14 (26) | 18:22 | 14 | 07:53 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 08:50 (25) | 07:07 | | 07:32 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 24 | 09:14 (26) | 18:24 | 18 | 07:52 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 08:49 (25) | 07:05 | | 07:29 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 26 | 09:15 (26) | 18:26 | 17 | 07:50 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 08:48 (25) | 07:02 | | 07:27 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 27 | 09:15 (26) | 18:28 | 19 | 07:50 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 08:46 (25) | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 28 | 09:14 (26) | 18:30 | 19 | 07:48 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 08:46 (25) | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 28 | 09:14 (25) | 18:32 | 20 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 08:46 (25) | 06:54 | | 07:21 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 29 | 09:15 (25) | 18:34 | 19 | 07:47 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 08:45 (25) | 06:52 | | 07:20 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 31 | 09:16 (25) | 18:36 | 19 | 07:46 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 08:45 (25) | 06:49 | | 07:21 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 30 | 09:15 (25) | 18:38 | 16 | 07:46 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 08:45 (25) | 06:47 | | 07:24 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 31 | 09:16 (25) | 18:40 | 9 | 07:45 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:44 (25) | 06:44 | | 07:39 (1) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 31 | 09:15 (25) | 18:42 | 6 | 07:45 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:44 (25) | 06:42 | | 07:40 (1) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 31 | 09:15 (25) | 18:44 | 4 | 07:44 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:45 (25) | 06:39 | | 07:41 (1) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 30 | 09:15 (25) | 18:46 | 3 | 07:44 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 07:46 | | 08:12 (28) | 06:36 | | 07:42 (1) | 06:18 | 05:17 | 04:52 |
| | 16:46 | | 17:51 | 32 | 09:14 (25) | 18:48 | 2 | 07:44 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 07:44 | | 08:10 (28) | 06:34 | | 07:42 (1) | 06:16 | 05:15 | 04:53 |
| | 16:48 | | 17:53 | 36 | 09:14 (25) | 18:50 | 2 | 07:44 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | | 07:41 | | 08:07 (28) | 06:31 | | 07:43 (1) | 06:13 | 05:13 | 04:53 |
| | 16:50 | | 17:55 | 38 | 09:12 (25) | 18:52 | 1 | 07:44 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 07:39 | | 08:05 (28) | 06:29 | | 07:42 (1) | 06:11 | 05:12 | 04:53 |
| | 16:52 | | 17:57 | 41 | 09:12 (25) | 18:54 | 2 | 07:44 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | | 07:37 | | 08:03 (28) | 06:26 | | 07:42 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | | 17:59 | 40 | 09:10 (25) | 18:56 | 2 | 07:44 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 07:34 | | 08:03 (28) | 06:24 | | 07:42 (1) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | 18:01 | 37 | 09:08 (25) | 18:58 | 3 | 07:45 (1) | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | | 07:32 | | 08:02 (28) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | | 18:03 | 32 | 09:05 (25) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:05 (27) | 07:29 | | 08:02 (28) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 2 09:07 (27) | 18:05 | 22 | 09:00 (25) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:03 (27) | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | 6 09:09 (27) | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:01 (27) | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 10 09:11 (27) | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 08:59 (27) | | | | 07:11 | | | | 05:03 | |
| | 17:06 | 13 09:12 (27) | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | | 423 | 501 | 520 | |
| Total, worst case | | 31 | | 790 | | 302 | | | | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | | | | |
| Wind dir. red. | | 0,80 | | 0,84 | | 0,96 | | | | | |
| Total reduction | | 0,14 | | 0,20 | | 0,32 | | | | | |
| Total, real | | 4 | | 161 | | 98 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | 07:35 | | 08:02 (2) | 07:37 | 08:19 (25) | 08:35 |
| | 22:18 | 21:40 | 20:30 | | 19:12 | 42 | 08:44 (1) | 16:58 | 25 | 08:44 (26) | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | | 07:37 | | 08:04 (2) | 07:39 | 08:20 (25) | 08:37 |
| | 22:18 | 21:38 | 20:27 | | 19:10 | 40 | 08:44 (1) | 16:56 | 24 | 08:44 (26) | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | | 07:39 | | 08:06 (2) | 07:41 | 08:21 (26) | 08:39 |
| | 22:17 | 21:36 | 20:25 | | 19:07 | 39 | 08:45 (1) | 16:54 | 23 | 08:44 (26) | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | | 07:41 | | 08:08 (2) | 07:43 | 08:22 (26) | 08:40 |
| | 22:17 | 21:34 | 20:22 | | 19:05 | 36 | 08:44 (1) | 16:52 | 22 | 08:44 (27) | 16:08 |
| 5 | 05:00 | 05:47 | 06:46 | | 07:43 | | 08:10 (2) | 07:45 | 08:22 (26) | 08:42 |
| | 22:16 | 21:32 | 20:19 | | 19:02 | 31 | 08:43 (1) | 16:50 | 22 | 08:44 (27) | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | | 07:45 | | 08:17 (1) | 07:47 | 08:23 (26) | 08:43 |
| | 22:16 | 21:30 | 20:17 | | 19:00 | 24 | 08:41 (1) | 16:48 | 21 | 08:44 (27) | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | | 07:46 | | 08:19 (1) | 07:49 | 08:23 (26) | 08:44 |
| | 22:15 | 21:28 | 20:14 | | 18:57 | 20 | 08:39 (1) | 16:46 | 21 | 08:44 (27) | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | | 07:48 | | 08:21 (1) | 07:51 | 08:25 (26) | 08:46 |
| | 22:14 | 21:26 | 20:12 | | 18:54 | 15 | 08:36 (1) | 16:44 | 20 | 08:45 (27) | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | | 07:50 | | 08:26 (1) | 07:53 | 08:26 (27) | 08:47 |
| | 22:13 | 21:24 | 20:09 | | 18:52 | 15 | 08:51 (28) | 16:42 | 18 | 08:44 (27) | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | | 07:52 | | 08:38 (28) | 07:55 | 08:28 (27) | 08:48 |
| | 22:12 | 21:22 | 20:07 | | 18:49 | 14 | 08:52 (28) | 16:40 | 15 | 08:43 (27) | 16:05 |
| 11 | 05:07 | 05:58 | 06:57 | | 07:54 | | 08:37 (28) | 07:57 | 08:31 (27) | 08:50 |
| | 22:11 | 21:19 | 20:04 | | 18:47 | 16 | 08:53 (28) | 16:38 | 13 | 08:44 (27) | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 | | 07:56 | | 08:35 (28) | 08:00 | 08:33 (27) | 08:51 |
| | 22:10 | 21:17 | 20:01 | | 18:44 | 18 | 08:53 (28) | 16:36 | 9 | 08:42 (27) | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 | | 07:58 | | 08:36 (28) | 08:02 | 08:35 (27) | 08:52 |
| | 22:09 | 21:15 | 19:59 | | 18:42 | 19 | 08:55 (28) | 16:34 | 6 | 08:41 (27) | 16:04 |
| 14 | 05:11 | 06:04 | 07:03 | | 08:00 | | 08:35 (28) | 08:04 | 08:37 (27) | 08:53 |
| | 22:08 | 21:13 | 19:56 | | 18:40 | 29 | 09:36 (25) | 16:33 | 2 | 08:39 (27) | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 | | 08:02 | | 08:35 (28) | 08:06 | | 08:54 |
| | 22:07 | 21:11 | 19:54 | | 18:37 | 34 | 09:39 (25) | 16:31 | | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 | | 08:04 | | 08:35 (28) | 08:08 | | 08:55 |
| | 22:06 | 21:08 | 19:51 | | 18:35 | 39 | 09:41 (25) | 16:29 | | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:31 (1) | 08:06 | | 08:35 (28) | 08:10 | | 08:56 |
| | 22:04 | 21:06 | 19:49 | 3 | 08:34 (1) | 18:32 | 41 | 09:42 (25) | 16:28 | | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | | 08:27 (1) | 08:08 | | 08:37 (28) | 08:12 | | 08:57 |
| | 22:03 | 21:04 | 19:46 | 6 | 08:33 (1) | 18:30 | 40 | 09:43 (25) | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | | 08:24 (1) | 08:10 | | 08:39 (28) | 08:14 | | 08:57 |
| | 22:02 | 21:01 | 19:43 | 7 | 08:31 (1) | 18:27 | 38 | 09:44 (25) | 16:25 | | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | | 08:22 (1) | 08:12 | | 08:41 (28) | 08:15 | | 08:58 |
| | 22:00 | 20:59 | 19:41 | 8 | 08:30 (1) | 18:25 | 35 | 09:44 (25) | 16:23 | | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | | 08:08 (2) | 08:14 | | 09:15 (25) | 08:17 | | 08:59 |
| | 21:59 | 20:57 | 19:38 | 11 | 08:29 (1) | 18:23 | 30 | 09:45 (25) | 16:22 | | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 | | 08:06 (2) | 08:16 | | 09:15 (25) | 08:19 | | 08:59 |
| | 21:57 | 20:54 | 19:36 | 14 | 08:29 (1) | 18:20 | 31 | 09:46 (25) | 16:20 | | 16:05 |
| 23 | 05:24 | 06:21 | 07:20 | | 08:05 (2) | 08:18 | | 09:15 (25) | 08:21 | | 09:00 |
| | 21:56 | 20:52 | 19:33 | 14 | 08:28 (1) | 18:18 | 31 | 09:46 (25) | 16:19 | | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | | 08:04 (2) | 08:20 | | 09:14 (25) | 08:23 | | 09:00 |
| | 21:54 | 20:49 | 19:30 | 15 | 08:28 (1) | 18:16 | 31 | 09:45 (25) | 16:18 | | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | | 08:03 (2) | 07:22 | | 08:14 (25) | 08:25 | | 09:00 |
| | 21:53 | 20:47 | 19:28 | 17 | 08:28 (1) | 17:13 | 31 | 08:45 (25) | 16:16 | | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 | | 08:02 (2) | 07:24 | | 08:14 (25) | 08:27 | | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17 | 08:27 (1) | 17:11 | 30 | 08:44 (25) | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | | 08:02 (2) | 07:27 | | 08:15 (25) | 08:28 | | 09:01 |
| | 21:49 | 20:42 | 19:23 | 18 | 08:27 (1) | 17:09 | 30 | 08:45 (25) | 16:14 | | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | | 08:02 (2) | 07:29 | | 08:15 (25) | 08:30 | | 09:01 |
| | 21:47 | 20:40 | 19:20 | 18 | 08:27 (1) | 17:07 | 29 | 08:44 (25) | 16:13 | | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | | 08:01 (2) | 07:31 | | 08:16 (25) | 08:32 | | 09:01 |
| | 21:46 | 20:37 | 19:17 | 18 | 08:26 (1) | 17:04 | 27 | 08:43 (26) | 16:12 | | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | | 08:01 (2) | 07:33 | | 08:16 (25) | 08:34 | | 09:01 |
| | 21:44 | 20:35 | 19:15 | 20 | 08:27 (1) | 17:02 | 27 | 08:43 (26) | 16:11 | | 16:12 |
| 31 | 05:38 | 06:36 | | | | 07:35 | | 08:18 (25) | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | 26 | 08:44 (26) | | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | 224 |
| Total, worst case | | | | 186 | | | 908 | | | 241 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,97 | | | 0,89 | | | 0,81 | |
| Total reduction | | | | 0,38 | | | 0,27 | | | 0,13 | |
| Total, real | | | | 71 | | | 245 | | | 30 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 07:52 (28) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | | 18:08 | 36 | 08:42 (25) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 07:50 (28) | 07:06 | 05:53 | 05:01 |
| | 16:15 | 17:10 | | | 18:10 | 40 | 08:42 (25) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | | 07:22 | | 07:47 (28) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:13 | | | 18:12 | 42 | 08:41 (25) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:20 | | 07:46 (28) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | | | 18:14 | 43 | 08:41 (25) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | 07:45 (28) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | 42 | 08:39 (25) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | 08:47 (27) | 07:15 | | 07:45 (28) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 3 | 08:50 (27) | 18:18 | 39 | 08:38 (25) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | | 08:45 (27) | 07:12 | | 07:45 (28) | 06:53 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 7 | 08:52 (27) | 18:20 | 35 | 08:36 (25) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | | 08:42 (27) | 07:10 | | 07:46 (28) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 10 | 08:52 (27) | 18:22 | 30 | 08:34 (25) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | | 08:40 (27) | 07:07 | | 07:46 (28) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 14 | 08:54 (27) | 18:24 | 19 | 08:29 (25) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | | 08:38 (27) | 07:05 | | 07:47 (28) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 16 | 08:54 (27) | 18:26 | 11 | 07:58 (28) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | | 08:36 (26) | 07:02 | | 07:50 (28) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 19 | 08:55 (27) | 18:28 | 5 | 07:55 (28) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | | 08:33 (26) | 06:59 | | | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 22 | 08:55 (27) | 18:30 | | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | | 08:32 (26) | 06:57 | | | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 23 | 08:55 (27) | 18:32 | | | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | 08:02 | | 08:31 (26) | 06:54 | | | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 24 | 08:55 (27) | 18:34 | | | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | | 08:31 (26) | 06:52 | | 07:18 (1) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 24 | 08:55 (27) | 18:36 | 8 | 07:32 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | | 08:29 (26) | 06:49 | | 07:16 (1) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 24 | 08:53 (27) | 18:38 | 4 | 07:20 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 08:29 (26) | 06:47 | | 07:13 (1) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 23 | 08:52 (27) | 18:40 | 3 | 07:16 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | | 08:29 (26) | 06:44 | | 07:12 (1) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 21 | 08:50 (26) | 18:42 | 3 | 07:15 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | | 08:25 (25) | 06:42 | | 07:11 (1) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 26 | 08:51 (26) | 18:44 | 2 | 07:13 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | | 08:22 (25) | 06:39 | | 07:03 (2) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 29 | 08:51 (26) | 18:46 | 3 | 07:11 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | | 08:20 (25) | 06:36 | | 07:09 (1) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 29 | 08:49 (26) | 18:48 | 1 | 07:10 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | | 08:18 (25) | 06:34 | | 07:08 (1) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 31 | 08:49 (26) | 18:50 | 1 | 07:09 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | | 08:17 (25) | 06:31 | | 07:08 (1) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 30 | 08:47 (26) | 18:52 | 1 | 07:09 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | | 08:16 (25) | 06:29 | | | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 30 | 08:46 (26) | 18:54 | | | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | | 08:15 (25) | 06:26 | | 07:06 (1) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17:59 | 27 | 08:42 (26) | 18:56 | 1 | 07:07 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | | 08:15 (25) | 06:24 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 28 | 08:43 (25) | 18:58 | | | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | | 08:14 (25) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 28 | 08:42 (25) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | | 07:55 (28) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 33 | 08:43 (25) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | | 20:04 | | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 521 | | | 369 | | | | |
| Sun reduction | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | 0,88 | | | 0,93 | | | | |
| Total reduction | | | 0,21 | | | 0,32 | | | | |
| Total, real | | | 112 | | | 116 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | | 07:35 | | 07:37 | 08:08 (27) | 08:35 |
| | 22:18 | 21:40 | 20:30 | | 19:12 | | 16:58 | 16 08:24 (27) | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | | 07:37 | | 07:39 | 08:10 (27) | 08:37 |
| | 22:18 | 21:38 | 20:27 | | 19:10 | | 16:56 | 13 08:23 (27) | 16:09 |
| 3 | 04:59 | 05:43 | 06:42 | | 07:39 | 08:26 (28) | 07:41 | 08:12 (27) | 08:39 |
| | 22:17 | 21:36 | 20:25 | | 19:07 | 9 08:35 (28) | 16:54 | 10 08:22 (27) | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | | 07:41 | 08:24 (28) | 07:43 | 08:15 (27) | 08:40 |
| | 22:17 | 21:34 | 20:22 | | 19:05 | 13 08:37 (28) | 16:52 | 6 08:21 (27) | 16:08 |
| 5 | 05:00 | 05:47 | 06:46 | | 07:43 | 08:22 (28) | 07:45 | 08:17 (27) | 08:42 |
| | 22:16 | 21:32 | 20:19 | | 19:02 | 27 09:09 (25) | 16:50 | 2 08:19 (27) | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | | 07:45 | 08:21 (28) | 07:47 | | 08:43 |
| | 22:16 | 21:30 | 20:17 | | 19:00 | 33 09:11 (25) | 16:48 | | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | | 07:46 | 08:20 (28) | 07:49 | | 08:44 |
| | 22:15 | 21:28 | 20:14 | | 18:57 | 38 09:13 (25) | 16:46 | | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | | 07:48 | 08:20 (28) | 07:51 | | 08:46 |
| | 22:14 | 21:26 | 20:12 | | 18:54 | 41 09:14 (25) | 16:44 | | 16:05 |
| 9 | 05:05 | 05:54 | 06:53 | | 07:50 | 08:20 (28) | 07:53 | | 08:47 |
| | 22:13 | 21:24 | 20:09 | | 18:52 | 43 09:15 (25) | 16:42 | | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 | 08:07 (1) | 07:52 | 08:20 (28) | 07:55 | | 08:48 |
| | 22:12 | 21:22 | 20:07 | 11 08:18 (1) | 18:49 | 43 09:15 (25) | 16:40 | | 16:05 |
| 11 | 05:07 | 05:58 | 06:57 | 08:04 (1) | 07:54 | 08:22 (28) | 07:57 | | 08:50 |
| | 22:11 | 21:19 | 20:04 | 17 08:21 (1) | 18:47 | 41 09:15 (25) | 16:38 | | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 | 08:02 (1) | 07:56 | 08:24 (28) | 08:00 | | 08:51 |
| | 22:10 | 21:17 | 20:01 | 21 08:23 (1) | 18:44 | 39 09:15 (25) | 16:36 | | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 | 07:59 (1) | 07:58 | 08:27 (28) | 08:02 | | 08:52 |
| | 22:09 | 21:15 | 19:59 | 24 08:23 (1) | 18:42 | 35 09:16 (25) | 16:34 | | 16:04 |
| 14 | 05:11 | 06:04 | 07:03 | 07:58 (1) | 08:00 | 08:47 (25) | 08:04 | | 08:53 |
| | 22:08 | 21:13 | 19:56 | 26 08:24 (1) | 18:40 | 29 09:16 (25) | 16:33 | | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 | 07:55 (2) | 08:02 | 08:47 (25) | 08:06 | | 08:54 |
| | 22:07 | 21:11 | 19:54 | 30 08:25 (1) | 18:37 | 28 09:15 (25) | 16:31 | | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 | 07:53 (2) | 08:04 | 08:47 (25) | 08:08 | | 08:55 |
| | 22:06 | 21:08 | 19:51 | 32 08:25 (1) | 18:35 | 28 09:15 (25) | 16:29 | | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 07:51 (2) | 08:06 | 08:47 (25) | 08:10 | | 08:56 |
| | 22:04 | 21:06 | 19:49 | 35 08:26 (1) | 18:32 | 28 09:15 (26) | 16:28 | | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 07:50 (2) | 08:08 | 08:48 (25) | 08:12 | | 08:57 |
| | 22:03 | 21:04 | 19:46 | 36 08:26 (1) | 18:30 | 30 09:18 (26) | 16:26 | | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 07:48 (2) | 08:10 | 08:48 (25) | 08:14 | | 08:57 |
| | 22:02 | 21:01 | 19:43 | 37 08:25 (1) | 18:27 | 31 09:19 (26) | 16:25 | | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 07:48 (2) | 08:12 | 08:49 (25) | 08:15 | | 08:58 |
| | 22:00 | 20:59 | 19:41 | 36 08:24 (1) | 18:25 | 30 09:19 (26) | 16:23 | | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 07:47 (2) | 08:14 | 08:50 (25) | 08:17 | | 08:59 |
| | 21:59 | 20:57 | 19:38 | 37 08:24 (1) | 18:23 | 30 09:20 (26) | 16:22 | | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 | 07:47 (2) | 08:16 | 08:53 (25) | 08:19 | | 08:59 |
| | 21:57 | 20:54 | 19:36 | 36 08:23 (1) | 18:20 | 28 09:21 (26) | 16:20 | | 16:06 |
| 23 | 05:24 | 06:21 | 07:20 | 07:47 (2) | 08:18 | 08:56 (25) | 08:21 | | 09:00 |
| | 21:56 | 20:52 | 19:33 | 36 08:23 (1) | 18:18 | 25 09:21 (26) | 16:19 | | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 07:49 (2) | 08:20 | 08:59 (26) | 08:23 | | 09:00 |
| | 21:54 | 20:49 | 19:30 | 33 08:22 (1) | 18:16 | 22 09:21 (26) | 16:18 | | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:51 (2) | 07:22 | 07:59 (26) | 08:25 | | 09:00 |
| | 21:53 | 20:47 | 19:28 | 29 08:20 (1) | 17:13 | 23 08:22 (27) | 16:16 | | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 | 07:53 (2) | 07:24 | 07:59 (26) | 08:27 | | 09:01 |
| | 21:51 | 20:44 | 19:25 | 26 08:19 (1) | 17:11 | 24 08:23 (27) | 16:15 | | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:55 (2) | 07:27 | 08:00 (26) | 08:28 | | 09:01 |
| | 21:49 | 20:42 | 19:23 | 22 08:17 (1) | 17:09 | 24 08:24 (27) | 16:14 | | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:57 (2) | 07:29 | 08:01 (26) | 08:30 | | 09:01 |
| | 21:47 | 20:40 | 19:20 | 18 08:15 (1) | 17:07 | 23 08:24 (27) | 16:13 | | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 08:01 (1) | 07:31 | 08:01 (26) | 08:32 | | 09:01 |
| | 21:46 | 20:37 | 19:17 | 9 08:10 (1) | 17:04 | 23 08:24 (27) | 16:12 | | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | | 07:33 | 08:03 (26) | 08:34 | | 09:01 |
| | 21:44 | 20:35 | 19:15 | | 17:02 | 21 08:24 (27) | 16:11 | | 16:12 |
| 31 | 05:38 | 06:36 | | | 07:35 | 08:06 (26) | | | 09:01 |
| | 21:42 | 20:32 | | | 17:00 | 19 08:25 (27) | | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | | 326 | | 253 | | 224 |
| Total, worst case | | | | 551 | | 828 | | 47 | |
| Sun reduction | | | | 0,40 | | 0,31 | | 0,16 | |
| Oper. time red. | | | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | 0,90 | | 0,85 | |
| Total reduction | | | | 0,39 | | 0,27 | | 0,13 | |
| Total, real | | | | 215 | | 228 | | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | | 07:27 | | 08:22 (25) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | | 18:08 | 22 | 08:44 (25) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | 08:26 | | | 07:24 | | 08:24 (25) | 07:06 | 05:53 | 05:01 |
| | 16:15 | 17:10 | | | 18:10 | 19 | 08:43 (25) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | 08:24 | | | 07:22 | | 08:25 (25) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 17:13 | | | 18:12 | 15 | 08:40 (25) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | | | 07:20 | | 08:29 (25) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | | | 18:14 | 8 | 08:37 (25) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | 08:20 | | | 07:17 | | | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | | | 18:16 | | | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | 08:18 | | | 07:15 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | | | 18:18 | | | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | 08:16 | | | 07:12 | | | 06:53 | 05:42 | 04:57 |
| | 16:22 | 17:21 | | | 18:20 | | | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | 08:14 | | 08:42 (26) | 07:10 | | | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 3 | 08:45 (26) | 18:22 | | | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | 08:12 | | 08:40 (26) | 07:07 | | 07:33 (1) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 9 | 08:49 (26) | 18:24 | 7 | 07:40 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | 08:10 | | 08:38 (26) | 07:05 | | 07:29 (1) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 13 | 08:51 (26) | 18:26 | 15 | 07:44 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | 08:08 | | 08:36 (26) | 07:02 | | 07:27 (1) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 | 16 | 08:52 (26) | 18:28 | 19 | 07:46 (1) | 20:30 | 21:28 | 22:14 |
| 12 | 08:55 | 08:06 | | 08:34 (26) | 06:59 | | 07:24 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18 | 08:52 (26) | 18:30 | 23 | 07:47 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | | 08:34 (26) | 06:57 | | 07:22 (2) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 19 | 08:53 (26) | 18:32 | 26 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:54 | 08:02 | | 08:34 (26) | 06:54 | | 07:19 (2) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 20 | 08:54 (26) | 18:34 | 28 | 07:47 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | 08:00 | | 08:33 (25) | 06:52 | | 07:16 (2) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 21 | 08:54 (26) | 18:36 | 26 | 07:46 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | 07:57 | | 08:28 (25) | 06:49 | | 07:21 (2) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 25 | 08:53 (26) | 18:38 | 16 | 07:46 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 08:27 (25) | 06:47 | | 07:24 (2) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 27 | 08:54 (26) | 18:40 | 9 | 07:45 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | 07:53 | | 08:24 (25) | 06:44 | | 07:39 (1) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 28 | 08:52 (26) | 18:42 | 6 | 07:45 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | 07:51 | | 08:24 (25) | 06:42 | | 07:40 (1) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 28 | 08:52 (26) | 18:44 | 4 | 07:44 (1) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | 07:48 | | 08:23 (25) | 06:39 | | 07:41 (1) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 28 | 08:51 (26) | 18:46 | 3 | 07:44 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 07:46 | | 08:22 (25) | 06:36 | | 07:42 (1) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 27 | 08:49 (26) | 18:48 | 2 | 07:44 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:44 | | 08:22 (25) | 06:34 | | 07:42 (1) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 26 | 08:48 (25) | 18:50 | 2 | 07:44 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 07:41 | | 08:21 (25) | 06:31 | | 07:43 (1) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 26 | 08:47 (25) | 18:52 | 1 | 07:44 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | | 08:21 (25) | 06:29 | | 07:42 (1) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 27 | 08:48 (25) | 18:54 | 1 | 07:43 (1) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 07:37 | | 08:21 (25) | 06:26 | | | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17:59 | 26 | 08:47 (25) | 18:56 | | | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 07:34 | | 08:21 (25) | 06:24 | | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 26 | 08:47 (25) | 18:58 | | | 20:59 | 21:54 | 22:20 |
| 27 | 08:36 | 07:32 | | 08:21 (25) | 06:21 | | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 25 | 08:46 (25) | 19:00 | | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 07:29 | | 08:22 (25) | 06:18 | | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 23 | 08:45 (25) | 19:02 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | 05:05 | 04:56 |
| | 17:02 | | | | 20:04 | | | 21:05 | 21:59 | 22:19 |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:06 | | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | | | 07:11 | | | | 05:03 | |
| | 17:06 | | | | 20:08 | | | | 22:01 | |
| Potential sun hours | 242 | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | | 461 | | | 252 | | | | |
| Sun reduction | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | | 0,88 | | | 0,96 | | | | |
| Total reduction | | | 0,21 | | | 0,32 | | | | |
| Total, real | | | 99 | | | 82 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:02 (2) | 07:37 | 08:08 (26) | 08:35 |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 24 | 08:26 (1) | 16:58 | 12 08:20 (26) | 16:10 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:04 (1) | 07:39 | 08:10 (26) | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 21 | 08:25 (1) | 16:56 | 8 08:18 (26) | 16:09 |
| 3 | 04:59 | | 05:43 | | 06:42 | | 07:39 | | 08:06 (1) | 07:41 | 08:12 (26) | 08:39 |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 17 | 08:23 (1) | 16:54 | 2 08:14 (26) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:08 (1) | 07:43 | | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 12 | 08:20 (1) | 16:52 | | 16:08 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | | 07:45 | | 08:42 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | 16:50 | | 16:07 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:45 | | | 07:47 | | 08:43 |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | | | 16:48 | | 16:06 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | 07:49 | | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | 16:46 | | 16:06 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | 07:51 | | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | 16:44 | | 16:05 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | 07:53 | | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | 16:42 | | 16:05 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 09:01 (25) | 07:55 | | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 12 | 09:13 (25) | 16:40 | | 16:05 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:58 (25) | 07:57 | | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 17 | 09:15 (25) | 16:38 | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:56 (25) | 08:00 | | 08:51 |
| | 22:10 | | 21:17 | | 20:02 | | 18:44 | 20 | 09:16 (25) | 16:36 | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:56 (25) | 08:02 | | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 22 | 09:18 (25) | 16:34 | | 16:04 |
| 14 | 05:11 | | 06:04 | | 07:03 | | 08:00 | | 08:55 (25) | 08:04 | | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 24 | 09:19 (25) | 16:33 | | 16:04 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:54 (25) | 08:06 | | 08:54 |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 25 | 09:19 (25) | 16:31 | | 16:04 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:53 (25) | 08:08 | | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 26 | 09:19 (25) | 16:29 | | 16:04 |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:15 (1) | 08:06 | | 08:53 (25) | 08:10 | | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | 11 08:26 (1) | 18:32 | 26 | 09:19 (25) | 16:28 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:12 (1) | 08:08 | | 08:52 (25) | 08:12 | | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 17 08:29 (1) | 18:30 | 27 | 09:19 (25) | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:04 (2) | 08:10 | | 08:52 (25) | 08:14 | | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 25 08:29 (1) | 18:27 | 26 | 09:18 (25) | 16:25 | | 16:04 |
| 20 | 05:20 | | 06:15 | | 07:14 | 08:01 (2) | 08:12 | | 08:52 (25) | 08:15 | | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 29 08:30 (1) | 18:25 | 26 | 09:18 (26) | 16:23 | | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | 07:59 (2) | 08:14 | | 08:52 (25) | 08:17 | | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 30 08:29 (1) | 18:23 | 28 | 09:20 (26) | 16:22 | | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | 07:57 (2) | 08:16 | | 08:54 (25) | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 32 08:29 (1) | 18:20 | 28 | 09:22 (26) | 16:20 | | 16:06 |
| 23 | 05:24 | | 06:21 | | 07:20 | 07:56 (2) | 08:18 | | 08:54 (25) | 08:21 | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 32 08:28 (1) | 18:18 | 29 | 09:23 (26) | 16:19 | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:55 (2) | 08:20 | | 08:55 (25) | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 33 08:28 (1) | 18:16 | 28 | 09:23 (26) | 16:18 | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:55 (2) | 07:22 | | 07:56 (25) | 08:25 | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 33 08:28 (1) | 17:13 | 27 | 08:23 (26) | 16:16 | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | 07:55 (2) | 07:24 | | 07:59 (25) | 08:27 | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 32 08:27 (1) | 17:11 | 24 | 08:23 (26) | 16:15 | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | 07:55 (2) | 07:27 | | 08:03 (26) | 08:29 | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 32 08:27 (1) | 17:09 | 21 | 08:24 (26) | 16:14 | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | 07:57 (2) | 07:29 | | 08:03 (26) | 08:30 | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 30 08:27 (1) | 17:07 | 20 | 08:23 (26) | 16:13 | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | 07:58 (2) | 07:31 | | 08:03 (26) | 08:32 | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 28 08:26 (1) | 17:04 | 19 | 08:22 (26) | 16:12 | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:00 (2) | 07:33 | | 08:04 (26) | 08:34 | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | 27 08:27 (1) | 17:02 | 18 | 08:22 (26) | 16:11 | | 16:12 |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:06 (26) | | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | 15 | 08:21 (26) | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 391 | | 582 | | | 22 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,98 | | 0,89 | | | 0,86 | | |
| Total reduction | | | | | 0,39 | | 0,27 | | | 0,13 | | |
| Total, real | | | | | 151 | | 158 | | | 3 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 09:10 (26) | | 07:27 | 08:13 (28) | 07:08 | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 29 | 09:39 (25) | | 18:08 | 18 | 08:31 (28) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 09:10 (26) | | 07:24 | 08:05 (1) | 07:06 | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 31 | 09:41 (25) | | 18:10 | 25 | 08:30 (28) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 09:10 (26) | | 07:22 | 08:00 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | | 17:12 | 32 | 09:42 (25) | | 18:12 | 20 | 08:28 (28) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:10 (26) | | 07:20 | 07:58 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 33 | 09:43 (25) | | 18:14 | 10 | 08:24 (28) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 09:11 (26) | | 07:17 | 07:55 (1) | 06:58 | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 33 | 09:44 (25) | | 18:16 | 5 | 08:00 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 09:11 (26) | | 07:15 | 07:54 (1) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 34 | 09:45 (25) | | 18:18 | 4 | 07:58 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 09:12 (26) | | 07:12 | 07:41 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 34 | 09:46 (25) | | 18:20 | 6 | 07:55 (1) | 20:22 | 21:21 | 22:10 |
| 8 | 08:58 | | 08:14 | | 09:11 (26) | | 07:10 | 07:35 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 35 | 09:46 (25) | | 18:22 | 9 | 07:53 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 09:11 (25) | | 07:07 | 07:33 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 36 | 09:47 (25) | | 18:24 | 6 | 07:52 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 09:11 (25) | | 07:05 | 07:30 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 36 | 09:47 (25) | | 18:26 | 5 | 07:50 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 08:08 | | 09:11 (25) | | 07:02 | 07:29 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | | 17:30 | 37 | 09:48 (25) | | 18:28 | 5 | 07:50 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 08:06 | | 09:10 (25) | | 06:59 | 07:28 (2) | 06:40 | 05:32 | 04:54 |
| | 16:30 | | 17:32 | 37 | 09:47 (25) | | 18:30 | 3 | 07:48 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 08:04 | | 09:10 (25) | | 06:57 | 07:22 (29) | 06:38 | 05:30 | 04:53 |
| | 16:31 | | 17:34 | 37 | 09:47 (25) | | 18:32 | 7 | 07:48 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 08:02 | | 09:11 (25) | | 06:54 | 07:19 (29) | 06:35 | 05:29 | 04:53 |
| | 16:33 | | 17:36 | 36 | 09:47 (25) | | 18:34 | 11 | 07:47 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 08:00 | | 09:10 (25) | | 06:52 | 07:16 (29) | 06:33 | 05:27 | 04:53 |
| | 16:35 | | 17:38 | 36 | 09:46 (25) | | 18:36 | 15 | 07:46 (1) | 20:37 | 21:35 | 22:17 |
| 16 | 08:51 | | 07:57 | | 09:11 (25) | | 06:49 | 07:14 (29) | 06:30 | 05:25 | 04:52 |
| | 16:37 | | 17:40 | 35 | 09:46 (25) | | 18:38 | 18 | 07:46 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 09:12 (25) | | 06:47 | 07:13 (29) | 06:28 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | 34 | 09:46 (25) | | 18:40 | 18 | 07:31 (29) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 07:53 | | 08:20 (28) | | 06:44 | 07:13 (29) | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | 40 | 09:45 (25) | | 18:42 | 19 | 07:32 (29) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 07:51 | | 08:17 (28) | | 06:42 | 07:12 (29) | 06:23 | 05:20 | 04:52 |
| | 16:42 | | 17:47 | 44 | 09:44 (25) | | 18:44 | 19 | 07:31 (29) | 20:45 | 21:43 | 22:18 |
| 20 | 08:47 | | 07:48 | | 08:16 (28) | | 06:39 | 07:11 (29) | 06:21 | 05:18 | 04:52 |
| | 16:44 | | 17:49 | 46 | 09:44 (25) | | 18:46 | 20 | 07:31 (29) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | 09:17 (27) | 07:46 | | 08:14 (28) | | 06:36 | 07:12 (29) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 5 | 09:22 (27) | 17:51 | 46 | 09:42 (25) | | 18:48 | 19 | 07:31 (29) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 09:16 (27) | 07:44 | | 08:14 (28) | | 06:34 | 07:12 (29) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 9 | 09:25 (27) | 17:53 | 44 | 09:40 (25) | | 18:50 | 17 | 07:29 (29) | 20:51 | 21:48 | 22:19 |
| 23 | 08:43 | 09:14 (27) | 07:41 | | 08:12 (28) | | 06:31 | 07:13 (29) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 12 | 09:26 (27) | 17:55 | 42 | 09:38 (25) | | 18:52 | 15 | 07:28 (29) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 09:12 (27) | 07:39 | | 08:13 (28) | | 06:29 | 07:14 (29) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 15 | 09:27 (27) | 17:57 | 35 | 09:35 (25) | | 18:54 | 12 | 07:26 (29) | 20:55 | 21:51 | 22:20 |
| 25 | 08:40 | 09:11 (27) | 07:37 | | 08:12 (28) | | 06:26 | 07:16 (29) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 17 | 09:28 (27) | 17:59 | 22 | 08:34 (28) | | 18:56 | 6 | 07:22 (29) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | 09:11 (27) | 07:34 | | 08:12 (28) | | 06:24 | | 06:06 | 05:09 | 04:54 |
| | 16:56 | 19 | 09:30 (27) | 18:01 | 22 | 08:34 (28) | | 18:58 | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 09:11 (27) | 07:32 | | 08:12 (28) | | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 20 | 09:31 (26) | 18:03 | 21 | 08:33 (28) | | 19:00 | | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | 09:11 (27) | 07:29 | | 08:13 (28) | | 06:18 | | 06:02 | 05:07 | 04:55 |
| | 17:00 | 22 | 09:33 (26) | 18:05 | 20 | 08:33 (28) | | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | 09:10 (27) | | | | | 07:16 | | 06:00 | 05:05 | 04:56 |
| | 17:02 | 23 | 09:33 (26) | | | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | 09:10 (27) | | | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | 25 | 09:35 (25) | | | | 20:06 | | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | 09:10 (26) | | | | | 07:11 | | | 05:03 | |
| | 17:06 | 27 | 09:37 (25) | | | | 20:08 | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | | 423 | 501 | 520 |
| Total, worst case | 194 | | 967 | | 312 | | | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | | | |
| Wind dir. red. | 0,75 | | 0,79 | | 0,97 | | | | | |
| Total reduction | 0,13 | | 0,19 | | 0,32 | | | | | |
| Total, real | 26 | | 183 | | 101 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (2) | | 08:40 (25) | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 26 | 08:44 (1) | | 16:58 | 37 |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:07 (2) | | 08:40 (25) | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 27 | 08:44 (1) | | 16:56 | 36 |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:08 (2) | | 08:40 (25) | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 27 | 08:45 (1) | | 16:54 | 35 |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:09 (2) | | 08:41 (26) | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 27 | 08:45 (1) | | 16:52 | 35 |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:11 (2) | | 08:41 (26) | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 27 | 08:46 (1) | | 16:50 | 34 |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:14 (2) | | 08:40 (26) | |
| | 22:16 | | 21:30 | | 20:17 | | 19:00 | 27 | 08:47 (1) | | 16:48 | 34 |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:28 (1) | | 07:49 | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 20 | 08:48 (1) | | 16:46 | 33 |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:29 (1) | | 07:51 | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 20 | 08:49 (1) | | 16:44 | 32 |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:31 (1) | | 07:53 | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 19 | 08:50 (1) | | 16:42 | 30 |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:33 (1) | | 07:55 | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 27 | 09:00 (28) | | 16:40 | 29 |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:35 (1) | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 28 | 09:03 (28) | | 16:38 | 27 |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:41 (1) | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 22 | 09:04 (28) | | 16:36 | 25 |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:46 (28) | | 08:02 | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 19 | 09:05 (28) | | 16:34 | 23 |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:46 (28) | | 08:04 | |
| | 22:08 | | 21:13 | | 19:56 | | 18:40 | 20 | 09:06 (28) | | 16:33 | 22 |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:45 (28) | | 08:06 | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 21 | 09:06 (28) | | 16:31 | 20 |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:44 (28) | | 08:08 | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 22 | 09:06 (28) | | 16:29 | 19 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 08:44 (28) | | 08:10 | |
| | 22:04 | | 21:06 | | 19:49 | | 18:32 | 31 | 10:04 (25) | | 16:28 | 17 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:06 (29) | | 08:08 | | 08:44 (28) | |
| | 22:03 | | 21:04 | | 19:46 | 3 | 08:09 (29) | | 18:30 | 37 | 10:07 (25) | |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:01 (29) | | 08:10 | | 08:44 (28) | |
| | 22:02 | | 21:01 | | 19:43 | 11 | 08:12 (29) | | 18:27 | 43 | 10:10 (25) | |
| 20 | 05:20 | | 06:15 | | 07:14 | | 07:59 (29) | | 08:12 | | 08:44 (28) | |
| | 22:00 | | 20:59 | | 19:41 | 15 | 08:14 (29) | | 18:25 | 45 | 10:11 (25) | |
| 21 | 05:21 | | 06:17 | | 07:16 | | 07:58 (29) | | 08:14 | | 08:45 (28) | |
| | 21:59 | | 20:57 | | 19:38 | 16 | 08:14 (29) | | 18:23 | 46 | 10:12 (25) | |
| 22 | 05:23 | | 06:19 | | 07:18 | | 07:57 (29) | | 08:16 | | 08:47 (28) | |
| | 21:57 | | 20:54 | | 19:36 | 18 | 08:15 (29) | | 18:20 | 45 | 10:14 (25) | |
| 23 | 05:24 | | 06:21 | | 07:20 | | 07:56 (29) | | 08:18 | | 08:48 (28) | |
| | 21:56 | | 20:52 | | 19:33 | 19 | 08:15 (29) | | 18:18 | 44 | 10:15 (25) | |
| 24 | 05:26 | | 06:23 | | 07:21 | | 07:55 (29) | | 08:20 | | 08:51 (28) | |
| | 21:54 | | 20:49 | | 19:30 | 20 | 08:15 (29) | | 18:16 | 38 | 10:15 (25) | |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:55 (29) | | 07:22 | | 08:41 (25) | |
| | 21:53 | | 20:47 | | 19:28 | 20 | 08:15 (29) | | 17:13 | 35 | 09:16 (25) | |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:55 (29) | | 07:24 | | 08:40 (25) | |
| | 21:51 | | 20:44 | | 19:25 | 19 | 08:14 (29) | | 17:11 | 36 | 09:16 (25) | |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:56 (29) | | 07:27 | | 08:41 (25) | |
| | 21:49 | | 20:42 | | 19:23 | 17 | 08:13 (29) | | 17:09 | 36 | 09:17 (25) | |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:57 (29) | | 07:29 | | 08:40 (25) | |
| | 21:47 | | 20:40 | | 19:20 | 15 | 08:12 (29) | | 17:07 | 37 | 09:17 (25) | |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:58 (29) | | 07:31 | | 08:40 (25) | |
| | 21:46 | | 20:37 | | 19:17 | 12 | 08:26 (1) | | 17:04 | 37 | 09:17 (25) | |
| 30 | 05:36 | | 06:34 | | 07:33 | | 08:00 (29) | | 07:33 | | 08:39 (25) | |
| | 21:44 | | 20:35 | | 19:15 | 10 | 08:27 (1) | | 17:02 | 37 | 09:16 (25) | |
| 31 | 05:38 | | 06:36 | | | | | | 07:35 | | 08:40 (25) | |
| | 21:42 | | 20:32 | | | | | | 17:00 | 37 | 09:17 (25) | |
| Potential sun hours | 521 | | 465 | | 383 | | | | 326 | | 253 | |
| Total, worst case | | | | | | 195 | | | | 963 | | 529 |
| Sun reduction | | | | | | 0,40 | | | | 0,31 | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | | | 1,00 | | 1,00 |
| Wind dir. red. | | | | | | 0,99 | | | | 0,85 | | 0,75 |
| Total reduction | | | | | | 0,38 | | | | 0,26 | | 0,12 |
| Total, real | | | | | | 75 | | | | 246 | | 62 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 09:33 (27) | 07:27 | 08:17 (1) | 07:08 | 09:08 (1) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 56 | 10:29 (25) | 18:08 | 33 08:50 (1) | 20:10 | 9 09:17 (1) | 21:09 | 22:03 |
| 2 | 09:01 | | 08:26 | | 09:34 (27) | 07:24 | 08:15 (1) | 07:06 | 09:11 (1) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 55 | 10:29 (25) | 18:10 | 38 08:53 (1) | 20:12 | 7 09:18 (1) | 21:11 | 22:04 |
| 3 | 09:01 | | 08:24 | | 09:35 (26) | 07:22 | 08:18 (1) | 07:03 | 09:15 (1) | 05:51 | 05:00 |
| | 16:16 | | 17:12 | 55 | 10:30 (25) | 18:12 | 36 08:54 (1) | 20:14 | 3 09:18 (1) | 21:13 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:36 (26) | 07:20 | 08:23 (1) | 07:00 | | 05:49 | 04:59 |
| | 16:18 | | 17:15 | 54 | 10:30 (25) | 18:14 | 33 08:56 (1) | 20:16 | | 21:15 | 22:06 |
| 5 | 09:00 | | 08:20 | | 09:37 (26) | 07:17 | 08:26 (1) | 06:58 | | 05:46 | 04:58 |
| | 16:19 | | 17:17 | 53 | 10:30 (25) | 18:16 | 30 08:56 (1) | 20:18 | | 21:17 | 22:08 |
| 6 | 08:59 | | 08:18 | | 09:38 (26) | 07:15 | 07:47 (2) | 06:55 | | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 52 | 10:30 (25) | 18:18 | 38 08:58 (1) | 20:20 | | 21:19 | 22:09 |
| 7 | 08:59 | | 08:16 | | 09:40 (26) | 07:12 | 07:42 (2) | 06:53 | | 05:42 | 04:56 |
| | 16:22 | | 17:21 | 51 | 10:31 (25) | 18:20 | 46 08:58 (1) | 20:22 | | 21:20 | 22:10 |
| 8 | 08:58 | | 08:14 | | 09:41 (26) | 07:10 | 07:39 (2) | 06:50 | | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 49 | 10:30 (25) | 18:22 | 41 08:58 (1) | 20:24 | | 21:22 | 22:11 |
| 9 | 08:58 | | 08:12 | | 09:44 (26) | 07:07 | 07:52 (2) | 06:48 | | 05:38 | 04:55 |
| | 16:25 | | 17:25 | 46 | 10:30 (25) | 18:24 | 34 08:59 (1) | 20:26 | | 21:24 | 22:12 |
| 10 | 08:57 | | 08:10 | | 09:46 (25) | 07:05 | 07:54 (2) | 06:45 | | 05:36 | 04:55 |
| | 16:26 | | 17:27 | 44 | 10:30 (25) | 18:26 | 30 08:59 (1) | 20:28 | | 21:26 | 22:13 |
| 11 | 08:56 | 09:32 (27) | 08:08 | | 09:47 (25) | 07:02 | 07:56 (2) | 06:43 | | 05:34 | 04:54 |
| | 16:28 | 6 09:38 (27) | 17:30 | 43 | 10:30 (25) | 18:28 | 27 09:00 (1) | 20:29 | | 21:28 | 22:14 |
| 12 | 08:55 | 09:30 (27) | 08:06 | | 09:46 (25) | 06:59 | 08:34 (1) | 06:40 | | 05:32 | 04:54 |
| | 16:30 | 10 09:40 (27) | 17:32 | 42 | 10:28 (25) | 18:30 | 26 09:00 (1) | 20:31 | | 21:30 | 22:14 |
| 13 | 08:54 | 09:29 (27) | 08:04 | | 09:47 (25) | 06:57 | 07:24 (29) | 06:38 | | 05:30 | 04:53 |
| | 16:31 | 18 09:47 (26) | 17:34 | 41 | 10:28 (25) | 18:32 | 31 09:00 (1) | 20:33 | | 21:32 | 22:15 |
| 14 | 08:53 | 09:29 (27) | 08:02 | | 08:34 (28) | 06:54 | 07:20 (29) | 06:35 | | 05:29 | 04:53 |
| | 16:33 | 21 09:50 (26) | 17:36 | 45 | 10:28 (25) | 18:34 | 38 09:00 (1) | 20:35 | | 21:34 | 22:16 |
| 15 | 08:52 | 09:28 (27) | 08:00 | | 08:30 (28) | 06:52 | 07:17 (29) | 06:33 | | 05:27 | 04:53 |
| | 16:35 | 24 09:52 (26) | 17:38 | 50 | 10:26 (25) | 18:36 | 42 08:59 (1) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:27 (27) | 07:57 | | 08:28 (28) | 06:49 | 07:16 (29) | 06:30 | | 05:25 | 04:52 |
| | 16:37 | 35 10:07 (25) | 17:40 | 51 | 10:25 (25) | 18:38 | 44 09:00 (1) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:27 (27) | 07:55 | | 08:27 (28) | 06:47 | 07:15 (29) | 06:28 | | 05:23 | 04:52 |
| | 16:38 | 41 10:10 (25) | 17:42 | 52 | 10:24 (25) | 18:40 | 45 08:59 (1) | 20:41 | | 21:39 | 22:18 |
| 18 | 08:49 | 09:28 (27) | 07:53 | | 08:25 (28) | 06:44 | 07:15 (29) | 06:25 | | 05:21 | 04:52 |
| | 16:40 | 45 10:13 (25) | 17:44 | 51 | 10:22 (25) | 18:42 | 45 08:59 (1) | 20:43 | | 21:41 | 22:18 |
| 19 | 08:48 | 09:27 (27) | 07:51 | | 08:25 (28) | 06:42 | 07:13 (29) | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 48 10:15 (25) | 17:47 | 49 | 10:20 (25) | 18:44 | 47 08:58 (1) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:47 | 09:27 (27) | 07:48 | | 08:24 (28) | 06:39 | 07:13 (29) | 06:21 | | 05:18 | 04:52 |
| | 16:44 | 50 10:17 (25) | 17:49 | 45 | 10:18 (25) | 18:46 | 46 08:57 (1) | 20:47 | | 21:44 | 22:19 |
| 21 | 08:45 | 09:27 (27) | 07:46 | | 08:23 (28) | 06:36 | 07:13 (29) | 06:18 | | 05:17 | 04:52 |
| | 16:46 | 51 10:18 (25) | 17:51 | 38 | 10:13 (25) | 18:48 | 46 08:57 (1) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 09:27 (27) | 07:44 | | 08:23 (28) | 06:34 | 07:13 (29) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 52 10:19 (25) | 17:53 | 26 | 08:49 (28) | 18:50 | 45 08:56 (1) | 20:51 | | 21:48 | 22:19 |
| 23 | 08:42 | 09:27 (27) | 07:41 | | 08:23 (28) | 06:31 | 07:14 (29) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 54 10:21 (25) | 17:55 | 25 | 08:48 (28) | 18:52 | 43 08:55 (1) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:27 (27) | 07:39 | | 08:23 (28) | 06:29 | 07:14 (29) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 55 10:22 (25) | 17:57 | 25 | 08:48 (28) | 18:54 | 42 08:54 (1) | 20:55 | | 21:51 | 22:20 |
| 25 | 08:40 | 09:27 (27) | 07:37 | | 08:23 (28) | 06:26 | 07:14 (29) | 06:09 | | 05:11 | 04:53 |
| | 16:54 | 56 10:23 (25) | 17:59 | 24 | 08:47 (28) | 18:56 | 42 08:52 (1) | 20:57 | | 21:52 | 22:20 |
| 26 | 08:38 | 09:28 (27) | 07:34 | | 08:24 (28) | 06:24 | 07:17 (29) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 57 10:25 (25) | 18:01 | 23 | 08:47 (28) | 18:58 | 39 08:51 (1) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 09:29 (27) | 07:32 | | 08:23 (1) | 06:21 | 07:20 (29) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 57 10:26 (25) | 18:03 | 22 | 08:45 (28) | 19:00 | 29 08:49 (1) | 21:01 | | 21:56 | 22:19 |
| 28 | 08:35 | 09:29 (27) | 07:29 | | 08:20 (1) | 06:18 | 08:26 (1) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 57 10:26 (25) | 18:05 | 28 | 08:48 (1) | 19:02 | 22 08:48 (1) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 09:30 (27) | | | | 07:16 | 09:24 (1) | 06:00 | | 05:05 | 04:55 |
| | 17:02 | 57 10:27 (25) | | | | 20:04 | 22 09:46 (1) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | 09:30 (27) | | | | 07:13 | 09:22 (1) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 58 10:28 (25) | | | | 20:06 | 22 09:44 (1) | 21:07 | | 22:00 | 22:19 |
| 31 | 08:30 | 09:31 (27) | | | | 07:11 | 09:19 (1) | | | 05:03 | |
| | 17:06 | 57 10:28 (25) | | | | 20:08 | 22 09:41 (1) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 909 | | 1195 | | | 1124 | | 19 | | |
| Sun reduction | | 0,18 | | 0,25 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,67 | | 0,71 | | | 0,94 | | 0,92 | | |
| Total reduction | | 0,12 | | 0,17 | | | 0,31 | | 0,35 | | |
| Total, real | | 105 | | 200 | | | 345 | | 7 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:12 (2) | | 07:37 | | 09:15 (25) | | 08:35 | | 09:14 (27) |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 5 | 08:44 (1) | | 16:58 | 44 | 09:59 (25) | | 16:10 | 7 | 09:21 (27) |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | 08:12 (2) | | 07:39 | | 09:13 (26) | | 08:37 | | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 5 | 08:44 (1) | | 16:56 | 46 | 09:59 (25) | | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | 08:13 (2) | | 07:41 | | 09:10 (26) | | 08:39 | | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | 6 | 08:45 (1) | | 16:54 | 49 | 09:59 (25) | | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | 08:14 (2) | | 07:43 | | 09:09 (26) | | 08:40 | | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | 6 | 08:45 (1) | | 16:52 | 51 | 10:00 (25) | | 16:08 | | |
| 5 | 05:00 | | 05:47 | | 06:46 | | 07:43 | | 08:15 (2) | | 07:45 | | 09:08 (26) | | 08:42 | | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 8 | 08:46 (1) | | 16:50 | 52 | 10:00 (25) | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 08:17 (2) | | 07:47 | | 09:06 (26) | | 08:43 | | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | 8 | 08:47 (1) | | 16:48 | 54 | 10:00 (25) | | 16:06 | | |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | 08:20 (2) | | 07:49 | | 09:05 (26) | | 08:44 | | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 7 | 08:48 (1) | | 16:46 | 55 | 10:00 (25) | | 16:06 | | |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | 08:44 (1) | | 07:51 | | 09:06 (26) | | 08:46 | | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 5 | 08:49 (1) | | 16:44 | 54 | 10:00 (25) | | 16:05 | | |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | 08:45 (1) | | 07:53 | | 09:05 (27) | | 08:47 | | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 5 | 08:50 (1) | | 16:42 | 55 | 10:00 (25) | | 16:05 | | |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | 08:46 (1) | | 07:55 | | 09:03 (27) | | 08:48 | | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 6 | 08:52 (1) | | 16:40 | 56 | 09:59 (25) | | 16:04 | | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | 08:48 (1) | | 07:57 | | 09:02 (27) | | 08:50 | | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 12 | 09:11 (28) | | 16:38 | 57 | 09:59 (25) | | 16:04 | | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | 08:49 (1) | | 07:59 | | 09:02 (27) | | 08:51 | | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 20 | 09:14 (28) | | 16:36 | 57 | 09:59 (25) | | 16:04 | | |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 08:51 (1) | | 08:02 | | 09:02 (27) | | 08:52 | | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 25 | 09:16 (28) | | 16:34 | 57 | 09:59 (25) | | 16:04 | | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 08:54 (1) | | 08:04 | | 09:01 (27) | | 08:53 | | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 24 | 09:18 (28) | | 16:33 | 57 | 09:58 (25) | | 16:04 | | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 08:57 (28) | | 08:06 | | 09:01 (27) | | 08:54 | | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 22 | 09:19 (28) | | 16:31 | 56 | 09:57 (25) | | 16:04 | | |
| 16 | 05:14 | | 06:08 | | 07:06 | | 08:04 | | 08:56 (28) | | 08:08 | | 09:01 (27) | | 08:55 | | |
| | 22:06 | | 21:08 | | 19:51 | | 18:35 | 23 | 09:19 (28) | | 16:29 | 57 | 09:58 (25) | | 16:04 | | |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 (29) | | 08:06 | | 08:55 (28) | | 08:10 | | 09:01 (27) | | 08:56 |
| | 22:04 | | 21:06 | | 19:49 | 10 | 08:16 (29) | | 18:32 | 24 | 09:19 (28) | | 16:28 | 56 | 09:57 (25) | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:03 (29) | | 08:08 | | 08:54 (28) | | 08:12 | | 09:01 (27) | | 08:57 |
| | 22:03 | | 21:04 | | 19:46 | 15 | 08:18 (29) | | 18:30 | 25 | 09:19 (28) | | 16:26 | 55 | 09:56 (25) | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:01 (29) | | 08:10 | | 08:54 (28) | | 08:13 | | 09:01 (27) | | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | 18 | 08:19 (29) | | 18:27 | 25 | 09:19 (28) | | 16:25 | 54 | 09:55 (25) | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:14 | | 07:59 (29) | | 08:12 | | 08:54 (28) | | 08:15 | | 09:02 (27) | | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | 20 | 08:19 (29) | | 18:25 | 25 | 09:19 (28) | | 16:23 | 52 | 09:54 (25) | | 16:05 |
| 21 | 05:21 | | 06:17 | | 07:16 | | 07:59 (29) | | 08:14 | | 08:54 (28) | | 08:17 | | 09:03 (27) | | 08:59 |
| | 21:59 | | 20:57 | | 19:38 | 21 | 08:20 (29) | | 18:23 | 40 | 10:45 (25) | | 16:22 | 51 | 09:54 (25) | | 16:05 |
| 22 | 05:23 | | 06:19 | | 07:18 | | 07:58 (29) | | 08:16 | | 08:55 (28) | | 08:19 | | 09:03 (27) | | 08:59 |
| | 21:57 | | 20:54 | | 19:36 | 22 | 08:20 (29) | | 18:20 | 46 | 10:49 (25) | | 16:20 | 50 | 09:53 (25) | | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 07:57 (29) | | 08:18 | | 08:55 (28) | | 08:21 | | 09:04 (27) | | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | 23 | 08:20 (29) | | 18:18 | 50 | 10:51 (25) | | 16:19 | 48 | 09:52 (25) | | 16:06 |
| 24 | 05:26 | | 06:23 | | 07:21 | | 07:57 (29) | | 08:20 | | 08:56 (28) | | 08:23 | | 09:05 (27) | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | 23 | 08:20 (29) | | 18:16 | 52 | 10:53 (25) | | 16:18 | 45 | 09:50 (25) | | 16:07 |
| 25 | 05:28 | | 06:25 | | 07:23 | | 07:57 (29) | | 07:22 | | 07:56 (28) | | 08:25 | | 09:05 (27) | | 09:00 |
| | 21:53 | | 20:47 | | 19:28 | 22 | 08:19 (29) | | 17:13 | 53 | 09:54 (25) | | 16:16 | 42 | 09:49 (25) | | 16:07 |
| 26 | 05:29 | | 06:27 | | 07:25 | | 07:57 (29) | | 07:24 | | 07:58 (28) | | 08:27 | | 09:06 (27) | | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | 21 | 08:18 (29) | | 17:11 | 51 | 09:55 (25) | | 16:15 | 35 | 09:46 (25) | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:58 (29) | | 07:27 | | 08:01 (28) | | 08:28 | | 09:07 (27) | | 09:01 |
| | 21:49 | | 20:42 | | 19:23 | 19 | 08:17 (29) | | 17:09 | 49 | 09:57 (25) | | 16:14 | 24 | 09:31 (26) | | 16:09 |
| 28 | 05:33 | | 06:30 | | 07:29 | | 07:58 (29) | | 07:29 | | 09:18 (25) | | 08:30 | | 09:09 (27) | | 09:01 |
| | 21:47 | | 20:40 | | 19:20 | 17 | 08:15 (29) | | 17:07 | 39 | 09:57 (25) | | 16:13 | 21 | 09:30 (26) | | 16:10 |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:59 (29) | | 07:31 | | 09:17 (25) | | 08:32 | | 09:10 (27) | | 09:01 |
| | 21:46 | | 20:37 | | 19:17 | 14 | 08:13 (29) | | 17:04 | 41 | 09:58 (25) | | 16:12 | 18 | 09:28 (26) | | 16:11 |
| 30 | 05:36 | | 06:34 | | 07:33 | | 08:01 (29) | | 07:33 | | 09:16 (25) | | 08:34 | | 09:12 (27) | | 09:01 |
| | 21:44 | | 20:35 | | 19:15 | 9 | 08:10 (29) | | 17:02 | 42 | 09:58 (25) | | 16:11 | 10 | 09:22 (27) | | 16:11 |
| 31 | 05:38 | | 06:36 | | | | | | 07:35 | | 09:16 (25) | | | | | | 09:01 |
| | 21:42 | | 20:32 | | | | | | 17:00 | 43 | 09:59 (25) | | | | | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | | | 326 | | | | 253 | | | | 224 | |
| Total, worst case | | | | | | 254 | | | | 792 | | | | 1418 | | | | 7 |
| Sun reduction | | | | | | 0,40 | | | | 0,31 | | | | 0,16 | | | | 0,14 |
| Oper. time red. | | | | | | 1,00 | | | | 1,00 | | | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,99 | | | | 0,78 | | | | 0,66 | | | | 0,69 |
| Total reduction | | | | | | 0,38 | | | | 0,23 | | | | 0,10 | | | | 0,09 |
| Total, real | | | | | | 95 | | | | 181 | | | | 142 | | | | 1 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:41 (27) | 08:28 | | 09:54 (26) | 07:27 | 08:31 (1) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 24 | 10:32 (25) | 17:08 | 69 | 11:03 (25) | 18:07 | 48 | 09:19 (1) | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 | | 09:40 (27) | 08:26 | | 09:55 (26) | 07:24 | 08:30 (1) | 07:05 | 05:53 | 05:01 |
| | 16:15 | 33 | 10:34 (25) | 17:10 | 68 | 11:03 (25) | 18:10 | 48 | 09:18 (1) | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 | | 09:40 (27) | 08:24 | | 09:56 (26) | 07:22 | 08:28 (1) | 07:03 | 05:51 | 05:00 |
| | 16:16 | 38 | 10:36 (25) | 17:12 | 67 | 11:03 (25) | 18:12 | 49 | 09:17 (1) | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 | | 09:39 (27) | 08:22 | | 09:58 (26) | 07:20 | 08:28 (1) | 07:00 | 05:49 | 04:59 |
| | 16:18 | 42 | 10:37 (25) | 17:15 | 66 | 11:04 (25) | 18:14 | 49 | 09:17 (1) | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 | | 09:39 (27) | 08:20 | | 10:00 (26) | 07:17 | 07:51 (2) | 06:58 | 05:46 | 04:58 |
| | 16:19 | 48 | 10:40 (25) | 17:17 | 63 | 11:03 (25) | 18:16 | 62 | 09:15 (1) | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 | | 09:39 (27) | 08:18 | | 10:04 (26) | 07:15 | 07:49 (2) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 51 | 10:41 (25) | 17:19 | 56 | 11:03 (25) | 18:18 | 61 | 09:15 (1) | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 | | 09:38 (27) | 08:16 | | 10:16 (25) | 07:12 | 07:46 (2) | 06:53 | 05:42 | 04:56 |
| | 16:22 | 54 | 10:42 (25) | 17:21 | 47 | 11:03 (25) | 18:20 | 60 | 09:14 (1) | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 | | 09:38 (27) | 08:14 | | 10:15 (25) | 07:10 | 07:47 (2) | 06:50 | 05:40 | 04:56 |
| | 16:23 | 58 | 10:44 (25) | 17:23 | 47 | 11:02 (25) | 18:22 | 55 | 09:13 (1) | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 | | 09:39 (27) | 08:12 | | 10:16 (25) | 07:07 | 07:52 (2) | 06:48 | 05:38 | 04:55 |
| | 16:25 | 61 | 10:46 (25) | 17:25 | 46 | 11:02 (25) | 18:24 | 48 | 09:13 (1) | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 | | 09:39 (27) | 08:10 | | 10:17 (25) | 07:04 | 07:54 (2) | 06:45 | 05:36 | 04:55 |
| | 16:26 | 63 | 10:47 (25) | 17:27 | 44 | 11:01 (25) | 18:26 | 43 | 09:12 (1) | 20:28 | 21:26 | 22:13 |
| 11 | 08:56 | | 09:39 (27) | 08:08 | | 08:43 (28) | 07:02 | 07:56 (2) | 06:43 | 05:34 | 04:54 |
| | 16:28 | 66 | 10:48 (25) | 17:30 | 50 | 11:01 (25) | 18:28 | 39 | 09:12 (1) | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 | | 09:38 (27) | 08:06 | | 08:39 (28) | 06:59 | 08:34 (1) | 06:40 | 05:32 | 04:54 |
| | 16:30 | 69 | 10:49 (25) | 17:32 | 54 | 10:59 (25) | 18:30 | 37 | 09:11 (1) | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | | 09:38 (27) | 08:04 | | 08:37 (28) | 06:57 | 07:25 (29) | 06:38 | 05:30 | 04:53 |
| | 16:31 | 72 | 10:50 (25) | 17:34 | 56 | 10:58 (25) | 18:32 | 46 | 09:11 (1) | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 | | 09:38 (27) | 08:02 | | 08:36 (28) | 06:54 | 07:22 (29) | 06:35 | 05:29 | 04:53 |
| | 16:33 | 73 | 10:51 (25) | 17:36 | 57 | 10:57 (25) | 18:34 | 50 | 09:10 (1) | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 | | 09:39 (27) | 08:00 | | 08:34 (28) | 06:52 | 07:20 (29) | 06:33 | 05:27 | 04:53 |
| | 16:35 | 74 | 10:53 (25) | 17:38 | 55 | 10:54 (25) | 18:36 | 53 | 09:09 (1) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:38 (27) | 07:57 | | 08:34 (28) | 06:49 | 07:19 (29) | 06:30 | 05:25 | 04:52 |
| | 16:37 | 75 | 10:53 (25) | 17:40 | 53 | 10:53 (25) | 18:38 | 55 | 09:09 (1) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:39 (27) | 07:55 | | 08:33 (28) | 06:47 | 07:17 (29) | 06:28 | 05:23 | 04:52 |
| | 16:38 | 75 | 10:54 (25) | 17:42 | 49 | 10:50 (25) | 18:40 | 58 | 09:09 (1) | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 | | 09:39 (27) | 07:53 | | 08:32 (28) | 06:44 | 07:17 (29) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 77 | 10:56 (25) | 17:44 | 43 | 10:46 (25) | 18:42 | 58 | 09:09 (1) | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 | | 09:39 (27) | 07:51 | | 08:32 (28) | 06:42 | 07:16 (29) | 06:23 | 05:20 | 04:52 |
| | 16:42 | 77 | 10:56 (25) | 17:47 | 28 | 09:00 (28) | 18:44 | 58 | 09:08 (1) | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 | | 09:40 (27) | 07:48 | | 08:33 (28) | 06:39 | 07:15 (29) | 06:21 | 05:18 | 04:52 |
| | 16:44 | 78 | 10:58 (25) | 17:49 | 27 | 09:00 (28) | 18:46 | 60 | 09:08 (1) | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 | | 09:40 (27) | 07:46 | | 08:32 (28) | 06:36 | 07:15 (29) | 06:18 | 05:17 | 04:52 |
| | 16:46 | 78 | 10:58 (25) | 17:51 | 27 | 08:59 (28) | 18:48 | 60 | 09:08 (1) | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | | 09:40 (27) | 07:44 | | 08:32 (28) | 06:34 | 07:15 (29) | 06:16 | 05:15 | 04:53 |
| | 16:48 | 78 | 10:58 (25) | 17:53 | 37 | 09:09 (1) | 18:50 | 60 | 09:08 (1) | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 | | 09:41 (27) | 07:41 | | 08:32 (28) | 06:31 | 07:16 (29) | 06:13 | 05:13 | 04:53 |
| | 16:50 | 79 | 11:00 (25) | 17:55 | 41 | 09:13 (1) | 18:52 | 58 | 09:08 (1) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (27) | 07:39 | | 08:33 (28) | 06:29 | 07:16 (29) | 06:11 | 05:12 | 04:53 |
| | 16:52 | 79 | 11:00 (25) | 17:57 | 43 | 09:16 (1) | 18:54 | 59 | 09:08 (1) | 20:55 | 21:51 | 22:19 |
| 25 | 08:40 | | 09:42 (27) | 07:37 | | 08:33 (28) | 06:26 | 07:16 (29) | 06:09 | 05:11 | 04:53 |
| | 16:54 | 78 | 11:00 (25) | 17:59 | 45 | 09:18 (1) | 18:56 | 61 | 09:08 (1) | 20:57 | 21:52 | 22:20 |
| 26 | 08:38 | | 09:43 (27) | 07:34 | | 08:34 (28) | 06:23 | 07:18 (29) | 06:06 | 05:09 | 04:54 |
| | 16:56 | 79 | 11:02 (25) | 18:01 | 47 | 09:21 (1) | 18:58 | 61 | 09:08 (1) | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | | 09:44 (27) | 07:32 | | 08:35 (28) | 06:21 | 07:20 (29) | 06:04 | 05:08 | 04:54 |
| | 16:58 | 78 | 11:02 (25) | 18:03 | 47 | 09:22 (1) | 19:00 | 61 | 09:08 (1) | 21:01 | 21:56 | 22:19 |
| 28 | 08:35 | | 09:45 (27) | 07:29 | | 08:33 (1) | 06:18 | 07:44 (2) | 06:02 | 05:06 | 04:55 |
| | 17:00 | 77 | 11:02 (25) | 18:05 | 51 | 09:24 (1) | 19:02 | 56 | 09:09 (1) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 09:46 (27) | | | | 07:16 | 08:48 (2) | 06:00 | 05:05 | 04:55 |
| | 17:02 | 77 | 11:03 (25) | | | | 20:04 | 52 | 10:09 (1) | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 09:48 (27) | | | | 07:13 | 09:22 (1) | 05:57 | 05:04 | 04:56 |
| | 17:04 | 75 | 11:03 (25) | | | | 20:06 | 48 | 10:10 (1) | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 | | 09:51 (27) | | | | 07:11 | 09:22 (1) | | 05:03 | |
| | 17:06 | 72 | 11:03 (25) | | | | 20:08 | 47 | 10:09 (1) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | 423 | 501 | 520 |
| Total, worst case | | 2058 | | | 1383 | | | 1660 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,59 | | | 0,67 | | | 0,90 | | | |
| Total reduction | | 0,10 | | | 0,15 | | | 0,29 | | | |
| Total, real | | 204 | | | 214 | | | 480 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | 07:35 | | 08:07 (29) | | 09:46 (25) | |
| | 22:18 | | 21:40 | | 20:30 | | 19:12 | 4 | 08:11 (29) | | 10:31 (25) | |
| 2 | 04:58 | | 05:42 | | 06:40 | | 07:37 | | | | 09:46 (25) | |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | | | | 10:31 (25) | |
| 3 | 04:58 | | 05:43 | | 06:42 | | 07:39 | | | | 09:45 (25) | |
| | 22:17 | | 21:36 | | 20:25 | | 19:07 | | | | 10:32 (25) | |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:41 | | | | 09:45 (25) | |
| | 22:17 | | 21:34 | | 20:22 | | 19:05 | | | | 10:33 (25) | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 | | | | 09:33 (26) | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | | | | 10:33 (25) | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | | | 09:30 (26) | |
| | 22:16 | | 21:30 | | 20:17 | | 18:59 | | | | 10:33 (25) | |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:46 | | | | 09:27 (26) | |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | | | | 10:33 (25) | |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:48 | | | | 09:27 (26) | |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | | | | 10:34 (25) | |
| 9 | 05:05 | | 05:54 | | 06:53 | | 07:50 | | | | 09:25 (26) | |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | | | | 10:34 (25) | |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:52 | | | | 09:24 (26) | |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | | | | 10:34 (25) | |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:54 | | | | 09:21 (27) | |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | | 10:34 (25) | |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:56 | | | | 09:20 (27) | |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | | | 10:35 (25) | |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:58 | | 09:11 (28) | | 09:18 (27) | |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 12 | 09:23 (28) | | 10:35 (25) | |
| 14 | 05:11 | | 06:04 | | 07:02 | | 08:00 | | 09:10 (28) | | 09:17 (27) | |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16 | 09:26 (28) | | 10:34 (25) | |
| 15 | 05:12 | | 06:06 | | 07:04 | | 08:02 | | 09:08 (28) | | 09:16 (27) | |
| | 22:07 | | 21:11 | | 19:54 | | 18:37 | 20 | 09:28 (28) | | 10:34 (25) | |
| 16 | 05:14 | | 06:08 | | 07:06 | 08:10 (29) | 08:04 | | 09:06 (28) | | 09:16 (27) | |
| | 22:06 | | 21:08 | | 19:51 | 9 08:19 (29) | 18:35 | 23 | 09:29 (28) | | 10:35 (25) | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:07 (29) | 08:06 | | 09:05 (28) | | 09:16 (27) | |
| | 22:04 | | 21:06 | | 19:48 | 15 08:22 (29) | 18:32 | 24 | 09:29 (28) | | 10:34 (25) | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:05 (29) | 08:08 | | 09:04 (28) | | 09:15 (27) | |
| | 22:03 | | 21:04 | | 19:46 | 18 08:23 (29) | 18:30 | 26 | 09:30 (28) | | 10:34 (25) | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:03 (29) | 08:10 | | 09:03 (28) | | 09:15 (27) | |
| | 22:02 | | 21:01 | | 19:43 | 20 08:23 (29) | 18:27 | 27 | 09:30 (28) | | 10:34 (25) | |
| 20 | 05:19 | | 06:15 | | 07:14 | 08:02 (29) | 08:12 | | 09:03 (28) | | 09:15 (27) | |
| | 22:00 | | 20:59 | | 19:41 | 22 08:24 (29) | 18:25 | 27 | 09:30 (28) | | 10:33 (25) | |
| 21 | 05:21 | | 06:17 | | 07:16 | 08:01 (29) | 08:14 | | 09:02 (28) | | 09:16 (27) | |
| | 21:59 | | 20:57 | | 19:38 | 23 08:24 (29) | 18:23 | 28 | 09:30 (28) | | 10:34 (25) | |
| 22 | 05:23 | | 06:19 | | 07:18 | 08:00 (29) | 08:16 | | 09:03 (28) | | 09:16 (27) | |
| | 21:57 | | 20:54 | | 19:36 | 24 08:24 (29) | 18:20 | 27 | 09:30 (28) | | 10:34 (25) | |
| 23 | 05:24 | | 06:21 | | 07:19 | 08:00 (29) | 08:18 | | 09:03 (28) | | 09:16 (27) | |
| | 21:56 | | 20:52 | | 19:33 | 24 08:24 (29) | 18:18 | 34 | 11:12 (25) | | 10:33 (25) | |
| 24 | 05:26 | | 06:23 | | 07:21 | 07:59 (29) | 08:20 | | 09:03 (28) | | 09:16 (27) | |
| | 21:54 | | 20:49 | | 19:30 | 25 08:24 (29) | 18:16 | 45 | 11:18 (25) | | 10:33 (25) | |
| 25 | 05:28 | | 06:25 | | 07:23 | 07:59 (29) | 07:22 | | 08:03 (28) | | 09:17 (27) | |
| | 21:53 | | 20:47 | | 19:28 | 24 08:23 (29) | 17:13 | 50 | 10:21 (25) | | 10:33 (25) | |
| 26 | 05:29 | | 06:27 | | 07:25 | 08:00 (29) | 07:24 | | 08:03 (28) | | 09:17 (27) | |
| | 21:51 | | 20:44 | | 19:25 | 23 08:23 (29) | 17:11 | 54 | 10:23 (25) | | 10:32 (25) | |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:00 (29) | 07:27 | | 08:05 (28) | | 09:18 (27) | |
| | 21:49 | | 20:42 | | 19:23 | 22 08:22 (29) | 17:09 | 55 | 10:25 (25) | | 10:32 (25) | |
| 28 | 05:33 | | 06:30 | | 07:29 | 08:00 (29) | 07:29 | | 08:06 (28) | | 09:18 (27) | |
| | 21:47 | | 20:40 | | 19:20 | 19 08:19 (29) | 17:07 | 57 | 10:27 (25) | | 10:31 (25) | |
| 29 | 05:34 | | 06:32 | | 07:31 | 08:01 (29) | 07:31 | | 08:07 (28) | | 09:19 (27) | |
| | 21:46 | | 20:37 | | 19:17 | 17 08:18 (29) | 17:04 | 56 | 10:28 (25) | | 10:31 (25) | |
| 30 | 05:36 | | 06:34 | | 07:33 | 08:03 (29) | 07:33 | | 08:09 (28) | | 09:20 (27) | |
| | 21:44 | | 20:35 | | 19:15 | 12 08:15 (29) | 17:02 | 53 | 10:29 (25) | | 10:31 (25) | |
| 31 | 05:38 | | 06:36 | | | | 07:35 | | 08:14 (28) | | | |
| | 21:42 | | 20:32 | | | | 17:00 | 47 | 10:30 (25) | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | | 253 | |
| Total, worst case | | | | | | 297 | | 685 | | | | 2098 |
| Sun reduction | | | | | | 0,40 | | 0,31 | | | | 0,16 |
| Oper. time red. | | | | | | 1,00 | | 1,00 | | | | 1,00 |
| Wind dir. red. | | | | | | 0,99 | | 0,73 | | | | 0,57 |
| Total reduction | | | | | | 0,37 | | 0,21 | | | | 0,08 |
| Total, real | | | | | | 109 | | 144 | | | | 178 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10:31 (25) | | 09:21 (27) | | | | | | | | | |
| | 10:31 (25) | | 09:21 (27) | | | | | | | | | |
| | 10:29 (25) | | 09:22 (27) | | | | | | | | | |
| | 10:29 (25) | | 09:23 (27) | | | | | | | | | |
| | 10:29 (25) | | 09:24 (27) | | | | | | | | | |
| | 10:27 (25) | | 09:25 (27) | | | | | | | | | |
| | 10:27 (25) | | 09:25 (27) | | | | | | | | | |
| | 10:26 (25) | | 09:27 (27) | | | | | | | | | |
| | 10:26 (25) | | 09:28 (27) | | | | | | | | | |
| | 10:24 (25) | | 09:30 (27) | | | | | | | | | |
| | 10:24 (25) | | 09:31 (27) | | | | | | | | | |
| | 10:22 (25) | | 09:32 (27) | | | | | | | | | |
| | 09:51 (26) | | 09:47 (26) | | | | | | | | | |
| | 09:48 (26) | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:56 (27) | 08:28 | | 11:07 (25) | 07:27 | | 08:07 (2) | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 95 | 11:45 (25) | 17:08 | 49 | 11:56 (25) | 18:07 | 10 | 09:19 (1) | 20:10 | | | 21:09 | 22:03 |
| 2 | 09:01 | | 09:55 (27) | 08:26 | | 11:07 (25) | 07:24 | | 08:05 (2) | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | 97 | 11:45 (25) | 17:10 | 49 | 11:56 (25) | 18:10 | 8 | 09:18 (1) | 20:12 | | | 21:11 | 22:04 |
| 3 | 09:01 | | 09:56 (27) | 08:24 | | 11:08 (25) | 07:22 | | 08:03 (2) | 07:03 | | | 05:51 | 05:00 |
| | 16:16 | 98 | 11:46 (25) | 17:12 | 48 | 11:56 (25) | 18:12 | 7 | 09:17 (1) | 20:14 | | | 21:13 | 22:05 |
| 4 | 09:00 | | 09:56 (27) | 08:22 | | 09:02 (28) | 07:19 | | 08:02 (2) | 07:00 | | | 05:49 | 04:59 |
| | 16:18 | 98 | 11:46 (25) | 17:15 | 53 | 11:55 (25) | 18:14 | 7 | 09:17 (1) | 20:16 | | | 21:15 | 22:06 |
| 5 | 09:00 | | 09:57 (27) | 08:20 | | 08:59 (28) | 07:17 | | 08:00 (2) | 06:58 | | | 05:46 | 04:58 |
| | 16:19 | 99 | 11:48 (25) | 17:17 | 58 | 11:54 (25) | 18:16 | 6 | 09:15 (1) | 20:18 | | | 21:17 | 22:08 |
| 6 | 08:59 | | 09:57 (27) | 08:18 | | 08:57 (28) | 07:15 | | 07:59 (2) | 06:55 | | 07:20 (42) | 05:44 | 04:57 |
| | 16:20 | 99 | 11:48 (25) | 17:19 | 59 | 11:53 (25) | 18:18 | 6 | 09:15 (1) | 20:20 | 6 | 07:26 (42) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:57 (27) | 08:16 | | 08:55 (28) | 07:12 | | 07:58 (2) | 06:53 | | 07:17 (42) | 05:42 | 04:56 |
| | 16:22 | 100 | 11:48 (25) | 17:21 | 75 | 11:52 (25) | 18:20 | 5 | 09:14 (1) | 20:22 | 10 | 07:27 (42) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:57 (27) | 08:14 | | 08:53 (28) | 07:10 | | 07:57 (2) | 06:50 | | 07:15 (42) | 05:40 | 04:56 |
| | 16:23 | 102 | 11:49 (25) | 17:23 | 86 | 11:50 (25) | 18:22 | 3 | 09:13 (1) | 20:24 | 14 | 07:29 (42) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:59 (27) | 08:12 | | 08:53 (28) | 07:07 | | 07:57 (2) | 06:48 | | 07:12 (42) | 05:38 | 04:55 |
| | 16:25 | 102 | 11:51 (25) | 17:25 | 91 | 11:49 (25) | 18:24 | 3 | 09:13 (1) | 20:26 | 17 | 07:29 (42) | 21:24 | 22:12 |
| 10 | 08:57 | | 09:59 (27) | 08:10 | | 08:52 (28) | 07:04 | | 07:36 (29) | 06:45 | | 07:10 (42) | 05:36 | 04:55 |
| | 16:26 | 102 | 11:51 (25) | 17:27 | 95 | 11:47 (25) | 18:26 | 11 | 09:12 (1) | 20:27 | 20 | 07:30 (42) | 21:26 | 22:13 |
| 11 | 08:56 | | 10:00 (27) | 08:08 | | 08:52 (28) | 07:02 | | 07:33 (29) | 06:43 | | 07:09 (42) | 05:34 | 04:54 |
| | 16:28 | 102 | 11:52 (25) | 17:30 | 95 | 11:44 (25) | 18:28 | 16 | 07:57 (2) | 20:29 | 20 | 07:29 (42) | 21:28 | 22:14 |
| 12 | 08:55 | | 09:59 (27) | 08:06 | | 08:51 (28) | 06:59 | | 07:30 (29) | 06:40 | | 07:09 (42) | 05:32 | 04:54 |
| | 16:30 | 104 | 11:52 (25) | 17:32 | 93 | 11:39 (25) | 18:30 | 19 | 07:49 (29) | 20:31 | 21 | 07:30 (42) | 21:30 | 22:14 |
| 13 | 08:54 | | 10:00 (27) | 08:04 | | 08:51 (28) | 06:57 | | 07:29 (29) | 06:38 | | 07:09 (42) | 05:30 | 04:53 |
| | 16:31 | 103 | 11:52 (25) | 17:34 | 83 | 10:27 (1) | 18:32 | 22 | 07:51 (29) | 20:33 | 21 | 07:30 (42) | 21:32 | 22:15 |
| 14 | 08:53 | | 10:00 (27) | 08:02 | | 08:51 (28) | 06:54 | | 07:27 (29) | 06:35 | | 07:08 (42) | 05:29 | 04:53 |
| | 16:33 | 104 | 11:53 (25) | 17:36 | 87 | 10:29 (1) | 18:34 | 24 | 07:51 (29) | 20:35 | 21 | 07:29 (42) | 21:34 | 22:16 |
| 15 | 08:52 | | 10:01 (27) | 08:00 | | 08:50 (28) | 06:52 | | 07:26 (29) | 06:33 | | 07:09 (42) | 05:27 | 04:53 |
| | 16:35 | 104 | 11:54 (25) | 17:38 | 91 | 10:30 (1) | 18:36 | 25 | 07:51 (29) | 20:37 | 19 | 07:28 (42) | 21:35 | 22:16 |
| 16 | 08:51 | | 10:01 (27) | 07:57 | | 08:50 (28) | 06:49 | | 07:25 (29) | 06:30 | | 07:09 (42) | 05:25 | 04:52 |
| | 16:37 | 104 | 11:54 (25) | 17:40 | 94 | 10:32 (1) | 18:38 | 27 | 07:52 (29) | 20:39 | 18 | 07:27 (42) | 21:37 | 22:17 |
| 17 | 08:50 | | 10:02 (27) | 07:55 | | 08:51 (28) | 06:47 | | 07:24 (29) | 06:28 | | 07:10 (42) | 05:23 | 04:52 |
| | 16:38 | 105 | 11:55 (25) | 17:42 | 96 | 10:34 (1) | 18:40 | 28 | 07:52 (29) | 20:41 | 16 | 07:26 (42) | 21:39 | 22:18 |
| 18 | 08:49 | | 10:04 (27) | 07:53 | | 08:51 (28) | 06:44 | | 07:25 (29) | 06:25 | | 07:11 (42) | 05:21 | 04:52 |
| | 16:40 | 103 | 11:56 (25) | 17:44 | 98 | 10:35 (1) | 18:42 | 27 | 07:52 (29) | 20:43 | 14 | 07:25 (42) | 21:41 | 22:18 |
| 19 | 08:48 | | 10:04 (27) | 07:51 | | 08:52 (28) | 06:42 | | 07:24 (29) | 06:23 | | 07:13 (42) | 05:20 | 04:52 |
| | 16:42 | 103 | 11:55 (25) | 17:47 | 99 | 10:36 (1) | 18:44 | 27 | 07:51 (29) | 20:45 | 8 | 07:21 (42) | 21:42 | 22:18 |
| 20 | 08:47 | | 10:05 (27) | 07:48 | | 08:53 (28) | 06:39 | | 07:23 (29) | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 102 | 11:56 (25) | 17:49 | 100 | 10:38 (1) | 18:46 | 27 | 07:50 (29) | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 10:06 (27) | 07:46 | | 08:53 (28) | 06:36 | | 07:24 (29) | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 101 | 11:56 (25) | 17:51 | 101 | 10:38 (1) | 18:48 | 26 | 07:50 (29) | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 10:07 (27) | 07:44 | | 08:54 (28) | 06:34 | | 07:24 (29) | 06:16 | | | 05:15 | 04:53 |
| | 16:48 | 99 | 11:56 (25) | 17:53 | 100 | 10:39 (1) | 18:50 | 25 | 07:49 (29) | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 10:09 (27) | 07:41 | | 08:55 (28) | 06:31 | | 07:25 (29) | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 97 | 11:57 (25) | 17:55 | 100 | 10:40 (1) | 18:52 | 23 | 07:48 (29) | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 10:11 (27) | 07:39 | | 08:57 (28) | 06:29 | | 07:25 (29) | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 94 | 11:57 (25) | 17:57 | 97 | 10:41 (1) | 18:54 | 21 | 07:46 (29) | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 10:14 (27) | 07:37 | | 09:00 (28) | 06:26 | | 07:26 (29) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 87 | 11:57 (25) | 17:59 | 92 | 10:41 (1) | 18:56 | 18 | 07:44 (29) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 10:25 (26) | 07:34 | | 09:18 (1) | 06:23 | | 07:29 (29) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 80 | 11:58 (25) | 18:01 | 84 | 10:42 (1) | 18:58 | 13 | 07:42 (29) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 10:26 (26) | 07:32 | | 08:13 (2) | 06:21 | | 07:33 (29) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 78 | 11:58 (25) | 18:03 | 100 | 10:42 (1) | 19:00 | 3 | 07:36 (29) | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:35 | | 10:28 (26) | 07:29 | | 08:10 (2) | 06:18 | | | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 74 | 11:58 (25) | 18:05 | 109 | 10:43 (1) | 19:02 | | | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 10:30 (26) | | | | 07:16 | | | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 69 | 11:57 (25) | | | | 20:04 | | | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 10:32 (26) | | | | 07:13 | | | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 63 | 11:57 (25) | | | | 20:06 | | | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 11:06 (25) | | | | 07:11 | | | | | | 05:03 | |
| | 17:06 | 51 | 11:57 (25) | | | | 20:08 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 2919 | | | 2382 | | | 437 | | | 225 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,42 | | | 0,67 | | | 0,96 | | | 0,99 | | | |
| Total reduction | | 0,07 | | | 0,15 | | | 0,29 | | | 0,35 | | | |
| Total, real | | 197 | | | 348 | | | 128 | | | 78 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:09 (42) | 07:35 | | 08:08 (29) | 07:37 | | 08:22 (28) | 08:35 | | 09:41 (27) |
| | 22:18 | | 21:40 | | | 20:30 | 20 | 07:29 (42) | 19:12 | 20 | 08:28 (29) | 16:58 | 95 | 11:17 (25) | 16:10 | 102 | 11:33 (25) |
| 2 | 04:58 | | 05:42 | | | 06:40 | | 07:08 (42) | 07:37 | | 08:10 (29) | 07:39 | | 08:23 (28) | 08:37 | | 09:41 (27) |
| | 22:18 | | 21:38 | | | 20:27 | 20 | 07:28 (42) | 19:10 | 16 | 08:26 (29) | 16:56 | 90 | 11:18 (25) | 16:09 | 102 | 11:33 (25) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:10 (42) | 07:39 | | 08:12 (29) | 07:41 | | 08:23 (28) | 08:39 | | 09:42 (27) |
| | 22:17 | | 21:36 | | | 20:25 | 17 | 07:27 (42) | 19:07 | 12 | 08:24 (29) | 16:54 | 86 | 11:20 (25) | 16:08 | 101 | 11:34 (25) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:12 (42) | 07:41 | | | 07:43 | | 08:25 (28) | 08:40 | | 09:43 (27) |
| | 22:17 | | 21:34 | | | 20:22 | 14 | 07:26 (42) | 19:05 | | | 16:52 | 71 | 11:22 (25) | 16:08 | 100 | 11:34 (25) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:14 (42) | 07:43 | | | 07:45 | | 08:27 (28) | 08:42 | | 09:42 (27) |
| | 22:16 | | 21:32 | | | 20:19 | 10 | 07:24 (42) | 19:02 | | | 16:50 | 59 | 11:23 (25) | 16:07 | 101 | 11:34 (25) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:16 (42) | 07:44 | | | 07:47 | | 08:29 (28) | 08:43 | | 09:43 (27) |
| | 22:16 | | 21:30 | | | 20:17 | 6 | 07:22 (42) | 18:59 | | | 16:48 | 57 | 11:24 (25) | 16:06 | 99 | 11:34 (25) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | | 07:46 | | | 07:49 | | 08:32 (28) | 08:44 | | 09:43 (27) |
| | 22:15 | | 21:28 | | | 20:14 | | | 18:57 | | | 16:46 | 52 | 11:25 (25) | 16:06 | 99 | 11:34 (25) |
| 8 | 05:03 | | 05:53 | | | 06:51 | | | 07:48 | | | 07:51 | | 10:39 (25) | 08:46 | | 09:44 (27) |
| | 22:14 | | 21:26 | | | 20:12 | | | 18:54 | | | 16:44 | 47 | 11:26 (25) | 16:05 | 98 | 11:34 (25) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | | 07:53 | | 10:38 (25) | 08:47 | | 09:44 (27) |
| | 22:13 | | 21:24 | | | 20:09 | | | 18:52 | | | 16:42 | 49 | 11:27 (25) | 16:05 | 98 | 11:34 (25) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | | 07:52 | | 08:36 (2) | 07:55 | | 10:37 (25) | 08:48 | | 09:45 (27) |
| | 22:12 | | 21:22 | | | 20:07 | | | 18:49 | 5 | 08:41 (2) | 16:40 | 50 | 11:27 (25) | 16:04 | 98 | 11:35 (25) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | | 07:54 | | 08:38 (2) | 07:57 | | 10:37 (25) | 08:50 | | 09:46 (27) |
| | 22:11 | | 21:19 | | | 20:04 | | | 18:47 | 4 | 08:42 (2) | 16:38 | 51 | 11:28 (25) | 16:04 | 96 | 11:35 (25) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:39 (2) | 07:59 | | 10:04 (26) | 08:51 | | 09:46 (27) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 6 | 08:45 (2) | 16:36 | 64 | 11:29 (25) | 16:04 | 96 | 11:35 (25) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:41 (2) | 08:01 | | 10:02 (26) | 08:52 | | 09:46 (27) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 7 | 08:48 (2) | 16:34 | 69 | 11:29 (25) | 16:04 | 95 | 11:35 (25) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:44 (2) | 08:04 | | 10:00 (26) | 08:53 | | 09:47 (27) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 15 | 09:04 (2) | 16:33 | 74 | 11:30 (25) | 16:04 | 94 | 11:35 (25) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:48 (2) | 08:06 | | 09:58 (26) | 08:54 | | 09:48 (27) |
| | 22:07 | | 21:11 | | | 19:54 | | | 18:37 | 12 | 09:00 (2) | 16:31 | 78 | 11:30 (25) | 16:04 | 93 | 11:36 (25) |
| 16 | 05:14 | | 06:08 | | | 07:06 | | | 08:04 | | 09:52 (1) | 08:08 | | 09:58 (26) | 08:55 | | 09:48 (27) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 3 | 09:55 (1) | 16:29 | 80 | 11:31 (25) | 16:04 | 93 | 11:36 (25) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 08:18 (29) | 08:06 | | 09:31 (28) | 08:10 | | 09:48 (27) | 08:56 | | 09:49 (27) |
| | 22:04 | | 21:06 | | | 19:48 | 12 | 08:30 (29) | 18:32 | 17 | 09:56 (1) | 16:28 | 87 | 11:31 (25) | 16:04 | 92 | 11:36 (25) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 08:15 (29) | 08:08 | | 09:28 (28) | 08:12 | | 09:45 (27) | 08:57 | | 09:49 (27) |
| | 22:03 | | 21:04 | | | 19:46 | 17 | 08:32 (29) | 18:30 | 23 | 09:57 (1) | 16:26 | 94 | 11:31 (25) | 16:04 | 93 | 11:37 (25) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 08:12 (29) | 08:10 | | 09:26 (28) | 08:13 | | 09:43 (27) | 08:57 | | 09:50 (27) |
| | 22:02 | | 21:01 | | | 19:43 | 20 | 08:32 (29) | 18:27 | 26 | 09:57 (1) | 16:25 | 97 | 11:31 (25) | 16:04 | 92 | 11:37 (25) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 08:11 (29) | 08:12 | | 09:24 (28) | 08:15 | | 09:42 (27) | 08:58 | | 09:50 (27) |
| | 22:00 | | 20:59 | | | 19:41 | 23 | 08:34 (29) | 18:25 | 31 | 09:59 (1) | 16:23 | 99 | 11:31 (25) | 16:05 | 91 | 11:37 (25) |
| 21 | 05:21 | | 06:17 | | | 07:16 | | 08:10 (29) | 08:14 | | 09:23 (28) | 08:17 | | 09:42 (27) | 08:59 | | 09:51 (27) |
| | 21:59 | | 20:57 | | | 19:38 | 24 | 08:34 (29) | 18:23 | 32 | 10:00 (1) | 16:22 | 101 | 11:32 (25) | 16:05 | 91 | 11:38 (25) |
| 22 | 05:23 | | 06:19 | | | 07:18 | | 08:09 (29) | 08:16 | | 09:23 (28) | 08:19 | | 09:41 (27) | 08:59 | | 09:52 (27) |
| | 21:57 | | 20:54 | | | 19:36 | 26 | 08:35 (29) | 18:20 | 34 | 10:02 (1) | 16:20 | 102 | 11:32 (25) | 16:05 | 91 | 11:39 (25) |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 08:08 (29) | 08:18 | | 09:22 (28) | 08:21 | | 09:41 (27) | 09:00 | | 09:52 (27) |
| | 21:56 | | 20:52 | | | 19:33 | 27 | 08:35 (29) | 18:18 | 35 | 10:03 (1) | 16:19 | 104 | 11:33 (25) | 16:06 | 91 | 11:39 (25) |
| 24 | 05:26 | | 06:23 | | 07:16 (42) | 07:21 | | 08:08 (29) | 08:20 | | 09:21 (28) | 08:23 | | 09:41 (27) | 09:00 | | 09:52 (27) |
| | 21:54 | | 20:49 | 9 | 07:25 (42) | 19:30 | 27 | 08:35 (29) | 18:16 | 38 | 10:05 (1) | 16:18 | 103 | 11:33 (25) | 16:07 | 91 | 11:39 (25) |
| 25 | 05:28 | | 06:25 | | 07:14 (42) | 07:23 | | 08:07 (29) | 07:22 | | 08:20 (28) | 08:25 | | 09:40 (27) | 09:00 | | 09:52 (27) |
| | 21:52 | | 20:47 | 13 | 07:27 (42) | 19:28 | 28 | 08:35 (29) | 17:13 | 39 | 09:06 (1) | 16:16 | 105 | 11:33 (25) | 16:07 | 93 | 11:40 (25) |
| 26 | 05:29 | | 06:27 | | 07:13 (42) | 07:25 | | 08:07 (29) | 07:24 | | 08:20 (28) | 08:27 | | 09:40 (27) | 09:01 | | 09:54 (27) |
| | 21:51 | | 20:44 | 16 | 07:29 (42) | 19:25 | 27 | 08:34 (29) | 17:11 | 39 | 09:08 (1) | 16:15 | 104 | 11:33 (25) | 16:08 | 92 | 11:41 (25) |
| 27 | 05:31 | | 06:28 | | 07:11 (42) | 07:27 | | 08:07 (29) | 07:26 | | 08:21 (28) | 08:28 | | 09:40 (27) | 09:01 | | 09:54 (27) |
| | 21:49 | | 20:42 | 18 | 07:29 (42) | 19:23 | 27 | 08:34 (29) | 17:09 | 42 | 10:00 (1) | 16:14 | 104 | 11:33 (25) | 16:09 | 94 | 11:42 (25) |
| 28 | 05:33 | | 06:30 | | 07:10 (42) | 07:29 | | 08:06 (29) | 07:29 | | 08:20 (28) | 08:30 | | 09:41 (27) | 09:01 | | 09:54 (27) |
| | 21:47 | | 20:40 | 19 | 07:29 (42) | 19:20 | 26 | 08:32 (29) | 17:07 | 45 | 09:58 (1) | 16:13 | 103 | 11:33 (25) | 16:10 | 93 | 11:42 (25) |
| 29 | 05:34 | | 06:32 | | 07:09 (42) | 07:31 | | 08:07 (29) | 07:31 | | 08:20 (28) | 08:32 | | 09:41 (27) | 09:01 | | 09:55 (27) |
| | 21:46 | | 20:37 | 21 | 07:30 (42) | 19:17 | 24 | 08:31 (29) | 17:04 | 47 | 09:56 (1) | 16:12 | 103 | 11:33 (25) | 16:11 | 94 | 11:43 (25) |
| 30 | 05:36 | | 06:34 | | 07:09 (42) | 07:33 | | 08:07 (29) | 07:33 | | 08:20 (28) | 08:34 | | 09:41 (27) | 09:01 | | 09:54 (27) |
| | 21:44 | | 20:35 | 21 | 07:30 (42) | 19:15 | 23 | 08:30 (29) | 17:02 | 69 | 11:10 (25) | 16:11 | 104 | 11:34 (25) | 16:11 | 95 | 11:43 (25) |
| 31 | 05:38 | | 06:36 | | 07:09 (42) | | | | 07:35 | | 08:22 (28) | | | | 09:01 | | 09:55 (27) |
| | 21:42 | | 20:32 | 21 | 07:30 (42) | | | | 17:00 | 83 | 11:14 (25) | | | | 16:13 | 95 | 11:44 (25) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 138 | | | 418 | | | 700 | | | 2482 | | | 2953 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,98 | | | 0,78 | | | 0,43 | | | 0,44 | |
| Total reduction | | | | 0,45 | | | 0,35 | | | 0,21 | | | 0,06 | | | 0,05 | |
| Total, real | | | | 63 | | | 145 | | | 150 | | | 150 | | | 156 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:47 (28) | 08:28 | | 09:23 (2) | 07:27 | | 08:18 (29) | 07:08 | | 07:38 (42) | 05:55 | 05:02 |
| | 16:14 | 95 | 12:43 (25) | 17:08 | 23 | 10:10 (28) | 18:07 | 28 | 08:46 (29) | 20:10 | 23 | 08:01 (42) | 21:09 | 22:03 |
| 2 | 09:01 | | 09:46 (28) | 08:26 | | 09:22 (2) | 07:24 | | 08:19 (29) | 07:05 | | 07:38 (42) | 05:53 | 05:01 |
| | 16:15 | 96 | 12:43 (25) | 17:10 | 20 | 10:09 (28) | 18:10 | 27 | 08:46 (29) | 20:12 | 23 | 08:01 (42) | 21:11 | 22:04 |
| 3 | 09:01 | | 09:45 (28) | 08:24 | | 09:22 (2) | 07:22 | | 08:19 (29) | 07:03 | | 07:38 (42) | 05:51 | 05:00 |
| | 16:16 | 98 | 12:44 (25) | 17:12 | 16 | 10:07 (28) | 18:12 | 26 | 08:45 (29) | 20:14 | 22 | 08:00 (42) | 21:13 | 22:05 |
| 4 | 09:00 | | 09:44 (28) | 08:22 | | 09:22 (2) | 07:19 | | 08:20 (29) | 07:00 | | 07:38 (42) | 05:49 | 04:59 |
| | 16:18 | 99 | 12:44 (25) | 17:15 | 9 | 10:04 (28) | 18:14 | 24 | 08:44 (29) | 20:16 | 22 | 08:00 (42) | 21:15 | 22:06 |
| 5 | 09:00 | | 09:44 (28) | 08:20 | | 09:22 (2) | 07:17 | | 08:21 (29) | 06:58 | | 07:38 (42) | 05:46 | 04:58 |
| | 16:19 | 98 | 12:44 (25) | 17:17 | 1 | 09:23 (2) | 18:16 | 21 | 08:42 (29) | 20:18 | 20 | 07:58 (42) | 21:17 | 22:08 |
| 6 | 08:59 | | 09:44 (28) | 08:18 | | 09:21 (2) | 07:15 | | 08:23 (29) | 06:55 | | 07:40 (42) | 05:44 | 04:57 |
| | 16:20 | 99 | 12:44 (25) | 17:19 | 2 | 09:23 (2) | 18:18 | 17 | 08:40 (29) | 20:20 | 17 | 07:57 (42) | 21:19 | 22:09 |
| 7 | 08:59 | | 09:43 (28) | 08:16 | | | 07:12 | | 08:25 (29) | 06:53 | | 07:40 (42) | 05:42 | 04:56 |
| | 16:22 | 101 | 12:44 (25) | 17:21 | | | 18:20 | 12 | 08:37 (29) | 20:22 | 15 | 07:55 (42) | 21:20 | 22:10 |
| 8 | 08:58 | | 09:43 (28) | 08:14 | | | 07:10 | | | 06:50 | | 07:43 (42) | 05:40 | 04:56 |
| | 16:23 | 102 | 12:44 (25) | 17:23 | | | 18:22 | | | 20:24 | 9 | 07:52 (42) | 21:22 | 22:11 |
| 9 | 08:58 | | 09:43 (28) | 08:12 | | | 07:07 | | | 06:48 | | | 05:38 | 04:55 |
| | 16:25 | 104 | 12:45 (25) | 17:25 | | | 18:24 | | | 20:26 | | | 21:24 | 22:12 |
| 10 | 08:57 | | 09:43 (28) | 08:10 | | | 07:04 | | | 06:45 | | | 05:36 | 04:55 |
| | 16:26 | 105 | 12:45 (25) | 17:27 | | | 18:26 | | | 20:27 | | | 21:26 | 22:13 |
| 11 | 08:56 | | 09:43 (28) | 08:08 | | | 07:02 | | | 06:43 | | | 05:34 | 04:54 |
| | 16:28 | 105 | 12:44 (25) | 17:30 | | | 18:28 | | | 20:29 | | | 21:28 | 22:14 |
| 12 | 08:55 | | 09:42 (28) | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:54 |
| | 16:30 | 105 | 12:43 (25) | 17:32 | | | 18:30 | | | 20:31 | | | 21:30 | 22:14 |
| 13 | 08:54 | | 09:42 (28) | 08:04 | | | 06:57 | | | 06:38 | | | 05:30 | 04:53 |
| | 16:31 | 106 | 12:43 (25) | 17:34 | | | 18:32 | | | 20:33 | | | 21:32 | 22:15 |
| 14 | 08:53 | | 09:42 (28) | 08:02 | | | 06:54 | | | 06:35 | | | 05:29 | 04:53 |
| | 16:33 | 107 | 12:43 (25) | 17:36 | | | 18:34 | | | 20:35 | | | 21:34 | 22:16 |
| 15 | 08:52 | | 09:42 (28) | 08:00 | | | 06:52 | | | 06:33 | | | 05:27 | 04:53 |
| | 16:35 | 106 | 12:42 (25) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 09:42 (28) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | 105 | 12:40 (25) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 09:42 (28) | 07:55 | | 08:30 (29) | 06:47 | | | 06:28 | | | 05:23 | 04:52 |
| | 16:38 | 104 | 12:39 (25) | 17:42 | 9 | 08:39 (29) | 18:40 | | | 20:41 | | | 21:39 | 22:18 |
| 18 | 08:49 | | 09:43 (28) | 07:53 | | 08:26 (29) | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | 102 | 12:38 (25) | 17:44 | 15 | 08:41 (29) | 18:42 | | | 20:43 | | | 21:41 | 22:18 |
| 19 | 08:48 | | 09:42 (28) | 07:51 | | 08:24 (29) | 06:42 | | | 06:23 | | | 05:20 | 04:52 |
| | 16:42 | 100 | 12:34 (25) | 17:47 | 19 | 08:43 (29) | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:47 | | 09:38 (2) | 07:48 | | 08:23 (29) | 06:39 | | | 06:21 | | | 05:18 | 04:52 |
| | 16:44 | 102 | 12:32 (1) | 17:49 | 22 | 08:45 (29) | 18:46 | | | 20:47 | | | 21:44 | 22:19 |
| 21 | 08:45 | | 09:34 (2) | 07:46 | | 08:21 (29) | 06:36 | | | 06:18 | | | 05:16 | 04:52 |
| | 16:46 | 106 | 12:32 (1) | 17:51 | 25 | 08:46 (29) | 18:48 | | | 20:49 | | | 21:46 | 22:19 |
| 22 | 08:44 | | 09:31 (2) | 07:44 | | 08:21 (29) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 109 | 12:32 (1) | 17:53 | 26 | 08:47 (29) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 09:30 (2) | 07:41 | | 08:19 (29) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 111 | 12:33 (1) | 17:55 | 28 | 08:47 (29) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 09:29 (2) | 07:39 | | 08:19 (29) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 112 | 12:33 (1) | 17:57 | 29 | 08:48 (29) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:40 | | 09:27 (2) | 07:37 | | 08:18 (29) | 06:26 | | 06:50 (42) | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 114 | 12:33 (1) | 17:59 | 29 | 08:47 (29) | 18:56 | 4 | 06:54 (42) | 20:57 | | | 21:52 | 22:20 |
| 26 | 08:38 | | 09:27 (2) | 07:34 | | 08:19 (29) | 06:23 | | 06:48 (42) | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 115 | 12:34 (1) | 18:01 | 29 | 08:48 (29) | 18:58 | 10 | 06:58 (42) | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 09:26 (2) | 07:32 | | 08:18 (29) | 06:21 | | 06:45 (42) | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 115 | 12:34 (1) | 18:03 | 29 | 08:47 (29) | 19:00 | 14 | 06:59 (42) | 21:01 | | | 21:56 | 22:19 |
| 28 | 08:35 | | 09:25 (2) | 07:29 | | 08:18 (29) | 06:18 | | 06:43 (42) | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 115 | 12:34 (1) | 18:05 | 29 | 08:47 (29) | 19:02 | 18 | 07:01 (42) | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:24 (2) | | | | 07:16 | | 07:40 (42) | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 115 | 12:34 (1) | | | | 20:04 | 21 | 08:01 (42) | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:24 (2) | | | | 07:13 | | 07:40 (42) | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 115 | 12:34 (1) | | | | 20:06 | 22 | 08:02 (42) | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 09:23 (2) | | | | 07:11 | | 07:39 (42) | | | | 05:03 | |
| | 17:06 | 113 | 12:33 (1) | | | | 20:08 | 22 | 08:01 (42) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 3279 | | | 360 | | | 266 | | | 151 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,31 | | | 0,85 | | | 0,94 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,17 | | | 0,26 | | | 0,32 | | | |
| Total, real | | 153 | | | 61 | | | 70 | | | 49 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 06:38 | | | 07:35 | | | 07:37 | | | 08:35 | | 09:25 (28) |
| | 22:18 | | 21:40 | | 20:30 | | | 19:12 | | | 16:58 | | | 16:10 | 104 | 12:26 (25) |
| 2 | 04:58 | | 05:41 | | 06:40 | | | 07:37 | | | 07:39 | | 08:50 (2) | 08:37 | | 09:25 (28) |
| | 22:18 | | 21:38 | | 20:27 | | | 19:10 | | | 16:56 | 1 | 08:51 (2) | 16:09 | 105 | 12:27 (25) |
| 3 | 04:58 | | 05:43 | | 06:42 | | | 07:39 | | | 07:41 | | 08:50 (2) | 08:39 | | 09:26 (28) |
| | 22:17 | | 21:36 | | 20:24 | | | 19:07 | | | 16:54 | 1 | 08:51 (2) | 16:08 | 104 | 12:28 (25) |
| 4 | 04:59 | | 05:45 | | 06:44 | | 07:40 (42) | 07:41 | | | 07:43 | | 08:51 (2) | 08:40 | | 09:28 (28) |
| | 22:17 | | 21:34 | | 20:22 | 9 | 07:49 (42) | 19:05 | | | 16:52 | 1 | 08:52 (2) | 16:08 | 102 | 12:29 (25) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:38 (42) | 07:43 | | | 07:45 | | 08:51 (2) | 08:42 | | 09:28 (28) |
| | 22:16 | | 21:32 | | 20:19 | 14 | 07:52 (42) | 19:02 | | | 16:50 | 1 | 08:52 (2) | 16:07 | 101 | 12:29 (25) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:36 (42) | 07:44 | | 09:03 (29) | 07:47 | | 08:51 (2) | 08:43 | | 09:30 (28) |
| | 22:16 | | 21:30 | | 20:17 | 17 | 07:53 (42) | 18:59 | 8 | 09:11 (29) | 16:48 | 2 | 08:53 (2) | 16:06 | 99 | 12:30 (25) |
| 7 | 05:02 | | 05:51 | | 06:49 | | 07:34 (42) | 07:46 | | 08:59 (29) | 07:49 | | 08:51 (2) | 08:44 | | 09:30 (28) |
| | 22:15 | | 21:28 | | 20:14 | 19 | 07:53 (42) | 18:57 | 15 | 09:14 (29) | 16:46 | 10 | 09:34 (28) | 16:06 | 98 | 12:30 (25) |
| 8 | 05:03 | | 05:53 | | 06:51 | | 07:33 (42) | 07:48 | | 08:57 (29) | 07:51 | | 08:53 (2) | 08:46 | | 09:32 (28) |
| | 22:14 | | 21:26 | | 20:12 | 21 | 07:54 (42) | 18:54 | 19 | 09:16 (29) | 16:44 | 16 | 09:38 (28) | 16:05 | 99 | 12:32 (25) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:32 (42) | 07:50 | | 08:55 (29) | 07:53 | | 08:53 (2) | 08:47 | | 09:33 (28) |
| | 22:13 | | 21:24 | | 20:09 | 22 | 07:54 (42) | 18:52 | 23 | 09:18 (29) | 16:42 | 20 | 09:40 (28) | 16:05 | 98 | 12:32 (25) |
| 10 | 05:06 | | 05:56 | | 06:55 | | 07:31 (42) | 07:52 | | 08:54 (29) | 07:55 | | 08:53 (2) | 08:48 | | 09:35 (28) |
| | 22:12 | | 21:22 | | 20:07 | 23 | 07:54 (42) | 18:49 | 24 | 09:18 (29) | 16:40 | 24 | 09:41 (28) | 16:04 | 97 | 12:33 (25) |
| 11 | 05:07 | | 05:58 | | 06:57 | | 07:31 (42) | 07:54 | | 08:53 (29) | 07:57 | | 08:54 (2) | 08:50 | | 09:37 (28) |
| | 22:11 | | 21:19 | | 20:04 | 23 | 07:54 (42) | 18:47 | 26 | 09:19 (29) | 16:38 | 26 | 09:42 (28) | 16:04 | 95 | 12:33 (25) |
| 12 | 05:08 | | 06:00 | | 06:59 | | 07:30 (42) | 07:56 | | 08:52 (29) | 07:59 | | 08:56 (2) | 08:51 | | 11:04 (26) |
| | 22:10 | | 21:17 | | 20:01 | 23 | 07:53 (42) | 18:44 | 27 | 09:19 (29) | 16:36 | 28 | 09:44 (28) | 16:04 | 90 | 12:34 (25) |
| 13 | 05:09 | | 06:02 | | 07:01 | | 07:30 (42) | 07:58 | | 08:51 (29) | 08:01 | | 08:56 (2) | 08:52 | | 11:04 (26) |
| | 22:09 | | 21:15 | | 19:59 | 22 | 07:52 (42) | 18:42 | 28 | 09:19 (29) | 16:34 | 30 | 09:44 (28) | 16:04 | 90 | 12:34 (25) |
| 14 | 05:11 | | 06:04 | | 07:02 | | 07:31 (42) | 08:00 | | 08:51 (29) | 08:04 | | 08:57 (2) | 08:53 | | 10:42 (27) |
| | 22:08 | | 21:13 | | 19:56 | 20 | 07:51 (42) | 18:39 | 29 | 09:20 (29) | 16:33 | 31 | 09:45 (28) | 16:04 | 93 | 12:35 (25) |
| 15 | 05:12 | | 06:06 | | 07:04 | | 07:32 (42) | 08:02 | | 08:51 (29) | 08:06 | | 08:58 (2) | 08:54 | | 10:42 (27) |
| | 22:07 | | 21:10 | | 19:54 | 18 | 07:50 (42) | 18:37 | 29 | 09:20 (29) | 16:31 | 33 | 09:45 (28) | 16:04 | 96 | 12:36 (25) |
| 16 | 05:14 | | 06:08 | | 07:06 | | 07:34 (42) | 08:04 | | 08:51 (29) | 08:08 | | 09:00 (2) | 08:55 | | 10:40 (27) |
| | 22:06 | | 21:08 | | 19:51 | 15 | 07:49 (42) | 18:35 | 29 | 09:20 (29) | 16:29 | 34 | 09:47 (28) | 16:04 | 99 | 12:36 (25) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 07:36 (42) | 08:06 | | 08:51 (29) | 08:10 | | 09:01 (2) | 08:56 | | 10:40 (27) |
| | 22:04 | | 21:06 | | 19:48 | 11 | 07:47 (42) | 18:32 | 28 | 09:19 (29) | 16:28 | 35 | 09:47 (28) | 16:04 | 101 | 12:36 (25) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 07:38 (42) | 08:08 | | 08:51 (29) | 08:12 | | 09:03 (2) | 08:57 | | 10:41 (27) |
| | 22:03 | | 21:04 | | 19:46 | 6 | 07:44 (42) | 18:30 | 28 | 09:19 (29) | 16:26 | 37 | 09:47 (28) | 16:04 | 101 | 12:37 (25) |
| 19 | 05:18 | | 06:13 | | 07:12 | | | 08:10 | | 08:51 (29) | 08:13 | | 09:04 (2) | 08:57 | | 10:41 (27) |
| | 22:02 | | 21:01 | | 19:43 | | | 18:27 | 27 | 09:18 (29) | 16:25 | 39 | 09:47 (28) | 16:04 | 102 | 12:38 (25) |
| 20 | 05:19 | | 06:15 | | 07:14 | | | 08:12 | | 08:51 (29) | 08:15 | | 09:06 (2) | 08:58 | | 10:41 (27) |
| | 22:00 | | 20:59 | | 19:41 | | | 18:25 | 26 | 09:17 (29) | 16:23 | 41 | 09:47 (28) | 16:05 | 103 | 12:38 (25) |
| 21 | 05:21 | | 06:17 | | 07:16 | | | 08:14 | | 08:52 (29) | 08:17 | | 09:10 (2) | 08:59 | | 10:42 (27) |
| | 21:59 | | 20:57 | | 19:38 | | | 18:23 | 24 | 09:16 (29) | 16:22 | 38 | 09:48 (28) | 16:05 | 103 | 12:39 (25) |
| 22 | 05:23 | | 06:19 | | 07:18 | | | 08:16 | | 08:54 (29) | 08:19 | | 09:14 (2) | 08:59 | | 10:43 (27) |
| | 21:57 | | 20:54 | | 19:35 | | | 18:20 | 21 | 09:15 (29) | 16:20 | 34 | 09:48 (28) | 16:05 | 103 | 12:40 (25) |
| 23 | 05:24 | | 06:21 | | 07:19 | | | 08:18 | | 08:55 (29) | 08:21 | | 09:19 (28) | 09:00 | | 10:43 (27) |
| | 21:56 | | 20:52 | | 19:33 | | | 18:18 | 18 | 09:13 (29) | 16:19 | 33 | 12:10 (25) | 16:06 | 103 | 12:40 (25) |
| 24 | 05:26 | | 06:23 | | 07:21 | | | 08:20 | | 08:57 (29) | 08:23 | | 09:20 (28) | 09:00 | | 10:43 (27) |
| | 21:54 | | 20:49 | | 19:30 | | | 18:16 | 14 | 09:11 (29) | 16:18 | 41 | 12:15 (25) | 16:07 | 103 | 12:40 (25) |
| 25 | 05:28 | | 06:25 | | 07:23 | | | 07:22 | | 08:00 (29) | 08:25 | | 09:20 (28) | 09:00 | | 10:43 (27) |
| | 21:53 | | 20:47 | | 19:28 | | | 17:13 | 7 | 08:07 (29) | 16:16 | 45 | 12:17 (25) | 16:07 | 102 | 12:40 (25) |
| 26 | 05:29 | | 06:27 | | 07:25 | | | 07:24 | | | 08:27 | | 09:21 (28) | 09:01 | | 10:45 (27) |
| | 21:51 | | 20:44 | | 19:25 | | | 17:11 | | | 16:15 | 48 | 12:19 (25) | 16:08 | 101 | 12:41 (25) |
| 27 | 05:31 | | 06:28 | | 07:27 | | | 07:26 | | | 08:28 | | 09:21 (28) | 09:01 | | 10:46 (27) |
| | 21:49 | | 20:42 | | 19:23 | | | 17:09 | | | 16:14 | 51 | 12:21 (25) | 16:09 | 100 | 12:42 (25) |
| 28 | 05:33 | | 06:30 | | 07:29 | | | 07:29 | | | 08:30 | | 09:22 (28) | 09:01 | | 10:47 (27) |
| | 21:47 | | 20:40 | | 19:20 | | | 17:07 | | | 16:13 | 52 | 12:23 (25) | 16:10 | 97 | 12:42 (25) |
| 29 | 05:34 | | 06:32 | | 07:31 | | | 07:31 | | | 08:32 | | 09:23 (28) | 09:01 | | 10:49 (27) |
| | 21:46 | | 20:37 | | 19:17 | | | 17:04 | | | 16:12 | 53 | 12:24 (25) | 16:10 | 96 | 12:43 (25) |
| 30 | 05:36 | | 06:34 | | 07:33 | | | 07:33 | | | 08:34 | | 09:24 (28) | 09:01 | | 11:11 (26) |
| | 21:44 | | 20:35 | | 19:15 | | | 17:02 | | | 16:11 | 53 | 12:25 (25) | 16:11 | 91 | 12:42 (25) |
| 31 | 05:38 | | 06:36 | | | | | 07:35 | | | | | | 09:01 | | 11:13 (26) |
| | 21:42 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 90 | 12:43 (25) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | 263 | | | 450 | | | 858 | | | 3066 | | |
| Sun reduction | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | | |
| Oper. time red. | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 1,00 | | | 0,90 | | | 0,54 | | | 0,19 | | |
| Total reduction | | | | | 0,33 | | | 0,23 | | | 0,07 | | | 0,02 | | |
| Total, real | | | | | 85 | | | 102 | | | 60 | | | 66 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:52 (28) | 08:28 | | 08:57 (3) | 07:27 | | 08:02 (30) | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 146 | 14:50 (25) | 17:08 | 42 | 15:47 (1) | 18:07 | 64 | 09:39 (29) | 20:10 | | | 21:09 | 22:03 |
| 2 | 09:01 | | 10:52 (28) | 08:26 | | 08:55 (3) | 07:24 | | 08:03 (30) | 07:05 | | 07:36 (42) | 05:53 | 05:01 |
| | 16:15 | 145 | 14:50 (25) | 17:10 | 39 | 15:47 (1) | 18:10 | 61 | 09:38 (29) | 20:12 | 13 | 07:49 (42) | 21:11 | 22:04 |
| 3 | 09:01 | | 10:53 (28) | 08:24 | | 08:54 (3) | 07:22 | | 08:03 (30) | 07:03 | | 07:32 (42) | 05:51 | 05:00 |
| | 16:16 | 143 | 14:51 (25) | 17:12 | 32 | 15:48 (1) | 18:12 | 59 | 09:37 (29) | 20:14 | 18 | 07:50 (42) | 21:13 | 22:05 |
| 4 | 09:00 | | 10:53 (28) | 08:22 | | 08:54 (3) | 07:19 | | 08:04 (30) | 07:00 | | 07:31 (42) | 05:49 | 04:59 |
| | 16:18 | 142 | 14:51 (25) | 17:15 | 25 | 15:49 (1) | 18:14 | 55 | 09:36 (29) | 20:16 | 21 | 07:52 (42) | 21:15 | 22:06 |
| 5 | 09:00 | | 10:54 (28) | 08:20 | | 08:54 (3) | 07:17 | | 08:04 (30) | 06:58 | | 07:29 (42) | 05:46 | 04:58 |
| | 16:19 | 140 | 14:53 (25) | 17:17 | 25 | 15:50 (1) | 18:16 | 51 | 09:34 (29) | 20:18 | 24 | 07:53 (42) | 21:17 | 22:08 |
| 6 | 08:59 | | 10:54 (28) | 08:18 | | 08:54 (3) | 07:14 | | 08:07 (30) | 06:55 | | 07:28 (42) | 05:44 | 04:57 |
| | 16:20 | 132 | 14:53 (25) | 17:19 | 24 | 15:50 (1) | 18:18 | 43 | 09:33 (29) | 20:20 | 26 | 07:54 (42) | 21:19 | 22:09 |
| 7 | 08:59 | | 10:54 (28) | 08:16 | | 08:54 (3) | 07:12 | | 09:01 (29) | 06:53 | | 07:26 (42) | 05:42 | 04:56 |
| | 16:22 | 133 | 14:53 (25) | 17:21 | 24 | 15:51 (1) | 18:20 | 29 | 09:30 (29) | 20:22 | 28 | 07:54 (42) | 21:20 | 22:10 |
| 8 | 08:58 | | 10:55 (28) | 08:14 | | 08:54 (3) | 07:09 | | 09:02 (29) | 06:50 | | 07:26 (42) | 05:40 | 04:56 |
| | 16:23 | 134 | 14:54 (25) | 17:23 | 32 | 15:51 (1) | 18:22 | 25 | 09:27 (29) | 20:24 | 29 | 07:55 (42) | 21:22 | 22:11 |
| 9 | 08:58 | | 10:56 (28) | 08:12 | | 08:55 (3) | 07:07 | | 09:05 (29) | 06:48 | | 07:25 (42) | 05:38 | 04:55 |
| | 16:25 | 133 | 14:55 (25) | 17:25 | 34 | 15:51 (1) | 18:24 | 20 | 09:25 (29) | 20:25 | 30 | 07:55 (42) | 21:24 | 22:12 |
| 10 | 08:57 | | 10:57 (28) | 08:10 | | 08:56 (3) | 07:04 | | 09:09 (29) | 06:45 | | 07:24 (42) | 05:36 | 04:55 |
| | 16:26 | 134 | 14:56 (25) | 17:27 | 36 | 15:52 (1) | 18:26 | 10 | 09:19 (29) | 20:27 | 31 | 07:55 (42) | 21:26 | 22:13 |
| 11 | 08:56 | | 10:57 (28) | 08:08 | | 08:57 (3) | 07:02 | | | 06:43 | | 07:24 (42) | 05:34 | 04:54 |
| | 16:28 | 135 | 14:56 (25) | 17:29 | 37 | 15:52 (1) | 18:28 | | | 20:29 | 30 | 07:54 (42) | 21:28 | 22:14 |
| 12 | 08:55 | | 10:57 (28) | 08:06 | | 08:58 (3) | 06:59 | | | 06:40 | | 07:24 (42) | 05:32 | 04:54 |
| | 16:30 | 135 | 14:56 (25) | 17:32 | 36 | 09:34 (29) | 18:30 | | | 20:31 | 30 | 07:54 (42) | 21:30 | 22:14 |
| 13 | 08:54 | | 10:58 (28) | 08:04 | | 09:01 (3) | 06:57 | | | 06:38 | | 07:23 (42) | 05:30 | 04:53 |
| | 16:31 | 136 | 14:57 (25) | 17:34 | 35 | 09:36 (29) | 18:32 | | | 20:33 | 30 | 07:53 (42) | 21:32 | 22:15 |
| 14 | 08:53 | | 10:58 (28) | 08:02 | | 09:01 (29) | 06:54 | | | 06:35 | | 07:24 (42) | 05:29 | 04:53 |
| | 16:33 | 137 | 14:57 (25) | 17:36 | 36 | 09:37 (29) | 18:34 | | | 20:35 | 29 | 07:53 (42) | 21:34 | 22:16 |
| 15 | 08:52 | | 10:59 (28) | 07:59 | | 08:59 (29) | 06:52 | | | 06:33 | | 07:24 (42) | 05:27 | 04:53 |
| | 16:35 | 137 | 14:58 (25) | 17:38 | 39 | 09:38 (29) | 18:36 | | | 20:37 | 29 | 07:53 (42) | 21:35 | 22:16 |
| 16 | 08:51 | | 10:59 (28) | 07:57 | | 08:59 (29) | 06:49 | | | 06:30 | | 07:24 (42) | 05:25 | 04:52 |
| | 16:36 | 137 | 14:58 (25) | 17:40 | 40 | 09:39 (29) | 18:38 | | | 20:39 | 27 | 07:51 (42) | 21:37 | 22:17 |
| 17 | 08:50 | | 11:00 (28) | 07:55 | | 08:58 (29) | 06:47 | | | 06:28 | | 07:25 (42) | 05:23 | 04:52 |
| | 16:38 | 148 | 15:21 (1) | 17:42 | 42 | 09:40 (29) | 18:40 | | | 20:41 | 25 | 07:50 (42) | 21:39 | 22:18 |
| 18 | 08:49 | | 11:02 (28) | 07:53 | | 08:57 (29) | 06:44 | | | 06:25 | | 07:26 (42) | 05:21 | 04:52 |
| | 16:40 | 154 | 15:25 (1) | 17:44 | 43 | 09:40 (29) | 18:42 | | | 20:43 | 23 | 07:49 (42) | 21:41 | 22:18 |
| 19 | 08:48 | | 11:02 (28) | 07:51 | | 08:57 (29) | 06:41 | | | 06:23 | | 07:26 (42) | 05:20 | 04:52 |
| | 16:42 | 160 | 15:28 (1) | 17:47 | 44 | 09:41 (29) | 18:44 | | | 20:45 | 21 | 07:47 (42) | 21:42 | 22:18 |
| 20 | 08:47 | | 11:04 (28) | 07:48 | | 08:57 (29) | 06:39 | | | 06:21 | | 07:28 (42) | 05:18 | 04:52 |
| | 16:44 | 161 | 15:30 (1) | 17:49 | 44 | 09:41 (29) | 18:46 | | | 20:47 | 17 | 07:45 (42) | 21:44 | 22:19 |
| 21 | 08:45 | | 11:04 (28) | 07:46 | | 08:56 (29) | 06:36 | | | 06:18 | | 07:31 (42) | 05:16 | 04:52 |
| | 16:46 | 165 | 15:32 (1) | 17:51 | 45 | 09:41 (29) | 18:48 | | | 20:49 | 12 | 07:43 (42) | 21:46 | 22:19 |
| 22 | 08:44 | | 11:05 (28) | 07:44 | | 08:10 (30) | 06:34 | | | 06:16 | | | 05:15 | 04:52 |
| | 16:48 | 168 | 15:34 (1) | 17:53 | 55 | 09:42 (29) | 18:50 | | | 20:51 | | | 21:48 | 22:19 |
| 23 | 08:42 | | 11:07 (28) | 07:41 | | 08:07 (30) | 06:31 | | | 06:13 | | | 05:13 | 04:53 |
| | 16:50 | 168 | 15:36 (1) | 17:55 | 59 | 09:41 (29) | 18:52 | | | 20:53 | | | 21:49 | 22:19 |
| 24 | 08:41 | | 11:08 (28) | 07:39 | | 08:05 (30) | 06:29 | | | 06:11 | | | 05:12 | 04:53 |
| | 16:52 | 168 | 15:37 (1) | 17:57 | 63 | 09:41 (29) | 18:54 | | | 20:55 | | | 21:51 | 22:19 |
| 25 | 08:39 | | 11:10 (28) | 07:36 | | 08:04 (30) | 06:26 | | | 06:09 | | | 05:10 | 04:53 |
| | 16:54 | 167 | 15:39 (1) | 17:59 | 64 | 09:41 (29) | 18:56 | | | 20:57 | | | 21:52 | 22:19 |
| 26 | 08:38 | | 11:13 (28) | 07:34 | | 08:03 (30) | 06:23 | | | 06:06 | | | 05:09 | 04:54 |
| | 16:56 | 166 | 15:41 (1) | 18:01 | 66 | 09:41 (29) | 18:58 | | | 20:59 | | | 21:54 | 22:19 |
| 27 | 08:36 | | 11:16 (28) | 07:32 | | 08:02 (30) | 06:21 | | | 06:04 | | | 05:08 | 04:54 |
| | 16:58 | 164 | 15:42 (1) | 18:03 | 66 | 09:40 (29) | 19:00 | | | 21:01 | | | 21:55 | 22:19 |
| 28 | 08:35 | | 09:05 (3) | 07:29 | | 08:03 (30) | 06:18 | | | 06:02 | | | 05:06 | 04:55 |
| | 17:00 | 157 | 15:43 (1) | 18:05 | 65 | 09:40 (29) | 19:02 | | | 21:03 | | | 21:57 | 22:19 |
| 29 | 08:33 | | 09:03 (3) | | | | 07:16 | | | 06:00 | | | 05:05 | 04:55 |
| | 17:02 | 161 | 15:44 (1) | | | | 20:04 | | | 21:05 | | | 21:58 | 22:19 |
| 30 | 08:31 | | 09:01 (3) | | | | 07:13 | | | 05:57 | | | 05:04 | 04:56 |
| | 17:04 | 164 | 15:45 (1) | | | | 20:06 | | | 21:07 | | | 22:00 | 22:19 |
| 31 | 08:30 | | 08:59 (3) | | | | 07:11 | | | | | | 05:03 | |
| | 17:06 | 166 | 15:46 (1) | | | | 20:08 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 4636 | | | 1192 | | | 417 | | | 493 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,33 | | | 0,80 | | | 0,83 | | | 1,00 | | | |
| Total reduction | | 0,05 | | | 0,16 | | | 0,24 | | | 0,33 | | | |
| Total, real | | 233 | | | 196 | | | 99 | | | 162 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:22 (42) | 07:35 | | | 07:37 | | 08:25 (3) | 08:35 | | 10:38 (28) |
| | 22:18 | | 21:40 | | | 20:30 | 31 | 07:53 (42) | 19:12 | | | 16:58 | 36 | 15:21 (1) | 16:10 | 135 | 14:37 (25) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:22 (42) | 07:37 | | | 07:39 | | 08:24 (3) | 08:37 | | 10:39 (28) |
| | 22:18 | | 21:38 | | | 20:27 | 31 | 07:53 (42) | 19:10 | | | 16:56 | 35 | 15:21 (1) | 16:09 | 134 | 14:38 (25) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 07:23 (42) | 07:39 | | | 07:41 | | 08:24 (3) | 08:38 | | 10:39 (28) |
| | 22:17 | | 21:36 | | | 20:24 | 30 | 07:53 (42) | 19:07 | | | 16:54 | 30 | 15:20 (1) | 16:08 | 133 | 14:38 (25) |
| 4 | 04:59 | | 05:45 | | | 06:44 | | 07:23 (42) | 07:41 | | 09:44 (29) | 07:43 | | 08:24 (3) | 08:40 | | 10:40 (28) |
| | 22:17 | | 21:34 | | | 20:22 | 29 | 07:52 (42) | 19:05 | 16 | 10:00 (29) | 16:52 | 24 | 15:21 (1) | 16:08 | 133 | 14:39 (25) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:23 (42) | 07:42 | | 09:41 (29) | 07:45 | | 08:24 (3) | 08:42 | | 10:39 (28) |
| | 22:16 | | 21:32 | | | 20:19 | 28 | 07:51 (42) | 19:02 | 22 | 10:03 (29) | 16:50 | 24 | 15:20 (1) | 16:07 | 134 | 14:39 (25) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:24 (42) | 07:44 | | 09:38 (29) | 07:47 | | 08:23 (3) | 08:43 | | 10:40 (28) |
| | 22:16 | | 21:30 | | | 20:17 | 26 | 07:50 (42) | 18:59 | 27 | 10:05 (29) | 16:48 | 25 | 15:19 (1) | 16:06 | 132 | 14:39 (25) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 07:24 (42) | 07:46 | | 08:43 (30) | 07:49 | | 08:23 (3) | 08:44 | | 10:40 (28) |
| | 22:15 | | 21:28 | | | 20:14 | 24 | 07:48 (42) | 18:57 | 39 | 10:07 (29) | 16:46 | 25 | 15:19 (1) | 16:06 | 140 | 14:39 (25) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:25 (42) | 07:48 | | 08:40 (30) | 07:51 | | 08:24 (3) | 08:46 | | 10:41 (28) |
| | 22:14 | | 21:26 | | | 20:12 | 22 | 07:47 (42) | 18:54 | 47 | 10:08 (29) | 16:44 | 34 | 15:19 (1) | 16:05 | 143 | 14:40 (25) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:26 (42) | 07:50 | | 08:39 (30) | 07:53 | | 08:26 (3) | 08:47 | | 10:41 (28) |
| | 22:13 | | 21:24 | | | 20:09 | 19 | 07:45 (42) | 18:52 | 52 | 10:09 (29) | 16:42 | 39 | 15:18 (1) | 16:05 | 143 | 14:39 (25) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 07:29 (42) | 07:52 | | 08:37 (30) | 07:55 | | 08:28 (3) | 08:48 | | 10:42 (28) |
| | 22:12 | | 21:22 | | | 20:07 | 13 | 07:42 (42) | 18:49 | 57 | 10:10 (29) | 16:40 | 41 | 15:17 (1) | 16:04 | 145 | 14:40 (25) |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 07:34 (42) | 07:54 | | 08:36 (30) | 07:57 | | 08:30 (3) | 08:50 | | 10:42 (28) |
| | 22:11 | | 21:19 | | | 20:04 | 3 | 07:37 (42) | 18:47 | 61 | 10:11 (29) | 16:38 | 42 | 15:16 (1) | 16:04 | 146 | 14:40 (25) |
| 12 | 05:08 | | 06:00 | | | 06:59 | | | 07:56 | | 08:35 (30) | 07:59 | | 08:33 (3) | 08:51 | | 10:42 (28) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | 63 | 10:11 (29) | 16:36 | 44 | 15:17 (1) | 16:04 | 147 | 14:40 (25) |
| 13 | 05:09 | | 06:02 | | | 07:01 | | | 07:58 | | 08:35 (30) | 08:01 | | 08:35 (3) | 08:52 | | 10:43 (28) |
| | 22:09 | | 21:15 | | | 19:59 | | | 18:42 | 65 | 10:12 (29) | 16:34 | 42 | 15:16 (1) | 16:04 | 146 | 14:40 (25) |
| 14 | 05:11 | | 06:04 | | | 07:02 | | | 08:00 | | 08:36 (30) | 08:03 | | 08:37 (3) | 08:53 | | 10:43 (28) |
| | 22:08 | | 21:13 | | | 19:56 | | | 18:39 | 65 | 10:13 (29) | 16:33 | 40 | 15:15 (1) | 16:04 | 147 | 14:41 (25) |
| 15 | 05:12 | | 06:06 | | | 07:04 | | | 08:02 | | 08:36 (30) | 08:06 | | 10:48 (28) | 08:54 | | 10:44 (28) |
| | 22:07 | | 21:10 | | | 19:54 | | | 18:37 | 65 | 10:13 (29) | 16:31 | 49 | 15:14 (1) | 16:04 | 147 | 14:41 (25) |
| 16 | 05:13 | | 06:08 | | | 07:06 | | | 08:04 | | 08:36 (30) | 08:08 | | 10:46 (28) | 08:55 | | 10:44 (28) |
| | 22:06 | | 21:08 | | | 19:51 | | | 18:35 | 65 | 10:13 (29) | 16:29 | 59 | 15:14 (1) | 16:04 | 147 | 14:41 (25) |
| 17 | 05:15 | | 06:09 | | | 07:08 | | | 08:06 | | 08:36 (30) | 08:09 | | 10:44 (28) | 08:56 | | 10:45 (28) |
| | 22:04 | | 21:06 | | | 19:48 | | | 18:32 | 64 | 10:13 (29) | 16:28 | 62 | 15:12 (1) | 16:04 | 147 | 14:42 (25) |
| 18 | 05:16 | | 06:11 | | | 07:10 | | | 08:08 | | 08:37 (30) | 08:11 | | 10:42 (28) | 08:57 | | 10:45 (28) |
| | 22:03 | | 21:04 | | | 19:46 | | | 18:30 | 62 | 10:13 (29) | 16:26 | 68 | 15:11 (1) | 16:04 | 147 | 14:42 (25) |
| 19 | 05:18 | | 06:13 | | | 07:12 | | | 08:10 | | 08:39 (30) | 08:13 | | 10:41 (28) | 08:57 | | 10:46 (28) |
| | 22:02 | | 21:01 | | | 19:43 | | | 18:27 | 58 | 10:12 (29) | 16:25 | 76 | 15:10 (1) | 16:04 | 147 | 14:43 (25) |
| 20 | 05:19 | | 06:15 | | | 07:14 | | | 08:12 | | 08:41 (30) | 08:15 | | 10:40 (28) | 08:58 | | 10:46 (28) |
| | 22:00 | | 20:59 | | | 19:41 | | | 18:25 | 53 | 10:12 (29) | 16:23 | 81 | 15:09 (1) | 16:05 | 147 | 14:43 (25) |
| 21 | 05:21 | | 06:17 | | 07:41 (42) | 07:16 | | | 08:14 | | 09:26 (29) | 08:17 | | 10:40 (28) | 08:59 | | 10:47 (28) |
| | 21:59 | | 20:56 | 1 | 07:42 (42) | 19:38 | | | 18:23 | 45 | 10:11 (29) | 16:22 | 89 | 15:08 (1) | 16:05 | 148 | 14:44 (25) |
| 22 | 05:23 | | 06:19 | | 07:34 (42) | 07:18 | | | 08:16 | | 09:27 (29) | 08:19 | | 10:40 (28) | 08:59 | | 10:47 (28) |
| | 21:57 | | 20:54 | 13 | 07:47 (42) | 19:35 | | | 18:20 | 45 | 10:12 (29) | 16:20 | 99 | 15:07 (1) | 16:05 | 147 | 14:44 (25) |
| 23 | 05:24 | | 06:21 | | 07:32 (42) | 07:19 | | | 08:18 | | 09:27 (29) | 08:21 | | 10:39 (28) | 09:00 | | 10:48 (28) |
| | 21:56 | | 20:52 | 17 | 07:49 (42) | 19:33 | | | 18:18 | 44 | 10:11 (29) | 16:19 | 98 | 15:05 (1) | 16:06 | 148 | 14:45 (25) |
| 24 | 05:26 | | 06:23 | | 07:30 (42) | 07:21 | | | 08:20 | | 09:28 (29) | 08:23 | | 10:39 (28) | 09:00 | | 10:48 (28) |
| | 21:54 | | 20:49 | 21 | 07:51 (42) | 19:30 | | | 18:16 | 42 | 10:10 (29) | 16:18 | 92 | 15:02 (1) | 16:07 | 147 | 14:45 (25) |
| 25 | 05:28 | | 06:25 | | 07:29 (42) | 07:23 | | | 07:22 | | 08:28 (29) | 08:25 | | 10:39 (28) | 09:00 | | 10:48 (28) |
| | 21:52 | | 20:47 | 23 | 07:52 (42) | 19:28 | | | 17:13 | 41 | 09:09 (29) | 16:16 | 86 | 14:59 (1) | 16:07 | 147 | 14:45 (25) |
| 26 | 05:29 | | 06:26 | | 07:28 (42) | 07:25 | | | 07:24 | | 08:28 (29) | 08:27 | | 10:38 (28) | 09:01 | | 10:50 (28) |
| | 21:51 | | 20:44 | 25 | 07:53 (42) | 19:25 | | | 17:11 | 40 | 09:08 (29) | 16:15 | 77 | 14:37 (25) | 16:08 | 148 | 14:47 (25) |
| 27 | 05:31 | | 06:28 | | 07:26 (42) | 07:27 | | | 07:26 | | 08:30 (29) | 08:28 | | 10:38 (28) | 09:01 | | 10:50 (28) |
| | 21:49 | | 20:42 | 27 | 07:53 (42) | 19:23 | | | 17:09 | 38 | 09:08 (29) | 16:14 | 78 | 14:37 (25) | 16:09 | 147 | 14:47 (25) |
| 28 | 05:33 | | 06:30 | | 07:25 (42) | 07:29 | | | 07:29 | | 08:31 (29) | 08:30 | | 10:39 (28) | 09:01 | | 10:50 (28) |
| | 21:47 | | 20:39 | 29 | 07:54 (42) | 19:20 | | | 17:07 | 35 | 09:06 (29) | 16:13 | 76 | 14:37 (25) | 16:10 | 148 | 14:48 (25) |
| 29 | 05:34 | | 06:32 | | 07:24 (42) | 07:31 | | | 07:31 | | 08:29 (3) | 08:32 | | 10:39 (28) | 09:01 | | 10:51 (28) |
| | 21:46 | | 20:37 | 30 | 07:54 (42) | 19:17 | | | 17:04 | 36 | 09:05 (29) | 16:12 | 79 | 14:38 (25) | 16:10 | 146 | 14:48 (25) |
| 30 | 05:36 | | 06:34 | | 07:24 (42) | 07:33 | | | 07:33 | | 08:27 (3) | 08:34 | | 10:39 (28) | 09:01 | | 10:50 (28) |
| | 21:44 | | 20:35 | 30 | 07:54 (42) | 19:15 | | | 17:02 | 36 | 09:03 (29) | 16:11 | 79 | 14:38 (25) | 16:11 | 146 | 14:48 (25) |
| 31 | 05:38 | | 06:36 | | 07:24 (42) | | | | 07:35 | | 08:27 (3) | | | | 09:01 | | 10:51 (28) |
| | 21:42 | | 20:32 | 30 | 07:54 (42) | | | | 17:00 | 36 | 15:22 (1) | | | | 16:12 | 147 | 14:49 (25) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 246 | | | 256 | | | 1319 | | | 1729 | | | 4459 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,82 | | | 0,49 | | | 0,28 | |
| Total reduction | | | | 0,43 | | | 0,33 | | | 0,21 | | | 0,07 | | | 0,03 | |
| Total, real | | | | 106 | | | 85 | | | 280 | | | 113 | | | 142 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:48 (3) | 08:28 | | 12:00 (29) | 07:27 | | 07:53 (31) | 07:08 | | | 05:55 | | 07:32 (42) | 05:02 |
| | 16:14 | 141 | 15:01 (26) | 17:08 | 93 | 16:21 (25) | 18:07 | 10 | 08:03 (31) | 20:10 | | | 21:09 | 43 | 08:15 (42) | 22:03 |
| 2 | 09:01 | | 09:47 (3) | 08:26 | | 12:00 (29) | 07:24 | | 07:51 (31) | 07:05 | | | 05:53 | | 07:33 (42) | 05:01 |
| | 16:15 | 142 | 15:01 (26) | 17:10 | 93 | 16:21 (25) | 18:09 | 14 | 08:05 (31) | 20:12 | | | 21:11 | 40 | 08:13 (42) | 22:04 |
| 3 | 09:01 | | 09:48 (3) | 08:24 | | 12:00 (29) | 07:22 | | 07:49 (31) | 07:03 | | 07:54 (42) | 05:51 | | 07:34 (42) | 05:00 |
| | 16:16 | 142 | 15:02 (26) | 17:12 | 94 | 16:22 (25) | 18:12 | 17 | 08:06 (31) | 20:14 | 13 | 08:07 (42) | 21:13 | 38 | 08:12 (42) | 22:05 |
| 4 | 09:00 | | 09:48 (3) | 08:22 | | 09:01 (30) | 07:19 | | 07:48 (31) | 07:00 | | 07:50 (42) | 05:48 | | 07:35 (42) | 04:59 |
| | 16:18 | 145 | 15:02 (26) | 17:15 | 99 | 16:22 (25) | 18:14 | 20 | 08:08 (31) | 20:16 | 21 | 08:11 (42) | 21:15 | 36 | 08:11 (42) | 22:06 |
| 5 | 09:00 | | 09:49 (3) | 08:20 | | 08:58 (30) | 07:17 | | 07:47 (31) | 06:58 | | 07:46 (42) | 05:46 | | 07:36 (42) | 04:58 |
| | 16:19 | 145 | 15:03 (26) | 17:17 | 106 | 16:22 (25) | 18:16 | 21 | 08:08 (31) | 20:18 | 27 | 08:13 (42) | 21:17 | 33 | 08:09 (42) | 22:08 |
| 6 | 08:59 | | 09:49 (3) | 08:18 | | 08:56 (30) | 07:14 | | 07:47 (31) | 06:55 | | 07:44 (42) | 05:44 | | 07:37 (42) | 04:57 |
| | 16:20 | 145 | 15:03 (26) | 17:19 | 108 | 16:22 (25) | 18:18 | 21 | 08:08 (31) | 20:20 | 32 | 08:16 (42) | 21:19 | 31 | 08:08 (42) | 22:09 |
| 7 | 08:59 | | 09:49 (3) | 08:16 | | 08:54 (30) | 07:12 | | 07:46 (31) | 06:53 | | 07:42 (42) | 05:42 | | 07:38 (42) | 04:56 |
| | 16:22 | 144 | 15:03 (26) | 17:21 | 111 | 16:21 (25) | 18:20 | 22 | 08:08 (31) | 20:22 | 35 | 08:17 (42) | 21:20 | 28 | 08:06 (42) | 22:10 |
| 8 | 08:58 | | 09:49 (3) | 08:14 | | 08:53 (30) | 07:09 | | 07:45 (31) | 06:50 | | 07:40 (42) | 05:40 | | 07:40 (42) | 04:56 |
| | 16:23 | 146 | 15:03 (26) | 17:23 | 111 | 16:21 (25) | 18:22 | 22 | 08:07 (31) | 20:23 | 39 | 08:19 (42) | 21:22 | 23 | 08:03 (42) | 22:11 |
| 9 | 08:58 | | 09:49 (3) | 08:12 | | 08:52 (30) | 07:07 | | 07:46 (31) | 06:48 | | 07:38 (42) | 05:38 | | 07:42 (42) | 04:55 |
| | 16:25 | 146 | 15:03 (26) | 17:25 | 111 | 16:21 (25) | 18:24 | 21 | 08:07 (31) | 20:25 | 41 | 08:19 (42) | 21:24 | 19 | 08:01 (42) | 22:12 |
| 10 | 08:57 | | 09:51 (3) | 08:10 | | 08:52 (30) | 07:04 | | 07:46 (31) | 06:45 | | 07:37 (42) | 05:36 | | 07:45 (42) | 04:54 |
| | 16:26 | 144 | 15:04 (26) | 17:27 | 109 | 16:20 (25) | 18:26 | 20 | 08:06 (31) | 20:27 | 43 | 08:20 (42) | 21:26 | 12 | 07:57 (42) | 22:13 |
| 11 | 08:56 | | 09:50 (3) | 08:08 | | 08:51 (30) | 07:02 | | 07:47 (31) | 06:43 | | 07:35 (42) | 05:34 | | | 04:54 |
| | 16:28 | 144 | 15:03 (26) | 17:29 | 108 | 16:20 (25) | 18:28 | 18 | 08:05 (31) | 20:29 | 45 | 08:20 (42) | 21:28 | | | 22:14 |
| 12 | 08:55 | | 09:50 (3) | 08:06 | | 08:50 (30) | 06:59 | | 07:47 (31) | 06:40 | | 07:35 (42) | 05:32 | | | 04:54 |
| | 16:29 | 143 | 15:03 (26) | 17:32 | 104 | 16:17 (25) | 18:30 | 16 | 08:03 (31) | 20:31 | 46 | 08:21 (42) | 21:30 | | | 22:14 |
| 13 | 08:54 | | 09:51 (3) | 08:04 | | 08:50 (30) | 06:57 | | 07:48 (31) | 06:38 | | 07:33 (42) | 05:30 | | | 04:53 |
| | 16:31 | 143 | 15:04 (26) | 17:34 | 111 | 16:58 (1) | 18:32 | 13 | 08:01 (31) | 20:33 | 48 | 08:21 (42) | 21:32 | | | 22:15 |
| 14 | 08:53 | | 09:52 (3) | 08:02 | | 08:50 (30) | 06:54 | | 07:52 (31) | 06:35 | | 07:33 (42) | 05:28 | | | 04:53 |
| | 16:33 | 140 | 15:04 (26) | 17:36 | 97 | 17:01 (1) | 18:34 | 6 | 07:58 (31) | 20:35 | 49 | 08:22 (42) | 21:34 | | | 22:16 |
| 15 | 08:52 | | 09:52 (3) | 07:59 | | 08:50 (30) | 06:52 | | | 06:33 | | 07:32 (42) | 05:27 | | | 04:53 |
| | 16:35 | 139 | 15:04 (26) | 17:38 | 84 | 17:02 (1) | 18:36 | | | 20:37 | 50 | 08:22 (42) | 21:35 | | | 22:16 |
| 16 | 08:51 | | 09:52 (3) | 07:57 | | 08:50 (30) | 06:49 | | | 06:30 | | 07:31 (42) | 05:25 | | | 04:52 |
| | 16:36 | 136 | 15:03 (26) | 17:40 | 80 | 17:04 (1) | 18:38 | | | 20:39 | 51 | 08:22 (42) | 21:37 | | | 22:17 |
| 17 | 08:50 | | 09:53 (3) | 07:55 | | 08:51 (30) | 06:47 | | | 06:28 | | 07:31 (42) | 05:23 | | | 04:52 |
| | 16:38 | 134 | 15:03 (26) | 17:42 | 76 | 17:06 (1) | 18:40 | | | 20:41 | 51 | 08:22 (42) | 21:39 | | | 22:18 |
| 18 | 08:49 | | 09:54 (3) | 07:53 | | 08:50 (30) | 06:44 | | | 06:25 | | 07:31 (42) | 05:21 | | | 04:52 |
| | 16:40 | 137 | 15:38 (2) | 17:44 | 71 | 17:06 (1) | 18:42 | | | 20:43 | 52 | 08:23 (42) | 21:41 | | | 22:18 |
| 19 | 08:48 | | 09:54 (3) | 07:50 | | 08:51 (30) | 06:41 | | | 06:23 | | 07:30 (42) | 05:20 | | | 04:52 |
| | 16:42 | 142 | 15:41 (2) | 17:46 | 65 | 17:07 (1) | 18:44 | | | 20:45 | 52 | 08:22 (42) | 21:42 | | | 22:18 |
| 20 | 08:47 | | 09:56 (3) | 07:48 | | 08:52 (30) | 06:39 | | | 06:20 | | 07:30 (42) | 05:18 | | | 04:52 |
| | 16:44 | 136 | 15:44 (2) | 17:49 | 56 | 17:08 (1) | 18:46 | | | 20:47 | 52 | 08:22 (42) | 21:44 | | | 22:19 |
| 21 | 08:45 | | 09:56 (3) | 07:46 | | 08:53 (30) | 06:36 | | | 06:18 | | 07:30 (42) | 05:16 | | | 04:52 |
| | 16:46 | 125 | 15:46 (2) | 17:51 | 46 | 17:08 (1) | 18:48 | | | 20:49 | 52 | 08:22 (42) | 21:46 | | | 22:19 |
| 22 | 08:44 | | 09:57 (3) | 07:44 | | 08:54 (30) | 06:34 | | | 06:16 | | 07:29 (42) | 05:15 | | | 04:52 |
| | 16:48 | 117 | 15:48 (2) | 17:53 | 23 | 12:35 (29) | 18:50 | | | 20:51 | 52 | 08:21 (42) | 21:48 | | | 22:19 |
| 23 | 08:42 | | 09:59 (3) | 07:41 | | 08:55 (30) | 06:31 | | | 06:13 | | 07:29 (42) | 05:13 | | | 04:53 |
| | 16:50 | 117 | 15:50 (2) | 17:55 | 17 | 09:12 (30) | 18:52 | | | 20:53 | 51 | 08:20 (42) | 21:49 | | | 22:19 |
| 24 | 08:41 | | 10:00 (3) | 07:39 | | 08:58 (30) | 06:29 | | | 06:11 | | 07:29 (42) | 05:12 | | | 04:53 |
| | 16:52 | 127 | 16:11 (25) | 17:57 | 12 | 09:10 (30) | 18:54 | | | 20:55 | 51 | 08:20 (42) | 21:51 | | | 22:19 |
| 25 | 08:39 | | 10:01 (3) | 07:36 | | | 06:26 | | | 06:09 | | 07:30 (42) | 05:10 | | | 04:53 |
| | 16:54 | 132 | 16:13 (25) | 17:59 | | | 18:56 | | | 20:57 | 50 | 08:20 (42) | 21:52 | | | 22:19 |
| 26 | 08:38 | | 10:04 (3) | 07:34 | | | 06:23 | | | 06:06 | | 07:29 (42) | 05:09 | | | 04:54 |
| | 16:56 | 133 | 16:15 (25) | 18:01 | | | 18:58 | | | 20:59 | 49 | 08:18 (42) | 21:54 | | | 22:19 |
| 27 | 08:36 | | 10:07 (3) | 07:32 | | | 06:21 | | | 06:04 | | 07:30 (42) | 05:08 | | | 04:54 |
| | 16:58 | 132 | 16:17 (25) | 18:03 | | | 19:00 | | | 21:01 | 48 | 08:18 (42) | 21:55 | | | 22:19 |
| 28 | 08:35 | | 11:59 (29) | 07:29 | | | 06:18 | | | 06:02 | | 07:30 (42) | 05:06 | | | 04:55 |
| | 17:00 | 129 | 16:18 (25) | 18:05 | | | 19:02 | | | 21:03 | 47 | 08:17 (42) | 21:57 | | | 22:19 |
| 29 | 08:33 | | 11:59 (29) | | | | 07:16 | | | 05:59 | | 07:31 (42) | 05:05 | | | 04:55 |
| | 17:02 | 132 | 16:19 (25) | | | | 20:04 | | | 21:05 | 45 | 08:16 (42) | 21:58 | | | 22:19 |
| 30 | 08:31 | | 11:59 (29) | | | | 07:13 | | | 05:57 | | 07:31 (42) | 05:04 | | | 04:56 |
| | 17:04 | 134 | 16:20 (25) | | | | 20:06 | | | 21:07 | 44 | 08:15 (42) | 22:00 | | | 22:19 |
| 31 | 08:30 | | 11:59 (29) | | | | 07:11 | | | | | | 05:03 | | | |
| | 17:06 | 135 | 16:20 (25) | | | | 20:08 | | | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 4247 | | | 1985 | | | 241 | | | 1236 | | | 303 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,31 | | | 0,37 | | | 0,95 | | | 1,00 | | | 1,00 | | |
| Total reduction | | 0,04 | | | 0,07 | | | 0,25 | | | 0,31 | | | 0,40 | | |
| Total, real | | 188 | | | 141 | | | 61 | | | 380 | | | 122 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 07:34 (42) | 07:35 | | 08:27 (31) | 07:37 | | 08:21 (30) | 08:35 | | 09:32 (3) |
| | 22:18 | | 21:40 | | | 20:29 | 45 | 08:19 (42) | 19:12 | 15 | 08:42 (31) | 16:58 | 111 | 15:50 (25) | 16:10 | 144 | 14:45 (26) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 07:35 (42) | 07:37 | | 08:25 (31) | 07:39 | | 08:22 (30) | 08:37 | | 09:33 (3) |
| | 22:18 | | 21:38 | | | 20:27 | 43 | 08:18 (42) | 19:10 | 18 | 08:43 (31) | 16:56 | 111 | 15:50 (25) | 16:09 | 146 | 14:46 (26) |
| 3 | 04:58 | | 05:43 | | 07:54 (42) | 06:42 | | 07:36 (42) | 07:39 | | 08:24 (31) | 07:41 | | 08:23 (30) | 08:38 | | 09:33 (3) |
| | 22:17 | | 21:36 | 15 | 08:09 (42) | 20:24 | 41 | 08:17 (42) | 19:07 | 20 | 08:44 (31) | 16:54 | 111 | 15:51 (25) | 16:08 | 145 | 14:47 (26) |
| 4 | 04:59 | | 05:45 | | 07:52 (42) | 06:44 | | 07:37 (42) | 07:41 | | 08:23 (31) | 07:43 | | 08:24 (30) | 08:40 | | 09:34 (3) |
| | 22:17 | | 21:34 | 20 | 08:12 (42) | 20:22 | 39 | 08:16 (42) | 19:04 | 21 | 08:44 (31) | 16:52 | 111 | 15:52 (25) | 16:08 | 146 | 14:48 (26) |
| 5 | 05:00 | | 05:47 | | 07:50 (42) | 06:45 | | 07:39 (42) | 07:42 | | 08:22 (31) | 07:45 | | 08:26 (30) | 08:42 | | 09:34 (3) |
| | 22:16 | | 21:32 | 25 | 08:15 (42) | 20:19 | 35 | 08:14 (42) | 19:02 | 22 | 08:44 (31) | 16:50 | 110 | 15:52 (25) | 16:07 | 144 | 14:48 (26) |
| 6 | 05:01 | | 05:49 | | 07:47 (42) | 06:47 | | 07:39 (42) | 07:44 | | 08:22 (31) | 07:47 | | 08:28 (30) | 08:43 | | 09:35 (3) |
| | 22:15 | | 21:30 | 29 | 08:16 (42) | 20:17 | 32 | 08:11 (42) | 18:59 | 22 | 08:44 (31) | 16:48 | 106 | 15:52 (25) | 16:06 | 144 | 14:49 (26) |
| 7 | 05:02 | | 05:51 | | 07:46 (42) | 06:49 | | 07:41 (42) | 07:46 | | 08:22 (31) | 07:49 | | 08:31 (30) | 08:44 | | 09:35 (3) |
| | 22:15 | | 21:28 | 32 | 08:18 (42) | 20:14 | 28 | 08:09 (42) | 18:57 | 22 | 08:44 (31) | 16:46 | 100 | 15:52 (25) | 16:06 | 144 | 14:49 (26) |
| 8 | 05:03 | | 05:52 | | 07:45 (42) | 06:51 | | 07:44 (42) | 07:48 | | 08:22 (31) | 07:51 | | 11:31 (29) | 08:46 | | 09:36 (3) |
| | 22:14 | | 21:26 | 34 | 08:19 (42) | 20:12 | 22 | 08:06 (42) | 18:54 | 21 | 08:43 (31) | 16:44 | 93 | 15:52 (25) | 16:05 | 145 | 14:50 (26) |
| 9 | 05:04 | | 05:54 | | 07:43 (42) | 06:53 | | 07:48 (42) | 07:50 | | 08:22 (31) | 07:53 | | 11:31 (29) | 08:47 | | 09:36 (3) |
| | 22:13 | | 21:24 | 37 | 08:20 (42) | 20:09 | 13 | 08:01 (42) | 18:52 | 20 | 08:42 (31) | 16:42 | 93 | 15:52 (25) | 16:05 | 143 | 14:50 (26) |
| 10 | 05:06 | | 05:56 | | 07:42 (42) | 06:55 | | | 07:52 | | 08:22 (31) | 07:55 | | 11:30 (29) | 08:48 | | 09:37 (3) |
| | 22:12 | | 21:22 | 39 | 08:21 (42) | 20:07 | | | 18:49 | 19 | 08:41 (31) | 16:40 | 94 | 15:52 (25) | 16:04 | 142 | 14:51 (26) |
| 11 | 05:07 | | 05:58 | | 07:41 (42) | 06:57 | | | 07:54 | | 08:23 (31) | 07:57 | | 11:30 (29) | 08:50 | | 09:38 (3) |
| | 22:11 | | 21:19 | 41 | 08:22 (42) | 20:04 | | | 18:47 | 17 | 08:40 (31) | 16:38 | 93 | 15:51 (25) | 16:04 | 141 | 14:51 (26) |
| 12 | 05:08 | | 06:00 | | 07:40 (42) | 06:59 | | | 07:56 | | 08:25 (31) | 07:59 | | 11:31 (29) | 08:51 | | 09:38 (3) |
| | 22:10 | | 21:17 | 43 | 08:23 (42) | 20:01 | | | 18:44 | 13 | 08:38 (31) | 16:36 | 91 | 15:51 (25) | 16:04 | 141 | 14:51 (26) |
| 13 | 05:09 | | 06:02 | | 07:39 (42) | 07:01 | | | 07:58 | | 08:27 (31) | 08:01 | | 11:31 (29) | 08:52 | | 09:38 (3) |
| | 22:09 | | 21:15 | 44 | 08:23 (42) | 19:59 | | | 18:42 | 7 | 08:34 (31) | 16:34 | 92 | 15:51 (25) | 16:04 | 140 | 14:52 (26) |
| 14 | 05:11 | | 06:04 | | 07:38 (42) | 07:02 | | | 08:00 | | | 08:03 | | 11:31 (29) | 08:53 | | 09:39 (3) |
| | 22:08 | | 21:13 | 46 | 08:24 (42) | 19:56 | | | 18:39 | | | 16:33 | 91 | 15:50 (25) | 16:04 | 140 | 14:52 (26) |
| 15 | 05:12 | | 06:06 | | 07:37 (42) | 07:04 | | | 08:02 | | | 08:05 | | 09:38 (3) | 08:54 | | 09:39 (3) |
| | 22:07 | | 21:10 | 48 | 08:25 (42) | 19:54 | | | 18:37 | | | 16:31 | 98 | 15:49 (25) | 16:04 | 138 | 14:52 (26) |
| 16 | 05:13 | | 06:07 | | 07:37 (42) | 07:06 | | | 08:04 | | | 08:07 | | 09:37 (3) | 08:55 | | 09:40 (3) |
| | 22:06 | | 21:08 | 48 | 08:25 (42) | 19:51 | | | 18:35 | | | 16:29 | 99 | 15:48 (25) | 16:04 | 138 | 14:53 (26) |
| 17 | 05:15 | | 06:09 | | 07:37 (42) | 07:08 | | | 08:06 | | 09:33 (30) | 08:09 | | 09:35 (3) | 08:56 | | 09:41 (3) |
| | 22:04 | | 21:06 | 49 | 08:26 (42) | 19:48 | | | 18:32 | 5 | 09:38 (30) | 16:28 | 102 | 15:47 (25) | 16:04 | 137 | 14:54 (26) |
| 18 | 05:16 | | 06:11 | | 07:35 (42) | 07:10 | | | 08:08 | | 09:28 (30) | 08:11 | | 09:34 (3) | 08:56 | | 09:41 (3) |
| | 22:03 | | 21:04 | 50 | 08:25 (42) | 19:46 | | | 18:30 | 14 | 09:42 (30) | 16:26 | 100 | 15:45 (25) | 16:04 | 138 | 14:54 (26) |
| 19 | 05:18 | | 06:13 | | 07:35 (42) | 07:12 | | | 08:10 | | 09:26 (30) | 08:13 | | 09:33 (3) | 08:57 | | 09:42 (3) |
| | 22:02 | | 21:01 | 51 | 08:26 (42) | 19:43 | | | 18:27 | 18 | 09:44 (30) | 16:25 | 94 | 15:24 (2) | 16:04 | 137 | 14:55 (26) |
| 20 | 05:19 | | 06:15 | | 07:35 (42) | 07:14 | | | 08:12 | | 09:24 (30) | 08:15 | | 09:32 (3) | 08:58 | | 09:42 (3) |
| | 22:00 | | 20:59 | 51 | 08:26 (42) | 19:41 | | | 18:25 | 34 | 13:11 (29) | 16:23 | 99 | 15:23 (2) | 16:05 | 138 | 14:55 (26) |
| 21 | 05:21 | | 06:17 | | 07:35 (42) | 07:16 | | | 08:14 | | 09:23 (30) | 08:17 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:59 | | 20:56 | 51 | 08:26 (42) | 19:38 | | | 18:23 | 49 | 17:38 (1) | 16:22 | 115 | 15:22 (2) | 16:05 | 137 | 14:56 (26) |
| 22 | 05:23 | | 06:19 | | 07:33 (42) | 07:18 | | | 08:16 | | 09:22 (30) | 08:19 | | 09:32 (3) | 08:59 | | 09:43 (3) |
| | 21:57 | | 20:54 | 52 | 08:25 (42) | 19:35 | | | 18:20 | 59 | 17:38 (1) | 16:20 | 137 | 15:21 (2) | 16:05 | 137 | 14:56 (26) |
| 23 | 05:24 | | 06:21 | | 07:33 (42) | 07:19 | | | 08:18 | | 09:21 (30) | 08:21 | | 09:32 (3) | 09:00 | | 09:44 (3) |
| | 21:56 | | 20:52 | 53 | 08:26 (42) | 19:33 | | | 18:18 | 66 | 17:37 (1) | 16:19 | 142 | 15:19 (2) | 16:06 | 138 | 14:57 (26) |
| 24 | 05:26 | | 06:23 | | 07:33 (42) | 07:21 | | | 08:20 | | 09:21 (30) | 08:23 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:54 | | 20:49 | 52 | 08:25 (42) | 19:30 | | | 18:16 | 72 | 17:36 (1) | 16:18 | 139 | 15:16 (2) | 16:06 | 137 | 14:57 (26) |
| 25 | 05:27 | | 06:25 | | 07:33 (42) | 07:23 | | | 07:22 | | 08:20 (30) | 08:25 | | 09:31 (3) | 09:00 | | 09:44 (3) |
| | 21:52 | | 20:47 | 52 | 08:25 (42) | 19:28 | | | 17:13 | 78 | 16:35 (1) | 16:16 | 134 | 14:41 (26) | 16:07 | 138 | 14:57 (26) |
| 26 | 05:29 | | 06:26 | | 07:34 (42) | 07:25 | | | 07:24 | | 08:19 (30) | 08:27 | | 09:31 (3) | 09:01 | | 09:46 (3) |
| | 21:51 | | 20:44 | 51 | 08:25 (42) | 19:25 | | | 17:11 | 82 | 16:33 (1) | 16:15 | 136 | 14:42 (26) | 16:08 | 136 | 14:58 (26) |
| 27 | 05:31 | | 06:28 | | 07:33 (42) | 07:27 | | | 07:26 | | 08:20 (30) | 08:28 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:49 | | 20:42 | 51 | 08:24 (42) | 19:22 | | | 17:09 | 85 | 16:32 (1) | 16:14 | 138 | 14:43 (26) | 16:09 | 137 | 14:59 (26) |
| 28 | 05:33 | | 06:30 | | 07:33 (42) | 07:29 | | | 07:28 | | 08:20 (30) | 08:30 | | 09:32 (3) | 09:01 | | 09:46 (3) |
| | 21:47 | | 20:39 | 50 | 08:23 (42) | 19:20 | | | 17:07 | 99 | 16:30 (1) | 16:13 | 141 | 14:44 (26) | 16:10 | 139 | 14:59 (26) |
| 29 | 05:34 | | 06:32 | | 07:34 (42) | 07:31 | | | 07:31 | | 08:20 (30) | 08:32 | | 09:32 (3) | 09:01 | | 09:47 (3) |
| | 21:46 | | 20:37 | 49 | 08:23 (42) | 19:17 | | | 17:04 | 110 | 16:26 (1) | 16:12 | 143 | 14:45 (26) | 16:10 | 140 | 15:00 (26) |
| 30 | 05:36 | | 06:34 | | 07:34 (42) | 07:33 | | 08:29 (31) | 07:33 | | 08:20 (30) | 08:34 | | 09:33 (3) | 09:01 | | 09:46 (3) |
| | 21:44 | | 20:34 | 48 | 08:22 (42) | 19:15 | 11 | 08:40 (31) | 17:02 | 105 | 15:47 (25) | 16:11 | 144 | 14:46 (26) | 16:11 | 138 | 14:59 (26) |
| 31 | 05:38 | | 06:36 | | 07:35 (42) | | | | 07:35 | | 08:20 (30) | | | | 09:01 | | 09:47 (3) |
| | 21:42 | | 20:32 | 46 | 08:21 (42) | | | | 17:00 | 107 | 15:48 (25) | | | | 16:12 | 140 | 15:00 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 1257 | | | 309 | | | 1220 | | | 3368 | | | 4348 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 1,00 | | | 0,52 | | | 0,29 | | | 0,30 | |
| Total reduction | | | | 0,40 | | | 0,31 | | | 0,12 | | | 0,04 | | | 0,03 | |
| Total, real | | | | 506 | | | 95 | | | 152 | | | 121 | | | 138 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (3) | 08:28 | | 09:47 (3) | 07:27 | | 08:33 (30) | 07:08 | | 07:02 (42) | 05:02 |
| | 16:14 | 87 | 15:07 (26) | 17:08 | 119 | 16:27 (25) | 18:07 | 88 | 12:48 (29) | 20:10 | | 07:53 (42) | 22:03 |
| 2 | 09:01 | | 09:38 (3) | 08:26 | | 09:49 (3) | 07:24 | | 08:35 (30) | 07:05 | | 07:02 (42) | 05:01 |
| | 16:15 | 88 | 15:07 (26) | 17:10 | 118 | 16:29 (25) | 18:09 | 82 | 12:47 (29) | 20:12 | | 07:52 (42) | 22:04 |
| 3 | 09:01 | | 09:38 (3) | 08:24 | | 09:52 (3) | 07:22 | | 08:36 (30) | 07:03 | | 07:02 (42) | 05:00 |
| | 16:16 | 91 | 15:08 (26) | 17:12 | 112 | 16:30 (25) | 18:12 | 75 | 12:45 (29) | 20:14 | | 07:52 (42) | 22:05 |
| 4 | 09:00 | | 09:38 (3) | 08:22 | | 11:38 (29) | 07:19 | | 08:40 (30) | 07:00 | | 07:02 (42) | 04:59 |
| | 16:18 | 98 | 15:08 (26) | 17:15 | 104 | 16:31 (25) | 18:14 | 64 | 12:43 (29) | 20:16 | | 07:52 (42) | 22:06 |
| 5 | 09:00 | | 09:38 (3) | 08:20 | | 11:38 (29) | 07:17 | | 11:49 (29) | 06:58 | | 07:01 (42) | 04:58 |
| | 16:19 | 108 | 15:10 (26) | 17:17 | 104 | 16:32 (25) | 18:16 | 51 | 12:40 (29) | 20:18 | | 07:52 (42) | 22:08 |
| 6 | 08:59 | | 09:38 (3) | 08:18 | | 11:38 (29) | 07:14 | | 11:52 (29) | 06:55 | | 07:01 (42) | 04:57 |
| | 16:20 | 113 | 15:10 (26) | 17:19 | 106 | 16:33 (25) | 18:18 | 45 | 12:37 (29) | 20:20 | | 07:51 (42) | 22:09 |
| 7 | 08:59 | | 09:37 (3) | 08:16 | | 11:37 (29) | 07:12 | | 07:38 (31) | 06:53 | | 07:02 (42) | 04:56 |
| | 16:22 | 118 | 15:10 (26) | 17:21 | 108 | 16:33 (25) | 18:20 | 48 | 12:33 (29) | 20:22 | | 07:51 (42) | 22:10 |
| 8 | 08:58 | | 09:37 (3) | 08:14 | | 11:37 (29) | 07:09 | | 07:35 (31) | 06:50 | | 07:02 (42) | 04:56 |
| | 16:23 | 122 | 15:10 (26) | 17:23 | 108 | 16:33 (25) | 18:22 | 44 | 12:28 (29) | 20:23 | | 07:50 (42) | 22:11 |
| 9 | 08:58 | | 09:37 (3) | 08:12 | | 11:37 (29) | 07:07 | | 07:34 (31) | 06:48 | | 07:02 (42) | 04:55 |
| | 16:25 | 128 | 15:11 (26) | 17:25 | 110 | 16:34 (25) | 18:24 | 32 | 12:21 (29) | 20:25 | | 07:50 (42) | 22:12 |
| 10 | 08:57 | | 09:38 (3) | 08:10 | | 11:37 (29) | 07:04 | | 07:32 (31) | 06:45 | | 07:02 (42) | 04:54 |
| | 16:26 | 131 | 15:12 (26) | 17:27 | 110 | 16:34 (25) | 18:26 | 19 | 07:51 (31) | 20:27 | | 07:49 (42) | 22:13 |
| 11 | 08:56 | | 09:37 (3) | 08:08 | | 11:37 (29) | 07:02 | | 07:32 (31) | 06:43 | | 07:03 (42) | 04:54 |
| | 16:28 | 133 | 15:11 (26) | 17:29 | 110 | 16:34 (25) | 18:28 | 20 | 07:52 (31) | 20:29 | | 07:49 (42) | 22:14 |
| 12 | 08:55 | | 09:37 (3) | 08:06 | | 11:37 (29) | 06:59 | | 07:30 (31) | 06:40 | | 07:03 (42) | 04:54 |
| | 16:29 | 138 | 15:12 (26) | 17:32 | 109 | 16:33 (25) | 18:30 | 22 | 07:52 (31) | 20:31 | | 07:49 (42) | 22:14 |
| 13 | 08:54 | | 09:37 (3) | 08:04 | | 08:41 (30) | 06:57 | | 07:30 (31) | 06:38 | | 07:03 (42) | 04:53 |
| | 16:31 | 139 | 15:12 (26) | 17:34 | 119 | 16:33 (25) | 18:32 | 22 | 07:52 (31) | 20:33 | | 07:48 (42) | 22:15 |
| 14 | 08:53 | | 09:37 (3) | 08:02 | | 08:38 (30) | 06:54 | | 07:30 (31) | 06:35 | 07:28 (42) | 05:28 | 07:04 (42) | 04:53 |
| | 16:33 | 142 | 15:13 (26) | 17:36 | 125 | 16:33 (25) | 18:34 | 22 | 07:52 (31) | 20:35 | 6 07:34 (42) | 21:34 | 07:47 (42) | 22:16 |
| 15 | 08:52 | | 09:38 (3) | 07:59 | | 08:36 (30) | 06:52 | | 07:30 (31) | 06:33 | 07:22 (42) | 05:27 | 07:05 (42) | 04:53 |
| | 16:35 | 144 | 15:13 (26) | 17:38 | 127 | 16:32 (25) | 18:36 | 21 | 07:51 (31) | 20:37 | 18 07:40 (42) | 21:35 | 07:47 (42) | 22:16 |
| 16 | 08:51 | | 09:37 (3) | 07:57 | | 08:35 (30) | 06:49 | | 07:30 (31) | 06:30 | 07:18 (42) | 05:25 | 07:05 (42) | 04:52 |
| | 16:36 | 145 | 15:12 (26) | 17:40 | 127 | 16:31 (25) | 18:38 | 21 | 07:51 (31) | 20:39 | 24 07:42 (42) | 21:37 | 07:45 (42) | 22:17 |
| 17 | 08:50 | | 09:37 (3) | 07:55 | | 08:34 (30) | 06:47 | | 07:31 (31) | 06:28 | 07:16 (42) | 05:23 | 07:06 (42) | 04:52 |
| | 16:38 | 147 | 15:13 (26) | 17:42 | 128 | 16:31 (25) | 18:40 | 18 | 07:49 (31) | 20:41 | 28 07:44 (42) | 21:39 | 07:45 (42) | 22:18 |
| 18 | 08:49 | | 09:38 (3) | 07:53 | | 08:33 (30) | 06:44 | | 07:31 (31) | 06:25 | 07:14 (42) | 05:21 | 07:07 (42) | 04:52 |
| | 16:40 | 149 | 15:13 (26) | 17:44 | 126 | 16:28 (25) | 18:42 | 16 | 07:47 (31) | 20:43 | 32 07:46 (42) | 21:41 | 07:44 (42) | 22:18 |
| 19 | 08:48 | | 09:38 (3) | 07:50 | | 08:32 (30) | 06:41 | | 07:33 (31) | 06:23 | 07:11 (42) | 05:20 | 07:08 (42) | 04:52 |
| | 16:42 | 148 | 15:13 (26) | 17:46 | 123 | 16:27 (25) | 18:44 | 13 | 07:46 (31) | 20:45 | 36 07:47 (42) | 21:42 | 07:43 (42) | 22:18 |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:32 (30) | 06:39 | | 07:36 (31) | 06:20 | 07:10 (42) | 05:18 | 07:08 (42) | 04:52 |
| | 16:44 | 147 | 15:13 (26) | 17:49 | 115 | 16:23 (25) | 18:46 | 5 | 07:41 (31) | 20:47 | 38 07:48 (42) | 21:44 | 07:42 (42) | 22:19 |
| 21 | 08:45 | | 09:38 (3) | 07:46 | | 08:31 (30) | 06:36 | | | 06:18 | 07:09 (42) | 05:16 | 07:10 (42) | 04:52 |
| | 16:46 | 147 | 15:12 (26) | 17:51 | 115 | 17:14 (1) | 18:48 | | | 20:49 | 41 07:50 (42) | 21:46 | 07:41 (42) | 22:19 |
| 22 | 08:44 | | 09:38 (3) | 07:44 | | 08:31 (30) | 06:34 | | | 06:16 | 07:07 (42) | 05:15 | 07:10 (42) | 04:52 |
| | 16:48 | 146 | 15:11 (26) | 17:53 | 112 | 17:17 (1) | 18:50 | | | 20:51 | 43 07:50 (42) | 21:48 | 07:39 (42) | 22:19 |
| 23 | 08:42 | | 09:39 (3) | 07:41 | | 08:31 (30) | 06:31 | | | 06:13 | 07:06 (42) | 05:13 | 07:12 (42) | 04:53 |
| | 16:50 | 144 | 15:11 (26) | 17:55 | 111 | 17:19 (1) | 18:52 | | | 20:53 | 45 07:51 (42) | 21:49 | 07:39 (42) | 22:19 |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:31 (30) | 06:29 | | | 06:11 | 07:06 (42) | 05:12 | 07:14 (42) | 04:53 |
| | 16:52 | 140 | 15:10 (26) | 17:57 | 110 | 17:21 (1) | 18:54 | | | 20:55 | 45 07:51 (42) | 21:51 | 07:37 (42) | 22:19 |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:31 (30) | 06:26 | | | 06:09 | 07:05 (42) | 05:10 | 07:15 (42) | 04:53 |
| | 16:54 | 134 | 15:08 (26) | 17:59 | 105 | 17:21 (1) | 18:56 | | | 20:57 | 47 07:52 (42) | 21:52 | 07:36 (42) | 22:19 |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:32 (30) | 06:23 | | | 06:06 | 07:03 (42) | 05:09 | 07:16 (42) | 04:54 |
| | 16:56 | 127 | 15:06 (26) | 18:01 | 103 | 17:23 (1) | 18:58 | | | 20:59 | 48 07:51 (42) | 21:54 | 07:34 (42) | 22:19 |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 08:32 (30) | 06:21 | | | 06:04 | 07:03 (42) | 05:08 | 07:19 (42) | 04:54 |
| | 16:58 | 115 | 14:03 (28) | 18:03 | 97 | 12:51 (29) | 19:00 | | | 21:01 | 49 07:52 (42) | 21:55 | 07:31 (42) | 22:19 |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 08:33 (30) | 06:18 | | | 06:02 | 07:03 (42) | 05:06 | 07:23 (42) | 04:55 |
| | 17:00 | 112 | 14:01 (28) | 18:05 | 93 | 12:50 (29) | 19:02 | | | 21:03 | 49 07:52 (42) | 21:57 | 5 07:28 (42) | 22:19 |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | 07:02 (42) | 05:05 | | 04:55 |
| | 17:02 | 99 | 13:55 (28) | | | | 20:04 | | | 21:05 | 50 07:52 (42) | 21:58 | | 22:19 |
| 30 | 08:31 | | 09:44 (3) | | | | 07:13 | | | 05:57 | 07:02 (42) | 05:04 | | 04:56 |
| | 17:04 | 118 | 16:22 (25) | | | | 20:06 | | | 21:07 | 50 07:52 (42) | 22:00 | | 22:19 |
| 31 | 08:30 | | 09:45 (3) | | | | 07:11 | | | | | 05:03 | | |
| | 17:06 | 130 | 16:25 (25) | | | | 20:08 | | | | | 22:01 | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | 501 | | 520 |
| Total, worst case | | 3928 | | | 3154 | | | 728 | | | 649 | | 1067 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | 0,52 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | 1,00 | |
| Wind dir. red. | | 0,35 | | | 0,35 | | | 0,49 | | | 0,98 | | 0,98 | |
| Total reduction | | 0,05 | | | 0,07 | | | 0,14 | | | 0,32 | | 0,42 | |
| Total, real | | 205 | | | 226 | | | 99 | | | 207 | | 447 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | 07:13 (42) | 06:38 | | | 07:35 | | 08:09 (31) | 07:37 | | 11:07 (29) | 08:35 | | 09:19 (3) |
| | 22:18 | | 21:40 | 46 | 07:59 (42) | 20:29 | | | 19:12 | 22 | 08:31 (31) | 16:58 | 110 | 16:04 (25) | 16:10 | 134 | 14:53 (26) |
| 2 | 04:58 | | 05:41 | | 07:13 (42) | 06:40 | | | 07:37 | | 08:09 (31) | 07:39 | | 11:07 (29) | 08:37 | | 09:20 (3) |
| | 22:18 | | 21:38 | 47 | 08:00 (42) | 20:27 | | | 19:10 | 22 | 08:31 (31) | 16:56 | 108 | 16:03 (25) | 16:09 | 131 | 14:54 (26) |
| 3 | 04:58 | | 05:43 | | 07:12 (42) | 06:42 | | | 07:39 | | 08:10 (31) | 07:41 | | 11:07 (29) | 08:38 | | 09:21 (3) |
| | 22:17 | | 21:36 | 48 | 08:00 (42) | 20:24 | | | 19:07 | 20 | 08:30 (31) | 16:54 | 108 | 16:03 (25) | 16:08 | 127 | 14:55 (26) |
| 4 | 04:59 | | 05:45 | | 07:12 (42) | 06:44 | | | 07:41 | | 08:10 (31) | 07:43 | | 11:08 (29) | 08:40 | | 09:22 (3) |
| | 22:17 | | 21:34 | 48 | 08:00 (42) | 20:22 | | | 19:04 | 19 | 08:29 (31) | 16:52 | 106 | 16:03 (25) | 16:08 | 123 | 14:55 (26) |
| 5 | 05:00 | | 05:47 | | 07:12 (42) | 06:45 | | | 07:42 | | 08:11 (31) | 07:45 | | 11:08 (29) | 08:42 | | 09:22 (3) |
| | 22:16 | | 21:32 | 49 | 08:01 (42) | 20:19 | | | 19:02 | 40 | 13:02 (29) | 16:50 | 105 | 16:02 (25) | 16:07 | 119 | 14:55 (26) |
| 6 | 05:01 | | 05:49 | | 07:11 (42) | 06:47 | | | 07:44 | | 08:13 (31) | 07:47 | | 11:08 (29) | 08:43 | | 09:24 (3) |
| | 22:15 | | 21:30 | 49 | 08:00 (42) | 20:17 | | | 18:59 | 46 | 13:07 (29) | 16:48 | 104 | 16:02 (25) | 16:06 | 113 | 14:56 (26) |
| 7 | 05:02 | | 05:51 | | 07:11 (42) | 06:49 | | | 07:46 | | 08:15 (31) | 07:49 | | 11:08 (29) | 08:44 | | 09:24 (3) |
| | 22:15 | | 21:28 | 50 | 08:01 (42) | 20:14 | | | 18:57 | 49 | 13:11 (29) | 16:46 | 105 | 16:01 (25) | 16:06 | 108 | 14:56 (26) |
| 8 | 05:03 | | 05:52 | | 07:11 (42) | 06:51 | | | 07:48 | | 12:26 (29) | 07:51 | | 09:23 (3) | 08:46 | | 09:26 (3) |
| | 22:14 | | 21:26 | 50 | 08:01 (42) | 20:12 | | | 18:54 | 48 | 13:14 (29) | 16:44 | 112 | 16:01 (25) | 16:05 | 97 | 14:56 (26) |
| 9 | 05:04 | | 05:54 | | 07:10 (42) | 06:53 | | | 07:50 | | 12:23 (29) | 07:53 | | 09:20 (3) | 08:47 | | 09:26 (3) |
| | 22:13 | | 21:24 | 51 | 08:01 (42) | 20:09 | | | 18:52 | 53 | 13:16 (29) | 16:42 | 119 | 15:59 (25) | 16:05 | 90 | 14:56 (26) |
| 10 | 05:06 | | 05:56 | | 07:10 (42) | 06:55 | | | 07:52 | | 09:12 (30) | 07:55 | | 09:18 (3) | 08:48 | | 09:28 (3) |
| | 22:12 | | 21:22 | 51 | 08:01 (42) | 20:07 | | | 18:49 | 70 | 13:18 (29) | 16:40 | 118 | 15:58 (25) | 16:04 | 88 | 14:57 (26) |
| 11 | 05:07 | | 05:58 | | 07:10 (42) | 06:57 | | | 07:54 | | 09:09 (30) | 07:57 | | 09:16 (3) | 08:50 | | 09:29 (3) |
| | 22:11 | | 21:19 | 51 | 08:01 (42) | 20:04 | | | 18:47 | 78 | 13:19 (29) | 16:38 | 115 | 15:56 (25) | 16:04 | 87 | 14:57 (26) |
| 12 | 05:08 | | 06:00 | | 07:10 (42) | 06:59 | | | 07:56 | | 09:07 (30) | 07:59 | | 09:16 (3) | 08:51 | | 09:29 (3) |
| | 22:10 | | 21:17 | 51 | 08:01 (42) | 20:01 | | | 18:44 | 86 | 13:21 (29) | 16:36 | 106 | 15:53 (25) | 16:04 | 86 | 14:58 (26) |
| 13 | 05:09 | | 06:02 | | 07:10 (42) | 07:01 | | | 07:58 | | 09:06 (30) | 08:01 | | 09:15 (3) | 08:52 | | 09:30 (3) |
| | 22:09 | | 21:15 | 50 | 08:00 (42) | 19:59 | | | 18:42 | 91 | 13:22 (29) | 16:34 | 100 | 13:28 (28) | 16:04 | 86 | 14:58 (26) |
| 14 | 05:11 | | 06:04 | | 07:10 (42) | 07:02 | | | 08:00 | | 09:05 (30) | 08:03 | | 09:14 (3) | 08:53 | | 09:31 (3) |
| | 22:08 | | 21:13 | 50 | 08:00 (42) | 19:56 | | | 18:39 | 94 | 13:23 (29) | 16:33 | 112 | 13:33 (28) | 16:04 | 83 | 14:58 (26) |
| 15 | 05:12 | | 06:06 | | 07:10 (42) | 07:04 | | | 08:02 | | 09:04 (30) | 08:05 | | 09:14 (3) | 08:54 | | 09:32 (3) |
| | 22:07 | | 21:10 | 50 | 08:00 (42) | 19:54 | | | 18:37 | 98 | 13:24 (29) | 16:31 | 115 | 13:35 (28) | 16:04 | 82 | 14:58 (26) |
| 16 | 05:13 | 07:30 (42) | 06:07 | | 07:11 (42) | 07:06 | | | 08:04 | | 09:04 (30) | 08:07 | | 09:14 (3) | 08:55 | | 09:34 (3) |
| | 22:06 | 9 07:39 (42) | 21:08 | 48 | 07:59 (42) | 19:51 | | | 18:35 | 104 | 17:55 (1) | 16:29 | 126 | 14:39 (26) | 16:04 | 80 | 14:59 (26) |
| 17 | 05:15 | 07:27 (42) | 06:09 | | 07:11 (42) | 07:08 | | | 08:06 | | 09:03 (30) | 08:09 | | 09:14 (3) | 08:56 | | 09:35 (3) |
| | 22:04 | 15 07:42 (42) | 21:06 | 48 | 07:59 (42) | 19:48 | | | 18:32 | 107 | 17:53 (1) | 16:28 | 135 | 14:42 (26) | 16:04 | 80 | 14:59 (26) |
| 18 | 05:16 | 07:25 (42) | 06:11 | | 07:11 (42) | 07:10 | | | 08:08 | | 09:02 (30) | 08:11 | | 09:14 (3) | 08:56 | | 09:36 (3) |
| | 22:03 | 19 07:44 (42) | 21:04 | 46 | 07:57 (42) | 19:46 | | | 18:30 | 109 | 17:51 (1) | 16:26 | 140 | 14:44 (26) | 16:04 | 78 | 15:00 (26) |
| 19 | 05:18 | 07:24 (42) | 06:13 | | 07:11 (42) | 07:12 | | | 08:10 | | 09:02 (30) | 08:13 | | 09:13 (3) | 08:57 | | 09:37 (3) |
| | 22:02 | 22 07:46 (42) | 21:01 | 46 | 07:57 (42) | 19:43 | | | 18:27 | 110 | 17:49 (1) | 16:25 | 144 | 14:45 (26) | 16:04 | 77 | 15:01 (26) |
| 20 | 05:19 | 07:22 (42) | 06:15 | | 07:12 (42) | 07:14 | | | 08:12 | | 09:02 (30) | 08:15 | | 09:13 (3) | 08:58 | | 09:37 (3) |
| | 22:00 | 26 07:48 (42) | 20:59 | 44 | 07:56 (42) | 19:41 | | | 18:25 | 114 | 17:47 (1) | 16:23 | 147 | 14:46 (26) | 16:05 | 75 | 15:00 (26) |
| 21 | 05:21 | 07:22 (42) | 06:17 | | 07:13 (42) | 07:16 | | | 08:14 | | 09:02 (30) | 08:17 | | 09:14 (3) | 08:59 | | 09:39 (3) |
| | 21:59 | 27 07:49 (42) | 20:56 | 42 | 07:55 (42) | 19:38 | | | 18:23 | 114 | 17:43 (1) | 16:22 | 147 | 14:48 (26) | 16:05 | 75 | 15:01 (26) |
| 22 | 05:23 | 07:20 (42) | 06:19 | | 07:13 (42) | 07:18 | | | 08:16 | | 09:03 (30) | 08:19 | | 09:15 (3) | 08:59 | | 09:39 (3) |
| | 21:57 | 30 07:50 (42) | 20:54 | 40 | 07:53 (42) | 19:35 | | | 18:20 | 117 | 16:55 (25) | 16:20 | 147 | 14:49 (26) | 16:05 | 75 | 15:01 (26) |
| 23 | 05:24 | 07:20 (42) | 06:21 | | 07:14 (42) | 07:19 | | | 08:18 | | 09:03 (30) | 08:21 | | 09:15 (3) | 09:00 | | 09:40 (3) |
| | 21:56 | 32 07:52 (42) | 20:52 | 38 | 07:52 (42) | 19:33 | | | 18:18 | 124 | 16:58 (25) | 16:19 | 148 | 14:50 (26) | 16:06 | 75 | 15:02 (26) |
| 24 | 05:26 | 07:18 (42) | 06:23 | | 07:15 (42) | 07:21 | | 08:18 (31) | 08:20 | | 09:03 (30) | 08:23 | | 09:15 (3) | 09:00 | | 09:39 (3) |
| | 21:54 | 35 07:53 (42) | 20:49 | 36 | 07:51 (42) | 19:30 | 10 | 08:28 (31) | 18:16 | 127 | 16:59 (25) | 16:18 | 149 | 14:50 (26) | 16:06 | 76 | 15:02 (26) |
| 25 | 05:27 | 07:18 (42) | 06:25 | | 07:17 (42) | 07:23 | | 08:15 (31) | 07:22 | | 08:04 (30) | 08:25 | | 09:16 (3) | 09:00 | | 09:39 (3) |
| | 21:52 | 36 07:54 (42) | 20:47 | 32 | 07:49 (42) | 19:28 | 15 | 08:30 (31) | 17:13 | 127 | 16:00 (25) | 16:16 | 146 | 14:51 (26) | 16:07 | 77 | 15:03 (26) |
| 26 | 05:29 | 07:17 (42) | 06:26 | | 07:19 (42) | 07:25 | | 08:14 (31) | 07:24 | | 08:05 (30) | 08:27 | | 09:16 (3) | 09:01 | | 09:40 (3) |
| | 21:51 | 38 07:55 (42) | 20:44 | 28 | 07:47 (42) | 19:25 | 18 | 08:32 (31) | 17:11 | 128 | 16:01 (25) | 16:15 | 145 | 14:51 (26) | 16:08 | 78 | 15:04 (26) |
| 27 | 05:31 | 07:16 (42) | 06:28 | | 07:20 (42) | 07:27 | | 08:12 (31) | 07:26 | | 08:07 (30) | 08:28 | | 09:17 (3) | 09:01 | | 09:40 (3) |
| | 21:49 | 40 07:56 (42) | 20:42 | 24 | 07:44 (42) | 19:22 | 19 | 08:31 (31) | 17:09 | 125 | 16:02 (25) | 16:14 | 144 | 14:52 (26) | 16:09 | 80 | 15:05 (26) |
| 28 | 05:33 | 07:15 (42) | 06:30 | | 07:23 (42) | 07:29 | | 08:11 (31) | 07:28 | | 08:08 (30) | 08:30 | | 09:17 (3) | 09:01 | | 09:39 (3) |
| | 21:47 | 41 07:56 (42) | 20:39 | 17 | 07:40 (42) | 19:20 | 21 | 08:32 (31) | 17:07 | 124 | 16:03 (25) | 16:13 | 143 | 14:53 (26) | 16:10 | 81 | 15:05 (26) |
| 29 | 05:34 | 07:15 (42) | 06:32 | | 07:29 (42) | 07:31 | | 08:10 (31) | 07:31 | | 08:11 (30) | 08:32 | | 09:18 (3) | 09:01 | | 09:39 (3) |
| | 21:46 | 42 07:57 (42) | 20:37 | 5 | 07:34 (42) | 19:17 | 22 | 08:32 (31) | 17:04 | 120 | 16:03 (25) | 16:12 | 139 | 14:53 (26) | 16:10 | 84 | 15:06 (26) |
| 30 | 05:36 | 07:15 (42) | 06:34 | | | 07:33 | | 08:10 (31) | 07:33 | | 11:06 (29) | 08:34 | | 09:19 (3) | 09:01 | | 09:38 (3) |
| | 21:44 | 43 07:58 (42) | 20:34 | | | 19:15 | 22 | 08:32 (31) | 17:02 | 110 | 16:03 (25) | 16:11 | 138 | 14:54 (26) | 16:11 | 84 | 15:05 (26) |
| 31 | 05:38 | 07:13 (42) | 06:36 | | | | | | 07:35 | | 11:06 (29) | | | | 09:01 | | 09:38 (3) |
| | 21:42 | 45 07:58 (42) | 20:32 | | | | | | 17:00 | 110 | 16:03 (25) | | | | 16:12 | 86 | 15:06 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 500 | | 1235 | | | 127 | | | 2706 | | | 3781 | | | 2815 | |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | 0,98 | | | 0,97 | | | 0,37 | | | 0,33 | | | 0,39 | |
| Total reduction | | 0,39 | | 0,42 | | | 0,32 | | | 0,09 | | | 0,04 | | | 0,04 | |
| Total, real | | 197 | | 516 | | | 40 | | | 253 | | | 163 | | | 121 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:42 (3) | 08:28 | | 09:45 (3) | 07:27 | | 08:24 (30) | 07:08 | | | 05:55 | | 06:49 (42) | 05:02 | | 06:38 (42) |
| | 16:14 | 71 | 15:22 (26) | 17:08 | 137 | 15:32 (26) | 18:07 | 131 | 16:57 (2) | 20:10 | | | 21:09 | 33 | 07:22 (42) | 22:03 | 54 | 07:32 (42) |
| 2 | 09:01 | | 09:41 (3) | 08:26 | | 09:46 (3) | 07:24 | | 08:25 (30) | 07:05 | | | 05:53 | | 06:47 (42) | 05:01 | | 06:38 (42) |
| | 16:15 | 76 | 15:23 (26) | 17:10 | 130 | 15:30 (26) | 18:09 | 132 | 17:36 (1) | 20:12 | | | 21:11 | 37 | 07:24 (42) | 22:04 | 53 | 07:31 (42) |
| 3 | 09:01 | | 09:41 (3) | 08:24 | | 09:48 (3) | 07:22 | | 08:24 (30) | 07:03 | | | 05:51 | | 06:46 (42) | 05:00 | | 06:39 (42) |
| | 16:16 | 77 | 15:24 (26) | 17:12 | 118 | 14:37 (28) | 18:12 | 133 | 17:38 (1) | 20:14 | | | 21:13 | 39 | 07:25 (42) | 22:05 | 53 | 07:32 (42) |
| 4 | 09:00 | | 09:40 (3) | 08:22 | | 09:49 (3) | 07:19 | | 08:25 (30) | 07:00 | | | 05:48 | | 06:44 (42) | 04:59 | | 06:39 (42) |
| | 16:18 | 81 | 15:25 (26) | 17:15 | 113 | 14:35 (28) | 18:14 | 132 | 17:40 (1) | 20:16 | | | 21:15 | 42 | 07:26 (42) | 22:06 | 53 | 07:32 (42) |
| 5 | 09:00 | | 09:40 (3) | 08:20 | | 09:52 (3) | 07:17 | | 08:26 (30) | 06:58 | | | 05:46 | | 06:43 (42) | 04:58 | | 06:39 (42) |
| | 16:19 | 83 | 15:26 (26) | 17:17 | 105 | 14:33 (28) | 18:16 | 127 | 17:41 (1) | 20:18 | | | 21:17 | 44 | 07:27 (42) | 22:08 | 53 | 07:32 (42) |
| 6 | 08:59 | | 09:40 (3) | 08:18 | | 09:56 (3) | 07:14 | | 08:27 (30) | 06:55 | | | 05:44 | | 06:42 (42) | 04:57 | | 06:40 (42) |
| | 16:20 | 86 | 15:27 (26) | 17:19 | 91 | 14:29 (28) | 18:18 | 124 | 17:42 (1) | 20:20 | | | 21:18 | 45 | 07:27 (42) | 22:09 | 52 | 07:32 (42) |
| 7 | 08:59 | | 09:39 (3) | 08:16 | | 12:23 (29) | 07:12 | | 08:28 (30) | 06:53 | | | 05:42 | | 06:41 (42) | 04:56 | | 06:40 (42) |
| | 16:22 | 89 | 15:28 (26) | 17:21 | 79 | 16:39 (25) | 18:20 | 121 | 17:43 (1) | 20:22 | | | 21:20 | 47 | 07:28 (42) | 22:10 | 52 | 07:32 (42) |
| 8 | 08:58 | | 09:39 (3) | 08:14 | | 12:22 (29) | 07:09 | | 08:30 (30) | 06:50 | | | 05:40 | | 06:40 (42) | 04:56 | | 06:40 (42) |
| | 16:23 | 91 | 15:28 (26) | 17:23 | 92 | 16:44 (25) | 18:22 | 114 | 17:43 (1) | 20:23 | | | 21:22 | 49 | 07:29 (42) | 22:11 | 51 | 07:31 (42) |
| 9 | 08:58 | | 09:39 (3) | 08:12 | | 12:22 (29) | 07:07 | | 08:33 (30) | 06:48 | | | 05:38 | | 06:39 (42) | 04:55 | | 06:41 (42) |
| | 16:25 | 93 | 15:29 (26) | 17:25 | 98 | 16:47 (25) | 18:24 | 106 | 17:43 (1) | 20:25 | | | 21:24 | 50 | 07:29 (42) | 22:12 | 51 | 07:32 (42) |
| 10 | 08:57 | | 09:40 (3) | 08:10 | | 12:21 (29) | 07:04 | | 12:13 (29) | 06:45 | | | 05:36 | | 06:39 (42) | 04:54 | | 06:41 (42) |
| | 16:26 | 96 | 15:31 (26) | 17:27 | 103 | 16:49 (25) | 18:26 | 94 | 17:43 (1) | 20:27 | | | 21:26 | 50 | 07:29 (42) | 22:13 | 50 | 07:31 (42) |
| 11 | 08:56 | | 09:39 (3) | 08:08 | | 12:20 (29) | 07:02 | | 07:29 (31) | 06:43 | | | 05:34 | | 06:39 (42) | 04:54 | | 06:41 (42) |
| | 16:28 | 98 | 15:31 (26) | 17:29 | 107 | 16:50 (25) | 18:28 | 103 | 17:44 (1) | 20:29 | | | 21:28 | 52 | 07:31 (42) | 22:14 | 51 | 07:32 (42) |
| 12 | 08:55 | | 09:39 (3) | 08:06 | | 12:19 (29) | 06:59 | | 07:26 (31) | 06:40 | | | 05:32 | | 06:38 (42) | 04:54 | | 06:42 (42) |
| | 16:29 | 99 | 15:31 (26) | 17:32 | 110 | 16:50 (25) | 18:30 | 107 | 17:43 (1) | 20:31 | | | 21:30 | 53 | 07:31 (42) | 22:14 | 50 | 07:32 (42) |
| 13 | 08:54 | | 09:39 (3) | 08:04 | | 12:18 (29) | 06:57 | | 07:24 (31) | 06:38 | | | 05:30 | | 06:37 (42) | 04:53 | | 06:43 (42) |
| | 16:31 | 101 | 15:32 (26) | 17:34 | 114 | 16:52 (25) | 18:32 | 106 | 13:42 (29) | 20:33 | | | 21:32 | 54 | 07:31 (42) | 22:15 | 49 | 07:32 (42) |
| 14 | 08:53 | | 09:39 (3) | 08:02 | | 12:18 (29) | 06:54 | | 07:23 (31) | 06:35 | | | 05:28 | | 06:37 (42) | 04:53 | | 06:42 (42) |
| | 16:33 | 102 | 15:33 (26) | 17:36 | 115 | 16:52 (25) | 18:34 | 106 | 13:41 (29) | 20:35 | | | 21:34 | 54 | 07:31 (42) | 22:16 | 50 | 07:32 (42) |
| 15 | 08:52 | | 09:39 (3) | 07:59 | | 12:17 (29) | 06:52 | | 07:22 (31) | 06:33 | | | 05:27 | | 06:37 (42) | 04:53 | | 06:43 (42) |
| | 16:35 | 105 | 15:34 (26) | 17:38 | 117 | 16:52 (25) | 18:36 | 106 | 13:40 (29) | 20:37 | | | 21:35 | 55 | 07:32 (42) | 22:16 | 49 | 07:32 (42) |
| 16 | 08:51 | | 09:38 (3) | 07:57 | | 08:39 (30) | 06:49 | | 07:22 (31) | 06:30 | | | 05:25 | | 06:37 (42) | 04:52 | | 06:43 (42) |
| | 16:36 | 107 | 15:34 (26) | 17:40 | 125 | 16:53 (25) | 18:38 | 104 | 13:39 (29) | 20:39 | | | 21:37 | 54 | 07:31 (42) | 22:17 | 49 | 07:32 (42) |
| 17 | 08:50 | | 09:39 (3) | 07:55 | | 08:35 (30) | 06:47 | | 07:21 (31) | 06:28 | | | 05:23 | | 06:37 (42) | 04:52 | | 06:43 (42) |
| | 16:38 | 106 | 15:35 (26) | 17:42 | 135 | 16:53 (25) | 18:40 | 100 | 13:36 (29) | 20:41 | | | 21:39 | 55 | 07:32 (42) | 22:18 | 49 | 07:32 (42) |
| 18 | 08:49 | | 09:39 (3) | 07:53 | | 08:32 (30) | 06:44 | | 07:20 (31) | 06:25 | | | 05:21 | | 06:36 (42) | 04:52 | | 06:44 (42) |
| | 16:40 | 108 | 15:36 (26) | 17:44 | 142 | 16:53 (25) | 18:42 | 97 | 13:34 (29) | 20:43 | | | 21:41 | 56 | 07:32 (42) | 22:18 | 48 | 07:32 (42) |
| 19 | 08:48 | | 09:39 (3) | 07:50 | | 08:30 (30) | 06:41 | | 07:20 (31) | 06:23 | | | 05:20 | | 06:37 (42) | 04:52 | | 06:44 (42) |
| | 16:42 | 109 | 15:36 (26) | 17:46 | 146 | 16:53 (25) | 18:44 | 93 | 13:32 (29) | 20:45 | | | 21:42 | 55 | 07:32 (42) | 22:18 | 48 | 07:32 (42) |
| 20 | 08:47 | | 09:39 (3) | 07:48 | | 08:29 (30) | 06:39 | | 07:20 (31) | 06:20 | | | 05:18 | | 06:36 (42) | 04:52 | | 06:44 (42) |
| | 16:44 | 109 | 15:36 (26) | 17:49 | 149 | 16:53 (25) | 18:46 | 87 | 13:30 (29) | 20:47 | | | 21:44 | 56 | 07:32 (42) | 22:19 | 48 | 07:32 (42) |
| 21 | 08:45 | | 09:39 (3) | 07:46 | | 08:27 (30) | 06:36 | | 07:21 (31) | 06:18 | | | 05:16 | | 06:37 (42) | 04:52 | | 06:44 (42) |
| | 16:46 | 108 | 15:36 (26) | 17:51 | 150 | 16:52 (25) | 18:48 | 80 | 13:27 (29) | 20:49 | | | 21:46 | 55 | 07:32 (42) | 22:19 | 48 | 07:32 (42) |
| 22 | 08:44 | | 09:39 (3) | 07:44 | | 08:27 (30) | 06:34 | | 07:21 (31) | 06:16 | | | 05:15 | | 06:36 (42) | 04:52 | | 06:45 (42) |
| | 16:48 | 125 | 15:36 (26) | 17:53 | 151 | 16:55 (2) | 18:50 | 71 | 13:23 (29) | 20:51 | | | 21:47 | 56 | 07:32 (42) | 22:19 | 48 | 07:33 (42) |
| 23 | 08:42 | | 09:40 (3) | 07:41 | | 08:26 (30) | 06:31 | | 07:23 (31) | 06:13 | | | 05:13 | | 06:36 (42) | 04:53 | | 06:45 (42) |
| | 16:50 | 134 | 15:37 (26) | 17:55 | 152 | 16:55 (2) | 18:52 | 60 | 13:19 (29) | 20:53 | | | 21:49 | 56 | 07:32 (42) | 22:19 | 48 | 07:33 (42) |
| 24 | 08:41 | | 09:40 (3) | 07:39 | | 08:25 (30) | 06:29 | | 07:25 (31) | 06:11 | | | 05:12 | | 06:37 (42) | 04:53 | | 06:45 (42) |
| | 16:52 | 139 | 15:37 (26) | 17:57 | 151 | 16:56 (2) | 18:54 | 43 | 13:13 (29) | 20:55 | | | 21:51 | 55 | 07:32 (42) | 22:19 | 48 | 07:33 (42) |
| 25 | 08:39 | | 09:40 (3) | 07:36 | | 08:24 (30) | 06:26 | | 12:55 (29) | 06:09 | | | 05:10 | | 06:37 (42) | 04:53 | | 06:45 (42) |
| | 16:54 | 141 | 15:36 (26) | 17:59 | 149 | 16:56 (2) | 18:56 | 4 | 12:59 (29) | 20:57 | | | 21:52 | 56 | 07:33 (42) | 22:19 | 49 | 07:34 (42) |
| 26 | 08:38 | | 09:41 (3) | 07:34 | | 08:25 (30) | 06:23 | | | 06:06 | | | 05:09 | | 06:36 (42) | 04:54 | | 06:45 (42) |
| | 16:56 | 146 | 15:37 (26) | 18:01 | 142 | 16:57 (2) | 18:58 | | | 20:59 | | | 21:54 | 56 | 07:32 (42) | 22:19 | 49 | 07:34 (42) |
| 27 | 08:36 | | 09:42 (3) | 07:32 | | 08:24 (30) | 06:21 | | | 06:04 | | 07:01 (42) | 05:08 | | 06:37 (42) | 04:54 | | 06:46 (42) |
| | 16:58 | 147 | 15:37 (26) | 18:03 | 133 | 16:57 (2) | 19:00 | | | 21:01 | 9 | 07:10 (42) | 21:55 | 55 | 07:32 (42) | 22:19 | 49 | 07:35 (42) |
| 28 | 08:35 | | 09:42 (3) | 07:29 | | 08:24 (30) | 06:18 | | | 06:02 | | 06:56 (42) | 05:06 | | 06:37 (42) | 04:55 | | 06:45 (42) |
| | 17:00 | 146 | 15:36 (26) | 18:05 | 134 | 16:58 (2) | 19:02 | | | 21:03 | 19 | 07:15 (42) | 21:57 | 55 | 07:32 (42) | 22:19 | 50 | 07:35 (42) |
| 29 | 08:33 | | 09:43 (3) | | | | 07:16 | | | 05:59 | | 06:53 (42) | 05:05 | | 06:37 (42) | 04:55 | | 06:46 (42) |
| | 17:02 | 146 | 15:35 (26) | | | | 20:04 | | | 21:05 | 25 | 07:18 (42) | 21:58 | 55 | 07:32 (42) | 22:19 | 49 | 07:35 (42) |
| 30 | 08:31 | | 09:43 (3) | | | | 07:13 | | | 05:57 | | 06:51 (42) | 05:04 | | 06:38 (42) | 04:56 | | 06:45 (42) |
| | 17:04 | 145 | 15:34 (26) | | | | 20:06 | | | 21:07 | 29 | 07:20 (42) | 22:00 | 54 | 07:32 (42) | 22:19 | 50 | 07:35 (42) |
| 31 | 08:30 | | 09:44 (3) | | | | 07:11 | | | | | | 05:03 | | 06:38 (42) | | | |
| | 17:06 | 142 | 15:33 (26) | | | | 20:08 | | | | | | 22:01 | 54 | 07:32 (42) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3406 | | | 3488 | | | 2481 | | | 82 | | | 1587 | | | 1501 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,45 | | | 0,28 | | | 0,25 | | | 0,95 | | | 0,95 | | | 0,95 | |
| Total reduction | | 0,07 | | | 0,06 | | | 0,07 | | | 0,32 | | | 0,42 | | | 0,40 | |
| Total, real | | 238 | | | 204 | | | 181 | | | 26 | | | 673 | | | 595 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 06:46 (42) | 05:40 | | 06:49 (42) | 06:38 | | | 07:35 | | 08:04 (31) | 07:37 | | 11:51 (29) | 08:35 | | 09:21 (3) |
| | 22:18 | 50 | 07:36 (42) | 21:40 | 52 | 07:41 (42) | 20:29 | | | 19:12 | 106 | 14:22 (29) | 16:58 | 101 | 16:18 (25) | 16:10 | 97 | 15:13 (26) |
| 2 | 04:58 | | 06:46 (42) | 05:41 | | 06:49 (42) | 06:40 | | | 07:37 | | 08:06 (31) | 07:39 | | 11:51 (29) | 08:37 | | 09:22 (3) |
| | 22:18 | 50 | 07:36 (42) | 21:38 | 52 | 07:41 (42) | 20:27 | | | 19:10 | 105 | 18:22 (1) | 16:56 | 97 | 16:16 (25) | 16:09 | 96 | 15:13 (26) |
| 3 | 04:58 | | 06:46 (42) | 05:43 | | 06:49 (42) | 06:42 | | | 07:39 | | 08:09 (31) | 07:41 | | 11:52 (29) | 08:38 | | 09:23 (3) |
| | 22:17 | 51 | 07:37 (42) | 21:36 | 50 | 07:39 (42) | 20:24 | | | 19:07 | 100 | 18:21 (1) | 16:54 | 90 | 16:13 (25) | 16:08 | 93 | 15:13 (26) |
| 4 | 04:59 | | 06:46 (42) | 05:45 | | 06:50 (42) | 06:44 | | | 07:41 | | 09:13 (30) | 07:43 | | 11:54 (29) | 08:40 | | 09:24 (3) |
| | 22:17 | 51 | 07:37 (42) | 21:34 | 49 | 07:39 (42) | 20:22 | | | 19:04 | 101 | 18:21 (1) | 16:52 | 77 | 13:11 (29) | 16:08 | 91 | 15:13 (26) |
| 5 | 05:00 | | 06:46 (42) | 05:47 | | 06:51 (42) | 06:45 | | | 07:42 | | 09:08 (30) | 07:45 | | 09:25 (3) | 08:41 | | 09:25 (3) |
| | 22:16 | 51 | 07:37 (42) | 21:32 | 48 | 07:39 (42) | 20:19 | | | 19:02 | 112 | 18:20 (1) | 16:50 | 93 | 13:59 (28) | 16:07 | 89 | 15:13 (26) |
| 6 | 05:01 | | 06:46 (42) | 05:49 | | 06:51 (42) | 06:47 | | | 07:44 | | 09:05 (30) | 07:47 | | 09:21 (3) | 08:43 | | 09:26 (3) |
| | 22:15 | 51 | 07:37 (42) | 21:30 | 46 | 07:37 (42) | 20:17 | | | 18:59 | 118 | 18:19 (1) | 16:48 | 107 | 14:03 (28) | 16:06 | 86 | 15:13 (26) |
| 7 | 05:02 | | 06:46 (42) | 05:51 | | 06:52 (42) | 06:49 | | | 07:46 | | 09:03 (30) | 07:49 | | 09:19 (3) | 08:44 | | 09:26 (3) |
| | 22:15 | 52 | 07:38 (42) | 21:28 | 45 | 07:37 (42) | 20:14 | | | 18:57 | 121 | 18:18 (1) | 16:46 | 114 | 14:05 (28) | 16:06 | 84 | 15:12 (26) |
| 8 | 05:03 | | 06:46 (42) | 05:52 | | 06:53 (42) | 06:51 | | | 07:48 | | 09:01 (30) | 07:51 | | 09:18 (3) | 08:46 | | 09:28 (3) |
| | 22:14 | 52 | 07:38 (42) | 21:26 | 43 | 07:36 (42) | 20:12 | | | 18:54 | 127 | 18:17 (1) | 16:44 | 119 | 14:08 (28) | 16:05 | 81 | 15:13 (26) |
| 9 | 05:04 | | 06:46 (42) | 05:54 | | 06:53 (42) | 06:53 | | | 07:50 | | 09:00 (30) | 07:53 | | 09:17 (3) | 08:47 | | 09:29 (3) |
| | 22:13 | 52 | 07:38 (42) | 21:24 | 41 | 07:34 (42) | 20:09 | | | 18:52 | 129 | 18:15 (1) | 16:42 | 133 | 15:01 (26) | 16:05 | 77 | 15:12 (26) |
| 10 | 05:06 | | 06:46 (42) | 05:56 | | 06:54 (42) | 06:55 | | | 07:52 | | 08:59 (30) | 07:55 | | 09:16 (3) | 08:48 | | 09:31 (3) |
| | 22:12 | 53 | 07:39 (42) | 21:22 | 39 | 07:33 (42) | 20:07 | | | 18:49 | 132 | 18:13 (1) | 16:40 | 138 | 15:03 (26) | 16:04 | 76 | 15:13 (26) |
| 11 | 05:07 | | 06:47 (42) | 05:58 | | 06:56 (42) | 06:57 | | | 07:54 | | 08:58 (30) | 07:57 | | 09:15 (3) | 08:50 | | 09:32 (3) |
| | 22:11 | 53 | 07:40 (42) | 21:19 | 36 | 07:32 (42) | 20:04 | | | 18:47 | 133 | 18:11 (1) | 16:38 | 142 | 15:04 (26) | 16:04 | 72 | 15:13 (26) |
| 12 | 05:08 | | 06:46 (42) | 06:00 | | 06:58 (42) | 06:59 | | | 07:56 | | 08:57 (30) | 07:59 | | 09:15 (3) | 08:51 | | 09:33 (3) |
| | 22:10 | 54 | 07:40 (42) | 21:17 | 32 | 07:30 (42) | 20:01 | | | 18:44 | 134 | 18:08 (1) | 16:36 | 146 | 15:06 (26) | 16:04 | 69 | 15:12 (26) |
| 13 | 05:09 | | 06:46 (42) | 06:02 | | 06:59 (42) | 07:01 | | | 07:58 | | 08:57 (30) | 08:01 | | 09:14 (3) | 08:52 | | 09:34 (3) |
| | 22:09 | 54 | 07:40 (42) | 21:15 | 28 | 07:27 (42) | 19:59 | | | 18:42 | 131 | 17:30 (2) | 16:34 | 147 | 15:07 (26) | 16:04 | 65 | 15:12 (26) |
| 14 | 05:11 | | 06:46 (42) | 06:04 | | 07:01 (42) | 07:02 | | | 08:00 | | 08:56 (30) | 08:03 | | 09:14 (3) | 08:53 | | 09:35 (3) |
| | 22:08 | 54 | 07:40 (42) | 21:13 | 24 | 07:25 (42) | 19:56 | | | 18:39 | 134 | 17:30 (2) | 16:33 | 147 | 15:08 (26) | 16:04 | 63 | 15:12 (26) |
| 15 | 05:12 | | 06:46 (42) | 06:06 | | 07:05 (42) | 07:04 | | | 08:02 | | 08:57 (30) | 08:05 | | 09:14 (3) | 08:54 | | 09:37 (3) |
| | 22:07 | 54 | 07:40 (42) | 21:10 | 17 | 07:22 (42) | 19:54 | | | 18:37 | 138 | 17:30 (2) | 16:31 | 145 | 15:08 (26) | 16:04 | 60 | 15:12 (26) |
| 16 | 05:13 | | 06:46 (42) | 06:07 | | 07:12 (42) | 07:06 | | | 08:04 | | 08:57 (30) | 08:07 | | 09:14 (3) | 08:55 | | 09:39 (3) |
| | 22:06 | 55 | 07:41 (42) | 21:08 | 2 | 07:14 (42) | 19:51 | | | 18:35 | 145 | 17:29 (2) | 16:29 | 146 | 15:10 (26) | 16:04 | 56 | 15:12 (26) |
| 17 | 05:15 | | 06:46 (42) | 06:09 | | | 07:08 | | | 08:06 | | 08:57 (30) | 08:09 | | 09:14 (3) | 08:56 | | 13:45 (28) |
| | 22:04 | 55 | 07:41 (42) | 21:06 | | | 19:48 | | | 18:32 | 149 | 17:28 (2) | 16:28 | 141 | 15:10 (26) | 16:04 | 52 | 15:12 (26) |
| 18 | 05:16 | | 06:46 (42) | 06:11 | | | 07:10 | | | 08:08 | | 08:57 (30) | 08:11 | | 09:14 (3) | 08:56 | | 13:46 (28) |
| | 22:03 | 55 | 07:41 (42) | 21:04 | | | 19:46 | | | 18:30 | 151 | 17:27 (2) | 16:26 | 139 | 15:11 (26) | 16:04 | 50 | 15:12 (26) |
| 19 | 05:18 | | 06:46 (42) | 06:13 | | | 07:12 | | 08:12 (31) | 08:10 | | 08:57 (30) | 08:13 | | 09:14 (3) | 08:57 | | 13:46 (28) |
| | 22:02 | 56 | 07:42 (42) | 21:01 | | | 19:43 | 39 | 13:58 (29) | 18:27 | 152 | 17:26 (2) | 16:25 | 134 | 15:11 (26) | 16:04 | 51 | 15:13 (26) |
| 20 | 05:19 | | 06:46 (42) | 06:15 | | | 07:14 | | 08:09 (31) | 08:12 | | 08:57 (30) | 08:15 | | 09:14 (3) | 08:58 | | 13:46 (28) |
| | 22:00 | 56 | 07:42 (42) | 20:59 | | | 19:41 | 57 | 14:04 (29) | 18:25 | 152 | 17:25 (2) | 16:23 | 125 | 15:11 (26) | 16:05 | 50 | 15:12 (26) |
| 21 | 05:21 | | 06:47 (42) | 06:17 | | | 07:16 | | 08:07 (31) | 08:14 | | 08:58 (30) | 08:17 | | 09:15 (3) | 08:59 | | 13:47 (28) |
| | 21:59 | 55 | 07:42 (42) | 20:56 | | | 19:38 | 69 | 14:08 (29) | 18:23 | 149 | 17:22 (25) | 16:22 | 108 | 15:12 (26) | 16:05 | 50 | 15:13 (26) |
| 22 | 05:23 | | 06:46 (42) | 06:19 | | | 07:18 | | 08:06 (31) | 08:16 | | 09:00 (30) | 08:19 | | 09:15 (3) | 08:59 | | 13:47 (28) |
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| 23 | 05:24 | | 06:47 (42) | 06:21 | | | 07:19 | | 08:05 (31) | 08:18 | | 09:01 (30) | 08:21 | | 09:16 (3) | 09:00 | | 13:48 (28) |
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| 24 | 05:26 | | 06:47 (42) | 06:23 | | | 07:21 | | 08:04 (31) | 08:20 | | 09:03 (30) | 08:23 | | 09:16 (3) | 09:00 | | 13:48 (28) |
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| 25 | 05:27 | | 06:47 (42) | 06:25 | | | 07:23 | | 08:04 (31) | 07:22 | | 08:05 (30) | 08:25 | | 09:17 (3) | 09:00 | | 13:49 (28) |
| | 21:52 | 56 | 07:43 (42) | 20:47 | | | 19:28 | 95 | 14:17 (29) | 17:13 | 134 | 16:23 (25) | 16:16 | 106 | 15:13 (26) | 16:07 | 50 | 15:15 (26) |
| 26 | 05:29 | | 06:47 (42) | 06:26 | | | 07:25 | | 08:03 (31) | 07:24 | | 11:46 (29) | 08:27 | | 09:17 (3) | 09:01 | | 13:50 (28) |
| | 21:51 | 55 | 07:42 (42) | 20:44 | | | 19:25 | 100 | 14:19 (29) | 17:11 | 119 | 16:22 (25) | 16:15 | 106 | 15:13 (26) | 16:08 | 51 | 15:17 (26) |
| 27 | 05:31 | | 06:47 (42) | 06:28 | | | 07:27 | | 08:02 (31) | 07:26 | | 11:47 (29) | 08:28 | | 09:18 (3) | 09:01 | | 13:50 (28) |
| | 21:49 | 55 | 07:42 (42) | 20:42 | | | 19:22 | 103 | 14:19 (29) | 17:09 | 119 | 16:23 (25) | 16:14 | 105 | 15:13 (26) | 16:09 | 53 | 15:18 (26) |
| 28 | 05:33 | | 06:47 (42) | 06:30 | | | 07:29 | | 08:02 (31) | 07:28 | | 11:48 (29) | 08:30 | | 09:19 (3) | 09:01 | | 09:44 (3) |
| | 21:47 | 55 | 07:42 (42) | 20:39 | | | 19:20 | 105 | 14:20 (29) | 17:07 | 116 | 16:22 (25) | 16:13 | 102 | 15:13 (26) | 16:10 | 58 | 15:18 (26) |
| 29 | 05:34 | | 06:48 (42) | 06:32 | | | 07:31 | | 08:03 (31) | 07:31 | | 11:48 (29) | 08:32 | | 09:20 (3) | 09:01 | | 09:43 (3) |
| | 21:45 | 54 | 07:42 (42) | 20:37 | | | 19:17 | 106 | 14:21 (29) | 17:04 | 113 | 16:21 (25) | 16:12 | 102 | 15:13 (26) | 16:10 | 62 | 15:19 (26) |
| 30 | 05:36 | | 06:48 (42) | 06:34 | | | 07:33 | | 08:03 (31) | 07:33 | | 11:49 (29) | 08:34 | | 09:21 (3) | 09:01 | | 09:42 (3) |
| | 21:44 | 54 | 07:42 (42) | 20:34 | | | 19:15 | 107 | 14:22 (29) | 17:02 | 110 | 16:20 (25) | 16:11 | 100 | 15:14 (26) | 16:11 | 65 | 15:20 (26) |
| 31 | 05:38 | | 06:48 (42) | 06:36 | | | | | | 07:35 | | 11:49 (29) | | | | 09:01 | | 09:42 (3) |
| | 21:42 | 53 | 07:41 (42) | 20:32 | | | | | | 17:00 | 107 | 16:19 (25) | | | | 16:12 | 68 | 15:21 (26) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1663 | | | 604 | | | 1036 | | | 3969 | | | 3537 | | | 2066 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | | 0,95 | | | 0,28 | | | 0,27 | | | 0,37 | | | 0,45 | |
| Total reduction | | 0,40 | | | 0,42 | | | 0,10 | | | 0,07 | | | 0,05 | | | 0,05 | |
| Total, real | | 663 | | | 255 | | | 99 | | | 288 | | | 179 | | | 107 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:57 (3) | 08:28 | | 13:19 (29) | 07:27 | | 08:54 (30) | 07:08 | | | 05:55 | | 06:59 (42) | 05:02 | | 06:51 (42) |
| | 16:14 | 81 | 15:27 (26) | 17:08 | 100 | 15:36 (26) | 18:07 | 91 | 17:35 (1) | 20:10 | | | 21:09 | 48 | 07:47 (42) | 22:03 | 62 | 07:53 (42) |
| 2 | 09:01 | | 09:57 (3) | 08:26 | | 13:19 (29) | 07:24 | | 08:57 (30) | 07:05 | | | 05:53 | | 06:58 (42) | 05:01 | | 06:51 (42) |
| | 16:15 | 82 | 15:28 (26) | 17:10 | 88 | 14:50 (28) | 18:09 | 83 | 17:37 (1) | 20:12 | | | 21:11 | 50 | 07:48 (42) | 22:04 | 62 | 07:53 (42) |
| 3 | 09:01 | | 09:57 (3) | 08:24 | | 13:18 (29) | 07:22 | | 13:21 (29) | 07:03 | | | 05:51 | | 06:57 (42) | 05:00 | | 06:52 (42) |
| | 16:16 | 85 | 15:29 (26) | 17:12 | 84 | 14:47 (28) | 18:12 | 68 | 17:37 (1) | 20:14 | | | 21:13 | 52 | 07:49 (42) | 22:05 | 62 | 07:54 (42) |
| 4 | 09:00 | | 09:57 (3) | 08:22 | | 13:18 (29) | 07:19 | | 13:23 (29) | 07:00 | | | 05:48 | | 06:56 (42) | 04:59 | | 06:52 (42) |
| | 16:18 | 86 | 15:30 (26) | 17:15 | 72 | 14:30 (29) | 18:14 | 64 | 17:38 (1) | 20:16 | | | 21:15 | 54 | 07:50 (42) | 22:06 | 62 | 07:54 (42) |
| 5 | 09:00 | | 09:58 (3) | 08:20 | | 13:17 (29) | 07:17 | | 13:24 (29) | 06:58 | | | 05:46 | | 06:55 (42) | 04:58 | | 06:52 (42) |
| | 16:19 | 89 | 15:32 (26) | 17:17 | 74 | 14:31 (29) | 18:16 | 60 | 14:24 (29) | 20:18 | | | 21:17 | 55 | 07:50 (42) | 22:08 | 61 | 07:53 (42) |
| 6 | 08:59 | | 09:58 (3) | 08:18 | | 13:17 (29) | 07:14 | | 07:44 (31) | 06:55 | | | 05:44 | | 06:54 (42) | 04:57 | | 06:53 (42) |
| | 16:20 | 90 | 15:32 (26) | 17:19 | 80 | 16:42 (25) | 18:18 | 68 | 14:23 (29) | 20:20 | | | 21:18 | 57 | 07:51 (42) | 22:09 | 61 | 07:54 (42) |
| 7 | 08:59 | | 09:58 (3) | 08:16 | | 09:01 (30) | 07:12 | | 07:41 (31) | 06:53 | | | 05:42 | | 06:53 (42) | 04:56 | | 06:53 (42) |
| | 16:22 | 92 | 15:33 (26) | 17:21 | 96 | 16:45 (25) | 18:20 | 68 | 14:20 (29) | 20:21 | | | 21:20 | 58 | 07:51 (42) | 22:10 | 60 | 07:53 (42) |
| 8 | 08:58 | | 09:58 (3) | 08:14 | | 08:57 (30) | 07:09 | | 07:38 (31) | 06:50 | | | 05:40 | | 06:52 (42) | 04:56 | | 06:53 (42) |
| | 16:23 | 93 | 15:34 (26) | 17:23 | 108 | 16:47 (25) | 18:22 | 66 | 14:17 (29) | 20:23 | | | 21:22 | 60 | 07:52 (42) | 22:11 | 60 | 07:53 (42) |
| 9 | 08:58 | | 09:59 (3) | 08:12 | | 08:55 (30) | 07:07 | | 07:38 (31) | 06:48 | | | 05:38 | | 06:52 (42) | 04:55 | | 06:54 (42) |
| | 16:25 | 94 | 15:35 (26) | 17:25 | 116 | 16:49 (25) | 18:24 | 63 | 14:15 (29) | 20:25 | | | 21:24 | 60 | 07:52 (42) | 22:12 | 59 | 07:53 (42) |
| 10 | 08:57 | | 10:00 (3) | 08:10 | | 08:54 (30) | 07:04 | | 07:36 (31) | 06:45 | | | 05:36 | | 06:51 (42) | 04:54 | | 06:53 (42) |
| | 16:26 | 96 | 15:37 (26) | 17:27 | 123 | 16:50 (25) | 18:26 | 57 | 14:11 (29) | 20:27 | | | 21:26 | 61 | 07:52 (42) | 22:13 | 60 | 07:53 (42) |
| 11 | 08:56 | | 09:59 (3) | 08:08 | | 08:53 (30) | 07:02 | | 07:36 (31) | 06:43 | | | 05:34 | | 06:51 (42) | 04:54 | | 06:54 (42) |
| | 16:28 | 97 | 15:36 (26) | 17:29 | 129 | 16:51 (25) | 18:28 | 49 | 14:07 (29) | 20:29 | | | 21:28 | 62 | 07:53 (42) | 22:14 | 59 | 07:53 (42) |
| 12 | 08:55 | | 10:00 (3) | 08:06 | | 08:51 (30) | 06:59 | | 07:35 (31) | 06:40 | | | 05:32 | | 06:51 (42) | 04:54 | | 06:55 (42) |
| | 16:29 | 103 | 15:37 (26) | 17:32 | 136 | 16:51 (25) | 18:30 | 25 | 08:00 (31) | 20:31 | | | 21:30 | 62 | 07:53 (42) | 22:14 | 59 | 07:54 (42) |
| 13 | 08:54 | | 10:00 (3) | 08:04 | | 08:50 (30) | 06:57 | | 07:34 (31) | 06:38 | | | 05:30 | | 06:50 (42) | 04:53 | | 06:55 (42) |
| | 16:31 | 115 | 15:38 (26) | 17:34 | 136 | 16:52 (25) | 18:32 | 25 | 07:59 (31) | 20:33 | | | 21:32 | 63 | 07:53 (42) | 22:15 | 59 | 07:54 (42) |
| 14 | 08:53 | | 10:01 (3) | 08:02 | | 08:50 (30) | 06:54 | | 07:34 (31) | 06:35 | | | 05:28 | | 06:49 (42) | 04:53 | | 06:55 (42) |
| | 16:33 | 122 | 15:39 (26) | 17:36 | 136 | 16:52 (25) | 18:34 | 25 | 07:59 (31) | 20:35 | | | 21:34 | 64 | 07:53 (42) | 22:16 | 58 | 07:53 (42) |
| 15 | 08:52 | | 10:02 (3) | 07:59 | | 08:48 (30) | 06:52 | | 07:34 (31) | 06:33 | | | 05:27 | | 06:50 (42) | 04:53 | | 06:55 (42) |
| | 16:35 | 127 | 15:40 (26) | 17:38 | 140 | 16:52 (25) | 18:36 | 24 | 07:58 (31) | 20:37 | | | 21:35 | 64 | 07:54 (42) | 22:16 | 58 | 07:53 (42) |
| 16 | 08:51 | | 10:02 (3) | 07:57 | | 08:48 (30) | 06:49 | | 07:35 (31) | 06:30 | | | 05:25 | | 06:49 (42) | 04:52 | | 06:56 (42) |
| | 16:36 | 131 | 15:40 (26) | 17:40 | 141 | 16:52 (25) | 18:38 | 23 | 07:58 (31) | 20:39 | | | 21:37 | 65 | 07:54 (42) | 22:17 | 58 | 07:54 (42) |
| 17 | 08:50 | | 10:03 (3) | 07:55 | | 08:48 (30) | 06:47 | | 07:35 (31) | 06:28 | | | 05:23 | | 06:50 (42) | 04:52 | | 06:56 (42) |
| | 16:38 | 134 | 15:41 (26) | 17:42 | 141 | 16:53 (2) | 18:40 | 21 | 07:56 (31) | 20:41 | | | 21:39 | 64 | 07:54 (42) | 22:18 | 58 | 07:54 (42) |
| 18 | 08:49 | | 10:04 (3) | 07:53 | | 08:47 (30) | 06:44 | | 07:35 (31) | 06:25 | | | 05:21 | | 06:49 (42) | 04:52 | | 06:56 (42) |
| | 16:40 | 139 | 15:42 (26) | 17:44 | 142 | 16:53 (2) | 18:42 | 20 | 07:55 (31) | 20:43 | | | 21:41 | 65 | 07:54 (42) | 22:18 | 58 | 07:54 (42) |
| 19 | 08:48 | | 10:04 (3) | 07:50 | | 08:48 (30) | 06:41 | | 07:37 (31) | 06:23 | | | 05:20 | | 06:50 (42) | 04:52 | | 06:56 (42) |
| | 16:42 | 140 | 15:42 (26) | 17:46 | 141 | 16:54 (2) | 18:44 | 16 | 07:53 (31) | 20:45 | | | 21:42 | 64 | 07:54 (42) | 22:18 | 58 | 07:54 (42) |
| 20 | 08:47 | | 10:05 (3) | 07:48 | | 08:48 (30) | 06:39 | | 07:39 (31) | 06:20 | | | 05:18 | | 06:49 (42) | 04:52 | | 06:57 (42) |
| | 16:44 | 142 | 15:42 (26) | 17:49 | 139 | 16:55 (2) | 18:46 | 11 | 07:50 (31) | 20:47 | | | 21:44 | 65 | 07:54 (42) | 22:19 | 57 | 07:54 (42) |
| 21 | 08:45 | | 10:05 (3) | 07:46 | | 08:47 (30) | 06:36 | | | 06:18 | | | 05:16 | | 06:49 (42) | 04:52 | | 06:57 (42) |
| | 16:46 | 143 | 15:42 (26) | 17:51 | 136 | 16:55 (2) | 18:48 | | | 20:49 | | | 21:46 | 65 | 07:54 (42) | 22:19 | 57 | 07:54 (42) |
| 22 | 08:44 | | 10:06 (3) | 07:44 | | 08:48 (30) | 06:34 | | | 06:16 | | | 05:15 | | 06:49 (42) | 04:52 | | 06:58 (42) |
| | 16:48 | 143 | 15:42 (26) | 17:53 | 132 | 16:56 (2) | 18:50 | | | 20:51 | | | 21:47 | 65 | 07:54 (42) | 22:19 | 57 | 07:55 (42) |
| 23 | 08:42 | | 10:07 (3) | 07:41 | | 08:48 (30) | 06:31 | | | 06:13 | | 07:20 (42) | 05:13 | | 06:49 (42) | 04:53 | | 06:58 (42) |
| | 16:50 | 145 | 15:43 (26) | 17:55 | 125 | 16:56 (2) | 18:52 | | | 20:53 | 8 | 07:28 (42) | 21:49 | 65 | 07:54 (42) | 22:19 | 57 | 07:55 (42) |
| 24 | 08:41 | | 10:08 (3) | 07:39 | | 08:49 (30) | 06:29 | | | 06:11 | | 07:14 (42) | 05:12 | | 06:50 (42) | 04:53 | | 06:57 (42) |
| | 16:52 | 145 | 15:43 (26) | 17:57 | 115 | 16:57 (2) | 18:54 | | | 20:55 | 20 | 07:34 (42) | 21:51 | 64 | 07:54 (42) | 22:19 | 58 | 07:55 (42) |
| 25 | 08:39 | | 10:09 (3) | 07:36 | | 08:49 (30) | 06:26 | | | 06:09 | | 07:11 (42) | 05:10 | | 06:50 (42) | 04:53 | | 06:58 (42) |
| | 16:54 | 141 | 15:42 (26) | 17:59 | 107 | 16:56 (2) | 18:56 | | | 20:57 | 27 | 07:38 (42) | 21:52 | 64 | 07:54 (42) | 22:19 | 58 | 07:56 (42) |
| 26 | 08:38 | | 10:11 (3) | 07:34 | | 08:50 (30) | 06:23 | | | 06:06 | | 07:07 (42) | 05:09 | | 06:49 (42) | 04:54 | | 06:58 (42) |
| | 16:56 | 141 | 15:43 (26) | 18:01 | 115 | 17:30 (1) | 18:58 | | | 20:59 | 32 | 07:39 (42) | 21:54 | 64 | 07:53 (42) | 22:19 | 58 | 07:56 (42) |
| 27 | 08:36 | | 10:12 (3) | 07:32 | | 08:51 (30) | 06:21 | | | 06:04 | | 07:05 (42) | 05:08 | | 06:50 (42) | 04:54 | | 06:59 (42) |
| | 16:58 | 136 | 15:42 (26) | 18:03 | 104 | 17:32 (1) | 19:00 | | | 21:01 | 37 | 07:42 (42) | 21:55 | 64 | 07:54 (42) | 22:19 | 58 | 07:57 (42) |
| 28 | 08:35 | | 10:14 (3) | 07:29 | | 08:52 (30) | 06:18 | | | 06:02 | | 07:03 (42) | 05:06 | | 06:50 (42) | 04:55 | | 06:58 (42) |
| | 17:00 | 131 | 15:42 (26) | 18:05 | 98 | 17:34 (1) | 19:02 | | | 21:03 | 40 | 07:43 (42) | 21:57 | 64 | 07:54 (42) | 22:19 | 58 | 07:56 (42) |
| 29 | 08:33 | | 10:17 (3) | | | | 07:16 | | | 05:59 | | 07:01 (42) | 05:05 | | 06:50 (42) | 04:55 | | 06:59 (42) |
| | 17:02 | 125 | 15:41 (26) | | | | 20:04 | | | 21:05 | 44 | 07:45 (42) | 21:58 | 64 | 07:54 (42) | 22:19 | 58 | 07:57 (42) |
| 30 | 08:31 | | 13:20 (29) | | | | 07:13 | | | 05:57 | | 07:00 (42) | 05:04 | | 06:51 (42) | 04:56 | | 06:58 (42) |
| | 17:04 | 113 | 15:40 (26) | | | | 20:06 | | | 21:07 | 46 | 07:46 (42) | 22:00 | 63 | 07:54 (42) | 22:19 | 59 | 07:57 (42) |
| 31 | 08:30 | | 13:20 (29) | | | | 07:11 | | | | | | 05:03 | | 06:51 (42) | | | |
| | 17:06 | 107 | 15:38 (26) | | | | 20:08 | | | | | | 22:01 | 62 | 07:53 (42) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 3608 | | | 3254 | | | 927 | | | 254 | | | 1897 | | | 1769 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,46 | | | 0,47 | | | 0,54 | | | 0,97 | | | 0,97 | | | 0,97 | |
| Total reduction | | 0,07 | | | 0,10 | | | 0,16 | | | 0,33 | | | 0,43 | | | 0,40 | |
| Total, real | | 260 | | | 326 | | | 147 | | | 84 | | | 820 | | | 714 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:58 (42) | 05:40 | | 07:01 (42) | 06:38 | | | 07:35 | | 08:14 (31) | 07:37 | | 08:24 (30) | 08:35 | | 09:41 (3) |
| | 22:18 | 59 07:57 (42) | 21:40 | 62 | 08:03 (42) | 20:29 | | | 08:39 (31) | 120 | 16:19 (25) | 16:58 | 120 | 16:19 (25) | 16:10 | 98 | 15:19 (26) |
| 2 | 04:58 | 06:59 (42) | 05:41 | | 07:02 (42) | 06:40 | | | 07:37 | | 08:14 (31) | 07:39 | | 08:25 (30) | 08:37 | | 09:42 (3) |
| | 22:18 | 59 07:58 (42) | 21:38 | 61 | 08:03 (42) | 20:27 | | | 19:10 | 42 | 14:42 (29) | 16:56 | 116 | 16:18 (25) | 16:09 | 97 | 15:19 (26) |
| 3 | 04:58 | 06:59 (42) | 05:43 | | 07:01 (42) | 06:42 | | | 07:39 | | 08:14 (31) | 07:41 | | 08:27 (30) | 08:38 | | 09:43 (3) |
| | 22:17 | 60 07:59 (42) | 21:36 | 61 | 08:02 (42) | 20:24 | | | 19:07 | 53 | 14:47 (29) | 16:54 | 106 | 16:16 (25) | 16:08 | 94 | 15:19 (26) |
| 4 | 04:59 | 06:59 (42) | 05:45 | | 07:02 (42) | 06:44 | | | 07:41 | | 08:14 (31) | 07:43 | | 08:33 (30) | 08:40 | | 09:44 (3) |
| | 22:17 | 60 07:59 (42) | 21:34 | 60 | 08:02 (42) | 20:22 | | | 19:04 | 61 | 14:51 (29) | 16:52 | 91 | 16:15 (25) | 16:08 | 93 | 15:19 (26) |
| 5 | 05:00 | 06:58 (42) | 05:47 | | 07:03 (42) | 06:45 | | | 07:42 | | 08:15 (31) | 07:45 | | 12:47 (29) | 08:41 | | 09:43 (3) |
| | 22:16 | 61 07:59 (42) | 21:32 | 59 | 08:02 (42) | 20:19 | | | 19:02 | 65 | 14:53 (29) | 16:50 | 79 | 16:11 (25) | 16:07 | 92 | 15:18 (26) |
| 6 | 05:01 | 06:59 (42) | 05:49 | | 07:03 (42) | 06:47 | | | 07:44 | | 08:16 (31) | 07:47 | | 12:47 (29) | 08:43 | | 09:44 (3) |
| | 22:15 | 60 07:59 (42) | 21:30 | 58 | 08:01 (42) | 20:17 | | | 18:59 | 67 | 14:55 (29) | 16:48 | 74 | 14:01 (29) | 16:06 | 91 | 15:19 (26) |
| 7 | 05:02 | 06:59 (42) | 05:51 | | 07:03 (42) | 06:49 | | | 07:46 | | 08:17 (31) | 07:49 | | 12:47 (29) | 08:44 | | 09:44 (3) |
| | 22:15 | 60 07:59 (42) | 21:28 | 57 | 08:00 (42) | 20:14 | | | 18:57 | 68 | 14:57 (29) | 16:46 | 73 | 14:00 (29) | 16:06 | 88 | 15:18 (26) |
| 8 | 05:03 | 06:59 (42) | 05:52 | | 07:04 (42) | 06:51 | | | 07:48 | | 08:20 (31) | 07:51 | | 12:49 (29) | 08:46 | | 09:45 (3) |
| | 22:14 | 61 08:00 (42) | 21:26 | 56 | 08:00 (42) | 20:12 | | | 18:54 | 66 | 14:58 (29) | 16:44 | 84 | 14:19 (28) | 16:05 | 86 | 15:18 (26) |
| 9 | 05:04 | 06:59 (42) | 05:54 | | 07:04 (42) | 06:53 | | | 07:50 | | 13:58 (29) | 07:53 | | 12:49 (29) | 08:47 | | 09:45 (3) |
| | 22:13 | 61 08:00 (42) | 21:24 | 54 | 07:58 (42) | 20:09 | | | 18:52 | 61 | 14:59 (29) | 16:42 | 89 | 14:21 (28) | 16:05 | 86 | 15:18 (26) |
| 10 | 05:06 | 06:59 (42) | 05:56 | | 07:05 (42) | 06:55 | | | 07:52 | | 13:56 (29) | 07:55 | | 12:50 (29) | 08:48 | | 09:47 (3) |
| | 22:12 | 61 08:00 (42) | 21:22 | 52 | 07:57 (42) | 20:07 | | | 18:49 | 66 | 18:12 (1) | 16:40 | 102 | 15:07 (26) | 16:04 | 83 | 15:18 (26) |
| 11 | 05:07 | 06:59 (42) | 05:58 | | 07:06 (42) | 06:57 | | | 07:54 | | 09:33 (30) | 07:57 | | 12:51 (29) | 08:50 | | 09:47 (3) |
| | 22:11 | 63 08:02 (42) | 21:19 | 50 | 07:56 (42) | 20:04 | | | 18:47 | 77 | 18:11 (1) | 16:38 | 108 | 15:09 (26) | 16:04 | 82 | 15:18 (26) |
| 12 | 05:08 | 06:59 (42) | 06:00 | | 07:08 (42) | 06:59 | | | 07:56 | | 09:29 (30) | 07:59 | | 12:52 (29) | 08:51 | | 09:47 (3) |
| | 22:10 | 63 08:02 (42) | 21:17 | 47 | 07:55 (42) | 20:01 | | | 18:44 | 86 | 18:09 (1) | 16:36 | 113 | 15:12 (26) | 16:04 | 79 | 15:17 (26) |
| 13 | 05:09 | 06:59 (42) | 06:02 | | 07:08 (42) | 07:01 | | | 07:58 | | 09:26 (30) | 08:01 | | 09:49 (3) | 08:52 | | 09:48 (3) |
| | 22:09 | 63 08:02 (42) | 21:15 | 45 | 07:53 (42) | 19:59 | | | 18:42 | 95 | 18:08 (1) | 16:34 | 126 | 15:13 (26) | 16:04 | 77 | 15:17 (26) |
| 14 | 05:11 | 06:59 (42) | 06:04 | | 07:09 (42) | 07:02 | | | 08:00 | | 09:24 (30) | 08:03 | | 09:46 (3) | 08:53 | | 09:48 (3) |
| | 22:08 | 63 08:02 (42) | 21:13 | 43 | 07:52 (42) | 19:56 | | | 18:39 | 101 | 18:06 (1) | 16:33 | 132 | 15:14 (26) | 16:04 | 75 | 15:16 (26) |
| 15 | 05:12 | 06:59 (42) | 06:06 | | 07:11 (42) | 07:04 | | | 08:02 | | 09:23 (30) | 08:05 | | 09:44 (3) | 08:54 | | 09:49 (3) |
| | 22:07 | 63 08:02 (42) | 21:10 | 39 | 07:50 (42) | 19:54 | | | 18:37 | 106 | 18:04 (1) | 16:31 | 136 | 15:14 (26) | 16:04 | 74 | 15:16 (26) |
| 16 | 05:13 | 06:59 (42) | 06:07 | | 07:13 (42) | 07:06 | | | 08:04 | | 09:22 (30) | 08:07 | | 09:44 (3) | 08:55 | | 09:49 (3) |
| | 22:06 | 64 08:03 (42) | 21:08 | 36 | 07:49 (42) | 19:51 | | | 18:35 | 114 | 18:01 (1) | 16:29 | 141 | 15:16 (26) | 16:04 | 72 | 15:15 (26) |
| 17 | 05:15 | 06:59 (42) | 06:09 | | 07:15 (42) | 07:08 | | | 08:06 | | 09:21 (30) | 08:09 | | 09:43 (3) | 08:56 | | 09:50 (3) |
| | 22:04 | 64 08:03 (42) | 21:06 | 32 | 07:47 (42) | 19:48 | | | 18:32 | 109 | 17:28 (2) | 16:28 | 141 | 15:16 (26) | 16:04 | 66 | 14:40 (28) |
| 18 | 05:16 | 06:59 (42) | 06:11 | | 07:17 (42) | 07:10 | | | 08:08 | | 09:20 (30) | 08:11 | | 09:42 (3) | 08:56 | | 09:51 (3) |
| | 22:03 | 64 08:03 (42) | 21:04 | 26 | 07:43 (42) | 19:46 | | | 18:30 | 121 | 17:28 (2) | 16:26 | 145 | 15:17 (26) | 16:04 | 67 | 14:41 (28) |
| 19 | 05:18 | 06:59 (42) | 06:13 | | 07:20 (42) | 07:12 | | | 08:10 | | 09:19 (30) | 08:13 | | 09:41 (3) | 08:57 | | 09:52 (3) |
| | 22:02 | 65 08:04 (42) | 21:01 | 19 | 07:39 (42) | 19:43 | | | 18:27 | 128 | 17:27 (2) | 16:25 | 145 | 15:17 (26) | 16:04 | 67 | 14:42 (28) |
| 20 | 05:19 | 06:59 (42) | 06:15 | | 07:28 (42) | 07:14 | | | 08:12 | | 09:18 (30) | 08:15 | | 09:41 (3) | 08:58 | | 09:51 (3) |
| | 22:00 | 65 08:04 (42) | 20:59 | 3 | 07:31 (42) | 19:41 | | | 18:25 | 133 | 17:26 (2) | 16:23 | 143 | 15:17 (26) | 16:05 | 66 | 14:41 (28) |
| 21 | 05:21 | 07:00 (42) | 06:17 | | | 07:16 | | | 08:14 | | 09:18 (30) | 08:17 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:59 | 64 08:04 (42) | 20:56 | | | 19:38 | | | 18:23 | 137 | 17:25 (2) | 16:22 | 143 | 15:18 (26) | 16:05 | 66 | 14:42 (28) |
| 22 | 05:23 | 06:59 (42) | 06:19 | | | 07:18 | | | 08:16 | | 09:18 (30) | 08:19 | | 09:41 (3) | 08:59 | | 09:52 (3) |
| | 21:57 | 65 08:04 (42) | 20:54 | | | 19:35 | | | 18:20 | 139 | 17:25 (2) | 16:20 | 143 | 15:19 (26) | 16:05 | 66 | 14:42 (28) |
| 23 | 05:24 | 07:00 (42) | 06:21 | | | 07:19 | | 08:24 (31) | 08:18 | | 09:18 (30) | 08:21 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:56 | 65 08:05 (42) | 20:52 | | | 19:33 | 10 | 08:34 (31) | 18:18 | 141 | 17:24 (2) | 16:19 | 140 | 15:19 (26) | 16:06 | 66 | 14:43 (28) |
| 24 | 05:26 | 06:59 (42) | 06:23 | | | 07:21 | | 08:21 (31) | 08:20 | | 09:18 (30) | 08:23 | | 09:41 (3) | 09:00 | | 09:53 (3) |
| | 21:54 | 65 08:04 (42) | 20:49 | | | 19:30 | 15 | 08:36 (31) | 18:16 | 141 | 17:23 (2) | 16:18 | 140 | 15:19 (26) | 16:06 | 68 | 14:44 (28) |
| 25 | 05:27 | 07:00 (42) | 06:25 | | | 07:23 | | 08:20 (31) | 07:22 | | 08:18 (30) | 08:25 | | 09:41 (3) | 09:00 | | 09:54 (3) |
| | 21:52 | 65 08:05 (42) | 20:47 | | | 19:28 | 18 | 08:38 (31) | 17:13 | 141 | 16:22 (25) | 16:16 | 134 | 15:19 (26) | 16:07 | 67 | 14:44 (28) |
| 26 | 05:29 | 07:00 (42) | 06:26 | | | 07:25 | | 08:18 (31) | 07:24 | | 08:18 (30) | 08:27 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:51 | 64 08:04 (42) | 20:44 | | | 19:25 | 21 | 08:39 (31) | 17:11 | 139 | 16:22 (25) | 16:15 | 132 | 15:19 (26) | 16:08 | 66 | 14:45 (28) |
| 27 | 05:31 | 07:00 (42) | 06:28 | | | 07:27 | | 08:16 (31) | 07:26 | | 08:19 (30) | 08:28 | | 09:41 (3) | 09:01 | | 09:55 (3) |
| | 21:49 | 64 08:04 (42) | 20:42 | | | 19:22 | 22 | 08:38 (31) | 17:09 | 137 | 16:22 (25) | 16:14 | 127 | 15:19 (26) | 16:09 | 71 | 15:20 (26) |
| 28 | 05:33 | 07:00 (42) | 06:30 | | | 07:29 | | 08:15 (31) | 07:28 | | 08:19 (30) | 08:30 | | 09:41 (3) | 09:01 | | 09:56 (3) |
| | 21:47 | 64 08:04 (42) | 20:39 | | | 19:20 | 24 | 08:39 (31) | 17:07 | 138 | 16:22 (25) | 16:13 | 122 | 15:19 (26) | 16:10 | 72 | 15:22 (26) |
| 29 | 05:34 | 07:00 (42) | 06:32 | | | 07:31 | | 08:14 (31) | 07:31 | | 08:20 (30) | 08:32 | | 09:42 (3) | 09:01 | | 09:56 (3) |
| | 21:45 | 64 08:04 (42) | 20:37 | | | 19:17 | 25 | 08:39 (31) | 17:04 | 136 | 16:21 (25) | 16:12 | 114 | 15:19 (26) | 16:10 | 75 | 15:24 (26) |
| 30 | 05:36 | 07:01 (42) | 06:34 | | | 07:33 | | 08:14 (31) | 07:33 | | 08:21 (30) | 08:34 | | 09:42 (3) | 09:01 | | 09:55 (3) |
| | 21:44 | 63 08:04 (42) | 20:34 | | | 19:15 | 25 | 08:39 (31) | 17:02 | 135 | 16:20 (25) | 16:11 | 105 | 15:19 (26) | 16:11 | 78 | 15:24 (26) |
| 31 | 05:38 | 07:00 (42) | 06:36 | | | | | | 07:35 | | 08:21 (30) | | | | 09:01 | | 09:56 (3) |
| | 21:42 | 63 08:03 (42) | 20:32 | | | | | | 17:00 | 128 | 16:19 (25) | | | | 16:12 | 78 | 15:25 (26) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 1945 | | 920 | | | 160 | | | 3156 | | | 3564 | | | 2406 | |
| Sun reduction | | 0,49 | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,97 | | 0,97 | | | 0,97 | | | 0,50 | | | 0,43 | | | 0,49 | |
| Total reduction | | 0,41 | | 0,43 | | | 0,33 | | | 0,13 | | | 0,06 | | | 0,06 | |
| Total, real | | 790 | | 396 | | | 53 | | | 415 | | | 209 | | | 138 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 16:00 (38) | | 07:27 | | 07:08 | | 19:09 (27) | 05:55 | 20:07 (28) | 05:02 | |
| | 16:14 | | 17:08 | 26 | 16:26 (38) | | 18:07 | | 20:10 | 23 | 19:32 (27) | 21:09 | 20:31 (28) | 22:02 | |
| 2 | 09:01 | | 08:26 | | 15:59 (38) | | 07:24 | | 07:05 | | 19:09 (27) | 05:53 | 20:07 (28) | 05:01 | |
| | 16:15 | | 17:10 | 27 | 16:26 (38) | | 18:09 | | 20:12 | 24 | 19:33 (27) | 21:11 | 20:31 (28) | 22:04 | |
| 3 | 09:00 | | 08:24 | | 15:59 (38) | | 07:22 | | 07:03 | | 19:08 (27) | 05:51 | 20:06 (28) | 05:00 | |
| | 16:16 | | 17:12 | 28 | 16:27 (38) | | 18:12 | | 20:14 | 24 | 19:32 (27) | 21:13 | 20:32 (28) | 22:05 | |
| 4 | 09:00 | | 08:22 | | 15:59 (38) | | 07:19 | | 07:00 | | 19:09 (27) | 05:48 | 20:06 (28) | 04:59 | |
| | 16:18 | | 17:15 | 29 | 16:28 (38) | | 18:14 | | 20:16 | 23 | 19:32 (27) | 21:15 | 20:32 (28) | 22:06 | |
| 5 | 09:00 | | 08:20 | | 15:59 (38) | | 07:17 | | 06:58 | | 19:09 (27) | 05:46 | 20:06 (28) | 04:58 | |
| | 16:19 | | 17:17 | 29 | 16:28 (38) | | 18:16 | | 20:17 | 24 | 19:49 (26) | 21:16 | 20:32 (28) | 22:07 | |
| 6 | 08:59 | | 08:18 | | 15:59 (38) | | 07:14 | | 06:55 | | 19:10 (27) | 05:44 | 20:05 (28) | 04:57 | |
| | 16:20 | | 17:19 | 29 | 16:28 (38) | | 18:18 | | 20:19 | 29 | 19:52 (26) | 21:18 | 20:32 (28) | 22:09 | |
| 7 | 08:59 | | 08:16 | | 15:58 (38) | | 07:12 | | 06:53 | | 19:10 (27) | 05:42 | 20:05 (28) | 04:56 | 05:40 (5) |
| | 16:22 | | 17:21 | 30 | 16:28 (38) | | 18:20 | | 20:21 | 30 | 19:53 (26) | 21:20 | 20:31 (28) | 22:10 | 6 05:46 (5) |
| 8 | 08:58 | | 08:14 | | 15:59 (38) | | 07:09 | | 06:50 | | 19:12 (27) | 05:40 | 20:05 (28) | 04:56 | 05:37 (5) |
| | 16:23 | | 17:23 | 29 | 16:28 (38) | | 18:22 | | 20:23 | 31 | 19:56 (26) | 21:22 | 20:31 (28) | 22:11 | 10 05:47 (5) |
| 9 | 08:57 | | 08:12 | | 15:59 (38) | | 07:07 | | 06:48 | | 19:14 (27) | 05:38 | 20:06 (28) | 04:55 | 05:37 (5) |
| | 16:25 | | 17:25 | 29 | 16:28 (38) | | 18:24 | | 20:25 | 27 | 19:56 (26) | 21:24 | 20:30 (28) | 22:12 | 12 05:49 (5) |
| 10 | 08:57 | | 08:10 | | 16:00 (38) | | 07:04 | | 06:45 | | 19:37 (26) | 05:36 | 20:06 (28) | 04:54 | 05:35 (5) |
| | 16:26 | | 17:27 | 28 | 16:28 (38) | | 18:26 | | 20:27 | 20 | 19:57 (26) | 21:26 | 20:30 (28) | 22:13 | 15 05:50 (5) |
| 11 | 08:56 | | 08:08 | | 16:01 (38) | | 07:02 | | 06:43 | | 19:36 (26) | 05:34 | 20:07 (28) | 04:54 | 05:35 (5) |
| | 16:28 | | 17:29 | 26 | 16:27 (38) | | 18:28 | | 20:29 | 20 | 19:56 (26) | 21:28 | 20:56 (2) | 22:13 | 16 05:51 (5) |
| 12 | 08:55 | | 08:06 | | 16:01 (38) | | 06:59 | | 06:40 | | 07:05 (4) | 05:32 | 20:07 (28) | 04:54 | 05:35 (5) |
| | 16:29 | | 17:32 | 25 | 16:26 (38) | | 18:30 | | 20:31 | 26 | 19:56 (26) | 21:30 | 20:29 (28) | 22:14 | 10 05:52 (5) |
| 13 | 08:54 | | 08:04 | | 16:02 (38) | | 06:57 | | 06:38 | | 07:02 (4) | 05:30 | 20:08 (28) | 04:53 | 05:35 (5) |
| | 16:31 | | 17:34 | 24 | 16:26 (38) | | 18:32 | | 20:33 | 30 | 19:55 (26) | 21:32 | 20:28 (28) | 22:15 | 8 05:53 (5) |
| 14 | 08:53 | | 08:02 | | 16:04 (38) | | 06:54 | | 06:35 | | 07:00 (4) | 05:28 | 20:09 (28) | 04:53 | 05:34 (5) |
| | 16:33 | | 17:36 | 21 | 16:25 (38) | | 18:34 | | 20:35 | 32 | 19:55 (26) | 21:33 | 18 20:27 (28) | 22:16 | 8 05:53 (5) |
| 15 | 08:52 | | 07:59 | | 16:04 (38) | | 06:52 | | 06:33 | | 06:58 (4) | 05:27 | 20:10 (28) | 04:53 | 05:34 (5) |
| | 16:35 | | 17:38 | 18 | 16:22 (38) | | 18:36 | | 20:37 | 33 | 19:54 (26) | 21:35 | 16 20:26 (28) | 22:16 | 7 05:54 (5) |
| 16 | 08:51 | | 07:57 | | 16:07 (38) | | 06:49 | | 06:30 | | 06:55 (4) | 05:25 | 20:11 (28) | 04:52 | 05:34 (5) |
| | 16:36 | | 17:40 | 14 | 16:21 (38) | | 18:38 | | 20:39 | 35 | 19:53 (26) | 21:37 | 13 20:24 (28) | 22:17 | 7 05:55 (5) |
| 17 | 08:50 | | 07:55 | | 16:12 (38) | | 06:47 | | 06:28 | | 06:54 (4) | 05:23 | 20:14 (28) | 04:52 | 05:34 (5) |
| | 16:38 | | 17:42 | 5 | 16:17 (38) | | 18:40 | | 20:41 | 32 | 19:51 (26) | 21:39 | 9 20:23 (28) | 22:17 | 6 05:40 (5) |
| 18 | 08:49 | | 07:53 | | | | 06:44 | | 06:25 | | 06:53 (4) | 05:21 | | 04:52 | 05:34 (5) |
| | 16:40 | | 17:44 | | | | 18:42 | | 20:43 | 29 | 19:48 (26) | 21:41 | | 22:18 | 6 05:40 (5) |
| 19 | 08:48 | | 07:50 | | | | 06:41 | | 06:23 | | 06:53 (4) | 05:20 | 21:08 (2) | 04:52 | 05:34 (5) |
| | 16:42 | | 17:46 | | | | 18:44 | | 20:45 | 21 | 07:14 (4) | 21:42 | 1 21:09 (2) | 22:18 | 6 05:40 (5) |
| 20 | 08:46 | | 07:48 | | | | 06:39 | | 06:20 | | 06:54 (4) | 05:18 | | 04:52 | 05:34 (5) |
| | 16:44 | | 17:49 | | | | 18:46 | | 20:47 | 19 | 07:13 (4) | 21:44 | | 22:19 | 6 05:40 (5) |
| 21 | 08:45 | | 07:46 | | | | 06:36 | | 06:18 | | 06:54 (4) | 05:16 | | 04:52 | 05:34 (5) |
| | 16:46 | | 17:51 | | | | 18:48 | | 20:49 | 19 | 07:13 (4) | 21:46 | | 22:19 | 6 05:40 (5) |
| 22 | 08:44 | | 07:43 | | | | 06:34 | | 06:16 | | 06:54 (4) | 05:15 | | 04:52 | 05:35 (5) |
| | 16:48 | | 17:53 | | | | 18:50 | | 20:51 | 17 | 07:11 (4) | 21:47 | | 22:19 | 6 05:41 (5) |
| 23 | 08:42 | | 07:41 | | | | 06:31 | | 06:13 | | 06:55 (4) | 05:13 | | 04:53 | 05:35 (5) |
| | 16:50 | | 17:55 | | | | 18:52 | | 20:53 | 15 | 07:10 (4) | 21:49 | | 22:19 | 6 05:41 (5) |
| 24 | 08:41 | | 07:39 | | | | 06:29 | | 06:11 | | 06:57 (4) | 05:12 | | 04:53 | 05:35 (5) |
| | 16:52 | | 17:57 | | | | 18:54 | | 20:55 | 12 | 07:09 (4) | 21:51 | | 22:19 | 7 05:57 (5) |
| 25 | 08:39 | | 07:36 | | 16:10 (38) | | 06:26 | | 06:09 | | 06:59 (4) | 05:10 | | 04:53 | 05:36 (5) |
| | 16:54 | 2 | 17:59 | | 16:12 (38) | | 18:56 | | 20:57 | 7 | 07:06 (4) | 21:52 | | 22:19 | 6 05:42 (5) |
| 26 | 08:38 | | 07:34 | | 16:05 (38) | | 06:23 | | 18:17 (27) | | 06:06 | | 20:14 (28) | 05:09 | 04:54 | 05:36 (5) |
| | 16:56 | 11 | 18:01 | | 16:16 (38) | | 18:58 | 12 | 18:29 (27) | | 20:59 | 11 | 20:25 (28) | 21:54 | 22:19 | 7 05:57 (5) |
| 27 | 08:36 | | 07:32 | | 16:04 (38) | | 06:21 | | 18:14 (27) | | 06:04 | | 20:12 (28) | 05:08 | 04:54 | 05:37 (5) |
| | 16:58 | 16 | 18:03 | | 16:20 (38) | | 19:00 | 16 | 18:30 (27) | | 21:01 | 15 | 20:27 (28) | 21:55 | 22:19 | 6 05:43 (5) |
| 28 | 08:35 | | 07:29 | | 16:03 (38) | | 06:18 | | 18:13 (27) | | 06:02 | | 20:10 (28) | 05:06 | 04:55 | 05:37 (5) |
| | 17:00 | 18 | 18:05 | | 16:21 (38) | | 19:02 | 19 | 18:32 (27) | | 21:03 | 18 | 20:28 (28) | 21:57 | 22:19 | 7 05:57 (5) |
| 29 | 08:33 | | | | 16:02 (38) | | 07:16 | | 19:11 (27) | | 05:59 | | 20:09 (28) | 05:05 | 04:55 | 05:38 (5) |
| | 17:02 | 21 | | | 16:23 (38) | | 20:04 | 21 | 19:32 (27) | | 21:05 | 21 | 20:30 (28) | 21:58 | 22:19 | 9 05:57 (5) |
| 30 | 08:31 | | | | 16:01 (38) | | 07:13 | | 19:10 (27) | | 05:57 | | 20:08 (28) | 05:04 | 04:56 | 05:38 (5) |
| | 17:04 | 23 | | | 16:24 (38) | | 20:06 | 22 | 19:32 (27) | | 21:07 | 22 | 20:30 (28) | 22:00 | 22:18 | 10 05:56 (5) |
| 31 | 08:29 | | | | 16:00 (38) | | 07:11 | | 19:10 (27) | | | | | 05:03 | | |
| | 17:06 | 25 | | | 16:25 (38) | | 20:08 | 23 | 19:33 (27) | | | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | | | | 366 | | | | 423 | | | 501 | 520 | |
| Total, worst case | | 116 | | | 417 | | | 113 | | | | 689 | | 377 | | 193 |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | 0,39 | | 0,52 | | 0,48 |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 1,00 | | | | 0,98 | | 0,95 | | 0,79 |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | | 0,38 | | 0,48 | | 0,37 |
| Total, real | | 15 | | | 75 | | | 38 | | | | 260 | | 180 | | 72 |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 (5) | 05:40 | | 20:17 (28) | 06:38 | | 19:35 (26) | 07:35 | | | 07:37 | | 15:29 (38) | 08:35 |
| | 22:18 | 13 | 05:56 (5) | 21:40 | 24 | 21:03 (2) | 20:29 | 20 | 19:55 (26) | 19:12 | | | 16:58 | 28 | 15:57 (38) | 16:10 |
| 2 | 04:58 | | 05:40 (5) | 05:41 | | 20:17 (28) | 06:40 | | 19:35 (26) | 07:37 | | | 07:39 | | 15:29 (38) | 08:37 |
| | 22:18 | 16 | 05:56 (5) | 21:38 | 24 | 20:41 (28) | 20:27 | 20 | 19:55 (26) | 19:10 | | | 16:56 | 28 | 15:57 (38) | 16:09 |
| 3 | 04:58 | | 05:42 (5) | 05:43 | | 20:16 (28) | 06:42 | | 19:13 (27) | 07:39 | | | 07:41 | | 15:28 (38) | 08:38 |
| | 22:17 | 13 | 05:55 (5) | 21:36 | 24 | 20:40 (28) | 20:24 | 26 | 19:54 (26) | 19:07 | | | 16:54 | 29 | 15:57 (38) | 16:08 |
| 4 | 04:59 | | 05:43 (5) | 05:45 | | 20:16 (28) | 06:43 | | 19:09 (27) | 07:40 | | | 07:43 | | 15:28 (38) | 08:40 |
| | 22:17 | 11 | 05:54 (5) | 21:34 | 25 | 20:41 (28) | 20:22 | 31 | 19:53 (26) | 19:04 | | | 16:52 | 29 | 15:57 (38) | 16:08 |
| 5 | 05:00 | | 05:44 (5) | 05:47 | | 20:16 (28) | 06:45 | | 19:07 (27) | 07:42 | | | 07:45 | | 15:29 (38) | 08:41 |
| | 22:16 | 8 | 05:52 (5) | 21:32 | 25 | 20:41 (28) | 20:19 | 30 | 19:50 (26) | 19:02 | | | 16:49 | 29 | 15:58 (38) | 16:07 |
| 6 | 05:01 | | 05:48 (5) | 05:49 | | 20:15 (28) | 06:47 | | 19:05 (27) | 07:44 | | | 07:47 | | 15:29 (38) | 08:43 |
| | 22:15 | 1 | 05:49 (5) | 21:30 | 26 | 20:41 (28) | 20:17 | 29 | 19:47 (26) | 18:59 | | | 16:47 | 29 | 15:58 (38) | 16:06 |
| 7 | 05:02 | | | 05:51 | | 20:15 (28) | 06:49 | | 19:04 (27) | 07:46 | | | 07:49 | | 15:29 (38) | 08:44 |
| | 22:15 | | | 21:28 | 26 | 20:41 (28) | 20:14 | 25 | 19:45 (26) | 18:57 | | | 16:46 | 28 | 15:57 (38) | 16:06 |
| 8 | 05:03 | | | 05:52 | | 20:15 (28) | 06:51 | | 19:03 (27) | 07:48 | | | 07:51 | | 15:30 (38) | 08:46 |
| | 22:14 | | | 21:26 | 26 | 20:41 (28) | 20:12 | 23 | 19:26 (27) | 18:54 | | | 16:44 | 28 | 15:58 (38) | 16:05 |
| 9 | 05:04 | | | 05:54 | | 20:14 (28) | 06:53 | | 19:02 (27) | 07:50 | | | 07:53 | | 15:30 (38) | 08:47 |
| | 22:13 | | | 21:24 | 26 | 20:40 (28) | 20:09 | 24 | 19:26 (27) | 18:52 | | | 16:42 | 27 | 15:57 (38) | 16:05 |
| 10 | 05:06 | | | 05:56 | | 20:15 (28) | 06:55 | | 19:02 (27) | 07:52 | | | 07:55 | | 15:30 (38) | 08:48 |
| | 22:12 | | | 21:21 | 25 | 20:40 (28) | 20:06 | 24 | 19:26 (27) | 18:49 | | | 16:40 | 26 | 15:56 (38) | 16:04 |
| 11 | 05:07 | | | 05:58 | | 20:15 (28) | 06:57 | | 19:02 (27) | 07:54 | | | 07:57 | | 15:31 (38) | 08:49 |
| | 22:11 | | | 21:19 | 25 | 20:40 (28) | 20:04 | 24 | 19:26 (27) | 18:47 | | | 16:38 | 25 | 15:56 (38) | 16:04 |
| 12 | 05:08 | | | 06:00 | | 20:16 (28) | 06:59 | | 19:01 (27) | 07:56 | | | 07:59 | | 15:33 (38) | 08:51 |
| | 22:10 | | | 21:17 | 23 | 20:39 (28) | 20:01 | 23 | 19:24 (27) | 18:44 | | | 16:36 | 23 | 15:56 (38) | 16:04 |
| 13 | 05:09 | | | 06:02 | | 20:16 (28) | 07:00 | | 19:01 (27) | 07:58 | | | 08:01 | | 15:34 (38) | 08:52 |
| | 22:09 | | | 21:15 | 22 | 20:38 (28) | 19:59 | 23 | 19:24 (27) | 18:42 | | | 16:34 | 20 | 15:54 (38) | 16:04 |
| 14 | 05:11 | | | 06:04 | | 20:17 (28) | 07:02 | | 19:02 (27) | 08:00 | | | 08:03 | | 15:35 (38) | 08:53 |
| | 22:08 | | | 21:13 | 20 | 20:37 (28) | 19:56 | 21 | 19:23 (27) | 18:39 | | | 16:33 | 18 | 15:53 (38) | 16:04 |
| 15 | 05:12 | | | 06:06 | | 20:18 (28) | 07:04 | | 19:02 (27) | 08:02 | | | 08:05 | | 15:36 (38) | 08:54 |
| | 22:07 | | | 21:10 | 18 | 20:36 (28) | 19:54 | 20 | 19:22 (27) | 18:37 | | | 16:31 | 15 | 15:51 (38) | 16:04 |
| 16 | 05:13 | | | 06:07 | | 20:20 (28) | 07:06 | | 19:03 (27) | 08:04 | | | 08:07 | | 15:39 (38) | 08:55 |
| | 22:05 | | | 21:08 | 14 | 20:34 (28) | 19:51 | 17 | 19:20 (27) | 18:34 | | | 16:29 | 11 | 15:50 (38) | 16:04 |
| 17 | 05:15 | | | 06:09 | | 20:22 (28) | 07:08 | | 19:05 (27) | 08:06 | | | 08:09 | | 15:44 (38) | 08:56 |
| | 22:04 | | | 21:06 | 9 | 20:31 (28) | 19:48 | 13 | 19:18 (27) | 18:32 | | | 16:28 | 1 | 15:45 (38) | 16:04 |
| 18 | 05:16 | | | 06:11 | | 07:04 (4) | 07:10 | | 19:07 (27) | 08:08 | | | 08:11 | | | 08:56 |
| | 22:03 | | | 21:03 | 8 | 07:12 (4) | 19:46 | 6 | 19:13 (27) | 18:30 | | | 16:26 | | | 16:04 |
| 19 | 05:18 | | | 06:13 | | 07:02 (4) | 07:12 | | | 08:10 | | | 08:13 | | | 08:57 |
| | 22:02 | | | 21:01 | 13 | 07:15 (4) | 19:43 | | | 18:27 | | | 16:25 | | | 16:04 |
| 20 | 05:19 | | | 06:15 | | 07:01 (4) | 07:14 | | | 08:12 | | | 08:15 | | | 08:58 |
| | 22:00 | | | 20:59 | 15 | 07:16 (4) | 19:41 | | | 18:25 | | | 16:23 | | | 16:05 |
| 21 | 05:21 | | | 06:17 | | 07:00 (4) | 07:16 | | | 08:14 | | | 08:17 | | | 08:58 |
| | 21:59 | | | 20:56 | 17 | 07:17 (4) | 19:38 | | | 18:23 | | | 16:22 | | | 16:05 |
| 22 | 05:23 | | 21:18 (2) | 06:19 | | 06:58 (4) | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 |
| | 21:57 | 1 | 21:19 (2) | 20:54 | 19 | 07:17 (4) | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 |
| 23 | 05:24 | | | 06:21 | | 06:57 (4) | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 |
| | 21:56 | | | 20:52 | 20 | 07:17 (4) | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 |
| 24 | 05:26 | | 21:18 (2) | 06:23 | | 06:57 (4) | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 |
| | 21:54 | 1 | 21:19 (2) | 20:49 | 20 | 07:17 (4) | 19:30 | | | 18:16 | | | 16:18 | | | 16:06 |
| 25 | 05:27 | | | 06:25 | | 06:57 (4) | 07:23 | | | 07:22 | | 15:39 (38) | 08:25 | | | 09:00 |
| | 21:52 | | | 20:47 | 29 | 19:52 (26) | 19:28 | | | 17:13 | 9 | 15:48 (38) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:26 (28) | 06:26 | | 06:57 (4) | 07:25 | | | 07:24 | | 15:36 (38) | 08:26 | | | 09:01 |
| | 21:51 | 5 | 20:31 (28) | 20:44 | 33 | 19:54 (26) | 19:25 | | | 17:11 | 15 | 15:51 (38) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 20:23 (28) | 06:28 | | 06:57 (4) | 07:27 | | | 07:26 | | 15:33 (38) | 08:28 | | | 09:01 |
| | 21:49 | 11 | 20:34 (28) | 20:42 | 34 | 19:54 (26) | 19:22 | | | 17:09 | 19 | 15:52 (38) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 20:21 (28) | 06:30 | | 06:59 (4) | 07:29 | | | 07:28 | | 15:33 (38) | 08:30 | | | 09:01 |
| | 21:47 | 14 | 20:35 (28) | 20:39 | 33 | 19:55 (26) | 19:20 | | | 17:06 | 21 | 15:54 (38) | 16:13 | | | 16:10 |
| 29 | 05:34 | | 20:20 (28) | 06:32 | | 07:01 (4) | 07:31 | | | 07:30 | | 15:31 (38) | 08:32 | | | 09:01 |
| | 21:45 | 17 | 20:37 (28) | 20:37 | 32 | 19:56 (26) | 19:17 | | | 17:04 | 24 | 15:55 (38) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 20:19 (28) | 06:34 | | 07:03 (4) | 07:33 | | | 07:33 | | 15:30 (38) | 08:33 | | | 09:01 |
| | 21:44 | 19 | 20:38 (28) | 20:34 | 30 | 19:56 (26) | 19:15 | | | 17:02 | 26 | 15:56 (38) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 20:18 (28) | 06:36 | | 07:05 (4) | | | | 07:35 | | 15:29 (38) | | | | 09:01 |
| | 21:42 | 21 | 20:39 (28) | 20:32 | 26 | 19:56 (26) | | | | 17:00 | 27 | 15:56 (38) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 151 | | | 711 | | | 399 | | | 141 | | | 394 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,88 | | | 0,96 | | | 1,00 | | | 0,76 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,48 | | | 0,39 | | | 0,23 | | | 0,12 | | |
| Total, real | | 63 | | | 344 | | | 154 | | | 32 | | | 46 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| Day | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (41) | 08:28 | | | 07:27 | | | 07:08 | | 07:50 (33) | 05:55 | | 19:59 (30) | 05:02 | | |
| | 16:14 | 16 | 09:55 (41) | 17:08 | | | 18:07 | | | 20:10 | 41 | 19:15 (3) | 21:09 | 28 | 20:27 (30) | 22:02 | | |
| 2 | 09:01 | | 09:38 (41) | 08:26 | | | 07:24 | | | 07:05 | | 07:50 (33) | 05:53 | | 19:59 (30) | 05:01 | | |
| | 16:15 | 17 | 09:55 (41) | 17:10 | | | 18:09 | | | 20:12 | 41 | 19:15 (3) | 21:11 | 28 | 20:27 (30) | 22:04 | | |
| 3 | 09:00 | | 09:39 (41) | 08:24 | | | 07:22 | | | 07:03 | | 07:49 (33) | 05:51 | | 19:58 (30) | 05:00 | | |
| | 16:16 | 18 | 09:57 (41) | 17:12 | | | 18:11 | | | 20:13 | 41 | 19:15 (3) | 21:13 | 30 | 20:28 (30) | 22:05 | | |
| 4 | 09:00 | | 09:38 (41) | 08:22 | | | 07:19 | | | 07:00 | | 07:49 (33) | 05:48 | | 19:58 (30) | 04:59 | | |
| | 16:17 | 19 | 09:57 (41) | 17:14 | | | 18:14 | | | 20:15 | 41 | 19:15 (3) | 21:14 | 30 | 20:28 (30) | 22:06 | | |
| 5 | 09:00 | | 09:39 (41) | 08:20 | | | 07:17 | | | 06:58 | | 07:45 (4) | 05:46 | | 19:57 (30) | 04:58 | | |
| | 16:19 | 19 | 09:58 (41) | 17:17 | | | 18:16 | | | 20:17 | 44 | 19:15 (3) | 21:16 | 31 | 20:28 (30) | 22:07 | | |
| 6 | 08:59 | | 09:39 (41) | 08:18 | | | 07:14 | | | 06:55 | | 07:40 (4) | 05:44 | | 19:57 (30) | 04:57 | | |
| | 16:20 | 20 | 09:59 (41) | 17:19 | | | 18:18 | | | 20:19 | 47 | 19:15 (3) | 21:18 | 31 | 20:28 (30) | 22:08 | | |
| 7 | 08:59 | | 09:38 (41) | 08:16 | | | 07:12 | | | 06:53 | | 07:36 (4) | 05:42 | | 19:57 (30) | 04:56 | | |
| | 16:22 | 22 | 10:00 (41) | 17:21 | | | 18:20 | | | 20:21 | 50 | 19:15 (3) | 21:20 | 31 | 20:28 (30) | 22:10 | | |
| 8 | 08:58 | | 09:38 (41) | 08:14 | | | 07:09 | | | 06:50 | | 07:34 (4) | 05:40 | | 19:57 (30) | 04:56 | | |
| | 16:23 | 22 | 10:00 (41) | 17:23 | | | 18:22 | | | 20:23 | 49 | 19:15 (3) | 21:22 | 31 | 20:28 (30) | 22:11 | | |
| 9 | 08:57 | | 09:38 (41) | 08:12 | | | 07:07 | | | 06:48 | | 07:31 (4) | 05:38 | | 19:57 (30) | 04:55 | | |
| | 16:25 | 23 | 10:01 (41) | 17:25 | | | 18:24 | | | 20:25 | 49 | 19:15 (3) | 21:24 | 30 | 20:27 (30) | 22:12 | | |
| 10 | 08:57 | | 09:38 (41) | 08:10 | | | 07:04 | | | 06:45 | | 07:30 (4) | 05:36 | | 19:57 (30) | 04:54 | | |
| | 16:26 | 23 | 10:01 (41) | 17:27 | | | 18:26 | | | 20:27 | 43 | 19:15 (3) | 21:26 | 30 | 20:27 (30) | 22:12 | | |
| 11 | 08:56 | | 09:39 (41) | 08:08 | | | 07:02 | | | 06:43 | | 07:28 (4) | 05:34 | | 19:57 (30) | 04:54 | | |
| | 16:28 | 23 | 10:02 (41) | 17:29 | | | 18:28 | | | 20:29 | 40 | 08:08 (33) | 21:28 | 29 | 20:26 (30) | 22:13 | | |
| 12 | 08:55 | | 09:39 (41) | 08:06 | | | 06:59 | | | 06:40 | | 07:27 (4) | 05:32 | | 19:58 (30) | 04:53 | | |
| | 16:29 | 24 | 10:03 (41) | 17:32 | | | 18:30 | | | 20:31 | 41 | 08:08 (3) | 21:30 | 29 | 20:27 (30) | 22:14 | | |
| 13 | 08:54 | | 09:39 (41) | 08:04 | | | 06:57 | | | 06:38 | | 07:25 (4) | 05:30 | | 19:58 (30) | 04:53 | | |
| | 16:31 | 25 | 10:04 (41) | 17:34 | | | 18:32 | | | 20:33 | 43 | 08:08 (4) | 21:32 | 28 | 20:26 (30) | 22:15 | | |
| 14 | 08:53 | | 09:40 (41) | 08:02 | | | 06:54 | | | 06:35 | | 07:24 (4) | 05:28 | | 19:58 (30) | 04:53 | | 05:51 (32) |
| | 16:33 | 24 | 10:04 (41) | 17:36 | | | 18:34 | | | 20:35 | 45 | 08:09 (4) | 21:33 | 27 | 20:25 (30) | 22:16 | 5 | 05:56 (32) |
| 15 | 08:52 | | 09:40 (41) | 07:59 | | | 06:52 | | | 06:33 | | | 05:27 | | 20:00 (30) | 04:52 | | 05:50 (32) |
| | 16:35 | 25 | 10:05 (41) | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 25 | 20:25 (30) | 22:16 | 8 | 05:58 (32) |
| 16 | 08:51 | | 09:40 (41) | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | | 20:00 (30) | 04:52 | | 05:50 (32) |
| | 16:36 | 25 | 10:05 (41) | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 24 | 20:24 (30) | 22:17 | 9 | 05:59 (32) |
| 17 | 08:50 | | 09:40 (41) | 07:55 | | | 06:46 | | | 06:28 | | | 05:23 | | 20:01 (30) | 04:52 | | 05:49 (32) |
| | 16:38 | 26 | 10:06 (41) | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 23 | 20:24 (30) | 22:17 | 11 | 06:00 (32) |
| 18 | 08:49 | | 09:40 (41) | 07:53 | | | 06:44 | | | 06:25 | | | 05:21 | | 20:02 (30) | 04:52 | | 05:49 (32) |
| | 16:40 | 25 | 10:05 (41) | 17:44 | | | 18:42 | | | 20:43 | | | 21:41 | 20 | 20:22 (30) | 22:18 | 11 | 06:00 (32) |
| 19 | 08:48 | | 09:41 (41) | 07:50 | | | 06:41 | | | 06:23 | | | 05:20 | | 20:04 (30) | 04:52 | | 05:49 (32) |
| | 16:42 | 25 | 10:06 (41) | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 18 | 20:22 (30) | 22:18 | 12 | 06:01 (32) |
| 20 | 08:46 | | 09:41 (41) | 07:48 | | | 06:39 | | | 06:20 | | | 05:18 | | 20:05 (30) | 04:52 | | 05:49 (32) |
| | 16:44 | 25 | 10:06 (41) | 17:49 | | | 18:46 | | | 20:47 | | | 21:44 | 15 | 20:20 (30) | 22:19 | 12 | 06:01 (32) |
| 21 | 08:45 | | 09:42 (41) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 20:07 (30) | 04:52 | | 05:49 (32) |
| | 16:46 | 24 | 10:06 (41) | 17:51 | | | 18:48 | | | 20:49 | | | 21:46 | 11 | 20:18 (30) | 22:19 | 12 | 06:01 (32) |
| 22 | 08:44 | | 09:42 (41) | 07:43 | | | 06:34 | | | 06:16 | | | 05:15 | | 20:10 (30) | 04:52 | | 05:50 (32) |
| | 16:48 | 24 | 10:06 (41) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 5 | 20:15 (30) | 22:19 | 12 | 06:02 (32) |
| 23 | 08:42 | | 09:44 (41) | 07:41 | | | 06:31 | | 18:17 (3) | 06:13 | | | 05:13 | | | 04:53 | | 05:50 (32) |
| | 16:50 | 22 | 10:06 (41) | 17:55 | | | 18:52 | 6 | 18:23 (3) | 20:53 | | | 21:49 | | | 22:19 | 12 | 06:02 (32) |
| 24 | 08:41 | | 09:44 (41) | 07:39 | | | 06:28 | | 18:13 (3) | 06:11 | | | 05:12 | | | 04:53 | | 05:50 (32) |
| | 16:52 | 22 | 10:06 (41) | 17:57 | | | 18:54 | 14 | 18:27 (3) | 20:55 | | | 21:51 | | | 22:19 | 11 | 06:01 (32) |
| 25 | 08:39 | | 09:45 (41) | 07:36 | | | 06:26 | | 07:01 (33) | 06:09 | | 20:09 (30) | 05:10 | | | 04:53 | | 05:51 (32) |
| | 16:54 | 20 | 10:05 (41) | 17:59 | | | 18:56 | 30 | 18:28 (3) | 20:57 | 8 | 20:17 (30) | 21:52 | | | 22:19 | 11 | 06:02 (32) |
| 26 | 08:38 | | 09:46 (41) | 07:34 | | | 06:23 | | 06:58 (33) | 06:06 | | 20:06 (30) | 05:09 | | | 04:54 | | 05:51 (32) |
| | 16:56 | 18 | 10:04 (41) | 18:01 | | | 18:58 | 40 | 18:31 (3) | 20:59 | 15 | 20:21 (30) | 21:54 | | | 22:19 | 10 | 06:01 (32) |
| 27 | 08:36 | | 09:48 (41) | 07:32 | | | 06:21 | | 06:56 (33) | 06:04 | | 20:04 (30) | 05:08 | | | 04:54 | | 05:53 (32) |
| | 16:58 | 16 | 10:04 (41) | 18:03 | | | 19:00 | 45 | 18:31 (3) | 21:01 | 19 | 20:23 (30) | 21:55 | | | 22:19 | 8 | 06:01 (32) |
| 28 | 08:35 | | 09:50 (41) | 07:29 | | | 06:18 | | 06:54 (33) | 06:02 | | 20:02 (30) | 05:06 | | | 04:55 | | 05:54 (32) |
| | 17:00 | 12 | 10:02 (41) | 18:05 | | | 19:02 | 49 | 18:31 (3) | 21:03 | 22 | 20:24 (30) | 21:57 | | | 22:19 | 6 | 06:00 (32) |
| 29 | 08:33 | | 09:53 (41) | | | | 07:16 | | 07:53 (33) | 05:59 | | 20:01 (30) | 05:05 | | | 04:55 | | 05:57 (32) |
| | 17:02 | 7 | 10:00 (41) | | | | 20:04 | 52 | 19:32 (3) | 21:05 | 24 | 20:25 (30) | 21:58 | | | 22:19 | 1 | 05:58 (32) |
| 30 | 08:31 | | | | | | 07:13 | | 07:51 (33) | 05:57 | | 20:00 (30) | 05:04 | | | 04:56 | | |
| | 17:04 | | | | | | 20:06 | 38 | 19:15 (3) | 21:07 | 26 | 20:26 (30) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | | | | | 07:10 | | 07:51 (33) | | | | 05:03 | | | | | |
| | 17:06 | | | | | | 20:08 | 39 | 19:15 (3) | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 611 | | | | | | 313 | | | 729 | | | 554 | | | 151 | |
| Sun reduction | | 0,18 | | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,64 | | | | | | 1,00 | | | 0,99 | | | 0,95 | | | 0,81 | |
| Total reduction | | 0,11 | | | | | | 0,32 | | | 0,37 | | | 0,46 | | | 0,37 | |
| Total, real | | 67 | | | | | | 100 | | | 268 | | | 257 | | | 56 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 07:52 (4) | 06:38 | 07:27 (4) | 07:35 | 07:37 | | 08:35 | 09:21 (41) |
| | 22:18 | | 21:40 35 | 20:37 (30) | 20:29 18 | 08:07 (33) | 19:12 | 16:58 | | 16:10 23 | 09:44 (41) |
| 2 | 04:57 | | 05:41 | 07:50 (4) | 06:40 | 07:28 (4) | 07:37 | 07:39 | | 08:37 | 09:21 (41) |
| | 22:18 | | 21:38 40 | 20:37 (30) | 20:27 23 | 08:09 (33) | 19:09 | 16:56 | | 16:09 24 | 09:45 (41) |
| 3 | 04:58 | | 05:43 | 07:50 (4) | 06:42 | 07:29 (4) | 07:38 | 07:41 | | 08:38 | 09:22 (41) |
| | 22:17 | | 21:36 43 | 20:37 (30) | 20:24 28 | 08:11 (33) | 19:07 | 16:54 | | 16:08 23 | 09:45 (41) |
| 4 | 04:59 | | 05:45 | 07:49 (4) | 06:43 | 07:31 (4) | 07:40 | 07:43 | | 08:40 | 09:22 (41) |
| | 22:17 | | 21:34 47 | 20:38 (30) | 20:22 30 | 08:12 (33) | 19:04 | 16:51 | | 16:07 22 | 09:44 (41) |
| 5 | 05:00 | | 05:47 | 07:48 (4) | 06:45 | 07:33 (4) | 07:42 | 07:45 | | 08:41 | 09:23 (41) |
| | 22:16 | | 21:32 50 | 20:38 (30) | 20:19 34 | 08:13 (33) | 19:02 | 16:49 | | 16:07 22 | 09:45 (41) |
| 6 | 05:01 | | 05:49 | 07:46 (4) | 06:47 | 07:35 (4) | 07:44 | 07:47 | | 08:43 | 09:25 (41) |
| | 22:15 | | 21:30 53 | 20:37 (30) | 20:17 37 | 08:12 (33) | 18:59 | 16:47 | | 16:06 20 | 09:45 (41) |
| 7 | 05:02 | | 05:51 | 07:44 (4) | 06:49 | 07:40 (4) | 07:46 | 07:49 | | 08:44 | 09:25 (41) |
| | 22:15 | | 21:28 55 | 20:37 (30) | 20:14 32 | 08:12 (33) | 18:57 | 16:45 | | 16:06 20 | 09:45 (41) |
| 8 | 05:03 | | 05:52 | 07:43 (4) | 06:51 | 07:44 (33) | 07:48 | 07:51 | | 08:46 | 09:26 (41) |
| | 22:14 | | 21:26 58 | 20:37 (30) | 20:12 29 | 08:13 (33) | 18:54 | 16:44 | | 16:05 19 | 09:45 (41) |
| 9 | 05:04 | | 05:54 | 07:40 (4) | 06:53 | 07:43 (33) | 07:50 | 07:53 | | 08:47 | 09:27 (41) |
| | 22:13 | | 21:24 61 | 20:36 (30) | 20:09 30 | 08:13 (33) | 18:52 | 16:42 | | 16:05 18 | 09:45 (41) |
| 10 | 05:06 | | 05:56 | 07:38 (4) | 06:55 | 07:43 (33) | 07:52 | 07:55 | | 08:48 | 09:28 (41) |
| | 22:12 | | 21:21 63 | 20:36 (30) | 20:06 29 | 08:12 (33) | 18:49 | 16:40 | | 16:04 17 | 09:45 (41) |
| 11 | 05:07 | | 05:58 | 07:35 (4) | 06:57 | 07:42 (33) | 07:54 | 07:57 | | 08:49 | 09:29 (41) |
| | 22:11 | | 21:19 67 | 20:36 (30) | 20:04 29 | 08:11 (33) | 18:47 | 16:38 | | 16:04 16 | 09:45 (41) |
| 12 | 05:08 | | 06:00 | 07:32 (4) | 06:59 | 07:42 (33) | 07:56 | 07:59 | | 08:51 | 09:29 (41) |
| | 22:10 | | 21:17 69 | 20:35 (30) | 20:01 29 | 08:11 (33) | 18:44 | 16:36 | | 16:04 16 | 09:45 (41) |
| 13 | 05:09 | | 06:02 | 07:29 (4) | 07:00 | 07:42 (33) | 07:58 | 08:01 | 09:24 (41) | 08:52 | 09:30 (41) |
| | 22:09 | | 21:15 69 | 20:33 (30) | 19:59 28 | 08:10 (33) | 18:42 | 16:34 8 | 09:32 (41) | 16:04 15 | 09:45 (41) |
| 14 | 05:11 | | 06:04 | 20:09 (30) | 07:02 | 07:43 (33) | 08:00 | 08:03 | 09:22 (41) | 08:53 | 09:31 (41) |
| | 22:08 | | 21:13 23 | 20:32 (30) | 19:56 27 | 19:22 (3) | 18:39 | 16:33 12 | 09:34 (41) | 16:04 14 | 09:45 (41) |
| 15 | 05:12 | | 06:06 | 20:10 (30) | 07:04 | 07:44 (33) | 08:02 | 08:05 | 09:20 (41) | 08:54 | 09:32 (41) |
| | 22:07 | | 21:10 21 | 20:31 (30) | 19:53 26 | 19:22 (3) | 18:37 | 16:31 16 | 09:36 (41) | 16:04 13 | 09:45 (41) |
| 16 | 05:13 | | 06:07 | 20:12 (30) | 07:06 | 07:45 (33) | 08:04 | 08:07 | 09:19 (41) | 08:55 | 09:33 (41) |
| | 22:05 | | 21:08 18 | 20:30 (30) | 19:51 23 | 19:21 (3) | 18:34 | 16:29 18 | 09:37 (41) | 16:04 12 | 09:45 (41) |
| 17 | 05:15 | | 06:09 | 20:13 (30) | 07:08 | 07:46 (33) | 08:06 | 08:09 | 09:19 (41) | 08:56 | 09:34 (41) |
| | 22:04 | | 21:06 14 | 20:27 (30) | 19:48 20 | 19:19 (3) | 18:32 | 16:28 20 | 09:39 (41) | 16:04 11 | 09:45 (41) |
| 18 | 05:16 | | 06:11 | 20:17 (30) | 07:10 | 07:47 (33) | 08:08 | 08:11 | 09:18 (41) | 08:56 | 09:35 (41) |
| | 22:03 | | 21:03 6 | 20:23 (30) | 19:46 16 | 19:16 (3) | 18:30 | 16:26 22 | 09:40 (41) | 16:04 11 | 09:46 (41) |
| 19 | 05:18 | | 06:13 | | 07:12 | 07:52 (33) | 08:10 | 08:13 | 09:18 (41) | 08:57 | 09:36 (41) |
| | 22:01 | | 21:01 | | 19:43 7 | 19:14 (3) | 18:27 | 16:24 22 | 09:40 (41) | 16:04 10 | 09:46 (41) |
| 20 | 05:19 | | 06:15 | 07:25 (4) | 07:14 | 19:02 (3) | 08:12 | 08:15 | 09:17 (41) | 08:58 | 09:36 (41) |
| | 22:00 | | 20:59 1 | 07:26 (4) | 19:41 9 | 19:11 (3) | 18:25 | 16:23 24 | 09:41 (41) | 16:04 10 | 09:46 (41) |
| 21 | 05:21 | | 06:17 | 07:25 (4) | 07:16 | | 08:14 | 08:17 | 09:17 (41) | 08:58 | 09:37 (41) |
| | 21:59 | | 20:56 1 | 07:26 (4) | 19:38 | | 18:22 | 16:22 24 | 09:41 (41) | 16:05 10 | 09:47 (41) |
| 22 | 05:22 | 20:18 (30) | 06:19 | 07:24 (4) | 07:17 | | 08:16 | 08:19 | 09:17 (41) | 08:59 | 09:37 (41) |
| | 21:57 9 | 20:27 (30) | 20:54 1 | 07:25 (4) | 19:35 | | 18:20 | 16:20 25 | 09:42 (41) | 16:05 10 | 09:47 (41) |
| 23 | 05:24 | 20:16 (30) | 06:21 | 07:24 (4) | 07:19 | | 08:18 | 08:21 | 09:18 (41) | 08:59 | 09:38 (41) |
| | 21:56 14 | 20:30 (30) | 20:52 2 | 07:26 (4) | 19:33 | | 18:18 | 16:19 25 | 09:43 (41) | 16:06 10 | 09:48 (41) |
| 24 | 05:26 | 20:14 (30) | 06:23 | 07:24 (4) | 07:21 | | 08:20 | 08:23 | 09:18 (41) | 09:00 | 09:38 (41) |
| | 21:54 17 | 20:31 (30) | 20:49 2 | 07:26 (4) | 19:30 | | 18:15 | 16:17 25 | 09:43 (41) | 16:06 10 | 09:48 (41) |
| 25 | 05:27 | 20:14 (30) | 06:24 | 07:24 (4) | 07:23 | | 08:22 | 08:25 | 09:18 (41) | 09:00 | 09:38 (41) |
| | 21:52 18 | 20:32 (30) | 20:47 2 | 07:26 (4) | 19:28 | | 17:13 | 16:16 26 | 09:44 (41) | 16:07 10 | 09:48 (41) |
| 26 | 05:29 | 20:12 (30) | 06:26 | 07:25 (4) | 07:25 | | 07:24 | 08:26 | 09:19 (41) | 09:00 | 09:38 (41) |
| | 21:51 21 | 20:33 (30) | 20:44 2 | 07:27 (4) | 19:25 | | 17:11 | 16:15 25 | 09:44 (41) | 16:08 11 | 09:49 (41) |
| 27 | 05:31 | 20:11 (30) | 06:28 | 07:24 (4) | 07:27 | | 07:26 | 08:28 | 09:19 (41) | 09:01 | 09:38 (41) |
| | 21:49 23 | 20:34 (30) | 20:42 3 | 07:27 (4) | 19:22 | | 17:09 | 16:14 25 | 09:44 (41) | 16:09 12 | 09:50 (41) |
| 28 | 05:33 | 20:10 (30) | 06:30 | 07:25 (4) | 07:29 | | 07:28 | 08:30 | 09:20 (41) | 09:01 | 09:38 (41) |
| | 21:47 24 | 20:34 (30) | 20:39 2 | 07:27 (4) | 19:20 | | 17:06 | 16:13 24 | 09:44 (41) | 16:09 12 | 09:50 (41) |
| 29 | 05:34 | 20:10 (30) | 06:32 | 07:25 (4) | 07:31 | | 07:30 | 08:32 | 09:20 (41) | 09:01 | 09:38 (41) |
| | 21:45 26 | 20:36 (30) | 20:37 3 | 07:28 (4) | 19:17 | | 17:04 | 16:12 25 | 09:45 (41) | 16:10 13 | 09:51 (41) |
| 30 | 05:36 | 20:09 (30) | 06:34 | 07:26 (4) | 07:33 | | 07:32 | 08:33 | 09:20 (41) | 09:01 | 09:38 (41) |
| | 21:44 28 | 20:37 (30) | 20:34 3 | 07:29 (4) | 19:15 | | 17:02 | 16:11 24 | 09:44 (41) | 16:11 14 | 09:52 (41) |
| 31 | 05:38 | 20:08 (30) | 06:36 | 07:27 (4) | | | 07:35 | | | 09:01 | 09:38 (41) |
| | 21:42 28 | 20:36 (30) | 20:32 12 | 08:05 (33) | | | 17:00 | | | 16:12 16 | 09:54 (41) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | | 224 | |
| Total, worst case | 208 | | 826 | | 504 | | | 390 | | 464 | |
| Sun reduction | 0,49 | | 0,51 | | 0,40 | | | 0,16 | | 0,14 | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | | 1,00 | | 1,00 | |
| Wind dir. red. | 0,95 | | 0,97 | | 1,00 | | | 0,64 | | 0,64 | |
| Total reduction | 0,44 | | 0,47 | | 0,37 | | | 0,10 | | 0,08 | |
| Total, real | 91 | | 389 | | 188 | | | 37 | | 38 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (41) | 08:28 | | 07:27 | | | 07:08 | | 07:32 (11) | 05:55 | | 20:14 (30) | 05:02 | | |
| | 16:14 | 22 | 10:07 (41) | 17:08 | | 18:07 | | | 20:10 | 7 | 07:39 (11) | 21:09 | 20 | 20:34 (30) | 22:02 | | |
| 2 | 09:01 | | 09:45 (41) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (11) | 05:53 | | 20:13 (30) | 05:01 | | |
| | 16:15 | 23 | 10:08 (41) | 17:10 | | 18:09 | | | 20:12 | 12 | 19:44 (3) | 21:11 | 22 | 20:35 (30) | 22:04 | | |
| 3 | 09:00 | | 09:45 (41) | 08:24 | | 07:22 | | | 07:03 | | 07:30 (11) | 05:51 | | 20:12 (30) | 05:00 | | |
| | 16:16 | 24 | 10:09 (41) | 17:12 | | 18:11 | | | 20:13 | 12 | 19:46 (3) | 21:13 | 24 | 20:36 (30) | 22:05 | | |
| 4 | 09:00 | | 09:45 (41) | 08:22 | | 07:19 | | | 07:00 | | 07:41 (33) | 05:48 | | 20:11 (30) | 04:59 | | |
| | 16:17 | 24 | 10:09 (41) | 17:14 | | 18:14 | | | 20:15 | 18 | 19:46 (3) | 21:14 | 25 | 20:36 (30) | 22:06 | | |
| 5 | 09:00 | | 09:46 (41) | 08:20 | | 07:17 | | | 06:58 | | 07:37 (33) | 05:46 | | 20:11 (30) | 04:58 | | |
| | 16:19 | 24 | 10:10 (41) | 17:17 | | 18:16 | | | 20:17 | 24 | 19:46 (3) | 21:16 | 25 | 20:36 (30) | 22:07 | | |
| 6 | 08:59 | | 09:46 (41) | 08:18 | | 07:14 | | | 06:55 | | 07:35 (33) | 05:44 | | 06:43 (4) | 04:57 | | |
| | 16:20 | 25 | 10:11 (41) | 17:19 | | 18:18 | | | 20:19 | 28 | 19:46 (3) | 21:18 | 29 | 20:37 (30) | 22:08 | | |
| 7 | 08:59 | | 09:46 (41) | 08:16 | | 07:12 | | | 06:53 | | 07:33 (33) | 05:42 | | 06:42 (4) | 04:56 | | |
| | 16:22 | 25 | 10:11 (41) | 17:21 | | 18:20 | | | 20:21 | 30 | 19:45 (3) | 21:20 | 30 | 20:37 (30) | 22:10 | | |
| 8 | 08:58 | | 09:46 (41) | 08:14 | | 07:09 | | | 06:50 | | 07:32 (33) | 05:40 | | 06:41 (4) | 04:56 | | |
| | 16:23 | 26 | 10:12 (41) | 17:23 | | 18:22 | | | 20:23 | 33 | 19:45 (3) | 21:22 | 30 | 20:36 (30) | 22:11 | | |
| 9 | 08:57 | | 09:46 (41) | 08:12 | | 07:07 | | | 06:48 | | 07:30 (33) | 05:38 | | 06:40 (4) | 04:55 | | |
| | 16:25 | 26 | 10:12 (41) | 17:25 | | 18:24 | | | 20:25 | 34 | 19:44 (3) | 21:24 | 31 | 20:36 (30) | 22:12 | | |
| 10 | 08:57 | | 09:46 (41) | 08:10 | | 07:04 | | | 06:45 | | 07:29 (33) | 05:36 | | 06:39 (4) | 04:54 | | |
| | 16:26 | 27 | 10:13 (41) | 17:27 | | 18:26 | | | 20:27 | 36 | 19:44 (3) | 21:26 | 32 | 20:36 (30) | 22:12 | | |
| 11 | 08:56 | | 09:46 (41) | 08:08 | | 07:02 | | | 06:42 | | 07:28 (33) | 05:34 | | 06:38 (4) | 04:54 | | |
| | 16:28 | 28 | 10:14 (41) | 17:29 | | 18:28 | | | 20:29 | 35 | 19:42 (3) | 21:28 | 62 | 20:35 (30) | 22:13 | | |
| 12 | 08:55 | | 09:46 (41) | 08:06 | | 06:59 | | | 06:40 | | 07:28 (33) | 05:32 | | 06:38 (4) | 04:53 | | |
| | 16:29 | 28 | 10:14 (41) | 17:31 | | 18:30 | | | 20:31 | 34 | 19:41 (3) | 21:30 | 62 | 20:36 (30) | 22:14 | | |
| 13 | 08:54 | | 09:47 (41) | 08:04 | | 06:57 | | | 06:38 | | 07:26 (33) | 05:30 | | 06:37 (4) | 04:53 | | |
| | 16:31 | 28 | 10:15 (41) | 17:34 | | 18:32 | | | 20:33 | 35 | 08:01 (33) | 21:32 | 62 | 20:35 (30) | 22:15 | | |
| 14 | 08:53 | | 09:47 (41) | 08:02 | | 06:54 | | | 06:35 | | 07:26 (33) | 05:28 | | 06:36 (4) | 04:53 | | |
| | 16:33 | 29 | 10:16 (41) | 17:36 | | 18:34 | | | 20:35 | 35 | 08:01 (33) | 21:33 | 62 | 20:34 (30) | 22:16 | | |
| 15 | 08:52 | | 09:48 (41) | 07:59 | | 06:52 | | | 06:33 | | 07:26 (33) | 05:27 | | 06:37 (4) | 04:52 | | 21:37 (42) |
| | 16:35 | 28 | 10:16 (41) | 17:38 | | 18:36 | | | 20:37 | 35 | 08:01 (33) | 21:35 | 60 | 20:34 (30) | 22:16 | 1 | 21:38 (42) |
| 16 | 08:51 | | 09:48 (41) | 07:57 | | 06:49 | | | 06:30 | | 07:26 (33) | 05:25 | | 06:36 (4) | 04:52 | | 21:36 (42) |
| | 16:36 | 28 | 10:16 (41) | 17:40 | | 18:38 | | | 20:39 | 34 | 08:00 (33) | 21:37 | 59 | 20:33 (30) | 22:17 | 3 | 21:39 (42) |
| 17 | 08:50 | | 09:48 (41) | 07:55 | | 06:46 | | | 06:28 | | 07:26 (33) | 05:23 | | 06:36 (4) | 04:52 | | 21:36 (42) |
| | 16:38 | 29 | 10:17 (41) | 17:42 | | 18:40 | | | 20:41 | 34 | 08:00 (33) | 21:39 | 58 | 20:33 (30) | 22:17 | 3 | 21:39 (42) |
| 18 | 08:49 | | 09:48 (41) | 07:53 | | 06:44 | | 07:08 (13) | 06:25 | | 07:25 (33) | 05:21 | | 06:35 (4) | 04:52 | | 21:36 (42) |
| | 16:40 | 28 | 10:16 (41) | 17:44 | | 18:42 | 2 | 07:10 (13) | 20:43 | 34 | 07:59 (33) | 21:41 | 56 | 20:31 (30) | 22:18 | 4 | 21:40 (42) |
| 19 | 08:48 | | 09:49 (41) | 07:50 | | 06:41 | | 07:06 (13) | 06:23 | | 07:26 (33) | 05:20 | | 06:35 (4) | 04:52 | | 21:36 (42) |
| | 16:42 | 28 | 10:17 (41) | 17:46 | | 18:44 | 4 | 07:10 (13) | 20:45 | 32 | 07:58 (33) | 21:42 | 55 | 20:31 (30) | 22:18 | 4 | 21:40 (42) |
| 20 | 08:46 | | 09:49 (41) | 07:48 | | 06:39 | | 07:03 (13) | 06:20 | | 07:26 (33) | 05:18 | | 06:35 (4) | 04:52 | | 21:36 (42) |
| | 16:44 | 28 | 10:17 (41) | 17:48 | | 18:46 | 6 | 07:09 (13) | 20:47 | 32 | 07:58 (33) | 21:44 | 51 | 20:29 (30) | 22:19 | 4 | 21:40 (42) |
| 21 | 08:45 | | 09:50 (41) | 07:46 | | 06:36 | | 07:01 (13) | 06:18 | | 07:26 (33) | 05:16 | | 06:51 (4) | 04:52 | | 21:36 (42) |
| | 16:46 | 27 | 10:17 (41) | 17:51 | | 18:48 | 7 | 07:08 (13) | 20:49 | 30 | 07:56 (33) | 21:46 | 30 | 20:27 (30) | 22:19 | 4 | 21:40 (42) |
| 22 | 08:44 | | 09:51 (41) | 07:43 | | 06:34 | | 07:01 (13) | 06:16 | | 07:27 (33) | 05:15 | | 06:54 (4) | 04:52 | | 21:37 (42) |
| | 16:48 | 26 | 10:17 (41) | 17:53 | | 18:50 | 4 | 07:05 (13) | 20:51 | 28 | 07:55 (33) | 21:47 | 45 | 07:39 (4) | 22:19 | 4 | 21:41 (42) |
| 23 | 08:42 | | 09:52 (41) | 07:41 | | 06:31 | | | 06:13 | | 07:28 (33) | 05:13 | | 06:57 (4) | 04:53 | | 21:37 (42) |
| | 16:50 | 25 | 10:17 (41) | 17:55 | | 18:52 | | | 20:53 | 26 | 07:54 (33) | 21:49 | 42 | 07:39 (4) | 22:19 | 4 | 21:41 (42) |
| 24 | 08:41 | | 09:52 (41) | 07:39 | | 06:28 | | | 06:11 | | 07:30 (33) | 05:12 | | 06:59 (4) | 04:53 | | 21:37 (42) |
| | 16:52 | 25 | 10:17 (41) | 17:57 | | 18:54 | | | 20:55 | 23 | 07:53 (33) | 21:51 | 41 | 07:40 (4) | 22:19 | 4 | 21:41 (42) |
| 25 | 08:39 | | 09:53 (41) | 07:36 | | 06:26 | | | 06:09 | | 07:30 (33) | 05:10 | | 07:00 (4) | 04:53 | | 21:38 (42) |
| | 16:54 | 23 | 10:16 (41) | 17:59 | | 18:56 | | | 20:57 | 20 | 07:50 (33) | 21:52 | 39 | 07:39 (4) | 22:19 | 3 | 21:41 (42) |
| 26 | 08:38 | | 09:54 (41) | 07:34 | | 06:23 | | | 06:06 | | 07:33 (33) | 05:09 | | 07:02 (4) | 04:54 | | 21:38 (42) |
| | 16:56 | 21 | 10:15 (41) | 18:01 | | 18:58 | | | 20:59 | 14 | 07:47 (33) | 21:54 | 37 | 07:39 (4) | 22:19 | 3 | 21:41 (42) |
| 27 | 08:36 | | 09:56 (41) | 07:32 | | 06:21 | | | 06:04 | | 07:36 (33) | 05:08 | | 07:03 (4) | 04:54 | | 21:40 (42) |
| | 16:58 | 19 | 10:15 (41) | 18:03 | | 19:00 | | | 21:01 | 8 | 07:44 (33) | 21:55 | 37 | 07:40 (4) | 22:19 | 1 | 21:41 (42) |
| 28 | 08:35 | | 09:58 (41) | 07:29 | | 06:18 | | | 06:02 | | 07:03 (4) | 05:06 | | 07:05 (4) | 04:55 | | |
| | 17:00 | 16 | 10:14 (41) | 18:05 | | 19:02 | | | 21:03 | 19 | 20:29 (30) | 21:57 | 35 | 07:40 (4) | 22:19 | | |
| 29 | 08:33 | | 10:00 (41) | | | 07:16 | | | 05:59 | | 06:58 (4) | 05:05 | | 07:06 (4) | 04:55 | | |
| | 17:02 | 12 | 10:12 (41) | | | 20:04 | | | 21:05 | 31 | 20:31 (30) | 21:58 | 34 | 07:40 (4) | 22:19 | | |
| 30 | 08:31 | | 10:04 (41) | | | 07:13 | | 07:37 (11) | 05:57 | | 06:54 (4) | 05:04 | | 07:07 (4) | 04:56 | | |
| | 17:04 | 4 | 10:08 (41) | | | 20:06 | 3 | 07:40 (11) | 21:07 | 31 | 20:33 (30) | 22:00 | 33 | 07:40 (4) | 22:18 | | |
| 31 | 08:29 | | | | | 07:10 | | 07:35 (11) | | | | 05:03 | | 07:08 (4) | | | |
| | 17:06 | | | | | 20:08 | 5 | 07:40 (11) | | | | 22:01 | 32 | 07:40 (4) | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 726 | | | | | 31 | | | 804 | | | 1260 | | | 42 | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,61 | | | | | 1,00 | | | 0,99 | | | 0,95 | | | 0,78 | |
| Total reduction | | 0,10 | | | | | 0,31 | | | 0,36 | | | 0,45 | | | 0,35 | |
| Total, real | | 74 | | | | | 10 | | | 290 | | | 571 | | | 15 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 06:49 (4) | 06:38 | | 07:27 (33) | 07:35 | 07:37 | | | 08:35 | | 09:28 (41) |
| | 22:18 | | | 21:40 | 29 | 20:46 (30) | 20:29 | 32 | 07:59 (33) | 19:12 | 16:58 | | | 16:10 | 28 | 09:56 (41) |
| 2 | 04:57 | | | 05:41 | | 06:49 (4) | 06:40 | | 07:27 (33) | 07:37 | 07:39 | | | 08:37 | | 09:29 (41) |
| | 22:18 | | | 21:38 | 30 | 20:46 (30) | 20:27 | 32 | 07:59 (33) | 19:09 | 16:56 | | | 16:09 | 27 | 09:56 (41) |
| 3 | 04:58 | | | 05:43 | | 06:50 (4) | 06:42 | | 07:28 (33) | 07:38 | 07:41 | | | 08:38 | | 09:30 (41) |
| | 22:17 | | | 21:36 | 31 | 20:46 (30) | 20:24 | 30 | 07:58 (33) | 19:07 | 16:54 | | | 16:08 | 26 | 09:56 (41) |
| 4 | 04:59 | | | 05:45 | | 06:51 (4) | 06:43 | | 07:29 (33) | 07:40 | 07:43 | | | 08:40 | | 09:30 (41) |
| | 22:17 | | | 21:34 | 32 | 20:47 (30) | 20:22 | 28 | 07:57 (33) | 19:04 | 16:51 | | | 16:07 | 26 | 09:56 (41) |
| 5 | 05:00 | | | 05:47 | | 06:52 (4) | 06:45 | | 07:30 (33) | 07:42 | 07:45 | | | 08:41 | | 09:31 (41) |
| | 22:16 | | | 21:32 | 32 | 20:47 (30) | 20:19 | 25 | 07:55 (33) | 19:02 | 16:49 | | | 16:07 | 25 | 09:56 (41) |
| 6 | 05:01 | | | 05:49 | | 06:52 (4) | 06:47 | | 07:30 (33) | 07:44 | 07:47 | | | 08:43 | | 09:32 (41) |
| | 22:15 | | | 21:30 | 32 | 20:46 (30) | 20:17 | 23 | 07:53 (33) | 18:59 | 16:47 | | | 16:06 | 25 | 09:57 (41) |
| 7 | 05:02 | | | 05:51 | | 06:53 (4) | 06:49 | | 07:32 (33) | 07:46 | 07:49 | | | 08:44 | | 09:32 (41) |
| | 22:15 | | | 21:28 | 33 | 20:46 (30) | 20:14 | 18 | 07:50 (33) | 18:57 | 16:45 | | | 16:06 | 25 | 09:57 (41) |
| 8 | 05:03 | | | 05:52 | | 06:55 (4) | 06:51 | | 07:35 (33) | 07:48 | 07:51 | | | 08:46 | | 09:33 (41) |
| | 22:14 | | | 21:26 | 32 | 20:46 (30) | 20:12 | 12 | 07:47 (33) | 18:54 | 16:43 | | | 16:05 | 24 | 09:57 (41) |
| 9 | 05:04 | | | 05:54 | | 06:55 (4) | 06:53 | | 07:24 (11) | 07:50 | 07:53 | | | 08:47 | | 09:34 (41) |
| | 22:13 | | | 21:24 | 31 | 20:44 (30) | 20:09 | 6 | 07:30 (11) | 18:52 | 16:42 | | | 16:05 | 23 | 09:57 (41) |
| 10 | 05:06 | | | 05:56 | | 06:57 (4) | 06:55 | | 07:23 (11) | 07:52 | 07:55 | | | 08:48 | | 09:34 (41) |
| | 22:12 | | | 21:21 | 31 | 20:44 (30) | 20:06 | 9 | 07:32 (11) | 18:49 | 16:40 | | | 16:04 | 23 | 09:57 (41) |
| 11 | 05:07 | | | 05:58 | | 06:59 (4) | 06:57 | | 07:24 (11) | 07:54 | 07:57 | | | 08:49 | | 09:35 (41) |
| | 22:11 | | | 21:19 | 30 | 20:43 (30) | 20:04 | 7 | 07:31 (11) | 18:47 | 16:38 | | | 16:04 | 23 | 09:58 (41) |
| 12 | 05:08 | | | 06:00 | | 20:23 (30) | 06:59 | | 07:26 (11) | 07:56 | 07:59 | | 09:35 (41) | 08:51 | | 09:36 (41) |
| | 22:10 | | | 21:17 | 19 | 20:42 (30) | 20:01 | 5 | 07:31 (11) | 18:44 | 16:36 | 5 | 09:40 (41) | 16:04 | 22 | 09:58 (41) |
| 13 | 05:09 | | | 06:02 | | 20:23 (30) | 07:00 | | 07:28 (11) | 07:58 | 08:01 | | 09:31 (41) | 08:52 | | 09:36 (41) |
| | 22:09 | | | 21:15 | 17 | 20:40 (30) | 19:59 | 3 | 07:31 (11) | 18:42 | 16:34 | 13 | 09:44 (41) | 16:04 | 22 | 09:58 (41) |
| 14 | 05:11 | | | 06:04 | | 20:25 (30) | 07:02 | | | 08:00 | 08:03 | | 09:29 (41) | 08:53 | | 09:37 (41) |
| | 22:08 | | | 21:13 | 13 | 20:38 (30) | 19:56 | | | 18:39 | 16:33 | 17 | 09:46 (41) | 16:04 | 21 | 09:58 (41) |
| 15 | 05:12 | | | 06:06 | | 20:28 (30) | 07:04 | | | 08:02 | 08:05 | | 09:28 (41) | 08:54 | | 09:38 (41) |
| | 22:07 | | | 21:10 | 7 | 20:35 (30) | 19:53 | | | 18:37 | 16:31 | 19 | 09:47 (41) | 16:04 | 20 | 09:58 (41) |
| 16 | 05:13 | | | 06:07 | | 07:43 (33) | 07:06 | | | 08:04 | 08:07 | | 09:27 (41) | 08:55 | | 09:38 (41) |
| | 22:05 | | | 21:08 | 9 | 07:52 (33) | 19:51 | | | 18:34 | 16:29 | 21 | 09:48 (41) | 16:04 | 20 | 09:58 (41) |
| 17 | 05:15 | | | 06:09 | | 07:39 (33) | 07:08 | | | 08:06 | 08:09 | | 09:27 (41) | 08:55 | | 09:39 (41) |
| | 22:04 | | | 21:06 | 16 | 07:55 (33) | 19:48 | | | 18:32 | 16:28 | 23 | 09:50 (41) | 16:04 | 20 | 09:59 (41) |
| 18 | 05:16 | | | 06:11 | | 07:37 (33) | 07:10 | | | 08:08 | 08:11 | | 09:26 (41) | 08:56 | | 09:40 (41) |
| | 22:03 | | | 21:03 | 20 | 07:57 (33) | 19:46 | | | 18:30 | 16:26 | 25 | 09:51 (41) | 16:04 | 19 | 09:59 (41) |
| 19 | 05:18 | | | 06:13 | | 07:35 (33) | 07:12 | | | 08:10 | 08:13 | | 09:26 (41) | 08:57 | | 09:41 (41) |
| | 22:01 | | | 21:01 | 23 | 07:58 (33) | 19:43 | | | 18:27 | 16:24 | 25 | 09:51 (41) | 16:04 | 19 | 10:00 (41) |
| 20 | 05:19 | | | 06:15 | | 07:34 (33) | 07:14 | | | 08:12 | 08:15 | | 09:26 (41) | 08:58 | | 09:41 (41) |
| | 22:00 | | | 20:59 | 26 | 08:00 (33) | 19:41 | | | 18:25 | 16:23 | 26 | 09:52 (41) | 16:04 | 18 | 09:59 (41) |
| 21 | 05:21 | | | 06:17 | | 07:33 (33) | 07:15 | | | 08:14 | 08:17 | | 09:25 (41) | 08:58 | | 09:42 (41) |
| | 21:59 | | | 20:56 | 28 | 08:01 (33) | 19:38 | | | 18:22 | 16:22 | 27 | 09:52 (41) | 16:05 | 18 | 10:00 (41) |
| 22 | 05:22 | | | 06:19 | | 07:31 (33) | 07:17 | | 07:45 (13) | 08:16 | 08:19 | | 09:25 (41) | 08:59 | | 09:42 (41) |
| | 21:57 | | | 20:54 | 30 | 08:01 (33) | 19:35 | 7 | 07:52 (13) | 18:20 | 16:20 | 28 | 09:53 (41) | 16:05 | 18 | 10:00 (41) |
| 23 | 05:24 | | 06:45 (4) | 06:21 | | 07:30 (33) | 07:19 | | 07:47 (13) | 08:18 | 08:21 | | 09:26 (41) | 08:59 | | 09:43 (41) |
| | 21:56 | 10 | 20:38 (30) | 20:52 | 31 | 08:01 (33) | 19:33 | 6 | 07:53 (13) | 18:18 | 16:19 | 28 | 09:54 (41) | 16:06 | 18 | 10:01 (41) |
| 24 | 05:26 | | 06:45 (4) | 06:23 | | 07:29 (33) | 07:21 | | 07:49 (13) | 08:20 | 08:23 | | 09:26 (41) | 09:00 | | 09:43 (41) |
| | 21:54 | 16 | 20:40 (30) | 20:49 | 33 | 08:02 (33) | 19:30 | 5 | 07:54 (13) | 18:15 | 16:17 | 28 | 09:54 (41) | 16:06 | 19 | 10:02 (41) |
| 25 | 05:27 | | 06:46 (4) | 06:24 | | 07:29 (33) | 07:23 | | 07:51 (13) | 07:22 | 08:25 | | 09:26 (41) | 09:00 | | 09:43 (41) |
| | 21:52 | 19 | 20:42 (30) | 20:47 | 33 | 08:02 (33) | 19:28 | 2 | 07:53 (13) | 17:13 | 16:16 | 29 | 09:55 (41) | 16:07 | 19 | 10:02 (41) |
| 26 | 05:29 | | 06:46 (4) | 06:26 | | 07:29 (33) | 07:25 | | | 07:24 | 08:26 | | 09:27 (41) | 09:00 | | 09:43 (41) |
| | 21:51 | 21 | 20:42 (30) | 20:44 | 34 | 08:03 (33) | 19:25 | | | 17:11 | 16:15 | 28 | 09:55 (41) | 16:08 | 19 | 10:02 (41) |
| 27 | 05:31 | | 06:47 (4) | 06:28 | | 07:27 (33) | 07:27 | | | 07:26 | 08:28 | | 09:27 (41) | 09:01 | | 09:43 (41) |
| | 21:49 | 23 | 20:44 (30) | 20:42 | 35 | 08:02 (33) | 19:22 | | | 17:09 | 16:14 | 28 | 09:55 (41) | 16:09 | 20 | 10:03 (41) |
| 28 | 05:33 | | 06:46 (4) | 06:30 | | 07:27 (33) | 07:29 | | | 07:28 | 08:30 | | 09:27 (41) | 09:01 | | 09:44 (41) |
| | 21:47 | 25 | 20:44 (30) | 20:39 | 35 | 08:02 (33) | 19:20 | | | 17:06 | 16:13 | 29 | 09:56 (41) | 16:09 | 20 | 10:04 (41) |
| 29 | 05:34 | | 06:47 (4) | 06:32 | | 07:27 (33) | 07:31 | | | 07:30 | 08:32 | | 09:28 (41) | 09:01 | | 09:44 (41) |
| | 21:45 | 27 | 20:45 (30) | 20:37 | 35 | 08:02 (33) | 19:17 | | | 17:04 | 16:12 | 28 | 09:56 (41) | 16:10 | 20 | 10:04 (41) |
| 30 | 05:36 | | 06:48 (4) | 06:34 | | 07:27 (33) | 07:33 | | | 07:32 | 08:33 | | 09:28 (41) | 09:01 | | 09:44 (41) |
| | 21:44 | 28 | 20:46 (30) | 20:34 | 34 | 08:01 (33) | 19:15 | | | 17:02 | 16:11 | 27 | 09:55 (41) | 16:11 | 21 | 10:05 (41) |
| 31 | 05:38 | | 06:48 (4) | 06:36 | | 07:27 (33) | | | | 07:35 | | | | 09:01 | | 09:45 (41) |
| | 21:42 | 29 | 20:46 (30) | 20:32 | 34 | 08:01 (33) | | | | 17:00 | | | | 16:12 | 21 | 10:06 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 198 | | | 855 | | | 250 | | | | 454 | | | 669 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,94 | | | 0,97 | | | 1,00 | | | | 0,61 | | | 0,61 | |
| Total reduction | | 0,42 | | | 0,46 | | | 0,37 | | | | 0,09 | | | 0,08 | |
| Total, real | | 84 | | | 395 | | | 91 | | | | 41 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (40) | 08:28 | | 09:32 (41) | 07:27 | 07:08 | | | 05:55 | | 06:53 (33) | 05:02 | | 20:37 (30) |
| | 16:14 | 22 | 10:08 (40) | 17:08 | 28 | 10:00 (41) | 18:07 | 20:10 | | | 21:09 | 32 | 07:25 (33) | 22:02 | 25 | 21:02 (30) |
| 2 | 09:01 | | 09:46 (40) | 08:26 | | 09:33 (41) | 07:24 | 07:05 | | | 05:53 | | 06:53 (33) | 05:01 | | 20:38 (30) |
| | 16:15 | 22 | 10:08 (40) | 17:10 | 26 | 09:59 (41) | 18:09 | 20:12 | | | 21:11 | 32 | 07:25 (33) | 22:04 | 24 | 21:02 (30) |
| 3 | 09:00 | | 09:47 (40) | 08:24 | | 09:34 (41) | 07:22 | 07:03 | | | 05:51 | | 06:53 (33) | 05:00 | | 20:39 (30) |
| | 16:16 | 22 | 10:09 (40) | 17:12 | 25 | 09:59 (41) | 18:11 | 20:13 | | | 21:13 | 31 | 07:24 (33) | 22:05 | 24 | 21:03 (30) |
| 4 | 09:00 | | 09:47 (40) | 08:22 | | 09:35 (41) | 07:19 | 07:00 | | 07:25 (11) | 05:48 | | 06:53 (33) | 04:59 | | 20:39 (30) |
| | 16:17 | 22 | 10:09 (40) | 17:14 | 23 | 09:58 (41) | 18:14 | 20:15 | 2 | 07:27 (11) | 21:14 | 31 | 07:24 (33) | 22:06 | 23 | 21:02 (30) |
| 5 | 09:00 | | 09:47 (40) | 08:20 | | 09:36 (41) | 07:17 | 06:58 | | 07:22 (11) | 05:46 | | 06:54 (33) | 04:58 | | 20:39 (30) |
| | 16:19 | 22 | 10:09 (40) | 17:17 | 21 | 09:57 (41) | 18:16 | 20:17 | 4 | 07:26 (11) | 21:16 | 29 | 07:23 (33) | 22:07 | 23 | 21:02 (30) |
| 6 | 08:59 | | 09:48 (40) | 08:18 | | 09:37 (41) | 07:14 | 06:55 | | 07:20 (11) | 05:44 | | 06:54 (33) | 04:57 | | 20:39 (30) |
| | 16:20 | 22 | 10:10 (40) | 17:19 | 18 | 09:55 (41) | 18:18 | 20:19 | 6 | 07:26 (11) | 21:18 | 28 | 07:22 (33) | 22:08 | 22 | 21:01 (30) |
| 7 | 08:59 | | 09:48 (40) | 08:16 | | 09:39 (41) | 07:12 | 06:53 | | 07:17 (11) | 05:42 | | 06:55 (33) | 04:56 | | 20:40 (30) |
| | 16:22 | 22 | 10:10 (40) | 17:21 | 14 | 09:53 (41) | 18:20 | 20:21 | 8 | 07:25 (11) | 21:20 | 26 | 07:21 (33) | 22:10 | 22 | 21:02 (30) |
| 8 | 08:58 | | 09:48 (40) | 08:14 | | 09:43 (41) | 07:09 | 06:50 | | 07:17 (11) | 05:40 | | 06:56 (33) | 04:56 | | 20:40 (30) |
| | 16:23 | 22 | 10:10 (40) | 17:23 | 7 | 09:50 (41) | 18:22 | 20:23 | 6 | 07:23 (11) | 21:22 | 24 | 07:20 (33) | 22:11 | 21 | 21:01 (30) |
| 9 | 08:57 | | 09:49 (40) | 08:12 | | | 07:07 | 06:48 | | 19:50 (3) | 05:38 | | 06:57 (33) | 04:55 | | 20:41 (30) |
| | 16:25 | 21 | 10:10 (40) | 17:25 | | | 18:24 | 20:25 | 7 | 19:57 (3) | 21:24 | 21 | 07:18 (33) | 22:12 | 21 | 21:02 (30) |
| 10 | 08:57 | | 09:49 (40) | 08:10 | | | 07:04 | 06:45 | | 19:48 (3) | 05:36 | | 06:58 (33) | 04:54 | | 20:41 (30) |
| | 16:26 | 21 | 10:10 (40) | 17:27 | | | 18:26 | 20:27 | 11 | 19:59 (3) | 21:26 | 19 | 07:17 (33) | 22:12 | 20 | 21:01 (30) |
| 11 | 08:56 | | 09:35 (41) | 08:08 | | | 07:02 | 06:42 | | 19:45 (3) | 05:34 | | 06:59 (33) | 04:54 | | 20:42 (30) |
| | 16:28 | 30 | 10:11 (40) | 17:29 | | | 18:28 | 20:29 | 16 | 20:01 (3) | 21:28 | 20 | 20:50 (30) | 22:13 | 19 | 21:01 (30) |
| 12 | 08:55 | | 09:34 (41) | 08:06 | | | 06:59 | 06:40 | | 19:44 (3) | 05:32 | | 07:02 (33) | 04:53 | | 20:43 (30) |
| | 16:29 | 32 | 10:11 (40) | 17:32 | | | 18:30 | 20:31 | 19 | 20:03 (3) | 21:30 | 22 | 20:54 (30) | 22:14 | 19 | 21:02 (30) |
| 13 | 08:54 | | 09:33 (41) | 08:04 | | | 06:57 | 06:38 | | 19:42 (3) | 05:30 | | 20:41 (30) | 04:53 | | 20:43 (30) |
| | 16:31 | 34 | 10:11 (40) | 17:34 | | | 18:32 | 20:33 | 22 | 20:04 (3) | 21:32 | 15 | 20:56 (30) | 22:15 | 18 | 21:01 (30) |
| 14 | 08:53 | | 09:33 (41) | 08:02 | | | 06:54 | 06:35 | | 19:42 (3) | 05:28 | | 20:40 (30) | 04:53 | | 20:43 (30) |
| | 16:33 | 35 | 10:11 (40) | 17:36 | | | 18:34 | 20:35 | 24 | 20:06 (3) | 21:33 | 17 | 20:57 (30) | 22:16 | 18 | 21:01 (30) |
| 15 | 08:52 | | 09:32 (41) | 07:59 | | | 06:52 | 06:33 | | 19:41 (3) | 05:27 | | 20:39 (30) | 04:52 | | 20:44 (30) |
| | 16:35 | 36 | 10:11 (40) | 17:38 | | | 18:36 | 20:37 | 25 | 20:06 (3) | 21:35 | 20 | 20:59 (30) | 22:16 | 17 | 21:01 (30) |
| 16 | 08:51 | | 09:31 (41) | 07:57 | | | 06:49 | 06:30 | | 19:40 (3) | 05:25 | | 20:38 (30) | 04:52 | | 20:45 (30) |
| | 16:36 | 37 | 10:10 (40) | 17:40 | | | 18:38 | 20:39 | 26 | 20:06 (3) | 21:37 | 21 | 20:59 (30) | 22:17 | 16 | 21:01 (30) |
| 17 | 08:50 | | 09:31 (41) | 07:55 | | | 06:46 | 06:28 | | 07:08 (33) | 05:23 | | 20:38 (30) | 04:52 | | 20:45 (30) |
| | 16:38 | 36 | 10:10 (40) | 17:42 | | | 18:40 | 20:41 | 33 | 20:06 (3) | 21:39 | 22 | 21:00 (30) | 22:17 | 16 | 21:01 (30) |
| 18 | 08:49 | | 09:30 (41) | 07:53 | | | 06:44 | 06:25 | | 07:03 (33) | 05:21 | | 20:37 (30) | 04:52 | | 20:45 (30) |
| | 16:40 | 36 | 10:09 (40) | 17:44 | | | 18:42 | 20:43 | 41 | 20:05 (3) | 21:41 | 23 | 21:00 (30) | 22:18 | 16 | 21:01 (30) |
| 19 | 08:48 | | 09:30 (41) | 07:50 | | | 06:41 | 06:23 | | 07:01 (33) | 05:20 | | 20:37 (30) | 04:52 | | 20:46 (30) |
| | 16:42 | 34 | 10:08 (40) | 17:46 | | | 18:44 | 20:45 | 45 | 20:05 (3) | 21:42 | 24 | 21:01 (30) | 22:18 | 15 | 21:01 (30) |
| 20 | 08:46 | | 09:29 (41) | 07:48 | | | 06:39 | 06:20 | | 07:00 (33) | 05:18 | | 20:36 (30) | 04:52 | | 20:46 (30) |
| | 16:44 | 27 | 09:56 (41) | 17:49 | | | 18:46 | 20:47 | 48 | 20:05 (3) | 21:44 | 25 | 21:01 (30) | 22:19 | 15 | 21:01 (30) |
| 21 | 08:45 | | 09:30 (41) | 07:46 | | | 06:36 | 06:18 | | 06:57 (33) | 05:16 | | 20:36 (30) | 04:52 | | 20:46 (30) |
| | 16:46 | 27 | 09:57 (41) | 17:51 | | | 18:48 | 20:49 | 49 | 20:03 (3) | 21:46 | 26 | 21:02 (30) | 22:19 | 15 | 21:01 (30) |
| 22 | 08:44 | | 09:29 (41) | 07:43 | | | 06:34 | 06:16 | | 06:56 (33) | 05:15 | | 20:36 (30) | 04:52 | | 20:47 (30) |
| | 16:48 | 28 | 09:57 (41) | 17:53 | | | 18:50 | 20:51 | 50 | 20:03 (3) | 21:47 | 26 | 21:02 (30) | 22:19 | 15 | 21:02 (30) |
| 23 | 08:42 | | 09:30 (41) | 07:41 | | | 06:31 | 06:13 | | 06:56 (33) | 05:13 | | 20:36 (30) | 04:53 | | 20:47 (30) |
| | 16:50 | 29 | 09:59 (41) | 17:55 | | | 18:52 | 20:53 | 49 | 20:02 (3) | 21:49 | 26 | 21:02 (30) | 22:19 | 15 | 21:02 (30) |
| 24 | 08:41 | | 09:30 (41) | 07:39 | | | 06:28 | 06:11 | | 06:55 (33) | 05:12 | | 20:36 (30) | 04:53 | | 20:47 (30) |
| | 16:52 | 29 | 09:59 (41) | 17:57 | | | 18:54 | 20:55 | 48 | 20:01 (3) | 21:51 | 27 | 21:03 (30) | 22:19 | 15 | 21:02 (30) |
| 25 | 08:39 | | 09:29 (41) | 07:36 | | | 06:26 | 06:09 | | 06:53 (33) | 05:10 | | 20:35 (30) | 04:53 | | 20:47 (30) |
| | 16:54 | 30 | 09:59 (41) | 17:59 | | | 18:56 | 20:57 | 46 | 19:58 (3) | 21:52 | 27 | 21:02 (30) | 22:19 | 16 | 21:03 (30) |
| 26 | 08:38 | | 09:29 (41) | 07:34 | | | 06:23 | 06:06 | | 06:53 (33) | 05:09 | | 20:36 (30) | 04:54 | | 20:47 (30) |
| | 16:56 | 30 | 09:59 (41) | 18:01 | | | 18:58 | 20:59 | 41 | 19:55 (3) | 21:54 | 26 | 21:02 (30) | 22:19 | 16 | 21:03 (30) |
| 27 | 08:36 | | 09:30 (41) | 07:32 | | | 06:21 | 06:04 | | 06:53 (33) | 05:08 | | 20:36 (30) | 04:54 | | 20:47 (30) |
| | 16:58 | 30 | 10:00 (41) | 18:03 | | | 19:00 | 21:01 | 33 | 07:26 (33) | 21:55 | 26 | 21:02 (30) | 22:19 | 17 | 21:04 (30) |
| 28 | 08:34 | | 09:31 (41) | 07:29 | | | 06:18 | 06:02 | | 06:53 (33) | 05:06 | | 20:36 (30) | 04:55 | | 20:47 (30) |
| | 17:00 | 29 | 10:00 (41) | 18:05 | | | 19:02 | 21:03 | 33 | 07:26 (33) | 21:57 | 27 | 21:03 (30) | 22:19 | 17 | 21:04 (30) |
| 29 | 08:33 | | 09:31 (41) | | | | 07:16 | 05:59 | | 06:53 (33) | 05:05 | | 20:37 (30) | 04:55 | | 20:47 (30) |
| | 17:02 | 29 | 10:00 (41) | | | | 20:04 | 21:05 | 33 | 07:26 (33) | 21:58 | 26 | 21:03 (30) | 22:19 | 18 | 21:05 (30) |
| 30 | 08:31 | | 09:31 (41) | | | | 07:13 | 05:57 | | 06:53 (33) | 05:04 | | 20:37 (30) | 04:56 | | 20:46 (30) |
| | 17:04 | 29 | 10:00 (41) | | | | 20:06 | 21:07 | 33 | 07:26 (33) | 22:00 | 26 | 21:03 (30) | 22:18 | 19 | 21:05 (30) |
| 31 | 08:29 | | 09:32 (41) | | | | 07:10 | | | | 05:03 | | 20:37 (30) | | | |
| | 17:06 | 28 | 10:00 (41) | | | | 20:08 | | | | 22:01 | 25 | 21:02 (30) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 873 | | | 162 | | | | 758 | | | 770 | | | 557 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,65 | | | 0,68 | | | | 0,98 | | | 0,92 | | | 0,89 | |
| Total reduction | | 0,11 | | | 0,16 | | | | 0,36 | | | 0,44 | | | 0,40 | |
| Total, real | | 95 | | | 25 | | | | 272 | | | 341 | | | 222 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: Q - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 20:47 (30) | 05:40 | | 07:12 (33) | 06:38 | | | 07:35 | 07:37 | | | 08:35 | | 09:17 (41) |
| | 22:18 | 18 | 21:05 (30) | 21:40 | 21 | 21:04 (30) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 30 | 09:53 (40) |
| 2 | 04:58 | | 20:47 (30) | 05:41 | | 07:09 (33) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:32 (40) |
| | 22:18 | 19 | 21:06 (30) | 21:38 | 17 | 07:26 (33) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 22 | 09:54 (40) |
| 3 | 04:58 | | 20:47 (30) | 05:43 | | 07:08 (33) | 06:42 | | | 07:38 | 07:41 | | 09:12 (41) | 08:38 | | 09:33 (40) |
| | 22:17 | 20 | 21:07 (30) | 21:36 | 20 | 07:28 (33) | 20:24 | | | 19:07 | 16:54 | 8 | 09:20 (41) | 16:08 | 21 | 09:54 (40) |
| 4 | 04:59 | | 20:46 (30) | 05:45 | | 07:07 (33) | 06:43 | | 07:14 (11) | 07:40 | 07:43 | | 09:08 (41) | 08:40 | | 09:32 (40) |
| | 22:17 | 21 | 21:07 (30) | 21:34 | 22 | 07:29 (33) | 20:22 | 6 | 07:20 (11) | 19:04 | 16:51 | 15 | 09:23 (41) | 16:07 | 22 | 09:54 (40) |
| 5 | 05:00 | | 20:46 (30) | 05:47 | | 07:06 (33) | 06:45 | | 07:14 (11) | 07:42 | 07:45 | | 09:07 (41) | 08:41 | | 09:33 (40) |
| | 22:16 | 21 | 21:07 (30) | 21:32 | 25 | 07:31 (33) | 20:19 | 8 | 07:22 (11) | 19:02 | 16:49 | 19 | 09:26 (41) | 16:07 | 22 | 09:55 (40) |
| 6 | 05:01 | | 20:46 (30) | 05:49 | | 07:04 (33) | 06:47 | | 07:15 (11) | 07:44 | 07:47 | | 09:06 (41) | 08:43 | | 09:34 (40) |
| | 22:15 | 22 | 21:08 (30) | 21:30 | 27 | 07:31 (33) | 20:17 | 6 | 07:21 (11) | 18:59 | 16:47 | 21 | 09:27 (41) | 16:06 | 22 | 09:56 (40) |
| 7 | 05:02 | | 20:46 (30) | 05:51 | | 07:04 (33) | 06:49 | | 07:17 (11) | 07:46 | 07:49 | | 09:04 (41) | 08:44 | | 09:34 (40) |
| | 22:15 | 22 | 21:08 (30) | 21:28 | 28 | 07:32 (33) | 20:14 | 5 | 07:22 (11) | 18:57 | 16:45 | 24 | 09:28 (41) | 16:06 | 22 | 09:56 (40) |
| 8 | 05:03 | | 20:46 (30) | 05:52 | | 07:03 (33) | 06:51 | | 07:19 (11) | 07:48 | 07:51 | | 09:03 (41) | 08:46 | | 09:35 (40) |
| | 22:14 | 23 | 21:09 (30) | 21:26 | 30 | 07:33 (33) | 20:12 | 2 | 07:21 (11) | 18:54 | 16:44 | 26 | 09:29 (41) | 16:05 | 22 | 09:57 (40) |
| 9 | 05:04 | | 20:45 (30) | 05:54 | | 07:02 (33) | 06:53 | | | 07:50 | 07:53 | | 09:04 (41) | 08:47 | | 09:35 (40) |
| | 22:13 | 24 | 21:09 (30) | 21:24 | 30 | 07:32 (33) | 20:09 | | | 18:52 | 16:42 | 26 | 09:30 (41) | 16:05 | 22 | 09:57 (40) |
| 10 | 05:06 | | 20:45 (30) | 05:56 | | 07:01 (33) | 06:55 | | | 07:52 | 07:55 | | 09:03 (41) | 08:48 | | 09:35 (40) |
| | 22:12 | 24 | 21:09 (30) | 21:21 | 32 | 07:33 (33) | 20:06 | | | 18:49 | 16:40 | 28 | 09:31 (41) | 16:04 | 22 | 09:57 (40) |
| 11 | 05:07 | | 20:46 (30) | 05:58 | | 07:01 (33) | 06:57 | | | 07:54 | 07:57 | | 09:02 (41) | 08:49 | | 09:36 (40) |
| | 22:11 | 25 | 21:11 (30) | 21:19 | 32 | 07:33 (33) | 20:04 | | | 18:47 | 16:38 | 29 | 09:31 (41) | 16:04 | 22 | 09:58 (40) |
| 12 | 05:08 | | 20:46 (30) | 06:00 | | 07:01 (33) | 06:59 | | | 07:56 | 07:59 | | 09:02 (41) | 08:51 | | 09:36 (40) |
| | 22:10 | 25 | 21:11 (30) | 21:17 | 33 | 07:34 (33) | 20:01 | | | 18:44 | 16:36 | 29 | 09:31 (41) | 16:04 | 22 | 09:58 (40) |
| 13 | 05:09 | | 20:46 (30) | 06:02 | | 07:00 (33) | 07:00 | | | 07:58 | 08:01 | | 09:03 (41) | 08:52 | | 09:37 (40) |
| | 22:09 | 25 | 21:11 (30) | 21:15 | 33 | 07:33 (33) | 19:59 | | | 18:42 | 16:34 | 29 | 09:32 (41) | 16:04 | 21 | 09:58 (40) |
| 14 | 05:11 | | 20:45 (30) | 06:04 | | 07:00 (33) | 07:02 | | | 08:00 | 08:03 | | 09:02 (41) | 08:53 | | 09:37 (40) |
| | 22:08 | 26 | 21:11 (30) | 21:13 | 33 | 07:33 (33) | 19:56 | | | 18:39 | 16:33 | 30 | 09:32 (41) | 16:04 | 22 | 09:59 (40) |
| 15 | 05:12 | | 20:45 (30) | 06:06 | | 07:00 (33) | 07:04 | | | 08:02 | 08:05 | | 09:02 (41) | 08:54 | | 09:37 (40) |
| | 22:07 | 26 | 21:11 (30) | 21:10 | 33 | 07:33 (33) | 19:53 | | | 18:37 | 16:31 | 30 | 09:32 (41) | 16:04 | 22 | 09:59 (40) |
| 16 | 05:13 | | 20:46 (30) | 06:07 | | 07:00 (33) | 07:06 | | | 08:04 | 08:07 | | 09:02 (41) | 08:55 | | 09:38 (40) |
| | 22:05 | 26 | 21:12 (30) | 21:08 | 33 | 07:33 (33) | 19:51 | | | 18:34 | 16:29 | 30 | 09:32 (41) | 16:04 | 21 | 09:59 (40) |
| 17 | 05:15 | | 20:45 (30) | 06:09 | | 07:00 (33) | 07:08 | | | 08:06 | 08:09 | | 09:03 (41) | 08:55 | | 09:39 (40) |
| | 22:04 | 27 | 21:12 (30) | 21:06 | 32 | 07:32 (33) | 19:48 | | | 18:32 | 16:28 | 30 | 09:33 (41) | 16:04 | 21 | 10:00 (40) |
| 18 | 05:16 | | 20:45 (30) | 06:11 | | 07:00 (33) | 07:10 | | | 08:08 | 08:11 | | 09:04 (41) | 08:56 | | 09:39 (40) |
| | 22:03 | 27 | 21:12 (30) | 21:03 | 31 | 07:31 (33) | 19:46 | | | 18:30 | 16:26 | 29 | 09:33 (41) | 16:04 | 22 | 10:01 (40) |
| 19 | 05:18 | | 20:46 (30) | 06:13 | | 07:01 (33) | 07:12 | | | 08:10 | 08:13 | | 09:04 (41) | 08:57 | | 09:40 (40) |
| | 22:01 | 26 | 21:12 (30) | 21:01 | 30 | 07:31 (33) | 19:43 | | | 18:27 | 16:24 | 29 | 09:33 (41) | 16:04 | 21 | 10:01 (40) |
| 20 | 05:19 | | 20:45 (30) | 06:15 | | 07:01 (33) | 07:14 | | | 08:12 | 08:15 | | 09:04 (41) | 08:58 | | 09:40 (40) |
| | 22:00 | 27 | 21:12 (30) | 20:59 | 29 | 07:30 (33) | 19:41 | | | 18:25 | 16:23 | 28 | 09:32 (41) | 16:04 | 21 | 10:01 (40) |
| 21 | 05:21 | | 20:46 (30) | 06:17 | | 07:02 (33) | 07:16 | | | 08:14 | 08:17 | | 09:05 (41) | 08:58 | | 09:41 (40) |
| | 21:59 | 26 | 21:12 (30) | 20:56 | 27 | 07:29 (33) | 19:38 | | | 18:22 | 16:22 | 27 | 09:32 (41) | 16:05 | 21 | 10:02 (40) |
| 22 | 05:22 | | 20:46 (30) | 06:19 | | 07:02 (33) | 07:17 | | | 08:16 | 08:19 | | 09:05 (41) | 08:59 | | 09:41 (40) |
| | 21:57 | 26 | 21:12 (30) | 20:54 | 25 | 07:27 (33) | 19:35 | | | 18:20 | 16:20 | 27 | 09:32 (41) | 16:05 | 21 | 10:02 (40) |
| 23 | 05:24 | | 20:47 (30) | 06:21 | | 07:03 (33) | 07:19 | | | 08:18 | 08:21 | | 09:07 (41) | 08:59 | | 09:42 (40) |
| | 21:55 | 25 | 21:12 (30) | 20:52 | 23 | 07:26 (33) | 19:33 | | | 18:18 | 16:19 | 34 | 09:45 (40) | 16:06 | 21 | 10:03 (40) |
| 24 | 05:26 | | 20:47 (30) | 06:23 | | 07:05 (33) | 07:21 | | | 08:20 | 08:23 | | 09:08 (41) | 09:00 | | 09:42 (40) |
| | 21:54 | 24 | 21:11 (30) | 20:49 | 19 | 07:24 (33) | 19:30 | | | 18:15 | 16:18 | 36 | 09:47 (40) | 16:06 | 21 | 10:03 (40) |
| 25 | 05:27 | | 20:47 (30) | 06:24 | | 07:07 (33) | 07:23 | | | 07:22 | 08:25 | | 09:09 (41) | 09:00 | | 09:42 (40) |
| | 21:52 | 25 | 21:12 (30) | 20:47 | 15 | 07:22 (33) | 19:28 | | | 17:13 | 16:16 | 37 | 09:48 (40) | 16:07 | 21 | 10:03 (40) |
| 26 | 05:29 | | 20:47 (30) | 06:26 | | 07:12 (33) | 07:25 | | | 07:24 | 08:26 | | 09:10 (41) | 09:00 | | 09:42 (40) |
| | 21:51 | 24 | 21:11 (30) | 20:44 | 7 | 20:09 (3) | 19:25 | | | 17:11 | 16:15 | 37 | 09:49 (40) | 16:08 | 22 | 10:04 (40) |
| 27 | 05:31 | | 20:48 (30) | 06:28 | | 20:07 (3) | 07:27 | | | 07:26 | 08:28 | | 09:11 (41) | 09:01 | | 09:43 (40) |
| | 21:49 | 22 | 21:10 (30) | 20:42 | 1 | 20:08 (3) | 19:22 | | | 17:09 | 16:14 | 37 | 09:50 (40) | 16:09 | 21 | 10:04 (40) |
| 28 | 05:33 | | 20:49 (30) | 06:30 | | 20:06 (3) | 07:29 | | | 07:28 | 08:30 | | 09:13 (41) | 09:01 | | 09:43 (40) |
| | 21:47 | 20 | 21:09 (30) | 20:39 | 1 | 20:07 (3) | 19:20 | | | 17:06 | 16:13 | 35 | 09:51 (40) | 16:09 | 22 | 10:05 (40) |
| 29 | 05:34 | | 20:50 (30) | 06:32 | | 20:05 (3) | 07:31 | | | 07:30 | 08:32 | | 09:14 (41) | 09:01 | | 09:44 (40) |
| | 21:45 | 19 | 21:09 (30) | 20:37 | 2 | 20:07 (3) | 19:17 | | | 17:04 | 16:12 | 34 | 09:52 (40) | 16:10 | 21 | 10:05 (40) |
| 30 | 05:36 | | 20:51 (30) | 06:34 | | 20:04 (3) | 07:33 | | | 07:32 | 08:33 | | 09:15 (41) | 09:01 | | 09:44 (40) |
| | 21:44 | 17 | 21:08 (30) | 20:34 | 1 | 20:05 (3) | 19:15 | | | 17:02 | 16:11 | 32 | 09:52 (40) | 16:11 | 22 | 10:06 (40) |
| 31 | 05:38 | | 07:15 (33) | 06:36 | | | | | | 07:35 | | | | 09:01 | | 09:45 (40) |
| | 21:42 | 19 | 21:06 (30) | 20:32 | | | | | | 17:00 | | | | 16:12 | 22 | 10:07 (40) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 721 | | | 692 | | | 27 | | | | 796 | | | 677 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,89 | | | 0,97 | | | 0,99 | | | | 0,67 | | | 0,60 | |
| Total reduction | | 0,40 | | | 0,47 | | | 0,37 | | | | 0,10 | | | 0,08 | |
| Total, real | | 289 | | | 322 | | | 10 | | | | 78 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:46 (41) | 08:28 | | 10:04 (41) | 07:27 | | | 07:08 | | 07:32 (11) | 05:55 | | 07:10 (33) | 05:02 | | |
| | 16:14 | 36 | 10:22 (40) | 17:08 | 5 | 10:09 (41) | 18:07 | | | 20:10 | 2 | 07:34 (11) | 21:09 | 39 | 20:36 (30) | 22:02 | | |
| 2 | 09:01 | | 09:46 (41) | 08:26 | | | 07:24 | | | 07:05 | | 07:30 (11) | 05:53 | | 07:11 (33) | 05:01 | | |
| | 16:15 | 36 | 10:22 (40) | 17:10 | | | 18:09 | | | 20:11 | 6 | 19:44 (3) | 21:11 | 42 | 20:38 (30) | 22:04 | | |
| 3 | 09:00 | | 09:46 (41) | 08:24 | | | 07:22 | | | 07:03 | | 07:27 (11) | 05:51 | | 07:12 (33) | 05:00 | | |
| | 16:16 | 36 | 10:22 (40) | 17:12 | | | 18:11 | | | 20:13 | 12 | 19:46 (3) | 21:13 | 44 | 20:40 (30) | 22:05 | | |
| 4 | 09:00 | | 09:46 (41) | 08:22 | | | 07:19 | | | 07:00 | | 07:25 (11) | 05:48 | | 07:13 (33) | 04:59 | | |
| | 16:17 | 36 | 10:22 (40) | 17:14 | | | 18:13 | | | 20:15 | 16 | 19:48 (3) | 21:14 | 44 | 20:41 (30) | 22:06 | | |
| 5 | 09:00 | | 09:45 (41) | 08:20 | | | 07:17 | | | 06:58 | | 07:23 (11) | 05:46 | | 07:14 (33) | 04:58 | | |
| | 16:19 | 37 | 10:22 (40) | 17:17 | | | 18:16 | | | 20:17 | 17 | 19:49 (3) | 21:16 | 43 | 20:42 (30) | 22:07 | | |
| 6 | 08:59 | | 09:46 (41) | 08:18 | | | 07:14 | | | 06:55 | | 07:25 (11) | 05:44 | | 07:16 (33) | 04:57 | | |
| | 16:20 | 37 | 10:23 (40) | 17:19 | | | 18:18 | | | 20:19 | 16 | 19:52 (3) | 21:18 | 41 | 20:43 (30) | 22:08 | | |
| 7 | 08:59 | | 09:46 (41) | 08:16 | | | 07:12 | | | 06:53 | | 19:40 (3) | 05:42 | | 07:18 (33) | 04:56 | | |
| | 16:22 | 36 | 10:22 (40) | 17:21 | | | 18:20 | | | 20:21 | 13 | 19:53 (3) | 21:20 | 37 | 20:43 (30) | 22:10 | | |
| 8 | 08:58 | | 09:46 (41) | 08:14 | | | 07:09 | | | 06:50 | | 19:40 (3) | 05:40 | | 07:21 (33) | 04:56 | | |
| | 16:23 | 36 | 10:22 (40) | 17:23 | | | 18:22 | | | 20:23 | 14 | 19:54 (3) | 21:22 | 30 | 20:43 (30) | 22:11 | | |
| 9 | 08:57 | | 09:46 (41) | 08:12 | | | 07:07 | | | 06:48 | | 19:40 (3) | 05:38 | | 20:18 (30) | 04:55 | | |
| | 16:25 | 36 | 10:22 (40) | 17:25 | | | 18:24 | | | 20:25 | 14 | 19:54 (3) | 21:24 | 25 | 20:43 (30) | 22:12 | | |
| 10 | 08:57 | | 09:46 (41) | 08:10 | | | 07:04 | | | 06:45 | | 19:40 (3) | 05:36 | | 20:18 (30) | 04:54 | | |
| | 16:26 | 35 | 10:21 (40) | 17:27 | | | 18:26 | | | 20:27 | 14 | 19:54 (3) | 21:26 | 25 | 20:43 (30) | 22:12 | | |
| 11 | 08:56 | | 09:46 (41) | 08:08 | | | 07:02 | | | 06:42 | | 07:27 (33) | 05:34 | | 20:18 (30) | 04:54 | | |
| | 16:28 | 34 | 10:20 (40) | 17:29 | | | 18:28 | | | 20:29 | 19 | 19:53 (3) | 21:28 | 25 | 20:43 (30) | 22:13 | | |
| 12 | 08:55 | | 09:46 (41) | 08:06 | | | 06:59 | | | 06:40 | | 07:22 (33) | 05:32 | | 20:18 (30) | 04:53 | | |
| | 16:29 | 33 | 10:19 (40) | 17:31 | | | 18:30 | | | 20:31 | 29 | 19:53 (3) | 21:30 | 26 | 20:44 (30) | 22:14 | | |
| 13 | 08:54 | | 09:47 (41) | 08:04 | | | 06:57 | | | 06:38 | | 07:19 (33) | 05:30 | | 20:18 (30) | 04:53 | | |
| | 16:31 | 29 | 10:16 (41) | 17:34 | | | 18:32 | | | 20:33 | 32 | 19:52 (3) | 21:32 | 25 | 20:43 (30) | 22:15 | | |
| 14 | 08:53 | | 09:47 (41) | 08:02 | | | 06:54 | | | 06:35 | | 07:17 (33) | 05:28 | | 20:18 (30) | 04:53 | | |
| | 16:33 | 30 | 10:17 (41) | 17:36 | | | 18:34 | | | 20:35 | 35 | 19:51 (3) | 21:33 | 25 | 20:43 (30) | 22:16 | | |
| 15 | 08:52 | | 09:48 (41) | 07:59 | | | 06:52 | | | 06:33 | | 07:16 (33) | 05:27 | | 20:19 (30) | 04:52 | | |
| | 16:35 | 29 | 10:17 (41) | 17:38 | | | 18:36 | | | 20:37 | 37 | 19:50 (3) | 21:35 | 24 | 20:43 (30) | 22:16 | | |
| 16 | 08:51 | | 09:47 (41) | 07:57 | | | 06:49 | | | 06:30 | | 07:14 (33) | 05:25 | | 20:19 (30) | 04:52 | | |
| | 16:36 | 30 | 10:17 (41) | 17:40 | | | 18:38 | | | 20:39 | 37 | 19:48 (3) | 21:37 | 23 | 20:42 (30) | 22:17 | | |
| 17 | 08:50 | | 09:48 (41) | 07:55 | | | 06:46 | | | 06:28 | | 07:13 (33) | 05:23 | | 20:20 (30) | 04:52 | | |
| | 16:38 | 30 | 10:18 (41) | 17:42 | | | 18:40 | | | 20:41 | 37 | 19:46 (3) | 21:39 | 22 | 20:42 (30) | 22:17 | | |
| 18 | 08:49 | | 09:48 (41) | 07:53 | | | 06:44 | | | 06:25 | | 07:11 (33) | 05:21 | | 06:29 (4) | 04:52 | | |
| | 16:40 | 30 | 10:18 (41) | 17:44 | | | 18:42 | | | 20:43 | 37 | 19:41 (3) | 21:41 | 37 | 20:41 (30) | 22:18 | | |
| 19 | 08:48 | | 09:48 (41) | 07:50 | | | 06:41 | | | 06:23 | | 07:11 (33) | 05:20 | | 06:26 (4) | 04:52 | | |
| | 16:42 | 31 | 10:19 (41) | 17:46 | | | 18:44 | | | 20:45 | 34 | 07:45 (33) | 21:42 | 43 | 20:41 (30) | 22:18 | | |
| 20 | 08:46 | | 09:48 (41) | 07:48 | | | 06:39 | | 07:03 (13) | 06:20 | | 07:10 (33) | 05:18 | | 06:23 (4) | 04:52 | | |
| | 16:44 | 30 | 10:18 (41) | 17:48 | | | 18:46 | 2 | 07:05 (13) | 20:47 | 35 | 07:45 (33) | 21:44 | 45 | 20:40 (30) | 22:19 | | |
| 21 | 08:45 | | 09:49 (41) | 07:46 | | | 06:36 | | 07:01 (13) | 06:18 | | 07:09 (33) | 05:16 | | 06:23 (4) | 04:52 | | |
| | 16:46 | 30 | 10:19 (41) | 17:51 | | | 18:48 | 4 | 07:05 (13) | 20:49 | 36 | 07:45 (33) | 21:46 | 29 | 20:39 (30) | 22:19 | | |
| 22 | 08:44 | | 09:50 (41) | 07:43 | | | 06:34 | | 06:58 (13) | 06:16 | | 07:09 (33) | 05:15 | | 06:23 (4) | 04:52 | | |
| | 16:48 | 29 | 10:19 (41) | 17:53 | | | 18:50 | 6 | 07:04 (13) | 20:51 | 36 | 07:45 (33) | 21:47 | 21 | 20:38 (30) | 22:19 | | |
| 23 | 08:42 | | 09:51 (41) | 07:41 | | | 06:31 | | 06:55 (13) | 06:13 | | 07:09 (33) | 05:13 | | 06:25 (4) | 04:53 | | |
| | 16:50 | 28 | 10:19 (41) | 17:55 | | | 18:52 | 7 | 07:02 (13) | 20:53 | 36 | 07:45 (33) | 21:49 | 14 | 20:37 (30) | 22:19 | | |
| 24 | 08:41 | | 09:51 (41) | 07:39 | | | 06:28 | | 06:56 (13) | 06:11 | | 07:09 (33) | 05:12 | | 20:28 (30) | 04:53 | | |
| | 16:52 | 28 | 10:19 (41) | 17:57 | | | 18:54 | 5 | 07:01 (13) | 20:55 | 36 | 07:45 (33) | 21:51 | 7 | 20:35 (30) | 22:19 | | |
| 25 | 08:39 | | 09:52 (41) | 07:36 | | | 06:26 | | | 06:09 | | 07:08 (33) | 05:10 | | | 04:53 | | |
| | 16:54 | 26 | 10:18 (41) | 17:59 | | | 18:56 | | | 20:57 | 36 | 07:44 (33) | 21:52 | | | 22:19 | | |
| 26 | 08:38 | | 09:52 (41) | 07:34 | | | 06:23 | | | 06:06 | | 07:08 (33) | 05:09 | | | 04:54 | | |
| | 16:56 | 26 | 10:18 (41) | 18:01 | | | 18:58 | | | 20:59 | 36 | 07:44 (33) | 21:54 | | | 22:19 | | |
| 27 | 08:36 | | 09:54 (41) | 07:32 | | | 06:21 | | | 06:04 | | 07:08 (33) | 05:08 | | | 04:54 | | |
| | 16:58 | 24 | 10:18 (41) | 18:03 | | | 19:00 | | | 21:01 | 36 | 07:44 (33) | 21:55 | | | 22:19 | | |
| 28 | 08:34 | | 09:55 (41) | 07:29 | | | 06:18 | | | 06:02 | | 07:09 (33) | 05:06 | | | 04:55 | | |
| | 17:00 | 22 | 10:17 (41) | 18:05 | | | 19:02 | | | 21:03 | 34 | 07:43 (33) | 21:57 | | | 22:19 | | |
| 29 | 08:33 | | 09:56 (41) | | | | 07:16 | | | 05:59 | | 07:09 (33) | 05:05 | | | 04:55 | | |
| | 17:02 | 20 | 10:16 (41) | | | | 20:04 | | | 21:05 | 34 | 07:43 (33) | 21:58 | | | 22:19 | | |
| 30 | 08:31 | | 09:58 (41) | | | | 07:13 | | | 05:57 | | 07:10 (33) | 05:04 | | | 04:56 | | |
| | 17:04 | 17 | 10:15 (41) | | | | 20:06 | | | 21:07 | 32 | 07:42 (33) | 22:00 | | | 22:18 | | |
| 31 | 08:29 | | 10:00 (41) | | | | 07:10 | | | | | | 05:03 | | | | | |
| | 17:06 | 13 | 10:13 (41) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 930 | | | 5 | | | 24 | | | 808 | | | 736 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,60 | | | 0,61 | | | 1,00 | | | 0,99 | | | 0,94 | | | | |
| Total reduction | | 0,10 | | | 0,14 | | | 0,31 | | | 0,35 | | | 0,44 | | | | |
| Total, real | | 91 | | | 1 | | | 7 | | | 283 | | | 320 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: R - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:29 (30) | 06:38 | | 07:26 (33) | 07:35 | 07:37 | | | 08:35 | | 09:28 (41) |
| | 22:18 | | | 21:40 | 25 | 20:54 (30) | 20:29 | 5 | 07:31 (33) | 19:12 | 16:58 | | | 16:10 | 34 | 10:02 (40) |
| 2 | 04:57 | | | 05:41 | | 20:28 (30) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:29 (41) |
| | 22:18 | | | 21:38 | 25 | 20:53 (30) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 35 | 10:04 (40) |
| 3 | 04:58 | | | 05:43 | | 20:28 (30) | 06:42 | | | 07:38 | 07:41 | | | 08:38 | | 09:30 (41) |
| | 22:17 | | | 21:36 | 25 | 20:53 (30) | 20:24 | | | 19:07 | 16:54 | | | 16:08 | 36 | 10:06 (40) |
| 4 | 04:59 | | | 05:45 | | 20:29 (30) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:30 (41) |
| | 22:17 | | | 21:34 | 24 | 20:53 (30) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 36 | 10:06 (40) |
| 5 | 05:00 | | | 05:47 | | 07:30 (33) | 06:45 | | | 07:42 | 07:45 | | | 08:41 | | 09:31 (41) |
| | 22:16 | | | 21:32 | 34 | 20:53 (30) | 20:19 | | | 19:02 | 16:49 | | | 16:07 | 36 | 10:07 (40) |
| 6 | 05:01 | | | 05:49 | | 07:26 (33) | 06:47 | | 07:20 (11) | 07:44 | 07:47 | | | 08:43 | | 09:32 (41) |
| | 22:15 | | | 21:30 | 39 | 20:52 (30) | 20:17 | 4 | 07:24 (11) | 18:59 | 16:47 | | | 16:06 | 37 | 10:09 (40) |
| 7 | 05:02 | | | 05:51 | | 07:24 (33) | 06:49 | | 07:18 (11) | 07:46 | 07:49 | | | 08:44 | | 09:32 (41) |
| | 22:15 | | | 21:28 | 42 | 20:52 (30) | 20:14 | 8 | 07:26 (11) | 18:57 | 16:45 | | | 16:06 | 37 | 10:09 (40) |
| 8 | 05:03 | | | 05:52 | | 07:23 (33) | 06:51 | | 07:19 (11) | 07:48 | 07:51 | | | 08:46 | | 09:34 (41) |
| | 22:14 | | | 21:26 | 43 | 20:51 (30) | 20:12 | 8 | 07:27 (11) | 18:54 | 16:43 | | | 16:05 | 36 | 10:10 (40) |
| 9 | 05:04 | | | 05:54 | | 07:21 (33) | 06:53 | | 07:21 (11) | 07:50 | 07:53 | | | 08:47 | | 09:34 (41) |
| | 22:13 | | | 21:24 | 43 | 20:49 (30) | 20:09 | 7 | 07:28 (11) | 18:52 | 16:42 | | | 16:05 | 36 | 10:10 (40) |
| 10 | 05:06 | | | 05:56 | | 07:20 (33) | 06:55 | | 07:23 (11) | 07:52 | 07:55 | | 09:34 (41) | 08:48 | | 09:35 (41) |
| | 22:12 | | | 21:21 | 44 | 20:48 (30) | 20:06 | 5 | 07:28 (11) | 18:49 | 16:40 | 7 | 09:41 (41) | 16:04 | 36 | 10:11 (40) |
| 11 | 05:07 | | | 05:58 | | 07:19 (33) | 06:57 | | 07:24 (11) | 07:54 | 07:57 | | 09:31 (41) | 08:49 | | 09:36 (41) |
| | 22:11 | | | 21:19 | 42 | 20:46 (30) | 20:04 | 2 | 07:26 (11) | 18:47 | 16:38 | 13 | 09:44 (41) | 16:04 | 36 | 10:12 (40) |
| 12 | 05:08 | | | 06:00 | | 07:18 (33) | 06:59 | | | 07:56 | 07:59 | | 09:29 (41) | 08:51 | | 09:37 (41) |
| | 22:10 | | | 21:17 | 37 | 20:43 (30) | 20:01 | | | 18:44 | 16:36 | 17 | 09:46 (41) | 16:04 | 35 | 10:12 (40) |
| 13 | 05:09 | | | 06:02 | | 07:17 (33) | 07:00 | | | 07:58 | 08:01 | | 09:28 (41) | 08:52 | | 09:37 (41) |
| | 22:09 | | | 21:15 | 33 | 07:50 (33) | 19:59 | | | 18:42 | 16:34 | 20 | 09:48 (41) | 16:04 | 36 | 10:13 (40) |
| 14 | 05:11 | | | 06:04 | | 07:16 (33) | 07:02 | | | 08:00 | 08:03 | | 09:27 (41) | 08:53 | | 09:38 (41) |
| | 22:08 | | | 21:13 | 34 | 07:50 (33) | 19:56 | | | 18:39 | 16:33 | 22 | 09:49 (41) | 16:04 | 35 | 10:13 (40) |
| 15 | 05:12 | | | 06:05 | | 07:16 (33) | 07:04 | | | 08:02 | 08:05 | | 09:26 (41) | 08:54 | | 09:39 (41) |
| | 22:07 | | | 21:10 | 35 | 07:51 (33) | 19:53 | | | 18:37 | 16:31 | 24 | 09:50 (41) | 16:04 | 35 | 10:14 (40) |
| 16 | 05:13 | | | 06:07 | | 07:16 (33) | 07:06 | | | 08:04 | 08:07 | | 09:25 (41) | 08:55 | | 09:39 (41) |
| | 22:05 | | | 21:08 | 35 | 07:51 (33) | 19:51 | | | 18:34 | 16:29 | 26 | 09:51 (41) | 16:04 | 35 | 10:14 (40) |
| 17 | 05:15 | | | 06:09 | | 07:14 (33) | 07:08 | | | 08:06 | 08:09 | | 09:26 (41) | 08:55 | | 09:40 (41) |
| | 22:04 | | | 21:06 | 37 | 07:51 (33) | 19:48 | | | 18:32 | 16:28 | 26 | 09:52 (41) | 16:04 | 35 | 10:15 (40) |
| 18 | 05:16 | | | 06:11 | | 07:14 (33) | 07:10 | | | 08:08 | 08:11 | | 09:25 (41) | 08:56 | | 09:41 (41) |
| | 22:03 | | | 21:03 | 37 | 07:51 (33) | 19:46 | | | 18:30 | 16:26 | 28 | 09:53 (41) | 16:04 | 35 | 10:16 (40) |
| 19 | 05:18 | | 20:39 (30) | 06:13 | | 07:14 (33) | 07:12 | | 07:43 (13) | 08:10 | 08:13 | | 09:25 (41) | 08:57 | | 09:42 (41) |
| | 22:01 | 4 | 20:43 (30) | 21:01 | 37 | 07:51 (33) | 19:43 | 4 | 07:47 (13) | 18:27 | 16:24 | 28 | 09:53 (41) | 16:04 | 35 | 10:17 (40) |
| 20 | 05:19 | | 06:35 (4) | 06:15 | | 07:14 (33) | 07:14 | | 07:41 (13) | 08:12 | 08:15 | | 09:25 (41) | 08:58 | | 09:42 (41) |
| | 22:00 | 12 | 20:46 (30) | 20:59 | 37 | 07:51 (33) | 19:41 | 8 | 07:49 (13) | 18:25 | 16:23 | 29 | 09:54 (41) | 16:04 | 34 | 10:16 (40) |
| 21 | 05:21 | | 06:35 (4) | 06:17 | | 07:14 (33) | 07:15 | | 07:43 (13) | 08:14 | 08:17 | | 09:24 (41) | 08:58 | | 09:43 (41) |
| | 21:59 | 18 | 20:48 (30) | 20:56 | 37 | 07:51 (33) | 19:38 | 7 | 07:50 (13) | 18:22 | 16:22 | 30 | 09:54 (41) | 16:05 | 34 | 10:17 (40) |
| 22 | 05:22 | | 06:33 (4) | 06:19 | | 07:14 (33) | 07:17 | | 07:45 (13) | 08:16 | 08:19 | | 09:24 (41) | 08:59 | | 09:43 (41) |
| | 21:57 | 24 | 20:49 (30) | 20:54 | 36 | 07:50 (33) | 19:35 | 5 | 07:50 (13) | 18:20 | 16:20 | 30 | 09:54 (41) | 16:05 | 34 | 10:17 (40) |
| 23 | 05:24 | | 06:33 (4) | 06:21 | | 07:14 (33) | 07:19 | | 07:47 (13) | 08:18 | 08:21 | | 09:26 (41) | 08:59 | | 09:44 (41) |
| | 21:55 | 31 | 20:50 (30) | 20:52 | 35 | 07:49 (33) | 19:33 | 2 | 07:49 (13) | 18:18 | 16:19 | 30 | 09:56 (41) | 16:06 | 34 | 10:18 (40) |
| 24 | 05:26 | | 06:34 (4) | 06:23 | | 07:14 (33) | 07:21 | | | 08:20 | 08:23 | | 09:26 (41) | 09:00 | | 09:44 (41) |
| | 21:54 | 33 | 20:51 (30) | 20:49 | 35 | 07:49 (33) | 19:30 | | | 18:15 | 16:17 | 30 | 09:56 (41) | 16:06 | 34 | 10:18 (40) |
| 25 | 05:27 | | 06:37 (4) | 06:24 | | 07:15 (33) | 07:23 | | | 07:22 | 08:25 | | 09:26 (41) | 09:00 | | 09:44 (41) |
| | 21:52 | 33 | 20:52 (30) | 20:47 | 33 | 07:48 (33) | 19:28 | | | 17:13 | 16:16 | 30 | 09:56 (41) | 16:07 | 35 | 10:19 (40) |
| 26 | 05:29 | | 06:41 (4) | 06:26 | | 07:16 (33) | 07:25 | | | 07:24 | 08:26 | | 09:26 (41) | 09:00 | | 09:44 (41) |
| | 21:51 | 30 | 20:52 (30) | 20:44 | 31 | 07:47 (33) | 19:25 | | | 17:11 | 16:15 | 30 | 09:56 (41) | 16:08 | 35 | 10:19 (40) |
| 27 | 05:31 | | 20:30 (30) | 06:28 | | 07:16 (33) | 07:27 | | | 07:26 | 08:28 | | 09:27 (41) | 09:01 | | 09:44 (41) |
| | 21:49 | 23 | 20:53 (30) | 20:42 | 29 | 07:45 (33) | 19:22 | | | 17:09 | 16:14 | 29 | 09:56 (41) | 16:09 | 35 | 10:19 (40) |
| 28 | 05:33 | | 20:29 (30) | 06:30 | | 07:17 (33) | 07:29 | | | 07:28 | 08:30 | | 09:27 (41) | 09:01 | | 09:45 (41) |
| | 21:47 | 24 | 20:53 (30) | 20:39 | 27 | 07:44 (33) | 19:20 | | | 17:06 | 16:13 | 30 | 09:57 (41) | 16:09 | 35 | 10:20 (40) |
| 29 | 05:34 | | 20:29 (30) | 06:32 | | 07:18 (33) | 07:31 | | | 07:30 | 08:32 | | 09:28 (41) | 09:01 | | 09:45 (41) |
| | 21:45 | 24 | 20:53 (30) | 20:37 | 24 | 07:42 (33) | 19:17 | | | 17:04 | 16:12 | 29 | 09:57 (41) | 16:10 | 35 | 10:20 (40) |
| 30 | 05:36 | | 20:29 (30) | 06:34 | | 07:20 (33) | 07:33 | | | 07:32 | 08:33 | | 09:28 (41) | 09:01 | | 09:45 (41) |
| | 21:44 | 25 | 20:54 (30) | 20:34 | 20 | 07:40 (33) | 19:15 | | | 17:02 | 16:11 | 32 | 10:00 (40) | 16:11 | 36 | 10:21 (40) |
| 31 | 05:38 | | 20:29 (30) | 06:36 | | 07:22 (33) | | | | 07:35 | | | | 09:01 | | 09:45 (41) |
| | 21:42 | 25 | 20:54 (30) | 20:32 | 15 | 07:37 (33) | | | | 17:00 | | | | 16:12 | 36 | 10:21 (40) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 306 | | | 1030 | | | 65 | | | | 540 | | | 1093 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,97 | | | 1,00 | | | | 0,61 | | | 0,58 | |
| Total reduction | | 0,40 | | | 0,45 | | | 0,35 | | | | 0,09 | | | 0,07 | |
| Total, real | | 123 | | | 465 | | | 23 | | | | 47 | | | 77 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:05 (41) | 08:28 | | 07:27 | | | 07:08 | | | 05:55 | | 07:01 (33) | 05:02 |
| | 16:14 | 32 | 10:37 (41) | 17:08 | | 18:07 | | | 20:10 | | | 21:09 | 64 | 20:36 (30) | 22:02 |
| 2 | 09:01 | | 10:05 (41) | 08:26 | | 07:24 | | | 07:05 | | 07:30 (11) | 05:53 | | 07:00 (33) | 05:01 |
| | 16:15 | 32 | 10:37 (41) | 17:10 | | 18:09 | | | 20:11 | 7 | 19:44 (3) | 21:11 | 66 | 20:36 (30) | 22:04 |
| 3 | 09:00 | | 10:06 (41) | 08:24 | | 07:22 | | | 07:03 | | 07:27 (11) | 05:51 | | 07:00 (33) | 05:00 |
| | 16:16 | 32 | 10:38 (41) | 17:12 | | 18:11 | | | 20:13 | 12 | 19:46 (3) | 21:13 | 67 | 20:37 (30) | 22:05 |
| 4 | 09:00 | | 10:05 (41) | 08:22 | | 07:19 | | | 07:00 | | 07:25 (11) | 05:48 | | 07:00 (33) | 04:59 |
| | 16:17 | 33 | 10:38 (41) | 17:14 | | 18:13 | | | 20:15 | 16 | 19:48 (3) | 21:14 | 68 | 20:37 (30) | 22:06 |
| 5 | 09:00 | | 10:05 (41) | 08:20 | | 07:17 | | | 06:58 | | 07:22 (11) | 05:46 | | 07:00 (33) | 04:58 |
| | 16:19 | 33 | 10:38 (41) | 17:17 | | 18:16 | | | 20:17 | 19 | 19:49 (3) | 21:16 | 68 | 20:37 (30) | 22:07 |
| 6 | 08:59 | | 10:06 (41) | 08:18 | | 07:14 | | | 06:55 | | 07:21 (11) | 05:44 | | 07:00 (33) | 04:57 |
| | 16:20 | 33 | 10:39 (41) | 17:19 | | 18:18 | | | 20:19 | 22 | 19:52 (3) | 21:18 | 67 | 20:36 (30) | 22:08 |
| 7 | 08:59 | | 10:07 (41) | 08:16 | | 07:12 | | | 06:53 | | 07:22 (11) | 05:42 | | 07:00 (33) | 04:56 |
| | 16:22 | 32 | 10:39 (41) | 17:21 | | 18:20 | | | 20:21 | 19 | 19:53 (3) | 21:20 | 66 | 20:36 (30) | 22:10 |
| 8 | 08:58 | | 10:07 (41) | 08:14 | | 07:09 | | | 06:50 | | 19:40 (3) | 05:40 | | 07:00 (33) | 04:56 |
| | 16:23 | 33 | 10:40 (41) | 17:23 | | 18:22 | | | 20:23 | 14 | 19:54 (3) | 21:22 | 65 | 20:35 (30) | 22:11 |
| 9 | 08:57 | | 10:07 (41) | 08:12 | | 07:07 | | | 06:48 | | 19:40 (3) | 05:38 | | 07:00 (33) | 04:55 |
| | 16:25 | 33 | 10:40 (41) | 17:25 | | 18:24 | | | 20:25 | 13 | 19:53 (3) | 21:24 | 63 | 20:35 (30) | 22:12 |
| 10 | 08:57 | | 10:08 (41) | 08:10 | | 07:04 | | | 06:45 | | 19:40 (3) | 05:36 | | 07:00 (33) | 04:54 |
| | 16:26 | 32 | 10:40 (41) | 17:27 | | 18:26 | | | 20:27 | 12 | 19:52 (3) | 21:26 | 61 | 20:34 (30) | 22:12 |
| 11 | 08:56 | | 10:08 (41) | 08:08 | | 07:02 | | | 06:42 | | 19:40 (3) | 05:34 | | 07:00 (33) | 04:54 |
| | 16:28 | 33 | 10:41 (41) | 17:29 | | 18:28 | | | 20:29 | 11 | 19:51 (3) | 21:28 | 59 | 20:33 (30) | 22:13 |
| 12 | 08:55 | | 10:09 (41) | 08:06 | | 06:59 | | | 06:40 | | 19:40 (3) | 05:32 | | 07:01 (33) | 04:53 |
| | 16:29 | 32 | 10:41 (41) | 17:31 | | 18:30 | | | 20:31 | 10 | 19:50 (3) | 21:30 | 55 | 20:32 (30) | 22:14 |
| 13 | 08:54 | | 10:09 (41) | 08:04 | | 06:57 | | | 06:37 | | 19:40 (3) | 05:30 | | 07:02 (33) | 04:53 |
| | 16:31 | 33 | 10:42 (41) | 17:34 | | 18:32 | | | 20:33 | 8 | 19:48 (3) | 21:32 | 51 | 20:31 (30) | 22:15 |
| 14 | 08:53 | | 10:10 (41) | 08:01 | | 06:54 | | | 06:35 | | 19:40 (3) | 05:28 | | 07:02 (33) | 04:53 |
| | 16:33 | 32 | 10:42 (41) | 17:36 | | 18:34 | | | 20:35 | 7 | 19:47 (3) | 21:33 | 45 | 20:28 (30) | 22:16 |
| 15 | 08:52 | | 10:11 (41) | 07:59 | | 06:52 | | | 06:33 | | 19:40 (3) | 05:27 | | 07:03 (33) | 04:52 |
| | 16:35 | 31 | 10:42 (41) | 17:38 | | 18:36 | | | 20:37 | 3 | 19:43 (3) | 21:35 | 37 | 07:40 (33) | 22:16 |
| 16 | 08:51 | | 10:11 (41) | 07:57 | | 06:49 | | | 06:30 | | | 05:25 | | 07:04 (33) | 04:52 |
| | 16:36 | 31 | 10:42 (41) | 17:40 | | 18:38 | | | 20:39 | | | 21:37 | 35 | 07:39 (33) | 22:17 |
| 17 | 08:50 | | 10:12 (41) | 07:55 | | 06:46 | | | 06:28 | | 07:21 (33) | 05:23 | | 07:05 (33) | 04:52 |
| | 16:38 | 30 | 10:42 (41) | 17:42 | | 18:40 | | | 20:41 | 10 | 07:31 (33) | 21:39 | 33 | 07:38 (33) | 22:17 |
| 18 | 08:49 | | 10:12 (41) | 07:53 | | 06:44 | | | 06:25 | | 07:16 (33) | 05:21 | | 07:05 (33) | 04:52 |
| | 16:40 | 30 | 10:42 (41) | 17:44 | | 18:42 | | | 20:43 | 18 | 07:34 (33) | 21:40 | 32 | 07:37 (33) | 22:18 |
| 19 | 08:48 | | 10:13 (41) | 07:50 | | 06:41 | | | 06:23 | | 07:13 (33) | 05:20 | | 07:06 (33) | 04:52 |
| | 16:42 | 29 | 10:42 (41) | 17:46 | | 18:44 | | | 20:45 | 24 | 07:37 (33) | 21:42 | 29 | 07:35 (33) | 22:18 |
| 20 | 08:46 | | 10:13 (41) | 07:48 | | 06:39 | | 07:03 (13) | 06:20 | | 07:11 (33) | 05:18 | | 07:07 (33) | 04:52 |
| | 16:44 | 28 | 10:41 (41) | 17:48 | | 18:46 | 3 | 07:06 (13) | 20:47 | 28 | 07:39 (33) | 21:44 | 28 | 07:35 (33) | 22:19 |
| 21 | 08:45 | | 10:15 (41) | 07:46 | | 06:36 | | 07:01 (13) | 06:18 | | 07:09 (33) | 05:16 | | 07:09 (33) | 04:52 |
| | 16:46 | 26 | 10:41 (41) | 17:51 | | 18:48 | 5 | 07:06 (13) | 20:49 | 31 | 07:40 (33) | 21:46 | 25 | 07:34 (33) | 22:19 |
| 22 | 08:44 | | 10:15 (41) | 07:43 | | 06:34 | | 06:58 (13) | 06:16 | | 07:07 (33) | 05:15 | | 07:09 (33) | 04:52 |
| | 16:48 | 26 | 10:41 (41) | 17:53 | | 18:50 | 7 | 07:05 (13) | 20:51 | 34 | 07:41 (33) | 21:47 | 23 | 07:32 (33) | 22:19 |
| 23 | 08:42 | | 10:17 (41) | 07:41 | | 06:31 | | 06:55 (13) | 06:13 | | 07:06 (33) | 05:13 | | 07:11 (33) | 04:53 |
| | 16:50 | 24 | 10:41 (41) | 17:55 | | 18:52 | 9 | 07:04 (13) | 20:53 | 36 | 07:42 (33) | 21:49 | 20 | 07:31 (33) | 22:19 |
| 24 | 08:41 | | 10:18 (41) | 07:39 | | 06:28 | | 06:55 (13) | 06:11 | | 07:05 (33) | 05:12 | | 07:13 (33) | 04:53 |
| | 16:52 | 21 | 10:39 (41) | 17:57 | | 18:54 | 8 | 07:03 (13) | 20:55 | 38 | 07:43 (33) | 21:51 | 16 | 07:29 (33) | 22:19 |
| 25 | 08:39 | | 10:20 (41) | 07:36 | | 06:26 | | | 06:09 | | 07:03 (33) | 05:10 | | 07:15 (33) | 04:53 |
| | 16:54 | 18 | 10:38 (41) | 17:59 | | 18:56 | | | 20:57 | 40 | 07:43 (33) | 21:52 | 11 | 07:26 (33) | 22:19 |
| 26 | 08:38 | | 10:21 (41) | 07:34 | | 06:23 | | | 06:06 | | 07:03 (33) | 05:09 | | | 04:54 |
| | 16:56 | 15 | 10:36 (41) | 18:01 | | 18:58 | | | 20:59 | 46 | 20:28 (30) | 21:54 | | | 22:19 |
| 27 | 08:36 | | 10:25 (41) | 07:31 | | 06:21 | | | 06:04 | | 07:02 (33) | 05:08 | | | 04:54 |
| | 16:58 | 9 | 10:34 (41) | 18:03 | | 19:00 | | | 21:01 | 52 | 20:30 (30) | 21:55 | | | 22:19 |
| 28 | 08:34 | | | 07:29 | | 06:18 | | | 06:02 | | 07:02 (33) | 05:06 | | | 04:55 |
| | 17:00 | | | 18:05 | | 19:02 | | | 21:03 | 57 | 20:32 (30) | 21:57 | | | 22:19 |
| 29 | 08:33 | | | | | 07:16 | | | 05:59 | | 07:01 (33) | 05:05 | | | 04:55 |
| | 17:02 | | | | | 20:04 | | | 21:05 | 61 | 20:34 (30) | 21:58 | | | 22:19 |
| 30 | 08:31 | | | | | 07:13 | | | 05:57 | | 07:01 (33) | 05:04 | | | 04:56 |
| | 17:04 | | | | | 20:06 | | | 21:07 | 64 | 20:36 (30) | 22:00 | | | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | | | |
| | 17:06 | | | | | 20:08 | | | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 773 | | | | | 32 | | | 712 | | | 1154 | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,53 | | | | | 1,00 | | | 0,98 | | | 0,97 | | |
| Total reduction | | 0,08 | | | | | 0,30 | | | 0,34 | | | 0,45 | | |
| Total, real | | 66 | | | | | 10 | | | 246 | | | 518 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: S - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 07:12 (33) | 06:38 | | | 07:35 | 07:37 | | | 08:35 | | 09:50 (41) |
| | 22:18 | | | 21:40 | 55 | 20:43 (30) | 20:29 | | | 19:12 | 16:58 | | | 16:10 | 33 | 10:23 (41) |
| 2 | 04:57 | | | 05:41 | | 07:10 (33) | 06:40 | | | 07:37 | 07:39 | | | 08:37 | | 09:51 (41) |
| | 22:18 | | | 21:38 | 59 | 20:43 (30) | 20:27 | | | 19:09 | 16:56 | | | 16:09 | 32 | 10:23 (41) |
| 3 | 04:58 | | | 05:43 | | 07:10 (33) | 06:42 | | | 07:38 | 07:41 | | | 08:38 | | 09:51 (41) |
| | 22:17 | | | 21:36 | 62 | 20:44 (30) | 20:24 | | | 19:07 | 16:54 | | | 16:08 | 33 | 10:24 (41) |
| 4 | 04:59 | | | 05:45 | | 07:10 (33) | 06:43 | | | 07:40 | 07:43 | | | 08:40 | | 09:51 (41) |
| | 22:17 | | | 21:34 | 64 | 20:45 (30) | 20:22 | | | 19:04 | 16:51 | | | 16:07 | 33 | 10:24 (41) |
| 5 | 05:00 | | | 05:47 | | 07:10 (33) | 06:45 | | 07:19 (11) | 07:42 | 07:45 | | | 08:41 | | 09:52 (41) |
| | 22:16 | | | 21:32 | 65 | 20:46 (30) | 20:19 | 6 | 07:25 (11) | 19:02 | 16:49 | | | 16:07 | 32 | 10:24 (41) |
| 6 | 05:01 | | | 05:49 | | 07:09 (33) | 06:47 | | 07:16 (11) | 07:44 | 07:47 | | | 08:43 | | 09:53 (41) |
| | 22:15 | | | 21:30 | 66 | 20:45 (30) | 20:17 | 10 | 07:26 (11) | 18:59 | 16:47 | | | 16:06 | 32 | 10:25 (41) |
| 7 | 05:02 | | | 05:51 | | 07:09 (33) | 06:49 | | 07:17 (11) | 07:46 | 07:49 | | | 08:44 | | 09:53 (41) |
| | 22:15 | | | 21:28 | 67 | 20:46 (30) | 20:14 | 10 | 07:27 (11) | 18:57 | 16:45 | | | 16:06 | 32 | 10:25 (41) |
| 8 | 05:03 | | | 05:52 | | 07:09 (33) | 06:51 | | 07:19 (11) | 07:48 | 07:51 | | | 08:46 | | 09:54 (41) |
| | 22:14 | | | 21:26 | 67 | 20:46 (30) | 20:12 | 8 | 07:27 (11) | 18:54 | 16:43 | | | 16:05 | 32 | 10:26 (41) |
| 9 | 05:04 | | | 05:54 | | 07:08 (33) | 06:53 | | 07:21 (11) | 07:50 | 07:53 | | | 08:47 | | 09:54 (41) |
| | 22:13 | | | 21:24 | 68 | 20:45 (30) | 20:09 | 6 | 07:27 (11) | 18:52 | 16:42 | | | 16:05 | 32 | 10:26 (41) |
| 10 | 05:06 | | | 05:56 | | 07:09 (33) | 06:55 | | 07:23 (11) | 07:52 | 07:55 | | | 08:48 | | 09:54 (41) |
| | 22:12 | | | 21:21 | 67 | 20:45 (30) | 20:06 | 3 | 07:26 (11) | 18:49 | 16:40 | | | 16:04 | 32 | 10:26 (41) |
| 11 | 05:07 | | | 05:58 | | 07:09 (33) | 06:57 | | | 07:54 | 07:57 | | | 08:49 | | 09:55 (41) |
| | 22:11 | | | 21:19 | 66 | 20:45 (30) | 20:04 | | | 18:47 | 16:38 | | | 16:04 | 32 | 10:27 (41) |
| 12 | 05:08 | | | 06:00 | | 07:09 (33) | 06:59 | | | 07:56 | 07:59 | | | 08:51 | | 09:55 (41) |
| | 22:10 | | | 21:17 | 65 | 20:44 (30) | 20:01 | | | 18:44 | 16:36 | | | 16:04 | 32 | 10:27 (40) |
| 13 | 05:09 | | | 06:02 | | 07:08 (33) | 07:00 | | | 07:58 | 08:01 | | | 08:52 | | 09:56 (41) |
| | 22:09 | | | 21:15 | 64 | 20:43 (30) | 19:59 | | | 18:42 | 16:34 | | | 16:04 | 32 | 10:28 (40) |
| 14 | 05:11 | | | 06:04 | | 07:09 (33) | 07:02 | | | 08:00 | 08:03 | | | 08:53 | | 09:56 (41) |
| | 22:08 | | | 21:13 | 59 | 20:41 (30) | 19:56 | | | 18:39 | 16:33 | | | 16:04 | 33 | 10:29 (40) |
| 15 | 05:12 | | | 06:05 | | 07:09 (33) | 07:04 | | | 08:02 | 08:05 | | 09:57 (41) | 08:54 | | 09:57 (41) |
| | 22:07 | | | 21:10 | 56 | 20:39 (30) | 19:53 | | | 18:37 | 16:31 | 9 | 10:06 (41) | 16:04 | 32 | 10:29 (40) |
| 16 | 05:13 | | | 06:07 | | 07:10 (33) | 07:06 | | | 08:04 | 08:07 | | 09:54 (41) | 08:55 | | 09:57 (41) |
| | 22:05 | | | 21:08 | 51 | 20:37 (30) | 19:51 | | | 18:34 | 16:29 | 15 | 10:09 (41) | 16:04 | 33 | 10:30 (40) |
| 17 | 05:15 | | | 06:09 | | 07:09 (33) | 07:08 | | | 08:06 | 08:09 | | 09:54 (41) | 08:55 | | 09:58 (41) |
| | 22:04 | | | 21:06 | 44 | 20:34 (30) | 19:48 | | | 18:32 | 16:28 | 18 | 10:12 (41) | 16:04 | 33 | 10:31 (40) |
| 18 | 05:16 | | 07:27 (33) | 06:11 | | 07:10 (33) | 07:10 | | | 08:08 | 08:11 | | 09:52 (41) | 08:56 | | 09:59 (41) |
| | 22:03 | 7 | 07:34 (33) | 21:03 | 39 | 07:49 (33) | 19:46 | | | 18:30 | 16:26 | 21 | 10:13 (41) | 16:04 | 33 | 10:32 (40) |
| 19 | 05:18 | | 07:24 (33) | 06:13 | | 07:11 (33) | 07:12 | | 07:42 (13) | 08:10 | 08:13 | | 09:51 (41) | 08:57 | | 09:59 (41) |
| | 22:01 | 14 | 07:38 (33) | 21:01 | 38 | 07:49 (33) | 19:43 | 7 | 07:49 (13) | 18:27 | 16:24 | 24 | 10:15 (41) | 16:04 | 33 | 10:32 (40) |
| 20 | 05:19 | | 07:22 (33) | 06:15 | | 07:12 (33) | 07:14 | | 07:41 (13) | 08:12 | 08:15 | | 09:50 (41) | 08:58 | | 09:59 (41) |
| | 22:00 | 18 | 07:40 (33) | 20:59 | 36 | 07:48 (33) | 19:40 | 9 | 07:50 (13) | 18:25 | 16:23 | 26 | 10:16 (41) | 16:04 | 33 | 10:32 (40) |
| 21 | 05:21 | | 07:21 (33) | 06:17 | | 07:13 (33) | 07:15 | | 07:43 (13) | 08:14 | 08:17 | | 09:50 (41) | 08:58 | | 10:00 (41) |
| | 21:59 | 21 | 07:42 (33) | 20:56 | 33 | 07:46 (33) | 19:38 | 8 | 07:51 (13) | 18:22 | 16:22 | 27 | 10:17 (41) | 16:05 | 33 | 10:33 (40) |
| 22 | 05:22 | | 07:19 (33) | 06:19 | | 07:14 (33) | 07:17 | | 07:45 (13) | 08:16 | 08:19 | | 09:49 (41) | 08:59 | | 10:00 (41) |
| | 21:57 | 24 | 07:43 (33) | 20:54 | 30 | 07:44 (33) | 19:35 | 6 | 07:51 (13) | 18:20 | 16:20 | 28 | 10:17 (41) | 16:05 | 33 | 10:33 (40) |
| 23 | 05:24 | | 07:19 (33) | 06:21 | | 07:15 (33) | 07:19 | | 07:47 (13) | 08:18 | 08:21 | | 09:50 (41) | 08:59 | | 10:01 (41) |
| | 21:55 | 26 | 07:45 (33) | 20:52 | 27 | 07:42 (33) | 19:33 | 3 | 07:50 (13) | 18:18 | 16:19 | 29 | 10:19 (41) | 16:06 | 33 | 10:34 (40) |
| 24 | 05:26 | | 07:17 (33) | 06:23 | | 07:17 (33) | 07:21 | | 07:49 (13) | 08:20 | 08:23 | | 09:50 (41) | 09:00 | | 10:01 (41) |
| | 21:54 | 29 | 07:46 (33) | 20:49 | 23 | 07:40 (33) | 19:30 | 1 | 07:50 (13) | 18:15 | 16:17 | 30 | 10:20 (41) | 16:06 | 33 | 10:34 (40) |
| 25 | 05:27 | | 07:17 (33) | 06:24 | | 07:20 (33) | 07:23 | | | 07:22 | 08:25 | | 09:50 (41) | 09:00 | | 10:01 (41) |
| | 21:52 | 30 | 07:47 (33) | 20:47 | 17 | 07:37 (33) | 19:28 | | | 17:13 | 16:16 | 30 | 10:20 (41) | 16:07 | 33 | 10:34 (40) |
| 26 | 05:29 | | 07:15 (33) | 06:26 | | 07:25 (33) | 07:25 | | | 07:24 | 08:26 | | 09:50 (41) | 09:00 | | 10:02 (41) |
| | 21:51 | 33 | 07:48 (33) | 20:44 | 8 | 07:33 (33) | 19:25 | | | 17:11 | 16:15 | 31 | 10:21 (41) | 16:08 | 33 | 10:35 (40) |
| 27 | 05:31 | | 07:15 (33) | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | 09:50 (41) | 09:01 | | 10:02 (41) |
| | 21:49 | 34 | 07:49 (33) | 20:42 | | | 19:22 | | | 17:09 | 16:14 | 31 | 10:21 (41) | 16:09 | 33 | 10:35 (40) |
| 28 | 05:32 | | 07:14 (33) | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | 09:50 (41) | 09:01 | | 10:02 (41) |
| | 21:47 | 35 | 07:49 (33) | 20:39 | | | 19:20 | | | 17:06 | 16:13 | 32 | 10:22 (41) | 16:09 | 33 | 10:35 (40) |
| 29 | 05:34 | | 07:13 (33) | 06:32 | | | 07:31 | | | 07:30 | 08:32 | | 09:50 (41) | 09:01 | | 10:03 (41) |
| | 21:45 | 41 | 20:37 (30) | 20:37 | | | 19:17 | | | 17:04 | 16:12 | 33 | 10:23 (41) | 16:10 | 32 | 10:35 (40) |
| 30 | 05:36 | | 07:13 (33) | 06:34 | | | 07:33 | | | 07:32 | 08:33 | | 09:50 (41) | 09:01 | | 10:03 (41) |
| | 21:43 | 48 | 20:40 (30) | 20:34 | | | 19:15 | | | 17:02 | 16:11 | 32 | 10:22 (41) | 16:11 | 33 | 10:36 (40) |
| 31 | 05:38 | | 07:12 (33) | 06:36 | | | | | | 07:35 | | | | 09:01 | | 10:04 (41) |
| | 21:42 | 53 | 20:41 (30) | 20:32 | | | | | | 17:00 | | | | 16:12 | 32 | 10:36 (40) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | 253 | | | 224 | | |
| Total, worst case | | 413 | | | 1296 | | | 77 | | | | 416 | | | 1010 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,98 | | | 0,97 | | | 1,00 | | | | 0,53 | | | 0,52 | |
| Total reduction | | 0,42 | | | 0,45 | | | 0,35 | | | | 0,07 | | | 0,06 | |
| Total, real | | 175 | | | 579 | | | 27 | | | | 31 | | | 63 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:28 | | 09:03 (41) | 07:27 | | | 07:08 | | | 05:55 | | 06:31 (33) | 05:02 | | |
| | 16:14 | | | 17:08 | 20 | 09:23 (41) | 18:07 | | | 20:10 | | | 21:09 | 17 | 20:34 (3) | 22:02 | | |
| 2 | 09:01 | | | 08:26 | | 09:02 (41) | 07:24 | | | 07:05 | | | 05:53 | | 06:29 (33) | 05:01 | | |
| | 16:15 | | | 17:10 | 22 | 09:24 (41) | 18:09 | | | 20:12 | | | 21:11 | 20 | 20:34 (3) | 22:04 | | |
| 3 | 09:00 | | | 08:24 | | 09:01 (41) | 07:22 | | | 07:03 | | | 05:51 | | 06:28 (33) | 05:00 | | |
| | 16:16 | | | 17:12 | 25 | 09:26 (41) | 18:11 | | | 20:13 | | | 21:13 | 21 | 06:49 (33) | 22:05 | | |
| 4 | 09:00 | | | 08:22 | | 09:01 (41) | 07:19 | | | 07:00 | | | 05:48 | | 06:27 (33) | 04:59 | | |
| | 16:17 | | | 17:14 | 26 | 09:27 (41) | 18:14 | | | 20:15 | | | 21:14 | 23 | 06:50 (33) | 22:06 | | |
| 5 | 09:00 | | 09:35 (40) | 08:20 | | 09:00 (41) | 07:17 | | | 06:58 | | | 05:46 | | 06:26 (33) | 04:58 | | |
| | 16:19 | 2 | 09:37 (40) | 17:17 | 28 | 09:28 (41) | 18:16 | | | 20:17 | | | 21:16 | 25 | 06:51 (33) | 22:07 | | |
| 6 | 08:59 | | 09:35 (40) | 08:18 | | 08:59 (41) | 07:14 | | | 06:55 | | | 05:44 | | 06:25 (33) | 04:57 | | |
| | 16:20 | 4 | 09:39 (40) | 17:19 | 28 | 09:27 (41) | 18:18 | | | 20:19 | | | 21:18 | 26 | 06:51 (33) | 22:08 | | |
| 7 | 08:59 | | 09:34 (40) | 08:16 | | 08:59 (41) | 07:12 | | | 06:53 | | | 05:42 | | 06:24 (33) | 04:56 | | 21:25 (30) |
| | 16:22 | 7 | 09:41 (40) | 17:21 | 29 | 09:28 (41) | 18:20 | | | 20:21 | | | 21:20 | 28 | 06:52 (33) | 22:10 | 2 | 21:27 (30) |
| 8 | 08:58 | | 09:33 (40) | 08:14 | | 08:59 (41) | 07:09 | | | 06:50 | | | 05:40 | | 06:24 (33) | 04:56 | | 21:22 (30) |
| | 16:23 | 9 | 09:42 (40) | 17:23 | 30 | 09:29 (41) | 18:22 | | | 20:23 | | | 21:22 | 28 | 06:52 (33) | 22:11 | 7 | 21:29 (30) |
| 9 | 08:57 | | 09:32 (40) | 08:12 | | 08:59 (41) | 07:07 | | | 06:48 | | | 05:38 | | 06:23 (33) | 04:55 | | 21:22 (30) |
| | 16:25 | 11 | 09:43 (40) | 17:25 | 30 | 09:29 (41) | 18:24 | | | 20:25 | | | 21:24 | 29 | 06:52 (33) | 22:12 | 9 | 21:31 (30) |
| 10 | 08:57 | | 09:31 (40) | 08:10 | | 08:59 (41) | 07:04 | | | 06:45 | | | 05:36 | | 06:23 (33) | 04:54 | | 21:21 (30) |
| | 16:26 | 13 | 09:44 (40) | 17:27 | 30 | 09:29 (41) | 18:26 | | | 20:27 | | | 21:26 | 29 | 06:52 (33) | 22:12 | 11 | 21:32 (30) |
| 11 | 08:56 | | 09:30 (40) | 08:08 | | 08:58 (41) | 07:02 | | | 06:43 | | | 05:34 | | 06:22 (33) | 04:54 | | 21:21 (30) |
| | 16:28 | 15 | 09:45 (40) | 17:29 | 31 | 09:29 (41) | 18:28 | | | 20:29 | | | 21:28 | 30 | 06:52 (33) | 22:13 | 12 | 21:33 (30) |
| 12 | 08:55 | | 09:29 (40) | 08:06 | | 08:59 (41) | 06:59 | | | 06:40 | | | 05:32 | | 06:23 (33) | 04:53 | | 21:21 (30) |
| | 16:29 | 17 | 09:46 (40) | 17:32 | 30 | 09:29 (41) | 18:30 | | | 20:31 | | | 21:30 | 29 | 06:52 (33) | 22:14 | 13 | 21:34 (30) |
| 13 | 08:54 | | 09:28 (40) | 08:04 | | 08:59 (41) | 06:57 | | | 06:38 | | | 05:30 | | 06:23 (33) | 04:53 | | 21:20 (30) |
| | 16:31 | 19 | 09:47 (40) | 17:34 | 30 | 09:29 (41) | 18:32 | | | 20:33 | | | 21:32 | 29 | 06:52 (33) | 22:15 | 14 | 21:34 (30) |
| 14 | 08:53 | | 09:28 (40) | 08:02 | | 09:00 (41) | 06:54 | | | 06:35 | | | 05:28 | | 06:23 (33) | 04:53 | | 21:20 (30) |
| | 16:33 | 20 | 09:48 (40) | 17:36 | 29 | 09:29 (41) | 18:34 | | | 20:35 | | | 21:33 | 29 | 06:52 (33) | 22:16 | 15 | 21:35 (30) |
| 15 | 08:52 | | 09:28 (40) | 07:59 | | 09:00 (41) | 06:52 | | | 06:33 | | | 05:27 | | 06:24 (33) | 04:52 | | 21:20 (30) |
| | 16:35 | 21 | 09:49 (40) | 17:38 | 27 | 09:27 (41) | 18:36 | | | 20:37 | | | 21:35 | 28 | 06:52 (33) | 22:16 | 15 | 21:35 (30) |
| 16 | 08:51 | | 09:28 (40) | 07:57 | | 09:01 (41) | 06:49 | | | 06:30 | | | 05:25 | | 06:23 (33) | 04:52 | | 21:20 (30) |
| | 16:36 | 21 | 09:49 (40) | 17:40 | 26 | 09:27 (41) | 18:38 | | | 20:39 | | | 21:37 | 28 | 06:51 (33) | 22:17 | 16 | 21:36 (30) |
| 17 | 08:50 | | 09:28 (40) | 07:55 | | 09:02 (41) | 06:46 | | | 06:28 | | | 05:23 | | 06:24 (33) | 04:52 | | 21:20 (30) |
| | 16:38 | 22 | 09:50 (40) | 17:42 | 24 | 09:26 (41) | 18:40 | | | 20:41 | | | 21:39 | 27 | 06:51 (33) | 22:17 | 16 | 21:36 (30) |
| 18 | 08:49 | | 09:28 (40) | 07:53 | | 09:03 (41) | 06:44 | | | 06:25 | | | 05:21 | | 06:24 (33) | 04:52 | | 21:20 (30) |
| | 16:40 | 22 | 09:50 (40) | 17:44 | 21 | 09:24 (41) | 18:42 | | | 20:43 | | | 21:41 | 27 | 06:51 (33) | 22:18 | 17 | 21:37 (30) |
| 19 | 08:48 | | 09:28 (40) | 07:50 | | 09:05 (41) | 06:41 | | | 06:23 | | | 05:20 | | 06:25 (33) | 04:52 | | 21:20 (30) |
| | 16:42 | 23 | 09:51 (40) | 17:46 | 18 | 09:23 (41) | 18:44 | | | 20:45 | | | 21:42 | 26 | 06:51 (33) | 22:18 | 17 | 21:37 (30) |
| 20 | 08:46 | | 09:28 (40) | 07:48 | | 09:07 (41) | 06:39 | | | 06:20 | | | 05:18 | | 06:25 (33) | 04:52 | | 21:20 (30) |
| | 16:44 | 23 | 09:51 (40) | 17:49 | 12 | 09:19 (41) | 18:46 | | | 20:47 | | | 21:44 | 24 | 06:49 (33) | 22:19 | 17 | 21:37 (30) |
| 21 | 08:45 | | 09:29 (40) | 07:46 | | | 06:36 | | | 06:18 | | | 05:16 | | 06:27 (33) | 04:52 | | 21:20 (30) |
| | 16:46 | 23 | 09:52 (40) | 17:51 | | | 18:48 | | | 20:49 | | | 21:46 | 22 | 06:49 (33) | 22:19 | 17 | 21:37 (30) |
| 22 | 08:44 | | 09:29 (40) | 07:43 | | | 06:34 | | | 06:16 | | | 05:15 | | 06:27 (33) | 04:52 | | 21:21 (30) |
| | 16:48 | 22 | 09:51 (40) | 17:53 | | | 18:50 | | | 20:51 | | | 21:47 | 21 | 06:48 (33) | 22:19 | 17 | 21:38 (30) |
| 23 | 08:42 | | 09:30 (40) | 07:41 | | | 06:31 | | | 06:13 | | | 05:13 | | 06:28 (33) | 04:53 | | 21:21 (30) |
| | 16:50 | 22 | 09:52 (40) | 17:55 | | | 18:52 | | | 20:53 | | | 21:49 | 19 | 06:47 (33) | 22:19 | 17 | 21:38 (30) |
| 24 | 08:41 | | 09:30 (40) | 07:39 | | | 06:28 | | | 06:11 | | 20:17 (3) | 05:12 | | 06:29 (33) | 04:53 | | 21:21 (30) |
| | 16:52 | 22 | 09:52 (40) | 17:57 | | | 18:54 | | | 20:55 | 8 | 20:25 (3) | 21:51 | 18 | 06:47 (33) | 22:19 | 17 | 21:38 (30) |
| 25 | 08:39 | | 09:31 (40) | 07:36 | | | 06:26 | | | 06:09 | | 20:25 (3) | 05:10 | | 06:30 (33) | 04:53 | | 21:22 (30) |
| | 16:54 | 20 | 09:51 (40) | 17:59 | | | 18:56 | | | 20:57 | 1 | 20:26 (3) | 21:52 | 15 | 06:45 (33) | 22:19 | 16 | 21:38 (30) |
| 26 | 08:38 | | 09:31 (40) | 07:34 | | | 06:23 | | | 06:06 | | | 05:09 | | 06:31 (33) | 04:54 | | 21:22 (30) |
| | 16:56 | 20 | 09:51 (40) | 18:01 | | | 18:58 | | | 20:59 | | | 21:54 | 13 | 06:44 (33) | 22:19 | 16 | 21:38 (30) |
| 27 | 08:36 | | 09:33 (40) | 07:32 | | | 06:21 | | | 06:04 | | 20:29 (3) | 05:08 | | 06:33 (33) | 04:54 | | 21:23 (30) |
| | 16:58 | 18 | 09:51 (40) | 18:03 | | | 19:00 | | | 21:01 | 1 | 20:30 (3) | 21:55 | 9 | 06:42 (33) | 22:19 | 16 | 21:39 (30) |
| 28 | 08:34 | | 09:34 (40) | 07:29 | | | 06:18 | | | 06:02 | | 20:31 (3) | 05:06 | | | 04:55 | | 21:23 (30) |
| | 17:00 | 16 | 09:50 (40) | 18:05 | | | 19:02 | | | 21:03 | 1 | 20:32 (3) | 21:57 | | | 22:19 | 15 | 21:38 (30) |
| 29 | 08:33 | | 09:11 (41) | | | | 07:16 | | | 05:59 | | 20:32 (3) | 05:05 | | | 04:55 | | 21:24 (30) |
| | 17:02 | 16 | 09:49 (40) | | | | 20:04 | | | 21:05 | 1 | 20:33 (3) | 21:58 | | | 22:19 | 14 | 21:38 (30) |
| 30 | 08:31 | | 09:07 (41) | | | | 07:13 | | | 05:57 | | 06:33 (33) | 05:04 | | | 04:56 | | 21:24 (30) |
| | 17:04 | 21 | 09:47 (40) | | | | 20:06 | | | 21:07 | 13 | 20:34 (3) | 22:00 | | | 22:18 | 13 | 21:37 (30) |
| 31 | 08:29 | | 09:05 (41) | | | | 07:10 | | | | | | 05:03 | | | | | |
| | 17:06 | 16 | 09:21 (41) | | | | 20:08 | | | | | | 22:01 | | | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 465 | | | 516 | | | | | | 25 | | | 640 | | | 339 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,69 | | | 0,79 | | | | | | 0,94 | | | 0,93 | | | 0,80 | |
| Total reduction | | 0,12 | | | 0,19 | | | | | | 0,35 | | | 0,46 | | | 0,37 | |
| Total, real | | 55 | | | 95 | | | | | | 9 | | | 295 | | | 125 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: T - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 21:25 (30) | 05:40 | | 06:34 (33) | 06:38 | 07:35 | | | 07:37 | | 08:29 (41) | 08:35 | | 09:12 (40) |
| | 22:18 | 12 | 21:37 (30) | 21:40 | 29 | 07:03 (33) | 20:29 | 19:12 | | | 16:58 | 30 | 08:59 (41) | 16:10 | 15 | 09:27 (40) |
| 2 | 04:58 | | 21:26 (30) | 05:41 | | 06:33 (33) | 06:40 | 07:37 | | | 07:39 | | 08:28 (41) | 08:37 | | 09:14 (40) |
| | 22:18 | 11 | 21:37 (30) | 21:38 | 29 | 07:02 (33) | 20:27 | 19:10 | | | 16:56 | 31 | 08:59 (41) | 16:09 | 13 | 09:27 (40) |
| 3 | 04:58 | | 21:27 (30) | 05:43 | | 06:33 (33) | 06:42 | 07:38 | | | 07:41 | | 08:28 (41) | 08:38 | | 09:16 (40) |
| | 22:17 | 10 | 21:37 (30) | 21:36 | 29 | 07:02 (33) | 20:24 | 19:07 | | | 16:54 | 30 | 08:58 (41) | 16:08 | 11 | 09:27 (40) |
| 4 | 04:59 | | 21:27 (30) | 05:45 | | 06:34 (33) | 06:43 | 07:40 | | | 07:43 | | 08:28 (41) | 08:40 | | 09:17 (40) |
| | 22:17 | 8 | 21:35 (30) | 21:34 | 28 | 07:02 (33) | 20:22 | 19:04 | | | 16:51 | 30 | 08:58 (41) | 16:07 | 9 | 09:26 (40) |
| 5 | 05:00 | | 21:29 (30) | 05:47 | | 06:34 (33) | 06:45 | 07:42 | | | 07:45 | | 08:30 (41) | 08:41 | | 09:19 (40) |
| | 22:16 | 5 | 21:34 (30) | 21:32 | 28 | 07:02 (33) | 20:19 | 19:02 | | | 16:49 | 28 | 08:58 (41) | 16:07 | 7 | 09:26 (40) |
| 6 | 05:01 | | | 05:49 | | 06:34 (33) | 06:47 | 07:44 | | | 07:47 | | 08:30 (41) | 08:43 | | 09:21 (40) |
| | 22:15 | | | 21:30 | 27 | 07:01 (33) | 20:17 | 18:59 | | | 16:47 | 27 | 08:57 (41) | 16:06 | 5 | 09:26 (40) |
| 7 | 05:02 | | | 05:51 | | 06:35 (33) | 06:49 | 07:46 | | | 07:49 | | 08:31 (41) | 08:44 | | 09:22 (40) |
| | 22:15 | | | 21:28 | 26 | 07:01 (33) | 20:14 | 18:57 | | | 16:45 | 25 | 08:56 (41) | 16:06 | 2 | 09:24 (40) |
| 8 | 05:03 | | | 05:52 | | 06:35 (33) | 06:51 | 07:48 | | | 07:51 | | 08:31 (41) | 08:46 | | |
| | 22:14 | | | 21:26 | 25 | 07:00 (33) | 20:12 | 18:54 | | | 16:44 | 24 | 08:55 (41) | 16:05 | | |
| 9 | 05:04 | | | 05:54 | | 06:35 (33) | 06:53 | 07:50 | | | 07:53 | | 08:33 (41) | 08:47 | | |
| | 22:13 | | | 21:24 | 24 | 20:43 (3) | 20:09 | 18:52 | | | 16:42 | 22 | 08:55 (41) | 16:05 | | |
| 10 | 05:06 | | | 05:56 | | 06:37 (33) | 06:55 | 07:52 | | | 07:55 | | 08:34 (41) | 08:48 | | |
| | 22:12 | | | 21:21 | 22 | 20:43 (3) | 20:06 | 18:49 | | | 16:40 | 20 | 08:54 (41) | 16:04 | | |
| 11 | 05:07 | | | 05:58 | | 06:38 (33) | 06:57 | 07:54 | | | 07:57 | | 08:36 (41) | 08:49 | | |
| | 22:11 | | | 21:19 | 19 | 20:43 (3) | 20:04 | 18:47 | | | 16:38 | 16 | 08:52 (41) | 16:04 | | |
| 12 | 05:08 | | | 06:00 | | 06:40 (33) | 06:59 | 07:56 | | | 07:59 | | 08:38 (41) | 08:51 | | |
| | 22:10 | | | 21:17 | 17 | 20:43 (3) | 20:01 | 18:44 | | | 16:36 | 20 | 09:18 (40) | 16:04 | | |
| 13 | 05:09 | | | 06:02 | | 06:42 (33) | 07:00 | 07:58 | | | 08:01 | | 09:08 (40) | 08:52 | | |
| | 22:09 | | | 21:15 | 10 | 20:41 (3) | 19:59 | 18:42 | | | 16:34 | 13 | 09:21 (40) | 16:04 | | |
| 14 | 05:11 | | | 06:04 | | 20:39 (3) | 07:02 | 08:00 | | | 08:03 | | 09:06 (40) | 08:53 | | |
| | 22:08 | | | 21:13 | 2 | 20:41 (3) | 19:56 | 18:39 | | | 16:33 | 16 | 09:22 (40) | 16:04 | | |
| 15 | 05:12 | | | 06:06 | | 20:38 (3) | 07:04 | 08:02 | | | 08:05 | | 09:05 (40) | 08:54 | | |
| | 22:07 | | | 21:10 | 1 | 20:39 (3) | 19:53 | 18:37 | | | 16:31 | 18 | 09:23 (40) | 16:04 | | |
| 16 | 05:13 | | 06:44 (33) | 06:07 | | | 07:06 | 08:04 | | | 08:07 | | 09:04 (40) | 08:55 | | |
| | 22:05 | 6 | 06:50 (33) | 21:08 | | | 19:51 | 18:34 | | | 16:29 | 20 | 09:24 (40) | 16:04 | | |
| 17 | 05:15 | | 06:42 (33) | 06:09 | | | 07:08 | 08:06 | | | 08:09 | | 09:05 (40) | 08:55 | | |
| | 22:04 | 11 | 06:53 (33) | 21:06 | | | 19:48 | 18:32 | | | 16:28 | 20 | 09:25 (40) | 16:04 | | |
| 18 | 05:16 | | 06:40 (33) | 06:11 | | 20:31 (3) | 07:10 | 08:08 | | | 08:11 | | 09:04 (40) | 08:56 | | |
| | 22:03 | 14 | 06:54 (33) | 21:03 | 1 | 20:32 (3) | 19:46 | 18:30 | | | 16:26 | 22 | 09:26 (40) | 16:04 | | |
| 19 | 05:18 | | 06:39 (33) | 06:13 | | 20:23 (3) | 07:12 | 08:10 | | | 08:13 | | 09:04 (40) | 08:57 | | |
| | 22:01 | 17 | 06:56 (33) | 21:01 | 7 | 20:30 (3) | 19:43 | 18:27 | | | 16:24 | 22 | 09:26 (40) | 16:04 | | |
| 20 | 05:19 | | 06:38 (33) | 06:15 | | | 07:14 | 08:12 | | | 08:15 | | 09:04 (40) | 08:58 | | |
| | 22:00 | 19 | 06:57 (33) | 20:59 | | | 19:41 | 18:25 | | | 16:23 | 22 | 09:26 (40) | 16:04 | | |
| 21 | 05:21 | | 06:38 (33) | 06:17 | | | 07:16 | 08:14 | | 09:41 (41) | 08:17 | | 09:04 (40) | 08:58 | | |
| | 21:59 | 20 | 06:58 (33) | 20:56 | | | 19:38 | 18:22 | 6 | 09:47 (41) | 16:22 | 23 | 09:27 (40) | 16:05 | | |
| 22 | 05:23 | | 06:37 (33) | 06:19 | | | 07:17 | 08:16 | | 09:36 (41) | 08:19 | | 09:04 (40) | 08:59 | | |
| | 21:57 | 22 | 06:59 (33) | 20:54 | | | 19:35 | 18:20 | 15 | 09:51 (41) | 16:20 | 23 | 09:27 (40) | 16:05 | | |
| 23 | 05:24 | | 06:37 (33) | 06:21 | | | 07:19 | 08:18 | | 09:35 (41) | 08:21 | | 09:05 (40) | 08:59 | | |
| | 21:55 | 23 | 07:00 (33) | 20:52 | | | 19:33 | 18:18 | 19 | 09:54 (41) | 16:19 | 23 | 09:28 (40) | 16:06 | | |
| 24 | 05:26 | | 06:36 (33) | 06:23 | | | 07:21 | 08:20 | | 09:33 (41) | 08:23 | | 09:06 (40) | 09:00 | | |
| | 21:54 | 24 | 07:00 (33) | 20:49 | | | 19:30 | 18:15 | 22 | 09:55 (41) | 16:18 | 22 | 09:28 (40) | 16:06 | | |
| 25 | 05:27 | | 06:36 (33) | 06:24 | | | 07:23 | 07:22 | | 08:32 (41) | 08:25 | | 09:06 (40) | 09:00 | | |
| | 21:52 | 25 | 07:01 (33) | 20:47 | | | 19:28 | 17:13 | 24 | 08:56 (41) | 16:16 | 22 | 09:28 (40) | 16:07 | | |
| 26 | 05:29 | | 06:35 (33) | 06:26 | | | 07:25 | 07:24 | | 08:30 (41) | 08:26 | | 09:07 (40) | 09:00 | | |
| | 21:51 | 26 | 07:01 (33) | 20:44 | | | 19:25 | 17:11 | 27 | 08:57 (41) | 16:15 | 21 | 09:28 (40) | 16:08 | | |
| 27 | 05:31 | | 06:35 (33) | 06:28 | | | 07:27 | 07:26 | | 08:29 (41) | 08:28 | | 09:07 (40) | 09:01 | | |
| | 21:49 | 27 | 07:02 (33) | 20:42 | | | 19:22 | 17:09 | 28 | 08:57 (41) | 16:14 | 21 | 09:28 (40) | 16:09 | | |
| 28 | 05:33 | | 06:34 (33) | 06:30 | | | 07:29 | 07:28 | | 08:29 (41) | 08:30 | | 09:08 (40) | 09:01 | | |
| | 21:47 | 28 | 07:02 (33) | 20:39 | | | 19:20 | 17:06 | 29 | 08:58 (41) | 16:13 | 20 | 09:28 (40) | 16:09 | | |
| 29 | 05:34 | | 06:34 (33) | 06:32 | | | 07:31 | 07:30 | | 08:29 (41) | 08:32 | | 09:09 (40) | 09:01 | | |
| | 21:45 | 28 | 07:02 (33) | 20:37 | | | 19:17 | 17:04 | 29 | 08:58 (41) | 16:12 | 19 | 09:28 (40) | 16:10 | | |
| 30 | 05:36 | | 06:34 (33) | 06:34 | | | 07:33 | 07:32 | | 08:28 (41) | 08:33 | | 09:10 (40) | 09:01 | | |
| | 21:44 | 29 | 07:03 (33) | 20:34 | | | 19:15 | 17:02 | 30 | 08:58 (41) | 16:11 | 17 | 09:27 (40) | 16:11 | | |
| 31 | 05:38 | | 06:33 (33) | 06:36 | | | | 07:35 | | 08:28 (41) | | | | 09:01 | | |
| | 21:42 | 29 | 07:02 (33) | 20:32 | | | | 17:00 | 30 | 08:58 (41) | | | | 16:12 | | |
| Potential sun hours | 521 | | | 465 | | | 383 | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 394 | | | 324 | | | | 259 | | | 667 | | | 62 | |
| Sun reduction | | 0,49 | | | 0,51 | | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,92 | | | 0,93 | | | | 0,79 | | | 0,73 | | | 0,68 | |
| Total reduction | | 0,43 | | | 0,46 | | | | 0,23 | | | 0,11 | | | 0,09 | |
| Total, real | | 168 | | | 149 | | | | 60 | | | 73 | | | 5 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | 17:11 (38) | 07:08 | | 05:55 | 06:36 (33) | 05:02 | 05:51 (4) |
| | 16:14 | 17:08 | | 18:07 | 19 17:30 (38) | 20:10 | | 21:09 | 24 07:00 (33) | 22:02 | 1 05:52 (4) |
| 2 | 09:01 | 08:26 | | 07:24 | 17:12 (38) | 07:05 | | 05:53 | 06:36 (33) | 05:01 | 05:51 (4) |
| | 16:15 | 17:10 | | 18:09 | 18 17:30 (38) | 20:12 | | 21:11 | 24 07:00 (33) | 22:04 | 1 05:52 (4) |
| 3 | 09:00 | 08:24 | | 07:22 | 17:12 (38) | 07:03 | | 05:51 | 06:36 (33) | 05:00 | 05:52 (4) |
| | 16:16 | 17:12 | | 18:11 | 17 17:29 (38) | 20:13 | | 21:13 | 28 20:38 (3) | 22:05 | 1 05:53 (4) |
| 4 | 09:00 | 08:22 | | 07:19 | 17:14 (38) | 07:00 | | 05:48 | 06:36 (33) | 04:59 | |
| | 16:18 | 17:14 | | 18:14 | 14 17:28 (38) | 20:15 | | 21:14 | 29 20:41 (3) | 22:06 | |
| 5 | 09:00 | 08:20 | | 07:17 | 17:15 (38) | 06:58 | | 05:46 | 06:37 (33) | 04:58 | 05:51 (4) |
| | 16:19 | 17:17 | | 18:16 | 10 17:25 (38) | 20:17 | | 21:16 | 26 20:42 (3) | 22:07 | 1 05:52 (4) |
| 6 | 08:59 | 08:18 | | 07:14 | | 06:55 | | 05:44 | 06:37 (33) | 04:57 | 05:51 (4) |
| | 16:20 | 17:19 | | 18:18 | | 20:19 | | 21:18 | 25 20:44 (3) | 22:08 | 1 05:52 (4) |
| 7 | 08:59 | 08:16 | 08:46 (41) | 07:12 | | 06:53 | | 05:42 | 06:38 (33) | 04:56 | |
| | 16:22 | 17:21 | 9 08:55 (41) | 18:20 | | 20:21 | | 21:20 | 22 20:45 (3) | 22:10 | |
| 8 | 08:58 | 08:14 | 08:44 (41) | 07:09 | | 06:50 | | 05:40 | 06:39 (33) | 04:56 | |
| | 16:23 | 17:23 | 14 08:58 (41) | 18:22 | | 20:23 | | 21:22 | 19 20:46 (3) | 22:11 | |
| 9 | 08:57 | 08:12 | 08:42 (41) | 07:07 | | 06:48 | | 05:38 | 06:40 (33) | 04:55 | 05:52 (4) |
| | 16:25 | 17:25 | 18 09:00 (41) | 18:24 | | 20:25 | | 21:24 | 16 20:46 (3) | 22:12 | 1 05:53 (4) |
| 10 | 08:57 | 08:10 | 08:41 (41) | 07:04 | | 06:45 | | 05:36 | 06:41 (33) | 04:54 | |
| | 16:26 | 17:27 | 21 09:02 (41) | 18:26 | | 20:27 | | 21:26 | 14 20:47 (3) | 22:12 | |
| 11 | 08:56 | 08:08 | 08:40 (41) | 07:02 | | 06:43 | | 05:34 | 06:45 (33) | 04:54 | 05:52 (4) |
| | 16:28 | 17:29 | 22 09:02 (41) | 18:28 | | 20:29 | | 21:28 | 5 20:47 (3) | 22:13 | 1 05:53 (4) |
| 12 | 08:55 | 08:06 | 08:39 (41) | 06:59 | | 06:40 | | 05:32 | 20:46 (3) | 04:53 | |
| | 16:29 | 17:32 | 24 09:03 (41) | 18:30 | | 20:31 | | 21:30 | 2 20:48 (3) | 22:14 | |
| 13 | 08:54 | 08:04 | 08:39 (41) | 06:57 | | 06:38 | | 05:30 | 20:47 (3) | 04:53 | 05:52 (4) |
| | 16:31 | 17:34 | 25 09:04 (41) | 18:32 | | 20:33 | | 21:32 | 1 20:48 (3) | 22:15 | 1 05:53 (4) |
| 14 | 08:53 | 08:02 | 08:39 (41) | 06:54 | | 06:35 | | 05:28 | 20:47 (3) | 04:53 | |
| | 16:33 | 17:36 | 26 09:05 (41) | 18:34 | | 20:35 | | 21:33 | 1 20:48 (3) | 22:16 | |
| 15 | 08:52 | 07:59 | 08:38 (41) | 06:52 | | 06:33 | | 05:27 | 06:04 (4) | 04:53 | |
| | 16:35 | 17:38 | 26 09:04 (41) | 18:36 | | 20:37 | | 21:35 | 8 20:49 (3) | 22:16 | |
| 16 | 08:51 | 07:57 | 08:38 (41) | 06:49 | | 06:30 | | 05:25 | 06:00 (4) | 04:52 | |
| | 16:36 | 17:40 | 27 09:05 (41) | 18:38 | | 20:39 | | 21:37 | 15 20:49 (3) | 22:17 | |
| 17 | 08:50 | 07:55 | 08:39 (41) | 06:46 | | 06:28 | | 05:23 | 05:59 (4) | 04:52 | |
| | 16:38 | 17:42 | 26 09:05 (41) | 18:40 | | 20:41 | | 21:39 | 6 06:05 (4) | 22:17 | |
| 18 | 08:49 | 07:53 | 08:38 (41) | 06:44 | | 06:25 | | 05:21 | 05:57 (4) | 04:52 | |
| | 16:40 | 17:44 | 26 09:04 (41) | 18:42 | | 20:43 | | 21:41 | 6 20:49 (3) | 22:18 | |
| 19 | 08:48 | 07:50 | 08:39 (41) | 06:41 | | 06:23 | | 05:20 | 05:56 (4) | 04:52 | |
| | 16:42 | 17:46 | 25 09:04 (41) | 18:44 | | 20:45 | | 21:42 | 4 06:00 (4) | 22:18 | |
| 20 | 08:46 | 07:48 | 08:39 (41) | 06:39 | | 06:20 | | 05:18 | 05:55 (4) | 04:52 | |
| | 16:44 | 17:49 | 24 09:03 (41) | 18:46 | | 20:47 | | 21:44 | 3 05:58 (4) | 22:19 | |
| 21 | 08:45 | 07:46 | 08:40 (41) | 06:36 | | 06:18 | | 05:16 | 05:54 (4) | 04:52 | |
| | 16:46 | 17:51 | 25 17:21 (38) | 18:48 | | 20:49 | | 21:46 | 4 05:58 (4) | 22:19 | |
| 22 | 08:44 | 07:43 | 08:42 (41) | 06:34 | | 06:16 | 06:46 (33) | 05:15 | 05:53 (4) | 04:52 | |
| | 16:48 | 17:53 | 27 17:24 (38) | 18:50 | | 20:51 | 6 06:52 (33) | 21:47 | 3 05:56 (4) | 22:19 | |
| 23 | 08:42 | 07:41 | 08:42 (41) | 06:31 | | 06:13 | 06:43 (33) | 05:13 | 05:53 (4) | 04:53 | |
| | 16:50 | 17:55 | 29 17:26 (38) | 18:52 | | 20:53 | 12 06:55 (33) | 21:49 | 3 05:56 (4) | 22:19 | |
| 24 | 08:41 | 07:39 | 08:45 (41) | 06:28 | | 06:11 | 06:41 (33) | 05:12 | 05:53 (4) | 04:53 | |
| | 16:52 | 17:57 | 27 17:28 (38) | 18:54 | | 20:55 | 16 06:57 (33) | 21:51 | 2 05:55 (4) | 22:19 | |
| 25 | 08:39 | 07:36 | 17:12 (38) | 06:26 | | 06:09 | 06:40 (33) | 05:10 | 05:53 (4) | 04:53 | |
| | 16:54 | 17:59 | 18 17:30 (38) | 18:56 | | 20:57 | 19 06:59 (33) | 21:52 | 2 05:55 (4) | 22:19 | |
| 26 | 08:38 | 07:34 | 17:12 (38) | 06:23 | | 06:06 | 06:38 (33) | 05:09 | 05:52 (4) | 04:54 | |
| | 16:56 | 18:01 | 20 17:32 (38) | 18:58 | | 20:59 | 21 06:59 (33) | 21:54 | 2 05:54 (4) | 22:19 | |
| 27 | 08:36 | 07:32 | 17:11 (38) | 06:21 | | 06:04 | 06:37 (33) | 05:08 | 05:51 (4) | 04:54 | |
| | 16:58 | 18:03 | 20 17:31 (38) | 19:00 | | 21:01 | 22 06:59 (33) | 21:55 | 2 05:53 (4) | 22:19 | |
| 28 | 08:35 | 07:29 | 17:11 (38) | 06:18 | | 06:02 | 06:37 (33) | 05:06 | 05:51 (4) | 04:55 | |
| | 17:00 | 18:05 | 20 17:31 (38) | 19:02 | | 21:03 | 23 07:00 (33) | 21:57 | 2 05:53 (4) | 22:19 | |
| 29 | 08:33 | | | 07:16 | | 05:59 | 06:36 (33) | 05:05 | 05:51 (4) | 04:55 | |
| | 17:02 | | | 20:04 | | 21:05 | 24 07:00 (33) | 21:58 | 2 05:53 (4) | 22:19 | |
| 30 | 08:31 | | | 07:13 | | 05:57 | 06:36 (33) | 05:04 | 05:51 (4) | 04:56 | |
| | 17:04 | | | 20:06 | | 21:07 | 24 07:00 (33) | 22:00 | 2 05:53 (4) | 22:18 | |
| 31 | 08:29 | | | 07:10 | | | | 05:03 | 05:51 (4) | | |
| | 17:06 | | | 20:08 | | | | 22:01 | 1 05:52 (4) | | |
| Potential sun hours | 242 | 269 | | 366 | | 423 | | 501 | | 520 | |
| Total, worst case | | | 499 | | 78 | | 167 | | 303 | | 8 |
| Sun reduction | | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | 0,48 |
| Oper. time red. | | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 |
| Wind dir. red. | | | 0,86 | | 0,92 | | 0,95 | | 0,93 | | 0,87 |
| Total reduction | | | 0,21 | | 0,31 | | 0,37 | | 0,48 | | 0,41 |
| Total, real | | | 105 | | 24 | | 62 | | 144 | | 3 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: U - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 20:56 (3) | 06:38 | 07:35 | | | 07:37 | | 08:11 (41) | 08:35 |
| | 22:18 | | | 21:40 | 2 | 20:58 (3) | 20:29 | 19:12 | | | 16:58 | 20 | 08:31 (41) | 16:10 |
| 2 | 04:58 | | | 05:41 | | 06:53 (33) | 06:40 | 07:37 | | | 07:39 | | 08:12 (41) | 08:37 |
| | 22:18 | | | 21:38 | 9 | 20:57 (3) | 20:27 | 19:10 | | | 16:56 | 18 | 08:30 (41) | 16:09 |
| 3 | 04:58 | | | 05:43 | | 06:51 (33) | 06:42 | 07:38 | | | 07:41 | | 08:14 (41) | 08:38 |
| | 22:17 | | | 21:36 | 15 | 20:57 (3) | 20:24 | 19:07 | | | 16:54 | 14 | 08:28 (41) | 16:08 |
| 4 | 04:59 | | | 05:45 | | 06:50 (33) | 06:43 | 07:40 | | | 07:43 | | 08:16 (41) | 08:40 |
| | 22:17 | | | 21:34 | 17 | 20:56 (3) | 20:22 | 19:04 | | | 16:51 | 8 | 08:24 (41) | 16:08 |
| 5 | 05:00 | | 05:57 (4) | 05:47 | | 06:49 (33) | 06:45 | 07:42 | | | 07:45 | | | 08:41 |
| | 22:16 | 1 | 05:58 (4) | 21:32 | 20 | 20:56 (3) | 20:19 | 19:02 | | | 16:49 | | | 16:07 |
| 6 | 05:01 | | | 05:49 | | 06:47 (33) | 06:47 | 07:44 | | | 07:47 | | | 08:43 |
| | 22:15 | | | 21:30 | 22 | 20:54 (3) | 20:17 | 18:59 | | | 16:47 | | | 16:06 |
| 7 | 05:02 | | | 05:51 | | 06:46 (33) | 06:49 | 07:46 | | | 07:49 | | | 08:44 |
| | 22:15 | | | 21:28 | 25 | 20:53 (3) | 20:14 | 18:57 | | | 16:45 | | | 16:06 |
| 8 | 05:03 | | 05:58 (4) | 05:52 | | 06:46 (33) | 06:51 | 07:48 | | 17:52 (38) | 07:51 | | | 08:46 |
| | 22:14 | 1 | 05:59 (4) | 21:26 | 26 | 20:51 (3) | 20:12 | 18:54 | 7 | 17:59 (38) | 16:44 | | | 16:05 |
| 9 | 05:04 | | 05:58 (4) | 05:54 | | 06:45 (33) | 06:53 | 07:50 | | 17:49 (38) | 07:53 | | | 08:47 |
| | 22:13 | 1 | 05:59 (4) | 21:24 | 29 | 20:48 (3) | 20:09 | 18:52 | 12 | 18:01 (38) | 16:42 | | | 16:05 |
| 10 | 05:06 | | 05:58 (4) | 05:56 | | 06:45 (33) | 06:55 | 07:52 | | 17:47 (38) | 07:55 | | | 08:48 |
| | 22:12 | 1 | 05:59 (4) | 21:21 | 26 | 20:45 (3) | 20:06 | 18:49 | 15 | 18:02 (38) | 16:40 | | | 16:04 |
| 11 | 05:07 | | 05:59 (4) | 05:58 | | 06:44 (33) | 06:57 | 07:54 | | 17:45 (38) | 07:57 | | | 08:49 |
| | 22:11 | 2 | 06:01 (4) | 21:19 | 24 | 07:08 (33) | 20:04 | 18:47 | 18 | 18:03 (38) | 16:38 | | | 16:04 |
| 12 | 05:08 | | 06:00 (4) | 06:00 | | 06:45 (33) | 06:59 | 07:56 | | 17:44 (38) | 07:59 | | | 08:51 |
| | 22:10 | 1 | 06:01 (4) | 21:17 | 24 | 07:09 (33) | 20:01 | 18:44 | 20 | 18:04 (38) | 16:36 | | | 16:04 |
| 13 | 05:09 | | 06:00 (4) | 06:02 | | 06:44 (33) | 07:00 | 07:58 | | 17:44 (38) | 08:01 | | | 08:52 |
| | 22:09 | 1 | 06:01 (4) | 21:15 | 24 | 07:08 (33) | 19:59 | 18:42 | 20 | 18:04 (38) | 16:34 | | | 16:04 |
| 14 | 05:11 | | 06:00 (4) | 06:04 | | 06:44 (33) | 07:02 | 08:00 | | 17:43 (38) | 08:03 | | | 08:53 |
| | 22:08 | 1 | 06:01 (4) | 21:13 | 23 | 07:07 (33) | 19:56 | 18:39 | 21 | 18:04 (38) | 16:33 | | | 16:04 |
| 15 | 05:12 | | 06:00 (4) | 06:06 | | 06:44 (33) | 07:04 | 08:02 | | 17:43 (38) | 08:05 | | | 08:54 |
| | 22:07 | 1 | 06:01 (4) | 21:10 | 23 | 07:07 (33) | 19:54 | 18:37 | 20 | 18:03 (38) | 16:31 | | | 16:04 |
| 16 | 05:13 | | 06:01 (4) | 06:07 | | 06:45 (33) | 07:06 | 08:04 | | 17:44 (38) | 08:07 | | | 08:55 |
| | 22:05 | 2 | 06:03 (4) | 21:08 | 22 | 07:07 (33) | 19:51 | 18:34 | 20 | 18:04 (38) | 16:29 | | | 16:04 |
| 17 | 05:15 | | 06:01 (4) | 06:09 | | 06:45 (33) | 07:08 | 08:06 | | 09:19 (41) | 08:09 | | | 08:55 |
| | 22:04 | 2 | 06:03 (4) | 21:06 | 20 | 07:05 (33) | 19:48 | 18:32 | 24 | 18:01 (38) | 16:28 | | | 16:04 |
| 18 | 05:16 | | 06:01 (4) | 06:11 | | 06:46 (33) | 07:10 | 08:08 | | 09:15 (41) | 08:11 | | | 08:56 |
| | 22:03 | 2 | 06:03 (4) | 21:03 | 18 | 07:04 (33) | 19:46 | 18:30 | 28 | 17:59 (38) | 16:26 | | | 16:04 |
| 19 | 05:18 | | 06:02 (4) | 06:13 | | 06:47 (33) | 07:12 | 08:10 | | 09:13 (41) | 08:13 | | | 08:57 |
| | 22:01 | 2 | 06:04 (4) | 21:01 | 16 | 07:03 (33) | 19:43 | 18:27 | 29 | 17:56 (38) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 06:02 (4) | 06:15 | | 06:49 (33) | 07:14 | 08:12 | | 09:11 (41) | 08:15 | | | 08:58 |
| | 22:00 | 3 | 06:05 (4) | 20:59 | 12 | 07:01 (33) | 19:41 | 18:25 | 28 | 17:54 (38) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 06:04 (4) | 06:17 | | 06:53 (33) | 07:16 | 08:14 | | 09:10 (41) | 08:17 | | | 08:58 |
| | 21:59 | 2 | 06:06 (4) | 20:56 | 4 | 06:57 (33) | 19:38 | 18:22 | 24 | 17:51 (38) | 16:22 | | | 16:05 |
| 22 | 05:23 | | 06:04 (4) | 06:19 | | | 07:17 | 08:16 | | 09:09 (41) | 08:19 | | | 08:59 |
| | 21:57 | 3 | 06:07 (4) | 20:54 | | | 19:35 | 18:20 | 24 | 09:33 (41) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 06:05 (4) | 06:21 | | | 07:19 | 08:18 | | 09:09 (41) | 08:21 | | | 08:59 |
| | 21:56 | 3 | 06:08 (4) | 20:52 | | | 19:33 | 18:18 | 25 | 09:34 (41) | 16:19 | | | 16:06 |
| 24 | 05:26 | | 06:06 (4) | 06:23 | | | 07:21 | 08:20 | | 09:09 (41) | 08:23 | | | 09:00 |
| | 21:54 | 3 | 06:09 (4) | 20:49 | | | 19:30 | 18:15 | 25 | 09:34 (41) | 16:18 | | | 16:06 |
| 25 | 05:27 | | 06:07 (4) | 06:24 | | | 07:23 | 07:22 | | 08:08 (41) | 08:25 | | | 09:00 |
| | 21:52 | 5 | 21:00 (3) | 20:47 | | | 19:28 | 17:13 | 26 | 08:34 (41) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 06:08 (4) | 06:26 | | | 07:25 | 07:24 | | 08:08 (41) | 08:26 | | | 09:00 |
| | 21:51 | 5 | 06:13 (4) | 20:44 | | | 19:25 | 17:11 | 26 | 08:34 (41) | 16:15 | | | 16:08 |
| 27 | 05:31 | | 06:10 (4) | 06:28 | | | 07:27 | 07:26 | | 08:08 (41) | 08:28 | | | 09:01 |
| | 21:49 | 9 | 21:00 (3) | 20:42 | | | 19:22 | 17:09 | 26 | 08:34 (41) | 16:14 | | | 16:09 |
| 28 | 05:33 | | 06:12 (4) | 06:30 | | | 07:29 | 07:28 | | 08:09 (41) | 08:30 | | | 09:01 |
| | 21:47 | 12 | 20:59 (3) | 20:39 | | | 19:20 | 17:06 | 25 | 08:34 (41) | 16:13 | | | 16:09 |
| 29 | 05:34 | | 20:58 (3) | 06:32 | | | 07:31 | 07:30 | | 08:09 (41) | 08:32 | | | 09:01 |
| | 21:45 | 1 | 20:59 (3) | 20:37 | | | 19:17 | 17:04 | 24 | 08:33 (41) | 16:12 | | | 16:10 |
| 30 | 05:36 | | 20:58 (3) | 06:34 | | | 07:33 | 07:32 | | 08:09 (41) | 08:33 | | | 09:01 |
| | 21:44 | 1 | 20:59 (3) | 20:34 | | | 19:15 | 17:02 | 23 | 08:32 (41) | 16:11 | | | 16:11 |
| 31 | 05:38 | | 20:57 (3) | 06:36 | | | | 07:35 | | 08:10 (41) | | | | 09:01 |
| | 21:42 | 1 | 20:58 (3) | 20:32 | | | | 17:00 | 21 | 08:31 (41) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | 326 | | | 253 | | | 224 |
| Total, worst case | | 66 | | | 401 | | | | 531 | | | 60 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,87 | | | 0,95 | | | | 0,88 | | | 0,85 | | |
| Total reduction | | 0,42 | | | 0,48 | | | | 0,27 | | | 0,13 | | |
| Total, real | | 28 | | | 194 | | | | 141 | | | 8 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 11:58 (40) | 08:28 | | 09:43 (39) | 07:27 | 07:08 | | | 05:55 | | 06:32 (12) | 05:02 | | 21:11 (5) |
| | 16:14 | 81 | 13:42 (41) | 17:08 | 98 | 13:57 (41) | 18:07 | 20:09 | | | 21:09 | 6 | 06:38 (12) | 22:02 | 15 | 21:26 (5) |
| 2 | 09:01 | | 12:00 (40) | 08:26 | | 09:44 (39) | 07:24 | 07:05 | | | 05:53 | | 06:20 (11) | 05:01 | | 21:11 (5) |
| | 16:15 | 79 | 13:43 (41) | 17:10 | 94 | 13:56 (41) | 18:09 | 20:11 | | | 21:11 | 2 | 06:22 (11) | 22:04 | 16 | 21:27 (5) |
| 3 | 09:00 | | 12:01 (40) | 08:24 | | 09:45 (39) | 07:22 | 07:03 | | | 05:51 | | 06:18 (11) | 05:00 | | 21:11 (5) |
| | 16:16 | 79 | 13:45 (41) | 17:12 | 93 | 13:56 (41) | 18:11 | 20:13 | | | 21:12 | 6 | 06:24 (11) | 22:05 | 17 | 21:28 (5) |
| 4 | 09:00 | | 09:48 (39) | 08:22 | | 09:46 (39) | 07:19 | 07:00 | | | 05:48 | | 06:16 (11) | 04:59 | | 21:12 (5) |
| | 16:17 | 83 | 13:45 (41) | 17:14 | 90 | 13:56 (41) | 18:13 | 20:15 | | | 21:14 | 8 | 06:24 (11) | 22:06 | 17 | 21:29 (5) |
| 5 | 09:00 | | 09:46 (39) | 08:20 | | 09:47 (39) | 07:17 | 06:58 | | | 05:46 | | 06:14 (11) | 04:58 | | 21:11 (5) |
| | 16:19 | 85 | 13:45 (41) | 17:17 | 87 | 13:56 (41) | 18:16 | 20:17 | | | 21:16 | 11 | 06:25 (11) | 22:07 | 19 | 21:30 (5) |
| 6 | 08:59 | | 09:45 (39) | 08:18 | | 09:48 (39) | 07:14 | 06:55 | | | 05:44 | | 06:12 (11) | 04:57 | | 21:11 (5) |
| | 16:20 | 86 | 13:46 (41) | 17:19 | 82 | 13:54 (41) | 18:18 | 20:19 | | | 21:18 | 13 | 06:25 (11) | 22:08 | 20 | 21:31 (5) |
| 7 | 08:59 | | 09:44 (39) | 08:16 | | 09:50 (39) | 07:12 | 06:53 | | | 05:42 | | 06:10 (11) | 04:56 | | 21:12 (5) |
| | 16:22 | 87 | 13:47 (41) | 17:21 | 77 | 13:54 (41) | 18:20 | 20:21 | | | 21:20 | 15 | 06:25 (11) | 22:09 | 20 | 21:32 (5) |
| 8 | 08:58 | | 09:43 (39) | 08:14 | | 09:52 (39) | 07:09 | 06:50 | | | 05:40 | | 06:08 (11) | 04:56 | | 21:11 (5) |
| | 16:23 | 82 | 13:47 (41) | 17:23 | 71 | 13:53 (41) | 18:22 | 20:23 | | | 21:22 | 17 | 06:25 (11) | 22:10 | 22 | 21:33 (5) |
| 9 | 08:57 | | 09:43 (39) | 08:12 | | 09:56 (39) | 07:07 | 06:47 | | | 05:38 | | 06:07 (11) | 04:55 | | 21:12 (5) |
| | 16:25 | 81 | 13:48 (41) | 17:25 | 62 | 13:52 (41) | 18:24 | 20:25 | | | 21:24 | 18 | 06:25 (11) | 22:11 | 22 | 21:34 (5) |
| 10 | 08:57 | | 09:42 (39) | 08:10 | | 13:00 (41) | 07:04 | 06:45 | | 07:10 (13) | 05:36 | | 06:07 (11) | 04:54 | | 21:12 (5) |
| | 16:26 | 84 | 13:49 (41) | 17:27 | 52 | 13:52 (41) | 18:26 | 20:27 | 1 | 07:11 (13) | 21:26 | 17 | 06:24 (11) | 22:12 | 22 | 21:34 (5) |
| 11 | 08:56 | | 09:42 (39) | 08:08 | | 13:00 (41) | 07:02 | 06:42 | | 07:07 (13) | 05:34 | | 06:07 (11) | 04:54 | | 21:12 (5) |
| | 16:28 | 85 | 13:49 (41) | 17:29 | 50 | 13:50 (41) | 18:28 | 20:29 | 5 | 07:12 (13) | 21:28 | 17 | 06:24 (11) | 22:13 | 23 | 21:35 (5) |
| 12 | 08:55 | | 09:42 (39) | 08:06 | | 13:02 (41) | 06:59 | 06:40 | | 07:05 (13) | 05:32 | | 06:08 (11) | 04:53 | | 21:13 (5) |
| | 16:29 | 87 | 13:50 (41) | 17:31 | 47 | 13:49 (41) | 18:30 | 20:31 | 8 | 07:13 (13) | 21:30 | 16 | 06:24 (11) | 22:14 | 22 | 21:35 (5) |
| 13 | 08:54 | | 09:41 (39) | 08:04 | | 13:04 (41) | 06:57 | 06:37 | | 07:02 (13) | 05:30 | | 06:08 (11) | 04:53 | | 21:12 (5) |
| | 16:31 | 90 | 13:51 (41) | 17:34 | 43 | 13:47 (41) | 18:32 | 20:33 | 11 | 07:13 (13) | 21:31 | 15 | 06:23 (11) | 22:15 | 23 | 21:35 (5) |
| 14 | 08:53 | | 09:41 (39) | 08:01 | | 13:07 (41) | 06:54 | 06:35 | | 07:00 (13) | 05:28 | | 06:09 (11) | 04:53 | | 21:13 (5) |
| | 16:33 | 92 | 13:52 (41) | 17:36 | 39 | 13:46 (41) | 18:34 | 20:35 | 14 | 07:14 (13) | 21:33 | 13 | 06:22 (11) | 22:16 | 22 | 21:35 (5) |
| 15 | 08:52 | | 09:40 (39) | 07:59 | | 13:09 (41) | 06:52 | 06:33 | | 06:57 (13) | 05:27 | | 06:11 (11) | 04:52 | | 21:13 (5) |
| | 16:35 | 92 | 13:51 (41) | 17:38 | 34 | 13:43 (41) | 18:36 | 20:37 | 16 | 07:13 (13) | 21:35 | 10 | 06:21 (11) | 22:16 | 22 | 21:35 (5) |
| 16 | 08:51 | | 09:40 (39) | 07:57 | | 13:12 (41) | 06:49 | 06:30 | | 06:56 (13) | 05:25 | | 06:12 (11) | 04:52 | | 21:13 (5) |
| | 16:36 | 95 | 13:52 (41) | 17:40 | 28 | 13:40 (41) | 18:38 | 20:39 | 17 | 07:13 (13) | 21:37 | 7 | 06:19 (11) | 22:17 | 23 | 21:36 (5) |
| 17 | 08:50 | | 09:41 (39) | 07:55 | | 13:16 (41) | 06:46 | 06:28 | | 06:56 (13) | 05:23 | | | 04:52 | | 21:14 (5) |
| | 16:38 | 95 | 13:53 (41) | 17:42 | 19 | 13:35 (41) | 18:40 | 20:41 | 17 | 07:13 (13) | 21:39 | | | 22:17 | 22 | 21:36 (5) |
| 18 | 08:49 | | 09:40 (39) | 07:53 | | | 06:44 | 06:25 | | 06:56 (13) | 05:21 | | | 04:52 | | 21:14 (5) |
| | 16:40 | 97 | 13:53 (41) | 17:44 | | | 18:42 | 20:43 | 15 | 07:11 (13) | 21:40 | | | 22:18 | 22 | 21:36 (5) |
| 19 | 08:48 | | 09:40 (39) | 07:50 | | | 06:41 | 06:23 | | 06:57 (13) | 05:20 | | | 04:52 | | 21:14 (5) |
| | 16:42 | 98 | 13:54 (41) | 17:46 | | | 18:44 | 20:45 | 13 | 07:10 (13) | 21:42 | | | 22:18 | 22 | 21:36 (5) |
| 20 | 08:46 | | 09:40 (39) | 07:48 | | | 06:39 | 06:20 | | 06:59 (13) | 05:18 | | | 04:52 | | 21:14 (5) |
| | 16:44 | 98 | 13:54 (41) | 17:48 | | | 18:46 | 20:47 | 10 | 07:09 (13) | 21:44 | | | 22:18 | 22 | 21:36 (5) |
| 21 | 08:45 | | 09:40 (39) | 07:46 | | | 06:36 | 06:18 | | 07:01 (13) | 05:16 | | | 04:52 | | 21:14 (5) |
| | 16:46 | 101 | 13:55 (41) | 17:51 | | | 18:48 | 20:49 | 3 | 07:04 (13) | 21:46 | | | 22:19 | 22 | 21:36 (5) |
| 22 | 08:44 | | 09:40 (39) | 07:43 | | | 06:34 | 06:16 | | | 05:15 | | | 04:52 | | 21:15 (5) |
| | 16:48 | 101 | 13:55 (41) | 17:53 | | | 18:50 | 20:51 | | | 21:47 | | | 22:19 | 22 | 21:37 (5) |
| 23 | 08:42 | | 09:40 (39) | 07:41 | | | 06:31 | 06:13 | | 06:39 (12) | 05:13 | | | 04:53 | | 21:15 (5) |
| | 16:50 | 101 | 13:55 (41) | 17:55 | | | 18:52 | 20:53 | 3 | 06:42 (12) | 21:49 | | | 22:19 | 22 | 21:37 (5) |
| 24 | 08:41 | | 09:41 (39) | 07:39 | | | 06:28 | 06:11 | | 06:37 (12) | 05:12 | | | 04:53 | | 21:15 (5) |
| | 16:52 | 101 | 13:56 (41) | 17:57 | | | 18:54 | 20:55 | 6 | 06:43 (12) | 21:51 | | | 22:19 | 22 | 21:37 (5) |
| 25 | 08:39 | | 09:40 (39) | 07:36 | | | 06:26 | 06:08 | | 06:34 (12) | 05:10 | | 21:15 (5) | 04:53 | | 21:16 (5) |
| | 16:54 | 102 | 13:56 (41) | 17:59 | | | 18:56 | 20:57 | 8 | 06:42 (12) | 21:52 | 1 | 21:16 (5) | 22:19 | 22 | 21:38 (5) |
| 26 | 08:38 | | 09:40 (39) | 07:34 | | | 06:23 | 06:06 | | 06:32 (12) | 05:09 | | 21:14 (5) | 04:54 | | 21:15 (5) |
| | 16:56 | 102 | 13:56 (41) | 18:01 | | | 18:58 | 20:59 | 10 | 06:42 (12) | 21:54 | 4 | 21:18 (5) | 22:19 | 23 | 21:38 (5) |
| 27 | 08:36 | | 09:41 (39) | 07:31 | | | 06:21 | 06:04 | | 06:30 (12) | 05:08 | | 21:13 (5) | 04:54 | | 21:16 (5) |
| | 16:58 | 101 | 13:56 (41) | 18:03 | | | 19:00 | 21:01 | 12 | 06:42 (12) | 21:55 | 6 | 21:19 (5) | 22:19 | 23 | 21:39 (5) |
| 28 | 08:34 | | 09:42 (39) | 07:29 | | | 06:18 | 06:02 | | 06:28 (12) | 05:06 | | 21:13 (5) | 04:55 | | 21:16 (5) |
| | 17:00 | 100 | 13:57 (41) | 18:05 | | | 19:02 | 21:03 | 14 | 06:42 (12) | 21:57 | 8 | 21:21 (5) | 22:19 | 22 | 21:38 (5) |
| 29 | 08:33 | | 09:42 (39) | | | | 07:16 | 05:59 | | 06:29 (12) | 05:05 | | 21:12 (5) | 04:55 | | 21:16 (5) |
| | 17:02 | 100 | 13:57 (41) | | | | 20:04 | 21:05 | 12 | 06:41 (12) | 21:58 | 10 | 21:22 (5) | 22:19 | 23 | 21:39 (5) |
| 30 | 08:31 | | 09:42 (39) | | | | 07:13 | 05:57 | | 06:30 (12) | 05:04 | | 21:12 (5) | 04:56 | | 21:16 (5) |
| | 17:04 | 100 | 13:57 (41) | | | | 20:06 | 21:07 | 10 | 06:40 (12) | 22:00 | 12 | 21:24 (5) | 22:18 | 22 | 21:38 (5) |
| 31 | 08:29 | | 09:43 (39) | | | | 07:10 | | | | 05:03 | | 21:12 (5) | | | |
| | 17:06 | 98 | 13:57 (41) | | | | 20:07 | | | | 22:01 | 13 | 21:25 (5) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 2863 | | | 1066 | | | | 205 | | | 245 | | | 636 | |
| Sun reduction | | 0,18 | | | 0,25 | | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,28 | | | 0,25 | | | | 0,97 | | | 0,89 | | | 0,82 | |
| Total reduction | | 0,04 | | | 0,05 | | | | 0,29 | | | 0,35 | | | 0,30 | |
| Total, real | | 110 | | | 50 | | | | 59 | | | 85 | | | 191 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
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+8 621 66746
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: V - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | | 05:40 | | 06:18 (11) | 06:38 | | 07:06 (13) | 07:35 | | | 07:37 | | 12:28 (41) | 08:35 | | 09:24 (39) |
| | 22:18 | | | 21:40 | 16 | 06:34 (11) | 20:29 | 5 | 07:11 (13) | 19:12 | | | 16:58 | 52 | 13:20 (41) | 16:10 | 86 | 13:31 (41) |
| 2 | 04:57 | | | 05:41 | | 06:17 (11) | 06:40 | | 07:08 (13) | 07:36 | | | 07:39 | | 09:25 (39) | 08:37 | | 09:25 (39) |
| | 22:18 | | | 21:38 | 17 | 06:34 (11) | 20:27 | 1 | 07:09 (13) | 19:09 | | | 16:56 | 63 | 13:22 (41) | 16:09 | 84 | 13:32 (41) |
| 3 | 04:58 | | 21:39 (5) | 05:43 | | 06:17 (11) | 06:41 | | | 07:38 | | | 07:41 | | 09:22 (39) | 08:38 | | 09:27 (39) |
| | 22:17 | 1 | 21:40 (5) | 21:36 | 18 | 06:35 (11) | 20:24 | | | 19:07 | | | 16:53 | 71 | 13:23 (41) | 16:08 | 81 | 13:32 (41) |
| 4 | 04:59 | | | 05:45 | | 06:17 (11) | 06:43 | | | 07:40 | | | 07:43 | | 09:19 (39) | 08:40 | | 09:27 (39) |
| | 22:16 | | | 21:34 | 18 | 06:35 (11) | 20:22 | | | 19:04 | | | 16:51 | 78 | 13:23 (41) | 16:07 | 82 | 13:32 (41) |
| 5 | 05:00 | | | 05:47 | | 06:18 (11) | 06:45 | | | 07:42 | | | 07:45 | | 09:18 (39) | 08:41 | | 09:29 (39) |
| | 22:16 | | | 21:32 | 16 | 06:34 (11) | 20:19 | | | 19:02 | | | 16:49 | 84 | 13:25 (41) | 16:07 | 87 | 13:32 (41) |
| 6 | 05:01 | | | 05:49 | | 06:20 (11) | 06:47 | | | 07:44 | | | 07:47 | | 09:17 (39) | 08:43 | | 09:31 (39) |
| | 22:15 | | | 21:30 | 14 | 06:34 (11) | 20:17 | | | 18:59 | | | 16:47 | 86 | 13:25 (41) | 16:06 | 87 | 13:33 (41) |
| 7 | 05:02 | | | 05:50 | | 06:22 (11) | 06:49 | | | 07:46 | | | 07:49 | | 09:16 (39) | 08:44 | | 09:33 (39) |
| | 22:14 | | | 21:28 | 12 | 06:34 (11) | 20:14 | | | 18:57 | | | 16:45 | 90 | 13:26 (41) | 16:06 | 86 | 13:32 (41) |
| 8 | 05:03 | | | 05:52 | | 06:24 (11) | 06:51 | | | 07:48 | | | 07:51 | | 09:15 (39) | 08:45 | | 09:36 (39) |
| | 22:14 | | | 21:26 | 10 | 06:34 (11) | 20:11 | | | 18:54 | | | 16:43 | 92 | 13:26 (41) | 16:05 | 83 | 13:33 (41) |
| 9 | 05:04 | | | 05:54 | | 06:25 (11) | 06:53 | | | 07:50 | | | 07:53 | | 09:15 (39) | 08:47 | | 11:50 (40) |
| | 22:13 | | | 21:23 | 8 | 06:33 (11) | 20:09 | | | 18:52 | | | 16:42 | 95 | 13:27 (41) | 16:05 | 78 | 13:33 (41) |
| 10 | 05:05 | | | 05:56 | | 06:27 (11) | 06:55 | | | 07:52 | | | 07:55 | | 09:14 (39) | 08:48 | | 11:49 (40) |
| | 22:12 | | | 21:21 | 5 | 06:32 (11) | 20:06 | | | 18:49 | | | 16:40 | 96 | 13:27 (41) | 16:04 | 80 | 13:33 (41) |
| 11 | 05:07 | | | 05:58 | | 06:29 (11) | 06:57 | | | 07:54 | | | 07:57 | | 09:14 (39) | 08:49 | | 11:49 (40) |
| | 22:11 | | | 21:19 | 1 | 06:30 (11) | 20:04 | | | 18:47 | | | 16:38 | 99 | 13:28 (41) | 16:04 | 81 | 13:33 (41) |
| 12 | 05:08 | | | 06:00 | | 06:39 (12) | 06:58 | | | 07:56 | | | 07:59 | | 09:13 (39) | 08:50 | | 11:49 (40) |
| | 22:10 | | | 21:17 | 8 | 06:47 (12) | 20:01 | | | 18:44 | | | 16:36 | 100 | 13:28 (41) | 16:04 | 81 | 13:34 (41) |
| 13 | 05:09 | | | 06:02 | | 06:37 (12) | 07:00 | | | 07:58 | | | 08:01 | | 09:14 (39) | 08:52 | | 11:49 (40) |
| | 22:09 | | | 21:15 | 11 | 06:48 (12) | 19:59 | | | 18:42 | | | 16:34 | 100 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 14 | 05:11 | | | 06:04 | | 06:36 (12) | 07:02 | | | 08:00 | | | 08:03 | | 09:14 (39) | 08:53 | | 11:49 (40) |
| | 22:08 | | | 21:12 | 13 | 06:49 (12) | 19:56 | | | 18:39 | | | 16:33 | 100 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 15 | 05:12 | | | 06:05 | | 06:36 (12) | 07:04 | | | 08:02 | | | 08:05 | | 09:13 (39) | 08:54 | | 11:49 (40) |
| | 22:07 | | | 21:10 | 13 | 06:49 (12) | 19:53 | | | 18:37 | | | 16:31 | 102 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 16 | 05:13 | | | 06:07 | | 06:38 (12) | 07:06 | | | 08:04 | | | 08:07 | | 09:13 (39) | 08:55 | | 11:49 (40) |
| | 22:05 | | | 21:08 | 12 | 06:50 (12) | 19:51 | | | 18:34 | | | 16:29 | 102 | 13:29 (41) | 16:04 | 82 | 13:34 (41) |
| 17 | 05:15 | | | 06:09 | | 06:39 (12) | 07:08 | | | 08:06 | | | 08:09 | | 09:14 (39) | 08:55 | | 11:50 (40) |
| | 22:04 | | | 21:06 | 10 | 06:49 (12) | 19:48 | | | 18:32 | | | 16:28 | 102 | 13:30 (41) | 16:04 | 82 | 13:35 (41) |
| 18 | 05:16 | | | 06:11 | | 06:41 (12) | 07:10 | | | 08:08 | | | 08:11 | | 09:15 (39) | 08:56 | | 11:50 (40) |
| | 22:03 | | | 21:03 | 8 | 06:49 (12) | 19:46 | | | 18:30 | | | 16:26 | 101 | 13:30 (41) | 16:04 | 84 | 13:36 (41) |
| 19 | 05:18 | | | 06:13 | | 06:43 (12) | 07:12 | | | 08:10 | | | 08:13 | | 09:15 (39) | 08:57 | | 11:50 (40) |
| | 22:01 | | | 21:01 | 6 | 06:49 (12) | 19:43 | | | 18:27 | | | 16:24 | 101 | 13:30 (41) | 16:04 | 83 | 13:35 (41) |
| 20 | 05:19 | | | 06:15 | | 06:45 (12) | 07:14 | | | 08:12 | | | 08:15 | | 09:15 (39) | 08:58 | | 11:51 (40) |
| | 22:00 | | | 20:59 | 3 | 06:48 (12) | 19:40 | | | 18:25 | | | 16:23 | 101 | 13:30 (41) | 16:04 | 83 | 13:36 (41) |
| 21 | 05:21 | | | 06:17 | | | 07:15 | | | 08:14 | | | 08:17 | | 09:15 (39) | 08:58 | | 11:52 (40) |
| | 21:58 | | | 20:56 | | | 19:38 | | | 18:22 | | | 16:21 | 101 | 13:30 (41) | 16:05 | 82 | 13:37 (41) |
| 22 | 05:22 | | | 06:19 | | 07:05 (13) | 07:17 | | | 08:16 | | | 08:19 | | 09:16 (39) | 08:59 | | 11:52 (40) |
| | 21:57 | | | 20:54 | 5 | 07:10 (13) | 19:35 | | | 18:20 | | | 16:20 | 99 | 13:30 (41) | 16:05 | 82 | 13:37 (41) |
| 23 | 05:24 | | | 06:21 | | 07:02 (13) | 07:19 | | | 08:18 | | | 08:21 | | 09:16 (39) | 08:59 | | 11:53 (40) |
| | 21:55 | | | 20:51 | 11 | 07:13 (13) | 19:33 | | | 18:18 | | | 16:19 | 98 | 13:30 (41) | 16:06 | 82 | 13:38 (41) |
| 24 | 05:26 | | | 06:23 | | 07:01 (13) | 07:21 | | | 08:20 | | 13:54 (41) | 08:23 | | 09:18 (39) | 09:00 | | 11:53 (40) |
| | 21:54 | | | 20:49 | 13 | 07:14 (13) | 19:30 | | | 18:15 | 5 | 13:59 (41) | 16:17 | 97 | 13:31 (41) | 16:06 | 83 | 13:38 (41) |
| 25 | 05:27 | | | 06:24 | | 07:00 (13) | 07:23 | | | 07:22 | | 12:45 (41) | 08:25 | | 09:19 (39) | 09:00 | | 11:53 (40) |
| | 21:52 | | | 20:47 | 15 | 07:15 (13) | 19:27 | | | 17:13 | 22 | 13:07 (41) | 16:16 | 95 | 13:31 (41) | 16:07 | 83 | 13:38 (41) |
| 26 | 05:29 | | | 06:26 | | 06:58 (13) | 07:25 | | | 07:24 | | 12:41 (41) | 08:26 | | 09:20 (39) | 09:00 | | 11:54 (40) |
| | 21:51 | | | 20:44 | 17 | 07:15 (13) | 19:25 | | | 17:11 | 29 | 13:10 (41) | 16:15 | 94 | 13:31 (41) | 16:08 | 82 | 13:39 (41) |
| 27 | 05:31 | | 06:25 (11) | 06:28 | | 06:57 (13) | 07:27 | | | 07:26 | | 12:37 (41) | 08:28 | | 09:20 (39) | 09:01 | | 11:54 (40) |
| | 21:49 | 2 | 06:27 (11) | 20:42 | 18 | 07:15 (13) | 19:22 | | | 17:09 | 36 | 13:13 (41) | 16:14 | 93 | 13:31 (41) | 16:09 | 82 | 13:39 (41) |
| 28 | 05:32 | | 06:22 (11) | 06:30 | | 06:59 (13) | 07:29 | | | 07:28 | | 12:36 (41) | 08:30 | | 09:21 (39) | 09:01 | | 11:55 (40) |
| | 21:47 | 8 | 06:30 (11) | 20:39 | 16 | 07:15 (13) | 19:20 | | | 17:06 | 40 | 13:16 (41) | 16:13 | 92 | 13:32 (41) | 16:09 | 82 | 13:40 (41) |
| 29 | 05:34 | | 06:20 (11) | 06:32 | | 07:01 (13) | 07:31 | | | 07:30 | | 12:33 (41) | 08:32 | | 09:21 (39) | 09:01 | | 11:56 (40) |
| | 21:45 | 12 | 06:32 (11) | 20:37 | 14 | 07:15 (13) | 19:17 | | | 17:04 | 44 | 13:17 (41) | 16:12 | 90 | 13:31 (41) | 16:10 | 82 | 13:41 (41) |
| 30 | 05:36 | | 06:19 (11) | 06:34 | | 07:03 (13) | 07:33 | | | 07:32 | | 12:32 (41) | 08:33 | | 09:23 (39) | 09:01 | | 11:57 (40) |
| | 21:43 | 13 | 06:32 (11) | 20:34 | 11 | 07:14 (13) | 19:15 | | | 17:02 | 46 | 13:18 (41) | 16:11 | 87 | 13:31 (41) | 16:11 | 81 | 13:41 (41) |
| 31 | 05:38 | | 06:18 (11) | 06:36 | | 07:04 (13) | | | | 07:34 | | 12:30 (41) | | | | 09:01 | | 11:58 (40) |
| | 21:42 | 15 | 06:33 (11) | 20:32 | 8 | 07:12 (13) | | | | 17:00 | 50 | 13:20 (41) | | | | 16:12 | 80 | 13:42 (41) |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | 51 | | | 347 | | | 6 | | | 272 | | | 2761 | | | 2557 | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,90 | | | 0,94 | | | 0,98 | | | 0,15 | | | 0,30 | | | 0,17 | |
| Total reduction | | 0,33 | | | 0,37 | | | 0,29 | | | 0,04 | | | 0,04 | | | 0,02 | |
| Total, real | | 17 | | | 127 | | | 2 | | | 10 | | | 100 | | | 44 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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LT-54469 Kauno r. sav.
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:27 (14) | 08:27 | | 09:03 (36) | 07:26 | | | 07:08 | | 19:02 (39) | 05:55 | | 06:41 (6) | 05:02 |
| | 16:14 | 14 | 10:41 (14) | 17:08 | 21 | 09:24 (36) | 18:07 | | | 20:09 | 30 | 19:32 (39) | 21:08 | 2 | 06:43 (6) | 22:02 |
| 2 | 09:00 | | 10:29 (14) | 08:26 | | 09:02 (36) | 07:24 | | | 07:05 | | 19:02 (39) | 05:53 | | 06:40 (6) | 05:01 |
| | 16:15 | 12 | 10:41 (14) | 17:10 | 23 | 09:25 (36) | 18:09 | | | 20:11 | 31 | 19:33 (39) | 21:10 | 2 | 06:42 (6) | 22:03 |
| 3 | 09:00 | | 10:30 (14) | 08:24 | | 09:02 (36) | 07:22 | | | 07:03 | | 19:01 (39) | 05:50 | | 06:40 (6) | 05:00 |
| | 16:16 | 10 | 10:40 (14) | 17:12 | 23 | 09:25 (36) | 18:11 | | | 20:13 | 31 | 19:32 (39) | 21:12 | 1 | 06:41 (6) | 22:05 |
| 4 | 09:00 | | 10:32 (14) | 08:22 | | 09:01 (36) | 07:19 | | | 07:00 | | 19:00 (39) | 05:48 | | 06:39 (6) | 04:59 |
| | 16:17 | 8 | 10:40 (14) | 17:14 | 24 | 09:25 (36) | 18:13 | | | 20:15 | 31 | 19:31 (39) | 21:14 | 2 | 06:41 (6) | 22:06 |
| 5 | 08:59 | | 10:34 (14) | 08:20 | | 09:01 (36) | 07:17 | | | 06:57 | | 19:01 (39) | 05:46 | | 06:39 (6) | 04:58 |
| | 16:19 | 3 | 10:37 (14) | 17:16 | 24 | 09:25 (36) | 18:15 | | | 20:17 | 30 | 19:31 (39) | 21:16 | 1 | 06:40 (6) | 22:07 |
| 6 | 08:59 | | | 08:18 | | 09:02 (36) | 07:14 | | | 06:55 | | 19:00 (39) | 05:44 | | 06:40 (6) | 04:57 |
| | 16:20 | | | 17:19 | 23 | 09:25 (36) | 18:17 | | | 20:19 | 30 | 19:30 (39) | 21:18 | 1 | 06:41 (6) | 22:08 |
| 7 | 08:58 | | | 08:16 | | 09:02 (36) | 07:12 | | | 06:52 | | 19:01 (39) | 05:42 | | | 04:56 |
| | 16:21 | | | 17:21 | 24 | 09:26 (36) | 18:19 | | | 20:21 | 29 | 19:30 (39) | 21:20 | | | 22:09 |
| 8 | 08:58 | | | 08:14 | | 09:03 (36) | 07:09 | | | 06:50 | | 19:01 (39) | 05:40 | | | 04:56 |
| | 16:23 | | | 17:23 | 22 | 09:25 (36) | 18:22 | | | 20:23 | 27 | 19:28 (39) | 21:22 | | | 22:10 |
| 9 | 08:57 | | | 08:12 | | 09:03 (36) | 07:07 | | | 06:47 | | 19:02 (39) | 05:38 | | | 04:55 |
| | 16:24 | | | 17:25 | 22 | 09:25 (36) | 18:24 | | | 20:25 | 26 | 19:28 (39) | 21:24 | | | 22:11 |
| 10 | 08:56 | | | 08:10 | | 09:03 (36) | 07:04 | | | 06:45 | | 19:02 (39) | 05:36 | | | 04:54 |
| | 16:26 | | | 17:27 | 21 | 09:24 (36) | 18:26 | | | 20:27 | 24 | 19:26 (39) | 21:26 | | | 22:12 |
| 11 | 08:56 | | | 08:08 | | 09:05 (36) | 07:02 | | | 06:42 | | 19:04 (39) | 05:34 | | | 04:54 |
| | 16:28 | | | 17:29 | 18 | 09:23 (36) | 18:28 | | | 20:29 | 20 | 19:24 (39) | 21:28 | | | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:06 (36) | 06:59 | | | 06:40 | | 19:06 (39) | 05:32 | | | 04:53 |
| | 16:29 | | | 17:31 | 16 | 09:22 (36) | 18:30 | | | 20:31 | 17 | 19:23 (39) | 21:29 | | | 22:14 |
| 13 | 08:54 | | | 08:03 | | 09:08 (36) | 06:57 | | | 06:37 | | 19:08 (39) | 05:30 | | | 04:53 |
| | 16:31 | | | 17:33 | 12 | 09:20 (36) | 18:32 | | | 20:33 | 11 | 19:19 (39) | 21:31 | | | 22:15 |
| 14 | 08:53 | | | 08:01 | | 09:11 (36) | 06:54 | | 18:04 (40) | 06:35 | | | 05:28 | | | 04:53 |
| | 16:33 | | | 17:36 | 5 | 09:16 (36) | 18:34 | 3 | 18:07 (40) | 20:35 | | | 21:33 | | | 22:15 |
| 15 | 08:52 | | | 07:59 | | | 06:51 | | 18:01 (40) | 06:32 | | | 05:26 | | | 04:52 |
| | 16:34 | | | 17:38 | | | 18:36 | 7 | 18:08 (40) | 20:37 | | | 21:35 | | | 22:16 |
| 16 | 08:51 | | | 07:57 | | | 06:49 | | 17:59 (40) | 06:30 | | | 05:25 | | | 04:52 |
| | 16:36 | | | 17:40 | | | 18:38 | 11 | 18:10 (40) | 20:39 | | | 21:37 | | | 22:17 |
| 17 | 08:50 | | | 07:55 | | | 06:46 | | 17:58 (40) | 06:27 | | | 05:23 | | | 04:52 |
| | 16:38 | | | 17:42 | | | 18:40 | 15 | 18:13 (40) | 20:41 | | | 21:39 | | | 22:17 |
| 18 | 08:49 | | | 07:52 | | | 06:44 | | 17:57 (40) | 06:25 | | | 05:21 | | | 04:52 |
| | 16:40 | | | 17:44 | | | 18:42 | 17 | 18:14 (40) | 20:43 | | | 21:40 | | | 22:18 |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:57 (40) | 06:23 | | | 05:19 | | | 04:52 |
| | 16:42 | | | 17:46 | | | 18:44 | 20 | 18:17 (40) | 20:45 | | | 21:42 | | | 22:18 |
| 20 | 08:46 | | | 07:48 | | | 06:39 | | 17:56 (40) | 06:20 | | 06:59 (6) | 05:18 | | | 04:52 |
| | 16:44 | | | 17:48 | | | 18:46 | 21 | 18:17 (40) | 20:47 | 10 | 07:09 (6) | 21:44 | | | 22:18 |
| 21 | 08:45 | | | 07:46 | | | 06:36 | | 17:56 (40) | 06:18 | | 06:54 (6) | 05:16 | | | 04:52 |
| | 16:46 | | | 17:50 | | | 18:48 | 20 | 18:16 (40) | 20:49 | 18 | 07:12 (6) | 21:45 | | | 22:19 |
| 22 | 08:43 | | | 07:43 | | | 06:33 | | 17:56 (40) | 06:15 | | 06:52 (6) | 05:15 | | | 04:52 |
| | 16:48 | | | 17:53 | | | 18:50 | 20 | 18:16 (40) | 20:51 | 23 | 07:15 (6) | 21:47 | | | 22:19 |
| 23 | 08:42 | | | 07:41 | | | 06:31 | | 17:56 (40) | 06:13 | | 06:50 (6) | 05:13 | | | 04:53 |
| | 16:50 | | | 17:55 | | | 18:52 | 18 | 18:14 (40) | 20:53 | 27 | 07:17 (6) | 21:49 | | | 22:19 |
| 24 | 08:41 | | | 07:38 | | | 06:28 | | 17:58 (40) | 06:11 | | 06:48 (6) | 05:12 | | | 04:53 |
| | 16:52 | | | 17:57 | | | 18:54 | 15 | 18:13 (40) | 20:55 | 30 | 07:18 (6) | 21:50 | | | 22:19 |
| 25 | 08:39 | | | 07:36 | | | 06:26 | | 17:59 (40) | 06:08 | | 06:46 (6) | 05:10 | | | 04:53 |
| | 16:54 | | | 17:59 | | | 18:56 | 21 | 18:24 (39) | 20:57 | 33 | 07:19 (6) | 21:52 | | | 22:19 |
| 26 | 08:37 | | | 07:34 | | | 06:23 | | 18:01 (40) | 06:06 | | 06:45 (6) | 05:09 | | | 04:54 |
| | 16:56 | | | 18:01 | | | 18:58 | 21 | 18:26 (39) | 20:59 | 35 | 07:20 (6) | 21:53 | | | 22:19 |
| 27 | 08:36 | | 09:07 (36) | 07:31 | | | 06:21 | | 18:09 (39) | 06:04 | | 06:44 (6) | 05:08 | | | 04:54 |
| | 16:58 | 10 | 09:17 (36) | 18:03 | | | 18:59 | 20 | 18:29 (39) | 21:01 | 37 | 07:21 (6) | 21:55 | | | 22:19 |
| 28 | 08:34 | | 09:05 (36) | 07:29 | | | 06:18 | | 18:06 (39) | 06:02 | | 06:43 (6) | 05:06 | | | 04:55 |
| | 17:00 | 14 | 09:19 (36) | 18:05 | | | 19:01 | 24 | 18:30 (39) | 21:03 | 22 | 07:21 (6) | 21:57 | | | 22:19 |
| 29 | 08:33 | | 09:05 (36) | | | | 07:15 | | 19:06 (39) | 05:59 | | 06:43 (6) | 05:05 | | | 04:55 |
| | 17:02 | 16 | 09:21 (36) | | | | 20:03 | 25 | 19:31 (39) | 21:05 | 15 | 07:22 (6) | 21:58 | | | 22:18 |
| 30 | 08:31 | | 09:04 (36) | | | | 07:13 | | 19:04 (39) | 05:57 | | 06:42 (6) | 05:04 | | | 04:56 |
| | 17:04 | 18 | 09:22 (36) | | | | 20:05 | 27 | 19:31 (39) | 21:06 | 11 | 07:23 (6) | 21:59 | | | 22:18 |
| 31 | 08:29 | | 09:03 (36) | | | | 07:10 | | 19:03 (39) | | | | 05:03 | | | |
| | 17:06 | 20 | 09:23 (36) | | | | 20:07 | 29 | 19:32 (39) | | | | 22:01 | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 |
| Total, worst case | | 125 | | | 278 | | | 334 | | | 598 | | | 9 | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,66 | | | 0,78 | | | 0,99 | | | 0,98 | | | 0,96 | | |
| Total reduction | | 0,11 | | | 0,18 | | | 0,32 | | | 0,36 | | | 0,46 | | |
| Total, real | | 14 | | | 49 | | | 105 | | | 215 | | | 4 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: W - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 19:03 (39) | 07:34 | | | 07:36 | | 08:33 (36) | 08:35 | | |
| | 22:18 | | 21:40 | | | 20:29 | 20 | 19:23 (39) | 19:12 | | | 16:58 | 21 | 08:54 (36) | 16:10 | | |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 19:01 (39) | 07:36 | | | 07:38 | | 08:33 (36) | 08:36 | | |
| | 22:17 | | 21:38 | | | 20:27 | 24 | 19:25 (39) | 19:09 | | | 16:55 | 22 | 08:55 (36) | 16:09 | | |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 19:00 (39) | 07:38 | | | 07:41 | | 08:32 (36) | 08:38 | | |
| | 22:17 | | 21:36 | | | 20:24 | 26 | 19:26 (39) | 19:07 | | | 16:53 | 23 | 08:55 (36) | 16:08 | | |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:59 (39) | 07:40 | | | 07:43 | | 08:32 (36) | 08:40 | | |
| | 22:16 | | 21:34 | | | 20:22 | 27 | 19:26 (39) | 19:04 | | | 16:51 | 23 | 08:55 (36) | 16:07 | | |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:57 (39) | 07:42 | | | 07:45 | | 08:31 (36) | 08:41 | | |
| | 22:16 | | 21:32 | | | 20:19 | 29 | 19:26 (39) | 19:02 | | | 16:49 | 24 | 08:55 (36) | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:49 (6) | 06:47 | | 18:56 (39) | 07:44 | | | 07:47 | | 08:32 (36) | 08:43 | | |
| | 22:15 | | 21:30 | 1 | 06:50 (6) | 20:16 | 30 | 19:26 (39) | 18:59 | | | 16:47 | 24 | 08:56 (36) | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 (6) | 06:49 | | 18:56 (39) | 07:46 | | | 07:49 | | 08:32 (36) | 08:44 | | 10:22 (14) |
| | 22:14 | | 21:28 | 1 | 06:50 (6) | 20:14 | 30 | 19:26 (39) | 18:57 | | | 16:45 | 24 | 08:56 (36) | 16:06 | 2 | 10:24 (14) |
| 8 | 05:03 | | 05:52 | | 06:50 (6) | 06:51 | | 18:56 (39) | 07:48 | | | 07:51 | | 08:32 (36) | 08:45 | | 10:19 (14) |
| | 22:14 | | 21:25 | 1 | 06:51 (6) | 20:11 | 30 | 19:26 (39) | 18:54 | | | 16:43 | 23 | 08:55 (36) | 16:05 | 8 | 10:27 (14) |
| 9 | 05:04 | | 05:54 | | 06:49 (6) | 06:53 | | 18:55 (39) | 07:50 | | | 07:53 | | 08:32 (36) | 08:47 | | 10:19 (14) |
| | 22:13 | | 21:23 | 1 | 06:50 (6) | 20:09 | 31 | 19:26 (39) | 18:52 | | | 16:41 | 23 | 08:55 (36) | 16:05 | 10 | 10:29 (14) |
| 10 | 05:05 | | 05:56 | | 06:49 (6) | 06:55 | | 18:54 (39) | 07:52 | | | 07:55 | | 08:34 (36) | 08:48 | | 10:18 (14) |
| | 22:12 | | 21:21 | 2 | 06:51 (6) | 20:06 | 31 | 19:25 (39) | 18:49 | | | 16:40 | 21 | 08:55 (36) | 16:04 | 12 | 10:30 (14) |
| 11 | 05:07 | | 05:58 | | 06:50 (6) | 06:56 | | 18:54 (39) | 07:54 | | | 07:57 | | 08:34 (36) | 08:49 | | 10:18 (14) |
| | 22:11 | | 21:19 | 1 | 06:51 (6) | 20:04 | 30 | 19:24 (39) | 18:47 | | | 16:38 | 20 | 08:54 (36) | 16:04 | 13 | 10:31 (14) |
| 12 | 05:08 | | 06:00 | | 06:49 (6) | 06:58 | | 18:55 (39) | 07:56 | | | 07:59 | | 08:35 (36) | 08:50 | | 10:18 (14) |
| | 22:10 | | 21:17 | 2 | 06:51 (6) | 20:01 | 29 | 19:24 (39) | 18:44 | | | 16:36 | 18 | 08:53 (36) | 16:04 | 15 | 10:33 (14) |
| 13 | 05:09 | | 06:02 | | 06:50 (6) | 07:00 | | 18:55 (39) | 07:58 | | | 08:01 | | 08:37 (36) | 08:51 | | 10:18 (14) |
| | 22:09 | | 21:15 | 2 | 06:52 (6) | 19:58 | 28 | 19:23 (39) | 18:42 | | | 16:34 | 16 | 08:53 (36) | 16:04 | 15 | 10:33 (14) |
| 14 | 05:11 | | 06:03 | | 06:50 (6) | 07:02 | | 18:56 (39) | 08:00 | | | 08:03 | | 08:38 (36) | 08:52 | | 10:18 (14) |
| | 22:08 | | 21:12 | 3 | 06:53 (6) | 19:56 | 26 | 19:22 (39) | 18:39 | | | 16:32 | 14 | 08:52 (36) | 16:03 | 16 | 10:34 (14) |
| 15 | 05:12 | | 06:05 | | 06:51 (6) | 07:04 | | 18:57 (39) | 08:02 | | | 08:05 | | 08:40 (36) | 08:53 | | 10:05 (15) |
| | 22:06 | | 21:10 | 3 | 06:54 (6) | 19:53 | 23 | 19:20 (39) | 18:37 | | | 16:31 | 9 | 08:49 (36) | 16:03 | 18 | 10:35 (14) |
| 16 | 05:13 | | 06:07 | | 06:52 (6) | 07:06 | | 18:57 (39) | 08:04 | | | 08:07 | | | 08:54 | | 10:04 (15) |
| | 22:05 | | 21:08 | 3 | 06:55 (6) | 19:51 | 21 | 19:18 (39) | 18:34 | | | 16:29 | | | 16:03 | 22 | 10:36 (14) |
| 17 | 05:15 | | 06:09 | | 06:52 (6) | 07:08 | | 18:51 (40) | 08:06 | | | 08:09 | | | 08:55 | | 10:04 (15) |
| | 22:04 | | 21:05 | 3 | 06:55 (6) | 19:48 | 20 | 19:15 (39) | 18:32 | | | 16:27 | | | 16:04 | 24 | 10:37 (14) |
| 18 | 05:16 | | 06:11 | | 06:53 (6) | 07:10 | | 18:47 (40) | 08:08 | | | 08:11 | | | 08:56 | | 10:04 (15) |
| | 22:03 | | 21:03 | 4 | 06:57 (6) | 19:46 | 22 | 19:12 (39) | 18:29 | | | 16:26 | | | 16:04 | 25 | 10:37 (14) |
| 19 | 05:18 | | 06:13 | | 06:54 (6) | 07:12 | | 18:45 (40) | 08:10 | | | 08:13 | | | 08:57 | | 10:04 (15) |
| | 22:01 | | 21:01 | 5 | 06:59 (6) | 19:43 | 15 | 19:00 (40) | 18:27 | | | 16:24 | | | 16:04 | 25 | 10:37 (14) |
| 20 | 05:19 | | 06:15 | | 06:56 (6) | 07:13 | | 18:43 (40) | 08:12 | | | 08:15 | | | 08:57 | | 10:04 (15) |
| | 22:00 | | 20:58 | 5 | 07:01 (6) | 19:40 | 18 | 19:01 (40) | 18:25 | | | 16:23 | | | 16:04 | 26 | 10:38 (14) |
| 21 | 05:21 | | 06:17 | | 06:57 (6) | 07:15 | | 18:42 (40) | 08:14 | | | 08:17 | | | 08:58 | | 10:04 (15) |
| | 21:58 | | 20:56 | 6 | 07:03 (6) | 19:38 | 19 | 19:01 (40) | 18:22 | | | 16:21 | | | 16:05 | 27 | 10:38 (14) |
| 22 | 05:22 | | 06:19 | | 06:59 (6) | 07:17 | | 18:41 (40) | 08:16 | | | 08:19 | | | 08:59 | | 10:05 (15) |
| | 21:57 | | 20:54 | 14 | 07:16 (6) | 19:35 | 20 | 19:01 (40) | 18:20 | | | 16:20 | | | 16:05 | 27 | 10:39 (14) |
| 23 | 05:24 | | 06:21 | | 07:04 (6) | 07:19 | | 18:41 (40) | 08:18 | | | 08:21 | | | 08:59 | | 10:05 (15) |
| | 21:55 | | 20:51 | 8 | 07:12 (6) | 19:33 | 20 | 19:01 (40) | 18:18 | | | 16:19 | | | 16:06 | 26 | 10:39 (14) |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 18:40 (40) | 08:20 | | | 08:23 | | | 09:00 | | 10:06 (15) |
| | 21:54 | | 20:49 | | | 19:30 | 20 | 19:00 (40) | 18:15 | | | 16:17 | | | 16:06 | 26 | 10:40 (14) |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 18:40 (40) | 07:22 | | | 08:24 | | | 09:00 | | 10:07 (15) |
| | 21:52 | | 20:46 | | | 19:27 | 18 | 18:58 (40) | 17:13 | | | 16:16 | | | 16:07 | 25 | 10:40 (14) |
| 26 | 05:29 | | 06:26 | | | 07:25 | | 18:40 (40) | 07:24 | | | 08:26 | | | 09:00 | | 10:08 (15) |
| | 21:50 | | 20:44 | | | 19:25 | 15 | 18:55 (40) | 17:11 | | | 16:15 | | | 16:08 | 23 | 10:40 (14) |
| 27 | 05:31 | | 06:28 | | | 07:27 | | 18:40 (40) | 07:26 | | | 08:28 | | | 09:00 | | 10:09 (15) |
| | 21:49 | | 20:42 | | | 19:22 | 13 | 18:53 (40) | 17:09 | | | 16:14 | | | 16:08 | 22 | 10:41 (14) |
| 28 | 05:32 | | 06:30 | | | 07:29 | | 18:41 (40) | 07:28 | | 08:39 (36) | 08:30 | | | 09:01 | | 10:10 (15) |
| | 21:47 | | 20:39 | | | 19:20 | 9 | 18:50 (40) | 17:06 | 8 | 08:47 (36) | 16:13 | | | 16:09 | 20 | 10:41 (14) |
| 29 | 05:34 | | 06:32 | | | 07:31 | | 18:43 (40) | 07:30 | | 08:37 (36) | 08:31 | | | 09:01 | | 10:25 (14) |
| | 21:45 | | 20:37 | | | 19:17 | 4 | 18:47 (40) | 17:04 | 13 | 08:50 (36) | 16:12 | | | 16:10 | 16 | 10:41 (14) |
| 30 | 05:36 | | 06:34 | | 19:09 (39) | 07:32 | | | 07:32 | | 08:35 (36) | 08:33 | | | 09:01 | | 10:26 (14) |
| | 21:43 | | 20:34 | 11 | 19:20 (39) | 19:14 | | | 17:02 | 17 | 08:52 (36) | 16:11 | | | 16:11 | 15 | 10:41 (14) |
| 31 | 05:38 | | 06:36 | | 19:05 (39) | | | | 07:34 | | 08:34 (36) | | | | 09:01 | | 10:27 (14) |
| | 21:41 | | 20:32 | 17 | 19:22 (39) | | | | 17:00 | 19 | 08:53 (36) | | | | 16:12 | 15 | 10:42 (14) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 93 | | | 648 | | | 57 | | | 305 | | | 473 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,97 | | | 1,00 | | | 0,78 | | | 0,78 | | | 0,48 | |
| Total reduction | | | | 0,47 | | | 0,37 | | | 0,22 | | | 0,11 | | | 0,06 | |
| Total, real | | | | 43 | | | 238 | | | 13 | | | 35 | | | 28 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 09:10 (36) | | 07:26 | | 07:08 | 19:00 (39) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 24 | 09:34 (36) | | 18:07 | | 20:09 | 30 | 19:30 (39) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | | 09:10 (36) | | 07:24 | | 07:05 | 19:01 (39) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 25 | 09:35 (36) | | 18:09 | | 20:11 | 29 | 19:30 (39) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 09:10 (36) | | 07:22 | | 07:03 | 19:00 (39) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 25 | 09:35 (36) | | 18:11 | | 20:13 | 29 | 19:29 (39) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:10 (36) | | 07:19 | | 07:00 | 19:00 (39) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 24 | 09:34 (36) | | 18:13 | | 20:15 | 28 | 19:28 (39) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 09:10 (36) | | 07:17 | | 06:57 | 19:00 (39) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 24 | 09:34 (36) | | 18:15 | | 20:17 | 28 | 19:28 (39) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | | 09:11 (36) | | 07:14 | | 06:55 | 19:00 (39) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 22 | 09:33 (36) | | 18:17 | | 20:19 | 26 | 19:26 (39) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | | 09:12 (36) | | 07:12 | | 06:52 | 19:01 (39) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 21 | 09:33 (36) | | 18:19 | | 20:21 | 24 | 19:25 (39) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | | 09:13 (36) | | 07:09 | | 06:50 | 19:02 (39) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 19 | 09:32 (36) | | 18:22 | | 20:23 | 21 | 19:23 (39) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | | 09:14 (36) | | 07:07 | | 06:47 | 19:04 (39) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | 18 | 09:32 (36) | | 18:24 | | 20:25 | 18 | 19:22 (39) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 09:15 (36) | | 07:04 | | 06:45 | 19:05 (39) | 05:36 | 04:54 |
| | 16:26 | | 17:27 | 14 | 09:29 (36) | | 18:26 | | 20:27 | 14 | 19:19 (39) | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 09:18 (36) | | 07:02 | | 06:42 | 19:10 (39) | 05:34 | 04:54 |
| | 16:28 | | 17:29 | 9 | 09:27 (36) | | 18:28 | | 20:29 | 4 | 19:14 (39) | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | | | 06:59 | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | | | 18:30 | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | | | 06:57 | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | | | 18:32 | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | | | 06:54 | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | | | 18:34 | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | | | 06:51 | | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | | | 18:36 | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | | | 06:49 | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | | | 18:38 | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | | | 06:46 | | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | | | 18:40 | | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | | | 06:44 | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | | | 18:42 | | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 07:50 | | | | 06:41 | | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | | | 18:44 | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | | | 06:39 | | 06:20 | | 07:02 (6) | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | | | 18:46 | | 20:47 | 10 | 07:12 (6) | 21:44 | 22:18 |
| 21 | 08:45 | | 07:46 | | | | 06:36 | | 06:18 | | 06:57 (6) | 05:16 | 04:52 |
| | 16:46 | | 17:50 | | | | 18:48 | | 20:49 | 19 | 07:16 (6) | 21:45 | 22:19 |
| 22 | 08:43 | | 07:43 | | | | 06:33 | | 06:15 | | 06:55 (6) | 05:15 | 04:52 |
| | 16:48 | | 17:53 | | | | 18:50 | | 20:51 | 24 | 07:19 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:15 (36) | | 07:41 | | 06:31 | | 06:13 | | 06:53 (6) | 05:13 | 04:53 |
| | 16:50 | 9 | 09:24 (36) | | 17:55 | | 18:52 | | 20:53 | 28 | 07:21 (6) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:14 (36) | | 07:38 | | 06:28 | | 18:12 (39) | 06:11 | | 06:51 (6) | 05:12 | 04:53 |
| | 16:52 | 13 | 09:27 (36) | | 17:57 | | 18:54 | 12 | 18:24 (39) | 20:55 | 31 | 07:22 (6) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:12 (36) | | 07:36 | | 06:26 | | 18:08 (39) | 06:08 | | 06:49 (6) | 05:10 | 04:53 |
| | 16:54 | 16 | 09:28 (36) | | 17:59 | | 18:56 | 18 | 18:26 (39) | 20:57 | 34 | 07:23 (6) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:11 (36) | | 07:34 | | 06:23 | | 18:06 (39) | 06:06 | | 06:47 (6) | 05:09 | 04:54 |
| | 16:56 | 18 | 09:29 (36) | | 18:01 | | 18:57 | 21 | 18:27 (39) | 20:59 | 37 | 07:24 (6) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:10 (36) | | 07:31 | | 06:21 | | 18:05 (39) | 06:04 | | 06:46 (6) | 05:08 | 04:54 |
| | 16:58 | 20 | 09:30 (36) | | 18:03 | | 18:59 | 24 | 18:29 (39) | 21:01 | 39 | 07:25 (6) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:10 (36) | | 07:29 | | 06:18 | | 18:03 (39) | 06:02 | | 06:45 (6) | 05:06 | 04:55 |
| | 17:00 | 21 | 09:31 (36) | | 18:05 | | 19:01 | 26 | 18:29 (39) | 21:03 | 25 | 07:26 (6) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:10 (36) | | | | 07:15 | | 19:03 (39) | 05:59 | | 06:45 (6) | 05:05 | 04:55 |
| | 17:02 | 23 | 09:33 (36) | | | | 20:03 | 27 | 19:30 (39) | 21:05 | 17 | 07:26 (6) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:10 (36) | | | | 07:13 | | 19:01 (39) | 05:57 | | 06:44 (6) | 05:04 | 04:56 |
| | 17:04 | 23 | 09:33 (36) | | | | 20:05 | 29 | 19:30 (39) | 21:06 | 13 | 07:27 (6) | 21:59 | 22:18 |
| 31 | 08:29 | | 09:10 (36) | | | | 07:10 | | 19:01 (39) | | | | 05:03 | |
| | 17:06 | 24 | 09:34 (36) | | | | 20:07 | 29 | 19:30 (39) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 167 | | | 225 | | | 186 | | | 528 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 1,00 | | | 0,98 | | | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,33 | | | 0,37 | | | |
| Total, real | | 22 | | | 40 | | | 61 | | | 195 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

Licensed user:
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: X - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | | 06:38 | | 19:09 (39) | 07:34 | | | 07:36 | | 08:44 (36) | 08:35 | | |
| | 22:18 | 21:40 | | | 20:29 | 4 | 19:13 (39) | 19:12 | | | 16:58 | 15 | 08:59 (36) | 16:10 | | |
| 2 | 04:57 | 05:41 | | | 06:39 | | 19:04 (39) | 07:36 | | | 07:38 | | 08:43 (36) | 08:36 | | |
| | 22:17 | 21:38 | | | 20:27 | 14 | 19:18 (39) | 19:09 | | | 16:55 | 18 | 09:01 (36) | 16:09 | | |
| 3 | 04:58 | 05:43 | | | 06:41 | | 19:02 (39) | 07:38 | | | 07:41 | | 08:42 (36) | 08:38 | | |
| | 22:17 | 21:36 | | | 20:24 | 18 | 19:20 (39) | 19:07 | | | 16:53 | 20 | 09:02 (36) | 16:08 | | |
| 4 | 04:59 | 05:45 | | | 06:43 | | 19:00 (39) | 07:40 | | | 07:43 | | 08:41 (36) | 08:40 | | |
| | 22:16 | 21:34 | | | 20:22 | 21 | 19:21 (39) | 19:04 | | | 16:51 | 22 | 09:03 (36) | 16:07 | | |
| 5 | 05:00 | 05:47 | | | 06:45 | | 18:58 (39) | 07:42 | | | 07:45 | | 08:40 (36) | 08:41 | | |
| | 22:16 | 21:32 | | | 20:19 | 23 | 19:21 (39) | 19:02 | | | 16:49 | 23 | 09:03 (36) | 16:07 | | |
| 6 | 05:01 | 05:49 | | | 06:47 | | 18:56 (39) | 07:44 | | | 07:47 | | 08:41 (36) | 08:43 | | |
| | 22:15 | 21:30 | | | 20:16 | 26 | 19:22 (39) | 18:59 | | | 16:47 | 23 | 09:04 (36) | 16:06 | | |
| 7 | 05:02 | 05:50 | | | 06:49 | | 18:56 (39) | 07:46 | | | 07:49 | | 08:40 (36) | 08:44 | | |
| | 22:14 | 21:28 | | | 20:14 | 27 | 19:23 (39) | 18:57 | | | 16:45 | 25 | 09:05 (36) | 16:06 | | |
| 8 | 05:03 | 05:52 | | | 06:51 | | 18:55 (39) | 07:48 | | | 07:51 | | 08:40 (36) | 08:45 | | |
| | 22:14 | 21:25 | | | 20:11 | 28 | 19:23 (39) | 18:54 | | | 16:43 | 24 | 09:04 (36) | 16:05 | | |
| 9 | 05:04 | 05:54 | | | 06:53 | | 18:54 (39) | 07:50 | | | 07:53 | | 08:40 (36) | 08:47 | | |
| | 22:13 | 21:23 | | | 20:09 | 29 | 19:23 (39) | 18:52 | | | 16:41 | 24 | 09:04 (36) | 16:05 | | |
| 10 | 05:05 | 05:56 | | | 06:55 | | 18:53 (39) | 07:52 | | | 07:55 | | 08:41 (36) | 08:48 | | |
| | 22:12 | 21:21 | | | 20:06 | 29 | 19:22 (39) | 18:49 | | | 16:40 | 24 | 09:05 (36) | 16:04 | | |
| 11 | 05:07 | 05:58 | | | 06:56 | | 18:53 (39) | 07:54 | | | 07:57 | | 08:41 (36) | 08:49 | | |
| | 22:11 | 21:19 | | | 20:04 | 29 | 19:22 (39) | 18:47 | | | 16:38 | 24 | 09:05 (36) | 16:04 | | |
| 12 | 05:08 | 06:00 | | | 06:58 | | 18:53 (39) | 07:56 | | | 07:59 | | 08:41 (36) | 08:50 | | |
| | 22:10 | 21:17 | | | 20:01 | 29 | 19:22 (39) | 18:44 | | | 16:36 | 23 | 09:04 (36) | 16:04 | | |
| 13 | 05:09 | 06:02 | | | 07:00 | | 18:53 (39) | 07:58 | | | 08:01 | | 08:42 (36) | 08:51 | | |
| | 22:09 | 21:15 | | | 19:58 | 28 | 19:21 (39) | 18:42 | | | 16:34 | 23 | 09:05 (36) | 16:04 | | |
| 14 | 05:11 | 06:03 | | 06:52 (6) | 07:02 | | 18:53 (39) | 08:00 | | | 08:03 | | 08:43 (36) | 08:52 | | |
| | 22:08 | 21:12 | 1 | 06:53 (6) | 19:56 | 27 | 19:20 (39) | 18:39 | | | 16:32 | 21 | 09:04 (36) | 16:03 | | |
| 15 | 05:12 | 06:05 | | 06:53 (6) | 07:04 | | 18:53 (39) | 08:02 | | | 08:05 | | 08:43 (36) | 08:53 | | |
| | 22:06 | 21:10 | 1 | 06:54 (6) | 19:53 | 26 | 19:19 (39) | 18:37 | | | 16:31 | 20 | 09:03 (36) | 16:03 | | |
| 16 | 05:13 | 06:07 | | 06:54 (6) | 07:06 | | 18:53 (39) | 08:04 | | | 08:07 | | 08:44 (36) | 08:54 | | |
| | 22:05 | 21:08 | 1 | 06:55 (6) | 19:51 | 24 | 19:17 (39) | 18:34 | | | 16:29 | 18 | 09:02 (36) | 16:03 | | |
| 17 | 05:15 | 06:09 | | 06:54 (6) | 07:08 | | 18:54 (39) | 08:06 | | | 08:09 | | 08:45 (36) | 08:55 | | |
| | 22:04 | 21:05 | 1 | 06:55 (6) | 19:48 | 22 | 19:16 (39) | 18:32 | | | 16:27 | 16 | 09:01 (36) | 16:04 | | |
| 18 | 05:16 | 06:11 | | 06:55 (6) | 07:10 | | 18:55 (39) | 08:08 | | | 08:11 | | 08:48 (36) | 08:56 | | 10:39 (14) |
| | 22:03 | 21:03 | 2 | 06:57 (6) | 19:46 | 19 | 19:14 (39) | 18:29 | | | 16:26 | 13 | 09:01 (36) | 16:04 | 4 | 10:43 (14) |
| 19 | 05:18 | 06:13 | | 06:57 (6) | 07:12 | | 18:57 (39) | 08:10 | | | 08:13 | | 08:50 (36) | 08:57 | | 10:38 (14) |
| | 22:01 | 21:01 | 2 | 06:59 (6) | 19:43 | 15 | 19:12 (39) | 18:27 | | | 16:24 | 9 | 08:59 (36) | 16:04 | 5 | 10:43 (14) |
| 20 | 05:19 | 06:15 | | 06:59 (6) | 07:13 | | 19:01 (39) | 08:12 | | | 08:15 | | | 08:57 | | 10:38 (14) |
| | 22:00 | 20:58 | 2 | 07:01 (6) | 19:40 | 6 | 19:07 (39) | 18:25 | | | 16:23 | | | 16:04 | 6 | 10:44 (14) |
| 21 | 05:21 | 06:17 | | 07:00 (6) | 07:15 | | | 08:14 | | | 08:17 | | | 08:58 | | 10:38 (14) |
| | 21:58 | 20:56 | 3 | 07:03 (6) | 19:38 | | | 18:22 | | | 16:21 | | | 16:05 | 6 | 10:44 (14) |
| 22 | 05:22 | 06:19 | | 07:02 (6) | 07:17 | | | 08:16 | | | 08:19 | | | 08:59 | | 10:39 (14) |
| | 21:57 | 20:54 | 11 | 07:16 (6) | 19:35 | | | 18:20 | | | 16:20 | | | 16:05 | 6 | 10:45 (14) |
| 23 | 05:24 | 06:21 | | 07:07 (6) | 07:19 | | | 08:18 | | | 08:21 | | | 08:59 | | 10:39 (14) |
| | 21:55 | 20:51 | 8 | 07:15 (6) | 19:33 | | | 18:18 | | | 16:19 | | | 16:06 | 6 | 10:45 (14) |
| 24 | 05:26 | 06:22 | | | 07:21 | | | 08:20 | | | 08:23 | | | 09:00 | | 10:41 (14) |
| | 21:54 | 20:49 | | | 19:30 | | | 18:15 | | | 16:17 | | | 16:06 | 5 | 10:46 (14) |
| 25 | 05:27 | 06:24 | | | 07:23 | | | 07:22 | | | 08:24 | | | 09:00 | | 10:42 (14) |
| | 21:52 | 20:46 | | | 19:27 | | | 17:13 | | | 16:16 | | | 16:07 | 4 | 10:46 (14) |
| 26 | 05:29 | 06:26 | | | 07:25 | | | 07:24 | | | 08:26 | | | 09:00 | | 10:43 (14) |
| | 21:50 | 20:44 | | | 19:25 | | | 17:11 | | | 16:15 | | | 16:08 | 2 | 10:45 (14) |
| 27 | 05:31 | 06:28 | | | 07:27 | | | 07:26 | | | 08:28 | | | 09:00 | | |
| | 21:49 | 20:42 | | | 19:22 | | | 17:08 | | | 16:14 | | | 16:08 | | |
| 28 | 05:32 | 06:30 | | | 07:29 | | | 07:28 | | | 08:30 | | | 09:01 | | |
| | 21:47 | 20:39 | | | 19:20 | | | 17:06 | | | 16:13 | | | 16:09 | | |
| 29 | 05:34 | 06:32 | | | 07:31 | | | 07:30 | | | 08:31 | | | 09:01 | | |
| | 21:45 | 20:37 | | | 19:17 | | | 17:04 | | | 16:12 | | | 16:10 | | |
| 30 | 05:36 | 06:34 | | | 07:32 | | | 07:32 | | | 08:33 | | | 09:01 | | |
| | 21:43 | 20:34 | | | 19:14 | | | 17:02 | | | 16:11 | | | 16:11 | | |
| 31 | 05:38 | 06:36 | | | | | | 07:34 | | 08:47 (36) | | | | 09:01 | | |
| | 21:41 | 20:32 | | | | | | 17:00 | 10 | 08:57 (36) | | | | 16:12 | | |
| Potential sun hours | 521 | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | 32 | | | 444 | | | 10 | | | 385 | | | 44 | |
| Sun reduction | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | 0,96 | | | 1,00 | | | 0,76 | | | 0,76 | | | 0,42 | |
| Total reduction | | | 0,47 | | | 0,38 | | | 0,22 | | | 0,11 | | | 0,05 | |
| Total, real | | | 15 | | | 168 | | | 2 | | | 44 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 09:13 (36) | 07:26 | | | 07:08 | 19:00 (39) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 25 | 09:38 (36) | 18:07 | | | 20:09 | 29 | 19:29 (39) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | | 09:13 (36) | 07:24 | | | 07:05 | | 19:00 (39) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 25 | 09:38 (36) | 18:09 | | | 20:11 | 29 | 19:29 (39) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 09:14 (36) | 07:22 | | | 07:03 | | 19:00 (39) | 05:50 | 05:00 |
| | 16:16 | | 17:12 | 24 | 09:38 (36) | 18:11 | | | 20:13 | 28 | 19:28 (39) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:13 (36) | 07:19 | | | 07:00 | | 18:59 (39) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | 24 | 09:37 (36) | 18:13 | | | 20:15 | 27 | 19:26 (39) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 09:14 (36) | 07:17 | | | 06:57 | | 19:00 (39) | 05:46 | 04:58 |
| | 16:19 | | 17:16 | 23 | 09:37 (36) | 18:15 | | | 20:17 | 26 | 19:26 (39) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | | 09:15 (36) | 07:14 | | | 06:55 | | 19:01 (39) | 05:44 | 04:57 |
| | 16:20 | | 17:19 | 21 | 09:36 (36) | 18:17 | | | 20:19 | 23 | 19:24 (39) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | | 09:16 (36) | 07:12 | | | 06:52 | | 19:02 (39) | 05:42 | 04:56 |
| | 16:21 | | 17:21 | 20 | 09:36 (36) | 18:19 | | | 20:21 | 21 | 19:23 (39) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | | 09:17 (36) | 07:09 | | | 06:50 | | 19:03 (39) | 05:40 | 04:56 |
| | 16:23 | | 17:23 | 18 | 09:35 (36) | 18:22 | | | 20:23 | 18 | 19:21 (39) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | | 09:19 (36) | 07:07 | | | 06:47 | | 19:05 (39) | 05:38 | 04:55 |
| | 16:24 | | 17:25 | 15 | 09:34 (36) | 18:24 | | | 20:25 | 14 | 19:19 (39) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 09:21 (36) | 07:04 | | | 06:45 | | 19:09 (39) | 05:36 | 04:54 |
| | 16:26 | | 17:27 | 9 | 09:30 (36) | 18:26 | | | 20:27 | 5 | 19:14 (39) | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | | 07:02 | | | 06:42 | | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | | 18:28 | | | 20:29 | | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | | 06:59 | | | 06:40 | | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | | 18:30 | | | 20:31 | | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | | 06:57 | | | 06:37 | | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | | 18:32 | | | 20:33 | | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | | 06:54 | | | 06:35 | | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | | 18:34 | | | 20:35 | | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | | 06:51 | | | 06:32 | | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | | 18:36 | | | 20:37 | | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | | 06:49 | | | 06:30 | | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | | 18:38 | | | 20:39 | | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | | 06:46 | | | 06:27 | | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | | 18:40 | | | 20:41 | | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | | 06:44 | | | 06:25 | | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | | 18:42 | | | 20:43 | | | 21:40 | 22:18 |
| 19 | 08:47 | | 07:50 | | | 06:41 | | | 06:23 | | | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | | 18:44 | | | 20:45 | | | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | | 06:39 | | | 06:20 | | 07:04 (6) | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | | 18:46 | | | 20:47 | 9 | 07:13 (6) | 21:44 | 22:18 |
| 21 | 08:45 | 09:19 (36) | 07:46 | | | 06:36 | | | 06:18 | | 06:59 (6) | 05:16 | 04:52 |
| | 16:46 | 8 09:27 (36) | 17:50 | | | 18:48 | | | 20:49 | 18 | 07:17 (6) | 21:45 | 22:19 |
| 22 | 08:43 | 09:17 (36) | 07:43 | | | 06:33 | | | 06:15 | | 06:56 (6) | 05:15 | 04:52 |
| | 16:48 | 12 09:29 (36) | 17:53 | | | 18:50 | | | 20:51 | 24 | 07:20 (6) | 21:47 | 22:19 |
| 23 | 08:42 | 09:15 (36) | 07:41 | | | 06:31 | | 18:12 (39) | 06:13 | | 06:54 (6) | 05:13 | 04:53 |
| | 16:50 | 16 09:31 (36) | 17:55 | | | 18:52 | 9 | 18:21 (39) | 20:53 | 28 | 07:22 (6) | 21:49 | 22:19 |
| 24 | 08:41 | 09:15 (36) | 07:38 | | | 06:28 | | 18:09 (39) | 06:11 | | 06:52 (6) | 05:12 | 04:53 |
| | 16:51 | 18 09:33 (36) | 17:57 | | | 18:54 | 16 | 18:25 (39) | 20:55 | 32 | 07:24 (6) | 21:50 | 22:19 |
| 25 | 08:39 | 09:14 (36) | 07:36 | | | 06:26 | | 18:07 (39) | 06:08 | | 06:50 (6) | 05:10 | 04:53 |
| | 16:54 | 20 09:34 (36) | 17:59 | | | 18:56 | 19 | 18:26 (39) | 20:57 | 34 | 07:24 (6) | 21:52 | 22:19 |
| 26 | 08:37 | 09:14 (36) | 07:34 | | | 06:23 | | 18:04 (39) | 06:06 | | 06:48 (6) | 05:09 | 04:54 |
| | 16:56 | 20 09:34 (36) | 18:01 | | | 18:57 | 23 | 18:27 (39) | 20:59 | 38 | 07:26 (6) | 21:53 | 22:19 |
| 27 | 08:36 | 09:13 (36) | 07:31 | | | 06:21 | | 18:04 (39) | 06:04 | | 06:47 (6) | 05:08 | 04:54 |
| | 16:58 | 22 09:35 (36) | 18:03 | | | 18:59 | 24 | 18:28 (39) | 21:01 | 40 | 07:27 (6) | 21:55 | 22:19 |
| 28 | 08:34 | 09:13 (36) | 07:29 | | | 06:18 | | 18:02 (39) | 06:02 | | 06:46 (6) | 05:06 | 04:55 |
| | 17:00 | 23 09:36 (36) | 18:05 | | | 19:01 | 26 | 18:28 (39) | 21:03 | 25 | 07:27 (6) | 21:57 | 22:19 |
| 29 | 08:33 | 09:13 (36) | | | | 07:15 | | 19:02 (39) | 05:59 | | 06:46 (6) | 05:05 | 04:55 |
| | 17:02 | 24 09:37 (36) | | | | 20:03 | 27 | 19:29 (39) | 21:05 | 18 | 07:28 (6) | 21:58 | 22:18 |
| 30 | 08:31 | 09:13 (36) | | | | 07:13 | | 19:01 (39) | 05:57 | | 06:45 (6) | 05:04 | 04:56 |
| | 17:04 | 25 09:38 (36) | | | | 20:05 | 28 | 19:29 (39) | 21:06 | 14 | 07:29 (6) | 21:59 | 22:18 |
| 31 | 08:29 | 09:13 (36) | | | | 07:10 | | 19:01 (39) | | | | 05:03 | |
| | 17:06 | 25 09:38 (36) | | | | 20:07 | 28 | 19:29 (39) | | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | 213 | | 204 | | | 200 | | | 500 | | | | |
| Sun reduction | 0,18 | | 0,25 | | | 0,34 | | | 0,39 | | | | |
| Oper. time red. | 1,00 | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | 0,74 | | 0,74 | | | 1,00 | | | 0,98 | | | | |
| Total reduction | 0,13 | | 0,17 | | | 0,33 | | | 0,37 | | | | |
| Total, real | 27 | | 36 | | | 65 | | | 184 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
|---|---|---|---|---|
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: Y - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | | September | | | October | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | | 06:38 | | | 07:34 | 07:36 | | 08:50 (36) | 08:35 |
| | 22:18 | 21:40 | | | 20:29 | | | 19:12 | 16:58 | 11 | 09:01 (36) | 16:10 |
| 2 | 04:57 | 05:41 | | | 06:39 | | 19:08 (39) | 07:36 | 07:38 | | 08:49 (36) | 08:36 |
| | 22:17 | 21:38 | | | 20:27 | 5 | 19:13 (39) | 19:09 | 16:55 | 15 | 09:04 (36) | 16:09 |
| 3 | 04:58 | 05:43 | | | 06:41 | | 19:03 (39) | 07:38 | 07:41 | | 08:47 (36) | 08:38 |
| | 22:17 | 21:36 | | | 20:24 | 14 | 19:17 (39) | 19:07 | 16:53 | 18 | 09:05 (36) | 16:08 |
| 4 | 04:59 | 05:45 | | | 06:43 | | 19:01 (39) | 07:40 | 07:43 | | 08:46 (36) | 08:40 |
| | 22:16 | 21:34 | | | 20:22 | 18 | 19:19 (39) | 19:04 | 16:51 | 20 | 09:06 (36) | 16:07 |
| 5 | 05:00 | 05:47 | | | 06:45 | | 18:58 (39) | 07:42 | 07:45 | | 08:45 (36) | 08:41 |
| | 22:16 | 21:32 | | | 20:19 | 21 | 19:19 (39) | 19:02 | 16:49 | 21 | 09:06 (36) | 16:07 |
| 6 | 05:01 | 05:49 | | | 06:47 | | 18:57 (39) | 07:44 | 07:47 | | 08:45 (36) | 08:43 |
| | 22:15 | 21:30 | | | 20:16 | 23 | 19:20 (39) | 18:59 | 16:47 | 23 | 09:08 (36) | 16:06 |
| 7 | 05:02 | 05:50 | | | 06:49 | | 18:56 (39) | 07:46 | 07:49 | | 08:44 (36) | 08:44 |
| | 22:14 | 21:28 | | | 20:14 | 25 | 19:21 (39) | 18:57 | 16:45 | 24 | 09:08 (36) | 16:06 |
| 8 | 05:03 | 05:52 | | | 06:51 | | 18:55 (39) | 07:48 | 07:51 | | 08:44 (36) | 08:45 |
| | 22:14 | 21:25 | | | 20:11 | 27 | 19:22 (39) | 18:54 | 16:43 | 24 | 09:08 (36) | 16:05 |
| 9 | 05:04 | 05:54 | | | 06:53 | | 18:54 (39) | 07:50 | 07:53 | | 08:43 (36) | 08:47 |
| | 22:13 | 21:23 | | | 20:09 | 28 | 19:22 (39) | 18:52 | 16:41 | 25 | 09:08 (36) | 16:05 |
| 10 | 05:05 | 05:56 | | | 06:55 | | 18:52 (39) | 07:52 | 07:55 | | 08:44 (36) | 08:48 |
| | 22:12 | 21:21 | | | 20:06 | 29 | 19:21 (39) | 18:49 | 16:40 | 25 | 09:09 (36) | 16:04 |
| 11 | 05:07 | 05:58 | | | 06:56 | | 18:52 (39) | 07:54 | 07:57 | | 08:44 (36) | 08:49 |
| | 22:11 | 21:19 | | | 20:04 | 29 | 19:21 (39) | 18:47 | 16:38 | 25 | 09:09 (36) | 16:04 |
| 12 | 05:08 | 06:00 | | | 06:58 | | 18:52 (39) | 07:56 | 07:59 | | 08:44 (36) | 08:50 |
| | 22:10 | 21:17 | | | 20:01 | 29 | 19:21 (39) | 18:44 | 16:36 | 24 | 09:08 (36) | 16:04 |
| 13 | 05:09 | 06:02 | | | 07:00 | | 18:52 (39) | 07:58 | 08:01 | | 08:45 (36) | 08:51 |
| | 22:09 | 21:15 | | | 19:58 | 28 | 19:20 (39) | 18:42 | 16:34 | 24 | 09:09 (36) | 16:04 |
| 14 | 05:11 | 06:03 | | | 07:02 | | 18:52 (39) | 08:00 | 08:03 | | 08:45 (36) | 08:52 |
| | 22:08 | 21:12 | | | 19:56 | 28 | 19:20 (39) | 18:39 | 16:32 | 24 | 09:09 (36) | 16:03 |
| 15 | 05:12 | 06:05 | | | 07:04 | | 18:52 (39) | 08:02 | 08:05 | | 08:46 (36) | 08:53 |
| | 22:06 | 21:10 | | | 19:53 | 27 | 19:19 (39) | 18:37 | 16:31 | 22 | 09:08 (36) | 16:03 |
| 16 | 05:13 | 06:07 | | | 07:06 | | 18:52 (39) | 08:04 | 08:07 | | 08:47 (36) | 08:54 |
| | 22:05 | 21:08 | | | 19:51 | 25 | 19:17 (39) | 18:34 | 16:29 | 20 | 09:07 (36) | 16:03 |
| 17 | 05:15 | 06:09 | | | 07:08 | | 18:53 (39) | 08:06 | 08:09 | | 08:47 (36) | 08:55 |
| | 22:04 | 21:05 | | | 19:48 | 23 | 19:16 (39) | 18:32 | 16:27 | 20 | 09:07 (36) | 16:04 |
| 18 | 05:16 | 06:11 | | 06:56 (6) | 07:10 | | 18:54 (39) | 08:08 | 08:11 | | 08:49 (36) | 08:56 |
| | 22:03 | 21:03 | 1 | 06:57 (6) | 19:46 | 20 | 19:14 (39) | 18:29 | 16:26 | 18 | 09:07 (36) | 16:04 |
| 19 | 05:18 | 06:13 | | 06:58 (6) | 07:12 | | 18:55 (39) | 08:10 | 08:13 | | 08:50 (36) | 08:57 |
| | 22:01 | 21:01 | 1 | 06:59 (6) | 19:43 | 17 | 19:12 (39) | 18:27 | 16:24 | 16 | 09:06 (36) | 16:04 |
| 20 | 05:19 | 06:15 | | 07:00 (6) | 07:13 | | 18:58 (39) | 08:12 | 08:15 | | 08:52 (36) | 08:57 |
| | 22:00 | 20:58 | 1 | 07:01 (6) | 19:40 | 11 | 19:09 (39) | 18:25 | 16:23 | 12 | 09:04 (36) | 16:04 |
| 21 | 05:21 | 06:17 | | 07:01 (6) | 07:15 | | | 08:14 | 08:17 | | 08:54 (36) | 08:58 |
| | 21:58 | 20:56 | 2 | 07:03 (6) | 19:38 | | | 18:22 | 16:21 | 8 | 09:02 (36) | 16:05 |
| 22 | 05:22 | 06:19 | | 07:04 (6) | 07:17 | | | 08:16 | 08:19 | | | 08:59 |
| | 21:57 | 20:54 | 9 | 07:16 (6) | 19:35 | | | 18:20 | 16:20 | | | 16:05 |
| 23 | 05:24 | 06:21 | | 07:09 (6) | 07:19 | | | 08:18 | 08:21 | | | 08:59 |
| | 21:55 | 20:51 | 7 | 07:16 (6) | 19:33 | | | 18:18 | 16:19 | | | 16:06 |
| 24 | 05:26 | 06:22 | | | 07:21 | | | 08:20 | 08:23 | | | 09:00 |
| | 21:54 | 20:49 | | | 19:30 | | | 18:15 | 16:17 | | | 16:06 |
| 25 | 05:27 | 06:24 | | | 07:23 | | | 07:22 | 08:24 | | | 09:00 |
| | 21:52 | 20:46 | | | 19:27 | | | 17:13 | 16:16 | | | 16:07 |
| 26 | 05:29 | 06:26 | | | 07:25 | | | 07:24 | 08:26 | | | 09:00 |
| | 21:50 | 20:44 | | | 19:25 | | | 17:11 | 16:15 | | | 16:08 |
| 27 | 05:31 | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | | 09:00 |
| | 21:49 | 20:42 | | | 19:22 | | | 17:08 | 16:14 | | | 16:08 |
| 28 | 05:32 | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | | 09:01 |
| | 21:47 | 20:39 | | | 19:20 | | | 17:06 | 16:13 | | | 16:09 |
| 29 | 05:34 | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | | 09:01 |
| | 21:45 | 20:37 | | | 19:17 | | | 17:04 | 16:12 | | | 16:10 |
| 30 | 05:36 | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | | 09:01 |
| | 21:43 | 20:34 | | | 19:14 | | | 17:02 | 16:11 | | | 16:11 |
| 31 | 05:38 | 06:36 | | | | | | 07:34 | | | | 09:01 |
| | 21:41 | 20:32 | | | | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | 465 | | | 383 | | | 326 | 253 | | | 224 |
| Total, worst case | | | 21 | | | 427 | | | | 419 | | |
| Sun reduction | | | 0,51 | | | 0,40 | | | | 0,16 | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | 1,00 | | |
| Wind dir. red. | | | 0,96 | | | 1,00 | | | | 0,74 | | |
| Total reduction | | | 0,48 | | | 0,38 | | | | 0,11 | | |
| Total, real | | | 10 | | | 162 | | | | 47 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:17 (36) | 07:26 | | 07:08 | 18:59 (39) | 05:55 | 05:02 |
| | 16:14 | | 17:08 25 | 09:42 (36) | 18:07 | | 20:09 29 | 19:28 (39) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:17 (36) | 07:24 | | 07:05 | 19:00 (39) | 05:53 | 05:01 |
| | 16:15 | | 17:10 25 | 09:42 (36) | 18:09 | | 20:11 28 | 19:28 (39) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:18 (36) | 07:22 | | 07:03 | 19:00 (39) | 05:50 | 05:00 |
| | 16:16 | | 17:12 24 | 09:42 (36) | 18:11 | | 20:13 26 | 19:26 (39) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | 09:18 (36) | 07:19 | | 07:00 | 19:00 (39) | 05:48 | 04:59 |
| | 16:17 | | 17:14 22 | 09:40 (36) | 18:13 | | 20:15 25 | 19:25 (39) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 09:19 (36) | 07:17 | | 06:57 | 19:01 (39) | 05:46 | 04:58 |
| | 16:19 | | 17:16 21 | 09:40 (36) | 18:15 | | 20:17 23 | 19:24 (39) | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 09:20 (36) | 07:14 | | 06:55 | 19:01 (39) | 05:44 | 04:57 |
| | 16:20 | | 17:19 19 | 09:39 (36) | 18:17 | | 20:19 21 | 19:22 (39) | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 09:21 (36) | 07:12 | | 06:52 | 19:03 (39) | 05:42 | 04:56 |
| | 16:21 | | 17:21 17 | 09:38 (36) | 18:19 | | 20:21 18 | 19:21 (39) | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 09:23 (36) | 07:09 | | 06:50 | 19:04 (39) | 05:40 | 04:56 |
| | 16:23 | | 17:23 14 | 09:37 (36) | 18:22 | | 20:23 14 | 19:18 (39) | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 09:26 (36) | 07:07 | | 06:47 | 19:08 (39) | 05:38 | 04:55 |
| | 16:24 | | 17:25 9 | 09:35 (36) | 18:24 | | 20:25 6 | 19:14 (39) | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | | 06:49 | | 06:30 | | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:38 | | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | | 07:55 | | 06:46 | | 06:27 | | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:40 | | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | | 07:52 | | 06:44 | | 06:25 | | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:42 | | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:23 (36) | 07:50 | | 06:41 | | 06:23 | | 05:19 | 04:52 |
| | 16:42 7 | 09:30 (36) | 17:46 | | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:20 (36) | 07:48 | | 06:39 | | 06:20 | 07:07 (6) | 05:18 | 04:52 |
| | 16:44 12 | 09:32 (36) | 17:48 | | 18:46 | | 20:47 7 | 07:14 (6) | 21:44 | 22:18 |
| 21 | 08:45 | 09:20 (36) | 07:46 | | 06:36 | | 06:18 | 07:00 (6) | 05:16 | 04:52 |
| | 16:46 14 | 09:34 (36) | 17:50 | | 18:48 | | 20:49 18 | 07:18 (6) | 21:45 | 22:19 |
| 22 | 08:43 | 09:18 (36) | 07:43 | | 06:33 | 18:16 (39) | 06:15 | 06:57 (6) | 05:15 | 04:52 |
| | 16:48 17 | 09:35 (36) | 17:53 | | 18:50 2 | 18:18 (39) | 20:51 24 | 07:21 (6) | 21:47 | 22:19 |
| 23 | 08:42 | 09:17 (36) | 07:41 | | 06:31 | 18:10 (39) | 06:13 | 06:55 (6) | 05:13 | 04:53 |
| | 16:50 19 | 09:36 (36) | 17:55 | | 18:52 13 | 18:23 (39) | 20:53 29 | 07:24 (6) | 21:49 | 22:19 |
| 24 | 08:41 | 09:18 (36) | 07:38 | | 06:28 | 18:08 (39) | 06:11 | 06:53 (6) | 05:12 | 04:53 |
| | 16:51 20 | 09:38 (36) | 17:57 | | 18:54 17 | 18:25 (39) | 20:55 33 | 07:26 (6) | 21:50 | 22:19 |
| 25 | 08:39 | 09:17 (36) | 07:36 | | 06:26 | 18:05 (39) | 06:08 | 06:51 (6) | 05:10 | 04:53 |
| | 16:54 22 | 09:39 (36) | 17:59 | | 18:56 21 | 18:26 (39) | 20:57 35 | 07:26 (6) | 21:52 | 22:19 |
| 26 | 08:37 | 09:16 (36) | 07:34 | | 06:23 | 18:03 (39) | 06:06 | 06:50 (6) | 05:09 | 04:54 |
| | 16:56 23 | 09:39 (36) | 18:01 | | 18:57 24 | 18:27 (39) | 20:59 37 | 07:27 (6) | 21:53 | 22:19 |
| 27 | 08:36 | 09:16 (36) | 07:31 | | 06:21 | 18:03 (39) | 06:04 | 06:48 (6) | 05:08 | 04:54 |
| | 16:58 24 | 09:40 (36) | 18:03 | | 18:59 25 | 18:28 (39) | 21:01 40 | 07:28 (6) | 21:55 | 22:19 |
| 28 | 08:34 | 09:16 (36) | 07:29 | | 06:18 | 18:01 (39) | 06:02 | 06:47 (6) | 05:06 | 04:55 |
| | 17:00 24 | 09:40 (36) | 18:05 | | 19:01 27 | 18:28 (39) | 21:03 26 | 07:29 (6) | 21:57 | 22:19 |
| 29 | 08:33 | 09:17 (36) | | | 07:15 | 19:01 (39) | 05:59 | 06:47 (6) | 05:05 | 04:55 |
| | 17:02 25 | 09:42 (36) | | | 20:03 28 | 19:29 (39) | 21:05 19 | 07:30 (6) | 21:58 | 22:18 |
| 30 | 08:31 | 09:17 (36) | | | 07:13 | 19:00 (39) | 05:57 | 06:46 (6) | 05:04 | 04:56 |
| | 17:04 25 | 09:42 (36) | | | 20:05 28 | 19:28 (39) | 21:06 15 | 07:31 (6) | 21:59 | 22:18 |
| 31 | 08:29 | 09:17 (36) | | | 07:10 | 19:00 (39) | | | 05:03 | |
| | 17:06 25 | 09:42 (36) | | | 20:07 28 | 19:28 (39) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 257 | | 176 | | 213 | | 473 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,73 | | 0,73 | | 1,00 | | 0,98 | | | |
| Total reduction | 0,13 | | 0,17 | | 0,32 | | 0,37 | | | |
| Total, real | 32 | | 30 | | 69 | | 174 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) Shadow receptor: Z - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | | September | | | October | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | | | 06:38 | | | 07:34 | 07:36 | | | 08:35 |
| | 22:18 | 21:40 | | | 20:29 | | | 19:12 | 16:58 | | | 16:10 |
| 2 | 04:57 | 05:41 | | | 06:39 | | | 07:36 | 07:38 | | 08:55 (36) | 08:36 |
| | 22:17 | 21:38 | | | 20:27 | | | 19:09 | 16:55 | 10 | 09:05 (36) | 16:09 |
| 3 | 04:58 | 05:43 | | | 06:41 | | 19:06 (39) | 07:38 | 07:41 | | 08:52 (36) | 08:38 |
| | 22:17 | 21:36 | | | 20:24 | 6 | 19:12 (39) | 19:07 | 16:53 | 15 | 09:07 (36) | 16:08 |
| 4 | 04:59 | 05:45 | | | 06:43 | | 19:02 (39) | 07:40 | 07:43 | | 08:51 (36) | 08:40 |
| | 22:16 | 21:34 | | | 20:22 | 14 | 19:16 (39) | 19:04 | 16:51 | 17 | 09:08 (36) | 16:07 |
| 5 | 05:00 | 05:47 | | | 06:45 | | 18:59 (39) | 07:42 | 07:45 | | 08:49 (36) | 08:41 |
| | 22:16 | 21:32 | | | 20:19 | 18 | 19:17 (39) | 19:02 | 16:49 | 20 | 09:09 (36) | 16:07 |
| 6 | 05:01 | 05:49 | | | 06:47 | | 18:57 (39) | 07:44 | 07:47 | | 08:49 (36) | 08:43 |
| | 22:15 | 21:30 | | | 20:16 | 21 | 19:18 (39) | 18:59 | 16:47 | 22 | 09:11 (36) | 16:06 |
| 7 | 05:02 | 05:50 | | | 06:49 | | 18:56 (39) | 07:46 | 07:49 | | 08:48 (36) | 08:44 |
| | 22:14 | 21:28 | | | 20:14 | 23 | 19:19 (39) | 18:57 | 16:45 | 23 | 09:11 (36) | 16:06 |
| 8 | 05:03 | 05:52 | | | 06:51 | | 18:55 (39) | 07:48 | 07:51 | | 08:48 (36) | 08:45 |
| | 22:14 | 21:25 | | | 20:11 | 25 | 19:20 (39) | 18:54 | 16:43 | 24 | 09:12 (36) | 16:05 |
| 9 | 05:04 | 05:54 | | | 06:53 | | 18:54 (39) | 07:50 | 07:53 | | 08:47 (36) | 08:47 |
| | 22:13 | 21:23 | | | 20:09 | 27 | 19:21 (39) | 18:52 | 16:41 | 25 | 09:12 (36) | 16:05 |
| 10 | 05:05 | 05:56 | | | 06:55 | | 18:52 (39) | 07:52 | 07:55 | | 08:48 (36) | 08:48 |
| | 22:12 | 21:21 | | | 20:06 | 28 | 19:20 (39) | 18:49 | 16:40 | 25 | 09:13 (36) | 16:04 |
| 11 | 05:07 | 05:58 | | | 06:56 | | 18:52 (39) | 07:54 | 07:57 | | 08:48 (36) | 08:49 |
| | 22:11 | 21:19 | | | 20:04 | 28 | 19:20 (39) | 18:47 | 16:38 | 25 | 09:13 (36) | 16:04 |
| 12 | 05:08 | 06:00 | | | 06:58 | | 18:51 (39) | 07:56 | 07:59 | | 08:47 (36) | 08:50 |
| | 22:10 | 21:17 | | | 20:01 | 29 | 19:20 (39) | 18:44 | 16:36 | 26 | 09:13 (36) | 16:04 |
| 13 | 05:09 | 06:02 | | | 07:00 | | 18:51 (39) | 07:58 | 08:01 | | 08:49 (36) | 08:51 |
| | 22:09 | 21:15 | | | 19:58 | 28 | 19:19 (39) | 18:42 | 16:34 | 24 | 09:13 (36) | 16:04 |
| 14 | 05:11 | 06:03 | | | 07:02 | | 18:51 (39) | 08:00 | 08:03 | | 08:49 (36) | 08:52 |
| | 22:08 | 21:12 | | | 19:56 | 28 | 19:19 (39) | 18:39 | 16:32 | 24 | 09:13 (36) | 16:03 |
| 15 | 05:12 | 06:05 | | | 07:04 | | 18:52 (39) | 08:02 | 08:05 | | 08:49 (36) | 08:53 |
| | 22:06 | 21:10 | | | 19:53 | 26 | 19:18 (39) | 18:37 | 16:31 | 24 | 09:13 (36) | 16:03 |
| 16 | 05:13 | 06:07 | | | 07:06 | | 18:51 (39) | 08:04 | 08:07 | | 08:49 (36) | 08:54 |
| | 22:05 | 21:08 | | | 19:51 | 26 | 19:17 (39) | 18:34 | 16:29 | 23 | 09:12 (36) | 16:03 |
| 17 | 05:15 | 06:09 | | | 07:08 | | 18:52 (39) | 08:06 | 08:09 | | 08:50 (36) | 08:55 |
| | 22:04 | 21:05 | | | 19:48 | 23 | 19:15 (39) | 18:32 | 16:27 | 22 | 09:12 (36) | 16:04 |
| 18 | 05:16 | 06:11 | | | 07:10 | | 18:52 (39) | 08:08 | 08:11 | | 08:52 (36) | 08:56 |
| | 22:03 | 21:03 | | | 19:46 | 22 | 19:14 (39) | 18:29 | 16:26 | 20 | 09:12 (36) | 16:04 |
| 19 | 05:18 | 06:13 | | | 07:12 | | 18:54 (39) | 08:10 | 08:13 | | 08:52 (36) | 08:57 |
| | 22:01 | 21:01 | | | 19:43 | 18 | 19:12 (39) | 18:27 | 16:24 | 19 | 09:11 (36) | 16:04 |
| 20 | 05:19 | 06:15 | | | 07:13 | | 18:56 (39) | 08:12 | 08:15 | | 08:53 (36) | 08:57 |
| | 22:00 | 20:58 | | | 19:40 | 14 | 19:10 (39) | 18:25 | 16:23 | 17 | 09:10 (36) | 16:04 |
| 21 | 05:21 | 06:17 | | 07:02 (6) | 07:15 | | 18:59 (39) | 08:14 | 08:17 | | 08:55 (36) | 08:58 |
| | 21:58 | 20:56 | 1 | 07:03 (6) | 19:38 | 7 | 19:06 (39) | 18:22 | 16:21 | 14 | 09:09 (36) | 16:05 |
| 22 | 05:22 | 06:19 | | 07:06 (6) | 07:17 | | | 08:16 | 08:19 | | 08:56 (36) | 08:59 |
| | 21:57 | 20:54 | 7 | 07:16 (6) | 19:35 | | | 18:20 | 16:20 | 12 | 09:08 (36) | 16:05 |
| 23 | 05:24 | 06:21 | | 07:12 (6) | 07:19 | | | 08:18 | 08:21 | | 08:59 (36) | 08:59 |
| | 21:55 | 20:51 | 4 | 07:16 (6) | 19:33 | | | 18:18 | 16:19 | 7 | 09:06 (36) | 16:06 |
| 24 | 05:26 | 06:22 | | | 07:21 | | | 08:20 | 08:23 | | | 09:00 |
| | 21:54 | 20:49 | | | 19:30 | | | 18:15 | 16:17 | | | 16:06 |
| 25 | 05:27 | 06:24 | | | 07:23 | | | 07:22 | 08:24 | | | 09:00 |
| | 21:52 | 20:46 | | | 19:27 | | | 17:13 | 16:16 | | | 16:07 |
| 26 | 05:29 | 06:26 | | | 07:25 | | | 07:24 | 08:26 | | | 09:00 |
| | 21:50 | 20:44 | | | 19:25 | | | 17:11 | 16:15 | | | 16:08 |
| 27 | 05:31 | 06:28 | | | 07:27 | | | 07:26 | 08:28 | | | 09:00 |
| | 21:49 | 20:42 | | | 19:22 | | | 17:08 | 16:14 | | | 16:08 |
| 28 | 05:32 | 06:30 | | | 07:29 | | | 07:28 | 08:30 | | | 09:01 |
| | 21:47 | 20:39 | | | 19:20 | | | 17:06 | 16:13 | | | 16:09 |
| 29 | 05:34 | 06:32 | | | 07:31 | | | 07:30 | 08:31 | | | 09:01 |
| | 21:45 | 20:37 | | | 19:17 | | | 17:04 | 16:12 | | | 16:10 |
| 30 | 05:36 | 06:34 | | | 07:32 | | | 07:32 | 08:33 | | | 09:01 |
| | 21:43 | 20:34 | | | 19:14 | | | 17:02 | 16:11 | | | 16:11 |
| 31 | 05:38 | 06:36 | | | | | | 07:34 | | | | 09:01 |
| | 21:41 | 20:32 | | | | | | 17:00 | | | | 16:12 |
| Potential sun hours | 521 | 465 | | | 383 | | | 326 | 253 | | | 224 |
| Total, worst case | | | 12 | | | 411 | | | | 438 | | |
| Sun reduction | | | 0,51 | | | 0,40 | | | | 0,16 | | |
| Oper. time red. | | | 1,00 | | | 1,00 | | | | 1,00 | | |
| Wind dir. red. | | | 0,97 | | | 1,00 | | | | 0,73 | | |
| Total reduction | | | 0,47 | | | 0,38 | | | | 0,11 | | |
| Total, real | | | 6 | | | 155 | | | | 48 | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:37 (36) | 07:26 | | 07:08 | 18:56 (39) | 05:55 | 05:02 |
| | 16:14 | | 17:08 18 | 09:55 (36) | 18:07 | | 20:09 21 | 19:17 (39) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:39 (36) | 07:24 | | 07:05 | 18:58 (39) | 05:53 | 05:01 |
| | 16:15 | | 17:10 15 | 09:54 (36) | 18:09 | | 20:11 17 | 19:15 (39) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | 09:41 (36) | 07:22 | | 07:03 | 18:59 (39) | 05:50 | 05:00 |
| | 16:16 | | 17:12 11 | 09:52 (36) | 18:11 | | 20:13 13 | 19:12 (39) | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | 19:03 (39) | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 5 | 19:08 (39) | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:57 | | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | | 07:14 | | 06:55 | | 05:44 | 04:57 |
| | 16:20 | | 17:19 | | 18:17 | | 20:19 | | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | | 07:12 | | 06:52 | | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | | 21:20 | 22:09 |
| 8 | 08:58 | 09:37 (36) | 08:14 | | 07:09 | | 06:50 | | 05:40 | 04:56 |
| | 16:23 3 | 09:40 (36) | 17:23 | | 18:22 | | 20:23 | | 21:22 | 22:10 |
| 9 | 08:57 | 09:35 (36) | 08:12 | | 07:07 | | 06:47 | | 05:38 | 04:55 |
| | 16:24 8 | 09:43 (36) | 17:25 | | 18:24 | | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | 09:34 (36) | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 11 | 09:45 (36) | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | 09:33 (36) | 08:08 | | 07:02 | | 06:42 | | 05:34 | 04:54 |
| | 16:28 14 | 09:47 (36) | 17:29 | | 18:28 | | 20:29 | | 21:28 | 22:13 |
| 12 | 08:55 | 09:32 (36) | 08:06 | | 06:59 | | 06:40 | | 05:32 | 04:53 |
| | 16:29 16 | 09:48 (36) | 17:31 | | 18:30 | | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 09:32 (36) | 08:03 | | 06:56 | | 06:37 | | 05:30 | 04:53 |
| | 16:31 17 | 09:49 (36) | 17:33 | | 18:32 | | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 09:32 (36) | 08:01 | | 06:54 | | 06:35 | | 05:28 | 04:53 |
| | 16:33 19 | 09:51 (36) | 17:36 | | 18:34 | | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 09:31 (36) | 07:59 | | 06:51 | | 06:32 | 07:21 (6) | 05:26 | 04:52 |
| | 16:34 20 | 09:51 (36) | 17:38 | | 18:36 | | 20:37 16 | 07:37 (6) | 21:35 | 22:16 |
| 16 | 08:51 | 09:31 (36) | 07:57 | | 06:49 | | 06:30 | 07:17 (6) | 05:25 | 04:52 |
| | 16:36 21 | 09:52 (36) | 17:40 | | 18:38 | | 20:39 24 | 07:41 (6) | 21:37 | 22:17 |
| 17 | 08:50 | 09:31 (36) | 07:55 | | 06:46 | | 06:27 | 07:14 (6) | 05:23 | 04:52 |
| | 16:38 22 | 09:53 (36) | 17:42 | | 18:40 | | 20:41 30 | 07:44 (6) | 21:39 | 22:17 |
| 18 | 08:49 | 09:30 (36) | 07:52 | | 06:44 | | 06:25 | 07:11 (6) | 05:21 | 04:52 |
| | 16:40 24 | 09:54 (36) | 17:44 | | 18:42 | | 20:43 34 | 07:45 (6) | 21:40 | 22:18 |
| 19 | 08:47 | 09:31 (36) | 07:50 | | 06:41 | 18:05 (39) | 06:23 | 07:10 (6) | 05:19 | 04:52 |
| | 16:42 24 | 09:55 (36) | 17:46 | | 18:44 12 | 18:17 (39) | 20:45 37 | 07:47 (6) | 21:42 | 22:18 |
| 20 | 08:46 | 09:30 (36) | 07:48 | | 06:39 | 18:02 (39) | 06:20 | 07:08 (6) | 05:18 | 04:52 |
| | 16:44 25 | 09:55 (36) | 17:48 | | 18:46 16 | 18:18 (39) | 20:47 41 | 07:49 (6) | 21:44 | 22:18 |
| 21 | 08:45 | 09:31 (36) | 07:46 | | 06:36 | 17:59 (39) | 06:18 | 07:06 (6) | 05:16 | 04:52 |
| | 16:46 25 | 09:56 (36) | 17:50 | | 18:48 20 | 18:19 (39) | 20:49 43 | 07:49 (6) | 21:45 | 22:19 |
| 22 | 08:43 | 09:31 (36) | 07:43 | | 06:33 | 17:58 (39) | 06:15 | 07:05 (6) | 05:15 | 04:52 |
| | 16:48 25 | 09:56 (36) | 17:53 | | 18:50 23 | 18:21 (39) | 20:51 45 | 07:50 (6) | 21:47 | 22:19 |
| 23 | 08:42 | 09:31 (36) | 07:41 | | 06:31 | 17:57 (39) | 06:13 | 07:04 (6) | 05:13 | 04:53 |
| | 16:50 25 | 09:56 (36) | 17:55 | | 18:52 24 | 18:21 (39) | 20:53 47 | 07:51 (6) | 21:49 | 22:19 |
| 24 | 08:41 | 09:32 (36) | 07:38 | | 06:28 | 17:56 (39) | 06:11 | 07:03 (6) | 05:12 | 04:53 |
| | 16:51 25 | 09:57 (36) | 17:57 | | 18:54 26 | 18:22 (39) | 20:55 49 | 07:52 (6) | 21:50 | 22:19 |
| 25 | 08:39 | 09:32 (36) | 07:36 | | 06:26 | 17:55 (39) | 06:08 | 07:01 (6) | 05:10 | 04:53 |
| | 16:53 25 | 09:57 (36) | 17:59 | | 18:56 27 | 18:22 (39) | 20:57 51 | 07:52 (6) | 21:52 | 22:19 |
| 26 | 08:37 | 09:32 (36) | 07:34 | | 06:23 | 17:54 (39) | 06:06 | 07:01 (6) | 05:09 | 04:54 |
| | 16:56 25 | 09:57 (36) | 18:01 | | 18:57 27 | 18:21 (39) | 20:59 52 | 07:53 (6) | 21:53 | 22:19 |
| 27 | 08:36 | 09:32 (36) | 07:31 | | 06:21 | 17:55 (39) | 06:04 | 07:00 (6) | 05:08 | 04:54 |
| | 16:58 25 | 09:57 (36) | 18:03 | | 18:59 26 | 18:21 (39) | 21:01 53 | 07:53 (6) | 21:55 | 22:19 |
| 28 | 08:34 | 09:33 (36) | 07:29 | | 06:18 | 17:54 (39) | 06:01 | 07:14 (6) | 05:06 | 04:55 |
| | 17:00 23 | 09:56 (36) | 18:05 | | 19:01 26 | 18:20 (39) | 21:03 40 | 07:54 (6) | 21:57 | 22:19 |
| 29 | 08:33 | 09:34 (36) | | | 07:15 | 18:55 (39) | 05:59 | 07:18 (6) | 05:05 | 04:55 |
| | 17:02 23 | 09:57 (36) | | | 20:03 25 | 19:20 (39) | 21:05 36 | 07:54 (6) | 21:58 | 22:18 |
| 30 | 08:31 | 09:35 (36) | | | 07:13 | 18:55 (39) | 05:57 | 07:21 (6) | 05:04 | 04:56 |
| | 17:04 22 | 09:57 (36) | | | 20:05 24 | 19:19 (39) | 21:06 33 | 07:54 (6) | 21:59 | 22:18 |
| 31 | 08:29 | 09:36 (36) | | | 07:10 | 18:56 (39) | | | 05:03 | |
| | 17:06 20 | 09:56 (36) | | | 20:07 22 | 19:18 (39) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 487 | | 44 | | 298 | | 687 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,68 | | 0,68 | | 1,00 | | 0,98 | | | |
| Total reduction | 0,12 | | 0,16 | | 0,32 | | 0,36 | | | |
| Total, real | 56 | | 7 | | 95 | | 250 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AA - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | | 07:34 | | 07:36 | | | 08:35 | | 09:15 (36) |
| | 22:18 | | 21:40 | | | 20:29 | | | 19:12 | | 16:58 | | | 16:10 | 14 | 09:29 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | | 09:17 (36) |
| | 22:17 | | 21:38 | | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | 11 | 09:28 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | | 09:19 (36) |
| | 22:17 | | 21:36 | | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | 8 | 09:27 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | | 07:40 | | 07:43 | | | 08:40 | | 09:21 (36) |
| | 22:16 | | 21:34 | | | 20:22 | | | 19:04 | | 16:51 | | | 16:07 | 4 | 09:25 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | | 07:42 | | 07:45 | | | 08:41 | | |
| | 22:16 | | 21:32 | | | 20:19 | | | 19:02 | | 16:49 | | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | |
| | 22:15 | | 21:30 | | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | | 06:49 | | | 07:46 | | 07:49 | | 09:16 (36) | 08:44 | | |
| | 22:14 | | 21:28 | | | 20:14 | | | 18:57 | | 16:45 | 1 | 09:17 (36) | 16:05 | | |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:59 (39) | 07:48 | | 07:51 | | 09:11 (36) | 08:45 | | |
| | 22:14 | | 21:25 | | | 20:11 | 3 | 19:02 (39) | 18:54 | | 16:43 | 11 | 09:22 (36) | 16:05 | | |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:54 (39) | 07:50 | | 07:53 | | 09:08 (36) | 08:47 | | |
| | 22:13 | | 21:23 | | | 20:09 | 12 | 19:06 (39) | 18:52 | | 16:41 | 16 | 09:24 (36) | 16:05 | | |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 18:50 (39) | 07:52 | | 07:55 | | 09:08 (36) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 17 | 19:07 (39) | 18:49 | | 16:40 | 18 | 09:26 (36) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 18:48 (39) | 07:54 | | 07:57 | | 09:07 (36) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 21 | 19:09 (39) | 18:47 | | 16:38 | 20 | 09:27 (36) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:47 (39) | 07:56 | | 07:59 | | 09:06 (36) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 23 | 19:10 (39) | 18:44 | | 16:36 | 21 | 09:27 (36) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:46 (39) | 07:58 | | 08:01 | | 09:06 (36) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:58 | 24 | 19:10 (39) | 18:42 | | 16:34 | 23 | 09:29 (36) | 16:04 | | |
| 14 | 05:11 | | 06:03 | | | 07:02 | | 18:45 (39) | 08:00 | | 08:03 | | 09:06 (36) | 08:52 | | |
| | 22:08 | | 21:12 | | | 19:56 | 26 | 19:11 (39) | 18:39 | | 16:32 | 23 | 09:29 (36) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:45 (39) | 08:02 | | 08:05 | | 09:05 (36) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 26 | 19:11 (39) | 18:37 | | 16:31 | 25 | 09:30 (36) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:43 (39) | 08:04 | | 08:07 | | 09:05 (36) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 27 | 19:10 (39) | 18:34 | | 16:29 | 25 | 09:30 (36) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:43 (39) | 08:06 | | 08:09 | | 09:05 (36) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 27 | 19:10 (39) | 18:32 | | 16:27 | 25 | 09:30 (36) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:43 (39) | 08:08 | | 08:11 | | 09:06 (36) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 26 | 19:09 (39) | 18:29 | | 16:26 | 25 | 09:31 (36) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:43 (39) | 08:10 | | 08:13 | | 09:06 (36) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 26 | 19:09 (39) | 18:27 | | 16:24 | 25 | 09:31 (36) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:43 (39) | 08:12 | | 08:15 | | 09:06 (36) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 25 | 19:08 (39) | 18:25 | | 16:23 | 25 | 09:31 (36) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:44 (39) | 08:14 | | 08:17 | | 09:06 (36) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 23 | 19:07 (39) | 18:22 | | 16:21 | 25 | 09:31 (36) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:13 (6) | 07:17 | | 18:45 (39) | 08:16 | | 08:19 | | 09:06 (36) | 08:59 | | |
| | 21:57 | | 20:54 | 3 | 07:16 (6) | 19:35 | 20 | 19:05 (39) | 18:20 | | 16:20 | 25 | 09:31 (36) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:12 (6) | 07:19 | | 18:46 (39) | 08:18 | | 08:21 | | 09:07 (36) | 08:59 | | |
| | 21:55 | | 20:51 | 6 | 07:18 (6) | 19:33 | 18 | 19:04 (39) | 18:18 | | 16:19 | 24 | 09:31 (36) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:14 (6) | 07:21 | | 18:47 (39) | 08:20 | | 08:23 | | 09:08 (36) | 09:00 | | |
| | 21:54 | | 20:49 | 6 | 07:20 (6) | 19:30 | 13 | 19:00 (39) | 18:15 | | 16:17 | 23 | 09:31 (36) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:15 (6) | 07:23 | | 18:50 (39) | 07:22 | | 08:24 | | 09:08 (36) | 09:00 | | |
| | 21:52 | | 20:46 | 8 | 07:23 (6) | 19:27 | 6 | 18:56 (39) | 17:13 | | 16:16 | 23 | 09:31 (36) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:17 (6) | 07:25 | | | 07:24 | | 08:26 | | 09:09 (36) | 09:00 | | |
| | 21:50 | | 20:44 | 6 | 07:23 (6) | 19:25 | | | 17:11 | | 16:15 | 21 | 09:30 (36) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:19 (6) | 07:27 | | | 07:26 | | 08:28 | | 09:10 (36) | 09:00 | | |
| | 21:49 | | 20:42 | 6 | 07:25 (6) | 19:22 | | | 17:08 | | 16:14 | 20 | 09:30 (36) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:23 (6) | 07:29 | | | 07:28 | | 08:30 | | 09:11 (36) | 09:01 | | |
| | 21:47 | | 20:39 | 4 | 07:27 (6) | 19:20 | | | 17:06 | | 16:13 | 19 | 09:30 (36) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | | 07:31 | | | 07:30 | | 08:31 | | 09:12 (36) | 09:01 | | |
| | 21:45 | | 20:37 | | | 19:17 | | | 17:04 | | 16:12 | 18 | 09:30 (36) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | 09:13 (36) | 09:01 | | |
| | 21:43 | | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | 16 | 09:29 (36) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | | | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 39 | | | 363 | | | | | 497 | | | 37 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | | 1,00 | | | | | 0,68 | | | 0,68 | |
| Total reduction | | | | 0,47 | | | 0,37 | | | | | 0,10 | | | 0,09 | |
| Total, real | | | | 19 | | | 134 | | | | | 50 | | | 3 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:42 (36) | 07:26 | | 07:08 | 18:55 (39) | 05:55 | 05:02 |
| | 16:14 | | 17:08 13 | 09:55 (36) | 18:07 | | 20:09 15 | 19:10 (39) | 21:08 | 22:02 |
| 2 | 09:00 | | 08:26 | 09:45 (36) | 07:24 | | 07:05 | 18:59 (39) | 05:53 | 05:01 |
| | 16:15 | | 17:10 7 | 09:52 (36) | 18:09 | | 20:11 9 | 19:08 (39) | 21:10 | 22:03 |
| 3 | 09:00 | | 08:24 | | 07:22 | | 07:03 | | 05:50 | 05:00 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | | 21:12 | 22:05 |
| 4 | 09:00 | | 08:22 | | 07:19 | | 07:00 | | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | | 07:17 | | 06:57 | | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | | 21:16 | 22:07 |
| 6 | 08:59 | 09:38 (36) | 08:18 | | 07:14 | | 06:55 | | 05:44 | 04:57 |
| | 16:20 6 | 09:44 (36) | 17:19 | | 18:17 | | 20:19 | | 21:18 | 22:08 |
| 7 | 08:58 | 09:36 (36) | 08:16 | | 07:12 | | 06:52 | | 05:42 | 04:56 |
| | 16:21 10 | 09:46 (36) | 17:21 | | 18:19 | | 20:21 | | 21:20 | 22:09 |
| 8 | 08:58 | 09:35 (36) | 08:14 | | 07:09 | | 06:50 | | 05:40 | 04:56 |
| | 16:23 12 | 09:47 (36) | 17:23 | | 18:22 | | 20:23 | | 21:22 | 22:10 |
| 9 | 08:57 | 09:35 (36) | 08:12 | | 07:07 | | 06:47 | | 05:38 | 04:55 |
| | 16:24 14 | 09:49 (36) | 17:25 | | 18:24 | | 20:25 | | 21:24 | 22:11 |
| 10 | 08:56 | 09:34 (36) | 08:10 | | 07:04 | | 06:45 | | 05:36 | 04:54 |
| | 16:26 16 | 09:50 (36) | 17:27 | | 18:26 | | 20:27 | | 21:26 | 22:12 |
| 11 | 08:56 | 09:34 (36) | 08:08 | | 07:02 | | 06:42 | 07:31 (6) | 05:34 | 04:54 |
| | 16:28 17 | 09:51 (36) | 17:29 | | 18:28 | | 20:29 17 | 07:48 (6) | 21:28 | 22:13 |
| 12 | 08:55 | 09:33 (36) | 08:06 | | 06:59 | | 06:40 | 07:27 (6) | 05:32 | 04:53 |
| | 16:29 19 | 09:52 (36) | 17:31 | | 18:30 | | 20:31 25 | 07:52 (6) | 21:29 | 22:14 |
| 13 | 08:54 | 09:33 (36) | 08:03 | | 06:56 | | 06:37 | 07:23 (6) | 05:30 | 04:53 |
| | 16:31 20 | 09:53 (36) | 17:33 | | 18:32 | | 20:33 30 | 07:53 (6) | 21:31 | 22:15 |
| 14 | 08:53 | 09:33 (36) | 08:01 | | 06:54 | | 06:35 | 07:21 (6) | 05:28 | 04:53 |
| | 16:33 21 | 09:54 (36) | 17:36 | | 18:34 | | 20:35 32 | 07:53 (6) | 21:33 | 22:15 |
| 15 | 08:52 | 09:33 (36) | 07:59 | | 06:51 | | 06:32 | 07:19 (6) | 05:26 | 04:52 |
| | 16:34 21 | 09:54 (36) | 17:38 | | 18:36 | | 20:37 33 | 07:52 (6) | 21:35 | 22:16 |
| 16 | 08:51 | 09:33 (36) | 07:57 | | 06:49 | | 06:30 | 07:17 (6) | 05:25 | 04:52 |
| | 16:36 23 | 09:56 (36) | 17:40 | | 18:38 | | 20:39 36 | 07:53 (6) | 21:37 | 22:17 |
| 17 | 08:50 | 09:33 (36) | 07:55 | | 06:46 | 18:03 (39) | 06:27 | 07:16 (6) | 05:23 | 04:52 |
| | 16:38 24 | 09:57 (36) | 17:42 | | 18:40 9 | 18:12 (39) | 20:41 37 | 07:53 (6) | 21:39 | 22:17 |
| 18 | 08:49 | 09:33 (36) | 07:52 | | 06:44 | 17:59 (39) | 06:25 | 07:14 (6) | 05:21 | 04:52 |
| | 16:40 24 | 09:57 (36) | 17:44 | | 18:42 15 | 18:14 (39) | 20:43 38 | 07:52 (6) | 21:40 | 22:18 |
| 19 | 08:47 | 09:33 (36) | 07:50 | | 06:41 | 17:58 (39) | 06:23 | 07:13 (6) | 05:19 | 04:52 |
| | 16:42 25 | 09:58 (36) | 17:46 | | 18:44 19 | 18:17 (39) | 20:45 40 | 07:53 (6) | 21:42 | 22:18 |
| 20 | 08:46 | 09:33 (36) | 07:48 | | 06:39 | 17:56 (39) | 06:20 | 07:12 (6) | 05:18 | 04:52 |
| | 16:44 25 | 09:58 (36) | 17:48 | | 18:46 21 | 18:17 (39) | 20:47 41 | 07:53 (6) | 21:44 | 22:18 |
| 21 | 08:45 | 09:34 (36) | 07:46 | | 06:36 | 17:54 (39) | 06:18 | 07:11 (6) | 05:16 | 04:52 |
| | 16:46 25 | 09:59 (36) | 17:50 | | 18:48 24 | 18:18 (39) | 20:49 42 | 07:53 (6) | 21:45 | 22:19 |
| 22 | 08:43 | 09:34 (36) | 07:43 | | 06:33 | 17:54 (39) | 06:15 | 07:10 (6) | 05:15 | 04:52 |
| | 16:48 25 | 09:59 (36) | 17:53 | | 18:50 25 | 18:19 (39) | 20:51 44 | 07:54 (6) | 21:47 | 22:19 |
| 23 | 08:42 | 09:33 (36) | 07:41 | | 06:31 | 17:52 (39) | 06:13 | 07:10 (6) | 05:13 | 04:53 |
| | 16:50 26 | 09:59 (36) | 17:55 | | 18:52 26 | 18:18 (39) | 20:53 44 | 07:54 (6) | 21:49 | 22:19 |
| 24 | 08:41 | 09:35 (36) | 07:38 | | 06:28 | 17:52 (39) | 06:11 | 07:09 (6) | 05:12 | 04:53 |
| | 16:51 24 | 09:59 (36) | 17:57 | | 18:54 27 | 18:19 (39) | 20:55 46 | 07:55 (6) | 21:50 | 22:19 |
| 25 | 08:39 | 09:35 (36) | 07:36 | | 06:26 | 17:52 (39) | 06:08 | 07:08 (6) | 05:10 | 04:53 |
| | 16:53 24 | 09:59 (36) | 17:59 | | 18:56 26 | 18:18 (39) | 20:57 47 | 07:55 (6) | 21:52 | 22:19 |
| 26 | 08:37 | 09:35 (36) | 07:34 | | 06:23 | 17:51 (39) | 06:06 | 07:07 (6) | 05:09 | 04:54 |
| | 16:56 24 | 09:59 (36) | 18:01 | | 18:57 26 | 18:17 (39) | 20:59 49 | 07:56 (6) | 21:53 | 22:19 |
| 27 | 08:36 | 09:36 (36) | 07:31 | | 06:21 | 17:51 (39) | 06:04 | 07:07 (6) | 05:08 | 04:54 |
| | 16:58 23 | 09:59 (36) | 18:03 | | 18:59 26 | 18:17 (39) | 21:01 50 | 07:57 (6) | 21:55 | 22:19 |
| 28 | 08:34 | 09:36 (36) | 07:29 | | 06:18 | 17:51 (39) | 06:01 | 07:14 (6) | 05:06 | 04:55 |
| | 17:00 22 | 09:58 (36) | 18:05 | | 19:01 25 | 18:16 (39) | 21:03 44 | 07:58 (6) | 21:57 | 22:19 |
| 29 | 08:33 | 09:38 (36) | | | 07:15 | 18:52 (39) | 05:59 | 07:18 (6) | 05:05 | 04:55 |
| | 17:02 20 | 09:58 (36) | | | 20:03 24 | 19:16 (39) | 21:05 41 | 07:59 (6) | 21:58 | 22:18 |
| 30 | 08:31 | 09:39 (36) | | | 07:13 | 18:53 (39) | 05:57 | 07:21 (6) | 05:04 | 04:56 |
| | 17:04 19 | 09:58 (36) | | | 20:05 21 | 19:14 (39) | 21:06 39 | 08:00 (6) | 21:59 | 22:18 |
| 31 | 08:29 | 09:40 (36) | | | 07:10 | 18:54 (39) | | | 05:03 | |
| | 17:06 17 | 09:57 (36) | | | 20:07 19 | 19:13 (39) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 |
| Total, worst case | 526 | | 20 | | 333 | | 799 | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | 0,67 | | 0,67 | | 0,99 | | 0,99 | | | |
| Total reduction | 0,11 | | 0,15 | | 0,32 | | 0,37 | | | |
| Total, real | 60 | | 3 | | 106 | | 292 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AB - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:30 (6) | 07:34 | | 07:36 | | | 08:35 | | 09:16 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 4 | 07:34 (6) | 19:12 | | 16:58 | | | 16:10 | 17 | 09:33 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | | 07:36 | | 07:38 | | | 08:36 | | 09:17 (36) |
| | 22:17 | | 21:38 | | | 20:27 | | | 19:09 | | 16:55 | | | 16:09 | 16 | 09:33 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | | 07:38 | | 07:41 | | | 08:38 | | 09:19 (36) |
| | 22:17 | | 21:36 | | | 20:24 | | | 19:07 | | 16:53 | | | 16:08 | 14 | 09:33 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | | 07:40 | | 07:43 | | | 08:40 | | 09:19 (36) |
| | 22:16 | | 21:34 | | | 20:22 | | | 19:04 | | 16:51 | | | 16:07 | 12 | 09:31 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | | 07:42 | | 07:45 | | | 08:41 | | 09:21 (36) |
| | 22:16 | | 21:32 | | | 20:19 | | | 19:02 | | 16:49 | | | 16:07 | 10 | 09:31 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | 09:22 (36) |
| | 22:15 | | 21:30 | | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | 7 | 09:29 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | | 07:46 | | 07:49 | | | 08:44 | | |
| | 22:14 | | 21:28 | | | 20:14 | | | 18:57 | | 16:45 | | | 16:05 | | |
| 8 | 05:03 | | 05:52 | | | 06:51 | | | 07:48 | | 07:51 | | | 08:45 | | |
| | 22:14 | | 21:25 | | | 20:11 | | | 18:54 | | 16:43 | | | 16:05 | | |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | 07:53 | | 09:15 (36) | 08:47 | | |
| | 22:13 | | 21:23 | | | 20:09 | | | 18:52 | | 16:41 | 8 | 09:23 (36) | 16:05 | | |
| 10 | 05:05 | | 05:56 | | | 06:55 | | 18:51 (39) | 07:52 | | 07:55 | | 09:13 (36) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 8 | 18:59 (39) | 18:49 | | 16:40 | 13 | 09:26 (36) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:56 | | 18:48 (39) | 07:54 | | 07:57 | | 09:11 (36) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 14 | 19:02 (39) | 18:47 | | 16:38 | 17 | 09:28 (36) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:46 (39) | 07:56 | | 07:59 | | 09:10 (36) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 18 | 19:04 (39) | 18:44 | | 16:36 | 19 | 09:29 (36) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:44 (39) | 07:58 | | 08:01 | | 09:10 (36) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:58 | 21 | 19:05 (39) | 18:42 | | 16:34 | 20 | 09:30 (36) | 16:04 | | |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 18:43 (39) | 08:00 | | 08:03 | | 09:09 (36) | 08:52 | | |
| | 22:08 | | 21:12 | | | 19:56 | 23 | 19:06 (39) | 18:39 | | 16:32 | 22 | 09:31 (36) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:42 (39) | 08:02 | | 08:05 | | 09:08 (36) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 24 | 19:06 (39) | 18:37 | | 16:31 | 24 | 09:32 (36) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:40 (39) | 08:04 | | 08:07 | | 09:08 (36) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 26 | 19:06 (39) | 18:34 | | 16:29 | 24 | 09:32 (36) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:39 (39) | 08:06 | | 08:09 | | 09:08 (36) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 27 | 19:06 (39) | 18:32 | | 16:27 | 24 | 09:32 (36) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:39 (39) | 08:08 | | 08:11 | | 09:09 (36) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 27 | 19:06 (39) | 18:29 | | 16:26 | 24 | 09:33 (36) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:39 (39) | 08:10 | | 08:13 | | 09:08 (36) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 26 | 19:05 (39) | 18:27 | | 16:24 | 26 | 09:34 (36) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:39 (39) | 08:12 | | 08:15 | | 09:09 (36) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 26 | 19:05 (39) | 18:25 | | 16:23 | 25 | 09:34 (36) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:39 (39) | 08:14 | | 08:17 | | 09:09 (36) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 25 | 19:04 (39) | 18:22 | | 16:21 | 25 | 09:34 (36) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | 07:15 (6) | 07:17 | | 18:39 (39) | 08:16 | | 08:19 | | 09:09 (36) | 08:59 | | |
| | 21:57 | | 20:54 | 1 | 07:16 (6) | 19:35 | 24 | 19:03 (39) | 18:20 | | 16:20 | 25 | 09:34 (36) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | 07:16 (6) | 07:19 | | 18:40 (39) | 08:18 | | 08:21 | | 09:09 (36) | 08:59 | | |
| | 21:55 | | 20:51 | 2 | 07:18 (6) | 19:33 | 22 | 19:02 (39) | 18:18 | | 16:19 | 25 | 09:34 (36) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | 07:17 (6) | 07:21 | | 18:40 (39) | 08:20 | | 08:23 | | 09:10 (36) | 09:00 | | |
| | 21:54 | | 20:49 | 3 | 07:20 (6) | 19:30 | 20 | 19:00 (39) | 18:15 | | 16:17 | 24 | 09:34 (36) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | 07:18 (6) | 07:23 | | 18:41 (39) | 07:22 | | 08:24 | | 09:10 (36) | 09:00 | | |
| | 21:52 | | 20:46 | 5 | 07:23 (6) | 19:27 | 17 | 18:58 (39) | 17:13 | | 16:16 | 24 | 09:34 (36) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:18 (6) | 07:25 | | 18:44 (39) | 07:24 | | 08:26 | | 09:11 (36) | 09:00 | | |
| | 21:50 | | 20:44 | 5 | 07:23 (6) | 19:25 | 11 | 18:55 (39) | 17:11 | | 16:15 | 23 | 09:34 (36) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:19 (6) | 07:27 | | | 07:26 | | 08:28 | | 09:12 (36) | 09:00 | | |
| | 21:49 | | 20:42 | 6 | 07:25 (6) | 19:22 | | | 17:08 | | 16:14 | 22 | 09:34 (36) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:21 (6) | 07:29 | | | 07:28 | | 08:30 | | 09:13 (36) | 09:01 | | |
| | 21:47 | | 20:39 | 6 | 07:27 (6) | 19:20 | | | 17:06 | | 16:13 | 21 | 09:34 (36) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:22 (6) | 07:31 | | | 07:30 | | 08:31 | | 09:13 (36) | 09:01 | | |
| | 21:45 | | 20:37 | 7 | 07:29 (6) | 19:17 | | | 17:04 | | 16:12 | 20 | 09:33 (36) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:24 (6) | 07:32 | | | 07:32 | | 08:33 | | 09:15 (36) | 09:01 | | |
| | 21:43 | | 20:34 | 7 | 07:31 (6) | 19:14 | | | 17:02 | | 16:11 | 18 | 09:33 (36) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 07:26 (6) | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | 6 | 07:32 (6) | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 48 | | | 363 | | | | | 473 | | | 76 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | | | 0,67 | | | 0,67 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | | | 0,10 | | | 0,09 | |
| Total, real | | | | 23 | | | 134 | | | | | 47 | | | 6 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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+8 621 66746
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | | 08:27 | | 09:49 (36) | 07:26 | | | 07:08 | | 18:58 (39) | 05:55 | 05:02 |
| | 16:14 | | | 17:08 | 4 | 09:53 (36) | 18:07 | | | 20:09 | 4 | 19:02 (39) | 21:08 | 22:02 |
| 2 | 09:00 | | | 08:26 | | | 07:24 | | | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | | | 17:10 | | | 18:09 | | | 20:11 | | | 21:10 | 22:03 |
| 3 | 09:00 | | 09:38 (36) | 08:24 | | | 07:22 | | | 07:03 | | | 05:50 | 05:00 |
| | 16:16 | 5 | 09:43 (36) | 17:12 | | | 18:11 | | | 20:13 | | | 21:12 | 22:05 |
| 4 | 09:00 | | 09:38 (36) | 08:22 | | | 07:19 | | | 07:00 | | | 05:48 | 04:59 |
| | 16:17 | 8 | 09:46 (36) | 17:14 | | | 18:13 | | | 20:15 | | | 21:14 | 22:06 |
| 5 | 08:59 | | 09:37 (36) | 08:20 | | | 07:17 | | | 06:57 | | | 05:46 | 04:58 |
| | 16:19 | 10 | 09:47 (36) | 17:16 | | | 18:15 | | | 20:17 | | | 21:16 | 22:07 |
| 6 | 08:59 | | 09:37 (36) | 08:18 | | | 07:14 | | | 06:55 | | | 05:44 | 04:57 |
| | 16:20 | 12 | 09:49 (36) | 17:19 | | | 18:17 | | | 20:19 | | | 21:18 | 22:08 |
| 7 | 08:58 | | 09:36 (36) | 08:16 | | | 07:12 | | | 06:52 | | 07:42 (6) | 05:42 | 04:56 |
| | 16:21 | 14 | 09:50 (36) | 17:21 | | | 18:19 | | | 20:21 | 12 | 07:54 (6) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:36 (36) | 08:14 | | | 07:09 | | | 06:50 | | 07:36 (6) | 05:40 | 04:56 |
| | 16:23 | 15 | 09:51 (36) | 17:23 | | | 18:22 | | | 20:23 | 19 | 07:55 (6) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:35 (36) | 08:12 | | | 07:07 | | | 06:47 | | 07:33 (6) | 05:38 | 04:55 |
| | 16:24 | 17 | 09:52 (36) | 17:25 | | | 18:24 | | | 20:25 | 22 | 07:55 (6) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:35 (36) | 08:10 | | | 07:04 | | | 06:45 | | 07:30 (6) | 05:36 | 04:54 |
| | 16:26 | 18 | 09:53 (36) | 17:27 | | | 18:26 | | | 20:27 | 24 | 07:54 (6) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:35 (36) | 08:08 | | | 07:02 | | | 06:42 | | 07:29 (6) | 05:34 | 04:54 |
| | 16:28 | 19 | 09:54 (36) | 17:29 | | | 18:28 | | | 20:29 | 25 | 07:54 (6) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:35 (36) | 08:06 | | | 06:59 | | | 06:40 | | 07:27 (6) | 05:32 | 04:53 |
| | 16:29 | 20 | 09:55 (36) | 17:31 | | | 18:30 | | | 20:31 | 27 | 07:54 (6) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:35 (36) | 08:03 | | | 06:56 | | | 06:37 | | 07:25 (6) | 05:30 | 04:53 |
| | 16:31 | 21 | 09:56 (36) | 17:33 | | | 18:32 | | | 20:33 | 28 | 07:53 (6) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:35 (36) | 08:01 | | | 06:54 | | | 06:35 | | 07:24 (6) | 05:28 | 04:53 |
| | 16:33 | 22 | 09:57 (36) | 17:36 | | | 18:34 | | | 20:35 | 29 | 07:53 (6) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:34 (36) | 07:59 | | | 06:51 | | | 06:32 | | 07:22 (6) | 05:26 | 04:52 |
| | 16:34 | 23 | 09:57 (36) | 17:38 | | | 18:36 | | | 20:37 | 30 | 07:52 (6) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:35 (36) | 07:57 | | | 06:49 | | 17:58 (39) | 06:30 | | 07:21 (6) | 05:25 | 04:52 |
| | 16:36 | 23 | 09:58 (36) | 17:40 | | | 18:38 | 12 | 18:10 (39) | 20:39 | 32 | 07:53 (6) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:35 (36) | 07:55 | | | 06:46 | | 17:56 (39) | 06:27 | | 07:20 (6) | 05:23 | 04:52 |
| | 16:38 | 24 | 09:59 (36) | 17:42 | | | 18:40 | 17 | 18:13 (39) | 20:41 | 33 | 07:53 (6) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:35 (36) | 07:52 | | | 06:44 | | 17:54 (39) | 06:25 | | 07:19 (6) | 05:21 | 04:52 |
| | 16:40 | 24 | 09:59 (36) | 17:44 | | | 18:42 | 20 | 18:14 (39) | 20:43 | 33 | 07:52 (6) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:35 (36) | 07:50 | | | 06:41 | | 17:53 (39) | 06:23 | | 07:18 (6) | 05:19 | 04:52 |
| | 16:42 | 25 | 10:00 (36) | 17:46 | | | 18:44 | 22 | 18:15 (39) | 20:45 | 35 | 07:53 (6) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:35 (36) | 07:48 | | | 06:39 | | 17:51 (39) | 06:20 | | 07:18 (6) | 05:18 | 04:52 |
| | 16:44 | 25 | 10:00 (36) | 17:48 | | | 18:46 | 24 | 18:15 (39) | 20:47 | 35 | 07:53 (6) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:36 (36) | 07:46 | | | 06:36 | | 17:50 (39) | 06:18 | | 07:16 (6) | 05:16 | 04:52 |
| | 16:46 | 25 | 10:01 (36) | 17:50 | | | 18:48 | 25 | 18:15 (39) | 20:49 | 37 | 07:53 (6) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:36 (36) | 07:43 | | | 06:33 | | 17:50 (39) | 06:15 | | 07:16 (6) | 05:15 | 04:52 |
| | 16:48 | 25 | 10:01 (36) | 17:53 | | | 18:50 | 26 | 18:16 (39) | 20:51 | 38 | 07:54 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:36 (36) | 07:41 | | | 06:31 | | 17:49 (39) | 06:13 | | 07:16 (6) | 05:13 | 04:53 |
| | 16:49 | 25 | 10:01 (36) | 17:55 | | | 18:52 | 26 | 18:15 (39) | 20:53 | 38 | 07:54 (6) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:37 (36) | 07:38 | | | 06:28 | | 17:49 (39) | 06:11 | | 07:16 (6) | 05:12 | 04:53 |
| | 16:51 | 24 | 10:01 (36) | 17:57 | | | 18:54 | 27 | 18:16 (39) | 20:55 | 39 | 07:55 (6) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:38 (36) | 07:36 | | | 06:26 | | 17:49 (39) | 06:08 | | 07:15 (6) | 05:10 | 04:53 |
| | 16:53 | 23 | 10:01 (36) | 17:59 | | | 18:56 | 26 | 18:15 (39) | 20:57 | 40 | 07:55 (6) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:38 (36) | 07:34 | | | 06:23 | | 17:48 (39) | 06:06 | | 07:15 (6) | 05:09 | 04:54 |
| | 16:56 | 22 | 10:00 (36) | 18:01 | | | 18:57 | 26 | 18:14 (39) | 20:59 | 41 | 07:56 (6) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:39 (36) | 07:31 | | | 06:21 | | 17:49 (39) | 06:04 | | 07:15 (6) | 05:08 | 04:54 |
| | 16:58 | 21 | 10:00 (36) | 18:03 | | | 18:59 | 24 | 18:13 (39) | 21:01 | 42 | 07:57 (6) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:40 (36) | 07:29 | | | 06:18 | | 17:49 (39) | 06:01 | | 07:15 (6) | 05:06 | 04:55 |
| | 17:00 | 19 | 09:59 (36) | 18:05 | | | 19:01 | 23 | 18:12 (39) | 21:03 | 43 | 07:58 (6) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:42 (36) | | | | 07:15 | | 18:51 (39) | 05:59 | | 07:18 (6) | 05:05 | 04:55 |
| | 17:02 | 17 | 09:59 (36) | | | | 20:03 | 20 | 19:11 (39) | 21:05 | 41 | 07:59 (6) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:43 (36) | | | | 07:13 | | 18:51 (39) | 05:57 | | 07:21 (6) | 05:04 | 04:56 |
| | 17:04 | 15 | 09:58 (36) | | | | 20:05 | 18 | 19:09 (39) | 21:06 | 39 | 08:00 (6) | 21:59 | 22:18 |
| 31 | 08:29 | | 09:45 (36) | | | | 07:10 | | 18:54 (39) | | | | 05:03 | |
| | 17:06 | 11 | 09:56 (36) | | | | 20:07 | 13 | 19:07 (39) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 552 | | | 4 | | | 349 | | | 786 | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,66 | | | 0,66 | | | 0,99 | | | 0,99 | | | |
| Total reduction | | 0,11 | | | 0,15 | | | 0,32 | | | 0,37 | | | |
| Total, real | | 62 | | | 1 | | | 110 | | | 288 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AC - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:28 (6) | 07:34 | | 07:36 | | | 08:35 | | 09:17 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 6 | 07:34 (6) | 19:12 | | 16:58 | | | 16:10 | 19 | 09:36 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:29 (6) | 07:36 | | 07:38 | | | 08:36 | | 09:18 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 7 | 07:36 (6) | 19:09 | | 16:55 | | | 16:09 | 18 | 09:36 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:31 (6) | 07:38 | | 07:41 | | | 08:38 | | 09:19 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 9 | 07:40 (6) | 19:07 | | 16:53 | | | 16:08 | 17 | 09:36 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:34 (6) | 07:40 | | 07:43 | | | 08:40 | | 09:20 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 20 | 07:56 (6) | 19:04 | | 16:51 | | | 16:07 | 15 | 09:35 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:38 (6) | 07:42 | | 07:45 | | | 08:41 | | 09:21 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 13 | 07:51 (6) | 19:02 | | 16:49 | | | 16:07 | 14 | 09:35 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | | 07:44 | | 07:47 | | | 08:43 | | 09:22 (36) |
| | 22:15 | | 21:30 | | | 20:16 | | | 18:59 | | 16:47 | | | 16:06 | 12 | 09:34 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | | 07:46 | | 07:49 | | | 08:44 | | 09:24 (36) |
| | 22:14 | | 21:28 | | | 20:14 | | | 18:57 | | 16:45 | | | 16:05 | 10 | 09:34 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | | 07:48 | | 07:51 | | | 08:45 | | 09:25 (36) |
| | 22:14 | | 21:25 | | | 20:11 | | | 18:54 | | 16:43 | | | 16:05 | 8 | 09:33 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | | 07:50 | | 07:53 | | | 08:47 | | 09:27 (36) |
| | 22:13 | | 21:23 | | | 20:09 | | | 18:52 | | 16:41 | | | 16:05 | 6 | 09:33 (36) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | | 07:52 | | 07:55 | | 09:19 (36) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | | | 18:49 | | 16:40 | 5 | 09:24 (36) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:56 | | | 07:54 | | 07:57 | | 09:16 (36) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | | | 18:47 | | 16:38 | 11 | 09:27 (36) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:58 | | 18:46 (39) | 07:56 | | 07:59 | | 09:14 (36) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 12 | 18:58 (39) | 18:44 | | 16:36 | 15 | 09:29 (36) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:43 (39) | 07:58 | | 08:01 | | 09:13 (36) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:58 | 17 | 19:00 (39) | 18:42 | | 16:34 | 18 | 09:31 (36) | 16:04 | | |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 18:41 (39) | 08:00 | | 08:03 | | 09:12 (36) | 08:52 | | |
| | 22:08 | | 21:12 | | | 19:56 | 20 | 19:01 (39) | 18:39 | | 16:32 | 20 | 09:32 (36) | 16:03 | | |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:40 (39) | 08:02 | | 08:05 | | 09:12 (36) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 22 | 19:02 (39) | 18:37 | | 16:31 | 21 | 09:33 (36) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:38 (39) | 08:04 | | 08:07 | | 09:11 (36) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 24 | 19:02 (39) | 18:34 | | 16:29 | 22 | 09:33 (36) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:37 (39) | 08:06 | | 08:09 | | 09:11 (36) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 25 | 19:02 (39) | 18:32 | | 16:27 | 23 | 09:34 (36) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:36 (39) | 08:08 | | 08:11 | | 09:11 (36) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 26 | 19:02 (39) | 18:29 | | 16:26 | 24 | 09:35 (36) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:36 (39) | 08:10 | | 08:13 | | 09:11 (36) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 26 | 19:02 (39) | 18:27 | | 16:24 | 25 | 09:36 (36) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:35 (39) | 08:12 | | 08:15 | | 09:11 (36) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 27 | 19:02 (39) | 18:25 | | 16:23 | 25 | 09:36 (36) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:35 (39) | 08:14 | | 08:17 | | 09:11 (36) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 27 | 19:02 (39) | 18:22 | | 16:21 | 25 | 09:36 (36) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | | 07:17 | | 18:35 (39) | 08:16 | | 08:19 | | 09:11 (36) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 26 | 19:01 (39) | 18:20 | | 16:20 | 25 | 09:36 (36) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:36 (39) | 08:18 | | 08:21 | | 09:11 (36) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 24 | 19:00 (39) | 18:18 | | 16:19 | 25 | 09:36 (36) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 18:35 (39) | 08:20 | | 08:23 | | 09:12 (36) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 23 | 18:58 (39) | 18:15 | | 16:17 | 24 | 09:36 (36) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 18:36 (39) | 07:22 | | 08:24 | | 09:12 (36) | 09:00 | | |
| | 21:52 | | 20:46 | | | 19:27 | 21 | 18:57 (39) | 17:13 | | 16:16 | 24 | 09:36 (36) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 07:22 (6) | 07:25 | | 18:37 (39) | 07:24 | | 08:26 | | 09:13 (36) | 09:00 | | |
| | 21:50 | | 20:44 | 1 | 07:23 (6) | 19:25 | 18 | 18:55 (39) | 17:11 | | 16:15 | 23 | 09:36 (36) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 07:23 (6) | 07:27 | | 18:39 (39) | 07:26 | | 08:28 | | 09:13 (36) | 09:00 | | |
| | 21:49 | | 20:42 | 2 | 07:25 (6) | 19:22 | 14 | 18:53 (39) | 17:08 | | 16:14 | 23 | 09:36 (36) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | 07:24 (6) | 07:29 | | 18:43 (39) | 07:28 | | 08:30 | | 09:14 (36) | 09:01 | | |
| | 21:47 | | 20:39 | 3 | 07:27 (6) | 19:20 | 5 | 18:48 (39) | 17:06 | | 16:13 | 22 | 09:36 (36) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | 07:25 (6) | 07:31 | | | 07:30 | | 08:31 | | 09:15 (36) | 09:01 | | |
| | 21:45 | | 20:37 | 4 | 07:29 (6) | 19:17 | | | 17:04 | | 16:12 | 21 | 09:36 (36) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 07:26 (6) | 07:32 | | | 07:32 | | 08:33 | | 09:16 (36) | 09:01 | | |
| | 21:43 | | 20:34 | 5 | 07:31 (6) | 19:14 | | | 17:02 | | 16:11 | 20 | 09:36 (36) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 07:26 (6) | | | | 07:34 | | | | | 09:01 | | |
| | 21:41 | | 20:32 | 6 | 07:32 (6) | | | | 17:00 | | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 21 | | | 412 | | | | | 441 | | | 119 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | | | 0,66 | | | 0,66 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | | | 0,10 | | | 0,08 | |
| Total, real | | | | 10 | | | 151 | | | | | 43 | | | 10 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (36) | 08:27 | | 07:26 | | | 07:08 | | | 05:55 | 05:02 |
| | 16:14 | 10 | 09:48 (36) | 17:08 | | 18:07 | | | 20:09 | | | 21:08 | 22:02 |
| 2 | 09:00 | | 09:38 (36) | 08:26 | | 07:24 | | | 07:05 | | | 05:53 | 05:01 |
| | 16:15 | 11 | 09:49 (36) | 17:10 | | 18:09 | | | 20:11 | | | 21:10 | 22:03 |
| 3 | 09:00 | | 09:37 (36) | 08:24 | | 07:22 | | | 07:03 | | 07:52 (6) | 05:50 | 05:00 |
| | 16:16 | 13 | 09:50 (36) | 17:12 | | 18:11 | | | 20:13 | 8 | 08:00 (6) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:38 (36) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (6) | 05:48 | 04:59 |
| | 16:17 | 14 | 09:52 (36) | 17:14 | | 18:13 | | | 20:15 | 12 | 07:58 (6) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:37 (36) | 08:20 | | 07:17 | | | 06:57 | | 07:43 (6) | 05:46 | 04:58 |
| | 16:19 | 15 | 09:52 (36) | 17:16 | | 18:15 | | | 20:17 | 15 | 07:58 (6) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:38 (36) | 08:18 | | 07:14 | | | 06:55 | | 07:40 (6) | 05:44 | 04:57 |
| | 16:20 | 16 | 09:54 (36) | 17:19 | | 18:17 | | | 20:19 | 17 | 07:57 (6) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:37 (36) | 08:16 | | 07:12 | | | 06:52 | | 07:39 (6) | 05:42 | 04:56 |
| | 16:21 | 18 | 09:55 (36) | 17:21 | | 18:19 | | | 20:21 | 17 | 07:56 (6) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:37 (36) | 08:14 | | 07:09 | | | 06:50 | | 07:36 (6) | 05:40 | 04:56 |
| | 16:23 | 19 | 09:56 (36) | 17:23 | | 18:22 | | | 20:23 | 19 | 07:55 (6) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:37 (36) | 08:12 | | 07:07 | | | 06:47 | | 07:35 (6) | 05:38 | 04:55 |
| | 16:24 | 19 | 09:56 (36) | 17:25 | | 18:24 | | | 20:25 | 20 | 07:55 (6) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:37 (36) | 08:10 | | 07:04 | | | 06:45 | | 07:33 (6) | 05:36 | 04:54 |
| | 16:26 | 20 | 09:57 (36) | 17:27 | | 18:26 | | | 20:27 | 21 | 07:54 (6) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:37 (36) | 08:08 | | 07:02 | | | 06:42 | | 07:32 (6) | 05:34 | 04:54 |
| | 16:28 | 21 | 09:58 (36) | 17:29 | | 18:28 | | | 20:29 | 22 | 07:54 (6) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:37 (36) | 08:06 | | 06:59 | | | 06:40 | | 07:31 (6) | 05:32 | 04:53 |
| | 16:29 | 22 | 09:59 (36) | 17:31 | | 18:30 | | | 20:31 | 23 | 07:54 (6) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:37 (36) | 08:03 | | 06:56 | | | 06:37 | | 07:30 (6) | 05:30 | 04:53 |
| | 16:31 | 23 | 10:00 (36) | 17:33 | | 18:32 | | | 20:33 | 23 | 07:53 (6) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:37 (36) | 08:01 | | 06:54 | | 17:58 (39) | 06:35 | | 07:29 (6) | 05:28 | 04:53 |
| | 16:33 | 24 | 10:01 (36) | 17:36 | | 18:34 | 8 | 18:06 (39) | 20:35 | 24 | 07:53 (6) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:37 (36) | 07:59 | | 06:51 | | 17:54 (39) | 06:32 | | 07:28 (6) | 05:26 | 04:52 |
| | 16:34 | 24 | 10:01 (36) | 17:38 | | 18:36 | 14 | 18:08 (39) | 20:37 | 24 | 07:52 (6) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:37 (36) | 07:57 | | 06:49 | | 17:51 (39) | 06:30 | | 07:27 (6) | 05:25 | 04:52 |
| | 16:36 | 24 | 10:01 (36) | 17:40 | | 18:38 | 19 | 18:10 (39) | 20:39 | 26 | 07:53 (6) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:38 (36) | 07:55 | | 06:46 | | 17:50 (39) | 06:27 | | 07:27 (6) | 05:23 | 04:52 |
| | 16:38 | 24 | 10:02 (36) | 17:42 | | 18:40 | 21 | 18:11 (39) | 20:41 | 26 | 07:53 (6) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:38 (36) | 07:52 | | 06:44 | | 17:48 (39) | 06:25 | | 07:26 (6) | 05:21 | 04:52 |
| | 16:40 | 24 | 10:02 (36) | 17:44 | | 18:42 | 24 | 18:12 (39) | 20:43 | 26 | 07:52 (6) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:38 (36) | 07:50 | | 06:41 | | 17:48 (39) | 06:23 | | 07:26 (6) | 05:19 | 04:52 |
| | 16:42 | 25 | 10:03 (36) | 17:46 | | 18:44 | 25 | 18:13 (39) | 20:45 | 27 | 07:53 (6) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:38 (36) | 07:48 | | 06:39 | | 17:47 (39) | 06:20 | | 07:26 (6) | 05:18 | 04:52 |
| | 16:44 | 25 | 10:03 (36) | 17:48 | | 18:46 | 26 | 18:13 (39) | 20:47 | 27 | 07:53 (6) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:39 (36) | 07:46 | | 06:36 | | 17:46 (39) | 06:18 | | 07:25 (6) | 05:16 | 04:52 |
| | 16:46 | 24 | 10:03 (36) | 17:50 | | 18:48 | 26 | 18:12 (39) | 20:49 | 28 | 07:53 (6) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:39 (36) | 07:43 | | 06:33 | | 17:46 (39) | 06:15 | | 07:25 (6) | 05:15 | 04:52 |
| | 16:48 | 24 | 10:03 (36) | 17:53 | | 18:50 | 27 | 18:13 (39) | 20:51 | 29 | 07:54 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:40 (36) | 07:41 | | 06:31 | | 17:45 (39) | 06:13 | | 07:25 (6) | 05:13 | 04:53 |
| | 16:49 | 23 | 10:03 (36) | 17:55 | | 18:52 | 27 | 18:12 (39) | 20:53 | 29 | 07:54 (6) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:41 (36) | 07:38 | | 06:28 | | 17:46 (39) | 06:11 | | 07:25 (6) | 05:12 | 04:53 |
| | 16:51 | 22 | 10:03 (36) | 17:57 | | 18:54 | 26 | 18:12 (39) | 20:55 | 30 | 07:55 (6) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:41 (36) | 07:36 | | 06:26 | | 17:46 (39) | 06:08 | | 07:24 (6) | 05:10 | 04:53 |
| | 16:53 | 22 | 10:03 (36) | 17:59 | | 18:56 | 24 | 18:10 (39) | 20:57 | 31 | 07:55 (6) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:42 (36) | 07:34 | | 06:23 | | 17:46 (39) | 06:06 | | 07:24 (6) | 05:09 | 04:54 |
| | 16:56 | 20 | 10:02 (36) | 18:01 | | 18:57 | 23 | 18:09 (39) | 20:59 | 32 | 07:56 (6) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:43 (36) | 07:31 | | 06:21 | | 17:47 (39) | 06:04 | | 07:24 (6) | 05:08 | 04:54 |
| | 16:58 | 18 | 10:01 (36) | 18:03 | | 18:59 | 21 | 18:08 (39) | 21:01 | 33 | 07:57 (6) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:44 (36) | 07:29 | | 06:18 | | 17:48 (39) | 06:01 | | 07:25 (6) | 05:06 | 04:55 |
| | 17:00 | 16 | 10:00 (36) | 18:05 | | 19:01 | 18 | 18:06 (39) | 21:03 | 33 | 07:58 (6) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:47 (36) | | | 07:15 | | 18:50 (39) | 05:59 | | 07:25 (6) | 05:05 | 04:55 |
| | 17:02 | 13 | 10:00 (36) | | | 20:03 | 15 | 19:05 (39) | 21:05 | 34 | 07:59 (6) | 21:58 | 22:18 |
| 30 | 08:31 | | 09:49 (36) | | | 07:13 | | 18:53 (39) | 05:57 | | 07:26 (6) | 05:04 | 04:56 |
| | 17:04 | 9 | 09:58 (36) | | | 20:05 | 8 | 19:01 (39) | 21:06 | 34 | 08:00 (6) | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | | | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 582 | | | | | 352 | | | 690 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,65 | | | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | | 0,31 | | | 0,37 | | | |
| Total, real | | 64 | | | | | 110 | | | 252 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AD - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | | 06:38 | | 07:31 (6) | 07:34 | | 07:36 | | | 08:35 | | 09:19 (36) |
| | 22:18 | | 21:40 | | | 20:29 | 4 | 08:08 (6) | 19:12 | | 16:58 | | | 16:10 | 21 | 09:40 (36) |
| 2 | 04:57 | | 05:41 | | | 06:39 | | 07:32 (6) | 07:36 | | 07:38 | | | 08:36 | | 09:20 (36) |
| | 22:17 | | 21:38 | | | 20:27 | 8 | 08:08 (6) | 19:09 | | 16:55 | | | 16:09 | 20 | 09:40 (36) |
| 3 | 04:58 | | 05:43 | | | 06:41 | | 07:33 (6) | 07:38 | | 07:41 | | | 08:38 | | 09:21 (36) |
| | 22:17 | | 21:36 | | | 20:24 | 15 | 08:08 (6) | 19:07 | | 16:53 | | | 16:08 | 20 | 09:41 (36) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 07:34 (6) | 07:40 | | 07:43 | | | 08:40 | | 09:21 (36) |
| | 22:16 | | 21:34 | | | 20:22 | 32 | 08:08 (6) | 19:04 | | 16:51 | | | 16:07 | 19 | 09:40 (36) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 07:35 (6) | 07:42 | | 07:45 | | | 08:41 | | 09:22 (36) |
| | 22:16 | | 21:32 | | | 20:19 | 32 | 08:07 (6) | 19:02 | | 16:49 | | | 16:07 | 18 | 09:40 (36) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 07:36 (6) | 07:44 | | 07:47 | | | 08:43 | | 09:23 (36) |
| | 22:15 | | 21:30 | | | 20:16 | 31 | 08:07 (6) | 18:59 | | 16:47 | | | 16:06 | 16 | 09:39 (36) |
| 7 | 05:02 | | 05:50 | | | 06:49 | | 07:38 (6) | 07:46 | | 07:49 | | | 08:44 | | 09:24 (36) |
| | 22:14 | | 21:28 | | | 20:14 | 29 | 08:07 (6) | 18:57 | | 16:45 | | | 16:05 | 16 | 09:40 (36) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 07:41 (6) | 07:48 | | 07:51 | | | 08:45 | | 09:25 (36) |
| | 22:14 | | 21:25 | | | 20:11 | 23 | 08:04 (6) | 18:54 | | 16:43 | | | 16:05 | 14 | 09:39 (36) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 07:45 (6) | 07:50 | | 07:53 | | | 08:47 | | 09:26 (36) |
| | 22:13 | | 21:23 | | | 20:09 | 15 | 08:00 (6) | 18:52 | | 16:41 | | | 16:05 | 13 | 09:39 (36) |
| 10 | 05:05 | | 05:56 | | | 06:55 | | | 07:52 | | 07:55 | | | 08:48 | | 09:27 (36) |
| | 22:12 | | 21:21 | | | 20:06 | | | 18:49 | | 16:40 | | | 16:04 | 12 | 09:39 (36) |
| 11 | 05:07 | | 05:58 | | | 06:56 | | | 07:54 | | 07:57 | | | 08:49 | | 09:28 (36) |
| | 22:11 | | 21:19 | | | 20:04 | | | 18:47 | | 16:38 | | | 16:04 | 10 | 09:38 (36) |
| 12 | 05:08 | | 06:00 | | | 06:58 | | | 07:56 | | 07:59 | | 09:20 (36) | 08:50 | | 09:30 (36) |
| | 22:10 | | 21:17 | | | 20:01 | | | 18:44 | | 16:36 | 9 | 09:29 (36) | 16:04 | 8 | 09:38 (36) |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:45 (39) | 07:58 | | 08:01 | | 09:19 (36) | 08:51 | | 09:32 (36) |
| | 22:09 | | 21:15 | | | 19:58 | 6 | 18:51 (39) | 18:42 | | 16:34 | 13 | 09:32 (36) | 16:04 | 6 | 09:38 (36) |
| 14 | 05:10 | | 06:03 | | | 07:02 | | 18:41 (39) | 08:00 | | 08:03 | | 09:17 (36) | 08:52 | | 09:33 (36) |
| | 22:08 | | 21:12 | | | 19:56 | 13 | 18:54 (39) | 18:39 | | 16:32 | 16 | 09:33 (36) | 16:03 | 3 | 09:36 (36) |
| 15 | 05:12 | | 06:05 | | | 07:04 | | 18:38 (39) | 08:02 | | 08:05 | | 09:16 (36) | 08:53 | | |
| | 22:06 | | 21:10 | | | 19:53 | 18 | 18:56 (39) | 18:37 | | 16:31 | 18 | 09:34 (36) | 16:03 | | |
| 16 | 05:13 | | 06:07 | | | 07:06 | | 18:36 (39) | 08:04 | | 08:07 | | 09:15 (36) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 20 | 18:56 (39) | 18:34 | | 16:29 | 20 | 09:35 (36) | 16:03 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:34 (39) | 08:06 | | 08:09 | | 09:14 (36) | 08:55 | | |
| | 22:04 | | 21:05 | | | 19:48 | 23 | 18:57 (39) | 18:32 | | 16:27 | 22 | 09:36 (36) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:33 (39) | 08:08 | | 08:11 | | 09:15 (36) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 25 | 18:58 (39) | 18:29 | | 16:26 | 22 | 09:37 (36) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:33 (39) | 08:10 | | 08:13 | | 09:15 (36) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 25 | 18:58 (39) | 18:27 | | 16:24 | 23 | 09:38 (36) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:13 | | 18:32 (39) | 08:12 | | 08:15 | | 09:14 (36) | 08:57 | | |
| | 22:00 | | 20:58 | | | 19:40 | 26 | 18:58 (39) | 18:25 | | 16:23 | 24 | 09:38 (36) | 16:04 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:32 (39) | 08:14 | | 08:17 | | 09:14 (36) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 26 | 18:58 (39) | 18:22 | | 16:21 | 24 | 09:38 (36) | 16:05 | | |
| 22 | 05:22 | | 06:19 | | | 07:17 | | 18:31 (39) | 08:16 | | 08:19 | | 09:14 (36) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 27 | 18:58 (39) | 18:20 | | 16:20 | 25 | 09:39 (36) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:31 (39) | 08:18 | | 08:21 | | 09:14 (36) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 26 | 18:57 (39) | 18:18 | | 16:19 | 25 | 09:39 (36) | 16:06 | | |
| 24 | 05:26 | | 06:22 | | | 07:21 | | 18:30 (39) | 08:20 | | 08:23 | | 09:15 (36) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 26 | 18:56 (39) | 18:15 | | 16:17 | 24 | 09:39 (36) | 16:06 | | |
| 25 | 05:27 | | 06:24 | | | 07:23 | | 18:31 (39) | 07:22 | | 08:24 | | 09:15 (36) | 09:00 | | |
| | 21:52 | | 20:46 | | | 19:27 | 24 | 18:55 (39) | 17:13 | | 16:16 | 24 | 09:39 (36) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | | 07:25 | | 18:31 (39) | 07:24 | | 08:26 | | 09:15 (36) | 09:00 | | |
| | 21:50 | | 20:44 | | | 19:25 | 23 | 18:54 (39) | 17:11 | | 16:15 | 24 | 09:39 (36) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | | 07:27 | | 18:32 (39) | 07:26 | | 08:28 | | 09:16 (36) | 09:00 | | |
| | 21:49 | | 20:42 | | | 19:22 | 20 | 18:52 (39) | 17:08 | | 16:14 | 24 | 09:40 (36) | 16:08 | | |
| 28 | 05:32 | | 06:30 | | | 07:29 | | 18:34 (39) | 07:28 | | 08:30 | | 09:16 (36) | 09:01 | | |
| | 21:47 | | 20:39 | | | 19:20 | 16 | 18:50 (39) | 17:06 | | 16:13 | 24 | 09:40 (36) | 16:09 | | |
| 29 | 05:34 | | 06:32 | | | 07:31 | | 18:36 (39) | 07:30 | | 08:31 | | 09:17 (36) | 09:01 | | |
| | 21:45 | | 20:37 | | | 19:17 | 11 | 18:47 (39) | 17:04 | | 16:12 | 23 | 09:40 (36) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | | 07:32 | | | 07:32 | | 08:33 | | 09:18 (36) | 09:01 | | 09:40 (36) |
| | 21:43 | | 20:34 | | | 19:14 | | | 17:02 | | 16:11 | 22 | 09:40 (36) | 16:11 | 5 | 09:45 (36) |
| 31 | 05:38 | | 06:36 | | 07:30 (6) | | | | 07:34 | | | | | 09:01 | | 09:39 (36) |
| | 21:41 | | 20:32 | 2 | 07:32 (6) | | | | 17:00 | | | | | 16:12 | 8 | 09:47 (36) |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | 253 | | | 224 | | |
| Total, worst case | | | | 2 | | | 544 | | | | | 406 | | | 209 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 1,00 | | | 0,99 | | | | | 0,65 | | | 0,65 | |
| Total reduction | | | | 0,48 | | | 0,37 | | | | | 0,10 | | | 0,08 | |
| Total, real | | | | 1 | | | 199 | | | | | 39 | | | 17 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:38 (36) | 08:27 | | 07:26 | | | 07:08 | | 07:54 (6) | 05:55 | 05:02 |
| | 16:14 | 14 | 09:52 (36) | 17:08 | | 18:07 | | | 20:09 | 8 | 08:02 (6) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:39 (36) | 08:26 | | 07:24 | | | 07:05 | | 07:51 (6) | 05:53 | 05:01 |
| | 16:15 | 15 | 09:54 (36) | 17:10 | | 18:09 | | | 20:11 | 11 | 08:02 (6) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:38 (36) | 08:24 | | 07:22 | | | 07:03 | | 07:48 (6) | 05:50 | 05:00 |
| | 16:16 | 16 | 09:54 (36) | 17:12 | | 18:11 | | | 20:13 | 12 | 08:00 (6) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:39 (36) | 08:22 | | 07:19 | | | 07:00 | | 07:46 (6) | 05:48 | 04:59 |
| | 16:17 | 17 | 09:56 (36) | 17:14 | | 18:13 | | | 20:15 | 12 | 07:58 (6) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:38 (36) | 08:20 | | 07:17 | | | 06:57 | | 07:45 (6) | 05:46 | 04:58 |
| | 16:19 | 18 | 09:56 (36) | 17:16 | | 18:15 | | | 20:17 | 13 | 07:58 (6) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:39 (36) | 08:18 | | 07:14 | | | 06:55 | | 07:43 (6) | 05:44 | 04:57 |
| | 16:20 | 19 | 09:58 (36) | 17:19 | | 18:17 | | | 20:19 | 14 | 07:57 (6) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:39 (36) | 08:16 | | 07:12 | | | 06:52 | | 07:42 (6) | 05:42 | 04:56 |
| | 16:21 | 19 | 09:58 (36) | 17:21 | | 18:19 | | | 20:21 | 14 | 07:56 (6) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:39 (36) | 08:14 | | 07:09 | | | 06:50 | | 07:40 (6) | 05:40 | 04:56 |
| | 16:23 | 20 | 09:59 (36) | 17:23 | | 18:22 | | | 20:23 | 15 | 07:55 (6) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:38 (36) | 08:12 | | 07:07 | | | 06:47 | | 07:39 (6) | 05:38 | 04:55 |
| | 16:24 | 22 | 10:00 (36) | 17:25 | | 18:24 | | | 20:25 | 16 | 07:55 (6) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:38 (36) | 08:10 | | 07:04 | | | 06:45 | | 07:38 (6) | 05:36 | 04:54 |
| | 16:26 | 22 | 10:00 (36) | 17:27 | | 18:26 | | | 20:27 | 16 | 07:54 (6) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:39 (36) | 08:08 | | 07:02 | | | 06:42 | | 07:37 (6) | 05:34 | 04:54 |
| | 16:28 | 22 | 10:01 (36) | 17:29 | | 18:28 | | | 20:29 | 17 | 07:54 (6) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:39 (36) | 08:06 | | 06:59 | | | 06:40 | | 07:37 (6) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:02 (36) | 17:31 | | 18:30 | | | 20:31 | 17 | 07:54 (6) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:39 (36) | 08:03 | | 06:56 | | 17:52 (39) | 06:37 | | 07:36 (6) | 05:30 | 04:53 |
| | 16:31 | 23 | 10:02 (36) | 17:33 | | 18:32 | 12 | 18:04 (39) | 20:33 | 17 | 07:53 (6) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:40 (36) | 08:01 | | 06:54 | | 17:50 (39) | 06:35 | | 07:35 (6) | 05:28 | 04:53 |
| | 16:33 | 23 | 10:03 (36) | 17:36 | | 18:34 | 17 | 18:07 (39) | 20:35 | 18 | 07:53 (6) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:39 (36) | 07:59 | | 06:51 | | 17:48 (39) | 06:32 | | 07:34 (6) | 05:26 | 04:52 |
| | 16:34 | 24 | 10:03 (36) | 17:38 | | 18:36 | 20 | 18:08 (39) | 20:37 | 18 | 07:52 (6) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:40 (36) | 07:57 | | 06:49 | | 17:46 (39) | 06:30 | | 07:34 (6) | 05:25 | 04:52 |
| | 16:36 | 24 | 10:04 (36) | 17:40 | | 18:38 | 22 | 18:08 (39) | 20:39 | 19 | 07:53 (6) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:40 (36) | 07:55 | | 06:46 | | 17:45 (39) | 06:27 | | 07:34 (6) | 05:23 | 04:52 |
| | 16:38 | 25 | 10:05 (36) | 17:42 | | 18:40 | 25 | 18:10 (39) | 20:41 | 19 | 07:53 (6) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:40 (36) | 07:52 | | 06:44 | | 17:44 (39) | 06:25 | | 07:33 (6) | 05:21 | 04:52 |
| | 16:40 | 24 | 10:04 (36) | 17:44 | | 18:42 | 25 | 18:09 (39) | 20:43 | 19 | 07:52 (6) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:41 (36) | 07:50 | | 06:41 | | 17:44 (39) | 06:23 | | 07:33 (6) | 05:19 | 04:52 |
| | 16:42 | 24 | 10:05 (36) | 17:46 | | 18:44 | 26 | 18:10 (39) | 20:45 | 20 | 07:53 (6) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:41 (36) | 07:48 | | 06:39 | | 17:43 (39) | 06:20 | | 07:34 (6) | 05:18 | 04:52 |
| | 16:44 | 24 | 10:05 (36) | 17:48 | | 18:46 | 27 | 18:10 (39) | 20:47 | 19 | 07:53 (6) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:42 (36) | 07:46 | | 06:36 | | 17:42 (39) | 06:18 | | 07:33 (6) | 05:16 | 04:52 |
| | 16:46 | 23 | 10:05 (36) | 17:50 | | 18:48 | 27 | 18:09 (39) | 20:49 | 20 | 07:53 (6) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:42 (36) | 07:43 | | 06:33 | | 17:43 (39) | 06:15 | | 07:33 (6) | 05:15 | 04:52 |
| | 16:48 | 23 | 10:05 (36) | 17:53 | | 18:50 | 26 | 18:09 (39) | 20:51 | 21 | 07:54 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:43 (36) | 07:41 | | 06:31 | | 17:43 (39) | 06:13 | | 07:34 (6) | 05:13 | 04:53 |
| | 16:49 | 21 | 10:04 (36) | 17:55 | | 18:52 | 25 | 18:08 (39) | 20:53 | 20 | 07:54 (6) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:44 (36) | 07:38 | | 06:28 | | 17:44 (39) | 06:11 | | 07:34 (6) | 05:12 | 04:53 |
| | 16:51 | 21 | 10:05 (36) | 17:57 | | 18:54 | 24 | 18:08 (39) | 20:55 | 21 | 07:55 (6) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:45 (36) | 07:36 | | 06:26 | | 17:44 (39) | 06:08 | | 07:34 (6) | 05:10 | 04:53 |
| | 16:53 | 19 | 10:04 (36) | 17:59 | | 18:56 | 22 | 18:06 (39) | 20:57 | 21 | 07:55 (6) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:46 (36) | 07:34 | | 06:23 | | 17:44 (39) | 06:06 | | 07:34 (6) | 05:09 | 04:54 |
| | 16:56 | 17 | 10:03 (36) | 18:01 | | 18:57 | 20 | 18:04 (39) | 20:59 | 22 | 07:56 (6) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:47 (36) | 07:31 | | 06:21 | | 17:46 (39) | 06:04 | | 07:35 (6) | 05:08 | 04:54 |
| | 16:58 | 15 | 10:02 (36) | 18:03 | | 18:59 | 17 | 18:03 (39) | 21:01 | 22 | 07:57 (6) | 21:55 | 22:19 |
| 28 | 08:34 | | 09:49 (36) | 07:29 | | 06:18 | | 17:48 (39) | 06:01 | | 07:35 (6) | 05:06 | 04:55 |
| | 17:00 | 11 | 10:00 (36) | 18:05 | | 19:01 | 12 | 18:00 (39) | 21:03 | 23 | 07:58 (6) | 21:57 | 22:19 |
| 29 | 08:33 | | 09:53 (36) | | | 07:15 | | | 05:59 | | 07:36 (6) | 05:05 | 04:55 |
| | 17:02 | 5 | 09:58 (36) | | | 20:03 | | | 21:05 | 23 | 07:59 (6) | 21:58 | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:04 (6) | 05:57 | | 07:37 (6) | 05:04 | 04:56 |
| | 17:04 | | | | | 20:05 | 7 | 08:11 (6) | 21:06 | 23 | 08:00 (6) | 21:59 | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 07:58 (6) | | | | 05:03 | |
| | 17:06 | | | | | 20:07 | 19 | 08:17 (6) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 573 | | | | | 373 | | | 530 | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,64 | | | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | | 0,31 | | | 0,36 | | | |
| Total, real | | 61 | | | | | 116 | | | 193 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AE - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (6) | 07:34 | | 18:35 (39) | 07:36 | | | 08:35 | | 09:21 (36) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (6) | 19:12 | 6 | 18:41 (39) | 16:58 | | | 16:10 | 22 | 09:43 (36) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (6) | 07:36 | | | 07:38 | | | 08:36 | | 09:22 (36) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (6) | 19:09 | | | 16:55 | | | 16:09 | 21 | 09:43 (36) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:37 (6) | 07:38 | | | 07:41 | | | 08:38 | | 09:23 (36) |
| | 22:17 | | 21:36 | | 20:24 | 11 | 08:08 (6) | 19:07 | | | 16:53 | | | 16:08 | 21 | 09:44 (36) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:38 (6) | 07:40 | | | 07:43 | | | 08:40 | | 09:23 (36) |
| | 22:16 | | 21:34 | | 20:22 | 28 | 08:08 (6) | 19:04 | | | 16:51 | | | 16:07 | 20 | 09:43 (36) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:38 (6) | 07:42 | | | 07:45 | | | 08:41 | | 09:24 (36) |
| | 22:16 | | 21:32 | | 20:19 | 29 | 08:07 (6) | 19:02 | | | 16:49 | | | 16:07 | 19 | 09:43 (36) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:39 (6) | 07:44 | | | 07:47 | | | 08:43 | | 09:24 (36) |
| | 22:15 | | 21:30 | | 20:16 | 28 | 08:07 (6) | 18:59 | | | 16:47 | | | 16:06 | 19 | 09:43 (36) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:40 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:25 (36) |
| | 22:14 | | 21:28 | | 20:14 | 27 | 08:07 (6) | 18:57 | | | 16:45 | | | 16:05 | 18 | 09:43 (36) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:41 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:26 (36) |
| | 22:14 | | 21:25 | | 20:11 | 26 | 08:07 (6) | 18:54 | | | 16:43 | | | 16:05 | 17 | 09:43 (36) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:42 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:27 (36) |
| | 22:13 | | 21:23 | | 20:09 | 25 | 08:07 (6) | 18:52 | | | 16:41 | | | 16:05 | 16 | 09:43 (36) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:43 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:28 (36) |
| | 22:12 | | 21:21 | | 20:06 | 23 | 08:06 (6) | 18:49 | | | 16:40 | | | 16:04 | 15 | 09:43 (36) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:46 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:29 (36) |
| | 22:11 | | 21:19 | | 20:04 | 21 | 08:07 (6) | 18:47 | | | 16:38 | | | 16:04 | 14 | 09:43 (36) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:49 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:30 (36) |
| | 22:10 | | 21:17 | | 20:01 | 18 | 08:07 (6) | 18:44 | | | 16:36 | | | 16:04 | 13 | 09:43 (36) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:54 (6) | 07:58 | | | 08:01 | | 09:24 (36) | 08:51 | | 09:31 (36) |
| | 22:09 | | 21:15 | | 19:58 | 10 | 08:04 (6) | 18:42 | | | 16:34 | 7 | 09:31 (36) | 16:04 | 12 | 09:43 (36) |
| 14 | 05:10 | | 06:03 | | 07:02 | | | 08:00 | | | 08:03 | | 09:22 (36) | 08:52 | | 09:32 (36) |
| | 22:08 | | 21:12 | | 19:56 | | | 18:39 | | | 16:32 | 11 | 09:33 (36) | 16:03 | 11 | 09:43 (36) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 18:39 (39) | 08:02 | | | 08:05 | | 09:20 (36) | 08:53 | | 09:33 (36) |
| | 22:06 | | 21:10 | | 19:53 | 11 | 18:50 (39) | 18:37 | | | 16:31 | 15 | 09:35 (36) | 16:03 | 10 | 09:43 (36) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 18:35 (39) | 08:04 | | | 08:07 | | 09:19 (36) | 08:54 | | 09:34 (36) |
| | 22:05 | | 21:08 | | 19:51 | 16 | 18:51 (39) | 18:34 | | | 16:29 | 17 | 09:36 (36) | 16:03 | 9 | 09:43 (36) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 18:33 (39) | 08:06 | | | 08:09 | | 09:18 (36) | 08:55 | | 09:35 (36) |
| | 22:04 | | 21:05 | | 19:48 | 19 | 18:52 (39) | 18:32 | | | 16:27 | 19 | 09:37 (36) | 16:04 | 8 | 09:43 (36) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:31 (39) | 08:08 | | | 08:11 | | 09:18 (36) | 08:56 | | 09:36 (36) |
| | 22:03 | | 21:03 | | 19:46 | 22 | 18:53 (39) | 18:29 | | | 16:26 | 21 | 09:39 (36) | 16:04 | 7 | 09:43 (36) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:30 (39) | 08:10 | | | 08:13 | | 09:18 (36) | 08:57 | | 09:36 (36) |
| | 22:01 | | 21:01 | | 19:43 | 24 | 18:54 (39) | 18:27 | | | 16:24 | 21 | 09:39 (36) | 16:04 | 7 | 09:43 (36) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:29 (39) | 08:12 | | | 08:15 | | 09:17 (36) | 08:57 | | 09:37 (36) |
| | 22:00 | | 20:58 | | 19:40 | 25 | 18:54 (39) | 18:25 | | | 16:23 | 23 | 09:40 (36) | 16:04 | 6 | 09:43 (36) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:29 (39) | 08:14 | | | 08:17 | | 09:17 (36) | 08:58 | | 09:37 (36) |
| | 21:58 | | 20:56 | | 19:38 | 26 | 18:55 (39) | 18:22 | | | 16:21 | 23 | 09:40 (36) | 16:05 | 6 | 09:43 (36) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:28 (39) | 08:16 | | | 08:19 | | 09:17 (36) | 08:59 | | 09:38 (36) |
| | 21:57 | | 20:54 | | 19:35 | 27 | 18:55 (39) | 18:20 | | | 16:20 | 24 | 09:41 (36) | 16:05 | 6 | 09:44 (36) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:28 (39) | 08:18 | | | 08:21 | | 09:17 (36) | 08:59 | | 09:38 (36) |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:54 (39) | 18:18 | | | 16:19 | 24 | 09:41 (36) | 16:06 | 6 | 09:44 (36) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:27 (39) | 08:20 | | | 08:23 | | 09:17 (36) | 09:00 | | 09:39 (36) |
| | 21:54 | | 20:49 | | 19:30 | 26 | 18:53 (39) | 18:15 | | | 16:17 | 24 | 09:41 (36) | 16:06 | 6 | 09:45 (36) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:27 (39) | 07:22 | | | 08:24 | | 09:17 (36) | 09:00 | | 09:39 (36) |
| | 21:52 | | 20:46 | | 19:27 | 25 | 18:52 (39) | 17:13 | | | 16:16 | 25 | 09:42 (36) | 16:07 | 7 | 09:46 (36) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:27 (39) | 07:24 | | | 08:26 | | 09:18 (36) | 09:00 | | 09:39 (36) |
| | 21:50 | | 20:44 | | 19:25 | 25 | 18:52 (39) | 17:11 | | | 16:15 | 24 | 09:42 (36) | 16:08 | 8 | 09:47 (36) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:28 (39) | 07:26 | | | 08:28 | | 09:18 (36) | 09:00 | | 09:39 (36) |
| | 21:49 | | 20:42 | | 19:22 | 23 | 18:51 (39) | 17:08 | | | 16:14 | 24 | 09:42 (36) | 16:08 | 8 | 09:47 (36) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:28 (39) | 07:28 | | | 08:30 | | 09:19 (36) | 09:01 | | 09:39 (36) |
| | 21:47 | | 20:39 | | 19:20 | 21 | 18:49 (39) | 17:06 | | | 16:13 | 23 | 09:42 (36) | 16:09 | 9 | 09:48 (36) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:29 (39) | 07:30 | | | 08:31 | | 09:19 (36) | 09:01 | | 09:39 (36) |
| | 21:45 | | 20:37 | | 19:17 | 18 | 18:47 (39) | 17:04 | | | 16:12 | 24 | 09:43 (36) | 16:10 | 10 | 09:49 (36) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:31 (39) | 07:32 | | | 08:33 | | 09:20 (36) | 09:01 | | 09:39 (36) |
| | 21:43 | | 20:34 | | 19:14 | 14 | 18:45 (39) | 17:02 | | | 16:11 | 23 | 09:43 (36) | 16:11 | 12 | 09:51 (36) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:39 (36) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 13 | 09:52 (36) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 599 | | | 6 | | | 372 | | | 376 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | 0,99 | | | 0,64 | | | 0,64 | |
| Total reduction | | | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 217 | | | 2 | | | 35 | | | 30 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:39 (36) | 08:27 | 07:26 | | | 07:08 | | 07:54 (6) | 05:55 | 05:02 |
| | 16:14 | 17 | 09:56 (36) | 17:08 | 18:07 | | | 20:09 | 8 | 08:02 (6) | 21:08 | 22:02 |
| 2 | 09:00 | | 09:40 (36) | 08:26 | 07:24 | | | 07:05 | | 07:53 (6) | 05:53 | 05:01 |
| | 16:15 | 18 | 09:58 (36) | 17:10 | 18:09 | | | 20:11 | 9 | 08:02 (6) | 21:10 | 22:03 |
| 3 | 09:00 | | 09:39 (36) | 08:24 | 07:22 | | | 07:03 | | 07:51 (6) | 05:50 | 05:00 |
| | 16:16 | 19 | 09:58 (36) | 17:12 | 18:11 | | | 20:13 | 9 | 08:00 (6) | 21:12 | 22:05 |
| 4 | 09:00 | | 09:40 (36) | 08:22 | 07:19 | | | 07:00 | | 07:50 (6) | 05:48 | 04:59 |
| | 16:17 | 19 | 09:59 (36) | 17:14 | 18:13 | | | 20:15 | 8 | 07:58 (6) | 21:14 | 22:06 |
| 5 | 08:59 | | 09:40 (36) | 08:20 | 07:17 | | | 06:57 | | 07:49 (6) | 05:46 | 04:58 |
| | 16:19 | 20 | 10:00 (36) | 17:16 | 18:15 | | | 20:17 | 9 | 07:58 (6) | 21:16 | 22:07 |
| 6 | 08:59 | | 09:41 (36) | 08:18 | 07:14 | | | 06:55 | | 07:48 (6) | 05:44 | 04:57 |
| | 16:20 | 20 | 10:01 (36) | 17:19 | 18:17 | | | 20:19 | 9 | 07:57 (6) | 21:18 | 22:08 |
| 7 | 08:58 | | 09:40 (36) | 08:16 | 07:12 | | | 06:52 | | 07:47 (6) | 05:42 | 04:56 |
| | 16:21 | 21 | 10:01 (36) | 17:21 | 18:19 | | | 20:21 | 9 | 07:56 (6) | 21:20 | 22:09 |
| 8 | 08:58 | | 09:40 (36) | 08:14 | 07:09 | | | 06:50 | | 07:46 (6) | 05:40 | 04:55 |
| | 16:23 | 22 | 10:02 (36) | 17:23 | 18:22 | | | 20:23 | 9 | 07:55 (6) | 21:22 | 22:10 |
| 9 | 08:57 | | 09:40 (36) | 08:12 | 07:07 | | | 06:47 | | 07:46 (6) | 05:38 | 04:55 |
| | 16:24 | 23 | 10:03 (36) | 17:25 | 18:24 | | | 20:25 | 9 | 07:55 (6) | 21:24 | 22:11 |
| 10 | 08:56 | | 09:41 (36) | 08:10 | 07:04 | | | 06:45 | | 07:44 (6) | 05:36 | 04:54 |
| | 16:26 | 22 | 10:03 (36) | 17:27 | 18:26 | | | 20:27 | 10 | 07:54 (6) | 21:26 | 22:12 |
| 11 | 08:56 | | 09:41 (36) | 08:08 | 07:02 | | 17:51 (39) | 06:42 | | 07:44 (6) | 05:34 | 04:54 |
| | 16:28 | 23 | 10:04 (36) | 17:29 | 18:28 | 8 | 17:59 (39) | 20:29 | 10 | 07:54 (6) | 21:28 | 22:13 |
| 12 | 08:55 | | 09:41 (36) | 08:06 | 06:59 | | 17:48 (39) | 06:40 | | 07:44 (6) | 05:32 | 04:53 |
| | 16:29 | 23 | 10:04 (36) | 17:31 | 18:30 | 14 | 18:02 (39) | 20:31 | 10 | 07:54 (6) | 21:29 | 22:14 |
| 13 | 08:54 | | 09:41 (36) | 08:03 | 06:56 | | 17:45 (39) | 06:37 | | 07:43 (6) | 05:30 | 04:53 |
| | 16:31 | 24 | 10:05 (36) | 17:33 | 18:32 | 19 | 18:04 (39) | 20:33 | 10 | 07:53 (6) | 21:31 | 22:15 |
| 14 | 08:53 | | 09:42 (36) | 08:01 | 06:54 | | 17:44 (39) | 06:35 | | 07:44 (6) | 05:28 | 04:53 |
| | 16:33 | 24 | 10:06 (36) | 17:36 | 18:34 | 22 | 18:06 (39) | 20:35 | 9 | 07:53 (6) | 21:33 | 22:15 |
| 15 | 08:52 | | 09:42 (36) | 07:59 | 06:51 | | 17:43 (39) | 06:32 | | 07:43 (6) | 05:26 | 04:52 |
| | 16:34 | 24 | 10:06 (36) | 17:38 | 18:36 | 23 | 18:06 (39) | 20:37 | 9 | 07:52 (6) | 21:35 | 22:16 |
| 16 | 08:51 | | 09:42 (36) | 07:57 | 06:49 | | 17:41 (39) | 06:30 | | 07:43 (6) | 05:25 | 04:52 |
| | 16:36 | 24 | 10:06 (36) | 17:40 | 18:38 | 25 | 18:06 (39) | 20:39 | 10 | 07:53 (6) | 21:37 | 22:17 |
| 17 | 08:50 | | 09:43 (36) | 07:55 | 06:46 | | 17:41 (39) | 06:27 | | 07:43 (6) | 05:23 | 04:52 |
| | 16:38 | 24 | 10:07 (36) | 17:42 | 18:40 | 26 | 18:07 (39) | 20:41 | 10 | 07:53 (6) | 21:39 | 22:17 |
| 18 | 08:49 | | 09:43 (36) | 07:52 | 06:44 | | 17:40 (39) | 06:25 | | 07:43 (6) | 05:21 | 04:52 |
| | 16:40 | 23 | 10:06 (36) | 17:44 | 18:42 | 26 | 18:06 (39) | 20:43 | 9 | 07:52 (6) | 21:40 | 22:18 |
| 19 | 08:47 | | 09:44 (36) | 07:50 | 06:41 | | 17:40 (39) | 06:23 | | 07:43 (6) | 05:19 | 04:52 |
| | 16:42 | 23 | 10:07 (36) | 17:46 | 18:44 | 27 | 18:07 (39) | 20:45 | 10 | 07:53 (6) | 21:42 | 22:18 |
| 20 | 08:46 | | 09:44 (36) | 07:48 | 06:39 | | 17:40 (39) | 06:20 | | 07:44 (6) | 05:18 | 04:52 |
| | 16:44 | 23 | 10:07 (36) | 17:48 | 18:46 | 26 | 18:06 (39) | 20:47 | 9 | 07:53 (6) | 21:44 | 22:18 |
| 21 | 08:45 | | 09:45 (36) | 07:46 | 06:36 | | 17:39 (39) | 06:18 | | 07:43 (6) | 05:16 | 04:52 |
| | 16:46 | 22 | 10:07 (36) | 17:50 | 18:48 | 26 | 18:05 (39) | 20:49 | 10 | 07:53 (6) | 21:45 | 22:19 |
| 22 | 08:43 | | 09:46 (36) | 07:43 | 06:33 | | 17:40 (39) | 06:15 | | 07:44 (6) | 05:15 | 04:52 |
| | 16:48 | 21 | 10:07 (36) | 17:53 | 18:50 | 25 | 18:05 (39) | 20:51 | 10 | 07:54 (6) | 21:47 | 22:19 |
| 23 | 08:42 | | 09:46 (36) | 07:41 | 06:31 | | 17:40 (39) | 06:13 | | 07:45 (6) | 05:13 | 04:53 |
| | 16:49 | 20 | 10:06 (36) | 17:55 | 18:52 | 23 | 18:03 (39) | 20:53 | 9 | 07:54 (6) | 21:49 | 22:19 |
| 24 | 08:41 | | 09:48 (36) | 07:38 | 06:28 | | 17:42 (39) | 06:11 | | 07:46 (6) | 05:12 | 04:53 |
| | 16:51 | 18 | 10:06 (36) | 17:57 | 18:54 | 21 | 18:03 (39) | 20:55 | 9 | 07:55 (6) | 21:50 | 22:19 |
| 25 | 08:39 | | 09:49 (36) | 07:36 | 06:26 | | 17:42 (39) | 06:08 | | 07:46 (6) | 05:10 | 04:53 |
| | 16:53 | 16 | 10:05 (36) | 17:59 | 18:56 | 19 | 18:01 (39) | 20:57 | 9 | 07:55 (6) | 21:52 | 22:19 |
| 26 | 08:37 | | 09:50 (36) | 07:34 | 06:23 | | 17:44 (39) | 06:06 | | 07:47 (6) | 05:09 | 04:54 |
| | 16:56 | 14 | 10:04 (36) | 18:01 | 18:57 | 14 | 17:58 (39) | 20:59 | 9 | 07:56 (6) | 21:53 | 22:19 |
| 27 | 08:36 | | 09:52 (36) | 07:31 | 06:21 | | 07:08 (6) | 06:04 | | 07:48 (6) | 05:07 | 04:54 |
| | 16:58 | 10 | 10:02 (36) | 18:03 | 18:59 | 26 | 17:55 (39) | 21:01 | 9 | 07:57 (6) | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:04 (6) | 06:01 | | 07:49 (6) | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 25 | 07:29 (6) | 21:03 | 9 | 07:58 (6) | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:01 (6) | 05:59 | | 07:50 (6) | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 31 | 08:32 (6) | 21:05 | 9 | 07:59 (6) | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 07:58 (6) | 05:57 | | 07:52 (6) | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 35 | 08:33 (6) | 21:06 | 8 | 08:00 (6) | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 07:57 (6) | | | | 05:03 | |
| | 17:06 | | | | 20:07 | 39 | 08:36 (6) | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | | | 501 | 520 |
| Total, worst case | | 557 | | | | 500 | | | 276 | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | 0,39 | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,63 | | | | 0,99 | | | 1,00 | | | |
| Total reduction | | 0,11 | | | | 0,31 | | | 0,36 | | | |
| Total, real | | 59 | | | | 155 | | | 100 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AF - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (6) | 07:34 | | 18:26 (39) | 07:36 | | | 08:35 | | 09:23 (36) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (6) | 19:12 | 16 | 18:42 (39) | 16:58 | | | 16:10 | 23 | 09:46 (36) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (6) | 07:36 | | 18:28 (39) | 07:38 | | | 08:36 | | 09:24 (36) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (6) | 19:09 | 12 | 18:40 (39) | 16:55 | | | 16:09 | 22 | 09:46 (36) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 08:00 (6) | 07:38 | | | 07:41 | | | 08:38 | | 09:25 (36) |
| | 22:17 | | 21:36 | | 20:24 | 8 | 08:08 (6) | 19:07 | | | 16:53 | | | 16:08 | 22 | 09:47 (36) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:44 (6) | 07:40 | | | 07:43 | | | 08:40 | | 09:24 (36) |
| | 22:16 | | 21:34 | | 20:22 | 22 | 08:08 (6) | 19:04 | | | 16:51 | | | 16:07 | 22 | 09:46 (36) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:43 (6) | 07:42 | | | 07:45 | | | 08:41 | | 09:25 (36) |
| | 22:16 | | 21:32 | | 20:19 | 24 | 08:07 (6) | 19:02 | | | 16:49 | | | 16:07 | 22 | 09:47 (36) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 (6) | 07:44 | | | 07:47 | | | 08:43 | | 09:26 (36) |
| | 22:15 | | 21:30 | | 20:16 | 23 | 08:07 (6) | 18:59 | | | 16:47 | | | 16:06 | 20 | 09:46 (36) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:44 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:27 (36) |
| | 22:14 | | 21:28 | | 20:14 | 23 | 08:07 (6) | 18:57 | | | 16:45 | | | 16:05 | 20 | 09:47 (36) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:45 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:27 (36) |
| | 22:14 | | 21:25 | | 20:11 | 22 | 08:07 (6) | 18:54 | | | 16:43 | | | 16:05 | 19 | 09:46 (36) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:46 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:28 (36) |
| | 22:13 | | 21:23 | | 20:09 | 21 | 08:07 (6) | 18:52 | | | 16:41 | | | 16:05 | 19 | 09:47 (36) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:45 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:29 (36) |
| | 22:12 | | 21:21 | | 20:06 | 21 | 08:06 (6) | 18:49 | | | 16:40 | | | 16:04 | 18 | 09:47 (36) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:47 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:30 (36) |
| | 22:11 | | 21:19 | | 20:04 | 20 | 08:07 (6) | 18:47 | | | 16:38 | | | 16:04 | 17 | 09:47 (36) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:48 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:31 (36) |
| | 22:10 | | 21:17 | | 20:01 | 19 | 08:07 (6) | 18:44 | | | 16:36 | | | 16:04 | 16 | 09:47 (36) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:49 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:32 (36) |
| | 22:09 | | 21:15 | | 19:58 | 19 | 08:08 (6) | 18:42 | | | 16:34 | | | 16:04 | 15 | 09:47 (36) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 07:51 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:32 (36) |
| | 22:08 | | 21:12 | | 19:56 | 17 | 08:08 (6) | 18:39 | | | 16:32 | | | 16:03 | 15 | 09:47 (36) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 07:53 (6) | 08:02 | | | 08:05 | | 09:25 (36) | 08:53 | | 09:33 (36) |
| | 22:06 | | 21:10 | | 19:53 | 16 | 08:09 (6) | 18:37 | | | 16:31 | 10 | 09:35 (36) | 16:03 | 14 | 09:47 (36) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 07:56 (6) | 08:04 | | | 08:07 | | 09:23 (36) | 08:54 | | 09:34 (36) |
| | 22:05 | | 21:08 | | 19:51 | 18 | 18:42 (39) | 18:34 | | | 16:29 | 14 | 09:37 (36) | 16:03 | 14 | 09:48 (36) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:01 (6) | 08:06 | | | 08:09 | | 09:22 (36) | 08:55 | | 09:35 (36) |
| | 22:04 | | 21:05 | | 19:48 | 21 | 18:46 (39) | 18:32 | | | 16:27 | 16 | 09:38 (36) | 16:04 | 13 | 09:48 (36) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 18:30 (39) | 08:08 | | | 08:11 | | 09:22 (36) | 08:56 | | 09:36 (36) |
| | 22:03 | | 21:03 | | 19:46 | 18 | 18:48 (39) | 18:29 | | | 16:26 | 18 | 09:40 (36) | 16:04 | 12 | 09:48 (36) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 18:28 (39) | 08:10 | | | 08:13 | | 09:21 (36) | 08:57 | | 09:35 (36) |
| | 22:01 | | 21:01 | | 19:43 | 21 | 18:49 (39) | 18:27 | | | 16:24 | 20 | 09:41 (36) | 16:04 | 13 | 09:48 (36) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 18:27 (39) | 08:12 | | | 08:15 | | 09:21 (36) | 08:57 | | 09:36 (36) |
| | 22:00 | | 20:58 | | 19:40 | 23 | 18:50 (39) | 18:25 | | | 16:23 | 21 | 09:42 (36) | 16:04 | 13 | 09:49 (36) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 18:26 (39) | 08:14 | | | 08:17 | | 09:20 (36) | 08:58 | | 09:36 (36) |
| | 21:58 | | 20:56 | | 19:38 | 24 | 18:50 (39) | 18:22 | | | 16:21 | 22 | 09:42 (36) | 16:05 | 12 | 09:48 (36) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 18:25 (39) | 08:16 | | | 08:19 | | 09:20 (36) | 08:59 | | 09:37 (36) |
| | 21:57 | | 20:54 | | 19:35 | 26 | 18:51 (39) | 18:20 | | | 16:20 | 23 | 09:43 (36) | 16:05 | 12 | 09:49 (36) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 18:25 (39) | 08:18 | | | 08:21 | | 09:20 (36) | 08:59 | | 09:37 (36) |
| | 21:55 | | 20:51 | | 19:33 | 26 | 18:51 (39) | 18:18 | | | 16:19 | 23 | 09:43 (36) | 16:06 | 13 | 09:50 (36) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 18:23 (39) | 08:20 | | | 08:23 | | 09:20 (36) | 09:00 | | 09:38 (36) |
| | 21:54 | | 20:49 | | 19:30 | 27 | 18:50 (39) | 18:15 | | | 16:17 | 24 | 09:44 (36) | 16:06 | 13 | 09:51 (36) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 18:23 (39) | 07:22 | | | 08:24 | | 09:20 (36) | 09:00 | | 09:39 (36) |
| | 21:52 | | 20:46 | | 19:27 | 26 | 18:49 (39) | 17:13 | | | 16:16 | 24 | 09:44 (36) | 16:07 | 12 | 09:51 (36) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:23 (39) | 07:24 | | | 08:26 | | 09:20 (36) | 09:00 | | 09:39 (36) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:49 (39) | 17:11 | | | 16:15 | 24 | 09:44 (36) | 16:08 | 13 | 09:52 (36) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:23 (39) | 07:26 | | | 08:28 | | 09:21 (36) | 09:00 | | 09:39 (36) |
| | 21:49 | | 20:42 | | 19:22 | 25 | 18:48 (39) | 17:08 | | | 16:14 | 24 | 09:45 (36) | 16:08 | 13 | 09:52 (36) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:23 (39) | 07:28 | | | 08:30 | | 09:21 (36) | 09:01 | | 09:39 (36) |
| | 21:47 | | 20:39 | | 19:20 | 24 | 18:47 (39) | 17:06 | | | 16:13 | 24 | 09:45 (36) | 16:09 | 14 | 09:53 (36) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:24 (39) | 07:30 | | | 08:31 | | 09:22 (36) | 09:01 | | 09:39 (36) |
| | 21:45 | | 20:37 | | 19:17 | 22 | 18:46 (39) | 17:04 | | | 16:12 | 23 | 09:45 (36) | 16:10 | 15 | 09:54 (36) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:25 (39) | 07:32 | | | 08:33 | | 09:22 (36) | 09:01 | | 09:39 (36) |
| | 21:43 | | 20:34 | | 19:14 | 20 | 18:45 (39) | 17:02 | | | 16:11 | 24 | 09:46 (36) | 16:11 | 16 | 09:55 (36) |
| 31 | 05:38 | | 06:36 | | | | | 07:34 | | | | | | 09:01 | | 09:40 (36) |
| | 21:41 | | 20:32 | | | | | 17:00 | | | | | | 16:12 | 16 | 09:56 (36) |
| Potential sun hours | 521 | | 465 | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | | | 607 | | | 28 | | | 334 | | | 498 | |
| Sun reduction | | | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | | | 219 | | | 8 | | | 31 | | | 39 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 09:41 (36) | 08:27 | 07:26 | | 07:08 | 07:59 (6) | 05:55 | 05:02 |
| | 16:14 19 | 10:00 (36) | 17:08 | 18:07 | | 20:09 3 | 08:02 (6) | 21:08 | 22:02 |
| 2 | 09:00 | 09:41 (36) | 08:26 | 07:24 | | 07:05 | 07:59 (6) | 05:53 | 05:01 |
| | 16:15 20 | 10:01 (36) | 17:10 | 18:09 | | 20:11 3 | 08:02 (6) | 21:10 | 22:03 |
| 3 | 09:00 | 09:41 (36) | 08:24 | 07:22 | | 07:03 | 07:57 (6) | 05:50 | 05:00 |
| | 16:16 20 | 10:01 (36) | 17:12 | 18:11 | | 20:13 3 | 08:00 (6) | 21:12 | 22:05 |
| 4 | 09:00 | 09:42 (36) | 08:22 | 07:19 | | 07:00 | 07:56 (6) | 05:48 | 04:59 |
| | 16:17 20 | 10:02 (36) | 17:14 | 18:13 | | 20:15 2 | 07:58 (6) | 21:14 | 22:06 |
| 5 | 08:59 | 09:42 (36) | 08:20 | 07:17 | | 06:57 | 07:56 (6) | 05:46 | 04:58 |
| | 16:19 21 | 10:03 (36) | 17:16 | 18:15 | | 20:17 2 | 07:58 (6) | 21:16 | 22:07 |
| 6 | 08:59 | 09:42 (36) | 08:18 | 07:14 | | 06:55 | 07:55 (6) | 05:44 | 04:57 |
| | 16:20 22 | 10:04 (36) | 17:19 | 18:17 | | 20:19 2 | 07:57 (6) | 21:18 | 22:08 |
| 7 | 08:58 | 09:42 (36) | 08:16 | 07:12 | | 06:52 | 07:55 (6) | 05:42 | 04:56 |
| | 16:21 22 | 10:04 (36) | 17:21 | 18:19 | | 20:21 1 | 07:56 (6) | 21:20 | 22:09 |
| 8 | 08:58 | 09:42 (36) | 08:14 | 07:09 | | 06:50 | 07:54 (6) | 05:40 | 04:55 |
| | 16:23 23 | 10:05 (36) | 17:23 | 18:22 | | 20:23 1 | 07:55 (6) | 21:22 | 22:10 |
| 9 | 08:57 | 09:43 (36) | 08:12 | 07:07 | 17:50 (39) | 06:47 | 07:54 (6) | 05:38 | 04:55 |
| | 16:24 22 | 10:05 (36) | 17:25 | 18:24 3 | 17:53 (39) | 20:25 1 | 07:55 (6) | 21:24 | 22:11 |
| 10 | 08:56 | 09:43 (36) | 08:10 | 07:04 | 17:46 (39) | 06:45 | 07:53 (6) | 05:36 | 04:54 |
| | 16:26 23 | 10:06 (36) | 17:27 | 18:26 12 | 17:58 (39) | 20:27 1 | 07:54 (6) | 21:26 | 22:12 |
| 11 | 08:56 | 09:43 (36) | 08:08 | 07:02 | 17:43 (39) | 06:42 | 07:53 (6) | 05:34 | 04:54 |
| | 16:28 23 | 10:06 (36) | 17:29 | 18:28 17 | 18:00 (39) | 20:29 1 | 07:54 (6) | 21:28 | 22:13 |
| 12 | 08:55 | 09:43 (36) | 08:06 | 06:59 | 17:41 (39) | 06:40 | | 05:32 | 04:53 |
| | 16:29 24 | 10:07 (36) | 17:31 | 18:30 21 | 18:02 (39) | 20:31 | | 21:29 | 22:14 |
| 13 | 08:54 | 09:44 (36) | 08:03 | 06:56 | 17:40 (39) | 06:37 | | 05:30 | 04:53 |
| | 16:31 24 | 10:08 (36) | 17:33 | 18:32 22 | 18:02 (39) | 20:33 | | 21:31 | 22:15 |
| 14 | 08:53 | 09:45 (36) | 08:01 | 06:54 | 17:39 (39) | 06:35 | | 05:28 | 04:53 |
| | 16:33 23 | 10:08 (36) | 17:36 | 18:34 24 | 18:03 (39) | 20:35 | | 21:33 | 22:15 |
| 15 | 08:52 | 09:44 (36) | 07:59 | 06:51 | 17:38 (39) | 06:32 | | 05:26 | 04:52 |
| | 16:34 24 | 10:08 (36) | 17:38 | 18:36 25 | 18:03 (39) | 20:37 | | 21:35 | 22:16 |
| 16 | 08:51 | 09:45 (36) | 07:57 | 06:49 | 17:37 (39) | 06:30 | | 05:25 | 04:52 |
| | 16:36 23 | 10:08 (36) | 17:40 | 18:38 26 | 18:03 (39) | 20:39 | | 21:37 | 22:17 |
| 17 | 08:50 | 09:46 (36) | 07:55 | 06:46 | 17:37 (39) | 06:27 | | 05:23 | 04:52 |
| | 16:38 23 | 10:09 (36) | 17:42 | 18:40 26 | 18:03 (39) | 20:41 | | 21:39 | 22:17 |
| 18 | 08:49 | 09:46 (36) | 07:52 | 06:44 | 17:36 (39) | 06:25 | | 05:21 | 04:52 |
| | 16:40 22 | 10:08 (36) | 17:44 | 18:42 27 | 18:03 (39) | 20:43 | | 21:40 | 22:18 |
| 19 | 08:47 | 09:47 (36) | 07:50 | 06:41 | 17:37 (39) | 06:23 | | 05:19 | 04:52 |
| | 16:42 22 | 10:09 (36) | 17:46 | 18:44 26 | 18:03 (39) | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 09:47 (36) | 07:48 | 06:39 | 17:37 (39) | 06:20 | | 05:18 | 04:52 |
| | 16:44 21 | 10:08 (36) | 17:48 | 18:46 25 | 18:02 (39) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 09:49 (36) | 07:46 | 06:36 | 17:37 (39) | 06:18 | | 05:16 | 04:52 |
| | 16:46 20 | 10:09 (36) | 17:50 | 18:48 23 | 18:00 (39) | 20:49 | | 21:45 | 22:19 |
| 22 | 08:43 | 09:49 (36) | 07:43 | 06:33 | 07:25 (6) | 06:15 | | 05:15 | 04:52 |
| | 16:48 19 | 10:08 (36) | 17:53 | 18:50 27 | 18:00 (39) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 09:50 (36) | 07:41 | 06:31 | 07:17 (6) | 06:13 | | 05:13 | 04:53 |
| | 16:49 17 | 10:07 (36) | 17:55 | 18:52 38 | 17:58 (39) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 09:52 (36) | 07:38 | 06:28 | 07:14 (6) | 06:11 | | 05:12 | 04:53 |
| | 16:51 15 | 10:07 (36) | 17:57 | 18:54 41 | 17:56 (39) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 09:54 (36) | 07:36 | 06:26 | 07:11 (6) | 06:08 | | 05:10 | 04:53 |
| | 16:53 11 | 10:05 (36) | 17:59 | 18:56 41 | 17:53 (39) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:37 | 09:56 (36) | 07:34 | 06:23 | 07:08 (6) | 06:06 | | 05:09 | 04:54 |
| | 16:56 6 | 10:02 (36) | 18:01 | 18:57 35 | 07:43 (6) | 20:59 | | 21:53 | 22:19 |
| 27 | 08:36 | | 07:31 | 06:21 | 07:07 (6) | 06:04 | | 05:07 | 04:54 |
| | 16:58 | | 18:03 | 18:59 38 | 07:45 (6) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | | 07:29 | 06:18 | 07:04 (6) | 06:01 | | 05:06 | 04:55 |
| | 17:00 | | 18:05 | 19:01 42 | 07:46 (6) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | | | 07:15 | 08:03 (6) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | | | 20:03 45 | 08:48 (6) | 21:05 | | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | 08:01 (6) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | | | 20:05 47 | 08:48 (6) | 21:06 | | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | 08:01 (6) | | | 05:03 | |
| | 17:06 | | | 20:07 48 | 08:49 (6) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | 366 | | 423 | | 501 | 520 |
| Total, worst case | | 529 | | | 679 | | 20 | | |
| Sun reduction | | 0,18 | | | 0,34 | | 0,39 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | 1,00 | | |
| Wind dir. red. | | 0,63 | | | 0,99 | | 1,00 | | |
| Total reduction | | 0,10 | | | 0,31 | | 0,36 | | |
| Total, real | | 55 | | | 210 | | 7 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AG - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:38 | | 08:07 (6) | 07:34 | | 18:20 (39) | 07:36 | | | 08:35 | | 09:25 (36) |
| | 22:18 | 21:40 | 20:29 | 1 | 08:08 (6) | 19:12 | 21 | 18:41 (39) | 16:58 | | | 16:10 | 24 | 09:49 (36) |
| 2 | 04:57 | 05:41 | 06:39 | | 08:04 (6) | 07:36 | | 18:21 (39) | 07:38 | | | 08:36 | | 09:26 (36) |
| | 22:17 | 21:38 | 20:27 | 4 | 08:08 (6) | 19:09 | 19 | 18:40 (39) | 16:55 | | | 16:09 | 23 | 09:49 (36) |
| 3 | 04:58 | 05:43 | 06:41 | | 08:00 (6) | 07:38 | | 18:22 (39) | 07:41 | | | 08:38 | | 09:27 (36) |
| | 22:17 | 21:36 | 20:24 | 8 | 08:08 (6) | 19:07 | 15 | 18:37 (39) | 16:53 | | | 16:08 | 23 | 09:50 (36) |
| 4 | 04:59 | 05:45 | 06:43 | | 07:52 (6) | 07:40 | | 18:25 (39) | 07:43 | | | 08:40 | | 09:27 (36) |
| | 22:16 | 21:34 | 20:22 | 16 | 08:08 (6) | 19:04 | 9 | 18:34 (39) | 16:51 | | | 16:07 | 22 | 09:49 (36) |
| 5 | 05:00 | 05:47 | 06:45 | | 07:51 (6) | 07:42 | | | 07:45 | | | 08:41 | | 09:27 (36) |
| | 22:16 | 21:32 | 20:19 | 16 | 08:07 (6) | 19:02 | | | 16:49 | | | 16:07 | 23 | 09:50 (36) |
| 6 | 05:01 | 05:49 | 06:47 | | 07:51 (6) | 07:44 | | | 07:47 | | | 08:43 | | 09:28 (36) |
| | 22:15 | 21:30 | 20:16 | 16 | 08:07 (6) | 18:59 | | | 16:47 | | | 16:06 | 21 | 09:49 (36) |
| 7 | 05:02 | 05:50 | 06:49 | | 07:51 (6) | 07:46 | | | 07:49 | | | 08:44 | | 09:29 (36) |
| | 22:14 | 21:28 | 20:14 | 16 | 08:07 (6) | 18:57 | | | 16:45 | | | 16:05 | 21 | 09:50 (36) |
| 8 | 05:03 | 05:52 | 06:51 | | 07:51 (6) | 07:48 | | | 07:51 | | | 08:45 | | 09:29 (36) |
| | 22:14 | 21:25 | 20:11 | 16 | 08:07 (6) | 18:54 | | | 16:43 | | | 16:05 | 20 | 09:49 (36) |
| 9 | 05:04 | 05:54 | 06:53 | | 07:51 (6) | 07:50 | | | 07:53 | | | 08:47 | | 09:30 (36) |
| | 22:13 | 21:23 | 20:09 | 16 | 08:07 (6) | 18:52 | | | 16:41 | | | 16:05 | 20 | 09:50 (36) |
| 10 | 05:05 | 05:56 | 06:55 | | 07:51 (6) | 07:52 | | | 07:55 | | | 08:48 | | 09:30 (36) |
| | 22:12 | 21:21 | 20:06 | 15 | 08:06 (6) | 18:49 | | | 16:40 | | | 16:04 | 20 | 09:50 (36) |
| 11 | 05:07 | 05:58 | 06:56 | | 07:51 (6) | 07:54 | | | 07:57 | | | 08:49 | | 09:32 (36) |
| | 22:11 | 21:19 | 20:04 | 16 | 08:07 (6) | 18:47 | | | 16:38 | | | 16:04 | 19 | 09:51 (36) |
| 12 | 05:08 | 06:00 | 06:58 | | 07:52 (6) | 07:56 | | | 07:59 | | | 08:50 | | 09:32 (36) |
| | 22:10 | 21:17 | 20:01 | 15 | 08:07 (6) | 18:44 | | | 16:36 | | | 16:04 | 19 | 09:51 (36) |
| 13 | 05:09 | 06:02 | 07:00 | | 07:53 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:33 (36) |
| | 22:09 | 21:15 | 19:58 | 15 | 08:08 (6) | 18:42 | | | 16:34 | | | 16:04 | 18 | 09:51 (36) |
| 14 | 05:10 | 06:03 | 07:02 | | 07:53 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:33 (36) |
| | 22:08 | 21:12 | 19:56 | 15 | 08:08 (6) | 18:39 | | | 16:32 | | | 16:03 | 18 | 09:51 (36) |
| 15 | 05:12 | 06:05 | 07:04 | | 07:54 (6) | 08:02 | | | 08:05 | | | 08:53 | | 09:34 (36) |
| | 22:06 | 21:10 | 19:53 | 15 | 08:09 (6) | 18:37 | | | 16:31 | | | 16:03 | 17 | 09:51 (36) |
| 16 | 05:13 | 06:07 | 07:06 | | 07:55 (6) | 08:04 | | | 08:07 | | 09:29 (36) | 08:54 | | 09:35 (36) |
| | 22:05 | 21:08 | 19:51 | 14 | 08:09 (6) | 18:34 | | | 16:29 | 6 | 09:35 (36) | 16:03 | 17 | 09:52 (36) |
| 17 | 05:15 | 06:09 | 07:08 | | 07:56 (6) | 08:06 | | | 08:09 | | 09:27 (36) | 08:55 | | 09:36 (36) |
| | 22:04 | 21:05 | 19:48 | 14 | 08:10 (6) | 18:32 | | | 16:27 | 11 | 09:38 (36) | 16:04 | 16 | 09:52 (36) |
| 18 | 05:16 | 06:11 | 07:10 | | 07:58 (6) | 08:08 | | | 08:11 | | 09:26 (36) | 08:56 | | 09:36 (36) |
| | 22:03 | 21:03 | 19:46 | 21 | 18:39 (39) | 18:29 | | | 16:26 | 15 | 09:41 (36) | 16:04 | 16 | 09:52 (36) |
| 19 | 05:18 | 06:13 | 07:12 | | 08:00 (6) | 08:10 | | | 08:13 | | 09:25 (36) | 08:57 | | 09:36 (36) |
| | 22:01 | 21:01 | 19:43 | 26 | 18:42 (39) | 18:27 | | | 16:24 | 17 | 09:42 (36) | 16:04 | 16 | 09:52 (36) |
| 20 | 05:19 | 06:15 | 07:13 | | 08:03 (6) | 08:12 | | | 08:15 | | 09:24 (36) | 08:57 | | 09:37 (36) |
| | 22:00 | 20:58 | 19:40 | 29 | 18:44 (39) | 18:25 | | | 16:23 | 19 | 09:43 (36) | 16:04 | 16 | 09:53 (36) |
| 21 | 05:21 | 06:17 | 07:15 | | 08:08 (6) | 08:14 | | | 08:17 | | 09:24 (36) | 08:58 | | 09:37 (36) |
| | 21:58 | 20:56 | 19:38 | 28 | 18:45 (39) | 18:22 | | | 16:21 | 20 | 09:44 (36) | 16:05 | 16 | 09:53 (36) |
| 22 | 05:22 | 06:19 | 07:17 | | 18:23 (39) | 08:16 | | | 08:19 | | 09:23 (36) | 08:59 | | 09:38 (36) |
| | 21:57 | 20:54 | 19:35 | 23 | 18:46 (39) | 18:20 | | | 16:20 | 21 | 09:44 (36) | 16:05 | 16 | 09:54 (36) |
| 23 | 05:24 | 06:21 | 07:19 | | 18:22 (39) | 08:18 | | | 08:21 | | 09:23 (36) | 08:59 | | 09:38 (36) |
| | 21:55 | 20:51 | 19:33 | 24 | 18:46 (39) | 18:18 | | | 16:19 | 22 | 09:45 (36) | 16:06 | 16 | 09:54 (36) |
| 24 | 05:26 | 06:22 | 07:21 | | 18:20 (39) | 08:20 | | | 08:23 | | 09:23 (36) | 09:00 | | 09:39 (36) |
| | 21:54 | 20:49 | 19:30 | 25 | 18:45 (39) | 18:15 | | | 16:17 | 22 | 09:45 (36) | 16:06 | 16 | 09:55 (36) |
| 25 | 05:27 | 06:24 | 07:23 | | 18:19 (39) | 07:22 | | | 08:24 | | 09:23 (36) | 09:00 | | 09:39 (36) |
| | 21:52 | 20:46 | 19:27 | 26 | 18:45 (39) | 17:13 | | | 16:16 | 23 | 09:46 (36) | 16:07 | 16 | 09:55 (36) |
| 26 | 05:29 | 06:26 | 07:25 | | 18:19 (39) | 07:24 | | | 08:26 | | 09:23 (36) | 09:00 | | 09:40 (36) |
| | 21:50 | 20:44 | 19:25 | 26 | 18:45 (39) | 17:11 | | | 16:15 | 23 | 09:46 (36) | 16:08 | 16 | 09:56 (36) |
| 27 | 05:31 | 06:28 | 07:27 | | 18:19 (39) | 07:26 | | | 08:28 | | 09:23 (36) | 09:00 | | 09:40 (36) |
| | 21:49 | 20:42 | 19:22 | 26 | 18:45 (39) | 17:08 | | | 16:14 | 24 | 09:47 (36) | 16:08 | 16 | 09:56 (36) |
| 28 | 05:32 | 06:30 | 07:29 | | 18:19 (39) | 07:28 | | | 08:30 | | 09:24 (36) | 09:01 | | 09:40 (36) |
| | 21:47 | 20:39 | 19:20 | 25 | 18:44 (39) | 17:06 | | | 16:13 | 23 | 09:47 (36) | 16:09 | 17 | 09:57 (36) |
| 29 | 05:34 | 06:32 | 07:31 | | 18:19 (39) | 07:30 | | | 08:31 | | 09:24 (36) | 09:01 | | 09:40 (36) |
| | 21:45 | 20:37 | 19:17 | 25 | 18:44 (39) | 17:04 | | | 16:12 | 24 | 09:48 (36) | 16:10 | 18 | 09:58 (36) |
| 30 | 05:36 | 06:34 | 07:32 | | 18:19 (39) | 07:32 | | | 08:33 | | 09:25 (36) | 09:01 | | 09:41 (36) |
| | 21:43 | 20:34 | 19:14 | 24 | 18:43 (39) | 17:02 | | | 16:11 | 23 | 09:48 (36) | 16:11 | 18 | 09:59 (36) |
| 31 | 05:38 | 06:36 | | | | 07:34 | | | | | | 09:01 | | 09:41 (36) |
| | 21:41 | 20:32 | | | | 17:00 | | | | | | 16:12 | 19 | 10:00 (36) |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 556 | | | 64 | | | 293 | | | 573 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,98 | | | 0,63 | | | 0,63 | |
| Total reduction | | | | 0,36 | | | 0,28 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 199 | | | 18 | | | 26 | | | 44 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:43 (36) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 20 | 10:03 (36) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:43 (36) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 21 | 10:04 (36) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:43 (36) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 21 | 10:04 (36) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:44 (36) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 22 | 10:06 (36) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:44 (36) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 22 | 10:06 (36) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:45 (36) | 08:18 | 07:14 | | | 06:55 | 05:44 | 04:57 |
| | 16:20 | 22 | 10:07 (36) | 17:19 | 18:17 | | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:45 (36) | 08:16 | 07:12 | | | 06:52 | 05:42 | 04:56 |
| | 16:21 | 23 | 10:08 (36) | 17:21 | 18:19 | | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:45 (36) | 08:14 | 07:09 | | 17:43 (39) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:08 (36) | 17:23 | 18:22 | 11 | 17:54 (39) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:45 (36) | 08:12 | 07:07 | | 17:40 (39) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:08 (36) | 17:25 | 18:24 | 15 | 17:55 (39) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:46 (36) | 08:10 | 07:04 | | 17:38 (39) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:09 (36) | 17:27 | 18:26 | 20 | 17:58 (39) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:46 (36) | 08:08 | 07:02 | | 17:37 (39) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 23 | 10:09 (36) | 17:29 | 18:28 | 21 | 17:58 (39) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:46 (36) | 08:06 | 06:59 | | 17:36 (39) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 24 | 10:10 (36) | 17:31 | 18:30 | 24 | 18:00 (39) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:47 (36) | 08:03 | 06:56 | | 17:35 (39) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 23 | 10:10 (36) | 17:33 | 18:32 | 25 | 18:00 (39) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:48 (36) | 08:01 | 06:54 | | 17:35 (39) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 23 | 10:11 (36) | 17:36 | 18:34 | 25 | 18:00 (39) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:47 (36) | 07:59 | 06:51 | | 17:34 (39) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 23 | 10:10 (36) | 17:38 | 18:36 | 26 | 18:00 (39) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:48 (36) | 07:57 | 06:49 | | 17:33 (39) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 23 | 10:11 (36) | 17:40 | 18:38 | 26 | 17:59 (39) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:49 (36) | 07:55 | 06:46 | | 17:33 (39) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 22 | 10:11 (36) | 17:42 | 18:40 | 26 | 17:59 (39) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:49 (36) | 07:52 | 06:44 | | 07:34 (6) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 21 | 10:10 (36) | 17:44 | 18:42 | 33 | 17:58 (39) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:51 (36) | 07:50 | 06:41 | | 07:28 (6) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 20 | 10:11 (36) | 17:46 | 18:44 | 44 | 17:58 (39) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:51 (36) | 07:48 | 06:39 | | 07:24 (6) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 19 | 10:10 (36) | 17:48 | 18:46 | 49 | 17:56 (39) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:53 (36) | 07:46 | 06:36 | | 07:21 (6) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17 | 10:10 (36) | 17:50 | 18:48 | 52 | 17:55 (39) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:54 (36) | 07:43 | 06:33 | | 07:19 (6) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 15 | 10:09 (36) | 17:53 | 18:50 | 52 | 17:53 (39) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 09:55 (36) | 07:41 | 06:31 | | 07:17 (6) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 12 | 10:07 (36) | 17:55 | 18:52 | 50 | 17:50 (39) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | 09:58 (36) | 07:38 | 06:28 | | 07:15 (6) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 8 | 10:06 (36) | 17:57 | 18:54 | 42 | 07:57 (6) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:13 (6) | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 45 | 07:58 (6) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | | | 07:34 | 06:23 | | 07:12 (6) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 46 | 07:58 (6) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:11 (6) | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 48 | 07:59 (6) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:09 (6) | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 50 | 07:59 (6) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:09 (6) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 51 | 09:00 (6) | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:08 (6) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 52 | 09:00 (6) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:07 (6) | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:01 (6) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 493 | | | | 887 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,31 | | | | |
| Total, real | | 50 | | | | 274 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AH - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 08:07 (6) | | 07:34 | | 18:15 (39) | | 07:36 | | 08:35 | | 09:28 (36) |
| | 22:18 | | 21:40 | | 20:29 | 1 | 08:08 (6) | | 19:12 | 24 | 18:39 (39) | | 16:58 | | 16:10 | 23 | 09:51 (36) |
| 2 | 04:57 | | 05:41 | | 06:39 | | 08:04 (6) | | 07:36 | | 18:15 (39) | | 07:38 | | 08:36 | | 09:29 (36) |
| | 22:17 | | 21:38 | | 20:27 | 4 | 08:08 (6) | | 19:09 | 23 | 18:38 (39) | | 16:55 | | 16:09 | 23 | 09:52 (36) |
| 3 | 04:58 | | 05:43 | | 06:41 | | 08:02 (6) | | 07:38 | | 18:16 (39) | | 07:41 | | 08:38 | | 09:29 (36) |
| | 22:17 | | 21:36 | | 20:24 | 6 | 08:08 (6) | | 19:07 | 20 | 18:36 (39) | | 16:53 | | 16:08 | 23 | 09:52 (36) |
| 4 | 04:59 | | 05:45 | | 06:43 | | 08:02 (6) | | 07:40 | | 18:17 (39) | | 07:43 | | 08:40 | | 09:29 (36) |
| | 22:16 | | 21:34 | | 20:22 | 6 | 08:08 (6) | | 19:04 | 18 | 18:35 (39) | | 16:51 | | 16:07 | 23 | 09:52 (36) |
| 5 | 05:00 | | 05:47 | | 06:45 | | 08:00 (6) | | 07:42 | | 18:19 (39) | | 07:45 | | 08:41 | | 09:30 (36) |
| | 22:16 | | 21:32 | | 20:19 | 7 | 08:07 (6) | | 19:02 | 13 | 18:32 (39) | | 16:49 | | 16:07 | 23 | 09:53 (36) |
| 6 | 05:01 | | 05:49 | | 06:47 | | 08:00 (6) | | 07:44 | | 18:22 (39) | | 07:47 | | 08:43 | | 09:30 (36) |
| | 22:15 | | 21:30 | | 20:16 | 7 | 08:07 (6) | | 18:59 | 6 | 18:28 (39) | | 16:47 | | 16:06 | 22 | 09:52 (36) |
| 7 | 05:02 | | 05:50 | | 06:49 | | 08:00 (6) | | 07:46 | | | | 07:49 | | 08:44 | | 09:31 (36) |
| | 22:14 | | 21:28 | | 20:14 | 7 | 08:07 (6) | | 18:57 | | | | 16:45 | | 16:05 | 22 | 09:53 (36) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 08:00 (6) | | 07:48 | | | | 07:51 | | 08:45 | | 09:31 (36) |
| | 22:14 | | 21:25 | | 20:11 | 7 | 08:07 (6) | | 18:54 | | | | 16:43 | | 16:05 | 22 | 09:53 (36) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 08:00 (6) | | 07:50 | | | | 07:53 | | 08:47 | | 09:32 (36) |
| | 22:13 | | 21:23 | | 20:09 | 7 | 08:07 (6) | | 18:52 | | | | 16:41 | | 16:05 | 22 | 09:54 (36) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:59 (6) | | 07:52 | | | | 07:55 | | 08:48 | | 09:32 (36) |
| | 22:12 | | 21:21 | | 20:06 | 7 | 08:06 (6) | | 18:49 | | | | 16:40 | | 16:04 | 22 | 09:54 (36) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:59 (6) | | 07:54 | | | | 07:57 | | 08:49 | | 09:34 (36) |
| | 22:11 | | 21:19 | | 20:04 | 8 | 08:07 (6) | | 18:47 | | | | 16:38 | | 16:04 | 20 | 09:54 (36) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:59 (6) | | 07:56 | | | | 07:59 | | 08:50 | | 09:34 (36) |
| | 22:10 | | 21:17 | | 20:01 | 8 | 08:07 (6) | | 18:44 | | | | 16:36 | | 16:04 | 20 | 09:54 (36) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:59 (6) | | 07:58 | | | | 08:01 | | 08:51 | | 09:35 (36) |
| | 22:09 | | 21:15 | | 19:58 | 9 | 08:08 (6) | | 18:42 | | | | 16:34 | | 16:04 | 20 | 09:55 (36) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 07:59 (6) | | 08:00 | | | | 08:03 | | 08:52 | | 09:35 (36) |
| | 22:08 | | 21:12 | | 19:56 | 9 | 08:08 (6) | | 18:39 | | | | 16:32 | | 16:03 | 20 | 09:55 (36) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:00 (6) | | 08:02 | | | | 08:05 | | 08:53 | | 09:36 (36) |
| | 22:06 | | 21:10 | | 19:53 | 9 | 08:09 (6) | | 18:37 | | | | 16:31 | | 16:03 | 19 | 09:55 (36) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 07:59 (6) | | 08:04 | | | | 08:07 | | 08:54 | | 09:36 (36) |
| | 22:05 | | 21:08 | | 19:51 | 10 | 08:09 (6) | | 18:34 | | | | 16:29 | | 16:03 | 19 | 09:55 (36) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:00 (6) | | 08:06 | | | | 08:09 | | 08:55 | | 09:37 (36) |
| | 22:04 | | 21:05 | | 19:48 | 10 | 08:10 (6) | | 18:32 | | | | 16:27 | | 16:04 | 19 | 09:56 (36) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:01 (6) | | 08:08 | | | | 08:11 | | 09:32 (36) | | 08:56 | | 09:38 (36) |
| | 22:03 | | 21:03 | | 19:46 | 10 | 08:11 (6) | | 18:29 | | | | 16:26 | 8 | 09:40 (36) | | 16:04 | 18 | 09:56 (36) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:02 (6) | | 08:10 | | | | 08:13 | | 09:30 (36) | | 08:57 | | 09:38 (36) |
| | 22:01 | | 21:01 | | 19:43 | 10 | 08:12 (6) | | 18:27 | | | | 16:24 | 12 | 09:42 (36) | | 16:04 | 18 | 09:56 (36) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:03 (6) | | 08:12 | | | | 08:15 | | 09:29 (36) | | 08:57 | | 09:39 (36) |
| | 22:00 | | 20:58 | | 19:40 | 21 | 18:36 (39) | | 18:25 | | | | 16:23 | 15 | 09:44 (36) | | 16:04 | 18 | 09:57 (36) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:04 (6) | | 08:14 | | | | 08:17 | | 09:28 (36) | | 08:58 | | 09:39 (36) |
| | 21:58 | | 20:56 | | 19:38 | 26 | 18:38 (39) | | 18:22 | | | | 16:21 | 17 | 09:45 (36) | | 16:05 | 18 | 09:57 (36) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:06 (6) | | 08:16 | | | | 08:19 | | 09:27 (36) | | 08:59 | | 09:40 (36) |
| | 21:57 | | 20:54 | | 19:35 | 30 | 18:40 (39) | | 18:20 | | | | 16:20 | 19 | 09:46 (36) | | 16:05 | 18 | 09:58 (36) |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:08 (6) | | 08:18 | | | | 08:21 | | 09:27 (36) | | 08:59 | | 09:40 (36) |
| | 21:55 | | 20:51 | | 19:33 | 34 | 18:41 (39) | | 18:18 | | | | 16:19 | 20 | 09:47 (36) | | 16:06 | 18 | 09:58 (36) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:10 (6) | | 08:20 | | | | 08:23 | | 09:27 (36) | | 09:00 | | 09:41 (36) |
| | 21:54 | | 20:49 | | 19:30 | 35 | 18:40 (39) | | 18:15 | | | | 16:17 | 20 | 09:47 (36) | | 16:06 | 18 | 09:59 (36) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 08:14 (6) | | 07:22 | | | | 08:24 | | 09:26 (36) | | 09:00 | | 09:41 (36) |
| | 21:52 | | 20:46 | | 19:27 | 38 | 18:41 (39) | | 17:13 | | | | 16:16 | 22 | 09:48 (36) | | 16:07 | 18 | 09:59 (36) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 18:15 (39) | | 07:24 | | | | 08:26 | | 09:26 (36) | | 09:00 | | 09:41 (36) |
| | 21:50 | | 20:44 | | 19:25 | 26 | 18:41 (39) | | 17:11 | | | | 16:15 | 23 | 09:49 (36) | | 16:08 | 19 | 10:00 (36) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 18:15 (39) | | 07:26 | | | | 08:28 | | 09:27 (36) | | 09:00 | | 09:41 (36) |
| | 21:49 | | 20:42 | | 19:22 | 26 | 18:41 (39) | | 17:08 | | | | 16:14 | 22 | 09:49 (36) | | 16:08 | 19 | 10:00 (36) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 18:14 (39) | | 07:28 | | | | 08:30 | | 09:27 (36) | | 09:01 | | 09:42 (36) |
| | 21:47 | | 20:39 | | 19:20 | 27 | 18:41 (39) | | 17:06 | | | | 16:13 | 23 | 09:50 (36) | | 16:09 | 19 | 10:01 (36) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 18:14 (39) | | 07:30 | | | | 08:31 | | 09:27 (36) | | 09:01 | | 09:42 (36) |
| | 21:45 | | 20:37 | | 19:17 | 26 | 18:40 (39) | | 17:04 | | | | 16:12 | 23 | 09:50 (36) | | 16:10 | 19 | 10:01 (36) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 18:14 (39) | | 07:32 | | | | 08:33 | | 09:27 (36) | | 09:01 | | 09:42 (36) |
| | 21:43 | | 20:34 | | 19:14 | 26 | 18:40 (39) | | 17:02 | | | | 16:11 | 24 | 09:51 (36) | | 16:11 | 20 | 10:02 (36) |
| 31 | 05:38 | | 06:36 | | | | | | 07:34 | | | | | | | | 09:01 | | 09:43 (36) |
| | 21:41 | | 20:32 | | | | | | 17:00 | | | | | | | | 16:12 | 20 | 10:03 (36) |
| Potential sun hours | 521 | | 465 | | 383 | | | | 326 | | | | 253 | | | | 224 | | |
| Total, worst case | | | | | | 457 | | | | 104 | | | | 248 | | | | 622 | |
| Sun reduction | | | | | | 0,40 | | | | 0,31 | | | | 0,16 | | | | 0,14 | |
| Oper. time red. | | | | | | 1,00 | | | | 1,00 | | | | 1,00 | | | | 1,00 | |
| Wind dir. red. | | | | | | 0,98 | | | | 0,97 | | | | 0,61 | | | | 0,61 | |
| Total reduction | | | | | | 0,36 | | | | 0,27 | | | | 0,09 | | | | 0,08 | |
| Total, real | | | | | | 163 | | | | 29 | | | | 22 | | | | 48 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:45 (36) | 08:27 | 07:26 | | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 21 | 10:06 (36) | 17:08 | 18:07 | | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 09:45 (36) | 08:26 | 07:24 | | | 07:05 | 05:53 | 05:01 |
| | 16:15 | 22 | 10:07 (36) | 17:10 | 18:09 | | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 09:45 (36) | 08:24 | 07:22 | | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 22 | 10:07 (36) | 17:12 | 18:11 | | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 09:46 (36) | 08:22 | 07:19 | | | 07:00 | 05:48 | 04:59 |
| | 16:17 | 22 | 10:08 (36) | 17:14 | 18:13 | | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 09:46 (36) | 08:20 | 07:17 | | | 06:57 | 05:46 | 04:58 |
| | 16:19 | 23 | 10:09 (36) | 17:16 | 18:15 | | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 09:47 (36) | 08:18 | 07:14 | | 17:40 (39) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 23 | 10:10 (36) | 17:19 | 18:17 | 9 | 17:49 (39) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 09:47 (36) | 08:16 | 07:12 | | 17:37 (39) | 06:52 | 05:42 | 04:56 |
| | 16:21 | 23 | 10:10 (36) | 17:21 | 18:19 | 15 | 17:52 (39) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 09:47 (36) | 08:14 | 07:09 | | 17:35 (39) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 23 | 10:10 (36) | 17:23 | 18:22 | 19 | 17:54 (39) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 09:48 (36) | 08:12 | 07:07 | | 17:33 (39) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 23 | 10:11 (36) | 17:25 | 18:24 | 21 | 17:54 (39) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 09:48 (36) | 08:10 | 07:04 | | 17:32 (39) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 23 | 10:11 (36) | 17:27 | 18:26 | 24 | 17:56 (39) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | 09:49 (36) | 08:08 | 07:02 | | 17:31 (39) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 22 | 10:11 (36) | 17:29 | 18:28 | 25 | 17:56 (39) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | 09:49 (36) | 08:06 | 06:59 | | 17:31 (39) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 23 | 10:12 (36) | 17:31 | 18:30 | 25 | 17:56 (39) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 09:50 (36) | 08:03 | 06:56 | | 17:30 (39) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 22 | 10:12 (36) | 17:33 | 18:32 | 26 | 17:56 (39) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | 09:51 (36) | 08:01 | 06:54 | | 07:42 (6) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 22 | 10:13 (36) | 17:36 | 18:34 | 39 | 17:56 (39) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 09:51 (36) | 07:59 | 06:51 | | 07:37 (6) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 21 | 10:12 (36) | 17:38 | 18:36 | 48 | 17:56 (39) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 09:52 (36) | 07:57 | 06:49 | | 07:33 (6) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 20 | 10:12 (36) | 17:40 | 18:38 | 54 | 17:55 (39) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | 09:53 (36) | 07:55 | 06:46 | | 07:31 (6) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 20 | 10:13 (36) | 17:42 | 18:40 | 57 | 17:54 (39) | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | 09:53 (36) | 07:52 | 06:44 | | 07:29 (6) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 19 | 10:12 (36) | 17:44 | 18:42 | 59 | 17:53 (39) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | 09:55 (36) | 07:50 | 06:41 | | 07:27 (6) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 17 | 10:12 (36) | 17:46 | 18:44 | 60 | 17:52 (39) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 09:55 (36) | 07:48 | 06:39 | | 07:25 (6) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 16 | 10:11 (36) | 17:48 | 18:46 | 60 | 17:50 (39) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | 09:57 (36) | 07:46 | 06:36 | | 07:23 (6) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 13 | 10:10 (36) | 17:50 | 18:48 | 58 | 17:47 (39) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | 09:59 (36) | 07:43 | 06:33 | | 07:23 (6) | 06:15 | 05:15 | 04:52 |
| | 16:48 | 10 | 10:09 (36) | 17:53 | 18:50 | 49 | 17:42 (39) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | 10:02 (36) | 07:41 | 06:31 | | 07:21 (6) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 3 | 10:05 (36) | 17:55 | 18:52 | 49 | 08:10 (6) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | 06:28 | | 07:21 (6) | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 18:54 | 50 | 08:11 (6) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | 06:26 | | 07:19 (6) | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 18:56 | 52 | 08:11 (6) | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | 06:23 | | 07:18 (6) | 06:06 | 05:09 | 04:54 |
| | 16:56 | | | 18:01 | 18:57 | 52 | 08:10 (6) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | 06:21 | | 07:18 (6) | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 18:59 | 53 | 08:11 (6) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | 06:18 | | 07:17 (6) | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 19:01 | 53 | 08:10 (6) | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | 07:15 | | 08:17 (6) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | 54 | 09:11 (6) | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | 07:13 | | 08:16 (6) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | 54 | 09:10 (6) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | 07:10 | | 08:16 (6) | | 05:03 | |
| | 17:06 | | | | 20:07 | 54 | 09:10 (6) | | 22:01 | |
| Potential sun hours | 242 | | | 269 | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 453 | | | | 1119 | | | | |
| Sun reduction | | 0,18 | | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | 0,61 | | | | 0,98 | | | | |
| Total reduction | | 0,10 | | | | 0,31 | | | | |
| Total, real | | 46 | | | | 345 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AI - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:38 | | | 07:34 | | 18:10 (39) | 07:36 | | | 08:35 | | 09:31 (36) |
| | 22:18 | 21:40 | 20:29 | | | 19:12 | 26 | 18:36 (39) | 16:58 | | | 16:10 | 23 | 09:54 (36) |
| 2 | 04:57 | 05:41 | 06:39 | | | 07:36 | | 18:10 (39) | 07:38 | | | 08:36 | | 09:31 (36) |
| | 22:17 | 21:38 | 20:27 | | | 19:09 | 25 | 18:35 (39) | 16:55 | | | 16:09 | 23 | 09:54 (36) |
| 3 | 04:58 | 05:43 | 06:41 | | | 07:38 | | 18:10 (39) | 07:41 | | | 08:38 | | 09:32 (36) |
| | 22:17 | 21:36 | 20:24 | | | 19:07 | 24 | 18:34 (39) | 16:53 | | | 16:08 | 23 | 09:55 (36) |
| 4 | 04:59 | 05:45 | 06:43 | | | 07:40 | | 18:10 (39) | 07:43 | | | 08:40 | | 09:32 (36) |
| | 22:16 | 21:34 | 20:22 | | | 19:04 | 23 | 18:33 (39) | 16:51 | | | 16:07 | 22 | 09:54 (36) |
| 5 | 05:00 | 05:47 | 06:45 | | | 07:42 | | 18:11 (39) | 07:45 | | | 08:41 | | 09:32 (36) |
| | 22:16 | 21:32 | 20:19 | | | 19:02 | 21 | 18:32 (39) | 16:49 | | | 16:07 | 23 | 09:55 (36) |
| 6 | 05:01 | 05:49 | 06:47 | | | 07:44 | | 18:12 (39) | 07:47 | | | 08:43 | | 09:32 (36) |
| | 22:15 | 21:30 | 20:16 | | | 18:59 | 17 | 18:29 (39) | 16:47 | | | 16:06 | 23 | 09:55 (36) |
| 7 | 05:02 | 05:50 | 06:49 | | | 07:46 | | 18:14 (39) | 07:49 | | | 08:44 | | 09:33 (36) |
| | 22:14 | 21:28 | 20:14 | | | 18:57 | 13 | 18:27 (39) | 16:45 | | | 16:05 | 23 | 09:56 (36) |
| 8 | 05:03 | 05:52 | 06:51 | | | 07:48 | | 18:18 (39) | 07:51 | | | 08:45 | | 09:33 (36) |
| | 22:14 | 21:25 | 20:11 | | | 18:54 | 4 | 18:22 (39) | 16:43 | | | 16:05 | 23 | 09:56 (36) |
| 9 | 05:04 | 05:54 | 06:53 | | | 07:50 | | | 07:53 | | | 08:47 | | 09:34 (36) |
| | 22:13 | 21:23 | 20:09 | | | 18:52 | | | 16:41 | | | 16:05 | 22 | 09:56 (36) |
| 10 | 05:05 | 05:56 | 06:55 | | | 07:52 | | | 07:55 | | | 08:48 | | 09:35 (36) |
| | 22:12 | 21:21 | 20:06 | | | 18:49 | | | 16:40 | | | 16:04 | 21 | 09:56 (36) |
| 11 | 05:07 | 05:58 | 06:56 | | | 07:54 | | | 07:57 | | | 08:49 | | 09:36 (36) |
| | 22:11 | 21:19 | 20:04 | | | 18:47 | | | 16:38 | | | 16:04 | 21 | 09:57 (36) |
| 12 | 05:08 | 06:00 | 06:58 | | | 07:56 | | | 07:59 | | | 08:50 | | 09:36 (36) |
| | 22:10 | 21:17 | 20:01 | | | 18:44 | | | 16:36 | | | 16:04 | 21 | 09:57 (36) |
| 13 | 05:09 | 06:02 | 07:00 | | 08:07 (6) | 07:58 | | | 08:01 | | | 08:51 | | 09:37 (36) |
| | 22:09 | 21:15 | 19:58 | 1 | 08:08 (6) | 18:42 | | | 16:34 | | | 16:04 | 21 | 09:58 (36) |
| 14 | 05:10 | 06:03 | 07:02 | | 08:07 (6) | 08:00 | | | 08:03 | | | 08:52 | | 09:37 (36) |
| | 22:08 | 21:12 | 19:56 | 1 | 08:08 (6) | 18:39 | | | 16:32 | | | 16:03 | 21 | 09:58 (36) |
| 15 | 05:12 | 06:05 | 07:04 | | 08:07 (6) | 08:02 | | | 08:05 | | | 08:53 | | 09:38 (36) |
| | 22:06 | 21:10 | 19:53 | 2 | 08:09 (6) | 18:37 | | | 16:31 | | | 16:03 | 20 | 09:58 (36) |
| 16 | 05:13 | 06:07 | 07:06 | | 08:06 (6) | 08:04 | | | 08:07 | | | 08:54 | | 09:38 (36) |
| | 22:05 | 21:08 | 19:51 | 3 | 08:09 (6) | 18:34 | | | 16:29 | | | 16:03 | 21 | 09:59 (36) |
| 17 | 05:15 | 06:09 | 07:08 | | 08:06 (6) | 08:06 | | | 08:09 | | | 08:55 | | 09:39 (36) |
| | 22:04 | 21:05 | 19:48 | 4 | 08:10 (6) | 18:32 | | | 16:27 | | | 16:04 | 20 | 09:59 (36) |
| 18 | 05:16 | 06:11 | 07:10 | | 08:07 (6) | 08:08 | | | 08:11 | | | 08:56 | | 09:40 (36) |
| | 22:03 | 21:03 | 19:46 | 4 | 08:11 (6) | 18:29 | | | 16:26 | | | 16:04 | 20 | 10:00 (36) |
| 19 | 05:18 | 06:13 | 07:12 | | 08:07 (6) | 08:10 | | | 08:13 | | 09:37 (36) | 08:57 | | 09:39 (36) |
| | 22:01 | 21:01 | 19:43 | 5 | 08:12 (6) | 18:27 | | | 16:24 | 3 | 09:40 (36) | 16:04 | 20 | 09:59 (36) |
| 20 | 05:19 | 06:15 | 07:13 | | 08:08 (6) | 08:12 | | | 08:15 | | 09:34 (36) | 08:57 | | 09:40 (36) |
| | 22:00 | 20:58 | 19:40 | 6 | 08:14 (6) | 18:25 | | | 16:23 | 10 | 09:44 (36) | 16:04 | 20 | 10:00 (36) |
| 21 | 05:21 | 06:17 | 07:15 | | 08:08 (6) | 08:14 | | | 08:17 | | 09:32 (36) | 08:58 | | 09:41 (36) |
| | 21:58 | 20:56 | 19:38 | 7 | 08:15 (6) | 18:22 | | | 16:21 | 13 | 09:45 (36) | 16:05 | 20 | 10:01 (36) |
| 22 | 05:22 | 06:19 | 07:17 | | 08:09 (6) | 08:16 | | | 08:19 | | 09:31 (36) | 08:59 | | 09:41 (36) |
| | 21:57 | 20:54 | 19:35 | 19 | 18:32 (39) | 18:20 | | | 16:20 | 16 | 09:47 (36) | 16:05 | 20 | 10:01 (36) |
| 23 | 05:24 | 06:20 | 07:19 | | 08:10 (6) | 08:18 | | | 08:21 | | 09:31 (36) | 08:59 | | 09:41 (36) |
| | 21:55 | 20:51 | 19:33 | 28 | 18:34 (39) | 18:18 | | | 16:19 | 17 | 09:48 (36) | 16:06 | 20 | 10:01 (36) |
| 24 | 05:26 | 06:22 | 07:21 | | 08:10 (6) | 08:20 | | | 08:23 | | 09:30 (36) | 09:00 | | 09:42 (36) |
| | 21:54 | 20:49 | 19:30 | 35 | 18:34 (39) | 18:15 | | | 16:17 | 19 | 09:49 (36) | 16:06 | 20 | 10:02 (36) |
| 25 | 05:27 | 06:24 | 07:23 | | 08:11 (6) | 07:22 | | | 08:24 | | 09:30 (36) | 09:00 | | 09:43 (36) |
| | 21:52 | 20:46 | 19:27 | 46 | 18:35 (39) | 17:13 | | | 16:16 | 20 | 09:50 (36) | 16:07 | 20 | 10:03 (36) |
| 26 | 05:29 | 06:26 | 07:25 | | 08:12 (6) | 07:24 | | | 08:26 | | 09:30 (36) | 09:00 | | 09:43 (36) |
| | 21:50 | 20:44 | 19:25 | 59 | 18:36 (39) | 17:11 | | | 16:15 | 20 | 09:50 (36) | 16:08 | 20 | 10:03 (36) |
| 27 | 05:31 | 06:28 | 07:27 | | 08:14 (6) | 07:26 | | | 08:28 | | 09:30 (36) | 09:00 | | 09:43 (36) |
| | 21:49 | 20:42 | 19:22 | 55 | 18:36 (39) | 17:08 | | | 16:14 | 21 | 09:51 (36) | 16:08 | 20 | 10:03 (36) |
| 28 | 05:32 | 06:30 | 07:29 | | 08:17 (6) | 07:28 | | | 08:30 | | 09:30 (36) | 09:01 | | 09:43 (36) |
| | 21:47 | 20:39 | 19:20 | 49 | 18:36 (39) | 17:06 | | | 16:13 | 22 | 09:52 (36) | 16:09 | 21 | 10:04 (36) |
| 29 | 05:34 | 06:32 | 07:31 | | 08:20 (6) | 07:30 | | | 08:31 | | 09:30 (36) | 09:01 | | 09:44 (36) |
| | 21:45 | 20:37 | 19:17 | 43 | 18:36 (39) | 17:04 | | | 16:12 | 22 | 09:52 (36) | 16:10 | 21 | 10:05 (36) |
| 30 | 05:36 | 06:34 | 07:32 | | 18:10 (39) | 07:32 | | | 08:33 | | 09:30 (36) | 09:01 | | 09:44 (36) |
| | 21:43 | 20:34 | 19:14 | 26 | 18:36 (39) | 17:02 | | | 16:11 | 23 | 09:53 (36) | 16:11 | 21 | 10:05 (36) |
| 31 | 05:38 | 06:36 | | | | 07:34 | | | | | | 09:01 | | 09:45 (36) |
| | 21:41 | 20:32 | | | | 17:00 | | | | | | 16:12 | 21 | 10:06 (36) |
| Potential sun hours | 521 | 465 | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 393 | | | 153 | | | 206 | | | 655 | |
| Sun reduction | | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,98 | | | 0,97 | | | 0,61 | | | 0,61 | |
| Total reduction | | | | 0,36 | | | 0,27 | | | 0,09 | | | 0,08 | |
| Total, real | | | | 140 | | | 42 | | | 18 | | | 50 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | March | | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 09:50 (36) | 08:27 | | 07:26 | | | 07:08 | | 05:55 | | 05:02 |
| | 16:14 | 23 | 10:13 (36) | 17:08 | | 18:07 | | | 20:09 | | 21:08 | | 22:02 |
| 2 | 09:00 | | 09:51 (36) | 08:26 | | 07:24 | | | 07:05 | | 05:53 | | 05:01 |
| | 16:15 | 23 | 10:14 (36) | 17:10 | | 18:09 | | | 20:11 | | 21:10 | | 22:03 |
| 3 | 09:00 | | 09:51 (36) | 08:24 | | 07:22 | | | 07:03 | | 05:50 | | 05:00 |
| | 16:16 | 23 | 10:14 (36) | 17:12 | | 18:11 | | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | | 09:52 (36) | 08:22 | | 07:19 | | | 07:00 | | 05:48 | | 04:59 |
| | 16:17 | 23 | 10:15 (36) | 17:14 | | 18:13 | | | 20:15 | | 21:14 | | 22:06 |
| 5 | 08:59 | | 09:52 (36) | 08:20 | | 07:17 | | | 06:57 | | 05:46 | | 04:58 |
| | 16:19 | 23 | 10:15 (36) | 17:16 | | 18:15 | | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | | 09:53 (36) | 08:18 | | 07:14 | | | 06:55 | | 05:44 | | 04:57 |
| | 16:20 | 24 | 10:17 (36) | 17:19 | | 18:17 | | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:58 | | 09:53 (36) | 08:16 | | 07:12 | | | 06:52 | | 05:42 | | 04:56 |
| | 16:21 | 24 | 10:17 (36) | 17:21 | | 18:19 | | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | | 09:53 (36) | 08:14 | | 07:09 | | 17:45 (39) | 06:50 | | 05:40 | | 04:55 |
| | 16:23 | 24 | 10:17 (36) | 17:23 | | 18:22 | 9 | 17:54 (39) | 20:23 | | 21:22 | | 22:10 |
| 9 | 08:57 | | 09:54 (36) | 08:12 | | 07:07 | | 17:41 (39) | 06:47 | | 05:38 | | 04:55 |
| | 16:24 | 23 | 10:17 (36) | 17:25 | | 18:24 | 14 | 17:55 (39) | 20:25 | | 21:24 | | 22:11 |
| 10 | 08:56 | | 09:54 (36) | 08:10 | | 07:04 | | 17:40 (39) | 06:45 | | 05:36 | | 04:54 |
| | 16:26 | 24 | 10:18 (36) | 17:27 | | 18:26 | 18 | 17:58 (39) | 20:27 | | 21:26 | | 22:12 |
| 11 | 08:56 | | 09:55 (36) | 08:08 | | 07:02 | | 17:38 (39) | 06:42 | | 05:34 | | 04:54 |
| | 16:28 | 23 | 10:18 (36) | 17:29 | | 18:28 | 21 | 17:59 (39) | 20:29 | | 21:28 | | 22:13 |
| 12 | 08:55 | | 09:55 (36) | 08:06 | | 06:59 | | 17:38 (39) | 06:40 | | 05:32 | | 04:53 |
| | 16:29 | 23 | 10:18 (36) | 17:31 | | 18:30 | 22 | 18:00 (39) | 20:31 | | 21:29 | | 22:14 |
| 13 | 08:54 | | 09:56 (36) | 08:03 | | 06:56 | | 17:36 (39) | 06:37 | | 05:30 | | 04:53 |
| | 16:31 | 22 | 10:18 (36) | 17:33 | | 18:32 | 24 | 18:00 (39) | 20:33 | | 21:31 | | 22:15 |
| 14 | 08:53 | | 09:57 (36) | 08:01 | | 06:54 | | 17:36 (39) | 06:35 | | 05:28 | | 04:53 |
| | 16:33 | 22 | 10:19 (36) | 17:36 | | 18:34 | 25 | 18:01 (39) | 20:35 | | 21:33 | | 22:15 |
| 15 | 08:52 | | 09:57 (36) | 07:59 | | 06:51 | | 17:35 (39) | 06:32 | | 05:26 | | 04:52 |
| | 16:34 | 21 | 10:18 (36) | 17:38 | | 18:36 | 26 | 18:01 (39) | 20:37 | | 21:35 | | 22:16 |
| 16 | 08:51 | | 09:58 (36) | 07:57 | | 06:49 | | 17:35 (39) | 06:30 | | 05:25 | | 04:52 |
| | 16:36 | 20 | 10:18 (36) | 17:40 | | 18:38 | 25 | 18:00 (39) | 20:39 | | 21:37 | | 22:17 |
| 17 | 08:50 | | 09:59 (36) | 07:55 | | 06:46 | | 07:39 (6) | 06:27 | | 05:23 | | 04:52 |
| | 16:38 | 19 | 10:18 (36) | 17:42 | | 18:40 | 41 | 18:00 (39) | 20:41 | | 21:39 | | 22:17 |
| 18 | 08:49 | | 10:00 (36) | 07:52 | | 06:44 | | 07:34 (6) | 06:25 | | 05:21 | | 04:52 |
| | 16:40 | 17 | 10:17 (36) | 17:44 | | 18:42 | 49 | 17:59 (39) | 20:43 | | 21:40 | | 22:18 |
| 19 | 08:47 | | 10:01 (36) | 07:50 | | 06:41 | | 07:31 (6) | 06:23 | | 05:19 | | 04:52 |
| | 16:42 | 16 | 10:17 (36) | 17:46 | | 18:44 | 53 | 17:58 (39) | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | | 10:02 (36) | 07:48 | | 06:39 | | 07:28 (6) | 06:20 | | 05:18 | | 04:52 |
| | 16:44 | 14 | 10:16 (36) | 17:48 | | 18:46 | 57 | 17:57 (39) | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | | 10:05 (36) | 07:46 | | 06:36 | | 07:26 (6) | 06:18 | | 05:16 | | 04:52 |
| | 16:46 | 10 | 10:15 (36) | 17:50 | | 18:48 | 57 | 17:55 (39) | 20:49 | | 21:45 | | 22:19 |
| 22 | 08:43 | | 10:08 (36) | 07:43 | | 06:33 | | 07:24 (6) | 06:15 | | 05:15 | | 04:52 |
| | 16:48 | 4 | 10:12 (36) | 17:53 | | 18:50 | 57 | 17:53 (39) | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | | | 07:41 | | 06:31 | | 07:22 (6) | 06:13 | | 05:13 | | 04:52 |
| | 16:49 | | | 17:55 | | 18:52 | 53 | 17:49 (39) | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | | | 07:38 | | 06:28 | | 07:21 (6) | 06:11 | | 05:12 | | 04:53 |
| | 16:51 | | | 17:57 | | 18:54 | 49 | 08:10 (6) | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | | | 07:36 | | 06:26 | | 07:19 (6) | 06:08 | | 05:10 | | 04:53 |
| | 16:53 | | | 17:59 | | 18:56 | 51 | 08:10 (6) | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:37 | | | 07:34 | | 06:23 | | 07:17 (6) | 06:06 | | 05:09 | | 04:54 |
| | 16:56 | | | 18:01 | | 18:57 | 53 | 08:10 (6) | 20:59 | | 21:53 | | 22:19 |
| 27 | 08:36 | | | 07:31 | | 06:21 | | 07:17 (6) | 06:04 | | 05:07 | | 04:54 |
| | 16:58 | | | 18:03 | | 18:59 | 54 | 08:11 (6) | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | | | 07:29 | | 06:18 | | 07:15 (6) | 06:01 | | 05:06 | | 04:55 |
| | 17:00 | | | 18:05 | | 19:01 | 56 | 08:11 (6) | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | | | | 07:15 | | 08:15 (6) | 05:59 | | 05:05 | | 04:55 |
| | 17:02 | | | | | 20:03 | 57 | 09:12 (6) | 21:05 | | 21:58 | | 22:18 |
| 30 | 08:31 | | | | | 07:13 | | 08:14 (6) | 05:57 | | 05:04 | | 04:56 |
| | 17:04 | | | | | 20:05 | 58 | 09:12 (6) | 21:06 | | 21:59 | | 22:18 |
| 31 | 08:29 | | | | | 07:10 | | 08:14 (6) | | | 05:03 | | |
| | 17:06 | | | | | 20:07 | 58 | 09:12 (6) | | | 22:01 | | |
| Potential sun hours | 242 | | | 269 | | 366 | | | 423 | | 501 | | 520 |
| Total, worst case | | 445 | | | | | 987 | | | | | | |
| Sun reduction | | 0,18 | | | | | 0,34 | | | | | | |
| Oper. time red. | | 1,00 | | | | | 1,00 | | | | | | |
| Wind dir. red. | | 0,59 | | | | | 0,98 | | | | | | |
| Total reduction | | 0,10 | | | | | 0,31 | | | | | | |
| Total, real | | 43 | | | | | 301 | | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AJ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 07:34 | | 18:16 (39) | | 07:36 | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 24 | 18:40 (39) | | 16:58 | |
| 2 | 04:57 | | 05:41 | | 06:39 | | 07:36 | | 18:17 (39) | | 07:38 | |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 22 | 18:39 (39) | | 16:55 | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:38 | | 18:17 (39) | | 07:41 | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 20 | 18:37 (39) | | 16:53 | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:40 | | 18:19 (39) | | 07:43 | |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 16 | 18:35 (39) | | 16:51 | |
| 5 | 05:00 | | 05:47 | | 06:45 | 08:06 (6) | 07:42 | | 18:20 (39) | | 07:45 | |
| | 22:16 | | 21:32 | | 20:19 | 1 08:07 (6) | 19:02 | 12 | 18:32 (39) | | 16:49 | |
| 6 | 05:01 | | 05:49 | | 06:47 | 08:06 (6) | 07:44 | | 18:24 (39) | | 07:47 | |
| | 22:15 | | 21:30 | | 20:16 | 1 08:07 (6) | 18:59 | 5 | 18:29 (39) | | 16:47 | |
| 7 | 05:02 | | 05:50 | | 06:49 | 08:06 (6) | 07:46 | | | | 07:49 | |
| | 22:14 | | 21:28 | | 20:14 | 1 08:07 (6) | 18:57 | | | | 16:45 | |
| 8 | 05:03 | | 05:52 | | 06:51 | 08:06 (6) | 07:48 | | | | 07:51 | |
| | 22:14 | | 21:25 | | 20:11 | 1 08:07 (6) | 18:54 | | | | 16:43 | |
| 9 | 05:04 | | 05:54 | | 06:53 | 08:06 (6) | 07:50 | | | | 07:53 | |
| | 22:13 | | 21:23 | | 20:09 | 1 08:07 (6) | 18:52 | | | | 16:41 | |
| 10 | 05:05 | | 05:56 | | 06:55 | 08:05 (6) | 07:52 | | | | 07:55 | |
| | 22:12 | | 21:21 | | 20:06 | 1 08:06 (6) | 18:49 | | | | 16:40 | |
| 11 | 05:07 | | 05:58 | | 06:56 | 08:05 (6) | 07:54 | | | | 07:57 | |
| | 22:11 | | 21:19 | | 20:04 | 2 08:07 (6) | 18:47 | | | | 16:38 | |
| 12 | 05:08 | | 06:00 | | 06:58 | 08:05 (6) | 07:56 | | | | 07:59 | |
| | 22:10 | | 21:17 | | 20:01 | 2 08:07 (6) | 18:44 | | | | 16:36 | |
| 13 | 05:09 | | 06:02 | | 07:00 | 08:05 (6) | 07:58 | | | | 08:01 | |
| | 22:09 | | 21:15 | | 19:58 | 3 08:08 (6) | 18:42 | | | | 16:34 | |
| 14 | 05:10 | | 06:03 | | 07:02 | 08:05 (6) | 08:00 | | | | 08:03 | |
| | 22:08 | | 21:12 | | 19:56 | 3 08:08 (6) | 18:39 | | | | 16:32 | |
| 15 | 05:12 | | 06:05 | | 07:04 | 08:06 (6) | 08:02 | | | | 08:05 | |
| | 22:06 | | 21:10 | | 19:53 | 3 08:09 (6) | 18:37 | | | | 16:31 | |
| 16 | 05:13 | | 06:07 | | 07:06 | 08:05 (6) | 08:04 | | | | 08:07 | |
| | 22:05 | | 21:08 | | 19:51 | 4 08:09 (6) | 18:34 | | | | 16:29 | |
| 17 | 05:15 | | 06:09 | | 07:08 | 08:06 (6) | 08:06 | | | | 08:09 | |
| | 22:04 | | 21:05 | | 19:48 | 4 08:10 (6) | 18:32 | | | | 16:27 | |
| 18 | 05:16 | | 06:11 | | 07:10 | 08:06 (6) | 08:08 | | | | 08:11 | |
| | 22:03 | | 21:03 | | 19:46 | 5 08:11 (6) | 18:29 | | | | 16:26 | |
| 19 | 05:18 | | 06:13 | | 07:12 | 08:07 (6) | 08:10 | | | | 08:13 | |
| | 22:01 | | 21:01 | | 19:43 | 5 08:12 (6) | 18:27 | | | | 16:24 | |
| 20 | 05:19 | | 06:15 | | 07:13 | 08:08 (6) | 08:12 | | | | 08:15 | 09:43 (36) |
| | 22:00 | | 20:58 | | 19:40 | 8 18:33 (39) | 18:25 | | | | 16:23 | 4 09:47 (36) |
| 21 | 05:21 | | 06:17 | | 07:15 | 08:09 (6) | 08:14 | | | | 08:17 | 09:40 (36) |
| | 21:58 | | 20:56 | | 19:38 | 18 18:38 (39) | 18:22 | | | | 16:21 | 10 09:50 (36) |
| 22 | 05:22 | | 06:19 | | 07:17 | 08:11 (6) | 08:16 | | | | 08:19 | 09:39 (36) |
| | 21:57 | | 20:54 | | 19:35 | 23 18:40 (39) | 18:20 | | | | 16:20 | 13 09:52 (36) |
| 23 | 05:24 | | 06:20 | | 07:19 | 08:12 (6) | 08:18 | | | | 08:21 | 09:38 (36) |
| | 21:55 | | 20:51 | | 19:33 | 28 18:41 (39) | 18:18 | | | | 16:19 | 15 09:53 (36) |
| 24 | 05:26 | | 06:22 | | 07:21 | 08:13 (6) | 08:20 | | | | 08:23 | 09:37 (36) |
| | 21:54 | | 20:49 | | 19:30 | 31 18:41 (39) | 18:15 | | | | 16:17 | 17 09:54 (36) |
| 25 | 05:27 | | 06:24 | | 07:23 | 08:16 (6) | 07:22 | | | | 08:24 | 09:36 (36) |
| | 21:52 | | 20:46 | | 19:27 | 36 18:41 (39) | 17:13 | | | | 16:16 | 19 09:55 (36) |
| 26 | 05:29 | | 06:26 | | 07:25 | 08:19 (6) | 07:24 | | | | 08:26 | 09:36 (36) |
| | 21:50 | | 20:44 | | 19:25 | 45 18:42 (39) | 17:11 | | | | 16:15 | 20 09:56 (36) |
| 27 | 05:31 | | 06:28 | | 07:27 | 08:27 (6) | 07:26 | | | | 08:28 | 09:36 (36) |
| | 21:49 | | 20:42 | | 19:22 | 29 18:42 (39) | 17:08 | | | | 16:14 | 21 09:57 (36) |
| 28 | 05:32 | | 06:30 | | 07:29 | 18:16 (39) | 07:28 | | | | 08:30 | 09:36 (36) |
| | 21:47 | | 20:39 | | 19:20 | 25 18:41 (39) | 17:06 | | | | 16:13 | 22 09:58 (36) |
| 29 | 05:34 | | 06:32 | | 07:31 | 18:16 (39) | 07:30 | | | | 08:31 | 09:36 (36) |
| | 21:45 | | 20:37 | | 19:17 | 25 18:41 (39) | 17:04 | | | | 16:12 | 23 09:59 (36) |
| 30 | 05:36 | | 06:34 | | 07:32 | 18:16 (39) | 07:32 | | | | 08:33 | 09:36 (36) |
| | 21:43 | | 20:34 | | 19:14 | 25 18:41 (39) | 17:02 | | | | 16:11 | 23 09:59 (36) |
| 31 | 05:38 | | 06:36 | | | | 07:34 | | | | | |
| | 21:41 | | 20:32 | | | | 17:00 | | | | | |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | 253 | | 224 | |
| Total, worst case | | | | | 330 | | 99 | | 187 | | 710 | |
| Sun reduction | | | | | 0,40 | | 0,31 | | 0,16 | | 0,14 | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | 1,00 | | 1,00 | |
| Wind dir. red. | | | | | 0,98 | | 0,97 | | 0,59 | | 0,59 | |
| Total reduction | | | | | 0,35 | | 0,27 | | 0,08 | | 0,07 | |
| Total, real | | | | | 116 | | 27 | | 16 | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | 09:24 (36) | 07:26 | | 07:08 | 19:03 (39) | 05:55 | | 05:02 |
| | 16:14 | | 17:08 25 | 09:49 (36) | 18:07 | | 20:09 27 | 19:30 (39) | 21:08 | | 22:02 |
| 2 | 09:00 | | 08:26 | 09:24 (36) | 07:24 | | 07:05 | 19:03 (39) | 05:53 | 06:40 (6) | 05:01 |
| | 16:15 | | 17:10 25 | 09:49 (36) | 18:09 | | 20:11 27 | 19:30 (39) | 21:10 2 | 06:42 (6) | 22:03 |
| 3 | 09:00 | | 08:24 | 09:25 (36) | 07:22 | | 07:03 | 19:03 (39) | 05:50 | 06:39 (6) | 05:00 |
| | 16:16 | | 17:12 24 | 09:49 (36) | 18:11 | | 20:13 26 | 19:29 (39) | 21:12 2 | 06:41 (6) | 22:05 |
| 4 | 09:00 | | 08:22 | 09:25 (36) | 07:19 | | 07:00 | 19:03 (39) | 05:48 | 06:38 (6) | 04:59 |
| | 16:17 | | 17:14 22 | 09:47 (36) | 18:13 | | 20:15 24 | 19:27 (39) | 21:14 3 | 06:41 (6) | 22:06 |
| 5 | 08:59 | | 08:20 | 09:26 (36) | 07:17 | | 06:57 | 19:04 (39) | 05:46 | 06:37 (6) | 04:58 |
| | 16:19 | | 17:16 20 | 09:46 (36) | 18:15 | | 20:17 23 | 19:27 (39) | 21:16 3 | 06:40 (6) | 22:07 |
| 6 | 08:59 | | 08:18 | 09:28 (36) | 07:14 | | 06:55 | 19:04 (39) | 05:44 | 06:37 (6) | 04:57 |
| | 16:20 | | 17:19 17 | 09:45 (36) | 18:17 | | 20:19 21 | 19:25 (39) | 21:18 4 | 06:41 (6) | 22:08 |
| 7 | 08:58 | | 08:16 | 09:30 (36) | 07:12 | | 06:52 | 19:06 (39) | 05:42 | 06:36 (6) | 04:56 |
| | 16:21 | | 17:21 14 | 09:44 (36) | 18:19 | | 20:21 17 | 19:23 (39) | 21:20 4 | 06:40 (6) | 22:09 |
| 8 | 08:58 | | 08:14 | 09:32 (36) | 07:09 | | 06:50 | 19:08 (39) | 05:40 | 06:35 (6) | 04:56 |
| | 16:23 | | 17:23 9 | 09:41 (36) | 18:22 | | 20:23 12 | 19:20 (39) | 21:22 4 | 06:39 (6) | 22:10 |
| 9 | 08:57 | | 08:12 | | 07:07 | | 06:47 | 19:13 (39) | 05:38 | 06:35 (6) | 04:55 |
| | 16:24 | | 17:25 | | 18:24 | | 20:25 3 | 19:16 (39) | 21:24 3 | 06:38 (6) | 22:11 |
| 10 | 08:56 | | 08:10 | | 07:04 | | 06:45 | | 05:36 | 06:34 (6) | 04:54 |
| | 16:26 | | 17:27 | | 18:26 | | 20:27 | | 21:26 3 | 06:37 (6) | 22:12 |
| 11 | 08:56 | | 08:08 | | 07:02 | | 06:42 | | 05:34 | 06:33 (6) | 04:54 |
| | 16:28 | | 17:29 | | 18:28 | | 20:29 | | 21:28 3 | 06:36 (6) | 22:13 |
| 12 | 08:55 | | 08:06 | | 06:59 | | 06:40 | | 05:32 | 06:34 (6) | 04:53 |
| | 16:29 | | 17:31 | | 18:30 | | 20:31 | | 21:29 2 | 06:36 (6) | 22:14 |
| 13 | 08:54 | | 08:03 | | 06:56 | | 06:37 | | 05:30 | 06:33 (6) | 04:53 |
| | 16:31 | | 17:33 | | 18:32 | | 20:33 | | 21:31 2 | 06:35 (6) | 22:15 |
| 14 | 08:53 | | 08:01 | | 06:54 | | 06:35 | | 05:28 | 06:32 (6) | 04:53 |
| | 16:33 | | 17:36 | | 18:34 | | 20:35 | | 21:33 2 | 06:34 (6) | 22:15 |
| 15 | 08:52 | | 07:59 | | 06:51 | | 06:32 | | 05:26 | 06:33 (6) | 04:52 |
| | 16:34 | | 17:38 | | 18:36 | | 20:37 | | 21:35 1 | 06:34 (6) | 22:16 |
| 16 | 08:51 | 09:28 (36) | 07:57 | | 06:49 | | 06:30 | | 05:25 | 06:32 (6) | 04:52 |
| | 16:36 8 | 09:36 (36) | 17:40 | | 18:38 | | 20:39 | | 21:37 2 | 06:34 (6) | 22:17 |
| 17 | 08:50 | 09:27 (36) | 07:55 | | 06:46 | | 06:27 | | 05:23 | 06:32 (6) | 04:52 |
| | 16:38 12 | 09:39 (36) | 17:42 | | 18:40 | | 20:41 | | 21:39 1 | 06:33 (6) | 22:17 |
| 18 | 08:49 | 09:25 (36) | 07:52 | | 06:44 | | 06:25 | | 05:21 | 06:32 (6) | 04:52 |
| | 16:40 15 | 09:40 (36) | 17:44 | | 18:42 | | 20:43 | | 21:40 1 | 06:33 (6) | 22:18 |
| 19 | 08:47 | 09:25 (36) | 07:50 | | 06:41 | | 06:23 | | 05:19 | | 04:52 |
| | 16:42 17 | 09:42 (36) | 17:46 | | 18:44 | | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | 09:24 (36) | 07:48 | | 06:39 | | 06:20 | | 05:18 | | 04:52 |
| | 16:44 19 | 09:43 (36) | 17:48 | | 18:46 | | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | 09:24 (36) | 07:46 | | 06:36 | | 06:18 | | 05:16 | | 04:52 |
| | 16:46 20 | 09:44 (36) | 17:50 | | 18:48 | | 20:49 | | 21:45 | | 22:19 |
| 22 | 08:43 | 09:23 (36) | 07:43 | | 06:33 | | 06:15 | | 05:15 | | 04:52 |
| | 16:48 22 | 09:45 (36) | 17:53 | | 18:50 | | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | 09:22 (36) | 07:41 | | 06:31 | 18:16 (39) | 06:13 | | 05:13 | | 04:53 |
| | 16:50 23 | 09:45 (36) | 17:55 | | 18:52 7 | 18:23 (39) | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | 09:23 (36) | 07:38 | | 06:28 | 18:12 (39) | 06:11 | | 05:12 | | 04:53 |
| | 16:51 24 | 09:47 (36) | 17:57 | | 18:54 15 | 18:27 (39) | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | 09:22 (36) | 07:36 | | 06:26 | 18:09 (39) | 06:08 | | 05:10 | | 04:53 |
| | 16:53 25 | 09:47 (36) | 17:59 | | 18:56 19 | 18:28 (39) | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:37 | 09:22 (36) | 07:34 | | 06:23 | 18:07 (39) | 06:06 | 06:56 (6) | 05:09 | | 04:54 |
| | 16:56 26 | 09:48 (36) | 18:01 | | 18:57 22 | 18:29 (39) | 20:59 12 | 07:08 (6) | 21:53 | | 22:19 |
| 27 | 08:36 | 09:22 (36) | 07:31 | | 06:21 | 18:07 (39) | 06:04 | 06:51 (6) | 05:08 | | 04:54 |
| | 16:58 26 | 09:48 (36) | 18:03 | | 18:59 23 | 18:30 (39) | 21:01 21 | 07:12 (6) | 21:55 | | 22:19 |
| 28 | 08:34 | 09:22 (36) | 07:29 | | 06:18 | 18:05 (39) | 06:02 | 06:49 (6) | 05:06 | | 04:55 |
| | 17:00 26 | 09:48 (36) | 18:05 | | 19:01 25 | 18:30 (39) | 21:03 10 | 07:15 (6) | 21:56 | | 22:19 |
| 29 | 08:33 | 09:23 (36) | | | 07:15 | 19:05 (39) | 05:59 | 06:46 (6) | 05:05 | | 04:55 |
| | 17:02 26 | 09:49 (36) | | | 20:03 26 | 19:31 (39) | 21:05 8 | 06:54 (6) | 21:58 | | 22:18 |
| 30 | 08:31 | 09:23 (36) | | | 07:13 | 19:04 (39) | 05:57 | 06:44 (6) | 05:04 | | 04:56 |
| | 17:04 26 | 09:49 (36) | | | 20:05 26 | 19:30 (39) | 21:06 7 | 06:51 (6) | 21:59 | | 22:18 |
| 31 | 08:29 | 09:23 (36) | | | 07:10 | 19:04 (39) | | | 05:03 | | |
| | 17:06 26 | 09:49 (36) | | | 20:07 27 | 19:31 (39) | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | 520 |
| Total, worst case | 341 | | 156 | | 190 | | 238 | | 42 | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | |
| Wind dir. red. | 0,71 | | 0,71 | | 1,00 | | 0,99 | | 0,95 | | |
| Total reduction | 0,12 | | 0,16 | | 0,32 | | 0,37 | | 0,46 | | |
| Total, real | 41 | | 26 | | 61 | | 87 | | 19 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AK - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:44 (6) | 06:38 | | 07:34 | 07:36 | | 08:35 |
| | 22:18 | | 21:40 | 3 06:47 (6) | 20:29 | | 19:12 | 16:58 | | 16:10 |
| 2 | 04:57 | | 05:41 | 06:44 (6) | 06:39 | | 07:36 | 07:38 | | 08:36 |
| | 22:17 | | 21:38 | 2 06:46 (6) | 20:27 | | 19:09 | 16:55 | | 16:09 |
| 3 | 04:58 | | 05:43 | 06:44 (6) | 06:41 | 19:11 (39) | 07:38 | 07:41 | 09:02 (36) | 08:38 |
| | 22:17 | | 21:36 | 3 06:47 (6) | 20:24 | 3 19:14 (39) | 19:07 | 16:53 | 9 09:11 (36) | 16:08 |
| 4 | 04:59 | | 05:45 | 06:45 (6) | 06:43 | 19:06 (39) | 07:40 | 07:43 | 08:59 (36) | 08:40 |
| | 22:16 | | 21:34 | 3 06:48 (6) | 20:22 | 12 19:18 (39) | 19:04 | 16:51 | 15 09:14 (36) | 16:07 |
| 5 | 05:00 | | 05:47 | 06:45 (6) | 06:45 | 19:02 (39) | 07:42 | 07:45 | 08:57 (36) | 08:41 |
| | 22:16 | | 21:32 | 3 06:48 (6) | 20:19 | 17 19:19 (39) | 19:02 | 16:49 | 18 09:15 (36) | 16:07 |
| 6 | 05:01 | | 05:49 | 06:46 (6) | 06:47 | 19:01 (39) | 07:44 | 07:47 | 08:57 (36) | 08:43 |
| | 22:15 | | 21:30 | 4 06:50 (6) | 20:16 | 20 19:21 (39) | 18:59 | 16:47 | 20 09:17 (36) | 16:06 |
| 7 | 05:02 | | 05:50 | 06:47 (6) | 06:49 | 18:59 (39) | 07:46 | 07:49 | 08:56 (36) | 08:44 |
| | 22:14 | | 21:28 | 3 06:50 (6) | 20:14 | 23 19:22 (39) | 18:57 | 16:45 | 22 09:18 (36) | 16:06 |
| 8 | 05:03 | | 05:52 | 06:48 (6) | 06:51 | 18:58 (39) | 07:48 | 07:51 | 08:55 (36) | 08:45 |
| | 22:14 | | 21:25 | 3 06:51 (6) | 20:11 | 24 19:22 (39) | 18:54 | 16:43 | 23 09:18 (36) | 16:05 |
| 9 | 05:04 | | 05:54 | 06:48 (6) | 06:53 | 18:57 (39) | 07:50 | 07:53 | 08:54 (36) | 08:47 |
| | 22:13 | | 21:23 | 2 06:50 (6) | 20:09 | 26 19:23 (39) | 18:52 | 16:41 | 25 09:19 (36) | 16:05 |
| 10 | 05:05 | | 05:56 | 06:49 (6) | 06:55 | 18:56 (39) | 07:52 | 07:55 | 08:55 (36) | 08:48 |
| | 22:12 | | 21:21 | 2 06:51 (6) | 20:06 | 26 19:22 (39) | 18:49 | 16:40 | 25 09:20 (36) | 16:04 |
| 11 | 05:07 | | 05:58 | 06:50 (6) | 06:56 | 18:55 (39) | 07:54 | 07:57 | 08:54 (36) | 08:49 |
| | 22:11 | | 21:19 | 1 06:51 (6) | 20:04 | 27 19:22 (39) | 18:47 | 16:38 | 26 09:20 (36) | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 18:55 (39) | 07:56 | 07:59 | 08:54 (36) | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | 27 19:22 (39) | 18:44 | 16:36 | 26 09:20 (36) | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 18:55 (39) | 07:58 | 08:01 | 08:54 (36) | 08:51 |
| | 22:09 | | 21:15 | | 19:58 | 27 19:22 (39) | 18:42 | 16:34 | 26 09:20 (36) | 16:04 |
| 14 | 05:11 | | 06:03 | | 07:02 | 18:55 (39) | 08:00 | 08:03 | 08:55 (36) | 08:52 |
| | 22:08 | | 21:12 | | 19:56 | 26 19:21 (39) | 18:39 | 16:32 | 26 09:21 (36) | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | 18:55 (39) | 08:02 | 08:05 | 08:55 (36) | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | 25 19:20 (39) | 18:37 | 16:31 | 26 09:21 (36) | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | 18:55 (39) | 08:04 | 08:07 | 08:55 (36) | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | 24 19:19 (39) | 18:34 | 16:29 | 26 09:21 (36) | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | 18:56 (39) | 08:06 | 08:09 | 08:55 (36) | 08:55 |
| | 22:04 | | 21:05 | | 19:48 | 21 19:17 (39) | 18:32 | 16:27 | 25 09:20 (36) | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | 18:57 (39) | 08:08 | 08:11 | 08:57 (36) | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | 19 19:16 (39) | 18:29 | 16:26 | 24 09:21 (36) | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | 18:58 (39) | 08:10 | 08:13 | 08:57 (36) | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | 16 19:14 (39) | 18:27 | 16:24 | 23 09:20 (36) | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | 19:01 (39) | 08:12 | 08:15 | 08:58 (36) | 08:57 |
| | 22:00 | | 20:58 | | 19:40 | 9 19:10 (39) | 18:25 | 16:23 | 22 09:20 (36) | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:59 (36) | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 | 20 09:19 (36) | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 09:00 (36) | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 19 09:19 (36) | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 09:01 (36) | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 | 17 09:18 (36) | 16:06 |
| 24 | 05:26 | 06:42 (6) | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:02 (36) | 09:00 |
| | 21:54 | 1 06:43 (6) | 20:49 | | 19:30 | | 18:15 | 16:17 | 15 09:17 (36) | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:04 (36) | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | | 17:13 | 16:16 | 12 09:16 (36) | 16:07 |
| 26 | 05:29 | 06:42 (6) | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:06 (36) | 09:00 |
| | 21:50 | 1 06:43 (6) | 20:44 | | 19:25 | | 17:11 | 16:15 | 8 09:14 (36) | 16:08 |
| 27 | 05:31 | 06:43 (6) | 06:28 | | 07:27 | | 07:26 | 08:28 | | 09:00 |
| | 21:49 | 1 06:44 (6) | 20:42 | | 19:22 | | 17:08 | 16:14 | | 16:08 |
| 28 | 05:32 | 06:43 (6) | 06:30 | | 07:29 | | 07:28 | 08:30 | | 09:01 |
| | 21:47 | 1 06:44 (6) | 20:39 | | 19:20 | | 17:06 | 16:13 | | 16:09 |
| 29 | 05:34 | 06:43 (6) | 06:32 | | 07:31 | | 07:30 | 08:31 | | 09:01 |
| | 21:45 | 2 06:45 (6) | 20:37 | | 19:17 | | 17:04 | 16:12 | | 16:10 |
| 30 | 05:36 | 06:43 (6) | 06:34 | | 07:32 | | 07:32 | 08:33 | | 09:01 |
| | 21:43 | 2 06:45 (6) | 20:34 | | 19:14 | | 17:02 | 16:11 | | 16:11 |
| 31 | 05:38 | 06:43 (6) | 06:36 | | | | 07:34 | | | 09:01 |
| | 21:41 | 3 06:46 (6) | 20:32 | | | | 17:00 | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | | 224 |
| Total, worst case | | 11 | | 29 | | 372 | | | 498 | |
| Sun reduction | | 0,49 | | 0,51 | | 0,40 | | | 0,16 | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | 0,95 | | 1,00 | | | 0,71 | |
| Total reduction | | 0,43 | | 0,46 | | 0,37 | | | 0,11 | |
| Total, real | | 5 | | 13 | | 139 | | | 53 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 09:31 (36) | | 07:26 | | 07:08 | | 19:03 (39) | 05:55 | | 05:02 |
| | 16:14 | | 17:08 | 24 | 09:55 (36) | | 18:07 | | 20:09 | 26 | 19:29 (39) | 21:08 | | 22:02 |
| 2 | 09:00 | | 08:26 | | 09:31 (36) | | 07:24 | | 07:05 | | 19:04 (39) | 05:53 | | 05:01 |
| | 16:15 | | 17:10 | 23 | 09:54 (36) | | 18:09 | | 20:11 | 25 | 19:29 (39) | 21:10 | | 22:03 |
| 3 | 09:00 | | 08:24 | | 09:32 (36) | | 07:22 | | 07:03 | | 19:04 (39) | 05:50 | | 05:00 |
| | 16:16 | | 17:12 | 22 | 09:54 (36) | | 18:11 | | 20:13 | 24 | 19:28 (39) | 21:12 | | 22:05 |
| 4 | 09:00 | | 08:22 | | 09:33 (36) | | 07:19 | | 07:00 | | 19:04 (39) | 05:48 | 06:39 (6) | 04:59 |
| | 16:17 | | 17:14 | 19 | 09:52 (36) | | 18:13 | | 20:15 | 22 | 19:26 (39) | 21:14 | 2 06:41 (6) | 22:06 |
| 5 | 08:59 | | 08:20 | | 09:34 (36) | | 07:17 | | 06:57 | | 19:05 (39) | 05:46 | 06:38 (6) | 04:58 |
| | 16:19 | | 17:16 | 17 | 09:51 (36) | | 18:15 | | 20:17 | 20 | 19:25 (39) | 21:16 | 2 06:40 (6) | 22:07 |
| 6 | 08:59 | | 08:18 | | 09:37 (36) | | 07:14 | | 06:55 | | 19:06 (39) | 05:44 | 06:38 (6) | 04:57 |
| | 16:20 | | 17:19 | 12 | 09:49 (36) | | 18:17 | | 20:19 | 17 | 19:23 (39) | 21:18 | 3 06:41 (6) | 22:08 |
| 7 | 08:58 | | 08:16 | | 09:41 (36) | | 07:12 | | 06:52 | | 19:08 (39) | 05:42 | 06:37 (6) | 04:56 |
| | 16:21 | | 17:21 | 3 | 09:44 (36) | | 18:19 | | 20:21 | 13 | 19:21 (39) | 21:20 | 3 06:40 (6) | 22:09 |
| 8 | 08:58 | | 08:14 | | | | 07:09 | | 06:50 | | 19:12 (39) | 05:40 | 06:36 (6) | 04:56 |
| | 16:23 | | 17:23 | | | | 18:22 | | 20:23 | 4 | 19:16 (39) | 21:22 | 3 06:39 (6) | 22:10 |
| 9 | 08:57 | | 08:12 | | | | 07:07 | | 06:47 | | | 05:38 | 06:35 (6) | 04:55 |
| | 16:24 | | 17:25 | | | | 18:24 | | 20:25 | | | 21:24 | 3 06:38 (6) | 22:11 |
| 10 | 08:56 | | 08:10 | | | | 07:04 | | 06:45 | | | 05:36 | 06:34 (6) | 04:54 |
| | 16:26 | | 17:27 | | | | 18:26 | | 20:27 | | | 21:26 | 3 06:37 (6) | 22:12 |
| 11 | 08:56 | | 08:08 | | | | 07:02 | | 06:42 | | | 05:34 | 06:33 (6) | 04:54 |
| | 16:28 | | 17:29 | | | | 18:28 | | 20:29 | | | 21:28 | 3 06:36 (6) | 22:13 |
| 12 | 08:55 | 09:35 (36) | 08:06 | | | | 06:59 | | 06:40 | | | 05:32 | 06:33 (6) | 04:53 |
| | 16:29 | 3 09:38 (36) | 17:31 | | | | 18:30 | | 20:31 | | | 21:29 | 3 06:36 (6) | 22:14 |
| 13 | 08:54 | 09:33 (36) | 08:03 | | | | 06:56 | | 06:37 | | | 05:30 | 06:32 (6) | 04:53 |
| | 16:31 | 9 09:42 (36) | 17:33 | | | | 18:32 | | 20:33 | | | 21:31 | 3 06:35 (6) | 22:15 |
| 14 | 08:53 | 09:32 (36) | 08:01 | | | | 06:54 | | 06:35 | | | 05:28 | 06:31 (6) | 04:53 |
| | 16:33 | 12 09:44 (36) | 17:36 | | | | 18:34 | | 20:35 | | | 21:33 | 3 06:34 (6) | 22:15 |
| 15 | 08:52 | 09:30 (36) | 07:59 | | | | 06:51 | | 06:32 | | | 05:26 | 06:32 (6) | 04:52 |
| | 16:34 | 15 09:45 (36) | 17:38 | | | | 18:36 | | 20:37 | | | 21:35 | 2 06:34 (6) | 22:16 |
| 16 | 08:51 | 09:30 (36) | 07:57 | | | | 06:49 | | 06:30 | | | 05:25 | 06:31 (6) | 04:52 |
| | 16:36 | 17 09:47 (36) | 17:40 | | | | 18:38 | | 20:39 | | | 21:37 | 3 06:34 (6) | 22:17 |
| 17 | 08:50 | 09:29 (36) | 07:55 | | | | 06:46 | | 06:27 | | | 05:23 | 06:30 (6) | 04:52 |
| | 16:38 | 20 09:49 (36) | 17:42 | | | | 18:40 | | 20:41 | | | 21:38 | 3 06:33 (6) | 22:17 |
| 18 | 08:49 | 09:28 (36) | 07:52 | | | | 06:44 | | 06:25 | | | 05:21 | 06:30 (6) | 04:52 |
| | 16:40 | 21 09:49 (36) | 17:44 | | | | 18:42 | | 20:43 | | | 21:40 | 3 06:33 (6) | 22:18 |
| 19 | 08:47 | 09:29 (36) | 07:50 | | | | 06:41 | | 06:23 | | | 05:19 | 06:30 (6) | 04:52 |
| | 16:42 | 22 09:51 (36) | 17:46 | | | | 18:44 | | 20:45 | | | 21:42 | 2 06:32 (6) | 22:18 |
| 20 | 08:46 | 09:28 (36) | 07:48 | | | | 06:39 | | 06:20 | | | 05:18 | 06:30 (6) | 04:52 |
| | 16:44 | 23 09:51 (36) | 17:48 | | | | 18:46 | | 20:47 | | | 21:44 | 2 06:32 (6) | 22:18 |
| 21 | 08:45 | 09:28 (36) | 07:46 | | | | 06:36 | | 06:18 | | | 05:16 | 06:30 (6) | 04:52 |
| | 16:46 | 24 09:52 (36) | 17:50 | | | | 18:48 | | 20:49 | | | 21:45 | 2 06:32 (6) | 22:19 |
| 22 | 08:43 | 09:28 (36) | 07:43 | | | | 06:33 | | 06:15 | | | 05:15 | 06:30 (6) | 04:52 |
| | 16:48 | 25 09:53 (36) | 17:53 | | | | 18:50 | | 20:51 | | | 21:47 | 1 06:31 (6) | 22:19 |
| 23 | 08:42 | 09:27 (36) | 07:41 | | | | 06:31 | 18:14 (39) | 06:13 | | | 05:13 | 06:30 (6) | 04:53 |
| | 16:50 | 26 09:53 (36) | 17:55 | | | | 18:52 | 10 18:24 (39) | 20:53 | | | 21:49 | 1 06:31 (6) | 22:19 |
| 24 | 08:41 | 09:28 (36) | 07:38 | | | | 06:28 | 18:11 (39) | 06:11 | | | 05:12 | 06:30 (6) | 04:53 |
| | 16:51 | 26 09:54 (36) | 17:57 | | | | 18:54 | 16 18:27 (39) | 20:55 | | | 21:50 | 2 06:32 (6) | 22:19 |
| 25 | 08:39 | 09:28 (36) | 07:36 | | | | 06:26 | 18:09 (39) | 06:08 | | | 05:10 | 06:29 (6) | 04:53 |
| | 16:53 | 26 09:54 (36) | 17:59 | | | | 18:56 | 19 18:28 (39) | 20:57 | | | 21:52 | 2 06:31 (6) | 22:19 |
| 26 | 08:37 | 09:28 (36) | 07:34 | | | | 06:23 | 18:07 (39) | 06:06 | | | 05:09 | 06:30 (6) | 04:54 |
| | 16:56 | 27 09:55 (36) | 18:01 | | | | 18:57 | 22 18:29 (39) | 20:59 | | | 21:53 | 1 06:31 (6) | 22:19 |
| 27 | 08:36 | 09:28 (36) | 07:31 | | | | 06:21 | 18:06 (39) | 06:04 | | | 05:08 | 06:30 (6) | 04:54 |
| | 16:58 | 27 09:55 (36) | 18:03 | | | | 18:59 | 24 18:30 (39) | 21:01 | | | 21:55 | 1 06:31 (6) | 22:19 |
| 28 | 08:34 | 09:28 (36) | 07:29 | | | | 06:18 | 18:05 (39) | 06:01 | | 06:56 (6) | 05:06 | 06:30 (6) | 04:55 |
| | 17:00 | 27 09:55 (36) | 18:05 | | | | 19:01 | 25 18:30 (39) | 21:03 | 2 | 06:58 (6) | 21:56 | 1 06:31 (6) | 22:19 |
| 29 | 08:33 | 09:29 (36) | | | | | 07:15 | 19:05 (39) | 05:59 | | 06:51 (6) | 05:05 | 06:30 (6) | 04:55 |
| | 17:02 | 27 09:56 (36) | | | | | 20:03 | 25 19:30 (39) | 21:05 | 3 | 06:54 (6) | 21:58 | 1 06:31 (6) | 22:18 |
| 30 | 08:31 | 09:29 (36) | | | | | 07:13 | 19:04 (39) | 05:57 | | 06:48 (6) | 05:04 | | 04:56 |
| | 17:04 | 26 09:55 (36) | | | | | 20:05 | 26 19:30 (39) | 21:06 | 3 | 06:51 (6) | 21:59 | | 22:18 |
| 31 | 08:29 | 09:30 (36) | | | | | 07:10 | 19:04 (39) | | | | 05:03 | | |
| | 17:06 | 25 09:55 (36) | | | | | 20:07 | 26 19:30 (39) | | | | 22:01 | | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | | | 520 | | |
| Total, worst case | 428 | | 120 | | 193 | | 159 | | 58 | | | | | |
| Sun reduction | 0,18 | | 0,25 | | 0,34 | | 0,39 | | 0,52 | | | | | |
| Oper. time red. | 1,00 | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | | | |
| Wind dir. red. | 0,69 | | 0,69 | | 1,00 | | 1,00 | | 0,95 | | | | | |
| Total reduction | 0,12 | | 0,16 | | 0,32 | | 0,37 | | 0,46 | | | | | |
| Total, real | 50 | | 19 | | 61 | | 58 | | 26 | | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AL - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | | December |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:43 (6) | 06:38 | | 07:34 | 07:36 | | 08:35 |
| | 22:18 | | 21:40 | 4 06:47 (6) | 20:29 | | 19:12 | 16:58 | | 16:10 |
| 2 | 04:57 | | 05:41 | 06:43 (6) | 06:39 | | 07:36 | 07:38 | | 08:36 |
| | 22:17 | | 21:38 | 3 06:46 (6) | 20:27 | | 19:09 | 16:55 | | 16:09 |
| 3 | 04:58 | | 05:43 | 06:44 (6) | 06:41 | | 07:38 | 07:41 | | 08:38 |
| | 22:17 | | 21:36 | 3 06:47 (6) | 20:24 | | 19:07 | 16:53 | | 16:08 |
| 4 | 04:59 | | 05:45 | 06:45 (6) | 06:43 | 19:10 (39) | 07:40 | 07:43 | 09:10 (36) | 08:40 |
| | 22:16 | | 21:34 | 3 06:48 (6) | 20:22 | 4 19:14 (39) | 19:04 | 16:51 | 5 09:15 (36) | 16:07 |
| 5 | 05:00 | | 05:47 | 06:45 (6) | 06:45 | 19:04 (39) | 07:42 | 07:45 | 09:06 (36) | 08:41 |
| | 22:16 | | 21:32 | 3 06:48 (6) | 20:19 | 13 19:17 (39) | 19:02 | 16:49 | 13 09:19 (36) | 16:07 |
| 6 | 05:01 | | 05:49 | 06:46 (6) | 06:47 | 19:02 (39) | 07:44 | 07:47 | 09:05 (36) | 08:43 |
| | 22:15 | | 21:30 | 4 06:50 (6) | 20:16 | 17 19:19 (39) | 18:59 | 16:47 | 16 09:21 (36) | 16:06 |
| 7 | 05:02 | | 05:50 | 06:47 (6) | 06:49 | 19:00 (39) | 07:46 | 07:49 | 09:03 (36) | 08:44 |
| | 22:14 | | 21:28 | 3 06:50 (6) | 20:14 | 20 19:20 (39) | 18:57 | 16:45 | 20 09:23 (36) | 16:06 |
| 8 | 05:03 | | 05:52 | 06:49 (6) | 06:51 | 18:59 (39) | 07:48 | 07:51 | 09:02 (36) | 08:45 |
| | 22:14 | | 21:25 | 2 06:51 (6) | 20:11 | 22 19:21 (39) | 18:54 | 16:43 | 22 09:24 (36) | 16:05 |
| 9 | 05:04 | | 05:54 | 06:49 (6) | 06:53 | 18:58 (39) | 07:50 | 07:53 | 09:01 (36) | 08:47 |
| | 22:13 | | 21:23 | 1 06:50 (6) | 20:09 | 24 19:22 (39) | 18:52 | 16:41 | 23 09:24 (36) | 16:05 |
| 10 | 05:05 | | 05:56 | | 06:55 | 18:56 (39) | 07:52 | 07:55 | 09:01 (36) | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | 25 19:21 (39) | 18:49 | 16:40 | 25 09:26 (36) | 16:04 |
| 11 | 05:07 | | 05:58 | | 06:56 | 18:56 (39) | 07:54 | 07:57 | 09:01 (36) | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | 25 19:21 (39) | 18:47 | 16:38 | 25 09:26 (36) | 16:04 |
| 12 | 05:08 | 06:39 (6) | 06:00 | | 06:58 | 18:55 (39) | 07:56 | 07:59 | 09:00 (36) | 08:50 |
| | 22:10 | 1 06:40 (6) | 21:17 | | 20:01 | 26 19:21 (39) | 18:44 | 16:36 | 26 09:26 (36) | 16:04 |
| 13 | 05:09 | 06:39 (6) | 06:02 | | 07:00 | 18:55 (39) | 07:58 | 08:01 | 09:00 (36) | 08:51 |
| | 22:09 | 1 06:40 (6) | 21:15 | | 19:58 | 26 19:21 (39) | 18:42 | 16:34 | 27 09:27 (36) | 16:04 |
| 14 | 05:11 | 06:39 (6) | 06:03 | | 07:02 | 18:55 (39) | 08:00 | 08:03 | 09:01 (36) | 08:52 |
| | 22:08 | 1 06:40 (6) | 21:12 | | 19:56 | 26 19:21 (39) | 18:39 | 16:32 | 27 09:28 (36) | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | 18:55 (39) | 08:02 | 08:05 | 09:01 (36) | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | 25 19:20 (39) | 18:37 | 16:31 | 27 09:28 (36) | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | 18:55 (39) | 08:04 | 08:07 | 09:01 (36) | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | 23 19:18 (39) | 18:34 | 16:29 | 27 09:28 (36) | 16:03 |
| 17 | 05:15 | 06:39 (6) | 06:09 | | 07:08 | 18:55 (39) | 08:06 | 08:09 | 09:01 (36) | 08:55 |
| | 22:04 | 1 06:40 (6) | 21:05 | | 19:48 | 22 19:17 (39) | 18:32 | 16:27 | 26 09:27 (36) | 16:04 |
| 18 | 05:16 | 06:39 (6) | 06:11 | | 07:10 | 18:56 (39) | 08:08 | 08:11 | 09:02 (36) | 08:56 |
| | 22:03 | 1 06:40 (6) | 21:03 | | 19:46 | 20 19:16 (39) | 18:29 | 16:26 | 26 09:28 (36) | 16:04 |
| 19 | 05:18 | 06:40 (6) | 06:13 | | 07:12 | 18:57 (39) | 08:10 | 08:13 | 09:02 (36) | 08:57 |
| | 22:01 | 1 06:41 (6) | 21:01 | | 19:43 | 17 19:14 (39) | 18:27 | 16:24 | 26 09:28 (36) | 16:04 |
| 20 | 05:19 | 06:40 (6) | 06:15 | | 07:13 | 19:00 (39) | 08:12 | 08:15 | 09:03 (36) | 08:57 |
| | 22:00 | 1 06:41 (6) | 20:58 | | 19:40 | 11 19:11 (39) | 18:25 | 16:23 | 25 09:28 (36) | 16:04 |
| 21 | 05:21 | 06:39 (6) | 06:17 | | 07:15 | | 08:14 | 08:17 | 09:03 (36) | 08:58 |
| | 21:58 | 2 06:41 (6) | 20:56 | | 19:38 | | 18:22 | 16:21 | 24 09:27 (36) | 16:05 |
| 22 | 05:22 | 06:40 (6) | 06:19 | | 07:17 | | 08:16 | 08:19 | 09:04 (36) | 08:59 |
| | 21:57 | 2 06:42 (6) | 20:54 | | 19:35 | | 18:20 | 16:20 | 23 09:27 (36) | 16:05 |
| 23 | 05:24 | 06:40 (6) | 06:21 | | 07:19 | | 08:18 | 08:21 | 09:05 (36) | 08:59 |
| | 21:55 | 2 06:42 (6) | 20:51 | | 19:33 | | 18:18 | 16:19 | 22 09:27 (36) | 16:06 |
| 24 | 05:26 | 06:40 (6) | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:05 (36) | 09:00 |
| | 21:54 | 3 06:43 (6) | 20:49 | | 19:30 | | 18:15 | 16:17 | 21 09:26 (36) | 16:06 |
| 25 | 05:27 | 06:40 (6) | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:06 (36) | 09:00 |
| | 21:52 | 2 06:42 (6) | 20:46 | | 19:27 | | 17:13 | 16:16 | 20 09:26 (36) | 16:07 |
| 26 | 05:29 | 06:41 (6) | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:08 (36) | 09:00 |
| | 21:50 | 2 06:43 (6) | 20:44 | | 19:25 | | 17:11 | 16:15 | 17 09:25 (36) | 16:08 |
| 27 | 05:31 | 06:42 (6) | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:09 (36) | 09:00 |
| | 21:49 | 2 06:44 (6) | 20:42 | | 19:22 | | 17:08 | 16:14 | 15 09:24 (36) | 16:08 |
| 28 | 05:32 | 06:41 (6) | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:11 (36) | 09:01 |
| | 21:47 | 3 06:44 (6) | 20:39 | | 19:20 | | 17:06 | 16:13 | 12 09:23 (36) | 16:09 |
| 29 | 05:34 | 06:42 (6) | 06:32 | | 07:31 | | 07:30 | 08:31 | 09:13 (36) | 09:01 |
| | 21:45 | 3 06:45 (6) | 20:37 | | 19:17 | | 17:04 | 16:12 | 9 09:22 (36) | 16:10 |
| 30 | 05:36 | 06:42 (6) | 06:34 | | 07:32 | | 07:32 | 08:33 | 09:16 (36) | 09:01 |
| | 21:43 | 3 06:45 (6) | 20:34 | | 19:14 | | 17:02 | 16:11 | 4 09:20 (36) | 16:11 |
| 31 | 05:38 | 06:43 (6) | 06:36 | | | | 07:34 | | | 09:01 |
| | 21:41 | 3 06:46 (6) | 20:32 | | | | 17:00 | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | | 224 |
| Total, worst case | | 34 | | 26 | | 346 | | | 553 | |
| Sun reduction | | 0,49 | | 0,51 | | 0,40 | | | 0,16 | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,95 | | 0,95 | | 1,00 | | | 0,69 | |
| Total reduction | | 0,43 | | 0,46 | | 0,37 | | | 0,10 | |
| Total, real | | 15 | | 12 | | 128 | | | 56 | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | | 07:26 | | 07:08 | 05:55 | 05:02 |
| | 16:14 | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | 08:26 | | 07:24 | | 07:05 | 05:53 | 05:00 |
| | 16:15 | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | | 07:22 | | 07:03 | 05:50 | 05:00 |
| | 16:16 | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | | 07:19 | 17:44 (39) | 07:00 | 05:48 | 04:59 |
| | 16:17 | 17:14 | | 18:13 | 1 17:45 (39) | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | | 07:17 | 17:41 (39) | 06:57 | 05:46 | 04:58 |
| | 16:19 | 17:16 | | 18:15 | 7 17:48 (39) | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | | 07:14 | 17:39 (39) | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | | 18:17 | 10 17:49 (39) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 | 10:11 (6) | 07:12 | 17:38 (39) | 06:52 | 05:42 | 04:56 |
| | 16:21 | 17:21 | 2 10:13 (6) | 18:19 | 14 17:52 (39) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 10:01 (6) | 07:09 | 17:36 (39) | 06:50 | 05:40 | 04:55 |
| | 16:23 | 17:23 | 23 10:24 (6) | 18:21 | 18 17:54 (39) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 09:57 (6) | 07:07 | 17:35 (39) | 06:47 | 05:38 | 04:55 |
| | 16:24 | 17:25 | 32 10:29 (6) | 18:24 | 20 17:55 (39) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 | 09:53 (6) | 07:04 | 17:35 (39) | 06:45 | 05:36 | 04:54 |
| | 16:26 | 17:27 | 39 10:32 (6) | 18:26 | 21 17:56 (39) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 09:50 (6) | 07:02 | 17:35 (39) | 06:42 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 45 10:35 (6) | 18:28 | 20 17:55 (39) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | | 06:59 | 17:35 (39) | 06:40 | 05:32 | 04:53 |
| | 16:29 | 17:31 | | 18:30 | 20 17:55 (39) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 | | 06:56 | 17:35 (39) | 06:37 | 05:30 | 04:53 |
| | 16:31 | 17:33 | | 18:32 | 19 17:54 (39) | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | | 06:54 | 17:36 (39) | 06:35 | 05:28 | 04:53 |
| | 16:33 | 17:36 | | 18:34 | 18 17:54 (39) | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | | 06:51 | 17:37 (39) | 06:32 | 05:26 | 04:52 |
| | 16:34 | 17:38 | | 18:36 | 15 17:52 (39) | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | | 06:49 | 09:36 (6) | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 | | 18:38 | 91 17:49 (39) | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | | 06:46 | 09:35 (6) | 06:27 | 05:23 | 04:52 |
| | 16:38 | 17:42 | | 18:40 | 81 10:56 (6) | 20:41 | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 | | 06:44 | 09:33 (6) | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | | 18:42 | 82 10:55 (6) | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 | | 06:41 | 09:32 (6) | 06:23 | 05:19 | 04:52 |
| | 16:42 | 17:46 | | 18:44 | 82 10:54 (6) | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | | 06:39 | 09:30 (6) | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | | 18:46 | 83 10:53 (6) | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | | 06:36 | 09:28 (6) | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:50 | | 18:48 | 84 10:52 (6) | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 | | 06:33 | 09:26 (6) | 06:15 | 05:15 | 04:52 |
| | 16:47 | 17:53 | | 18:50 | 85 10:51 (6) | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | | 06:31 | 09:23 (6) | 06:13 | 05:13 | 04:52 |
| | 16:49 | 17:55 | | 18:52 | 86 10:49 (6) | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 | 09:29 (6) | 06:28 | 09:21 (6) | 06:11 | 05:12 | 04:53 |
| | 16:51 | 17:57 | 1 09:30 (6) | 18:54 | 88 10:49 (6) | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 | 09:29 (6) | 06:26 | 09:19 (6) | 06:08 | 05:10 | 04:53 |
| | 16:53 | 17:59 | 1 09:30 (6) | 18:55 | 88 10:47 (6) | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 | 09:27 (6) | 06:23 | 09:18 (6) | 06:06 | 05:09 | 04:54 |
| | 16:55 | 18:01 | 3 09:30 (6) | 18:57 | 87 10:45 (6) | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 | 09:27 (6) | 06:21 | 09:19 (6) | 06:04 | 05:07 | 04:54 |
| | 16:58 | 18:03 | 3 09:30 (6) | 18:59 | 85 10:44 (6) | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 09:25 (6) | 06:18 | 09:20 (6) | 06:01 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 5 09:30 (6) | 19:01 | 82 10:42 (6) | 21:03 | 21:56 | 22:19 |
| 29 | 08:33 | | | 07:15 | 10:21 (6) | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | 20:03 | 79 11:40 (6) | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | | | 07:13 | 10:21 (6) | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | 20:05 | 77 11:38 (6) | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | 07:10 | 10:22 (6) | | 05:03 | |
| | 17:06 | | | 20:07 | 74 11:36 (6) | | 22:01 | |
| Potential sun hours | 242 | 269 | | 366 | | 423 | 501 | 520 |
| Total, worst case | | | 154 | | 1517 | | | |
| Sun reduction | | | 0,25 | | 0,34 | | | |
| Oper. time red. | | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | | 0,69 | | 0,72 | | | |
| Total reduction | | | 0,17 | | 0,25 | | | |
| Total, real | | | 26 | | 373 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AM - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 07:34 | | 18:15 (39) | 07:36 | 09:23 (6) | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 19 | 18:34 (39) | 16:58 38 | 10:01 (6) | 16:10 |
| 2 | 04:57 | | 05:41 | | 06:39 | | 07:36 | | 18:14 (39) | 07:38 | 09:27 (6) | 08:36 |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 20 | 18:34 (39) | 16:55 31 | 09:58 (6) | 16:09 |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:38 | | 18:13 (39) | 07:40 | 09:32 (6) | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 21 | 18:34 (39) | 16:53 21 | 09:53 (6) | 16:08 |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:40 | | 18:13 (39) | 07:43 | | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 21 | 18:34 (39) | 16:51 | | 16:07 |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 18:13 (39) | 07:45 | | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 19 | 18:32 (39) | 16:49 | | 16:07 |
| 6 | 05:01 | | 05:48 | | 06:47 | | 07:44 | | 18:14 (39) | 07:47 | | 08:43 |
| | 22:15 | | 21:30 | | 20:16 | | 18:59 | 15 | 18:29 (39) | 16:47 | | 16:06 |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:46 | | 18:14 (39) | 07:49 | | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 13 | 18:27 (39) | 16:45 | | 16:05 |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 18:15 (39) | 07:51 | | 08:45 |
| | 22:14 | | 21:25 | | 20:11 | | 18:54 | 9 | 18:24 (39) | 16:43 | | 16:05 |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 18:17 (39) | 07:53 | | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 5 | 18:22 (39) | 16:41 | | 16:05 |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:52 | | | 07:55 | | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | | | 16:40 | | 16:04 |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:54 | | | 07:57 | | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | | | 16:38 | | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:56 | | | 07:59 | | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | | | 16:36 | | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:58 | | | 08:01 | | 08:51 |
| | 22:09 | | 21:15 | | 19:58 | | 18:42 | | | 16:34 | | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | | | 08:03 | | 08:52 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | | | 16:32 | | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | | | 08:05 | | 08:53 |
| | 22:06 | | 21:10 | | 19:53 | | 18:37 | | | 16:31 | | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | | 08:07 | | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | | | 16:29 | | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | | 08:09 | | 08:55 |
| | 22:04 | | 21:05 | | 19:48 | | 18:32 | | | 16:27 | | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | | 08:11 | | 08:56 |
| | 22:03 | | 21:03 | | 19:45 | | 18:29 | | | 16:26 | | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | | 08:13 | | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | | | 16:24 | | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | | 10:08 (6) | 08:15 | | 08:57 |
| | 22:00 | | 20:58 | | 19:40 | | 18:25 | 3 | 10:11 (6) | 16:23 | | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | | 10:06 (6) | 08:17 | | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 6 | 10:12 (6) | 16:21 | | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | | 10:05 (6) | 08:19 | | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 8 | 10:13 (6) | 16:20 | | 16:05 |
| 23 | 05:24 | | 06:20 | | 07:19 | | 08:18 | | 10:06 (6) | 08:21 | | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 9 | 10:15 (6) | 16:19 | | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | | 10:08 (6) | 08:23 | | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 10 | 10:18 (6) | 16:17 | | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | | 09:09 (6) | 08:24 | | 09:00 |
| | 21:52 | | 20:46 | | 19:27 | | 17:13 | 13 | 10:17 (6) | 16:16 | | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 09:10 (6) | 08:26 | | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 15 | 10:15 (6) | 16:15 | | 16:08 |
| 27 | 05:31 | | 06:28 | | 07:27 | 18:21 (39) | 07:26 | | 09:12 (6) | 08:28 | | 09:00 |
| | 21:49 | | 20:42 | | 19:22 | 9 18:30 (39) | 17:08 | 17 | 10:13 (6) | 16:14 | | 16:08 |
| 28 | 05:32 | | 06:30 | | 07:29 | 18:19 (39) | 07:28 | | 09:13 (6) | 08:30 | | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | 13 18:32 (39) | 17:06 | 21 | 10:11 (6) | 16:13 | | 16:09 |
| 29 | 05:34 | | 06:32 | | 07:31 | 18:17 (39) | 07:30 | | 09:16 (6) | 08:31 | | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | 16 18:33 (39) | 17:04 | 25 | 10:09 (6) | 16:12 | | 16:10 |
| 30 | 05:36 | | 06:34 | | 07:32 | 18:15 (39) | 07:32 | | 09:18 (6) | 08:33 | | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | 19 18:34 (39) | 17:02 | 33 | 10:07 (6) | 16:11 | | 16:11 |
| 31 | 05:38 | | 06:36 | | | | 07:34 | | 09:20 (6) | | | 09:01 |
| | 21:41 | | 20:32 | | | | 17:00 | 44 | 10:04 (6) | | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 |
| Total, worst case | | | | | 57 | | 346 | | | 90 | | |
| Sun reduction | | | | | 0,40 | | 0,31 | | | 0,16 | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | | | | 0,97 | | 0,80 | | | 0,69 | | |
| Total reduction | | | | | 0,38 | | 0,25 | | | 0,11 | | |
| Total, real | | | | | 22 | | 85 | | | 10 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 10:20 (36) | 08:27 | | | 07:26 | | 08:39 (6) | 07:08 | 05:55 | 05:02 |
| | 16:14 | 13 | 10:33 (36) | 17:08 | | | 18:07 | 22 | 17:39 (39) | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 10:22 (36) | 08:26 | | | 07:24 | | 08:38 (6) | 07:05 | 05:53 | 05:00 |
| | 16:15 | 12 | 10:34 (36) | 17:10 | | | 18:09 | 23 | 17:39 (39) | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 10:22 (36) | 08:24 | | | 07:22 | | 08:38 (6) | 07:03 | 05:50 | 05:00 |
| | 16:16 | 11 | 10:33 (36) | 17:12 | | | 18:11 | 24 | 17:40 (39) | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | | 10:24 (36) | 08:22 | | | 07:19 | | 08:37 (6) | 07:00 | 05:48 | 04:59 |
| | 16:17 | 9 | 10:33 (36) | 17:14 | | | 18:13 | 24 | 17:39 (39) | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 10:25 (36) | 08:20 | | | 07:17 | | 17:16 (39) | 06:57 | 05:46 | 04:58 |
| | 16:19 | 7 | 10:32 (36) | 17:16 | | | 18:15 | 24 | 17:40 (39) | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | | 08:18 | | | 07:14 | | 17:16 (39) | 06:55 | 05:44 | 04:57 |
| | 16:20 | | | 17:19 | | | 18:17 | 23 | 17:39 (39) | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | | 08:16 | | | 07:12 | | 17:17 (39) | 06:52 | 05:42 | 04:56 |
| | 16:21 | | | 17:21 | | | 18:19 | 22 | 17:39 (39) | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | | 08:14 | | | 07:09 | | 17:17 (39) | 06:50 | 05:40 | 04:55 |
| | 16:23 | | | 17:23 | | | 18:21 | 21 | 17:38 (39) | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | | 08:12 | | | 07:07 | | 17:17 (39) | 06:47 | 05:38 | 04:55 |
| | 16:24 | | | 17:25 | | | 18:24 | 19 | 17:36 (39) | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | | 08:10 | | | 07:04 | | 17:19 (39) | 06:45 | 05:36 | 04:54 |
| | 16:26 | | | 17:27 | | | 18:26 | 16 | 17:35 (39) | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | | | 08:08 | | | 07:02 | | 17:20 (39) | 06:42 | 05:34 | 04:54 |
| | 16:28 | | | 17:29 | | | 18:28 | 12 | 17:32 (39) | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | | | 08:06 | | 09:03 (6) | 06:59 | | 17:26 (39) | 06:40 | 05:32 | 04:53 |
| | 16:29 | | | 17:31 | 12 | 09:15 (6) | 18:30 | 1 | 17:27 (39) | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | | 08:03 | | 08:59 (6) | 06:56 | | | 06:37 | 05:30 | 04:53 |
| | 16:31 | | | 17:33 | 21 | 09:20 (6) | 18:32 | | | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | | | 08:01 | | 08:55 (6) | 06:54 | | | 06:35 | 05:28 | 04:53 |
| | 16:33 | | | 17:36 | 27 | 09:22 (6) | 18:34 | | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | | 07:59 | | 08:53 (6) | 06:51 | | | 06:32 | 05:26 | 04:52 |
| | 16:34 | | | 17:38 | 32 | 09:25 (6) | 18:36 | | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | | 07:57 | | 08:51 (6) | 06:49 | | | 06:30 | 05:25 | 04:52 |
| | 16:36 | | | 17:40 | 36 | 09:27 (6) | 18:38 | | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | | | 07:55 | | 08:49 (6) | 06:46 | | | 06:27 | 05:23 | 04:52 |
| | 16:38 | | | 17:42 | 39 | 09:28 (6) | 18:40 | | | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | | | 07:52 | | 08:48 (6) | 06:44 | | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | | 17:44 | 42 | 09:30 (6) | 18:42 | | | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | | | 07:50 | | 08:47 (6) | 06:41 | | | 06:23 | 05:19 | 04:52 |
| | 16:42 | | | 17:46 | 43 | 09:30 (6) | 18:44 | | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | | 07:48 | | 08:45 (6) | 06:39 | | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | | 17:48 | 45 | 09:30 (6) | 18:46 | | | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | | | 07:46 | | 08:44 (6) | 06:36 | | | 06:18 | 05:16 | 04:52 |
| | 16:46 | | | 17:50 | 46 | 09:30 (6) | 18:48 | | | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | | | 07:43 | | 08:43 (6) | 06:33 | | | 06:15 | 05:15 | 04:52 |
| | 16:48 | | | 17:53 | 47 | 09:30 (6) | 18:50 | | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | | | 07:41 | | 08:42 (6) | 06:31 | | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | | 17:55 | 48 | 09:30 (6) | 18:52 | | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | | | 07:38 | | 08:41 (6) | 06:28 | | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | | 17:57 | 49 | 09:30 (6) | 18:54 | | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | | | 07:36 | | 08:41 (6) | 06:26 | | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | | 17:59 | 52 | 17:30 (39) | 18:56 | | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | | | 07:34 | | 08:39 (6) | 06:23 | | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | | 18:01 | 61 | 17:32 (39) | 18:57 | | | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | | | 07:31 | | 08:39 (6) | 06:21 | | | 06:04 | 05:07 | 04:54 |
| | 16:58 | | | 18:03 | 65 | 17:35 (39) | 18:59 | | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | | | 07:29 | | 08:38 (6) | 06:18 | | | 06:01 | 05:06 | 04:55 |
| | 17:00 | | | 18:05 | 69 | 17:36 (39) | 19:01 | | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | | | | | 07:15 | | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | | | 20:03 | | | 21:05 | 21:58 | 22:18 |
| 30 | 08:31 | | | | | | 07:13 | | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | | | 20:05 | | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | | | | | | 07:10 | | | | 05:03 | |
| | 17:06 | | | | | | 20:07 | | | | 22:01 | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | 501 | 520 |
| Total, worst case | | 52 | | | 734 | | | 231 | | | | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | | |
| Wind dir. red. | | 0,49 | | | 0,84 | | | 0,94 | | | | |
| Total reduction | | 0,08 | | | 0,20 | | | 0,30 | | | | |
| Total, real | | 4 | | | 144 | | | 70 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AN - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | | | November | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | | 06:38 | | 07:34 | | | 07:36 | | 08:35 | | |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | | | 16:58 | | 16:10 | | |
| 2 | 04:57 | | 05:41 | | 06:39 | | 07:36 | | 18:01 (39) | 07:38 | | 08:36 | | |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 9 | 18:10 (39) | 16:55 | | 16:09 | | |
| 3 | 04:58 | | 05:43 | | 06:41 | | 07:38 | | 17:58 (39) | 07:41 | | 08:38 | | |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 14 | 18:12 (39) | 16:53 | | 16:08 | | |
| 4 | 04:59 | | 05:45 | | 06:43 | | 07:40 | | 17:56 (39) | 07:43 | | 08:40 | | |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 17 | 18:13 (39) | 16:51 | | 16:07 | | |
| 5 | 05:00 | | 05:47 | | 06:45 | | 07:42 | | 17:54 (39) | 07:45 | | 08:41 | | |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 20 | 18:14 (39) | 16:49 | | 16:07 | | |
| 6 | 05:01 | | 05:49 | | 06:47 | | 07:44 | | 17:53 (39) | 07:47 | | 08:43 | | |
| | 22:15 | | 21:30 | | 20:16 | | 18:59 | 22 | 18:15 (39) | 16:47 | | 16:06 | | |
| 7 | 05:02 | | 05:50 | | 06:49 | | 07:46 | | 17:52 (39) | 07:49 | | 08:44 | | 10:13 (36) |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 23 | 18:15 (39) | 16:45 | | 16:05 | 6 | 10:19 (36) |
| 8 | 05:03 | | 05:52 | | 06:51 | | 07:48 | | 17:52 (39) | 07:51 | | 08:45 | | 10:11 (36) |
| | 22:14 | | 21:25 | | 20:11 | | 18:54 | 23 | 18:15 (39) | 16:43 | | 16:05 | 9 | 10:20 (36) |
| 9 | 05:04 | | 05:54 | | 06:53 | | 07:50 | | 17:51 (39) | 07:53 | | 08:47 | | 10:11 (36) |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 24 | 18:15 (39) | 16:41 | | 16:05 | 11 | 10:22 (36) |
| 10 | 05:05 | | 05:56 | | 06:55 | | 07:52 | | 09:12 (6) | 07:55 | | 08:48 | | 10:11 (36) |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 24 | 18:14 (39) | 16:40 | | 16:04 | 12 | 10:23 (36) |
| 11 | 05:07 | | 05:58 | | 06:56 | | 07:54 | | 09:12 (6) | 07:57 | | 08:49 | | 10:11 (36) |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 24 | 18:14 (39) | 16:38 | | 16:04 | 13 | 10:24 (36) |
| 12 | 05:08 | | 06:00 | | 06:58 | | 07:56 | | 09:12 (6) | 07:59 | | 08:50 | | 10:11 (36) |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 23 | 18:13 (39) | 16:36 | | 16:04 | 14 | 10:25 (36) |
| 13 | 05:09 | | 06:02 | | 07:00 | | 07:58 | | 09:12 (6) | 08:01 | | 08:51 | | 10:11 (36) |
| | 22:09 | | 21:15 | | 19:58 | | 18:42 | 20 | 18:11 (39) | 16:34 | | 16:04 | 15 | 10:26 (36) |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | | 09:12 (6) | 08:03 | | 08:52 | | 10:11 (36) |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 17 | 18:08 (39) | 16:32 | | 16:03 | 15 | 10:26 (36) |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | | 09:12 (6) | 08:05 | | 08:53 | | 10:11 (36) |
| | 22:06 | | 21:10 | | 19:53 | | 18:37 | 14 | 18:06 (39) | 16:31 | | 16:03 | 16 | 10:27 (36) |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | | 09:12 (6) | 08:07 | | 08:54 | | 10:12 (36) |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 9 | 18:03 (39) | 16:29 | | 16:03 | 16 | 10:28 (36) |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | | 09:12 (6) | 08:09 | | 08:55 | | 10:12 (36) |
| | 22:04 | | 21:05 | | 19:48 | | 18:32 | 3 | 09:15 (6) | 16:27 | | 16:04 | 17 | 10:29 (36) |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | | 09:13 (6) | 08:11 | | 08:56 | | 10:13 (36) |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 3 | 09:16 (6) | 16:26 | | 16:04 | 16 | 10:29 (36) |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | | 09:14 (6) | 08:13 | | 08:57 | | 10:12 (36) |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 3 | 09:17 (6) | 16:24 | | 16:04 | 17 | 10:29 (36) |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | | 09:14 (6) | 08:15 | | 08:57 | | 10:13 (36) |
| | 22:00 | | 20:58 | | 19:40 | | 18:25 | 4 | 09:18 (6) | 16:23 | | 16:04 | 17 | 10:30 (36) |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | | 09:15 (6) | 08:17 | | 08:58 | | 10:14 (36) |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 4 | 09:19 (6) | 16:21 | | 16:05 | 17 | 10:31 (36) |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | | 09:15 (6) | 08:19 | | 08:59 | | 10:14 (36) |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 5 | 09:20 (6) | 16:20 | | 16:05 | 17 | 10:31 (36) |
| 23 | 05:24 | | 06:20 | | 07:19 | | 08:18 | | 09:16 (6) | 08:21 | | 08:59 | | 10:14 (36) |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 5 | 09:21 (6) | 16:19 | | 16:06 | 17 | 10:31 (36) |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | | 09:18 (6) | 08:23 | | 09:00 | | 10:15 (36) |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 6 | 09:24 (6) | 16:17 | | 16:06 | 17 | 10:32 (36) |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | | 08:20 (6) | 08:24 | | 09:00 | | 10:16 (36) |
| | 21:52 | | 20:46 | | 19:27 | | 17:13 | 6 | 08:26 (6) | 16:16 | | 16:07 | 16 | 10:32 (36) |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | | 08:21 (6) | 08:26 | | 09:00 | | 10:16 (36) |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 7 | 08:28 (6) | 16:15 | | 16:08 | 17 | 10:33 (36) |
| 27 | 05:31 | | 06:28 | | 07:27 | | 07:26 | | 08:23 (6) | 08:28 | | 09:00 | | 10:16 (36) |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 11 | 08:54 (6) | 16:14 | | 16:08 | 17 | 10:33 (36) |
| 28 | 05:32 | | 06:30 | | 07:29 | | 07:28 | | 08:25 (6) | 08:30 | | 09:01 | | 10:17 (36) |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 19 | 08:51 (6) | 16:13 | | 16:09 | 16 | 10:33 (36) |
| 29 | 05:34 | | 06:32 | | 07:31 | | 07:30 | | 08:29 (6) | 08:31 | | 09:01 | | 10:18 (36) |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 19 | 08:48 (6) | 16:12 | | 16:10 | 15 | 10:33 (36) |
| 30 | 05:36 | | 06:34 | | 07:32 | | 07:32 | | 08:34 (6) | 08:33 | | 09:01 | | 10:19 (36) |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 9 | 08:43 (6) | 16:11 | | 16:11 | 15 | 10:34 (36) |
| 31 | 05:38 | | 06:36 | | | | 07:34 | | | | | 09:01 | | 10:20 (36) |
| | 21:41 | | 20:32 | | | | 17:00 | | | | | 16:12 | 14 | 10:34 (36) |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | | | 253 | | 224 | | |
| Total, worst case | | | | | | | | 387 | | | | | 372 | |
| Sun reduction | | | | | | | | 0,31 | | | | | 0,14 | |
| Oper. time red. | | | | | | | | 1,00 | | | | | 1,00 | |
| Wind dir. red. | | | | | | | | 0,91 | | | | | 0,49 | |
| Total reduction | | | | | | | | 0,26 | | | | | 0,06 | |
| Total, real | | | | | | | | 102 | | | | | 23 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 08:59 (24) | 07:26 | | 17:22 (18) | 07:07 | | | 05:55 | | | 05:01 | | 20:06 (20) |
| | 16:13 | | | 17:08 | 57 | 16:21 (7) | 18:07 | 17 | 17:39 (18) | 20:09 | | | 21:08 | | | 22:02 | 38 | 20:44 (20) |
| 2 | 09:00 | | | 08:25 | | 08:58 (24) | 07:24 | | 17:21 (18) | 07:05 | | | 05:52 | | 20:17 (20) | 05:00 | | 20:06 (20) |
| | 16:15 | | | 17:10 | 60 | 16:21 (7) | 18:09 | 20 | 17:41 (18) | 20:11 | | | 21:10 | 14 | 20:31 (20) | 22:03 | 38 | 20:44 (20) |
| 3 | 09:00 | | | 08:23 | | 08:58 (24) | 07:21 | | 17:21 (18) | 07:02 | | | 05:50 | | 20:14 (20) | 04:59 | | 20:06 (20) |
| | 16:16 | | | 17:12 | 63 | 16:39 (19) | 18:11 | 22 | 17:43 (18) | 20:13 | | | 21:12 | 19 | 20:33 (20) | 22:04 | 38 | 20:44 (20) |
| 4 | 08:59 | | | 08:22 | | 08:58 (24) | 07:19 | | 17:20 (18) | 07:00 | | 19:38 (17) | 05:48 | | 20:12 (20) | 04:58 | | 20:07 (20) |
| | 16:17 | | | 17:14 | 68 | 16:41 (19) | 18:13 | 23 | 17:43 (18) | 20:15 | 9 | 19:47 (17) | 21:14 | 23 | 20:35 (20) | 22:06 | 36 | 20:43 (20) |
| 5 | 08:59 | | | 08:20 | | 08:58 (24) | 07:16 | | 17:20 (18) | 06:57 | | 19:36 (17) | 05:46 | | 20:10 (20) | 04:58 | | 20:08 (20) |
| | 16:18 | | | 17:16 | 70 | 16:44 (19) | 18:15 | 22 | 17:42 (18) | 20:17 | 13 | 19:49 (17) | 21:16 | 27 | 20:37 (20) | 22:07 | 36 | 20:44 (20) |
| 6 | 08:59 | | | 08:18 | | 08:58 (24) | 07:14 | | 17:20 (18) | 06:55 | | 19:34 (17) | 05:44 | | 20:09 (20) | 04:57 | | 20:08 (20) |
| | 16:20 | | | 17:18 | 74 | 16:46 (19) | 18:17 | 22 | 17:42 (18) | 20:19 | 17 | 19:51 (17) | 21:18 | 29 | 20:38 (20) | 22:08 | 36 | 20:44 (20) |
| 7 | 08:58 | | | 08:16 | | 08:59 (24) | 07:11 | | 17:20 (18) | 06:52 | | 19:33 (17) | 05:42 | | 20:07 (20) | 04:56 | | 20:09 (20) |
| | 16:21 | | | 17:20 | 77 | 16:49 (19) | 18:19 | 26 | 17:46 (21) | 20:21 | 20 | 19:53 (17) | 21:20 | 32 | 20:39 (20) | 22:09 | 35 | 20:44 (20) |
| 8 | 08:57 | | | 08:14 | | 08:59 (24) | 07:09 | | 17:21 (18) | 06:50 | | 19:31 (17) | 05:40 | | 20:07 (20) | 04:55 | | 20:09 (20) |
| | 16:23 | | | 17:23 | 78 | 16:51 (19) | 18:21 | 29 | 17:50 (21) | 20:23 | 24 | 19:55 (17) | 21:22 | 34 | 20:41 (20) | 22:10 | 35 | 20:44 (20) |
| 9 | 08:57 | | | 08:12 | | 08:59 (24) | 07:06 | | 17:22 (18) | 06:47 | | 19:30 (17) | 05:38 | | 20:06 (20) | 04:55 | | 20:09 (20) |
| | 16:24 | | | 17:25 | 80 | 16:53 (19) | 18:23 | 30 | 17:52 (21) | 20:25 | 26 | 19:56 (17) | 21:24 | 35 | 20:41 (20) | 22:11 | 34 | 20:43 (20) |
| 10 | 08:56 | | | 08:10 | | 08:59 (24) | 07:04 | | 17:24 (18) | 06:45 | | 19:29 (17) | 05:36 | | 20:05 (20) | 04:54 | | 20:10 (20) |
| | 16:26 | | | 17:27 | 79 | 16:54 (19) | 18:25 | 30 | 17:54 (21) | 20:27 | 26 | 19:55 (17) | 21:25 | 37 | 20:42 (20) | 22:12 | 33 | 20:43 (20) |
| 11 | 08:55 | | | 08:07 | | 09:00 (24) | 07:01 | | 17:27 (21) | 06:42 | | 19:29 (17) | 05:34 | | 20:04 (20) | 04:54 | | 20:11 (20) |
| | 16:27 | | | 17:29 | 75 | 16:54 (19) | 18:27 | 28 | 17:55 (21) | 20:29 | 27 | 19:56 (17) | 21:27 | 38 | 20:42 (20) | 22:13 | 33 | 20:44 (20) |
| 12 | 08:55 | | | 08:05 | | 09:01 (24) | 06:59 | | 17:25 (21) | 06:40 | | 19:28 (17) | 05:32 | | 20:04 (20) | 04:53 | | 20:10 (20) |
| | 16:29 | | | 17:31 | 73 | 16:54 (19) | 18:29 | 30 | 17:55 (21) | 20:31 | 27 | 19:55 (17) | 21:29 | 38 | 20:42 (20) | 22:14 | 33 | 20:43 (20) |
| 13 | 08:54 | | | 08:03 | | 09:02 (24) | 06:56 | | 17:25 (21) | 06:37 | | 19:28 (17) | 05:30 | | 20:04 (20) | 04:53 | | 20:11 (20) |
| | 16:31 | | | 17:33 | 66 | 16:53 (19) | 18:31 | 32 | 17:57 (21) | 20:33 | 27 | 19:55 (17) | 21:31 | 39 | 20:43 (20) | 22:14 | 32 | 20:43 (20) |
| 14 | 08:53 | | | 08:01 | | 09:03 (24) | 06:54 | | 17:23 (21) | 06:35 | | 19:29 (17) | 05:28 | | 20:03 (20) | 04:52 | | 20:12 (20) |
| | 16:32 | | | 17:35 | 59 | 16:52 (19) | 18:33 | 34 | 17:57 (21) | 20:35 | 26 | 19:55 (17) | 21:33 | 41 | 20:44 (20) | 22:15 | 31 | 20:43 (20) |
| 15 | 08:52 | | | 07:59 | | 09:06 (24) | 06:51 | | 17:23 (21) | 06:32 | | 19:28 (17) | 05:26 | | 20:03 (20) | 04:52 | | 20:12 (20) |
| | 16:34 | | | 17:38 | 49 | 16:51 (19) | 18:35 | 34 | 17:57 (21) | 20:37 | 26 | 19:54 (17) | 21:35 | 40 | 20:43 (20) | 22:16 | 32 | 20:44 (20) |
| 16 | 08:51 | | | 07:57 | | 09:08 (24) | 06:49 | | 17:22 (21) | 06:30 | | 19:29 (17) | 05:24 | | 20:03 (20) | 04:52 | | 20:13 (20) |
| | 16:36 | | | 17:40 | 35 | 16:49 (19) | 18:37 | 35 | 17:57 (21) | 20:39 | 24 | 19:53 (17) | 21:36 | 41 | 20:44 (20) | 22:16 | 31 | 20:44 (20) |
| 17 | 08:49 | | | 07:54 | | 16:01 (7) | 06:46 | | 17:22 (21) | 06:27 | | 19:29 (17) | 05:23 | | 20:02 (20) | 04:52 | | 20:13 (20) |
| | 16:38 | | | 17:42 | 10 | 16:11 (7) | 18:39 | 36 | 17:58 (21) | 20:41 | 23 | 19:52 (17) | 21:38 | 42 | 20:44 (20) | 22:17 | 31 | 20:44 (20) |
| 18 | 08:48 | | | 07:52 | | | 06:43 | | 17:22 (21) | 06:25 | | 19:30 (17) | 05:21 | | 20:03 (20) | 04:52 | | 20:13 (20) |
| | 16:40 | | | 17:44 | | | 18:41 | 35 | 17:57 (21) | 20:43 | 21 | 19:51 (17) | 21:40 | 42 | 20:45 (20) | 22:17 | 31 | 20:44 (20) |
| 19 | 08:47 | | | 07:50 | | | 06:41 | | 17:21 (21) | 06:22 | | 19:31 (17) | 05:19 | | 20:02 (20) | 04:52 | | 20:14 (20) |
| | 16:42 | | | 17:46 | | | 18:43 | 35 | 17:56 (21) | 20:45 | 19 | 19:50 (17) | 21:42 | 42 | 20:44 (20) | 22:18 | 30 | 20:44 (20) |
| 20 | 08:46 | | | 07:48 | | | 06:38 | | 17:22 (21) | 06:20 | | 19:32 (17) | 05:18 | | 20:03 (20) | 04:52 | | 20:14 (20) |
| | 16:43 | | | 17:48 | | | 18:45 | 34 | 17:56 (21) | 20:47 | 15 | 19:47 (17) | 21:43 | 42 | 20:45 (20) | 22:18 | 30 | 20:44 (20) |
| 21 | 08:45 | | | 07:45 | | | 06:36 | | 17:21 (21) | 06:18 | | 19:35 (17) | 05:16 | | 20:02 (20) | 04:52 | | 20:14 (20) |
| | 16:45 | | | 17:50 | | | 18:47 | 34 | 17:55 (21) | 20:49 | 9 | 19:44 (17) | 21:45 | 42 | 20:44 (20) | 22:18 | 30 | 20:44 (20) |
| 22 | 08:43 | | 15:58 (7) | 07:43 | | | 06:33 | | 17:22 (21) | 06:15 | | | 05:14 | | 20:03 (20) | 04:52 | | 20:14 (20) |
| | 16:47 | 10 | 16:08 (7) | 17:52 | | | 18:49 | 33 | 17:55 (21) | 20:50 | | | 21:47 | 42 | 20:45 (20) | 22:18 | 30 | 20:44 (20) |
| 23 | 08:42 | | 15:55 (7) | 07:41 | | | 06:31 | | 17:22 (21) | 06:13 | | | 05:13 | | 20:03 (20) | 04:52 | | 20:15 (20) |
| | 16:49 | 15 | 16:10 (7) | 17:54 | | | 18:51 | 32 | 17:54 (21) | 20:52 | | | 21:48 | 42 | 20:45 (20) | 22:19 | 30 | 20:45 (20) |
| 24 | 08:40 | | 15:54 (7) | 07:38 | | | 06:28 | | 17:22 (21) | 06:11 | | | 05:11 | | 20:03 (20) | 04:53 | | 20:14 (20) |
| | 16:51 | 18 | 16:12 (7) | 17:57 | | | 18:53 | 30 | 17:52 (21) | 20:54 | | | 21:50 | 41 | 20:44 (20) | 22:19 | 31 | 20:45 (20) |
| 25 | 08:39 | | 15:53 (7) | 07:36 | | | 06:25 | | 17:24 (21) | 06:08 | | | 05:10 | | 20:03 (20) | 04:53 | | 20:14 (20) |
| | 16:53 | 22 | 16:15 (7) | 17:59 | | | 18:55 | 27 | 17:51 (21) | 20:56 | | | 21:52 | 42 | 20:45 (20) | 22:19 | 31 | 20:45 (20) |
| 26 | 08:37 | | 09:08 (24) | 07:33 | | 17:26 (18) | 06:23 | | 17:25 (21) | 06:06 | | | 05:09 | | 20:04 (20) | 04:53 | | 20:15 (20) |
| | 16:55 | 32 | 16:16 (7) | 18:01 | 6 | 17:32 (18) | 18:57 | 24 | 17:49 (21) | 20:58 | | | 21:53 | 41 | 20:45 (20) | 22:19 | 31 | 20:46 (20) |
| 27 | 08:36 | | 09:06 (24) | 07:31 | | 17:25 (18) | 06:20 | | 17:27 (21) | 06:04 | | | 05:07 | | 20:04 (20) | 04:54 | | 20:14 (20) |
| | 16:57 | 38 | 16:17 (7) | 18:03 | 10 | 17:35 (18) | 18:59 | 20 | 17:47 (21) | 21:00 | | | 21:55 | 41 | 20:45 (20) | 22:19 | 32 | 20:46 (20) |
| 28 | 08:34 | | 09:04 (24) | 07:29 | | 17:23 (18) | 06:18 | | 17:29 (21) | 06:01 | | | 05:06 | | 20:04 (20) | 04:54 | | 20:15 (20) |
| | 16:59 | 44 | 16:18 (7) | 18:05 | 13 | 17:36 (18) | 19:01 | 15 | 17:44 (21) | 21:02 | | | 21:56 | 41 | 20:45 (20) | 22:18 | 32 | 20:47 (20) |
| 29 | 08:32 | | 09:02 (24) | | | | 07:15 | | 18:34 (21) | 05:59 | | | 05:05 | | 20:05 (20) | 04:55 | | 20:14 (20) |
| | 17:01 | 48 | 16:19 (7) | | | | 20:03 | 4 | 18:38 (21) | 21:04 | | | 21:58 | 40 | 20:45 (20) | 22:18 | 32 | 20:46 (20) |
| 30 | 08:31 | | 09:00 (24) | | | | 07:13 | | | 05:57 | | | 05:04 | | 20:05 (20) | 04:56 | | 20:15 (20) |
| | 17:04 | 52 | 16:19 (7) | | | | 20:05 | | | 21:06 | | | 21:59 | 40 | 20:45 (20) | 22:18 | 32 | 20:47 (20) |
| 31 | 08:29 | | 08:59 (24) | | | | 07:10 | | | | | | 05:02 | | 20:05 (20) | | | |
| | 17:06 | 55 | 16:20 (7) | | | | 20:07 | | | | | | 22:00 | 40 | 20:45 (20) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 334 | | | 1102 | | | 793 | | | 379 | | | 1107 | | | 984 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,75 | | | 0,77 | | | 0,96 | | | 0,99 | | | 0,93 | | | 0,93 | |
| Total reduction | | 0,13 | | | 0,19 | | | 0,32 | | | 0,38 | | | 0,47 | | | 0,44 | |
| Total, real | | 44 | | | 205 | | | 256 | | | 145 | | | 520 | | | 432 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AO - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | 20:15 (20) | 05:39 | | 20:14 (20) | 06:37 | | 19:28 (17) | 07:34 | | 18:05 (21) | 07:36 | | 08:29 (24) | 08:35 | |
| | 22:17 | 33 | 20:48 (20) | 21:39 | 39 | 20:53 (20) | 20:29 | 27 | 19:55 (17) | 19:12 | 31 | 18:36 (21) | 16:57 | 47 | 16:24 (19) | 16:10 | |
| 2 | 04:57 | | 20:14 (20) | 05:41 | | 20:15 (20) | 06:39 | | 19:28 (17) | 07:36 | | 18:06 (21) | 07:38 | | 08:28 (24) | 08:36 | |
| | 22:17 | 33 | 20:47 (20) | 21:37 | 37 | 20:52 (20) | 20:26 | 26 | 19:54 (17) | 19:09 | 28 | 18:34 (21) | 16:55 | 46 | 16:22 (19) | 16:09 | |
| 3 | 04:58 | | 20:14 (20) | 05:43 | | 20:16 (20) | 06:41 | | 19:28 (17) | 07:38 | | 18:04 (18) | 07:40 | | 08:29 (24) | 08:38 | |
| | 22:17 | 34 | 20:48 (20) | 21:35 | 36 | 20:52 (20) | 20:24 | 26 | 19:54 (17) | 19:07 | 29 | 18:33 (21) | 16:53 | 44 | 16:21 (19) | 16:08 | |
| 4 | 04:59 | | 20:14 (20) | 05:45 | | 20:16 (20) | 06:43 | | 19:28 (17) | 07:40 | | 18:01 (18) | 07:42 | | 08:28 (24) | 08:39 | |
| | 22:16 | 35 | 20:49 (20) | 21:33 | 34 | 20:50 (20) | 20:21 | 24 | 19:52 (17) | 19:04 | 30 | 18:31 (21) | 16:51 | 42 | 16:18 (19) | 16:07 | |
| 5 | 05:00 | | 20:14 (20) | 05:46 | | 20:17 (20) | 06:45 | | 19:29 (17) | 07:42 | | 17:59 (18) | 07:44 | | 08:28 (24) | 08:41 | |
| | 22:15 | 35 | 20:49 (20) | 21:31 | 33 | 20:50 (20) | 20:19 | 20 | 19:49 (17) | 19:01 | 30 | 18:29 (21) | 16:49 | 40 | 16:16 (19) | 16:06 | |
| 6 | 05:01 | | 20:14 (20) | 05:48 | | 20:18 (20) | 06:47 | | 19:30 (17) | 07:44 | | 17:58 (18) | 07:46 | | 08:28 (24) | 08:42 | |
| | 22:15 | 36 | 20:50 (20) | 21:29 | 31 | 20:49 (20) | 20:16 | 17 | 19:47 (17) | 18:59 | 27 | 18:25 (21) | 16:47 | 36 | 16:13 (19) | 16:06 | |
| 7 | 05:02 | | 20:14 (20) | 05:50 | | 20:19 (20) | 06:49 | | 19:31 (17) | 07:46 | | 17:57 (18) | 07:48 | | 08:29 (24) | 08:44 | |
| | 22:14 | 36 | 20:50 (20) | 21:27 | 29 | 20:48 (20) | 20:14 | 14 | 19:45 (17) | 18:56 | 21 | 18:18 (18) | 16:45 | 34 | 16:12 (19) | 16:05 | |
| 8 | 05:03 | | 20:14 (20) | 05:52 | | 20:20 (20) | 06:51 | | 19:33 (17) | 07:48 | | 17:56 (18) | 07:51 | | 08:29 (24) | 08:45 | |
| | 22:13 | 37 | 20:51 (20) | 21:25 | 26 | 20:46 (20) | 20:11 | 9 | 19:42 (17) | 18:54 | 22 | 18:18 (18) | 16:43 | 28 | 16:09 (19) | 16:05 | |
| 9 | 05:04 | | 20:14 (20) | 05:54 | | 20:22 (20) | 06:52 | | | 07:50 | | 17:55 (18) | 07:53 | | 08:29 (24) | 08:46 | |
| | 22:12 | 37 | 20:51 (20) | 21:23 | 22 | 20:44 (20) | 20:09 | | | 18:51 | 23 | 18:18 (18) | 16:41 | 27 | 15:52 (7) | 16:04 | |
| 10 | 05:05 | | 20:14 (20) | 05:56 | | 20:24 (20) | 06:54 | | | 07:52 | | 17:55 (18) | 07:55 | | 08:30 (24) | 08:48 | |
| | 22:11 | 37 | 20:51 (20) | 21:21 | 18 | 20:42 (20) | 20:06 | | | 18:49 | 23 | 18:18 (18) | 16:39 | 26 | 15:51 (7) | 16:04 | |
| 11 | 05:06 | | 20:13 (20) | 05:58 | | 20:27 (20) | 06:56 | | | 07:54 | | 17:55 (18) | 07:57 | | 08:31 (24) | 08:49 | |
| | 22:11 | 39 | 20:52 (20) | 21:19 | 11 | 20:38 (20) | 20:03 | | | 18:46 | 21 | 18:16 (18) | 16:38 | 26 | 15:52 (7) | 16:04 | |
| 12 | 05:08 | | 20:13 (20) | 05:59 | | | 06:58 | | | 07:56 | | 17:55 (18) | 07:59 | | 08:32 (24) | 08:50 | |
| | 22:09 | 39 | 20:52 (20) | 21:17 | | | 20:01 | | | 18:44 | 19 | 18:14 (18) | 16:36 | 24 | 15:51 (7) | 16:04 | |
| 13 | 05:09 | | 20:14 (20) | 06:01 | | | 07:00 | | | 07:58 | | 17:56 (18) | 08:01 | | 08:34 (24) | 08:51 | |
| | 22:08 | 39 | 20:53 (20) | 21:14 | | | 19:58 | | | 18:41 | 15 | 18:11 (18) | 16:34 | 21 | 15:50 (7) | 16:03 | |
| 14 | 05:10 | | 20:13 (20) | 06:03 | | | 07:02 | | | 08:00 | | 17:56 (18) | 08:03 | | 08:36 (24) | 08:52 | |
| | 22:07 | 40 | 20:53 (20) | 21:12 | | | 19:56 | | | 18:39 | 12 | 18:08 (18) | 16:32 | 19 | 15:50 (7) | 16:03 | |
| 15 | 05:12 | | 20:13 (20) | 06:05 | | | 07:04 | | 18:19 (21) | 08:02 | | 17:57 (18) | 08:05 | | 08:39 (24) | 08:53 | |
| | 22:06 | 40 | 20:53 (20) | 21:10 | | | 19:53 | 14 | 18:33 (21) | 18:36 | 9 | 18:06 (18) | 16:30 | 15 | 15:50 (7) | 16:03 | |
| 16 | 05:13 | | 20:13 (20) | 06:07 | | | 07:06 | | 18:16 (21) | 08:04 | | 17:59 (18) | 08:07 | | 08:41 (24) | 08:54 | |
| | 22:05 | 40 | 20:53 (20) | 21:08 | | | 19:50 | 19 | 18:35 (21) | 18:34 | 4 | 18:03 (18) | 16:29 | 12 | 15:49 (7) | 16:03 | |
| 17 | 05:15 | | 20:13 (20) | 06:09 | | | 07:08 | | 18:14 (21) | 08:06 | | | 08:09 | | 15:43 (7) | 08:55 | |
| | 22:04 | 41 | 20:54 (20) | 21:05 | | | 19:48 | 23 | 18:37 (21) | 18:32 | | | 16:27 | 5 | 15:48 (7) | 16:03 | |
| 18 | 05:16 | | 20:13 (20) | 06:11 | | | 07:09 | | 18:12 (21) | 08:08 | | | 08:11 | | 15:28 (7) | 08:56 | |
| | 22:02 | 41 | 20:54 (20) | 21:03 | | | 19:45 | 26 | 18:38 (21) | 18:29 | | | 16:26 | 6 | 15:46 (7) | 16:04 | |
| 19 | 05:17 | | 20:12 (20) | 06:13 | | | 07:11 | | 18:10 (21) | 08:10 | | | 08:13 | | 15:29 (7) | 08:56 | |
| | 22:01 | 42 | 20:54 (20) | 21:01 | | | 19:43 | 29 | 18:39 (21) | 18:27 | | | 16:24 | 13 | 15:44 (7) | 16:04 | |
| 20 | 05:19 | | 20:13 (20) | 06:15 | | | 07:13 | | 18:09 (21) | 08:12 | | | 08:15 | | 15:33 (7) | 08:57 | |
| | 21:59 | 42 | 20:55 (20) | 20:58 | | | 19:40 | 31 | 18:40 (21) | 18:24 | | | 16:23 | 10 | 15:43 (7) | 16:04 | |
| 21 | 05:21 | | 20:12 (20) | 06:16 | | | 07:15 | | 18:08 (21) | 08:14 | | | 08:17 | | | 08:58 | |
| | 21:58 | 42 | 20:54 (20) | 20:56 | | | 19:37 | 32 | 18:40 (21) | 18:22 | | | 16:21 | | | 16:05 | |
| 22 | 05:22 | | 20:13 (20) | 06:18 | | 19:39 (17) | 07:17 | | 18:06 (21) | 08:16 | | | 08:18 | | | 08:58 | |
| | 21:57 | 42 | 20:55 (20) | 20:53 | 11 | 19:50 (17) | 19:35 | 34 | 18:40 (21) | 18:20 | | | 16:20 | | | 16:05 | |
| 23 | 05:24 | | 20:13 (20) | 06:20 | | 19:37 (17) | 07:19 | | 18:05 (21) | 08:18 | | | 08:20 | | | 08:59 | |
| | 21:55 | 42 | 20:55 (20) | 20:51 | 15 | 19:52 (17) | 19:32 | 35 | 18:40 (21) | 18:17 | | | 16:18 | | | 16:06 | |
| 24 | 05:25 | | 20:13 (20) | 06:22 | | 19:35 (17) | 07:21 | | 18:05 (21) | 08:20 | | | 08:22 | | | 08:59 | |
| | 21:53 | 42 | 20:55 (20) | 20:49 | 19 | 19:54 (17) | 19:30 | 35 | 18:40 (21) | 18:15 | | | 16:17 | | | 16:06 | |
| 25 | 05:27 | | 20:13 (20) | 06:24 | | 19:32 (17) | 07:23 | | 18:04 (21) | 07:22 | | 15:30 (7) | 08:24 | | | 09:00 | |
| | 21:52 | 42 | 20:55 (20) | 20:46 | 22 | 19:54 (17) | 19:27 | 36 | 18:40 (21) | 17:13 | 17 | 16:16 (19) | 16:16 | | | 16:07 | |
| 26 | 05:29 | | 20:13 (20) | 06:26 | | 19:31 (17) | 07:25 | | 18:04 (21) | 07:24 | | 08:37 (24) | 08:26 | | | 09:00 | |
| | 21:50 | 42 | 20:55 (20) | 20:44 | 24 | 19:55 (17) | 19:25 | 35 | 18:39 (21) | 17:11 | 40 | 16:20 (19) | 16:15 | | | 16:07 | |
| 27 | 05:30 | | 20:13 (20) | 06:28 | | 19:31 (17) | 07:26 | | 18:04 (21) | 07:26 | | 08:34 (24) | 08:28 | | | 09:00 | |
| | 21:48 | 41 | 20:54 (20) | 20:41 | 24 | 19:55 (17) | 19:22 | 35 | 18:39 (21) | 17:08 | 53 | 16:21 (19) | 16:14 | | | 16:08 | |
| 28 | 05:32 | | 20:13 (20) | 06:30 | | 19:30 (17) | 07:28 | | 18:04 (21) | 07:28 | | 08:32 (24) | 08:29 | | | 09:00 | |
| | 21:47 | 42 | 20:55 (20) | 20:39 | 26 | 19:56 (17) | 19:19 | 34 | 18:38 (21) | 17:06 | 62 | 16:22 (19) | 16:12 | | | 16:09 | |
| 29 | 05:34 | | 20:14 (20) | 06:32 | | 19:29 (17) | 07:30 | | 18:04 (21) | 07:30 | | 08:31 (24) | 08:31 | | | 09:00 | |
| | 21:45 | 41 | 20:55 (20) | 20:36 | 27 | 19:56 (17) | 19:17 | 34 | 18:38 (21) | 17:04 | 67 | 16:22 (19) | 16:11 | | | 16:10 | |
| 30 | 05:36 | | 20:14 (20) | 06:34 | | 19:28 (17) | 07:32 | | 18:04 (21) | 07:32 | | 08:31 (24) | 08:33 | | | 09:00 | |
| | 21:43 | 40 | 20:54 (20) | 20:34 | 27 | 19:55 (17) | 19:14 | 33 | 18:37 (21) | 17:02 | 71 | 16:24 (19) | 16:10 | | | 16:11 | |
| 31 | 05:37 | | 20:14 (20) | 06:35 | | 19:28 (17) | | | | 07:34 | | 08:30 (24) | | | | 09:00 | |
| | 21:41 | 40 | 20:54 (20) | 20:31 | 27 | 19:55 (17) | | | | 16:59 | 46 | 16:24 (19) | | | | 16:12 | |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | |
| Total, worst case | | 1212 | | | 538 | | | 648 | | | 700 | | | 521 | | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | |
| Wind dir. red. | | 0,93 | | | 0,96 | | | 0,98 | | | 0,86 | | | 0,79 | | | |
| Total reduction | | 0,44 | | | 0,48 | | | 0,38 | | | 0,26 | | | 0,12 | | | |
| Total, real | | 535 | | | 259 | | | 246 | | | 182 | | | 64 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | | February | | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | | 08:27 | | 09:18 (24) | 07:26 | | 09:08 (24) | 07:07 | | | 05:55 | | 20:14 (17) | 05:01 | | 20:46 (20) |
| | 16:13 | | | 17:08 | 27 | 09:45 (24) | 18:07 | 54 | 17:39 (7) | 20:09 | | | 21:08 | 1 | 20:15 (17) | 22:02 | 18 | 21:04 (20) |
| 2 | 09:00 | | | 08:25 | | 09:17 (24) | 07:24 | | 09:09 (24) | 07:05 | | | 05:52 | | | 05:00 | | 20:46 (20) |
| | 16:15 | | | 17:10 | 30 | 09:47 (24) | 18:09 | 57 | 17:41 (19) | 20:11 | | | 21:10 | | | 22:03 | 18 | 21:04 (20) |
| 3 | 09:00 | | | 08:23 | | 09:15 (24) | 07:21 | | 09:10 (24) | 07:02 | | 19:40 (21) | 05:50 | | | 04:59 | | 20:47 (20) |
| | 16:16 | | | 17:12 | 34 | 09:49 (24) | 18:11 | 58 | 17:43 (19) | 20:13 | 6 | 19:46 (21) | 21:12 | | | 22:04 | 16 | 21:03 (20) |
| 4 | 08:59 | | | 08:21 | | 09:14 (24) | 07:19 | | 09:11 (24) | 07:00 | | 19:37 (21) | 05:48 | | | 04:58 | | 20:47 (20) |
| | 16:17 | | | 17:14 | 37 | 09:51 (24) | 18:13 | 58 | 17:45 (19) | 20:15 | 10 | 19:47 (21) | 21:14 | | | 22:06 | 15 | 21:02 (20) |
| 5 | 08:59 | | | 08:20 | | 09:13 (24) | 07:16 | | 09:12 (24) | 06:57 | | 19:35 (21) | 05:46 | | | 04:58 | | 20:49 (20) |
| | 16:18 | | | 17:16 | 39 | 09:52 (24) | 18:15 | 59 | 17:47 (19) | 20:17 | 14 | 19:49 (21) | 21:16 | | | 22:07 | 14 | 21:03 (20) |
| 6 | 08:59 | | | 08:18 | | 09:12 (24) | 07:14 | | 09:14 (24) | 06:55 | | 19:34 (21) | 05:44 | | | 04:57 | | 20:49 (20) |
| | 16:20 | | | 17:18 | 42 | 09:54 (24) | 18:17 | 57 | 17:49 (19) | 20:19 | 17 | 19:51 (21) | 21:18 | | | 22:08 | 13 | 21:02 (20) |
| 7 | 08:58 | | | 08:16 | | 09:11 (24) | 07:11 | | 09:16 (24) | 06:52 | | 19:33 (21) | 05:42 | | | 04:56 | | 20:50 (20) |
| | 16:21 | | | 17:20 | 44 | 09:55 (24) | 18:19 | 54 | 17:50 (19) | 20:21 | 20 | 19:53 (21) | 21:20 | | | 22:09 | 11 | 21:01 (20) |
| 8 | 08:57 | | | 08:14 | | 09:10 (24) | 07:09 | | 09:20 (24) | 06:50 | | 19:32 (21) | 05:40 | | | 04:55 | | 20:52 (20) |
| | 16:23 | | | 17:23 | 46 | 09:56 (24) | 18:21 | 47 | 17:50 (19) | 20:23 | 23 | 19:55 (21) | 21:22 | | | 22:10 | 8 | 21:00 (20) |
| 9 | 08:57 | | | 08:12 | | 09:09 (24) | 07:06 | | 17:21 (7) | 06:47 | | 19:32 (21) | 05:38 | | | 04:55 | | 20:52 (20) |
| | 16:24 | | | 17:25 | 47 | 09:56 (24) | 18:23 | 27 | 17:48 (19) | 20:25 | 23 | 19:55 (21) | 21:23 | | | 22:11 | 7 | 20:59 (20) |
| 10 | 08:56 | | | 08:10 | | 09:08 (24) | 07:04 | | 17:21 (7) | 06:45 | | 19:31 (21) | 05:36 | | 20:48 (20) | 04:54 | | 20:55 (20) |
| | 16:26 | | | 17:27 | 49 | 09:57 (24) | 18:25 | 27 | 17:48 (7) | 20:27 | 23 | 19:54 (21) | 21:25 | 5 | 20:53 (20) | 22:12 | 3 | 20:58 (20) |
| 11 | 08:55 | | | 08:07 | | 09:08 (24) | 07:01 | | 17:21 (7) | 06:42 | | 19:31 (21) | 05:34 | | 20:46 (20) | 04:54 | | |
| | 16:27 | | | 17:29 | 50 | 09:58 (24) | 18:27 | 26 | 17:47 (7) | 20:29 | 23 | 19:54 (21) | 21:27 | 8 | 20:54 (20) | 22:13 | | |
| 12 | 08:54 | | | 08:05 | | 09:08 (24) | 06:59 | | 17:20 (7) | 06:40 | | 19:30 (21) | 05:32 | | 20:44 (20) | 04:53 | | |
| | 16:29 | | | 17:31 | 51 | 09:59 (24) | 18:29 | 26 | 17:46 (7) | 20:31 | 23 | 19:53 (21) | 21:29 | 12 | 20:56 (20) | 22:14 | | |
| 13 | 08:54 | | | 08:03 | | 09:06 (24) | 06:56 | | 17:21 (7) | 06:37 | | 19:31 (21) | 05:30 | | 20:44 (20) | 04:53 | | |
| | 16:31 | | | 17:33 | 53 | 09:59 (24) | 18:31 | 24 | 17:45 (7) | 20:33 | 22 | 19:53 (21) | 21:31 | 14 | 20:58 (20) | 22:14 | | |
| 14 | 08:53 | | | 08:01 | | 09:06 (24) | 06:54 | | 17:22 (7) | 06:35 | | 19:31 (21) | 05:28 | | 20:43 (20) | 04:52 | | |
| | 16:32 | | | 17:35 | 54 | 10:00 (24) | 18:33 | 22 | 17:44 (7) | 20:35 | 20 | 19:51 (21) | 21:33 | 17 | 21:00 (20) | 22:15 | | |
| 15 | 08:52 | | | 07:59 | | 09:06 (24) | 06:51 | | 17:23 (7) | 06:32 | | 19:32 (21) | 05:26 | | 20:42 (20) | 04:52 | | |
| | 16:34 | | | 17:37 | 54 | 10:00 (24) | 18:35 | 20 | 17:43 (7) | 20:37 | 18 | 19:50 (21) | 21:35 | 19 | 21:01 (20) | 22:16 | | |
| 16 | 08:51 | | | 07:57 | | 09:05 (24) | 06:49 | | 17:25 (7) | 06:30 | | 19:34 (21) | 05:24 | | 20:42 (20) | 04:52 | | |
| | 16:36 | | | 17:40 | 55 | 10:00 (24) | 18:37 | 15 | 17:40 (7) | 20:39 | 15 | 19:49 (21) | 21:36 | 21 | 21:03 (20) | 22:16 | | |
| 17 | 08:49 | | | 07:54 | | 09:05 (24) | 06:46 | | 17:27 (7) | 06:27 | | 19:35 (21) | 05:23 | | 20:42 (20) | 04:52 | | |
| | 16:38 | | | 17:42 | 55 | 10:00 (24) | 18:39 | 10 | 17:37 (7) | 20:41 | 11 | 19:46 (21) | 21:38 | 22 | 21:04 (20) | 22:17 | | |
| 18 | 08:48 | | | 07:52 | | 09:06 (24) | 06:43 | | | 06:25 | | | 05:21 | | 20:42 (20) | 04:52 | | |
| | 16:40 | | | 17:44 | 55 | 10:01 (24) | 18:41 | | | 20:43 | | | 21:40 | 24 | 21:06 (20) | 22:17 | | |
| 19 | 08:47 | | | 07:50 | | 09:05 (24) | 06:41 | | | 06:22 | | 20:11 (17) | 05:19 | | 20:41 (20) | 04:52 | | |
| | 16:42 | | | 17:46 | 55 | 10:00 (24) | 18:43 | | | 20:45 | 5 | 20:16 (17) | 21:42 | 24 | 21:05 (20) | 22:18 | | |
| 20 | 08:46 | | | 07:48 | | 09:05 (24) | 06:38 | | 18:15 (18) | 06:20 | | 20:09 (17) | 05:18 | | 20:42 (20) | 04:52 | | |
| | 16:43 | | | 17:48 | 56 | 10:01 (24) | 18:45 | 3 | 18:18 (18) | 20:47 | 8 | 20:17 (17) | 21:43 | 24 | 21:06 (20) | 22:18 | | |
| 21 | 08:44 | | | 07:45 | | 09:05 (24) | 06:36 | | 18:13 (18) | 06:18 | | 20:08 (17) | 05:16 | | 20:41 (20) | 04:52 | | |
| | 16:45 | | | 17:50 | 55 | 10:00 (24) | 18:47 | 7 | 18:20 (18) | 20:48 | 11 | 20:19 (17) | 21:45 | 24 | 21:05 (20) | 22:18 | | |
| 22 | 08:43 | | | 07:43 | | 09:05 (24) | 06:33 | | 18:13 (18) | 06:15 | | 20:08 (17) | 05:14 | | 20:41 (20) | 04:52 | | |
| | 16:47 | | | 17:52 | 55 | 10:00 (24) | 18:49 | 9 | 18:22 (18) | 20:50 | 13 | 20:21 (17) | 21:47 | 25 | 21:06 (20) | 22:18 | | |
| 23 | 08:42 | | | 07:41 | | 09:06 (24) | 06:31 | | 18:12 (18) | 06:13 | | 20:08 (17) | 05:13 | | 20:42 (20) | 04:52 | | |
| | 16:49 | | | 17:54 | 54 | 10:00 (24) | 18:51 | 12 | 18:24 (18) | 20:52 | 15 | 20:23 (17) | 21:48 | 24 | 21:06 (20) | 22:19 | | |
| 24 | 08:40 | | | 07:38 | | 09:05 (24) | 06:28 | | 18:11 (18) | 06:10 | | 20:07 (17) | 05:11 | | 20:41 (20) | 04:53 | | |
| | 16:51 | | | 17:56 | 54 | 09:59 (24) | 18:53 | 15 | 18:26 (18) | 20:54 | 17 | 20:24 (17) | 21:50 | 24 | 21:05 (20) | 22:19 | | |
| 25 | 08:39 | | | 07:36 | | 09:06 (24) | 06:25 | | 18:12 (18) | 06:08 | | 20:07 (17) | 05:10 | | 20:42 (20) | 04:53 | | |
| | 16:53 | | | 17:59 | 53 | 09:59 (24) | 18:55 | 16 | 18:28 (18) | 20:56 | 18 | 20:25 (17) | 21:52 | 24 | 21:06 (20) | 22:19 | | |
| 26 | 08:37 | | | 07:33 | | 09:06 (24) | 06:23 | | 18:11 (18) | 06:06 | | 20:07 (17) | 05:09 | | 20:42 (20) | 04:53 | | |
| | 16:55 | | | 18:01 | 51 | 09:57 (24) | 18:57 | 16 | 18:27 (18) | 20:58 | 18 | 20:25 (17) | 21:53 | 24 | 21:06 (20) | 22:19 | | |
| 27 | 08:36 | | | 07:31 | | 09:07 (24) | 06:20 | | 18:12 (18) | 06:04 | | 20:08 (17) | 05:07 | | 20:43 (20) | 04:54 | | |
| | 16:57 | | | 18:03 | 50 | 09:57 (24) | 18:59 | 15 | 18:27 (18) | 21:00 | 16 | 20:24 (17) | 21:55 | 23 | 21:06 (20) | 22:18 | | |
| 28 | 08:34 | | | 07:29 | | 09:07 (24) | 06:18 | | 18:13 (18) | 06:01 | | 20:08 (17) | 05:06 | | 20:44 (20) | 04:54 | | |
| | 16:59 | | | 18:05 | 48 | 09:55 (24) | 19:01 | 12 | 18:25 (18) | 21:02 | 16 | 20:24 (17) | 21:56 | 21 | 21:05 (20) | 22:18 | | |
| 29 | 08:32 | | | | | | 07:15 | | 19:15 (18) | 05:59 | | 20:09 (17) | 05:05 | | 20:44 (20) | 04:55 | | |
| | 17:01 | | | | | | 20:03 | 6 | 19:21 (18) | 21:04 | 12 | 20:21 (17) | 21:58 | 21 | 21:05 (20) | 22:18 | | |
| 30 | 08:31 | | 09:24 (24) | | | | 07:13 | | | 05:57 | | 20:10 (17) | 05:04 | | 20:45 (20) | 04:56 | | |
| | 17:04 | 15 | 09:39 (24) | | | | 20:05 | | | 21:06 | 10 | 20:20 (17) | 21:59 | 20 | 21:05 (20) | 22:18 | | |
| 31 | 08:29 | | 09:21 (24) | | | | 07:10 | | | | | | 05:02 | | 20:45 (20) | | | |
| | 17:06 | 21 | 09:42 (24) | | | | 20:07 | | | | | | 22:00 | 20 | 21:05 (20) | | | |
| Potential sun hours | 242 | | | 269 | | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | 36 | | | 1353 | | | 752 | | | 427 | | | 441 | | | 123 | |
| Sun reduction | | 0,18 | | | 0,25 | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | 0,76 | | | 0,76 | | | 0,90 | | | 0,98 | | | 0,88 | | | 0,88 | |
| Total reduction | | 0,13 | | | 0,18 | | | 0,30 | | | 0,38 | | | 0,45 | | | 0,42 | |
| Total, real | | 5 | | | 246 | | | 225 | | | 162 | | | 197 | | | 51 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AP - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | | August | | | September | | | October | | | November | | | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:56 | | | 05:39 | | 20:55 (20) | 06:37 | | 19:30 (21) | 07:34 | | 18:01 (7) | 07:36 | | 08:38 (24) | 08:34 |
| | 22:17 | | | 21:39 | 11 | 21:06 (20) | 20:29 | 23 | 19:53 (21) | 19:12 | 24 | 18:25 (7) | 16:57 | 49 | 09:27 (24) | 16:10 |
| 2 | 04:57 | | | 05:41 | | 20:57 (20) | 06:39 | | 19:30 (21) | 07:36 | | 18:00 (7) | 07:38 | | 08:38 (24) | 08:36 |
| | 22:17 | | | 21:37 | 7 | 21:04 (20) | 20:26 | 23 | 19:53 (21) | 19:09 | 26 | 18:26 (7) | 16:55 | 48 | 09:26 (24) | 16:09 |
| 3 | 04:58 | | 20:58 (20) | 05:43 | | 20:59 (20) | 06:41 | | 19:30 (21) | 07:38 | | 17:59 (7) | 07:40 | | 08:40 (24) | 08:38 |
| | 22:17 | 6 | 21:04 (20) | 21:35 | 4 | 21:03 (20) | 20:24 | 23 | 19:53 (21) | 19:06 | 27 | 18:26 (7) | 16:53 | 46 | 09:26 (24) | 16:08 |
| 4 | 04:59 | | 20:57 (20) | 05:45 | | | 06:43 | | 19:29 (21) | 07:40 | | 17:59 (7) | 07:42 | | 08:41 (24) | 08:39 |
| | 22:16 | 8 | 21:05 (20) | 21:33 | | | 20:21 | 23 | 19:52 (21) | 19:04 | 26 | 18:25 (19) | 16:51 | 43 | 09:24 (24) | 16:07 |
| 5 | 05:00 | | 20:57 (20) | 05:46 | | | 06:45 | | 19:29 (21) | 07:42 | | 09:59 (24) | 07:44 | | 08:42 (24) | 08:41 |
| | 22:15 | 10 | 21:07 (20) | 21:31 | | | 20:19 | 20 | 19:49 (21) | 19:01 | 41 | 18:26 (19) | 16:49 | 41 | 09:23 (24) | 16:06 |
| 6 | 05:01 | | 20:56 (20) | 05:48 | | | 06:47 | | 19:30 (21) | 07:44 | | 09:54 (24) | 07:46 | | 08:43 (24) | 08:42 |
| | 22:15 | 12 | 21:08 (20) | 21:29 | | | 20:16 | 17 | 19:47 (21) | 18:59 | 51 | 18:26 (19) | 16:47 | 39 | 09:22 (24) | 16:06 |
| 7 | 05:02 | | 20:56 (20) | 05:50 | | | 06:49 | | 19:30 (21) | 07:46 | | 09:51 (24) | 07:48 | | 08:45 (24) | 08:44 |
| | 22:14 | 13 | 21:09 (20) | 21:27 | | | 20:14 | 15 | 19:45 (21) | 18:56 | 57 | 18:26 (19) | 16:45 | 36 | 09:21 (24) | 16:05 |
| 8 | 05:03 | | 20:55 (20) | 05:52 | | | 06:51 | | 19:32 (21) | 07:48 | | 09:49 (24) | 07:51 | | 08:46 (24) | 08:45 |
| | 22:13 | 14 | 21:09 (20) | 21:25 | | | 20:11 | 10 | 19:42 (21) | 18:54 | 58 | 18:24 (19) | 16:43 | 34 | 09:20 (24) | 16:05 |
| 9 | 05:04 | | 20:54 (20) | 05:54 | | | 06:52 | | 19:33 (21) | 07:50 | | 09:47 (24) | 07:53 | | 08:48 (24) | 08:46 |
| | 22:12 | 16 | 21:10 (20) | 21:23 | | | 20:08 | 6 | 19:39 (21) | 18:51 | 60 | 18:22 (19) | 16:41 | 30 | 09:18 (24) | 16:04 |
| 10 | 05:05 | | 20:54 (20) | 05:56 | | | 06:54 | | | 07:52 | | 09:45 (24) | 07:55 | | 08:50 (24) | 08:48 |
| | 22:11 | 17 | 21:11 (20) | 21:21 | | | 20:06 | | | 18:49 | 59 | 18:19 (19) | 16:39 | 25 | 09:15 (24) | 16:04 |
| 11 | 05:06 | | 20:53 (20) | 05:58 | | | 06:56 | | | 07:54 | | 09:44 (24) | 07:57 | | 08:53 (24) | 08:49 |
| | 22:10 | 18 | 21:11 (20) | 21:19 | | | 20:03 | | | 18:46 | 57 | 18:16 (19) | 16:37 | 21 | 09:14 (24) | 16:04 |
| 12 | 05:08 | | 20:53 (20) | 05:59 | | 20:21 (17) | 06:58 | | | 07:56 | | 09:42 (24) | 07:59 | | 08:56 (24) | 08:50 |
| | 22:09 | 19 | 21:12 (20) | 21:16 | 5 | 20:26 (17) | 20:01 | | | 18:44 | 56 | 18:14 (19) | 16:36 | 14 | 09:10 (24) | 16:03 |
| 13 | 05:09 | | 20:53 (20) | 06:01 | | 20:18 (17) | 07:00 | | | 07:58 | | 09:41 (24) | 08:01 | | | 08:51 |
| | 22:08 | 20 | 21:13 (20) | 21:14 | 11 | 20:29 (17) | 19:58 | | | 18:41 | 47 | 10:28 (24) | 16:34 | | | 16:03 |
| 14 | 05:10 | | 20:53 (20) | 06:03 | | 20:17 (17) | 07:02 | | 19:07 (18) | 07:59 | | 09:40 (24) | 08:03 | | | 08:52 |
| | 22:07 | 21 | 21:14 (20) | 21:12 | 13 | 20:30 (17) | 19:56 | 5 | 19:12 (18) | 18:39 | 49 | 10:29 (24) | 16:32 | | | 16:03 |
| 15 | 05:12 | | 20:52 (20) | 06:05 | | 20:16 (17) | 07:04 | | 19:03 (18) | 08:01 | | 09:39 (24) | 08:05 | | | 08:53 |
| | 22:06 | 22 | 21:14 (20) | 21:10 | 15 | 20:31 (17) | 19:53 | 11 | 19:14 (18) | 18:36 | 50 | 10:29 (24) | 16:30 | | | 16:03 |
| 16 | 05:13 | | 20:52 (20) | 06:07 | | 20:14 (17) | 07:06 | | 19:01 (18) | 08:03 | | 09:38 (24) | 08:07 | | | 08:54 |
| | 22:05 | 22 | 21:14 (20) | 21:07 | 17 | 20:31 (17) | 19:50 | 14 | 19:15 (18) | 18:34 | 52 | 10:30 (24) | 16:29 | | | 16:03 |
| 17 | 05:15 | | 20:52 (20) | 06:09 | | 20:13 (17) | 07:07 | | 19:00 (18) | 08:05 | | 09:37 (24) | 08:09 | | | 08:55 |
| | 22:04 | 23 | 21:15 (20) | 21:05 | 19 | 20:32 (17) | 19:48 | 16 | 19:16 (18) | 18:32 | 53 | 10:30 (24) | 16:27 | | | 16:03 |
| 18 | 05:16 | | 20:52 (20) | 06:11 | | 20:13 (17) | 07:09 | | 18:59 (18) | 08:07 | | 09:36 (24) | 08:11 | | | 08:56 |
| | 22:02 | 23 | 21:15 (20) | 21:03 | 19 | 20:32 (17) | 19:45 | 17 | 19:16 (18) | 18:29 | 54 | 10:30 (24) | 16:26 | | | 16:04 |
| 19 | 05:17 | | 20:51 (20) | 06:13 | | 20:13 (17) | 07:11 | | 18:59 (18) | 08:09 | | 09:36 (24) | 08:13 | | | 08:56 |
| | 22:01 | 24 | 21:15 (20) | 21:01 | 17 | 20:30 (17) | 19:43 | 15 | 19:14 (18) | 18:27 | 54 | 10:30 (24) | 16:24 | | | 16:04 |
| 20 | 05:19 | | 20:52 (20) | 06:15 | | 20:12 (17) | 07:13 | | 18:58 (18) | 08:12 | | 09:36 (24) | 08:15 | | | 08:57 |
| | 21:59 | 24 | 21:16 (20) | 20:58 | 15 | 20:27 (17) | 19:40 | 13 | 19:11 (18) | 18:24 | 55 | 10:31 (24) | 16:23 | | | 16:04 |
| 21 | 05:21 | | 20:51 (20) | 06:16 | | 20:12 (17) | 07:15 | | 18:58 (18) | 08:14 | | 09:36 (24) | 08:17 | | | 08:58 |
| | 21:58 | 25 | 21:16 (20) | 20:56 | 13 | 20:25 (17) | 19:37 | 11 | 19:09 (18) | 18:22 | 55 | 10:31 (24) | 16:21 | | | 16:05 |
| 22 | 05:22 | | 20:52 (20) | 06:18 | | 20:13 (17) | 07:17 | | 18:58 (18) | 08:16 | | 09:35 (24) | 08:18 | | | 08:58 |
| | 21:56 | 24 | 21:16 (20) | 20:53 | 10 | 20:23 (17) | 19:35 | 7 | 19:05 (18) | 18:20 | 56 | 10:31 (24) | 16:20 | | | 16:05 |
| 23 | 05:24 | | 20:51 (20) | 06:20 | | 20:14 (17) | 07:19 | | 18:59 (18) | 08:18 | | 09:35 (24) | 08:20 | | | 08:59 |
| | 21:55 | 25 | 21:16 (20) | 20:51 | 7 | 20:21 (17) | 19:32 | 4 | 19:03 (18) | 18:17 | 56 | 10:31 (24) | 16:18 | | | 16:06 |
| 24 | 05:25 | | 20:52 (20) | 06:22 | | 20:15 (17) | 07:21 | | | 08:20 | | 09:35 (24) | 08:22 | | | 08:59 |
| | 21:53 | 24 | 21:16 (20) | 20:49 | 4 | 20:19 (17) | 19:30 | | | 18:15 | 55 | 10:30 (24) | 16:17 | | | 16:06 |
| 25 | 05:27 | | 20:52 (20) | 06:24 | | 19:42 (21) | 07:23 | | | 07:22 | | 08:35 (24) | 08:24 | | | 09:00 |
| | 21:52 | 24 | 21:16 (20) | 20:46 | 3 | 19:45 (21) | 19:27 | | | 17:13 | 55 | 09:30 (24) | 16:16 | | | 16:07 |
| 26 | 05:29 | | 20:52 (20) | 06:26 | | 19:38 (21) | 07:25 | | 18:11 (7) | 07:24 | | 08:36 (24) | 08:26 | | | 09:00 |
| | 21:50 | 24 | 21:16 (20) | 20:44 | 11 | 19:49 (21) | 19:24 | 7 | 18:18 (7) | 17:10 | 54 | 09:30 (24) | 16:15 | | | 16:07 |
| 27 | 05:30 | | 20:52 (20) | 06:28 | | 19:35 (21) | 07:26 | | 18:07 (7) | 07:26 | | 08:36 (24) | 08:28 | | | 09:00 |
| | 21:48 | 22 | 21:14 (20) | 20:41 | 16 | 19:51 (21) | 19:22 | 14 | 18:21 (7) | 17:08 | 54 | 09:30 (24) | 16:14 | | | 16:08 |
| 28 | 05:32 | | 20:53 (20) | 06:30 | | 19:34 (21) | 07:28 | | 18:05 (7) | 07:28 | | 08:36 (24) | 08:29 | | | 09:00 |
| | 21:47 | 20 | 21:13 (20) | 20:39 | 18 | 19:52 (21) | 19:19 | 18 | 18:23 (7) | 17:06 | 53 | 09:29 (24) | 16:12 | | | 16:09 |
| 29 | 05:34 | | 20:54 (20) | 06:32 | | 19:32 (21) | 07:30 | | 18:03 (7) | 07:30 | | 08:36 (24) | 08:31 | | | 09:00 |
| | 21:45 | 18 | 21:12 (20) | 20:36 | 20 | 19:52 (21) | 19:17 | 21 | 18:24 (7) | 17:04 | 52 | 09:28 (24) | 16:11 | | | 16:10 |
| 30 | 05:36 | | 20:54 (20) | 06:34 | | 19:31 (21) | 07:32 | | 18:02 (7) | 07:32 | | 08:37 (24) | 08:33 | | | 09:00 |
| | 21:43 | 15 | 21:09 (20) | 20:34 | 22 | 19:53 (21) | 19:14 | 23 | 18:25 (7) | 17:02 | 52 | 09:29 (24) | 16:10 | | | 16:11 |
| 31 | 05:37 | | 20:55 (20) | 06:35 | | 19:30 (21) | | | | 07:34 | | 08:38 (24) | | | | 09:00 |
| | 21:41 | 13 | 21:08 (20) | 20:31 | 23 | 19:53 (21) | | | | 16:59 | 50 | 09:28 (24) | | | | 16:12 |
| Potential sun hours | 521 | | | 465 | | | 383 | | | 326 | | | 253 | | | 224 |
| Total, worst case | | 546 | | | 300 | | | 356 | | | 1548 | | | 426 | | |
| Sun reduction | | 0,49 | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | |
| Oper. time red. | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | |
| Wind dir. red. | | 0,88 | | | 0,97 | | | 0,99 | | | 0,80 | | | 0,76 | | |
| Total reduction | | 0,42 | | | 0,49 | | | 0,38 | | | 0,24 | | | 0,12 | | |
| Total, real | | 229 | | | 146 | | | 136 | | | 372 | | | 50 | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

Licensed user:
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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | | April | | | May | | | June | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:28 | | 07:27 | | | 07:08 | | 07:32 (9) | 05:55 | | | 05:02 | | 05:37 (8) |
| | 16:14 | | 17:08 | | 18:07 | | | 20:10 | 14 | 07:46 (9) | 21:09 | | | 22:02 | 20 | 05:57 (8) |
| 2 | 09:01 | | 08:26 | | 07:24 | | | 07:05 | | 07:30 (9) | 05:53 | | | 05:01 | | 05:37 (8) |
| | 16:15 | | 17:10 | | 18:10 | | | 20:12 | 18 | 07:48 (9) | 21:11 | | | 22:04 | 22 | 05:59 (8) |
| 3 | 09:00 | | 08:24 | | 07:22 | | | 07:03 | | 07:27 (9) | 05:51 | | | 05:00 | | 05:36 (8) |
| | 16:16 | | 17:13 | | 18:12 | | | 20:14 | 22 | 07:49 (9) | 21:13 | | | 22:05 | 24 | 06:00 (8) |
| 4 | 09:00 | | 08:22 | | 07:19 | | | 07:00 | | 07:26 (9) | 05:49 | | | 04:59 | | 05:36 (8) |
| | 16:18 | | 17:15 | | 18:14 | | | 20:16 | 24 | 07:50 (9) | 21:14 | | | 22:06 | 24 | 06:00 (8) |
| 5 | 09:00 | | 08:20 | | 07:17 | | | 06:58 | | 07:24 (9) | 05:46 | | | 04:58 | | 05:35 (8) |
| | 16:19 | | 17:17 | | 18:16 | | | 20:17 | 26 | 07:50 (9) | 21:16 | | | 22:07 | 26 | 06:01 (8) |
| 6 | 08:59 | | 08:18 | | 07:14 | | | 06:55 | | 07:24 (9) | 05:44 | | | 04:57 | | 05:35 (8) |
| | 16:20 | | 17:19 | | 18:18 | | | 20:19 | 27 | 07:51 (9) | 21:18 | | | 22:08 | 27 | 06:02 (8) |
| 7 | 08:59 | | 08:16 | | 07:12 | | | 06:53 | | 07:23 (9) | 05:42 | | | 04:57 | | 05:35 (8) |
| | 16:22 | | 17:21 | | 18:20 | | | 20:21 | 28 | 07:51 (9) | 21:20 | | | 22:09 | 27 | 06:02 (8) |
| 8 | 08:58 | | 08:14 | | 07:09 | | | 06:50 | | 07:23 (9) | 05:40 | | | 04:56 | | 05:35 (8) |
| | 16:23 | | 17:23 | | 18:22 | | | 20:23 | 28 | 07:51 (9) | 21:22 | | | 22:10 | 28 | 06:03 (8) |
| 9 | 08:57 | | 08:12 | | 07:07 | | | 06:48 | | 07:22 (9) | 05:38 | | | 04:55 | | 05:34 (8) |
| | 16:25 | | 17:25 | | 18:24 | | | 20:25 | 28 | 07:50 (9) | 21:24 | | | 22:11 | 29 | 06:03 (8) |
| 10 | 08:57 | | 08:10 | | 07:04 | | | 06:45 | | 07:22 (9) | 05:36 | | | 04:55 | | 05:35 (8) |
| | 16:26 | | 17:27 | | 18:26 | | | 20:27 | 28 | 07:50 (9) | 21:26 | | | 22:12 | 29 | 06:04 (8) |
| 11 | 08:56 | | 08:08 | | 07:02 | | | 06:43 | | 07:22 (9) | 05:34 | | | 04:54 | | 05:34 (8) |
| | 16:28 | | 17:30 | | 18:28 | | | 20:29 | 27 | 07:49 (9) | 21:28 | | | 22:13 | 30 | 06:04 (8) |
| 12 | 08:55 | | 08:06 | | 06:59 | | | 06:40 | | 07:22 (9) | 05:32 | | | 04:54 | | 05:34 (8) |
| | 16:30 | | 17:32 | | 18:30 | | | 20:31 | 27 | 07:49 (9) | 21:30 | | | 22:14 | 31 | 06:05 (8) |
| 13 | 08:54 | | 08:04 | | 06:57 | | | 06:38 | | 07:22 (9) | 05:30 | | | 04:53 | | 05:35 (8) |
| | 16:31 | | 17:34 | | 18:32 | | | 20:33 | 25 | 07:47 (9) | 21:31 | | | 22:15 | 30 | 06:05 (8) |
| 14 | 08:53 | | 08:02 | | 06:54 | | | 06:35 | | 07:23 (9) | 05:29 | | | 04:53 | | 05:34 (8) |
| | 16:33 | | 17:36 | | 18:34 | | | 20:35 | 23 | 07:46 (9) | 21:33 | | | 22:16 | 31 | 06:05 (8) |
| 15 | 08:52 | | 07:59 | | 06:52 | | | 06:33 | | 07:24 (9) | 05:27 | | | 04:53 | | 05:34 (8) |
| | 16:35 | | 17:38 | | 18:36 | | | 20:37 | 21 | 07:45 (9) | 21:35 | | | 22:16 | 31 | 06:05 (8) |
| 16 | 08:51 | | 07:57 | | 06:49 | | | 06:30 | | 06:55 (10) | 05:25 | | | 04:53 | | 05:34 (8) |
| | 16:37 | | 17:40 | | 18:38 | | | 20:39 | 20 | 07:43 (9) | 21:37 | | | 22:17 | 32 | 06:06 (8) |
| 17 | 08:50 | | 07:55 | | 06:47 | | | 06:28 | | 06:53 (10) | 05:23 | | | 04:52 | | 05:35 (8) |
| | 16:38 | | 17:42 | | 18:40 | | | 20:41 | 21 | 07:41 (9) | 21:39 | | | 22:17 | 31 | 06:06 (8) |
| 18 | 08:49 | | 07:53 | | 06:44 | | | 06:25 | | 06:51 (10) | 05:22 | | | 04:52 | | 05:35 (8) |
| | 16:40 | | 17:44 | | 18:42 | | | 20:43 | 18 | 07:38 (9) | 21:40 | | | 22:18 | 31 | 06:06 (8) |
| 19 | 08:48 | | 07:50 | | 06:41 | | | 06:23 | | 06:48 (10) | 05:20 | | | 04:52 | | 05:35 (8) |
| | 16:42 | | 17:47 | | 18:44 | | | 20:45 | 13 | 07:01 (10) | 21:42 | | | 22:18 | 32 | 06:07 (8) |
| 20 | 08:46 | | 07:48 | | 06:39 | | | 06:21 | | 06:46 (10) | 05:18 | | | 04:52 | | 05:35 (8) |
| | 16:44 | | 17:49 | | 18:46 | | | 20:47 | 16 | 07:02 (10) | 21:44 | | | 22:18 | 32 | 06:07 (8) |
| 21 | 08:45 | | 07:46 | | 06:36 | | | 06:18 | | 06:44 (10) | 05:17 | | | 04:52 | | 05:36 (8) |
| | 16:46 | | 17:51 | | 18:48 | | | 20:49 | 19 | 07:03 (10) | 21:46 | | | 22:19 | 32 | 06:08 (8) |
| 22 | 08:44 | | 07:43 | | 06:34 | | | 06:16 | | 06:41 (10) | 05:15 | | | 04:53 | | 05:36 (8) |
| | 16:48 | | 17:53 | | 18:50 | | | 20:51 | 21 | 07:02 (10) | 21:47 | | | 22:19 | 32 | 06:08 (8) |
| 23 | 08:42 | | 07:41 | | 06:31 | | | 06:13 | | 06:41 (10) | 05:14 | | | 04:53 | | 05:36 (8) |
| | 16:50 | | 17:55 | | 18:52 | | | 20:53 | 21 | 07:02 (10) | 21:49 | | | 22:19 | 32 | 06:08 (8) |
| 24 | 08:41 | | 07:39 | | 06:29 | | | 06:11 | | 06:41 (10) | 05:12 | | | 04:53 | | 05:36 (8) |
| | 16:52 | | 17:57 | | 18:54 | | | 20:55 | 21 | 07:02 (10) | 21:51 | | | 22:19 | 32 | 06:08 (8) |
| 25 | 08:39 | | 07:36 | | 06:26 | | | 06:09 | | 06:41 (10) | 05:11 | | | 04:54 | | 05:37 (8) |
| | 16:54 | | 17:59 | | 18:56 | | | 20:57 | 21 | 07:02 (10) | 21:52 | | | 22:19 | 31 | 06:08 (8) |
| 26 | 08:38 | | 07:34 | | 06:23 | | | 06:06 | | 06:41 (10) | 05:09 | | | 04:54 | | 05:36 (8) |
| | 16:56 | | 18:01 | | 18:58 | | | 20:59 | 19 | 07:00 (10) | 21:54 | | | 22:19 | 32 | 06:08 (8) |
| 27 | 08:36 | | 07:32 | | 06:21 | | | 06:04 | | 06:41 (10) | 05:08 | | | 04:54 | | 05:37 (8) |
| | 16:58 | | 18:03 | | 19:00 | | | 21:01 | 19 | 07:00 (10) | 21:55 | | | 22:19 | 32 | 06:09 (8) |
| 28 | 08:34 | | 07:29 | | 06:18 | | | 06:02 | | 06:42 (10) | 05:07 | | 05:43 (8) | 04:55 | | 05:37 (8) |
| | 17:00 | | 18:05 | | 19:02 | | | 21:03 | 17 | 06:59 (10) | 21:57 | 8 | 05:51 (8) | 22:19 | 31 | 06:08 (8) |
| 29 | 08:33 | | | | 07:16 | | | 06:00 | | 06:44 (10) | 05:05 | | 05:41 (8) | 04:56 | | 05:38 (8) |
| | 17:02 | | | | 20:04 | | | 21:05 | 13 | 06:57 (10) | 21:58 | 13 | 05:54 (8) | 22:19 | 31 | 06:09 (8) |
| 30 | 08:31 | | | | 07:13 | | | 05:57 | | 06:45 (10) | 05:04 | | 05:39 (8) | 04:56 | | 05:39 (8) |
| | 17:04 | | | | 20:06 | | | 21:07 | 10 | 06:55 (10) | 22:00 | 16 | 05:55 (8) | 22:18 | 30 | 06:09 (8) |
| 31 | 08:29 | | | | 07:11 | | 07:35 (9) | | | | 05:03 | | 05:38 (8) | | | |
| | 17:06 | | | | 20:08 | 9 | 07:44 (9) | | | | 22:01 | 18 | 05:56 (8) | | | |
| Potential sun hours | 242 | | 269 | | 366 | | | 423 | | | 501 | | | 520 | | |
| Total, worst case | | | | | | 9 | | | 635 | | | 55 | | | 882 | |
| Sun reduction | | | | | | 0,34 | | | 0,39 | | | 0,52 | | | 0,48 | |
| Oper. time red. | | | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | | | 1,00 | | | 0,98 | | | 0,81 | | | 0,81 | |
| Total reduction | | | | | | 0,34 | | | 0,39 | | | 0,42 | | | 0,40 | |
| Total, real | | | | | | 3 | | | 248 | | | 23 | | | 349 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AQ - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:38 (8) | 05:40 | | 06:38 | 07:21 (9) | 07:35 | 07:37 | 08:35 |
| | 22:18 | 30 06:08 (8) | 21:40 | | 20:29 | 27 07:48 (9) | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 05:39 (8) | 05:42 | | 06:40 | 07:20 (9) | 07:37 | 07:39 | 08:37 |
| | 22:18 | 30 06:09 (8) | 21:38 | | 20:27 | 28 07:48 (9) | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 | 05:40 (8) | 05:43 | | 06:42 | 07:20 (9) | 07:39 | 07:41 | 08:38 |
| | 22:17 | 29 06:09 (8) | 21:36 | | 20:24 | 28 07:48 (9) | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 05:40 (8) | 05:45 | | 06:44 | 07:20 (9) | 07:40 | 07:43 | 08:40 |
| | 22:16 | 29 06:09 (8) | 21:34 | | 20:22 | 28 07:48 (9) | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 | 05:41 (8) | 05:47 | | 06:45 | 07:20 (9) | 07:42 | 07:45 | 08:41 |
| | 22:16 | 28 06:09 (8) | 21:32 | | 20:19 | 28 07:48 (9) | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 | 05:41 (8) | 05:49 | | 06:47 | 07:19 (9) | 07:44 | 07:47 | 08:43 |
| | 22:15 | 27 06:08 (8) | 21:30 | | 20:17 | 27 07:46 (9) | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 | 05:41 (8) | 05:51 | | 06:49 | 07:19 (9) | 07:46 | 07:49 | 08:44 |
| | 22:14 | 26 06:07 (8) | 21:28 | | 20:14 | 26 07:45 (9) | 18:57 | 16:46 | 16:06 |
| 8 | 05:04 | 05:42 (8) | 05:53 | | 06:51 | 07:20 (9) | 07:48 | 07:51 | 08:46 |
| | 22:14 | 25 06:07 (8) | 21:26 | | 20:12 | 24 07:44 (9) | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 | 05:44 (8) | 05:54 | | 06:53 | 07:21 (9) | 07:50 | 07:53 | 08:47 |
| | 22:13 | 24 06:08 (8) | 21:24 | | 20:09 | 22 07:43 (9) | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 05:44 (8) | 05:56 | | 06:55 | 07:23 (9) | 07:52 | 07:55 | 08:48 |
| | 22:12 | 23 06:07 (8) | 21:21 | | 20:06 | 19 07:42 (9) | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 | 05:45 (8) | 05:58 | | 06:57 | 07:25 (9) | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21 06:06 (8) | 21:19 | | 20:04 | 15 07:40 (9) | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 05:46 (8) | 06:00 | 06:56 (10) | 06:59 | 07:26 (9) | 07:56 | 07:59 | 08:50 |
| | 22:10 | 19 06:05 (8) | 21:17 | 5 07:01 (10) | 20:01 | 10 07:36 (9) | 18:44 | 16:36 | 16:04 |
| 13 | 05:10 | 05:47 (8) | 06:02 | 06:53 (10) | 07:01 | | 07:58 | 08:01 | 08:52 |
| | 22:09 | 17 06:04 (8) | 21:15 | 11 07:04 (10) | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 05:48 (8) | 06:04 | 06:51 (10) | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | 15 06:03 (8) | 21:13 | 14 07:05 (10) | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 05:51 (8) | 06:06 | 06:50 (10) | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | 11 06:02 (8) | 21:10 | 16 07:06 (10) | 19:54 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 | 05:54 (8) | 06:08 | 06:49 (10) | 07:06 | | 08:04 | 08:07 | 08:55 |
| | 22:05 | 5 05:59 (8) | 21:08 | 18 07:07 (10) | 19:51 | | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | | 06:09 | 06:48 (10) | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | 20 07:08 (10) | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:17 | | 06:11 | 06:47 (10) | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | 20 07:07 (10) | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | 06:47 (10) | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | 21 07:08 (10) | 19:43 | | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | | 06:15 | 06:46 (10) | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | 22 07:08 (10) | 19:41 | | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | | 06:17 | 06:47 (10) | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | 21 07:08 (10) | 19:38 | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | | 06:19 | 06:49 (10) | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | 18 07:07 (10) | 19:35 | | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | | 06:21 | 06:50 (10) | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:52 | 16 07:06 (10) | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:23 | 06:52 (10) | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | 13 07:05 (10) | 19:30 | | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | | 06:25 | 06:54 (10) | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | 20:47 | 19 07:41 (9) | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:27 | 06:56 (10) | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | | 20:44 | 21 07:44 (9) | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | | 06:28 | 06:57 (10) | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | 21 07:45 (9) | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | | 06:30 | 07:25 (9) | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | 21 07:46 (9) | 19:20 | | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | | 06:32 | 07:24 (9) | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | 23 07:47 (9) | 19:17 | | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | | 06:34 | 07:23 (9) | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | 25 07:48 (9) | 19:15 | | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | | 06:36 | 07:22 (9) | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | 27 07:49 (9) | | | 17:00 | | 16:13 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Total, worst case | | 359 | | 372 | | 282 | | | |
| Sun reduction | | 0,49 | | 0,51 | | 0,40 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,81 | | 0,98 | | 1,00 | | | |
| Total reduction | | 0,40 | | 0,51 | | 0,40 | | | |
| Total, real | | 143 | | 188 | | 112 | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AR - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | July | August | | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | 06:32 (34) | 05:02 | 04:57 | 05:40 | | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | | 21:09 | 19 06:51 (34) | 22:02 | 22:18 | 21:40 | | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | | 05:53 | 06:33 (34) | 05:01 | 04:58 | 05:42 | | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | | 21:11 | 18 06:51 (34) | 22:04 | 22:17 | 21:38 | | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | 06:33 (34) | 05:00 | 04:59 | 05:43 | | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | | 21:12 | 17 06:50 (34) | 22:05 | 22:17 | 21:36 | | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:49 | 06:34 (34) | 04:59 | 04:59 | 05:45 | | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | | 21:14 | 15 06:49 (34) | 22:06 | 22:16 | 21:34 | | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | | 05:46 | 06:35 (34) | 04:58 | 05:00 | 05:47 | | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | 12 06:47 (34) | 22:07 | 22:16 | 21:32 | | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | | 05:44 | 06:37 (34) | 04:57 | 05:01 | 05:49 | 06:48 (34) | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | 8 06:45 (34) | 22:08 | 22:15 | 21:30 | 4 06:52 (34) | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | | 05:42 | | 04:57 | 05:02 | 05:51 | 06:45 (34) | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:09 | 22:14 | 21:28 | 10 06:55 (34) | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | | 05:40 | | 04:56 | 05:04 | 05:53 | 06:44 (34) | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:10 | 22:14 | 21:26 | 13 06:57 (34) | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | | 05:38 | | 04:55 | 05:05 | 05:54 | 06:43 (34) | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:11 | 22:13 | 21:23 | 16 06:59 (34) | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | | 05:36 | | 04:55 | 05:06 | 05:56 | 06:41 (34) | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | 22:12 | 21:21 | 17 06:58 (34) | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | | 05:34 | | 04:54 | 05:07 | 05:58 | 06:41 (34) | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | | 21:28 | | 22:13 | 22:11 | 21:19 | 18 06:59 (34) | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | | 05:32 | | 04:54 | 05:08 | 06:00 | 06:41 (34) | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | | 21:30 | | 22:14 | 22:10 | 21:17 | 19 07:00 (34) | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | | 05:30 | | 04:53 | 05:10 | 06:02 | 06:40 (34) | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | | 21:31 | | 22:15 | 22:09 | 21:15 | 20 07:00 (34) | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | | 05:29 | | 04:53 | 05:11 | 06:04 | 06:39 (34) | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | | 21:33 | | 22:15 | 22:08 | 21:13 | 20 06:59 (34) | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | | 05:27 | | 04:53 | 05:12 | 06:06 | 06:40 (34) | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | | 22:16 | 22:07 | 21:10 | 19 06:59 (34) | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | | 05:25 | | 04:53 | 05:14 | 06:08 | 06:40 (34) | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | | 21:37 | | 22:17 | 22:05 | 21:08 | 19 06:59 (34) | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | | 05:23 | | 04:52 | 05:15 | 06:09 | 06:40 (34) | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | | 22:17 | 22:04 | 21:06 | 19 06:59 (34) | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | | 05:22 | | 04:52 | 05:17 | 06:11 | 06:41 (34) | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | | 22:18 | 22:03 | 21:03 | 16 06:57 (34) | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | | 05:20 | | 04:52 | 05:18 | 06:13 | 06:43 (34) | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | | 21:42 | | 22:18 | 22:01 | 21:01 | 13 06:56 (34) | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | | 05:18 | | 04:52 | 05:20 | 06:15 | 06:45 (34) | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | | 21:44 | | 22:18 | 22:00 | 20:59 | 9 06:54 (34) | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | | 05:17 | | 04:52 | 05:21 | 06:17 | 06:47 (34) | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | | 22:19 | 21:58 | 20:56 | 5 06:52 (34) | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:41 (34) | 05:15 | | 04:53 | 05:23 | 06:19 | | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 6 06:47 (34) | 21:47 | | 22:19 | 21:57 | 20:54 | | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:39 (34) | 05:14 | | 04:53 | 05:24 | 06:21 | | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 10 06:49 (34) | 21:49 | | 22:19 | 21:55 | 20:52 | | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 06:37 (34) | 05:12 | | 04:53 | 05:26 | 06:23 | | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 13 06:50 (34) | 21:50 | | 22:19 | 21:54 | 20:49 | | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:35 (34) | 05:11 | | 04:54 | 05:28 | 06:25 | | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 16 06:51 (34) | 21:52 | | 22:19 | 21:52 | 20:47 | | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 06:33 (34) | 05:09 | | 04:54 | 05:29 | 06:27 | | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 18 06:51 (34) | 21:54 | | 22:19 | 21:51 | 20:44 | | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 06:32 (34) | 05:08 | | 04:54 | 05:31 | 06:28 | | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 19 06:51 (34) | 21:55 | | 22:19 | 21:49 | 20:42 | | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 06:32 (34) | 05:07 | | 04:55 | 05:33 | 06:30 | | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 20 06:52 (34) | 21:57 | | 22:19 | 21:47 | 20:39 | | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 06:32 (34) | 05:05 | | 04:56 | 05:34 | 06:32 | | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 20 06:52 (34) | 21:58 | | 22:19 | 21:45 | 20:37 | | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 06:32 (34) | 05:04 | | 04:56 | 05:36 | 06:34 | | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 20 06:52 (34) | 22:00 | | 22:18 | 21:43 | 20:34 | | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | | 05:03 | | | 05:38 | 06:36 | | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | | 22:01 | | | 21:42 | 20:32 | | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | 521 | 465 | | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | 142 | | 89 | | | | 237 | | | | |
| Sun reduction | | | | | 0,39 | | 0,52 | | | | 0,51 | | | | |
| Oper. time red. | | | | | 1,00 | | 1,00 | | | | 1,00 | | | | |
| Wind dir. red. | | | | | 0,95 | | 0,95 | | | | 0,95 | | | | |
| Total reduction | | | | | 0,37 | | 0,49 | | | | 0,49 | | | | |
| Total, real | | | | | 53 | | 44 | | | | 116 | | | | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AS - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (106)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 | 08:38 |
| | 16:16 | 17:13 | 18:12 | 20:14 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:49 | 04:59 | 05:00 | 05:45 | 06:44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:57 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:04 | 05:53 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:31 | 04:53 | 05:10 | 06:02 | 07:01 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:53 | 05:14 | 06:08 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:22 | 04:52 | 05:17 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:53 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:14 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:54 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:55 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Total, worst case | | | | | | | | | | | | |
| Sun reduction | | | | | | | | | | | | |
| Oper. time red. | | | | | | | | | | | | |
| Wind dir. red. | | | | | | | | | | | | |
| Total reduction | | | | | | | | | | | | |
| Total, real | | | | | | | | | | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | | 08:27 | | 11:50 (34) | 07:27 | 11:54 (34) | 07:08 | 18:30 (10) | 05:55 | 05:02 |
| | 16:14 | | 17:08 | 75 | 13:05 (34) | 18:07 | 93 17:35 (9) | 20:09 | 65 19:42 (8) | 21:09 | 22:02 |
| 2 | 09:00 | | 08:26 | | 11:49 (34) | 07:24 | 11:55 (34) | 07:05 | 18:30 (10) | 05:53 | 05:01 |
| | 16:15 | | 17:10 | 77 | 13:06 (34) | 18:09 | 92 17:36 (9) | 20:11 | 67 19:44 (8) | 21:10 | 22:04 |
| 3 | 09:00 | 12:13 (34) | 08:24 | | 11:49 (34) | 07:22 | 11:56 (34) | 07:03 | 18:30 (10) | 05:51 | 05:00 |
| | 16:16 | 9 12:22 (34) | 17:12 | 77 | 13:06 (34) | 18:11 | 88 17:35 (9) | 20:13 | 68 19:45 (8) | 21:12 | 22:05 |
| 4 | 09:00 | 12:11 (34) | 08:22 | | 11:49 (34) | 07:19 | 11:58 (34) | 07:00 | 18:30 (10) | 05:48 | 04:59 |
| | 16:18 | 15 12:26 (34) | 17:14 | 78 | 13:07 (34) | 18:14 | 84 17:35 (9) | 20:15 | 70 19:46 (8) | 21:14 | 22:06 |
| 5 | 08:59 | 12:08 (34) | 08:20 | | 11:48 (34) | 07:17 | 12:00 (34) | 06:58 | 18:29 (10) | 05:46 | 04:58 |
| | 16:19 | 20 12:28 (34) | 17:17 | 78 | 13:06 (34) | 18:16 | 80 17:35 (9) | 20:17 | 70 19:45 (8) | 21:16 | 22:07 |
| 6 | 08:59 | 12:08 (34) | 08:18 | | 11:48 (34) | 07:14 | 12:02 (34) | 06:55 | 18:30 (10) | 05:44 | 04:57 |
| | 16:20 | 23 12:31 (34) | 17:19 | 79 | 13:07 (34) | 18:18 | 73 17:34 (9) | 20:19 | 69 19:45 (8) | 21:18 | 22:08 |
| 7 | 08:58 | 12:06 (34) | 08:16 | | 11:47 (34) | 07:12 | 12:06 (34) | 06:53 | 18:29 (10) | 05:42 | 04:56 |
| | 16:22 | 27 12:33 (34) | 17:21 | 81 | 13:08 (34) | 18:20 | 66 17:34 (9) | 20:21 | 68 19:44 (8) | 21:20 | 22:09 |
| 8 | 08:58 | 12:05 (34) | 08:14 | | 11:47 (34) | 07:09 | 12:10 (34) | 06:50 | 18:30 (10) | 05:40 | 04:56 |
| | 16:23 | 30 12:35 (34) | 17:23 | 81 | 13:08 (34) | 18:22 | 55 17:33 (9) | 20:23 | 64 19:43 (8) | 21:22 | 22:10 |
| 9 | 08:57 | 12:04 (34) | 08:12 | | 11:47 (34) | 07:07 | 12:18 (34) | 06:48 | 18:30 (10) | 05:38 | 04:55 |
| | 16:25 | 32 12:36 (34) | 17:25 | 82 | 13:09 (34) | 18:24 | 37 17:32 (9) | 20:25 | 62 19:42 (8) | 21:24 | 22:11 |
| 10 | 08:57 | 12:03 (34) | 08:10 | | 11:48 (34) | 07:04 | 17:08 (9) | 06:45 | 18:31 (10) | 05:36 | 04:55 |
| | 16:26 | 35 12:38 (34) | 17:27 | 81 | 13:09 (34) | 18:26 | 23 17:31 (9) | 20:27 | 57 19:40 (8) | 21:26 | 22:12 |
| 11 | 08:56 | 12:02 (34) | 08:08 | | 11:47 (34) | 07:02 | 17:09 (9) | 06:43 | 18:31 (10) | 05:34 | 04:54 |
| | 16:28 | 38 12:40 (34) | 17:29 | 82 | 13:09 (34) | 18:28 | 20 17:29 (9) | 20:29 | 53 19:38 (8) | 21:28 | 22:13 |
| 12 | 08:55 | 12:01 (34) | 08:06 | | 11:47 (34) | 06:59 | 17:11 (9) | 06:40 | 18:32 (10) | 05:32 | 04:54 |
| | 16:30 | 41 12:42 (34) | 17:32 | 82 | 13:09 (34) | 18:30 | 16 17:27 (9) | 20:31 | 43 19:34 (8) | 21:30 | 22:14 |
| 13 | 08:54 | 12:00 (34) | 08:04 | | 11:47 (34) | 06:57 | 17:14 (9) | 06:38 | 18:33 (10) | 05:30 | 04:53 |
| | 16:31 | 43 12:43 (34) | 17:34 | 82 | 13:09 (34) | 18:32 | 9 17:23 (9) | 20:33 | 35 19:08 (10) | 21:31 | 22:15 |
| 14 | 08:53 | 12:00 (34) | 08:01 | | 11:46 (34) | 06:54 | | 06:35 | 18:34 (10) | 05:28 | 04:53 |
| | 16:33 | 45 12:45 (34) | 17:36 | 83 | 13:09 (34) | 18:34 | | 20:35 | 33 19:07 (10) | 21:33 | 22:15 |
| 15 | 08:52 | 11:58 (34) | 07:59 | | 11:47 (34) | 06:52 | | 06:33 | 18:36 (10) | 05:27 | 04:53 |
| | 16:35 | 48 12:46 (34) | 17:38 | 82 | 13:09 (34) | 18:36 | | 20:37 | 29 19:05 (10) | 21:35 | 22:16 |
| 16 | 08:51 | 11:58 (34) | 07:57 | | 11:47 (34) | 06:49 | | 06:30 | 18:37 (10) | 05:25 | 04:52 |
| | 16:36 | 50 12:48 (34) | 17:40 | 82 | 13:09 (34) | 18:38 | | 20:39 | 26 19:03 (10) | 21:37 | 22:17 |
| 17 | 08:50 | 11:58 (34) | 07:55 | | 11:47 (34) | 06:46 | | 06:28 | 18:40 (10) | 05:23 | 04:52 |
| | 16:38 | 51 12:49 (34) | 17:42 | 81 | 13:08 (34) | 18:40 | | 20:41 | 20 19:00 (10) | 21:39 | 22:17 |
| 18 | 08:49 | 11:56 (34) | 07:53 | | 11:47 (34) | 06:44 | | 06:25 | 18:43 (10) | 05:21 | 04:52 |
| | 16:40 | 54 12:50 (34) | 17:44 | 81 | 13:08 (34) | 18:42 | | 20:43 | 13 18:56 (10) | 21:40 | 22:18 |
| 19 | 08:48 | 11:56 (34) | 07:50 | | 11:48 (34) | 06:41 | | 06:23 | | 05:20 | 04:52 |
| | 16:42 | 56 12:52 (34) | 17:46 | 80 | 13:08 (34) | 18:44 | | 20:45 | | 21:42 | 22:18 |
| 20 | 08:46 | 11:55 (34) | 07:48 | | 11:48 (34) | 06:39 | 17:49 (10) | 06:20 | | 05:18 | 04:52 |
| | 16:44 | 58 12:53 (34) | 17:49 | 79 | 13:07 (34) | 18:46 | 17 18:06 (10) | 20:47 | | 21:44 | 22:18 |
| 21 | 08:45 | 11:55 (34) | 07:46 | | 11:48 (34) | 06:36 | 17:46 (10) | 06:18 | | 05:16 | 04:52 |
| | 16:46 | 59 12:54 (34) | 17:51 | 79 | 13:07 (34) | 18:48 | 23 18:09 (10) | 20:49 | | 21:46 | 22:19 |
| 22 | 08:44 | 11:54 (34) | 07:43 | | 11:48 (34) | 06:34 | 17:43 (10) | 06:16 | | 05:15 | 04:53 |
| | 16:48 | 61 12:55 (34) | 17:53 | 78 | 13:06 (34) | 18:50 | 28 18:11 (10) | 20:51 | | 21:47 | 22:19 |
| 23 | 08:42 | 11:53 (34) | 07:41 | | 11:49 (34) | 06:31 | 17:40 (10) | 06:13 | | 05:13 | 04:53 |
| | 16:50 | 63 12:56 (34) | 17:55 | 85 | 17:26 (9) | 18:52 | 32 18:12 (10) | 20:53 | | 21:49 | 22:19 |
| 24 | 08:41 | 11:53 (34) | 07:39 | | 11:49 (34) | 06:28 | 17:39 (10) | 06:11 | | 05:12 | 04:53 |
| | 16:52 | 65 12:58 (34) | 17:57 | 90 | 17:28 (9) | 18:54 | 35 18:14 (10) | 20:55 | | 21:50 | 22:19 |
| 25 | 08:39 | 11:52 (34) | 07:36 | | 11:50 (34) | 06:26 | 17:37 (10) | 06:09 | | 05:10 | 04:53 |
| | 16:54 | 67 12:59 (34) | 17:59 | 92 | 17:30 (9) | 18:56 | 38 18:15 (10) | 20:57 | | 21:52 | 22:19 |
| 26 | 08:38 | 11:52 (34) | 07:34 | | 11:51 (34) | 06:23 | 17:36 (10) | 06:06 | | 05:09 | 04:54 |
| | 16:56 | 67 12:59 (34) | 18:01 | 95 | 17:33 (9) | 18:58 | 40 18:16 (10) | 20:59 | | 21:54 | 22:19 |
| 27 | 08:36 | 11:51 (34) | 07:31 | | 11:52 (34) | 06:21 | 17:34 (10) | 06:04 | | 05:08 | 04:54 |
| | 16:58 | 69 13:00 (34) | 18:03 | 95 | 17:34 (9) | 19:00 | 42 18:16 (10) | 21:01 | | 21:55 | 22:19 |
| 28 | 08:34 | 11:51 (34) | 07:29 | | 11:53 (34) | 06:18 | 17:33 (10) | 06:02 | | 05:06 | 04:55 |
| | 17:00 | 71 13:02 (34) | 18:05 | 94 | 17:35 (9) | 19:02 | 43 18:16 (10) | 21:03 | | 21:57 | 22:19 |
| 29 | 08:33 | 11:51 (34) | | | | 07:16 | 18:33 (10) | 05:59 | | 05:05 | 04:55 |
| | 17:02 | 72 13:03 (34) | | | | 20:04 | 50 19:36 (8) | 21:05 | | 21:58 | 22:19 |
| 30 | 08:31 | 11:50 (34) | | | | 07:13 | 18:31 (10) | 05:57 | | 05:04 | 04:56 |
| | 17:04 | 73 13:03 (34) | | | | 20:06 | 57 19:38 (8) | 21:07 | | 21:59 | 22:18 |
| 31 | 08:29 | 11:50 (34) | | | | 07:10 | 18:31 (10) | | | 05:03 | |
| | 17:06 | 74 13:04 (34) | | | | 20:08 | 60 19:40 (8) | | | 22:01 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | | 501 | 520 | |
| Total, worst case | | 1416 | | 2311 | | 1201 | | 912 | | | |
| Sun reduction | | 0,18 | | 0,25 | | 0,34 | | 0,39 | | | |
| Oper. time red. | | 1,00 | | 1,00 | | 1,00 | | 1,00 | | | |
| Wind dir. red. | | 0,10 | | 0,14 | | 0,67 | | 0,99 | | | |
| Total reduction | | 0,01 | | 0,03 | | 0,18 | | 0,31 | | | |
| Total, real | | 19 | | 61 | | 214 | | 280 | | | |

Table layout: For each day in each month the following matrix apply

| | | | | |
|---|---|---|---|---|
| Day in month | Sun rise (hh:mm) | | First time (hh:mm) with flicker | (WTG causing flicker first time) |
| | Sun set (hh:mm) | Minutes with flicker | Last time (hh:mm) with flicker | (WTG causing flicker last time) |

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# SHADOW - Calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)Shadow receptor: AT - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | | September | | | October | | | November | | | December | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | | | 06:38 | | 18:30 (10) | 07:35 | | 17:51 (9) | 07:37 | | 11:16 (34) | 08:35 | | 11:44 (34) |
| | 22:18 | | 21:40 | | | 20:29 | 53 | 19:37 (8) | 19:12 | 14 | 18:05 (9) | 16:58 | 82 | 12:38 (34) | 16:10 | 38 | 12:22 (34) |
| 2 | 04:58 | | 05:41 | | | 06:40 | | 18:29 (10) | 07:36 | | 17:49 (9) | 07:39 | | 11:17 (34) | 08:37 | | 11:46 (34) |
| | 22:17 | | 21:38 | | | 20:27 | 57 | 19:38 (8) | 19:09 | 18 | 18:07 (9) | 16:56 | 81 | 12:38 (34) | 16:09 | 35 | 12:21 (34) |
| 3 | 04:58 | | 05:43 | | | 06:42 | | 18:28 (10) | 07:38 | | 17:47 (9) | 07:41 | | 11:17 (34) | 08:38 | | 11:48 (34) |
| | 22:17 | | 21:36 | | | 20:24 | 62 | 19:40 (8) | 19:07 | 21 | 18:08 (9) | 16:54 | 81 | 12:38 (34) | 16:08 | 33 | 12:21 (34) |
| 4 | 04:59 | | 05:45 | | | 06:43 | | 18:27 (10) | 07:40 | | 17:45 (9) | 07:43 | | 11:17 (34) | 08:40 | | 11:49 (34) |
| | 22:16 | | 21:34 | | | 20:22 | 64 | 19:40 (8) | 19:04 | 24 | 18:09 (9) | 16:52 | 80 | 12:37 (34) | 16:08 | 30 | 12:19 (34) |
| 5 | 05:00 | | 05:47 | | | 06:45 | | 18:27 (10) | 07:42 | | 12:50 (34) | 07:45 | | 11:18 (34) | 08:41 | | 11:51 (34) |
| | 22:16 | | 21:32 | | | 20:19 | 67 | 19:41 (8) | 19:02 | 48 | 18:10 (9) | 16:49 | 80 | 12:38 (34) | 16:07 | 27 | 12:18 (34) |
| 6 | 05:01 | | 05:49 | | | 06:47 | | 18:25 (10) | 07:44 | | 12:44 (34) | 07:47 | | 11:18 (34) | 08:43 | | 11:54 (34) |
| | 22:15 | | 21:30 | | | 20:17 | 69 | 19:40 (8) | 18:59 | 61 | 18:10 (9) | 16:47 | 79 | 12:37 (34) | 16:06 | 23 | 12:17 (34) |
| 7 | 05:02 | | 05:51 | | | 06:49 | | 18:24 (10) | 07:46 | | 12:40 (34) | 07:49 | | 11:19 (34) | 08:44 | | 11:55 (34) |
| | 22:14 | | 21:28 | | | 20:14 | 70 | 19:40 (8) | 18:57 | 70 | 18:10 (9) | 16:46 | 78 | 12:37 (34) | 16:06 | 20 | 12:15 (34) |
| 8 | 05:03 | | 05:52 | | | 06:51 | | 18:24 (10) | 07:48 | | 12:37 (34) | 07:51 | | 11:19 (34) | 08:45 | | 11:59 (34) |
| | 22:14 | | 21:26 | | | 20:11 | 70 | 19:40 (8) | 18:54 | 76 | 18:10 (9) | 16:44 | 77 | 12:36 (34) | 16:05 | 15 | 12:14 (34) |
| 9 | 05:04 | | 05:54 | | | 06:53 | | 18:24 (10) | 07:50 | | 12:34 (34) | 07:53 | | 11:20 (34) | 08:47 | | 12:02 (34) |
| | 22:13 | | 21:23 | | | 20:09 | 70 | 19:40 (8) | 18:52 | 82 | 18:10 (9) | 16:42 | 76 | 12:36 (34) | 16:05 | 9 | 12:11 (34) |
| 10 | 05:06 | | 05:56 | | | 06:55 | | 18:24 (10) | 07:52 | | 12:32 (34) | 07:55 | | 11:20 (34) | 08:48 | | |
| | 22:12 | | 21:21 | | | 20:06 | 67 | 19:38 (8) | 18:49 | 86 | 18:10 (9) | 16:40 | 76 | 12:36 (34) | 16:04 | | |
| 11 | 05:07 | | 05:58 | | | 06:57 | | 18:23 (10) | 07:54 | | 12:30 (34) | 07:57 | | 11:21 (34) | 08:49 | | |
| | 22:11 | | 21:19 | | | 20:04 | 64 | 19:34 (8) | 18:47 | 89 | 18:09 (9) | 16:38 | 74 | 12:35 (34) | 16:04 | | |
| 12 | 05:08 | | 06:00 | | | 06:59 | | 18:23 (10) | 07:56 | | 12:28 (34) | 07:59 | | 11:21 (34) | 08:50 | | |
| | 22:10 | | 21:17 | | | 20:01 | 61 | 19:32 (8) | 18:44 | 92 | 18:09 (9) | 16:36 | 73 | 12:34 (34) | 16:04 | | |
| 13 | 05:09 | | 06:02 | | | 07:00 | | 18:23 (10) | 07:58 | | 12:26 (34) | 08:01 | | 11:23 (34) | 08:51 | | |
| | 22:09 | | 21:15 | | | 19:59 | 56 | 19:29 (8) | 18:42 | 94 | 18:08 (9) | 16:34 | 72 | 12:35 (34) | 16:04 | | |
| 14 | 05:11 | | 06:04 | | | 07:02 | | 18:23 (10) | 08:00 | | 12:25 (34) | 08:03 | | 11:23 (34) | 08:53 | | |
| | 22:08 | | 21:12 | | | 19:56 | 51 | 19:27 (8) | 18:39 | 95 | 18:07 (9) | 16:33 | 71 | 12:34 (34) | 16:04 | | |
| 15 | 05:12 | | 06:06 | | | 07:04 | | 18:23 (10) | 08:02 | | 12:23 (34) | 08:05 | | 11:24 (34) | 08:54 | | |
| | 22:07 | | 21:10 | | | 19:53 | 45 | 19:24 (8) | 18:37 | 94 | 18:05 (9) | 16:31 | 69 | 12:33 (34) | 16:04 | | |
| 16 | 05:14 | | 06:07 | | | 07:06 | | 18:24 (10) | 08:04 | | 12:22 (34) | 08:07 | | 11:25 (34) | 08:54 | | |
| | 22:05 | | 21:08 | | | 19:51 | 42 | 19:06 (10) | 18:34 | 93 | 18:03 (9) | 16:29 | 67 | 12:32 (34) | 16:04 | | |
| 17 | 05:15 | | 06:09 | | | 07:08 | | 18:23 (10) | 08:06 | | 12:22 (34) | 08:09 | | 11:26 (34) | 08:55 | | |
| | 22:04 | | 21:06 | | | 19:48 | 41 | 19:04 (10) | 18:32 | 92 | 18:02 (9) | 16:28 | 67 | 12:33 (34) | 16:04 | | |
| 18 | 05:16 | | 06:11 | | | 07:10 | | 18:24 (10) | 08:08 | | 12:21 (34) | 08:11 | | 11:27 (34) | 08:56 | | |
| | 22:03 | | 21:03 | | | 19:46 | 38 | 19:02 (10) | 18:30 | 88 | 17:59 (9) | 16:26 | 65 | 12:32 (34) | 16:04 | | |
| 19 | 05:18 | | 06:13 | | | 07:12 | | 18:25 (10) | 08:10 | | 12:20 (34) | 08:13 | | 11:28 (34) | 08:57 | | |
| | 22:01 | | 21:01 | | | 19:43 | 36 | 19:01 (10) | 18:27 | 80 | 17:55 (9) | 16:25 | 63 | 12:31 (34) | 16:04 | | |
| 20 | 05:19 | | 06:15 | | | 07:14 | | 18:26 (10) | 08:12 | | 12:19 (34) | 08:15 | | 11:29 (34) | 08:58 | | |
| | 22:00 | | 20:59 | | | 19:40 | 33 | 18:59 (10) | 18:25 | 79 | 13:38 (34) | 16:23 | 61 | 12:30 (34) | 16:05 | | |
| 21 | 05:21 | | 06:17 | | | 07:15 | | 18:28 (10) | 08:14 | | 12:18 (34) | 08:17 | | 11:30 (34) | 08:58 | | |
| | 21:58 | | 20:56 | | | 19:38 | 29 | 18:57 (10) | 18:22 | 80 | 13:38 (34) | 16:22 | 59 | 12:29 (34) | 16:05 | | |
| 22 | 05:23 | | 06:19 | | | 07:17 | | 18:30 (10) | 08:16 | | 12:18 (34) | 08:19 | | 11:31 (34) | 08:59 | | |
| | 21:57 | | 20:54 | | | 19:35 | 25 | 18:55 (10) | 18:20 | 80 | 13:38 (34) | 16:20 | 58 | 12:29 (34) | 16:05 | | |
| 23 | 05:24 | | 06:21 | | | 07:19 | | 18:32 (10) | 08:18 | | 12:17 (34) | 08:21 | | 11:32 (34) | 08:59 | | |
| | 21:55 | | 20:51 | | | 19:33 | 20 | 18:52 (10) | 18:18 | 81 | 13:38 (34) | 16:19 | 56 | 12:28 (34) | 16:06 | | |
| 24 | 05:26 | | 06:23 | | | 07:21 | | 18:37 (10) | 08:20 | | 12:18 (34) | 08:23 | | 11:33 (34) | 09:00 | | |
| | 21:54 | | 20:49 | | | 19:30 | 9 | 18:46 (10) | 18:15 | 81 | 13:39 (34) | 16:18 | 54 | 12:27 (34) | 16:07 | | |
| 25 | 05:28 | | 06:24 | | 18:46 (10) | 07:23 | | | 07:22 | | 11:17 (34) | 08:24 | | 11:36 (34) | 09:00 | | |
| | 21:52 | | 20:47 | 14 | 19:00 (10) | 19:28 | | | 17:13 | 82 | 12:39 (34) | 16:16 | 51 | 12:27 (34) | 16:07 | | |
| 26 | 05:29 | | 06:26 | | 18:43 (10) | 07:25 | | | 07:24 | | 11:17 (34) | 08:26 | | 11:37 (34) | 09:00 | | |
| | 21:50 | | 20:44 | 20 | 19:03 (10) | 19:25 | | | 17:11 | 82 | 12:39 (34) | 16:15 | 50 | 12:27 (34) | 16:08 | | |
| 27 | 05:31 | | 06:28 | | 18:39 (10) | 07:27 | | | 07:26 | | 11:16 (34) | 08:28 | | 11:38 (34) | 09:01 | | |
| | 21:49 | | 20:42 | 26 | 19:05 (10) | 19:22 | | | 17:09 | 82 | 12:38 (34) | 16:14 | 48 | 12:26 (34) | 16:09 | | |
| 28 | 05:33 | | 06:30 | | 18:37 (10) | 07:29 | | | 07:28 | | 11:16 (34) | 08:30 | | 11:39 (34) | 09:01 | | |
| | 21:47 | | 20:39 | 29 | 19:06 (10) | 19:20 | | | 17:06 | 82 | 12:38 (34) | 16:13 | 45 | 12:24 (34) | 16:10 | | |
| 29 | 05:34 | | 06:32 | | 18:35 (10) | 07:31 | | | 07:30 | | 11:17 (34) | 08:32 | | 11:40 (34) | 09:01 | | |
| | 21:45 | | 20:37 | 33 | 19:08 (10) | 19:17 | | | 17:04 | 82 | 12:39 (34) | 16:12 | 43 | 12:23 (34) | 16:10 | | |
| 30 | 05:36 | | 06:34 | | 18:34 (10) | 07:33 | | 17:56 (9) | 07:32 | | 11:16 (34) | 08:33 | | 11:42 (34) | 09:01 | | |
| | 21:43 | | 20:34 | 35 | 19:09 (10) | 19:15 | 4 | 18:00 (9) | 17:02 | 82 | 12:38 (34) | 16:11 | 41 | 12:23 (34) | 16:11 | | |
| 31 | 05:38 | | 06:36 | | 18:32 (10) | | | | 07:34 | | 11:16 (34) | | | | 09:01 | | |
| | 21:42 | | 20:32 | 44 | 19:35 (8) | | | | 17:00 | 82 | 12:38 (34) | | | | 16:12 | | |
| Potential sun hours | 521 | | 465 | | | 383 | | | 326 | | | 253 | | | 224 | | |
| Total, worst case | | | | 201 | | | 1203 | | | 2292 | | | 1977 | | | 230 | |
| Sun reduction | | | | 0,51 | | | 0,40 | | | 0,31 | | | 0,16 | | | 0,14 | |
| Oper. time red. | | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | | | 1,00 | |
| Wind dir. red. | | | | 0,99 | | | 0,99 | | | 0,25 | | | 0,10 | | | 0,10 | |
| Total reduction | | | | 0,40 | | | 0,31 | | | 0,06 | | | 0,01 | | | 0,01 | |
| Total, real | | | | 81 | | | 371 | | | 140 | | | 24 | | | 2 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | Minutes with flicker | First time (hh:mm) with flicker<br>Last time (hh:mm) with flicker | (WTG causing flicker first time)<br>(WTG causing flicker last time) |
|---|---|---|---|---|

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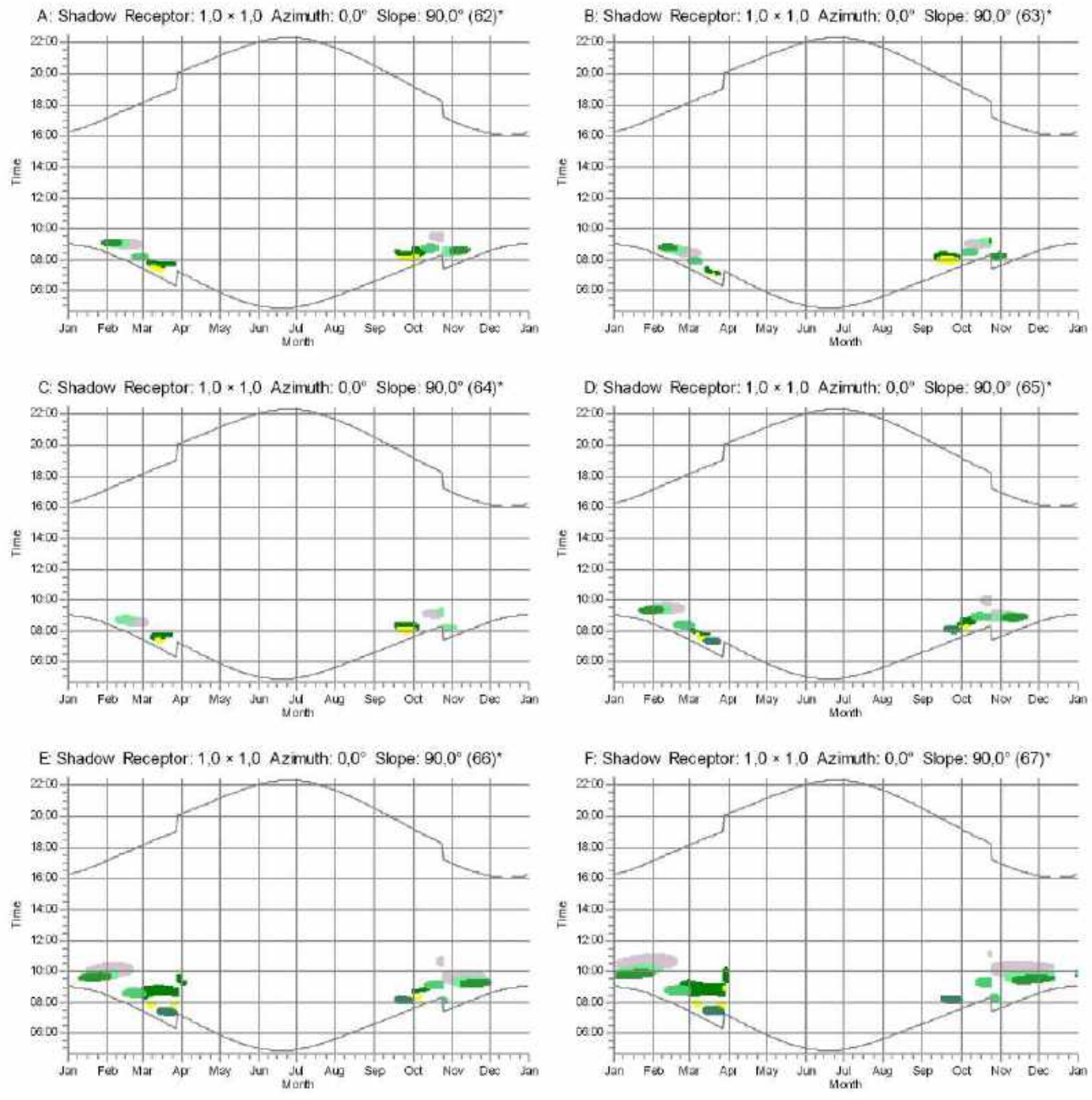
Raminta Survilë / r.survile@infraplanas.lt
Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




* Results reduced by flicker curtailment

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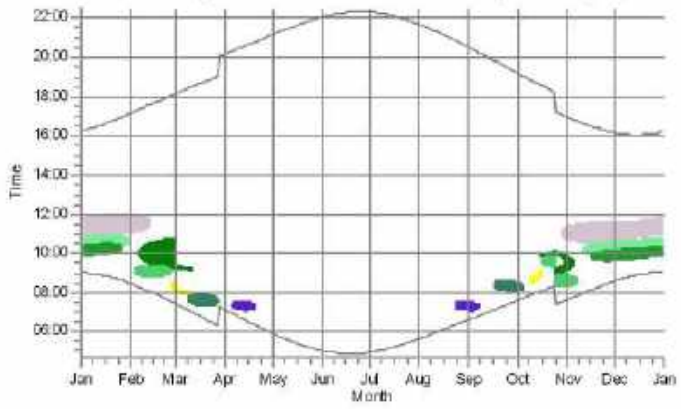
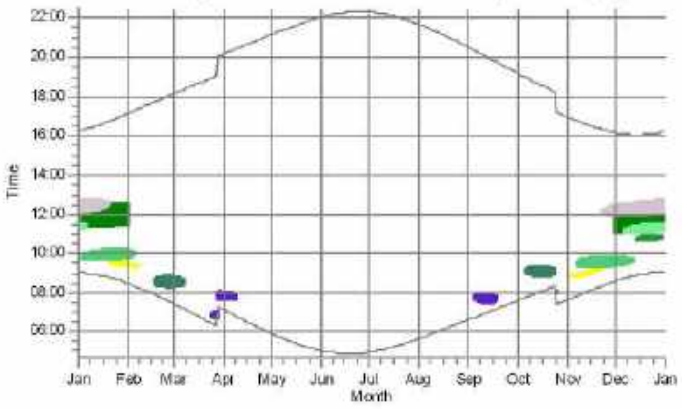
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

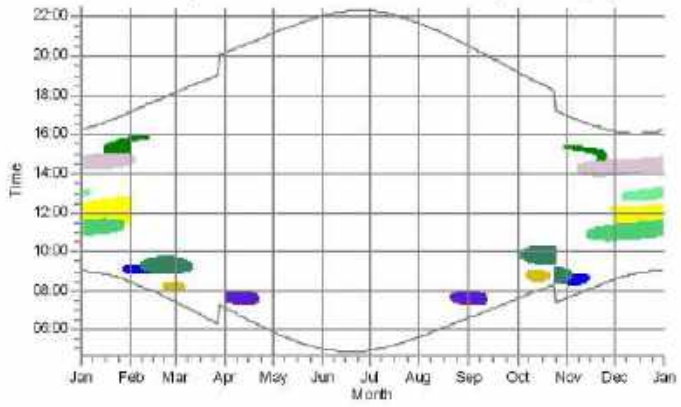
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*



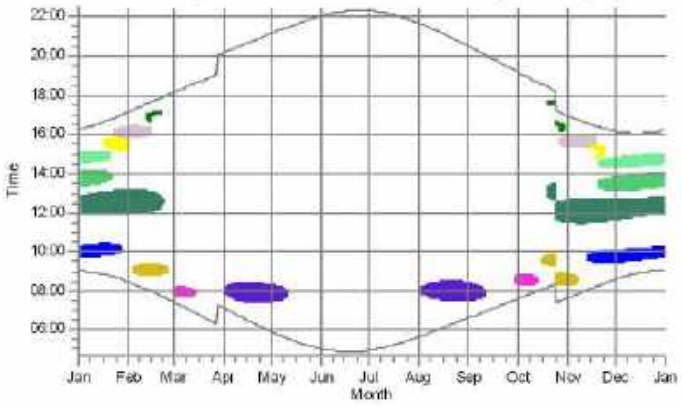

H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*



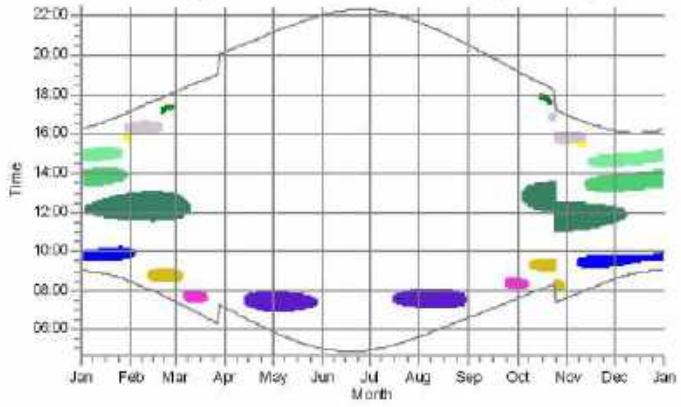

I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*



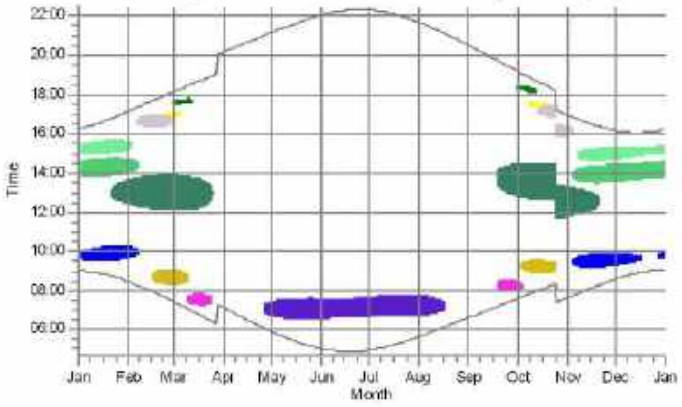

J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*




K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*




L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

* Results reduced by flicker curtailment

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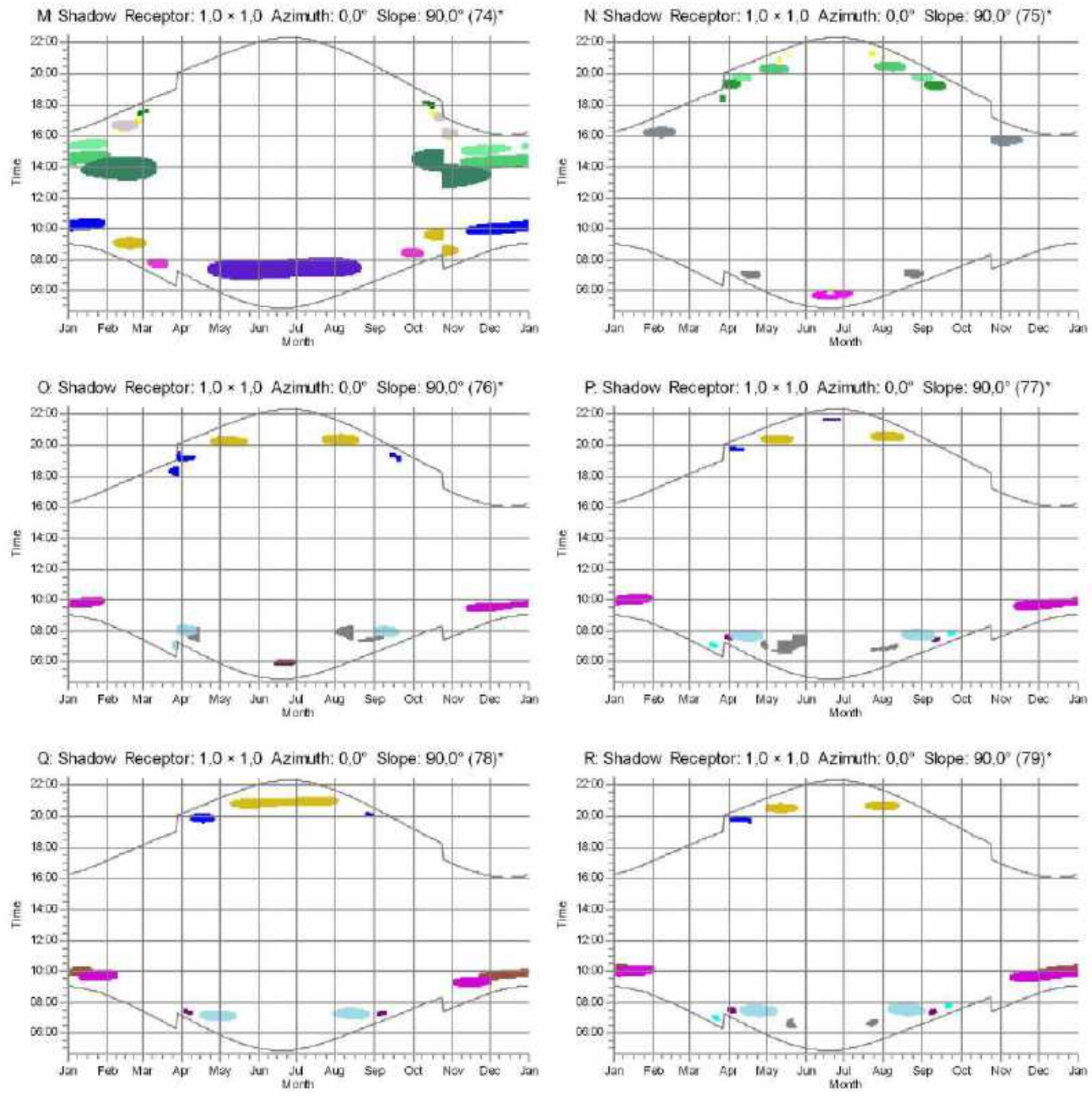
# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




WTGs

1: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)
2: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)
3: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)
4: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)
5: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)
11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)
13: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)
25: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)
26: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)
27: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)
28: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)
29: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)
30: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)
31: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)
32: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)
33: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)
38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)
40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)
41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)
42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

* Results reduced by flicker curtailment

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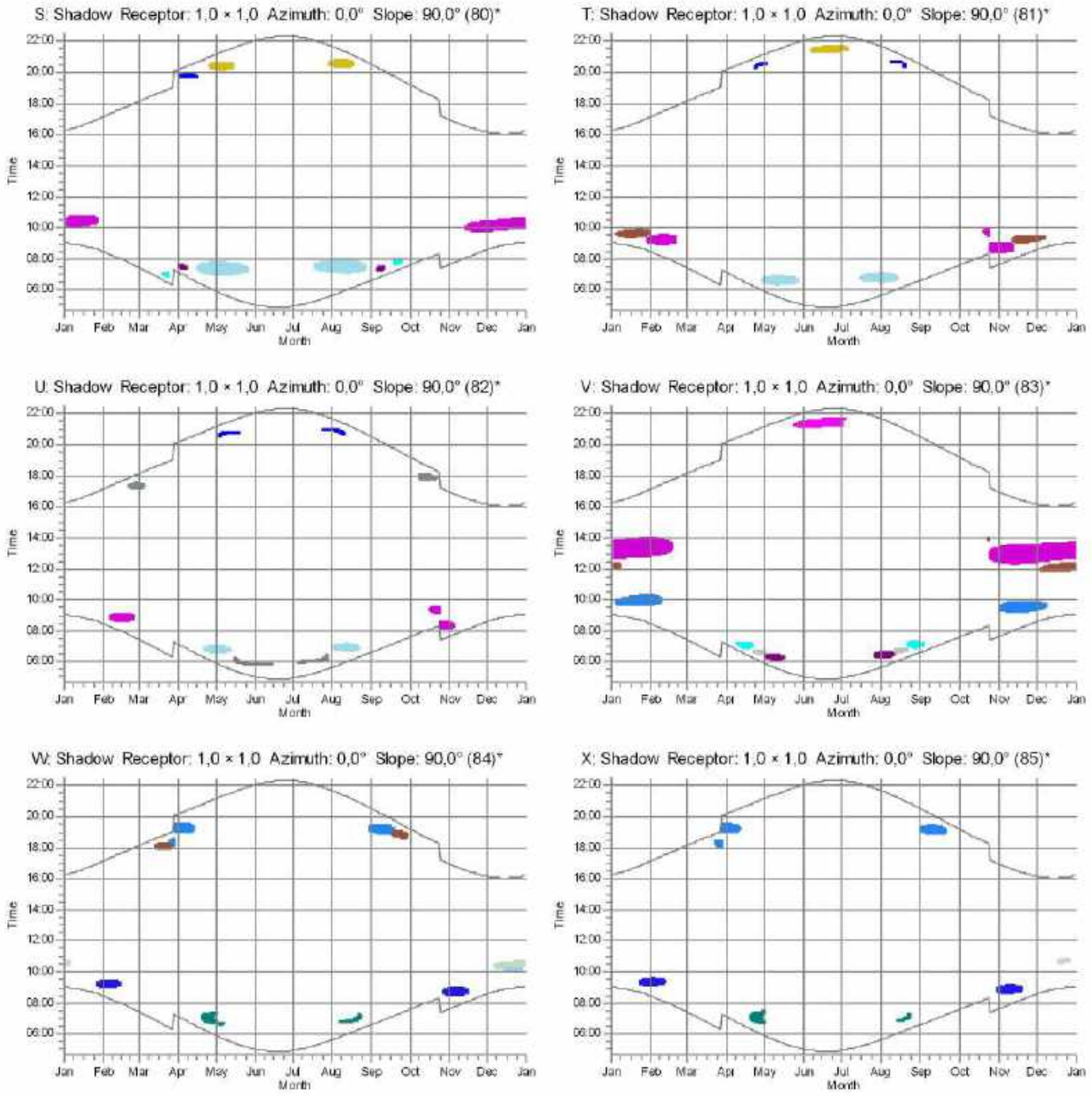
Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




* Results reduced by flicker curtailment

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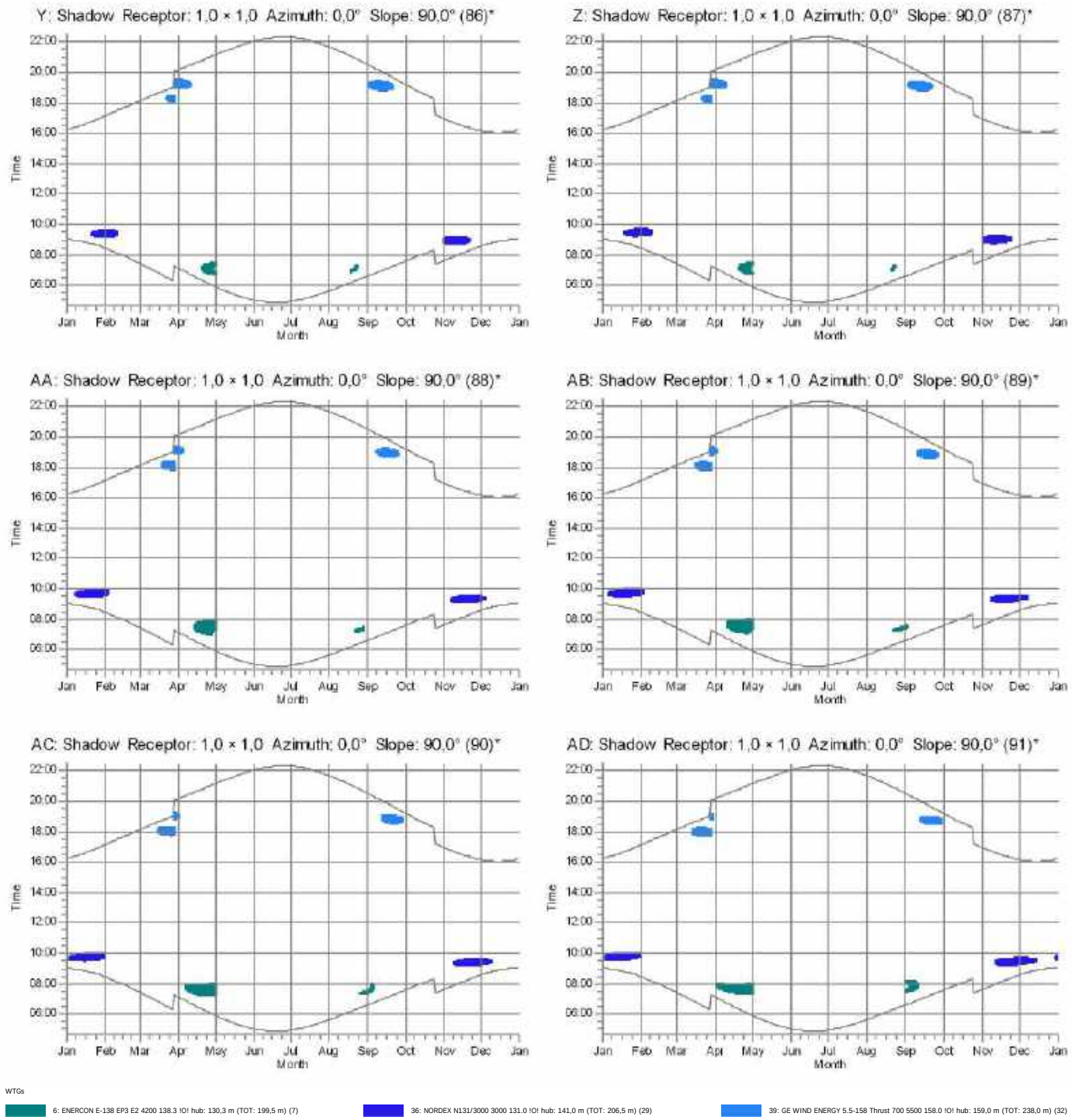
Raminta Survilë / r.survile@infraplanas.lt



## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




* Results reduced by flicker curtailment

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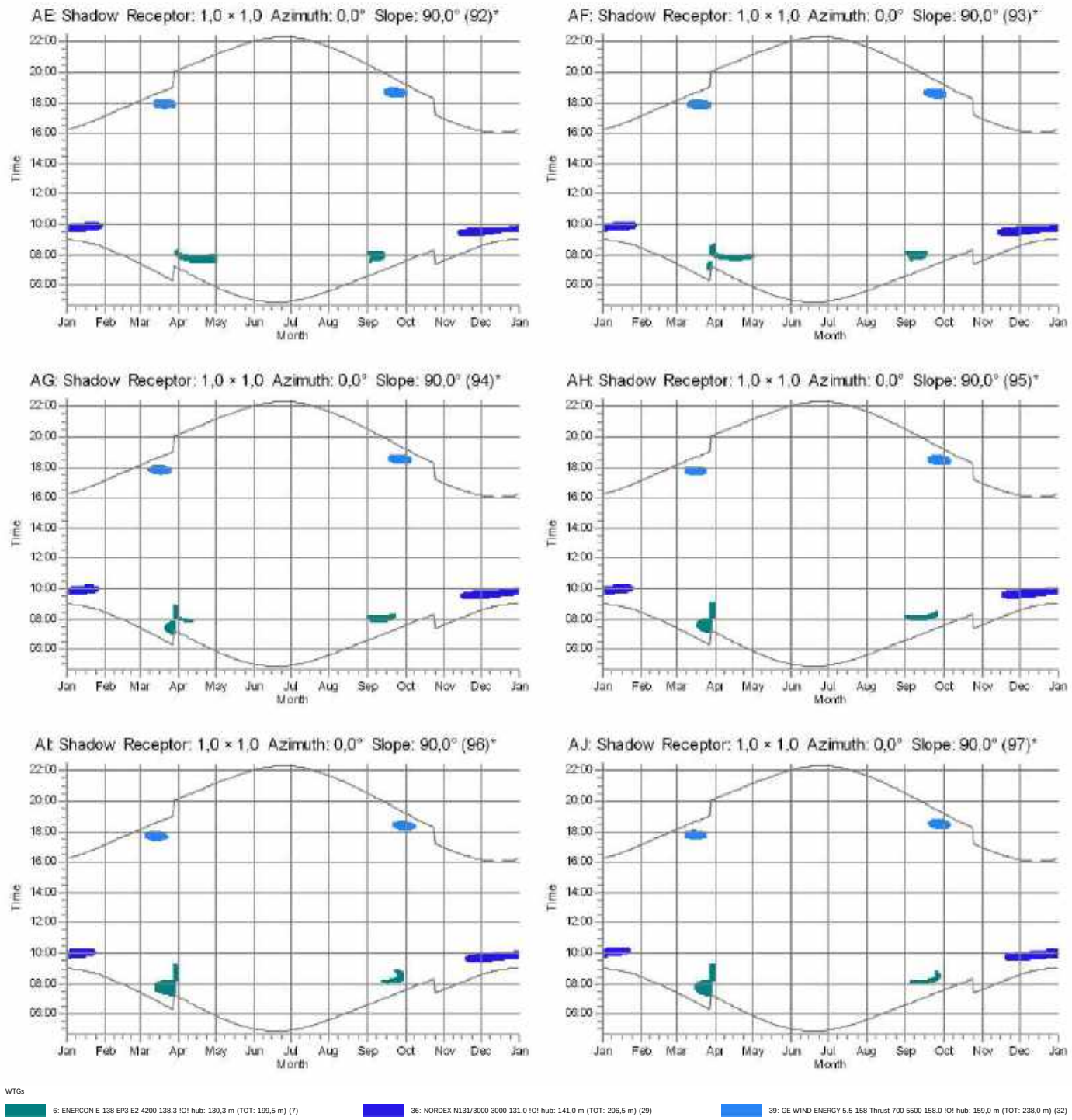
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




* Results reduced by flicker curtailment

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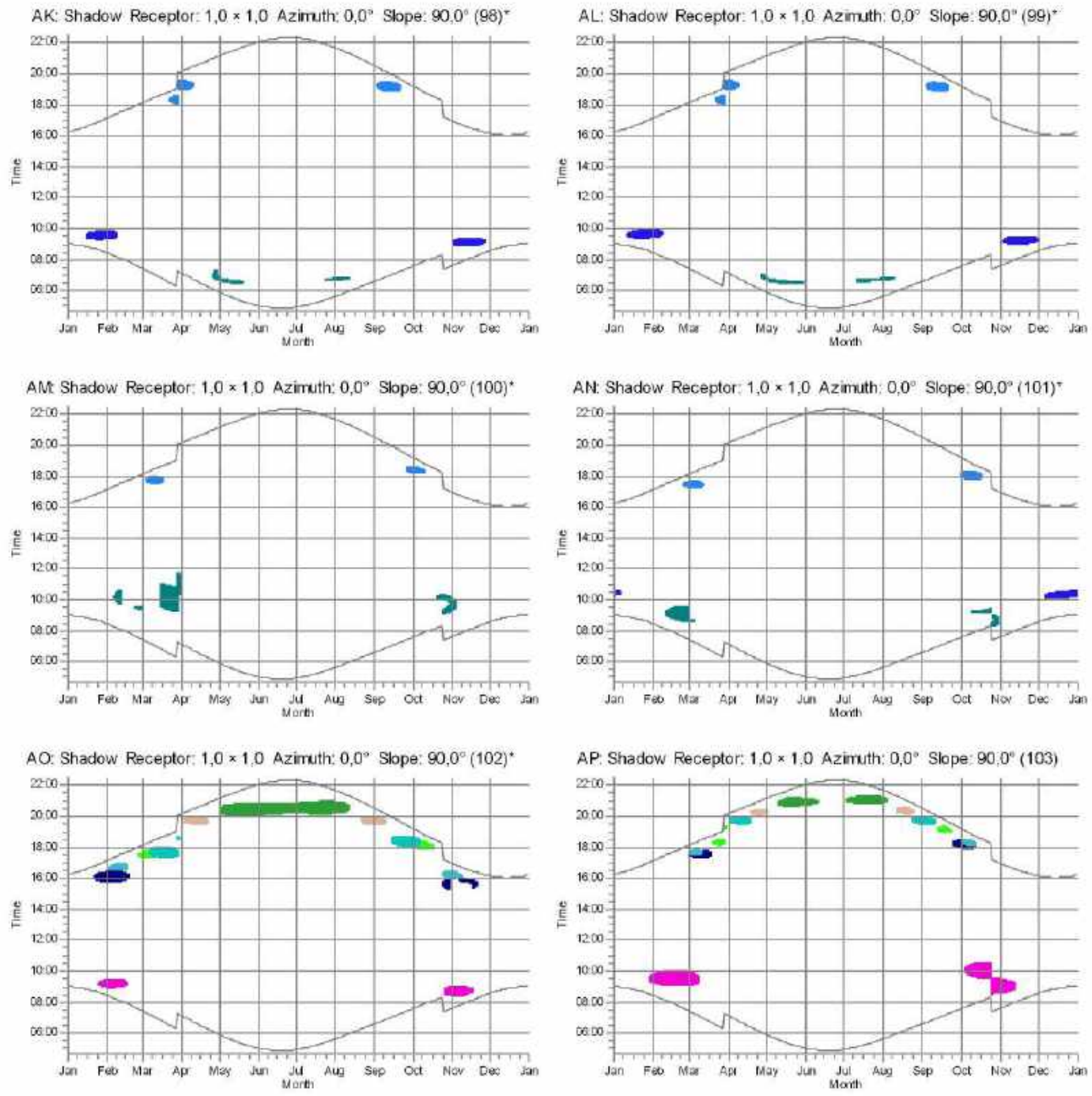
# SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




WTGs

6: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)
17: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)
18: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)
20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)
21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)
24: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)
36: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)
39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

* Results reduced by flicker curtailment

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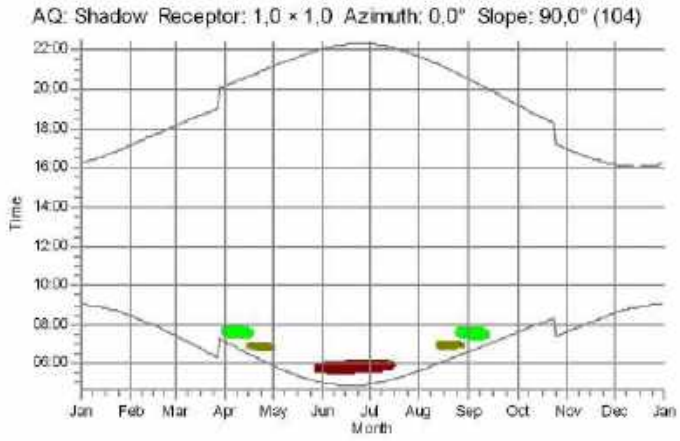
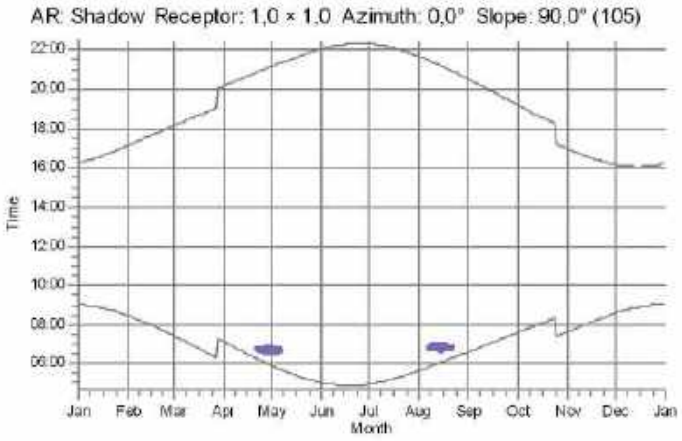
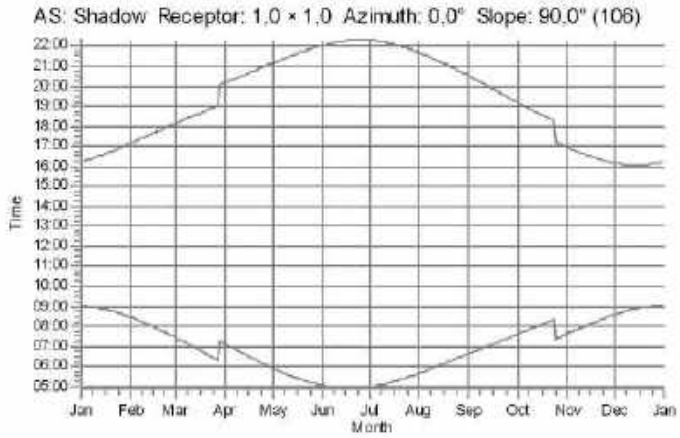
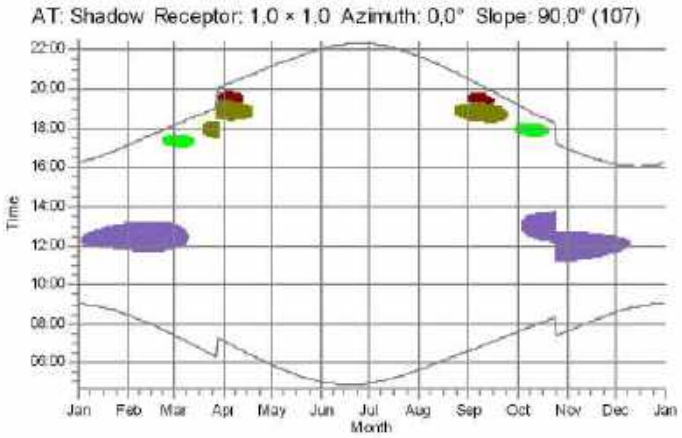
## SHADOW - Calendar, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




WTGs

8: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)
9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)
10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)
34: NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:20-12:22/62 | 08:28 15:43-15:47/4 | 07:27 17:33-17:35/2 | 07:08 09:08-09:17/9 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 08:17-09:19/62 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 11:20-12:22/62 | 08:26 15:44-15:47/3 | 07:24 17:35-17:37/2 | 07:05 09:11-09:18/7 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:10 08:05-09:18/73 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 11:20-12:23/63 | 08:24 15:45-15:48/3 | 07:22 17:35-17:38/3 08:00-08:08/8 | 07:03 09:15-09:18/3 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 08:18-09:17/59 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 11:20-12:23/63 | 08:22 15:46-15:49/3 | 07:19 17:37-17:40/3 07:58-08:04/6 | 07:00 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 08:23-09:17/54 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 11:21-12:24/63 | 08:20 15:47-15:50/3 | 07:17 17:38-17:41/3 07:48-08:00/12 | 06:58 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 08:26-09:15/49 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 11:21-12:25/64 | 08:18 15:48-15:50/2 | 07:15 17:40-17:42/2 07:45-07:58/13 | 06:55 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 08:28-09:15/47 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 11:21-12:25/64 | 08:16 15:49-15:51/2 | 07:12 17:40-17:43/3 07:42-07:55/13 | 06:53 | 05:42 | 04:56 |
| | 16:22 | 17:21 09:54-10:08/14 | 18:20 08:29-09:14/45 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 11:21-12:25/64 | 08:14 15:49-15:51/2 | 07:10 17:41-17:43/2 07:39-07:53/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 | 17:23 09:47-10:13/26 | 18:22 08:30-09:13/43 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 11:22-12:27/65 | 08:12 15:50-15:51/1 | 07:07 17:42-17:43/1 07:33-07:52/19 | 06:48 | 05:38 | 04:55 |
| | 16:25 | 17:25 09:44-10:17/33 | 18:24 08:32-09:13/41 | 20:26 | 21:24 | 22:12 |
| 10 | 08:57 11:22-12:28/66 | 08:10 15:51-15:52/1 | 07:04 17:42-17:43/1 07:29-07:50/21 | 06:45 | 05:36 | 04:55 |
| | 16:26 | 17:27 09:41-10:20/39 | 18:26 08:32-09:12/40 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 11:22-12:28/66 | 08:08 15:51-15:52/1 | 07:02 17:43-17:44/1 07:27-07:50/23 | 06:43 | 05:34 | 04:54 |
| | 16:28 | 17:30 09:39-10:23/44 | 18:28 08:34-09:12/38 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 11:22-12:28/66 | 08:06 09:36-10:25/49 | 06:59 17:42-17:43/1 07:25-07:48/23 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 08:34-09:11/37 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 11:22-12:29/67 | 08:04 16:46-16:58/12 | 06:57 08:35-09:11/36 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 09:34-10:27/53 | 18:32 07:24-07:48/24 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 11:22-12:29/67 | 08:02 16:55-17:01/6 09:32-10:29/57 | 06:54 08:35-09:10/35 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 16:43-16:44/1 | 18:34 07:22-07:47/25 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 11:23-12:30/67 | 08:00 16:58-17:02/4 | 06:52 08:34-09:09/35 07:18-07:24/6 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 09:30-10:30/60 | 18:36 07:30-07:46/16 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 11:22-12:30/68 | 07:57 17:01-17:04/3 | 06:49 08:35-09:09/34 07:16-07:20/4 | 06:30 | 05:25 | 04:52 |
| | 16:36 | 17:40 09:29-10:32/63 | 18:38 07:35-07:46/11 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 15:09-15:21/12 | 07:55 17:03-17:06/3 | 06:47 08:34-09:09/35 07:13-07:16/3 | 06:28 | 05:23 | 04:52 |
| | 16:38 11:23-12:31/68 | 17:42 09:28-10:34/66 | 18:40 07:37-07:45/8 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 15:07-15:25/18 | 07:53 17:04-17:06/2 | 06:44 08:35-09:09/34 07:12-07:15/3 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:24-12:32/68 | 17:44 09:26-10:35/69 | 18:42 07:39-07:45/6 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 15:04-15:28/24 | 07:51 17:05-17:07/2 | 06:42 08:34-09:08/34 07:11-07:13/2 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:23-12:32/69 | 17:47 09:25-10:36/71 | 18:44 07:40-07:44/4 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 15:03-15:30/27 | 07:48 17:07-17:08/1 | 06:39 08:33-09:08/35 07:09-07:11/2 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:24-12:32/68 | 17:49 09:24-10:38/74 | 18:46 07:41-07:44/3 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 15:01-15:32/31 | 07:46 17:07-17:14/7 | 06:36 08:33-09:08/35 07:09-07:10/1 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:24-12:32/68 | 17:51 09:22-10:38/76 | 18:48 07:42-07:44/2 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:59-15:34/35 | 07:44 17:12-17:17/5 08:50-09:09/19 | 06:34 08:32-09:08/36 07:08-07:09/1 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:24-12:32/68 | 17:53 09:22-10:39/77 | 18:50 07:42-07:44/2 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:59-15:36/37 | 07:41 17:15-17:19/4 08:45-09:13/28 | 06:31 08:32-09:08/36 07:08-07:09/1 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:25-12:33/68 | 17:55 09:20-10:40/80 | 18:52 07:43-07:44/1 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:57-15:37/40 | 07:39 17:17-17:21/4 08:42-09:16/34 | 06:29 08:31-09:08/37 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:25-12:33/68 | 17:57 09:20-10:41/81 | 18:54 07:42-07:44/2 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:56-15:39/43 | 07:36 17:18-17:21/3 | 06:26 08:29-09:08/39 07:42-07:44/2 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:25-12:33/68 | 17:59 08:39-10:41/122 | 18:56 07:06-07:07/1 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 14:56-15:41/45 | 07:34 17:20-17:30/10 | 06:23 08:28-09:08/40 | 06:06 | 05:09 | 04:54 |
| | 16:56 11:26-12:34/68 | 18:01 08:29-10:42/133 | 18:58 07:42-07:45/3 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 14:55-15:42/47 | 07:32 17:28-17:32/4 | 06:21 08:27-09:08/41 | 06:04 | 05:08 | 04:54 |
| | 16:58 11:26-12:34/68 | 18:03 08:23-10:42/139 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:54-15:43/49 | 07:29 17:31-17:34/3 | 06:18 08:26-09:09/43 | 06:02 | 05:06 | 04:55 |
| | 17:00 11:27-12:34/67 | 18:05 08:20-10:43/143 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:54-15:44/50 | | 07:16 09:24-10:09/45 | 06:00 | 05:05 | 04:55 |
| | 17:02 11:27-12:34/67 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:53-15:45/52 | | 07:13 09:22-10:10/48 | 05:57 | 05:04 | 04:56 |
| | 17:04 11:27-12:34/67 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:52-15:46/54 | | 07:11 09:19-10:09/50 | | 05:03 | |
| | 17:06 11:28-12:33/65 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2616 | 1749 | 1625 | 19 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 08:03-08:44/41 | 07:37 15:20-15:21/1 | 08:35 11:05-12:10/65 |
| | 22:18 | 21:40 | 20:30 | 19:12 | 16:58 09:11-09:49/38 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 18:21-18:22/1 | 07:39 15:19-15:21/2 | 08:37 11:04-12:10/66 |
| | 22:18 | 21:38 | 20:27 | 19:10 08:04-08:44/40 | 16:56 09:14-09:46/32 | 16:09 |
| 3 | 04:58 | 05:43 | 06:42 | 07:39 18:20-18:21/1 | 07:41 15:19-15:20/1 | 08:38 11:05-12:10/65 |
| | 22:17 | 21:36 | 20:24 | 19:07 08:06-08:45/39 | 16:54 09:17-09:42/25 | 16:08 |
| 4 | 04:59 | 05:45 | 06:44 | 07:41 18:19-18:21/2 | 07:43 15:19-15:21/2 | 08:40 11:06-12:11/65 |
| | 22:17 | 21:34 | 20:22 | 19:05 08:08-08:45/37 | 16:52 09:25-09:36/11 | 16:08 |
| 5 | 05:00 | 05:47 | 06:45 | 07:43 18:18-18:20/2 | 07:45 15:18-15:20/2 | 08:42 11:06-12:10/64 |
| | 22:16 | 21:32 | 20:19 | 19:02 08:16-08:46/30 | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 18:17-18:19/2 | 07:47 15:17-15:19/2 | 08:43 11:07-12:11/64 |
| | 22:16 | 21:30 | 20:17 | 18:59 08:17-08:47/30 | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 18:16-18:18/2 | 07:49 15:16-15:19/3 | 08:44 11:07-12:10/63 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:19-08:48/29 | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | 06:51 | 07:48 18:14-18:17/3 | 07:51 15:16-15:19/3 | 08:46 11:08-12:11/63 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:21-08:49/28 | 16:44 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 18:12-18:15/3 08:26-08:30/4 | 07:53 15:15-15:18/3 | 08:47 11:08-12:11/63 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:31-08:50/19 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 08:07-08:18/11 | 07:52 18:10-18:13/3 | 07:55 15:14-15:17/3 | 08:48 11:10-12:12/62 |
| | 22:12 | 21:22 | 20:07 | 18:49 08:33-08:52/19 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 08:04-08:21/17 | 07:54 18:09-18:11/2 | 07:57 15:12-15:16/4 | 08:50 11:10-12:12/62 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:35-08:54/19 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:59 08:02-08:23/21 | 07:56 18:07-18:09/2 08:41-08:46/5 | 07:59 15:12-15:17/5 | 08:51 11:10-12:12/62 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:49-08:56/7 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:01 07:59-08:23/24 | 07:58 18:05-18:08/3 | 08:01 15:11-15:16/5 | 08:52 11:11-12:12/61 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:51-09:00/9 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 07:58-08:24/26 | 08:00 18:02-18:06/4 | 08:03 15:09-15:15/6 | 08:53 11:11-12:12/61 |
| | 22:08 | 21:13 | 19:56 | 18:39 08:54-09:07/13 | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | 07:04 07:57-08:25/28 | 08:02 17:59-18:04/5 | 08:06 15:08-15:14/6 | 08:54 11:13-12:14/61 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:58-09:08/10 | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | 07:06 07:56-08:25/29 | 08:04 17:52-18:01/9 09:05-09:08/3 | 08:08 15:07-15:14/7 | 08:55 11:12-12:13/61 |
| | 22:06 | 21:08 | 19:51 | 18:35 09:52-09:55/3 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 07:55-08:26/31 | 08:06 17:50-17:53/3 | 08:10 15:06-15:12/6 | 08:56 11:13-12:13/60 |
| | 22:04 | 21:06 | 19:48 08:31-08:34/3 | 18:32 09:51-09:56/5 | 16:28 14:30-14:31/1 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 07:55-08:33/38 | 08:08 17:48-17:51/3 | 08:11 15:04-15:11/7 | 08:57 11:14-12:14/60 |
| | 22:03 | 21:04 | 19:46 | 18:30 09:51-09:57/6 | 16:26 14:31-14:33/2 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 07:54-08:31/37 | 08:10 17:45-17:49/4 | 08:13 15:01-15:10/9 | 08:57 11:15-12:15/60 |
| | 22:02 | 21:01 | 19:43 | 18:27 09:52-09:57/5 | 16:25 14:33-14:36/3 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 07:53-08:30/37 | 08:12 17:41-17:47/6 | 08:15 14:59-15:09/10 | 08:58 11:14-12:14/60 |
| | 22:00 | 20:59 | 19:41 | 18:25 09:52-09:59/7 | 16:23 14:34-14:38/4 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 07:53-08:29/36 | 08:14 17:37-17:43/6 | 08:17 14:56-15:08/12 | 08:59 11:15-12:15/60 |
| | 21:59 | 20:57 | 19:38 | 18:23 09:53-10:00/7 | 16:22 14:37-14:44/7 | 16:05 |
| 22 | 05:23 | 06:19 | 07:18 07:53-08:29/36 | 08:16 17:37-17:38/1 | 08:19 14:39-15:07/28 | 08:59 11:16-12:16/60 |
| | 21:57 | 20:54 | 19:35 | 18:20 09:55-10:02/7 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 07:54-08:28/34 | 08:18 17:35-17:37/2 | 08:21 14:41-15:05/24 | 09:00 11:16-12:16/60 |
| | 21:56 | 20:52 | 19:33 | 18:18 09:56-10:03/7 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 07:54-08:28/34 | 08:20 17:34-17:36/2 | 08:23 14:44-15:02/18 | 09:00 11:17-12:17/60 |
| | 21:54 | 20:49 | 19:30 | 18:16 09:56-10:05/9 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 07:55-08:28/33 | 07:22 16:32-16:35/3 | 08:25 14:47-14:59/12 | 09:00 11:17-12:17/60 |
| | 21:52 | 20:47 | 19:28 | 17:13 08:57-09:06/9 | 16:16 | 16:07 |
| 26 | 05:29 | 06:27 | 07:25 07:56-08:27/31 | 07:24 16:30-16:33/3 | 08:27 | 09:01 11:18-12:18/60 |
| | 21:51 | 20:44 | 19:25 | 17:11 08:59-09:08/9 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 07:57-08:27/30 | 07:26 16:28-16:32/4 09:01-09:12/11 | 08:28 | 09:01 11:18-12:19/61 |
| | 21:49 | 20:42 | 19:23 | 17:09 09:59-10:00/1 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 07:59-08:27/28 | 07:29 16:24-16:30/6 09:56-09:58/2 | 08:30 | 09:01 11:19-12:19/60 |
| | 21:47 | 20:40 | 19:20 | 17:07 16:13-16:15/2 09:02-09:14/12 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 08:01-08:26/25 | 07:31 16:16-16:26/10 09:04-09:17/13 | 08:32 | 09:01 11:19-12:20/61 |
| | 21:46 | 20:37 | 19:17 | 17:04 09:52-09:56/4 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:33 08:03-08:27/24 | 07:33 09:47-09:54/7 | 08:34 | 09:01 11:19-12:20/61 |
| | 21:44 | 20:35 | 19:15 | 17:02 09:06-09:21/15 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:35 15:21-15:22/1 09:09-09:29/20 | | 09:01 11:19-12:21/62 |
| | 21:42 | 20:32 | | 17:00 09:41-09:52/11 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 613 | 652 | 304 | 1913 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:26-12:25/59<br>16:14 | 08:28 15:57-16:06/9<br>17:08 09:23-09:25/2 | 07:27 16:56-16:57/1<br>18:07 08:07-08:13/6 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:25-12:25/60<br>16:15 | 08:26 15:59-16:08/9<br>17:10 09:22-09:24/2 | 07:24 16:57-16:58/1<br>18:10 08:05-08:10/5 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:26-12:26/60<br>16:16 | 08:24 16:02-16:10/8<br>17:12 09:22-09:24/2 | 07:22 16:57-16:58/1<br>18:12 08:03-08:07/4 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:26-12:26/60<br>16:18 | 08:22 16:05-16:12/7<br>17:15 09:22-09:23/1 | 07:19 16:57-16:58/1<br>18:14 08:02-08:06/4 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:26-12:28/62<br>16:19 | 08:20 16:07-16:13/6<br>17:17 09:22-09:23/1 | 07:17 07:51-08:04/13<br>18:16 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:08 |
| 6 | 08:59 11:26-12:28/62<br>16:20 | 08:18 16:10-16:15/5<br>17:19 09:21-09:23/2 | 07:14 07:47-08:03/16<br>18:18 | 06:55<br>20:20 | 05:44<br>21:19 | 04:57<br>22:09 |
| 7 | 08:59 11:26-12:29/63<br>16:22 | 08:16 16:10-16:15/5<br>17:21 | 07:12 07:41-08:01/20<br>18:20 | 06:53<br>20:22 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:26-12:30/64<br>16:23 | 08:14 16:12-16:17/5<br>17:23 | 07:09 07:47-07:59/12<br>18:22 07:35-07:40/5 | 06:50<br>20:24 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:27-12:31/64<br>16:25 | 08:12 16:14-16:18/4<br>17:25 | 07:07 07:52-07:59/7<br>18:24 07:32-07:36/4 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:27-12:32/65<br>16:26 | 08:10 16:15-16:19/4<br>17:27 | 07:04 07:54-07:57/3<br>18:26 07:29-07:33/4 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:13 |
| 11 | 08:56 11:27-12:33/66<br>16:28 | 08:08 16:26-16:40/14<br>17:29 16:17-16:20/3 | 07:02 07:56-07:57/1<br>18:28 07:27-07:32/5 | 06:43<br>20:29 | 05:34 20:54-20:56/2<br>21:28 | 04:54<br>22:14 |
| 12 | 08:55 11:26-12:33/67<br>16:30 | 08:06 16:32-16:43/11 16:17-16:20/3<br>17:32 16:22-16:28/6 | 06:59 07:24-07:30/6<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 11:26-12:34/68<br>16:31 | 08:04 16:39-16:46/7<br>17:34 16:18-16:21/3 | 06:57 07:22-07:29/7<br>18:32 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 11:26-12:35/69<br>16:33 | 08:02 16:42-16:48/6<br>17:36 | 06:54 07:19-07:27/8<br>18:34 | 06:35<br>20:35 | 05:29<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 11:26-12:36/70<br>16:35 | 07:59 16:44-16:49/5<br>17:38 | 06:52 07:16-07:26/10<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:26-12:36/70<br>16:36 | 07:57 16:47-16:51/4<br>17:40 | 06:49 07:21-07:26/5<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:26-12:37/71<br>16:38 | 07:55 16:49-16:53/4<br>17:42 | 06:47 07:24-07:25/1<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 15:28-15:38/10<br>16:40 11:26-12:38/72 | 07:53 16:49-16:53/4<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 15:24-15:41/17<br>16:42 11:26-12:38/72 | 07:50 16:51-16:54/3<br>17:47 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20 21:08-21:09/1<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 15:23-15:44/21 09:38-09:44/6<br>16:44 11:26-12:39/73 | 07:48 16:53-16:55/2<br>17:49 | 06:39 07:03-07:04/1<br>18:46 | 06:21<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 15:21-15:46/25 09:34-09:48/14<br>16:46 11:26-12:39/73 | 07:46 16:53-16:55/2<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 15:19-15:48/29 09:31-09:51/20<br>16:48 11:26-12:40/74 | 07:44 16:54-16:56/2<br>17:53 | 06:34<br>18:50 | 06:16<br>20:51 | 05:15<br>21:48 | 04:52<br>22:19 |
| 23 | 08:42 15:19-15:50/31 09:30-09:54/24<br>16:50 11:26-12:41/75 | 07:41 16:54-16:56/2<br>17:55 | 06:31<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 15:18-15:51/33 09:29-09:55/26<br>16:52 11:26-12:41/75 | 07:39 16:55-16:57/2<br>17:57 | 06:29 07:53-07:54/1<br>18:54 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 15:17-15:52/35 09:27-09:57/30<br>16:54 11:26-12:41/75 | 07:36 16:55-16:56/1<br>17:59 | 06:26 07:51-07:54/3<br>18:56 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 15:17-15:55/38 09:27-09:59/32<br>16:56 11:27-12:42/75 | 07:34 16:56-16:57/1<br>18:01 | 06:23 07:50-07:55/5<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 15:16-15:56/40 09:26-10:00/34<br>16:58 11:26-12:43/77 | 07:32 16:56-16:57/1<br>18:03 08:13-08:28/15 | 06:21 07:47-07:56/9<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 15:15-15:56/41 09:25-10:01/36<br>17:00 11:26-12:43/77 | 07:29 16:56-16:58/2<br>18:05 08:10-08:32/22 | 06:18 07:44-07:57/13<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 15:14-15:57/43 09:24-10:02/38<br>17:02 11:26-12:43/77 | | 07:16 08:48-08:55/7<br>20:04 | 06:00<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 15:14-15:59/45 09:24-10:03/39<br>17:04 11:26-12:43/77 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 15:13-16:03/50 09:23-10:04/41<br>17:06 11:27-12:43/76 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 2946 | 197 | 189 | 0 | 3 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 21:02-21:03/1<br>21:40 | 06:38<br>20:30 | 07:35 08:02-08:14/12<br>19:12 | 07:37 15:45-15:48/3<br>16:58 | 08:35 11:08-12:14/66<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 08:04-08:15/11<br>19:10 | 07:39 15:43-15:47/4<br>16:56 08:50-08:51/1 | 08:37 11:09-12:14/65<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 08:06-08:16/10<br>19:07 | 07:41 15:42-15:46/4<br>16:54 08:50-08:51/1 | 08:38 11:10-12:14/64<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 08:08-08:17/9<br>19:05 | 07:43 15:41-15:46/5<br>16:52 08:51-08:52/1 | 08:40 11:11-12:15/64<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 08:10-08:19/9<br>19:02 | 07:45 15:39-15:44/5<br>16:50 08:51-08:52/1 | 08:42 11:11-12:14/63<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 08:14-08:21/7<br>18:59 | 07:47 15:37-15:43/6<br>16:48 08:51-08:53/2 | 08:43 11:12-12:14/62<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:23/3<br>18:57 | 07:49 15:34-15:41/7<br>16:46 08:51-08:53/2 | 08:44 11:12-12:14/62<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 17:32-17:33/1<br>18:54 | 07:51 15:33-15:41/8<br>16:44 08:53-08:55/2 | 08:46 11:14-12:15/61<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 15:29-15:39/10<br>16:42 08:53-08:55/2 | 08:47 11:14-12:14/60<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 17:31-17:32/1<br>18:49 08:36-08:41/5 | 07:55 15:28-15:36/8<br>16:40 08:53-08:56/3 | 08:48 11:15-12:15/60<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 17:30-17:31/1<br>18:47 08:38-08:42/4 | 07:57 15:27-15:34/7<br>16:38 08:54-08:57/3 | 08:50 11:16-12:15/59<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 17:29-17:31/2<br>18:44 08:39-08:45/6 | 07:59 15:27-15:31/4<br>16:36 08:56-08:59/3 | 08:51 11:16-12:15/59<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 17:29-17:30/1<br>18:42 08:41-08:48/7 | 08:01 15:26-15:29/3<br>16:34 08:56-09:00/4 | 08:52 11:17-12:15/58<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02 07:59-08:04/5<br>19:56 | 08:00 17:28-17:30/2 08:44-08:55/11<br>18:39 09:00-09:04/4 | 08:03 15:25-15:28/3<br>16:33 08:57-09:01/4 | 08:53 11:18-12:15/57<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04 07:55-08:07/12<br>19:54 | 08:02 17:29-17:30/1<br>18:37 08:48-09:00/12 | 08:05 15:23-15:27/4<br>16:31 08:58-09:03/5 | 08:54 11:18-12:15/57<br>16:04 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06 07:53-08:09/16<br>19:51 | 08:04 17:28-17:29/1<br>18:35 | 08:07 15:23-15:27/4<br>16:29 09:00-09:05/5 | 08:55 11:19-12:15/56<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 07:51-08:10/19<br>19:48 | 08:06 17:27-17:28/1<br>18:32 | 08:09 15:21-15:26/5 09:01-09:07/6<br>16:28 09:30-09:31/1 | 08:56 11:20-12:16/56<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 07:50-08:11/21<br>19:46 | 08:08 17:26-17:28/2<br>18:30 | 08:11 15:19-15:25/6 09:03-09:10/7<br>16:26 09:27-09:29/2 | 08:56 11:21-12:16/55<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 07:48-08:10/22<br>19:43 | 08:10 17:25-17:27/2<br>18:27 | 08:13 15:17-15:24/7 09:24-09:28/4<br>16:25 14:53-14:54/1 09:04-09:13/9 | 08:57 11:21-12:17/56<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 07:48-08:11/23<br>19:41 | 08:12 17:24-17:26/2<br>18:25 | 08:15 15:15-15:23/8 09:06-09:26/20<br>16:23 14:54-14:57/3 | 08:58 11:21-12:17/56<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 07:47-08:10/23<br>19:38 | 08:14 17:23-17:25/2<br>18:23 | 08:17 15:12-15:22/10 11:02-11:03/1<br>16:22 14:57-15:02/5 09:10-09:25/15 | 08:59 11:22-12:18/56<br>16:05 |
| 22 | 05:23 21:18-21:19/1<br>21:57 | 06:19<br>20:54 | 07:18 07:47-08:10/23<br>19:35 | 08:16 17:23-17:25/2<br>18:20 | 08:19 14:59-15:21/22 09:14-09:21/7<br>16:20 11:02-11:03/1 | 08:59 11:22-12:17/55<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 07:47-08:09/22<br>19:33 | 08:18 17:21-17:24/3<br>18:18 | 08:21 15:01-15:19/18<br>16:19 11:03-11:04/1 | 09:00 11:23-12:19/56<br>16:06 |
| 24 | 05:26 21:18-21:19/1<br>21:54 | 06:23<br>20:49 | 07:21 07:49-08:08/19<br>19:30 | 08:20 17:19-17:23/4<br>18:16 | 08:23 15:05-15:16/11<br>16:18 11:03-11:05/2 | 09:00 11:23-12:19/56<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23 07:51-08:08/17<br>19:28 | 07:22 16:18-16:22/4<br>17:13 | 08:25 11:04-11:06/2<br>16:16 | 09:00 11:23-12:19/56<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 07:53-08:08/15<br>19:25 | 07:24 16:16-16:20/4<br>17:11 | 08:27 11:05-11:06/1<br>16:15 | 09:01 11:25-12:21/56<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 07:55-08:08/13<br>19:23 | 07:26 16:14-16:19/5<br>17:09 | 08:28 11:05-11:07/2<br>16:14 | 09:01 11:25-12:21/56<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 07:57-08:08/11<br>19:20 | 07:29 16:11-16:17/6<br>17:07 | 08:30 11:06-11:08/2<br>16:13 | 09:01 11:25-12:22/57<br>16:10 |
| 29 | 05:34<br>21:46 | 06:32<br>20:37 | 07:31 07:58-08:07/9<br>19:17 | 07:31 16:07-16:15/8<br>17:04 15:48-15:52/4 | 08:32 12:14-12:15/1<br>16:12 11:07-11:09/2 | 09:01 11:25-12:22/57<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:35 | 07:33 08:00-08:08/8<br>19:15 | 07:33 15:52-16:12/20<br>17:02 15:46-15:49/3 | 08:34 12:14-12:15/1<br>16:11 11:08-11:10/2 | 09:01 11:25-12:22/57<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | <br><br> | 07:35 15:56-16:08/12<br>17:00 15:45-15:48/3 | <br><br> | 09:01 11:25-12:23/58<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 2 | 1 | 278 | 207 | 309 | 1816 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 09:39-10:29/50<br>16:14 | 08:28 09:45-10:10/25<br>17:08 08:57-09:14/17 | 07:27<br>18:07 | 07:08 19:03-19:15/12<br>20:10 | 05:55 20:33-20:34/1<br>21:09 | 05:02<br>22:02 |
| 2 | 09:01 09:38-10:28/50<br>16:15 | 08:26 09:46-10:10/24<br>17:10 08:55-09:15/20 | 07:24<br>18:09 | 07:05 19:40-19:44/4<br>20:12 19:03-19:15/12 | 05:53 20:33-20:34/1<br>21:11 | 05:01<br>22:04 |
| 3 | 09:00 09:38-10:30/52<br>16:16 | 08:24 09:48-10:09/21<br>17:12 08:54-09:15/21 | 07:22<br>18:12 | 07:03 19:40-19:46/6<br>20:14 19:03-19:15/12 | 05:51 20:34-20:38/4<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 09:38-10:30/52<br>16:18 | 08:22 09:49-10:08/19<br>17:15 08:54-09:16/22 | 07:19<br>18:14 | 07:00 19:40-19:48/8<br>20:16 19:04-19:15/11 | 05:48 20:35-20:41/6<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 09:38-10:31/53<br>16:19 | 08:20 09:52-10:06/14<br>17:17 08:54-09:16/22 | 07:17<br>18:16 | 06:58 19:40-19:49/9<br>20:18 19:03-19:15/12 | 05:46 20:38-20:42/4<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:38-10:31/53<br>16:20 | 08:18 09:56-10:02/6<br>17:19 08:54-09:16/22 | 07:14<br>18:18 | 06:55 19:40-19:52/12<br>20:19 19:05-19:15/10 | 05:44 20:40-20:44/4<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 09:37-10:31/54<br>16:22 | 08:16 08:54-09:16/22<br>17:21 | 07:12<br>18:20 | 06:53 19:40-19:53/13<br>20:21 19:05-19:15/10 | 05:42 20:42-20:45/3<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 09:37-10:32/55<br>16:23 | 08:14 08:54-09:15/21<br>17:23 | 07:09<br>18:22 | 06:50 19:40-19:54/14<br>20:23 19:07-19:15/8 | 05:40 20:43-20:46/3<br>21:22 | 04:56<br>22:11 |
| 9 | 08:57 09:37-10:32/55<br>16:25 | 08:12 08:55-09:15/20<br>17:25 | 07:07<br>18:24 | 06:48 19:40-19:57/17<br>20:25 19:08-19:15/7 | 05:38 20:44-20:46/2<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 09:38-10:34/56<br>16:26 | 08:10 08:56-09:14/18<br>17:27 | 07:04<br>18:26 | 06:45 19:40-19:59/19<br>20:27 19:13-19:15/2 | 05:36 20:44-20:47/3<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 09:37-10:33/56<br>16:28 | 08:08 08:57-09:14/17<br>17:29 | 07:02<br>18:28 | 06:43 19:40-20:01/21<br>20:29 | 05:34 20:45-20:47/2<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:37-10:34/57<br>16:29 | 08:06 08:58-09:11/13<br>17:32 | 06:59<br>18:30 | 06:40 19:40-20:03/23<br>20:31 | 05:32 20:46-20:48/2<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 09:37-10:34/57<br>16:31 | 08:04 09:01-09:09/8<br>17:34 | 06:57<br>18:32 | 06:38 19:40-20:04/24<br>20:33 | 05:30 20:47-20:48/1<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 09:37-10:35/58<br>16:33 | 08:02<br>17:36 | 06:54<br>18:34 | 06:35 19:40-20:06/26<br>20:35 | 05:28 20:47-20:48/1<br>21:33 | 04:53<br>22:16 |
| 15 | 08:52 09:38-10:35/57<br>16:35 | 07:59<br>17:38 | 06:52<br>18:36 | 06:33 19:40-20:06/26<br>20:37 | 05:27 20:48-20:49/1<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 09:37-10:35/58<br>16:36 | 07:57<br>17:40 | 06:49<br>18:38 | 06:30 19:40-20:06/26<br>20:39 | 05:25 20:48-20:49/1<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:37-10:35/58<br>16:38 | 07:55<br>17:42 | 06:47<br>18:40 | 06:28 19:40-20:06/26<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:38-10:36/58<br>16:40 | 07:53<br>17:44 | 06:44<br>18:42 | 06:25 19:37-20:05/28<br>20:43 | 05:21 20:48-20:49/1<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 09:38-10:35/57<br>16:42 | 07:50<br>17:46 | 06:41<br>18:44 | 06:23 19:40-20:05/25<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:39-10:36/57<br>16:44 | 07:48<br>17:49 | 06:39<br>18:46 | 06:20 19:40-20:05/25<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 09:38-10:35/57<br>16:46 | 07:46<br>17:51 | 06:36<br>18:48 | 06:18 19:40-20:03/23<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 09:38-10:34/56<br>16:48 | 07:43<br>17:53 | 06:34<br>18:50 | 06:16 19:41-20:03/22<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:39-10:35/56<br>16:50 | 07:41<br>17:55 | 06:31 18:17-18:23/6<br>18:52 | 06:13 19:42-20:02/20<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:40-10:34/54<br>16:52 | 07:39<br>17:57 | 06:29 18:13-18:27/14<br>18:54 | 06:11 20:17-20:25/8<br>20:55 19:43-20:01/18 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:33/53<br>16:54 | 07:36<br>17:59 | 06:26 18:10-18:28/18<br>18:56 | 06:09 20:25-20:26/1<br>20:57 19:44-19:58/14 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:41-10:33/52<br>16:56 | 07:34<br>18:01 | 06:23 18:09-18:31/22<br>18:58 | 06:06 19:46-19:55/9<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:42-10:31/49<br>16:58 | 07:32<br>18:03 | 06:21 18:07-18:31/24<br>19:00 | 06:04 20:29-20:30/1<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 10:14-10:29/15 09:05-09:08/3<br>17:00 09:42-10:13/31 | 07:29<br>18:05 | 06:18 18:05-18:31/26<br>19:02 | 06:02 20:31-20:32/1<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 10:17-10:27/10 09:03-09:10/7<br>17:02 09:43-10:13/30 | | 07:16 19:05-19:32/27<br>20:04 | 05:59 20:32-20:33/1<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:43-10:12/29<br>17:04 09:01-09:12/11 | | 07:13 19:04-19:15/11<br>20:06 | 05:57 20:32-20:34/2<br>21:07 | 05:04<br>22:00 | 04:56<br>22:18 |
| 31 | 08:29 09:44-10:12/28<br>17:06 08:59-09:13/14 | | 07:11 19:04-19:15/11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1658 | 352 | 159 | 568 | 40 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:56-20:58/2<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:25-08:44/19<br>16:58 | 08:35 09:19-10:15/56<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41 20:55-20:57/2<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:24-08:45/21<br>16:56 | 08:37 09:20-10:16/56<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 20:54-20:57/3<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 08:24-08:45/21<br>16:54 | 08:38 09:21-10:16/55<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45 20:54-20:56/2<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 08:24-08:46/22<br>16:52 | 08:40 09:22-10:17/55<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47 20:53-20:56/3<br>21:32 | 06:45<br>20:19 | 07:42<br>19:02 | 07:45 09:25-09:32/7<br>16:49 08:24-08:46/22 | 08:41 09:22-10:17/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 20:51-20:54/3<br>21:30 | 06:47<br>20:17 | 07:44<br>18:59 | 07:47 09:21-09:36/15<br>16:47 08:23-08:46/23 | 08:43 09:24-10:17/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51 20:49-20:53/4<br>21:28 | 06:49<br>20:14 | 07:46<br>18:57 | 07:49 09:19-09:38/19<br>16:46 08:23-08:45/22 | 08:44 09:24-10:17/53<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 20:47-20:51/4<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 09:18-09:40/22<br>16:44 08:24-08:46/22 | 08:46 09:26-10:18/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 20:42-20:48/6<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 09:17-09:41/24<br>16:42 08:26-08:45/19 | 08:47 09:26-10:18/52<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 20:42-20:45/3<br>21:21 | 06:55<br>20:06 | 07:52<br>18:49 | 07:55 09:16-09:42/26<br>16:40 08:28-08:45/17 | 08:48 09:28-10:19/51<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 20:42-20:43/1<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 09:15-09:43/28<br>16:38 08:30-08:44/14 | 08:49 09:29-10:19/50<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 20:41-20:43/2<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 09:15-09:44/29<br>16:36 08:33-08:44/11 | 08:51 09:29-10:19/50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 20:40-20:41/1<br>21:15 | 07:00<br>19:59 | 07:58<br>18:42 | 08:01 09:49-09:59/10 08:35-08:42/7<br>16:34 09:14-09:45/31 | 08:52 09:30-10:19/49<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 20:39-20:41/2<br>21:13 | 07:02 19:21-19:22/1<br>19:56 | 08:00<br>18:39 | 08:03 09:46-10:01/15 08:37-08:40/3<br>16:33 09:14-09:45/31 | 08:53 09:31-10:19/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06 20:38-20:39/1<br>21:10 | 07:04 19:20-19:22/2<br>19:54 | 08:02<br>18:37 | 08:05 09:14-10:03/49<br>16:31 | 08:54 09:32-10:19/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 19:19-19:21/2<br>19:51 | 08:04<br>18:34 | 08:07 09:14-10:06/52<br>16:29 | 08:55 09:34-10:20/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 19:17-19:19/2<br>19:48 | 08:06<br>18:32 | 08:09 09:14-10:07/53<br>16:28 | 08:56 09:35-10:20/45<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 20:31-20:32/1<br>21:03 | 07:10 19:14-19:16/2<br>19:46 | 08:08<br>18:30 | 08:11 09:14-10:08/54<br>16:26 | 08:56 09:36-10:21/45<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13 20:23-20:30/7<br>21:01 | 07:12 19:10-19:14/4<br>19:43 | 08:10<br>18:27 | 08:13 09:13-10:09/56<br>16:25 | 08:57 09:37-10:22/45<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 19:02-19:11/9<br>19:41 | 08:12<br>18:25 | 08:15 09:13-10:09/56<br>16:23 | 08:58 09:37-10:21/44<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14<br>18:23 | 08:17 09:14-10:11/57<br>16:22 | 08:58 09:39-10:22/43<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16<br>18:20 | 08:19 09:15-10:12/57<br>16:20 | 08:59 09:39-10:22/43<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18<br>18:18 | 08:21 09:15-10:12/57<br>16:19 | 08:59 09:40-10:23/43<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20<br>18:16 | 08:23 09:15-10:13/58<br>16:18 | 09:00 09:39-10:24/45<br>16:06 |
| 25 | 05:27 20:59-21:00/1<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22<br>17:13 | 08:25 09:16-10:13/57<br>16:16 | 09:00 09:39-10:24/45<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26 20:08-20:09/1<br>20:44 | 07:25<br>19:25 | 07:24<br>17:11 | 08:27 09:16-10:14/58<br>16:15 | 09:01 09:40-10:25/45<br>16:08 |
| 27 | 05:31 20:59-21:00/1<br>21:49 | 06:28 20:07-20:08/1<br>20:42 | 07:27<br>19:22 | 07:26<br>17:09 | 08:28 09:17-10:14/57<br>16:14 | 09:01 09:40-10:26/46<br>16:09 |
| 28 | 05:33 20:58-20:59/1<br>21:47 | 06:30 20:06-20:07/1<br>20:39 | 07:29<br>19:20 | 07:28<br>17:06 | 08:30 09:17-10:15/58<br>16:13 | 09:01 09:39-10:26/47<br>16:10 |
| 29 | 05:34 20:58-20:59/1<br>21:45 | 06:32 20:05-20:07/2<br>20:37 | 07:31<br>19:17 | 07:30 08:29-08:40/11<br>17:04 | 08:32 09:18-10:15/57<br>16:12 | 09:01 09:39-10:27/48<br>16:10 |
| 30 | 05:36 20:58-20:59/1<br>21:44 | 06:34 20:04-20:05/1<br>20:34 | 07:33<br>19:15 | 07:33 08:27-08:41/14<br>17:02 | 08:33 09:19-10:16/57<br>16:11 | 09:01 09:38-10:27/49<br>16:11 |
| 31 | 05:38 20:57-20:58/1<br>21:42 | 06:36<br>20:32 | | 07:35 08:27-08:43/16<br>17:00 | | 09:01 09:38-10:27/49<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 6 | 53 | 22 | 41 | 1393 | 1510 |

Table layout: For each day in each month the following matrix apply

| Day in month | | |
|---|---|---|
| | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | | 05:55 | | 05:02 | 05:51-05:52/1 |
| | 16:14 | 17:08 | 18:07 | 20:09 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | | 05:53 | | 05:01 | 05:51-05:52/1 |
| | 16:15 | 17:10 | 18:09 | 20:11 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | | 05:51 | | 05:00 | 05:52-05:53/1 |
| | 16:16 | 17:12 | 18:11 | 20:13 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | | 05:48 | | 04:59 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | | 21:14 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 07:45-07:54/9 | 05:46 | | 04:58 | 05:51-05:52/1 |
| | 16:19 | 17:17 | 18:16 | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 07:40-07:59/19 | 05:44 | 06:43-06:45/2 | 04:57 | 05:51-05:52/1 |
| | 16:20 | 17:19 | 18:18 | 20:19 | | 21:18 | | 22:08 | |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 07:36-08:01/25 | 05:42 | 06:42-06:45/3 | 04:56 | |
| | 16:22 | 17:21 | 18:20 | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 07:34-08:04/30 | 05:40 | 06:41-06:45/4 | 04:56 | |
| | 16:23 | 17:23 | 18:22 | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 07:31-08:05/34 | 05:38 | 06:40-06:45/5 | 04:55 | 05:52-05:53/1 |
| | 16:25 | 17:25 | 18:24 | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 07:30-08:07/37 | 05:36 | 06:39-06:45/6 | 04:54 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | | 21:26 | | 22:12 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 07:28-08:07/39 | 05:34 | 06:38-07:15/37 | 04:54 | 05:52-05:53/1 |
| | 16:28 | 17:29 | 18:28 | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 07:27-08:08/41 | 05:32 | 06:38-07:15/37 | 04:53 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 07:05-07:11/6 | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 07:25-08:08/43 | 05:30 | 06:37-07:15/38 | 04:53 | 05:52-05:53/1 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 07:02-07:12/10 | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 07:24-08:09/45 | 05:28 | 06:36-07:15/39 | 04:53 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 07:00-07:13/13 | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 06:58-07:14/16 | 05:27 | 06:04-06:11/7 | 04:52 | |
| | 16:35 | 17:38 | 18:36 | 20:37 | | 21:35 | 06:37-07:15/38 | 22:16 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 06:55-07:14/19 | 05:25 | 06:00-06:14/14 | 04:52 | |
| | 16:36 | 17:40 | 18:38 | 20:39 | | 21:37 | 06:36-07:15/39 | 22:17 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 06:54-07:14/20 | 05:23 | 05:59-06:05/6 | 04:52 | |
| | 16:38 | 17:42 | 18:40 | 20:41 | | 21:39 | 06:36-07:15/39 | 22:17 | |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 06:53-07:14/21 | 05:21 | 05:57-06:02/5 | 04:52 | |
| | 16:40 | 17:44 | 18:42 | 20:43 | | 21:40 | 06:29-07:15/46 | 22:18 | |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 06:53-07:14/21 | 05:20 | 05:56-06:00/4 | 04:52 | |
| | 16:42 | 17:46 | 18:44 | 20:45 | | 21:42 | 06:26-07:15/49 | 22:18 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 06:54-07:13/19 | 05:18 | 05:55-05:58/3 | 04:52 | |
| | 16:44 | 17:48 | 18:46 | 20:47 | | 21:44 | 06:23-07:15/52 | 22:19 | |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 06:54-07:13/19 | 05:16 | 05:54-05:58/4 06:23-06:34/11 | 04:52 | |
| | 16:46 | 17:51 | 18:48 | 20:49 | | 21:46 | 06:51-07:15/24 | 22:19 | |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 06:54-07:11/17 | 05:15 | 05:53-05:56/3 06:54-07:39/45 | 04:52 | |
| | 16:48 | 17:53 | 18:50 | 20:51 | | 21:47 | 06:23-06:30/7 | 22:19 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 06:55-07:10/15 | 05:13 | 05:53-05:56/3 06:57-07:39/42 | 04:53 | |
| | 16:50 | 17:55 | 18:52 | 20:53 | | 21:49 | 06:25-06:28/3 | 22:19 | |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 06:57-07:09/12 | 05:12 | 05:53-05:55/2 | 04:53 | |
| | 16:52 | 17:57 | 18:54 | 20:55 | | 21:51 | 06:59-07:40/41 | 22:19 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 06:59-07:06/7 | 05:10 | 05:53-05:55/2 | 04:53 | |
| | 16:54 | 17:59 | 18:56 | 20:57 | | 21:52 | 07:00-07:39/39 | 22:19 | |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | | 05:09 | 05:52-05:54/2 | 04:54 | |
| | 16:56 | 18:01 | 18:58 | 20:59 | | 21:54 | 07:02-07:39/37 | 22:19 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | | 05:08 | 05:51-05:53/2 | 04:54 | |
| | 16:58 | 18:03 | 19:00 | 21:01 | | 21:55 | 07:03-07:40/37 | 22:19 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 07:03-07:13/10 | 05:06 | 05:51-05:53/2 | 04:55 | |
| | 17:00 | 18:05 | 19:02 | 21:03 | | 21:57 | 07:05-07:40/35 | 22:19 | |
| 29 | 08:33 | | 07:16 | 05:59 | 06:58-07:15/17 | 05:05 | 05:51-05:53/2 | 04:55 | |
| | 17:02 | | 20:04 | 21:05 | | 21:58 | 07:06-07:40/34 | 22:19 | |
| 30 | 08:31 | | 07:13 | 05:57 | 06:54-07:07/13 | 05:04 | 05:51-05:53/2 | 04:56 | |
| | 17:04 | | 20:06 | 21:07 | | 22:00 | 07:07-07:40/33 | 22:18 | |
| 31 | 08:29 | | 07:10 | | | 05:03 | 05:51-05:52/1 | | |
| | 17:06 | | 20:08 | | | 22:01 | 07:08-07:40/32 | | |
| Potential sun hours | 242 | 269 | 366 | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 577 | | 918 | | 8 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 06:49-06:53/4 | 06:38 07:27-07:31/4 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 07:52-07:58/6 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 06:49-06:53/4 | 06:40 07:28-07:33/5 | 07:36 | 07:39 | 08:37 |
| | 22:18 | 21:38 07:50-08:00/10 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 06:50-06:55/5 | 06:41 07:29-07:35/6 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 07:50-08:03/13 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 06:51-06:56/5 | 06:43 07:31-07:37/6 | 07:40 | 07:43 | 08:40 |
| | 22:17 | 21:34 07:49-08:05/16 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 05:57-05:58/1 | 05:47 06:52-06:57/5 | 06:45 07:33-07:41/8 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 07:48-08:07/19 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 06:52-06:58/6 | 06:47 07:49-07:54/5 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 07:46-08:08/22 | 20:17 07:35-07:48/13 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 06:53-07:00/7 | 06:49 07:40-07:49/9 | 07:46 | 07:49 | 08:44 |
| | 22:15 | 21:28 07:44-08:09/25 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 05:58-05:59/1 | 05:52 06:55-07:01/6 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 22:14 | 21:26 07:43-08:11/28 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 05:58-05:59/1 | 05:54 06:55-07:02/7 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:24 07:40-08:11/31 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 05:58-05:59/1 | 05:56 06:57-07:05/8 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 07:38-08:12/34 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 05:59-06:01/2 | 05:58 06:59-07:08/9 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 07:35-08:13/38 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 06:00-06:01/1 | 06:00 07:32-08:14/42 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 06:00-06:01/1 | 06:02 07:29-08:13/44 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 06:00-06:01/1 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 06:00-06:01/1 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 06:01-06:03/2 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 06:01-06:03/2 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 06:01-06:03/2 | 06:11 07:04-07:12/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 06:02-06:04/2 | 06:13 07:02-07:15/13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 06:02-06:05/3 | 06:15 07:25-07:26/1 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 06:35-06:37/2 | 20:59 07:01-07:16/15 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 06:04-06:06/2 | 06:17 07:25-07:26/1 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:59 06:35-06:40/5 | 20:56 07:00-07:17/17 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 06:04-06:07/3 | 06:19 07:24-07:25/1 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 06:33-06:42/9 | 20:54 06:58-07:17/19 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 06:05-06:08/3 | 06:21 07:24-07:26/2 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 06:33-06:47/14 | 20:52 06:57-07:17/20 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 06:06-06:09/3 | 06:23 07:24-07:26/2 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 06:34-06:48/14 | 20:49 06:57-07:17/20 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 06:07-06:11/4 | 06:24 07:24-07:26/2 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 06:37-06:49/12 | 20:47 06:57-07:17/20 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 06:08-06:13/5 | 06:26 07:25-07:27/2 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 06:41-06:49/8 | 20:44 06:57-07:17/20 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 06:25-06:26/1 06:47-06:50/3 | 06:28 07:24-07:27/3 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 06:10-06:17/7 | 20:42 06:57-07:16/19 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 06:12-06:23/11 | 06:30 07:25-07:27/2 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 06:46-06:50/4 | 20:39 06:59-07:15/16 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 06:47-06:51/4 | 06:32 07:25-07:28/3 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 07:01-07:14/13 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 06:48-06:52/4 | 06:34 07:26-07:29/3 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 07:03-07:13/10 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 06:48-06:52/4 | 06:36 07:27-07:31/4 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 07:05-07:11/6 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 143 | 636 | 56 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 21:11-21:26/15 | 04:57 05:52-05:56/4 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 05:39-05:48/9 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 21:11-21:27/16 | 04:57 05:40-05:56/16 | 05:41 | 06:40 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 21:11-21:28/17 | 04:58 21:39-21:40/1 | 05:43 | 06:42 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 05:42-05:55/13 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 21:12-21:29/17 | 04:59 05:43-05:54/11 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 21:11-21:30/19 | 05:00 05:44-05:52/8 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 21:11-21:31/20 | 05:01 05:48-05:49/1 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 21:12-21:32/20 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 05:40-05:46/6 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 21:11-21:33/22 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 05:37-05:47/10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 | 05:38 | 04:55 21:12-21:34/22 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 05:37-05:49/12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 21:12-21:34/22 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 05:35-05:50/15 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 | 05:34 | 04:54 21:12-21:35/23 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 05:35-05:51/16 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 21:13-21:35/22 05:35-05:43/8 | 05:08 | 06:00 | 06:59 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 05:50-05:52/2 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 21:12-21:35/23 05:35-05:42/7 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 05:52-05:53/1 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 | 06:35 | 05:28 | 04:53 21:13-21:35/22 05:34-05:41/7 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 05:52-05:53/1 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 21:13-21:35/22 05:34-05:40/6 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 05:53-05:54/1 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 21:13-21:36/23 05:34-05:40/6 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 05:54-05:55/1 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 21:14-21:36/22 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 05:34-05:40/6 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 21:14-21:36/22 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 05:34-05:40/6 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 21:14-21:36/22 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 05:34-05:40/6 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 21:14-21:36/22 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 05:34-05:40/6 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 21:14-21:36/22 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 05:34-05:40/6 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 21:15-21:37/22 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 05:35-05:41/6 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 21:15-21:37/22 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 05:35-05:41/6 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 21:15-21:37/22 05:35-05:41/6 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 05:56-05:57/1 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 21:15-21:16/1 | 04:53 21:16-21:38/22 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 05:36-05:42/6 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 21:14-21:18/4 | 04:54 21:15-21:38/23 05:36-05:42/6 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 05:56-05:57/1 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 21:13-21:19/6 | 04:54 21:16-21:39/23 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 05:37-05:43/6 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 21:13-21:21/8 | 04:55 21:16-21:38/22 05:37-05:43/6 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 05:56-05:57/1 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 21:12-21:22/10 | 04:55 21:16-21:39/23 05:38-05:45/7 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 05:55-05:57/2 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 21:12-21:24/12 | 04:56 21:16-21:38/22 05:38-05:46/8 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 05:54-05:56/2 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 21:12-21:25/13 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 54 | 829 | 63 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 08:39-08:40/1 | 07:08 07:54-08:02/8 | 05:55 06:41-06:43/2 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | 08:25 | 07:24 08:38-08:39/1 | 07:05 07:51-08:02/11 | 05:53 06:40-06:42/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | 08:24 | 07:22 08:38-08:39/1 | 07:03 07:48-08:00/12 | 05:50 06:39-06:41/2 | 05:00 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 08:37-08:38/1 | 07:00 07:46-07:58/12 | 05:48 06:38-06:41/3 | 04:59 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 07:43-07:58/15 | 05:46 06:37-06:40/3 | 04:58 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 07:40-07:57/17 | 05:44 06:37-06:41/4 | 04:57 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | 08:16 10:11-10:13/2 | 07:12 | 06:52 07:39-07:56/17 | 05:42 06:36-06:40/4 | 04:56 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 10:01-10:24/23 | 07:09 | 06:50 07:36-07:55/19 | 05:40 06:35-06:39/4 | 04:55 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 09:57-10:29/32 | 07:07 | 06:47 07:33-07:55/22 | 05:38 06:35-06:38/3 | 04:55 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | 08:10 09:53-10:32/39 | 07:04 | 06:45 07:30-07:54/24 | 05:36 06:34-06:37/3 | 04:54 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 09:50-10:35/45 | 07:02 | 06:42 07:29-07:54/25 | 05:34 06:33-06:36/3 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 09:03-09:15/12 | 06:59 | 06:40 07:27-07:54/27 | 05:32 06:33-06:36/3 | 04:53 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | 08:03 08:59-09:20/21 | 06:56 | 06:37 07:23-07:53/30 | 05:30 06:32-06:35/3 | 04:53 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 08:55-09:22/27 | 06:54 07:42-07:55/13 | 06:35 07:21-07:53/32 | 05:28 06:31-06:34/3 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 08:53-09:25/32 | 06:51 07:37-07:59/22 | 06:32 07:19-07:52/33 | 05:26 06:32-06:34/2 | 04:52 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 08:51-09:27/36 | 06:49 09:36-10:56/80 | 06:30 07:17-07:53/36 | 05:25 06:31-06:34/3 | 04:52 |
| | 16:36 | 17:40 | 18:38 07:33-08:01/28 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 08:49-09:28/39 | 06:46 09:35-10:56/81 | 06:27 07:14-07:53/39 | 05:23 06:30-06:33/3 | 04:52 |
| | 16:38 | 17:42 | 18:40 07:31-08:04/33 | 20:41 | 21:38 | 22:17 |
| 18 | 08:49 | 07:52 08:48-09:30/42 | 06:44 09:33-10:55/82 | 06:25 07:11-07:52/41 | 05:21 06:30-06:33/3 | 04:52 |
| | 16:40 | 17:44 | 18:42 07:29-08:05/36 | 20:43 | 21:40 | 22:18 |
| 19 | 08:47 | 07:50 08:47-09:30/43 | 06:41 09:32-10:54/82 | 06:23 07:10-07:53/43 | 05:19 06:30-06:32/2 | 04:52 |
| | 16:42 | 17:46 | 18:44 07:27-08:07/40 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 08:45-09:30/45 | 06:39 09:30-10:53/83 | 06:20 06:59-07:53/54 | 05:18 06:30-06:32/2 | 04:52 |
| | 16:44 | 17:48 | 18:46 07:24-08:08/44 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:45 08:44-09:30/46 | 06:36 09:28-10:52/84 | 06:18 06:54-07:53/59 | 05:16 06:30-06:32/2 | 04:52 |
| | 16:46 | 17:50 | 18:48 07:21-08:08/47 | 20:49 | 21:45 | 22:19 |
| 22 | 08:43 | 07:43 08:43-09:30/47 | 06:33 09:26-10:51/85 | 06:15 06:52-07:54/62 | 05:15 06:30-06:31/1 | 04:52 |
| | 16:47 | 17:53 | 18:50 07:19-08:10/51 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 08:42-09:30/48 | 06:31 09:23-10:49/86 | 06:13 06:50-07:54/64 | 05:13 06:30-06:31/1 | 04:52 |
| | 16:49 | 17:55 | 18:52 07:17-08:10/53 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:38 08:41-09:30/49 | 06:28 09:21-10:49/88 | 06:11 06:48-07:55/67 | 05:12 06:30-06:32/2 | 04:53 |
| | 16:51 | 17:57 | 18:54 07:14-08:11/57 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 08:41-09:30/49 | 06:26 09:19-10:47/88 | 06:08 06:46-07:55/69 | 05:10 06:29-06:31/2 | 04:53 |
| | 16:53 | 17:59 | 18:55 07:11-08:11/60 | 20:57 | 21:52 | 22:19 |
| 26 | 08:37 | 07:34 08:39-09:30/51 | 06:23 09:18-10:45/87 | 06:06 06:45-07:56/71 | 05:09 06:30-06:31/1 | 04:54 |
| | 16:55 | 18:01 | 18:57 07:08-08:10/62 | 20:59 | 21:53 | 22:19 |
| 27 | 08:36 | 07:31 08:39-09:30/51 | 06:21 09:19-10:44/85 | 06:04 06:44-07:57/73 | 05:07 06:30-06:31/1 | 04:54 |
| | 16:58 | 18:03 | 18:59 07:07-08:11/64 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 08:38-09:30/52 | 06:18 09:20-10:42/82 | 06:01 06:43-06:58/15 | 05:06 06:30-06:31/1 | 04:55 |
| | 17:00 | 18:05 | 19:01 07:04-08:11/67 | 21:03 07:14-07:58/44 | 21:56 | 22:19 |
| 29 | 08:33 | | 07:15 10:21-11:40/79 | 05:59 06:43-06:54/11 | 05:05 06:30-06:31/1 | 04:55 |
| | 17:02 | | 20:03 08:01-09:12/71 | 21:04 07:18-07:59/41 | 21:58 | 22:18 |
| 30 | 08:31 | | 07:13 10:21-11:38/77 | 05:57 06:42-06:51/9 | 05:04 | 04:56 |
| | 17:04 | | 20:05 07:58-09:12/74 | 21:06 07:21-08:00/39 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 10:22-11:36/74 | | 05:03 | |
| | 17:06 | | 20:07 07:57-09:12/75 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 831 | 2224 | 1141 | 69 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:39 06:43-06:47/4<br>21:39 | 06:38 08:07-08:08/1<br>20:29 07:28-07:34/6 | 07:34<br>19:12 | 07:36 09:23-10:01/38<br>16:58 | 08:35<br>16:10 |
| 2 | 04:57<br>22:17 | 05:41 06:43-06:46/3<br>21:38 | 06:39 08:04-08:08/4<br>20:27 07:29-07:36/7 | 07:36<br>19:09 | 07:38 09:27-09:58/31<br>16:55 | 08:36<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43 06:44-06:47/3<br>21:36 | 06:41 08:00-08:08/8<br>20:24 07:31-07:40/9 | 07:38<br>19:07 | 07:40 09:32-09:53/21<br>16:53 | 08:38<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45 06:45-06:48/3<br>21:34 | 06:43 07:51-08:08/17<br>20:22 07:34-07:49/15 | 07:40<br>19:04 | 07:43<br>16:51 | 08:40<br>16:07 |
| 5 | 05:00<br>22:16 | 05:47 06:45-06:48/3<br>21:32 | 06:45 07:35-08:07/32<br>20:19 | 07:42<br>19:02 | 07:45<br>16:49 | 08:41<br>16:07 |
| 6 | 05:01<br>22:15 | 05:48 06:46-06:50/4<br>21:30 | 06:47 07:36-08:07/31<br>20:16 | 07:44<br>18:59 | 07:47<br>16:47 | 08:43<br>16:06 |
| 7 | 05:02<br>22:14 | 05:50 06:47-06:50/3<br>21:27 | 06:49 07:38-08:07/29<br>20:14 | 07:46<br>18:57 | 07:49<br>16:45 | 08:44<br>16:05 |
| 8 | 05:03<br>22:13 | 05:52 06:48-06:51/3<br>21:25 | 06:51 07:41-08:07/26<br>20:11 | 07:48<br>18:54 | 07:51<br>16:43 | 08:45<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54 06:48-06:50/2<br>21:23 | 06:53 07:42-08:07/25<br>20:09 | 07:50<br>18:52 | 07:53<br>16:41 | 08:47<br>16:05 |
| 10 | 05:05<br>22:12 | 05:56 06:49-06:51/2<br>21:21 | 06:55 07:43-08:06/23<br>20:06 | 07:52 09:12-09:13/1<br>18:49 | 07:55<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:50-06:51/1<br>21:19 | 06:56 07:46-08:07/21<br>20:04 | 07:54 09:12-09:13/1<br>18:47 | 07:57<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08 06:39-06:40/1<br>22:10 | 06:00 06:49-06:51/2<br>21:17 | 06:58 07:48-08:07/19<br>20:01 | 07:56 09:12-09:13/1<br>18:44 | 07:59<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09 06:39-06:40/1<br>22:09 | 06:02 06:50-06:52/2<br>21:15 | 07:00 07:49-08:08/19<br>19:58 | 07:58 09:12-09:13/1<br>18:42 | 08:01<br>16:34 | 08:51<br>16:04 |
| 14 | 05:10 06:39-06:40/1<br>22:08 | 06:03 06:50-06:53/3<br>21:12 | 07:02 07:51-08:08/17<br>19:56 | 08:00 09:12-09:13/1<br>18:39 | 08:03<br>16:32 | 08:52<br>16:03 |
| 15 | 05:12<br>22:06 | 06:05 06:51-06:54/3<br>21:10 | 07:04 07:53-08:09/16<br>19:53 | 08:02 09:12-09:14/2<br>18:37 | 08:05<br>16:31 | 08:53<br>16:03 |
| 16 | 05:13<br>22:05 | 06:07 06:52-06:55/3<br>21:08 | 07:06 07:55-08:09/14<br>19:51 | 08:04 09:12-09:14/2<br>18:34 | 08:07<br>16:29 | 08:54<br>16:03 |
| 17 | 05:15 06:39-06:40/1<br>22:04 | 06:09 06:52-06:55/3<br>21:05 | 07:08 07:56-08:10/14<br>19:48 | 08:06 09:12-09:15/3<br>18:32 | 08:09<br>16:27 | 08:55<br>16:04 |
| 18 | 05:16 06:39-06:40/1<br>22:03 | 06:11 06:53-06:57/4<br>21:03 | 07:10 07:58-08:11/13<br>19:45 | 08:08 09:13-09:16/3<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18 06:40-06:41/1<br>22:01 | 06:13 06:54-06:59/5<br>21:01 | 07:11 08:00-08:12/12<br>19:43 | 08:10 09:14-09:17/3<br>18:27 | 08:13<br>16:24 | 08:57<br>16:04 |
| 20 | 05:19 06:40-06:41/1<br>22:00 | 06:15 06:56-07:01/5<br>20:58 | 07:13 08:03-08:14/11<br>19:40 | 08:12 09:14-09:18/4<br>18:25 10:08-10:11/3 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 05:21 06:39-06:41/2<br>21:58 | 06:17 06:57-07:03/6<br>20:56 | 07:15 08:04-08:15/11<br>19:38 | 08:14 09:15-09:19/4<br>18:22 10:06-10:12/6 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 05:22 06:40-06:42/2<br>21:57 | 06:19 07:13-07:16/3<br>20:54 06:59-07:10/11 | 07:17 08:06-08:17/11<br>19:35 | 08:16 09:15-09:20/5<br>18:20 10:05-10:13/8 | 08:19<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24 06:40-06:42/2<br>21:55 | 06:20 07:04-07:18/14<br>20:51 | 07:19 08:08-08:20/12<br>19:32 08:51-08:53/2 | 08:18 09:16-09:21/5<br>18:18 10:06-10:15/9 | 08:21<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26 06:40-06:43/3<br>21:54 | 06:22 07:14-07:20/6<br>20:49 | 07:21 08:10-08:22/12<br>19:30 08:46-08:50/4 | 08:20 09:18-09:24/6<br>18:15 10:08-10:18/10 | 08:22<br>16:17 | 09:00<br>16:06 |
| 25 | 05:27 06:40-06:42/2<br>21:52 | 06:24 07:15-07:23/8<br>20:46 | 07:23 08:41-08:49/8<br>19:27 08:11-08:27/16 | 07:22 08:20-08:26/6 09:09-09:20/11<br>17:13 10:15-10:17/2 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29 06:41-06:43/2<br>21:50 | 06:26 07:17-07:23/6<br>20:44 | 07:25 08:12-08:47/35<br>19:25 | 07:24 08:21-08:28/7 09:10-09:22/12<br>17:11 10:12-10:15/3 | 08:26<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31 06:42-06:44/2<br>21:49 | 06:28 07:19-07:25/6<br>20:42 | 07:27 08:14-08:44/30<br>19:22 | 07:26 08:52-08:54/2 10:09-10:13/4<br>17:08 08:23-08:32/9 09:12-09:25/13 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 05:32 06:41-06:44/3<br>21:47 | 06:30 07:21-07:27/6<br>20:39 | 07:29 08:17-08:41/24<br>19:20 | 07:28 08:45-08:51/6 10:05-10:11/6<br>17:06 08:25-08:38/13 09:13-09:28/15 | 08:30<br>16:13 | 09:01<br>16:09 |
| 29 | 05:34 06:42-06:45/3<br>21:45 | 06:32 07:22-07:29/7<br>20:37 | 07:31 08:20-08:37/17<br>19:17 | 07:30 08:29-08:48/19 09:16-09:33/17<br>17:04 10:01-10:09/8 | 08:31<br>16:12 | 09:01<br>16:10 |
| 30 | 05:36 06:42-06:45/3<br>21:43 | 06:34 07:24-07:31/7<br>20:34 | 07:32<br>19:14 | 07:32 08:34-08:43/9 09:18-09:39/21<br>17:02 09:55-10:07/12 | 08:33<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38 06:43-06:46/3<br>21:41 | 06:36 07:26-07:32/6<br>20:32 | <br> | 07:34 09:20-10:04/44<br>17:00 | <br> | 09:01<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 34 | 147 | 571 | 317 | 90 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | | February | | March | | April | May | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | | 08:27 | 15:49-16:21/32 | 07:26 | 17:32-17:39/7 | 07:08 | 05:55 | 05:01 |
| | 16:14 | | 17:08 | | 18:07 | | 20:09 | 21:08 | 22:02 |
| 2 | 09:00 | | 08:25 | 15:48-16:21/33 | 07:24 | 17:28-17:41/13 | 07:05 | 05:52 | 05:00 |
| | 16:15 | | 17:10 | | 18:09 | | 20:11 | 21:10 | 22:03 |
| 3 | 09:00 | | 08:23 | 15:48-16:22/34 | 07:21 | 17:27-17:43/16 | 07:02 | 05:50 | 04:59 |
| | 16:16 | | 17:12 | | 18:11 | | 20:13 | 21:12 | 22:04 |
| 4 | 08:59 | | 08:22 | 15:48-16:22/34 | 07:19 | 17:25-17:45/20 | 07:00 | 05:48 | 04:59 |
| | 16:17 | | 17:14 | | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | | 08:20 | 15:49-16:22/33 | 07:16 | 17:23-17:46/23 | 06:57 | 05:46 | 04:58 |
| | 16:19 | | 17:16 | | 18:15 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | | 08:18 | 15:49-16:23/34 | 07:14 | 17:23-17:47/24 | 06:55 | 05:44 | 04:57 |
| | 16:20 | | 17:18 | | 18:17 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 | | 08:16 | 15:49-16:23/34 | 07:11 | 17:21-17:47/26 | 06:52 | 05:42 | 04:56 |
| | 16:21 | | 17:21 | | 18:19 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | | 08:14 | 15:50-16:23/33 | 07:09 | 17:21-17:48/27 | 06:50 | 05:40 | 04:55 |
| | 16:23 | | 17:23 | | 18:21 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | | 08:12 | 15:49-16:22/33 | 07:06 | 17:21-17:47/26 | 06:47 | 05:38 | 04:55 |
| | 16:24 | | 17:25 | | 18:23 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:56 | | 08:10 | 15:50-16:21/31 | 07:04 | 17:21-17:48/27 | 06:45 | 05:36 | 04:54 |
| | 16:26 | | 17:27 | | 18:25 | | 20:27 | 21:25 | 22:12 |
| 11 | 08:55 | | 08:07 | 15:51-16:21/30 | 07:01 | 17:21-17:47/26 | 06:42 | 05:34 | 04:54 |
| | 16:28 | | 17:29 | | 18:27 | | 20:29 | 21:27 | 22:13 |
| 12 | 08:55 | | 08:05 | 15:52-16:21/29 | 06:59 | 17:20-17:46/26 | 06:40 | 05:32 | 04:53 |
| | 16:29 | | 17:31 | | 18:29 | | 20:31 | 21:29 | 22:14 |
| 13 | 08:54 | | 08:03 | 15:53-16:19/26 | 06:56 | 17:21-17:45/24 | 06:37 | 05:30 | 04:53 |
| | 16:31 | | 17:33 | | 18:31 | | 20:33 | 21:31 | 22:14 |
| 14 | 08:53 | | 08:01 | 15:54-16:18/24 | 06:54 | 17:22-17:44/22 | 06:35 | 05:28 | 04:53 |
| | 16:33 | | 17:35 | | 18:33 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | | 07:59 | 15:56-16:17/21 | 06:51 | 17:23-17:43/20 | 06:32 | 05:26 | 04:52 |
| | 16:34 | | 17:38 | | 18:35 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | | 07:57 | 15:58-16:14/16 | 06:49 | 17:25-17:40/15 | 06:30 | 05:25 | 04:52 |
| | 16:36 | | 17:40 | | 18:37 | | 20:39 | 21:36 | 22:16 |
| 17 | 08:50 | | 07:54 | 16:01-16:11/10 | 06:46 | 17:27-17:37/10 | 06:27 | 05:23 | 04:52 |
| | 16:38 | | 17:42 | | 18:39 | | 20:41 | 21:38 | 22:17 |
| 18 | 08:48 | | 07:52 | | 06:44 | | 06:25 | 05:21 | 04:52 |
| | 16:40 | | 17:44 | | 18:41 | | 20:43 | 21:40 | 22:17 |
| 19 | 08:47 | | 07:50 | | 06:41 | | 06:22 | 05:19 | 04:52 |
| | 16:42 | | 17:46 | | 18:43 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | | 07:48 | | 06:38 | | 06:20 | 05:18 | 04:52 |
| | 16:44 | | 17:48 | | 18:45 | | 20:47 | 21:43 | 22:18 |
| 21 | 08:45 | | 07:45 | | 06:36 | | 06:18 | 05:16 | 04:52 |
| | 16:45 | | 17:50 | | 18:47 | | 20:49 | 21:45 | 22:18 |
| 22 | 08:43 | 15:58-16:08/10 | 07:43 | | 06:33 | | 06:15 | 05:15 | 04:52 |
| | 16:47 | | 17:52 | | 18:49 | | 20:51 | 21:47 | 22:18 |
| 23 | 08:42 | 15:55-16:10/15 | 07:41 | | 06:31 | | 06:13 | 05:13 | 04:52 |
| | 16:49 | | 17:54 | | 18:51 | | 20:52 | 21:48 | 22:19 |
| 24 | 08:40 | 15:54-16:12/18 | 07:38 | | 06:28 | | 06:11 | 05:12 | 04:53 |
| | 16:51 | | 17:57 | | 18:53 | | 20:54 | 21:50 | 22:19 |
| 25 | 08:39 | 15:53-16:15/22 | 07:36 | | 06:26 | | 06:08 | 05:10 | 04:53 |
| | 16:53 | | 17:59 | | 18:55 | | 20:56 | 21:52 | 22:19 |
| 26 | 08:37 | 15:52-16:16/24 | 07:33 | | 06:23 | | 06:06 | 05:09 | 04:54 |
| | 16:55 | | 18:01 | | 18:57 | | 20:58 | 21:53 | 22:19 |
| 27 | 08:36 | 15:51-16:17/26 | 07:31 | | 06:20 | | 06:04 | 05:07 | 04:54 |
| | 16:57 | | 18:03 | | 18:59 | | 21:00 | 21:55 | 22:19 |
| 28 | 08:34 | 15:50-16:18/28 | 07:29 | | 06:18 | | 06:01 | 05:06 | 04:55 |
| | 16:59 | | 18:05 | | 19:01 | | 21:02 | 21:56 | 22:18 |
| 29 | 08:32 | 15:50-16:19/29 | | | 07:15 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | | | 20:03 | | 21:04 | 21:58 | 22:18 |
| 30 | 08:31 | 15:49-16:19/30 | | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | | | 20:05 | | 21:06 | 21:59 | 22:18 |
| 31 | 08:29 | 15:49-16:20/31 | | | 07:10 | | | 05:03 | |
| | 17:06 | | | | 20:07 | | | 22:00 | |
| Potential sun hours | 242 | | 269 | | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 233 | | 487 | | 352 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:39 | 06:37 | 07:34 18:01-18:25/24 | 07:36 | 08:35 |
| | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 04:57 | 05:41 | 06:39 | 07:36 18:00-18:26/26 | 07:38 | 08:36 |
| | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 17:59-18:26/27 | 07:40 | 08:38 |
| | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 17:59-18:25/26 | 07:42 | 08:39 |
| | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 17:57-18:24/27 | 07:44 | 08:41 |
| | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 05:01 | 05:48 | 06:47 | 07:44 17:57-18:23/26 | 07:46 | 08:42 |
| | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:23/26 | 07:49 15:52-15:53/1 | 08:44 |
| | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 17:59-18:23/24 | 07:51 | 08:45 |
| | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 17:59-18:22/23 | 07:53 15:51-15:52/1 | 08:46 |
| | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 05:05 | 05:56 | 06:54 | 07:52 18:00-18:19/19 | 07:55 15:50-15:51/1 | 08:48 |
| | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 05:07 | 05:58 | 06:56 | 07:54 18:01-18:16/15 | 07:57 15:50-15:52/2 | 08:49 |
| | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 18:03-18:14/11 | 07:59 15:49-15:51/2 | 08:50 |
| | 22:09 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 15:48-15:50/2 | 08:51 |
| | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 15:47-15:50/3 | 08:52 |
| | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 15:47-15:50/3 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 15:45-15:49/4 | 08:54 |
| | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 15:43-15:48/5 | 08:55 |
| | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 15:41-15:46/5 | 08:56 |
| | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 15:28-15:29/1 | 16:04 |
| 19 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 15:36-15:44/8 | 08:56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 15:29-15:34/5 | 16:04 |
| 20 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 15:33-15:43/10 | 08:57 |
| | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 15:30-15:42/12 | 08:24 | 09:00 |
| | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:11-18:18/7 | 07:24 15:28-15:45/17 | 08:26 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:07-18:21/14 | 07:26 15:25-15:47/22 | 08:28 | 09:00 |
| | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:30 | 07:28 18:05-18:23/18 | 07:28 15:23-15:48/25 | 08:29 | 09:00 |
| | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:30 18:03-18:24/21 | 07:30 15:22-15:49/27 | 08:31 | 09:00 |
| | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 | 07:32 18:02-18:25/23 | 07:32 15:22-15:50/28 | 08:33 | 09:00 |
| | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 83 | 405 | 53 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) WTG: 8 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 19:24-19:42/18 | 05:55 | 05:02 05:37-05:57/20 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 19:24-19:44/20 | 05:53 | 05:01 05:37-05:59/22 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 19:23-19:45/22 | 05:51 | 05:00 05:36-06:00/24 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:13 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:23-19:46/23 | 05:49 | 04:59 05:36-06:00/24 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 19:22-19:45/23 | 05:46 | 04:58 05:35-06:01/26 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:22-19:45/23 | 05:44 | 04:57 05:35-06:02/27 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 19:22-19:44/22 | 05:42 | 04:57 05:35-06:02/27 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:23-19:43/20 | 05:40 | 04:56 05:35-06:03/28 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 19:23-19:42/19 | 05:38 | 04:55 05:34-06:03/29 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 19:24-19:40/16 | 05:36 | 04:55 05:35-06:04/29 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 19:25-19:38/13 | 05:34 | 04:54 05:34-06:04/30 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 19:29-19:34/5 | 05:32 | 04:54 05:34-06:05/31 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 | 05:30 | 04:53 05:35-06:05/30 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:29 | 04:53 05:34-06:05/31 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:53 05:34-06:05/31 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 05:34-06:06/32 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:47 | 06:28 | 05:23 | 04:52 05:35-06:06/31 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 05:35-06:06/31 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 05:35-06:07/32 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 05:35-06:07/32 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 05:36-06:08/32 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 05:36-06:08/32 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 05:36-06:08/32 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 05:36-06:08/32 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 05:37-06:08/31 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 05:36-06:08/32 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 05:37-06:09/32 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:07 05:43-05:51/8 | 04:55 05:37-06:08/31 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 19:30-19:36/6 | 06:00 | 05:05 05:41-05:54/13 | 04:56 05:38-06:09/31 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 19:27-19:38/11 | 05:57 | 05:04 05:39-05:55/16 | 04:56 05:39-06:09/30 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:11 19:26-19:40/14 | | 05:03 05:38-05:56/18 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 0 | 31 | 224 | 55 | 882 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) WTG: 8 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 05:38-06:08/30 | 05:40 | 06:38 19:24-19:37/13 | 07:35 | 07:37 | 08:35 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 05:39-06:09/30 | 05:42 | 06:40 19:22-19:38/16 | 07:37 | 07:39 | 08:37 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:59 05:40-06:09/29 | 05:43 | 06:42 19:21-19:40/19 | 07:38 | 07:41 | 08:38 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 05:40-06:09/29 | 05:45 | 06:44 19:20-19:40/20 | 07:40 | 07:43 | 08:40 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 05:41-06:09/28 | 05:47 | 06:45 19:19-19:41/22 | 07:42 | 07:45 | 08:41 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 05:01 05:41-06:08/27 | 05:49 | 06:47 19:17-19:40/23 | 07:44 | 07:47 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 05:02 05:41-06:07/26 | 05:51 | 06:49 19:17-19:40/23 | 07:46 | 07:49 | 08:44 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 05:03 05:42-06:07/25 | 05:53 | 06:51 19:17-19:40/23 | 07:48 | 07:51 | 08:45 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 05:05 05:44-06:08/24 | 05:54 | 06:53 19:17-19:40/23 | 07:50 | 07:53 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 05:44-06:07/23 | 05:56 | 06:55 19:17-19:38/21 | 07:52 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 05:07 05:45-06:06/21 | 05:58 | 06:57 19:16-19:34/18 | 07:54 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 05:46-06:05/19 | 06:00 | 06:59 19:17-19:32/15 | 07:56 | 07:59 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 05:47-06:04/17 | 06:02 | 07:00 19:18-19:29/11 | 07:58 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 05:48-06:03/15 | 06:04 | 07:02 19:20-19:27/7 | 08:00 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 05:51-06:02/11 | 06:06 | 07:04 19:23-19:24/1 | 08:02 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 05:14 05:54-05:59/5 | 06:08 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 22:05 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 21:55 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 19:29-19:35/6 | | 07:35 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 359 | 6 | 255 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 17:07-17:35/28 | 07:08 07:32-07:46/14 | 05:55 | 05:02 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 17:07-17:36/29 | 07:05 07:30-07:48/18 | 05:53 | 05:01 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 17:06-17:35/29 | 07:03 07:27-07:49/22 | 05:51 | 05:00 |
| | 16:16 | 17:12 | 18:12 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 17:06-17:35/29 | 07:00 07:26-07:50/24 | 05:49 | 04:59 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 17:06-17:35/29 | 06:58 07:24-07:50/26 | 05:46 | 04:58 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 17:06-17:34/28 | 06:55 07:24-07:51/27 | 05:44 | 04:57 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 17:06-17:34/28 | 06:53 07:23-07:51/28 | 05:42 | 04:57 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 17:06-17:33/27 | 06:50 07:23-07:51/28 | 05:40 | 04:56 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 17:07-17:32/25 | 06:48 07:22-07:50/28 | 05:38 | 04:55 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 17:08-17:31/23 | 06:45 07:22-07:50/28 | 05:36 | 04:55 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 17:09-17:29/20 | 06:43 07:22-07:49/27 | 05:34 | 04:54 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 17:11-17:27/16 | 06:40 07:22-07:49/27 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 17:14-17:23/9 | 06:38 07:22-07:47/25 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:23-07:46/23 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 07:24-07:45/21 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 07:25-07:43/18 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 07:27-07:41/14 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 07:30-07:38/8 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 | 07:41 17:18-17:26/8 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 | 07:39 17:14-17:28/14 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:54 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 | 07:34 17:11-17:33/22 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 | 07:32 17:09-17:34/25 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 | 07:29 17:09-17:35/26 | 06:18 | 06:02 | 05:07 | 04:55 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 | | 07:16 | 06:00 | 05:05 | 04:56 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 | | 07:10 07:35-07:44/9 | | 05:03 | |
| | 17:06 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 0 | 113 | 329 | 406 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | | September | | October | | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | | 06:38 | 07:21-07:48/27 | 07:35 | 17:51-18:05/14 | 07:37 | 08:35 |
| | 22:18 | 21:40 | | 20:29 | | 19:12 | | 16:58 | 16:10 |
| 2 | 04:58 | 05:42 | | 06:40 | 07:20-07:48/28 | 07:37 | 17:49-18:07/18 | 07:39 | 08:37 |
| | 22:17 | 21:38 | | 20:27 | | 19:10 | | 16:56 | 16:09 |
| 3 | 04:59 | 05:43 | | 06:42 | 07:20-07:48/28 | 07:38 | 17:47-18:08/21 | 07:41 | 08:38 |
| | 22:17 | 21:36 | | 20:24 | | 19:07 | | 16:54 | 16:08 |
| 4 | 04:59 | 05:45 | | 06:43 | 07:20-07:48/28 | 07:40 | 17:45-18:09/24 | 07:43 | 08:40 |
| | 22:16 | 21:34 | | 20:22 | | 19:04 | | 16:52 | 16:08 |
| 5 | 05:00 | 05:47 | | 06:45 | 07:20-07:48/28 | 07:42 | 17:44-18:10/26 | 07:45 | 08:41 |
| | 22:16 | 21:32 | | 20:19 | | 19:02 | | 16:50 | 16:07 |
| 6 | 05:01 | 05:49 | | 06:47 | 07:19-07:46/27 | 07:44 | 17:43-18:10/27 | 07:47 | 08:43 |
| | 22:15 | 21:30 | | 20:17 | | 18:59 | | 16:48 | 16:06 |
| 7 | 05:02 | 05:51 | | 06:49 | 07:19-07:45/26 | 07:46 | 17:42-18:10/28 | 07:49 | 08:44 |
| | 22:14 | 21:28 | | 20:14 | | 18:57 | | 16:46 | 16:06 |
| 8 | 05:03 | 05:53 | | 06:51 | 07:20-07:44/24 | 07:48 | 17:41-18:10/29 | 07:51 | 08:45 |
| | 22:14 | 21:26 | | 20:12 | | 18:54 | | 16:44 | 16:05 |
| 9 | 05:05 | 05:54 | | 06:53 | 07:21-07:43/22 | 07:50 | 17:41-18:10/29 | 07:53 | 08:47 |
| | 22:13 | 21:23 | | 20:09 | | 18:52 | | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | | 06:55 | 07:23-07:42/19 | 07:52 | 17:41-18:10/29 | 07:55 | 08:48 |
| | 22:12 | 21:21 | | 20:06 | | 18:49 | | 16:40 | 16:05 |
| 11 | 05:07 | 05:58 | | 06:57 | 07:25-07:40/15 | 07:54 | 17:40-18:09/29 | 07:57 | 08:49 |
| | 22:11 | 21:19 | | 20:04 | | 18:47 | | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | | 06:59 | 07:26-07:36/10 | 07:56 | 17:40-18:09/29 | 07:59 | 08:50 |
| | 22:10 | 21:17 | | 20:01 | | 18:44 | | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | | 07:00 | | 07:58 | 17:41-18:08/27 | 08:01 | 08:52 |
| | 22:09 | 21:15 | | 19:59 | | 18:42 | | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | | 07:02 | | 08:00 | 17:41-18:07/26 | 08:03 | 08:53 |
| | 22:08 | 21:12 | | 19:56 | | 18:39 | | 16:33 | 16:04 |
| 15 | 05:12 | 06:06 | | 07:04 | | 08:02 | 17:42-18:05/23 | 08:05 | 08:54 |
| | 22:07 | 21:10 | | 19:53 | | 18:37 | | 16:31 | 16:04 |
| 16 | 05:14 | 06:08 | | 07:06 | | 08:04 | 17:43-18:03/20 | 08:07 | 08:54 |
| | 22:05 | 21:08 | | 19:51 | | 18:34 | | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | | 07:08 | | 08:06 | 17:45-18:02/17 | 08:09 | 08:55 |
| | 22:04 | 21:06 | | 19:48 | | 18:32 | | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | | 07:10 | | 08:08 | 17:47-17:59/12 | 08:11 | 08:56 |
| | 22:03 | 21:03 | | 19:46 | | 18:30 | | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | | 07:12 | | 08:10 | 17:52-17:55/3 | 08:13 | 08:57 |
| | 22:01 | 21:01 | | 19:43 | | 18:27 | | 16:25 | 16:04 |
| 20 | 05:20 | 06:15 | | 07:14 | | 08:12 | | 08:15 | 08:58 |
| | 22:00 | 20:59 | | 19:41 | | 18:25 | | 16:23 | 16:05 |
| 21 | 05:21 | 06:17 | | 07:16 | | 08:14 | | 08:17 | 08:58 |
| | 21:58 | 20:56 | | 19:38 | | 18:23 | | 16:22 | 16:05 |
| 22 | 05:23 | 06:19 | | 07:17 | | 08:16 | | 08:19 | 08:59 |
| | 21:57 | 20:54 | | 19:35 | | 18:20 | | 16:20 | 16:06 |
| 23 | 05:24 | 06:21 | | 07:19 | | 08:18 | | 08:21 | 08:59 |
| | 21:55 | 20:51 | | 19:33 | | 18:18 | | 16:19 | 16:06 |
| 24 | 05:26 | 06:23 | | 07:21 | | 08:20 | | 08:23 | 09:00 |
| | 21:54 | 20:49 | | 19:30 | | 18:16 | | 16:18 | 16:07 |
| 25 | 05:28 | 06:25 | 07:32-07:41/9 | 07:23 | | 07:22 | | 08:25 | 09:00 |
| | 21:52 | 20:47 | | 19:28 | | 17:13 | | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:29-07:44/15 | 07:25 | | 07:24 | | 08:26 | 09:00 |
| | 21:50 | 20:44 | | 19:25 | | 17:11 | | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:26-07:45/19 | 07:27 | | 07:26 | | 08:28 | 09:01 |
| | 21:49 | 20:42 | | 19:22 | | 17:09 | | 16:14 | 16:09 |
| 28 | 05:33 | 06:30 | 07:25-07:46/21 | 07:29 | | 07:28 | | 08:30 | 09:01 |
| | 21:47 | 20:39 | | 19:20 | | 17:07 | | 16:13 | 16:10 |
| 29 | 05:34 | 06:32 | 07:24-07:47/23 | 07:31 | | 07:30 | | 08:32 | 09:01 |
| | 21:45 | 20:37 | | 19:17 | | 17:04 | | 16:12 | 16:11 |
| 30 | 05:36 | 06:34 | 07:23-07:48/25 | 07:33 | 17:56-18:00/4 | 07:32 | | 08:33 | 09:01 |
| | 21:43 | 20:34 | | 19:15 | | 17:02 | | 16:11 | 16:12 |
| 31 | 05:38 | 06:36 | 07:22-07:49/27 | | | 07:34 | | | 09:01 |
| | 21:42 | 20:32 | | | | 17:00 | | | 16:13 |
| Potential sun hours | 521 | 465 | | 383 | | 326 | | 253 | 224 |
| Sum of minutes with flicker | 0 | 139 | | 286 | | 431 | | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 18:30-19:17/47 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 18:30-19:10/40 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 18:30-19:17/47 | 05:53 | 05:01 | 04:58 | 05:41 | 06:40 18:29-19:10/41 | 07:37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | 22:17 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 18:30-19:16/46 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 18:28-19:11/43 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 18:30-19:17/47 | 05:49 | 04:59 | 04:59 | 05:45 | 06:43 18:27-19:11/44 | 07:40 | 07:43 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 08:59 | 08:20 | 07:17 | 06:58 18:29-19:16/47 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 18:27-19:12/45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 18:30-19:16/46 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 18:25-19:11/46 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 18:29-19:15/46 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 18:24-19:11/47 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 18:30-19:14/44 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 18:24-19:11/47 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:48 18:30-19:13/43 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 18:24-19:11/47 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 18:31-19:12/41 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 18:24-19:10/46 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 | 07:02 | 06:43 18:31-19:11/40 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 18:23-19:09/46 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 18:32-19:10/38 | 05:32 | 04:54 | 05:08 | 06:00 06:56-07:01/5 | 06:59 18:23-19:09/46 | 07:56 | 07:59 | 08:50 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:38 18:33-19:08/35 | 05:30 | 04:53 | 05:09 | 06:02 06:53-07:04/11 | 07:00 18:23-19:08/45 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 18:34-19:07/33 | 05:29 | 04:53 | 05:11 | 06:04 06:51-07:05/14 | 07:02 18:23-19:07/44 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 18:36-19:05/29 | 05:27 | 04:53 | 05:12 | 06:06 06:50-07:06/16 | 07:04 18:23-19:07/44 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 18:37-19:03/26 | 05:25 | 04:52 | 05:14 | 06:07 06:49-07:07/18 | 07:06 18:24-19:06/42 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 06:55-06:57/2 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 18:40-19:00/20 | 05:23 | 04:52 | 05:15 | 06:09 06:48-07:08/20 | 07:08 18:23-19:04/41 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 06:53-07:00/7 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 18:43-18:56/13 | 05:21 | 04:52 | 05:16 | 06:11 06:47-07:07/20 | 07:10 18:24-19:02/38 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 06:51-07:01/10 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 06:48-07:01/13 | 05:20 | 04:52 | 05:18 | 06:13 06:47-07:08/21 | 07:12 18:25-19:01/36 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 17:49-18:06/17 | 06:20 06:46-07:02/16 | 05:18 | 04:52 | 05:19 | 06:15 06:46-07:08/22 | 07:14 18:26-18:59/33 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 | 06:36 17:46-18:09/23 | 06:18 06:44-07:03/19 | 05:16 | 04:52 | 05:21 | 06:17 06:47-07:08/21 | 07:16 18:28-18:57/29 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:58 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 17:43-18:11/28 | 06:16 06:41-07:02/21 | 05:15 | 04:53 | 05:23 | 06:19 06:49-07:07/18 | 07:17 18:30-18:55/25 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:40-18:12/32 | 06:13 06:41-07:02/21 | 05:13 | 04:53 | 05:24 | 06:21 06:50-07:06/16 | 07:19 18:32-18:52/20 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 17:39-18:14/35 | 06:11 06:41-07:02/21 | 05:12 | 04:53 | 05:26 | 06:23 06:52-07:05/13 | 07:21 18:37-18:46/9 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 | 07:36 | 06:26 17:37-18:15/38 | 06:09 06:41-07:02/21 | 05:11 | 04:53 | 05:28 | 06:25 18:46-19:00/14 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 06:54-07:04/10 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 17:36-18:16/40 | 06:06 06:41-07:00/19 | 05:09 | 04:54 | 05:29 | 06:26 18:43-19:03/20 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 06:56-07:02/6 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 17:34-18:16/42 | 06:04 06:41-07:00/19 | 05:08 | 04:54 | 05:31 | 06:28 18:39-19:05/26 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 06:57-06:59/2 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 17:33-18:16/43 | 06:02 06:42-06:59/17 | 05:06 | 04:55 | 05:33 | 06:30 18:37-19:06/29 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:10 |
| 29 | 08:33 | | 07:16 18:33-19:17/44 | 05:59 06:44-06:57/13 | 05:05 | 04:56 | 05:34 | 06:32 18:35-19:08/33 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 | | 07:13 18:31-19:17/46 | 05:57 06:45-06:55/10 | 05:04 | 04:56 | 05:36 | 06:34 18:34-19:09/35 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 18:31-19:17/46 | | 05:03 | | 05:38 | 06:36 18:32-19:10/38 | | 07:34 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 434 | 917 | 0 | 0 | 0 | 428 | 944 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | | 07:08 | 07:32-07:39/7 | 05:55 | | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:00 | 08:26 | 07:24 | | 07:05 | 07:30-07:38/8 | 05:53 | 06:20-06:22/2 | 05:00 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:10 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:27-07:36/9 | 05:50 | 06:18-06:24/6 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:25-07:33/8 | 05:48 | 06:16-06:24/8 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 08:59 | 08:20 | 07:17 | | 06:58 | 07:22-07:32/10 | 05:46 | 06:14-06:25/11 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:20-07:31/11 | 05:44 | 06:12-06:25/13 | 04:57 |
| | 16:20 | 17:19 | 18:17 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:58 | 08:16 | 07:12 | | 06:52 | 07:17-07:28/11 | 05:42 | 06:10-06:25/15 | 04:56 |
| | 16:21 | 17:21 | 18:19 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:17-07:23/6 | 05:40 | 06:08-06:25/17 | 04:55 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:10 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | | 05:38 | 06:07-06:25/18 | 04:55 |
| | 16:24 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | | 05:36 | 06:07-06:24/17 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | | 05:34 | 06:07-06:24/17 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | | 05:32 | 06:08-06:24/16 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | | 05:30 | 06:08-06:23/15 | 04:53 |
| | 16:31 | 17:33 | 18:32 | | 20:33 | | 21:31 | | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | | 05:28 | 06:09-06:22/13 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:15 |
| 15 | 08:52 | 07:59 | 06:51 | | 06:32 | | 05:26 | 06:11-06:21/10 | 04:52 |
| | 16:34 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | | 05:25 | 06:12-06:19/7 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:27 | | 05:23 | | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 |
| 18 | 08:49 | 07:52 | 06:44 | | 06:25 | | 05:21 | | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | | 22:18 |
| 19 | 08:47 | 07:50 | 06:41 | | 06:23 | | 05:19 | | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | | 05:18 | | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | | 05:16 | | 04:52 |
| | 16:46 | 17:50 | 18:48 | | 20:49 | | 21:46 | | 22:19 |
| 22 | 08:44 | 07:43 | 06:33 | | 06:15 | | 05:15 | | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | | 05:13 | | 04:52 |
| | 16:49 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | | 05:12 | | 04:53 |
| | 16:51 | 17:57 | 18:54 | | 20:55 | | 21:50 | | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | | 06:08 | | 05:10 | | 04:53 |
| | 16:53 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | | 06:06 | | 05:09 | | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | | 06:04 | | 05:07 | | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | | 06:01 | | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:01 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:15 | | 05:59 | | 05:05 | | 04:55 |
| | 17:02 | | 20:03 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:37-07:40/3 | 05:57 | | 05:04 | | 04:56 |
| | 17:04 | | 20:05 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:35-07:40/5 | | | 05:03 | | |
| | 17:06 | | 20:07 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 8 | | 70 | | 185 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:39 | 06:18-06:34/16 | 06:38 | | 07:34 | 07:36 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:17-06:34/17 | 06:39 | | 07:36 | 07:39 | 08:37 |
| | 22:17 | | 21:38 | | 20:27 | | 19:09 | 16:55 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:17-06:35/18 | 06:41 | | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:17-06:35/18 | 06:43 | 07:14-07:20/6 | 07:40 | 07:43 | 08:40 |
| | 22:16 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:18-06:34/16 | 06:45 | 07:14-07:25/11 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:20-06:34/14 | 06:47 | 07:15-07:26/11 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:22-06:34/12 | 06:49 | 07:17-07:27/10 | 07:46 | 07:49 | 08:44 |
| | 22:14 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:05 |
| 8 | 05:03 | | 05:52 | 06:24-06:34/10 | 06:51 | 07:19-07:27/8 | 07:48 | 07:51 | 08:45 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:25-06:33/8 | 06:53 | 07:21-07:30/9 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:41 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:27-06:32/5 | 06:55 | 07:23-07:32/9 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:29-06:30/1 | 06:56 | 07:24-07:31/7 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | | 06:58 | 07:26-07:31/5 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | | 07:00 | 07:28-07:31/3 | 07:58 | 08:01 | 08:51 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:10 | | 06:03 | | 07:02 | | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:03 |
| 15 | 05:12 | | 06:05 | | 07:04 | | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | | 06:07 | | 07:06 | | 08:04 | 08:07 | 08:54 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:03 |
| 17 | 05:15 | | 06:09 | | 07:08 | | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:27 | 16:04 |
| 18 | 05:16 | | 06:11 | | 07:10 | | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:29 | 16:26 | 16:04 |
| 19 | 05:18 | | 06:13 | | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:01 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | | 06:15 | | 07:13 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | | 06:17 | | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:58 | | 20:56 | | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | | 06:19 | | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | | 06:21 | | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | | 06:22 | | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | | 06:24 | | 07:23 | | 07:22 | 08:24 | 09:00 |
| | 21:52 | | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | | 06:26 | | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:50 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:25-06:27/2 | 06:28 | | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:08 | 16:14 | 16:08 |
| 28 | 05:32 | 06:22-06:30/8 | 06:30 | | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:20-06:32/12 | 06:32 | | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:19-06:32/13 | 06:34 | | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | | 20:34 | | 19:14 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:18-06:33/15 | 06:36 | | | | 07:34 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 50 | | 135 | | 79 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 06:32-06:38/6 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 06:39-06:47/8 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 06:37-06:48/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 06:36-06:49/13 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 06:36-06:49/13 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 06:38-06:50/12 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 06:39-06:49/10 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 06:41-06:49/8 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 06:43-06:49/6 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 06:45-06:48/3 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 06:39-06:42/3 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 06:37-06:43/6 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 06:34-06:42/8 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 06:32-06:42/10 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 06:30-06:42/12 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 06:28-06:42/14 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 06:29-06:41/12 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 06:30-06:40/10 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 75 | 6 | 0 | 0 | 84 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:27 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 07:06-07:11/5 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 07:08-07:09/1 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:04 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 07:10-07:11/1 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 07:07-07:12/5 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 07:05-07:13/8 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 07:02-07:13/11 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 07:00-07:14/14 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 06:57-07:13/16 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 06:56-07:13/17 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 06:56-07:13/17 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 07:08-07:10/2 | 06:25 06:56-07:11/15 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 07:06-07:10/4 | 06:23 06:57-07:10/13 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 07:42-07:49/7 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:03-07:09/6 | 06:20 06:59-07:09/10 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 07:41-07:50/9 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:01-07:08/7 | 06:18 07:01-07:04/3 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 07:43-07:51/8 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:33 06:58-07:05/7 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 07:05-07:10/5 | 07:17 07:45-07:52/7 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 06:55-07:04/9 | 06:13 | 05:13 | 04:52 | 05:24 | 06:21 07:02-07:13/11 | 07:19 07:47-07:53/6 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 06:55-07:03/8 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 07:01-07:14/13 | 07:21 07:49-07:54/5 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 07:00-07:15/15 | 07:23 07:51-07:53/2 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 06:58-07:15/17 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 06:57-07:15/18 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 06:59-07:15/16 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 07:01-07:15/14 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 07:03-07:14/11 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:07 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 07:04-07:12/8 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 43 | 130 | 0 | 0 | 0 | 128 | 50 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:27-10:41/14 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 10:29-10:41/12 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 10:30-10:40/10 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 10:32-10:40/8 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 10:34-10:37/3 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | 10:22-10:24/2 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | 10:19-10:27/8 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | 10:19-10:29/10 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | 10:18-10:30/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | 10:18-10:31/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | 10:18-10:33/15 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | 10:18-10:33/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | 10:18-10:34/16 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:18-10:35/17 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:18-10:36/18 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:19-10:37/18 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:39-10:43/4 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | 10:19-10:37/18 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:38-10:43/5 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | 10:19-10:37/18 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:20-10:44/24 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:19-10:44/25 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:20-10:45/25 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:21-10:45/24 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:41-10:46/5 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | 10:22-10:40/18 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:42-10:46/4 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | 10:22-10:40/18 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:43-10:45/2 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | 10:23-10:40/17 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:23-10:41/18 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 | 10:24-10:41/17 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | 10:25-10:41/16 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | 10:26-10:41/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | 10:27-10:42/15 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 | |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 | |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 | |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 | |
| 3 | 09:00 | 08:24 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 | |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 | |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 | |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 | |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 | |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 | |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 | |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 | |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 | |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 | |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 | |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 | |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 | |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 | |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 | |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 | |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 | |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 | |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 | |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 | |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 | |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 | |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 | |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 | |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 | 10:05-10:06/1 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 | |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 | 10:04-10:08/4 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 | |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 | 10:04-10:10/6 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 | |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 | 10:04-10:11/7 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 | |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 | 10:04-10:11/7 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 | |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 | 10:04-10:12/8 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 | |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 | 10:04-10:12/8 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 | |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 | 10:05-10:13/8 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 | |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 | 10:05-10:13/8 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 | |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 | 10:06-10:14/8 |
| | 16:52 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 | |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 | 10:07-10:14/7 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 | |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 | 10:08-10:14/6 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 | |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 | 10:09-10:13/4 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:09 | |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 | 10:10-10:13/3 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 | |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 | |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 | |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 | |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 | |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 | |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:14 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 20:14-20:15/1 | 05:01 | 04:56 | 05:39 | 06:37 19:28-19:55/27 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:28-19:54/26 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:28-19:54/26 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:38-19:47/9 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:28-19:52/24 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:36-19:49/13 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:31-19:45/14 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 19:31-19:55/24 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:33-19:42/9 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 19:30-19:56/26 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 19:29-19:55/26 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 | 06:42 19:29-19:56/27 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 19:28-19:55/27 | 05:32 | 04:53 | 05:08 | 06:00 20:21-20:26/5 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 19:28-19:55/27 | 05:30 | 04:53 | 05:09 | 06:01 20:18-20:29/11 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 19:29-19:55/26 | 05:28 | 04:52 | 05:10 | 06:03 20:17-20:30/13 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 19:28-19:54/26 | 05:26 | 04:52 | 05:12 | 06:05 20:16-20:31/15 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 19:29-19:53/24 | 05:24 | 04:52 | 05:13 | 06:07 20:14-20:31/17 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 19:29-19:52/23 | 05:23 | 04:52 | 05:15 | 06:09 20:13-20:32/19 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 19:30-19:51/21 | 05:21 | 04:52 | 05:16 | 06:11 20:13-20:32/19 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 20:11-20:16/5 | 05:19 | 04:52 | 05:18 | 06:13 20:13-20:30/17 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 19:31-19:50/19 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 20:09-20:17/8 | 05:18 | 04:52 | 05:19 | 06:15 20:12-20:27/15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 19:32-19:47/15 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 20:08-20:19/11 | 05:16 | 04:52 | 05:21 | 06:17 20:12-20:25/13 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 19:35-19:44/9 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 20:08-20:21/13 | 05:15 | 04:52 | 05:22 | 06:18 20:13-20:23/10 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 19:39-19:50/11 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 20:08-20:23/15 | 05:13 | 04:52 | 05:24 | 06:20 20:14-20:21/7 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 19:37-19:52/15 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 20:07-20:24/17 | 05:12 | 04:53 | 05:25 | 06:22 20:15-20:19/4 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 19:35-19:54/19 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 20:07-20:25/18 | 05:10 | 04:53 | 05:27 | 06:24 19:32-19:54/22 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 20:07-20:25/18 | 05:09 | 04:53 | 05:29 | 06:26 19:31-19:55/24 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 20:08-20:24/16 | 05:07 | 04:54 | 05:31 | 06:28 19:31-19:55/24 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 20:08-20:24/16 | 05:06 | 04:54 | 05:32 | 06:30 19:30-19:56/26 | 07:28 | 07:28 | 08:30 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 20:09-20:21/12 | 05:05 | 04:55 | 05:34 | 06:32 19:29-19:56/27 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 20:10-20:20/10 | 05:04 | 04:56 | 05:36 | 06:34 19:28-19:55/27 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:28-19:55/27 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 538 | 1 | 0 | 0 | 387 | 163 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 18 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 17:22-17:39/17 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:21-17:41/20 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 17:21-17:43/22 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:04-18:14/10 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 17:20-17:43/23 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:01-18:16/15 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 17:20-17:42/22 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 17:59-18:17/18 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 17:20-17:42/22 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 17:58-18:17/19 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:20-17:41/21 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 17:57-18:18/21 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:21-17:40/19 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 17:56-18:18/22 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:22-17:38/16 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 17:55-18:18/23 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:24-17:37/13 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 17:55-18:18/23 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:08 | 07:01 17:27-17:33/6 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 17:55-18:16/21 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 17:55-18:14/19 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 17:56-18:11/15 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 19:07-19:12/5 | 08:00 17:56-18:08/12 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 19:03-19:14/11 | 08:02 17:57-18:06/9 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 19:01-19:15/14 | 08:04 17:59-18:03/4 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 19:00-19:16/16 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:59-19:16/17 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:59-19:14/15 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 18:15-18:18/3 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:58-19:11/13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 18:13-18:20/7 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:58-19:09/11 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 18:13-18:22/9 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:58-19:05/7 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 18:12-18:24/12 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:59-19:03/4 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:53 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 18:11-18:26/15 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 18:12-18:28/16 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 17:26-17:32/6 | 06:23 18:11-18:27/16 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 17:25-17:35/10 | 06:20 18:12-18:27/15 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 17:23-17:36/13 | 06:18 18:13-18:25/12 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 19:15-19:21/6 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 29 | 312 | 0 | 0 | 0 | 0 | 0 | 113 | 231 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 19 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 16:03-16:24/21 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 17:37-17:41/4 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 16:03-16:22/19 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 16:37-16:39/2 | 07:21 17:36-17:43/7 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 18:18-18:23/5 | 07:40 16:04-16:21/17 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:22 16:35-16:41/6 | 07:19 17:35-17:45/10 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 18:15-18:25/10 | 07:42 16:04-16:18/14 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 16:35-16:44/9 | 07:16 17:34-17:47/13 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 18:12-18:26/14 | 07:44 16:04-16:16/12 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 16:34-16:46/12 | 07:14 17:35-17:49/14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 18:11-18:26/15 | 07:46 16:05-16:13/8 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 16:34-16:49/15 | 07:11 17:34-17:50/16 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 18:10-18:26/16 | 07:49 16:06-16:12/6 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 16:34-16:51/17 | 07:09 17:35-17:50/15 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 18:10-18:24/14 | 07:51 16:08-16:09/1 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 16:33-16:53/20 | 07:06 17:36-17:48/12 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 18:10-18:22/12 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 16:33-16:54/21 | 07:04 17:39-17:46/7 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 18:10-18:19/9 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 16:34-16:54/20 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 18:11-18:16/5 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 16:34-16:54/20 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 18:11-18:14/3 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 16:34-16:53/19 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 16:36-16:52/16 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 16:37-16:51/14 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 16:38-16:49/11 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:55 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 16:11-16:16/5 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 16:08-16:20/12 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 16:06-16:21/15 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 16:05-16:22/17 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 16:04-16:22/18 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 16:04-16:24/20 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 16:03-16:24/21 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 202 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 98 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 20 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 20:46-21:04/18 | 04:56 20:15-20:48/33 | 05:39 20:55-21:06/11 | 06:37 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 20:06-20:44/38 | 22:18 | 21:39 20:14-20:53/39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 20:17-20:31/14 | 05:00 20:46-21:04/18 | 04:57 20:14-20:47/33 | 05:41 20:57-21:04/7 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 20:06-20:44/38 | 22:17 | 21:37 20:15-20:52/37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 20:14-20:33/19 | 04:59 20:47-21:03/16 | 04:58 20:58-21:04/6 | 05:43 20:59-21:03/4 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 20:06-20:44/38 | 22:17 20:14-20:48/34 | 21:35 20:16-20:52/36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 20:12-20:35/23 | 04:58 20:47-21:02/15 | 04:59 20:57-21:05/8 | 05:45 20:16-20:50/34 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 20:07-20:43/36 | 22:16 20:14-20:49/35 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 20:10-20:37/27 | 04:58 20:49-21:03/14 | 05:00 20:57-21:07/10 | 05:47 20:17-20:50/33 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:18 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 20:08-20:44/36 | 22:15 20:14-20:49/35 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 20:09-20:38/29 | 04:57 20:49-21:02/13 | 05:01 20:56-21:08/12 | 05:48 20:18-20:49/31 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 20:08-20:44/36 | 22:15 20:14-20:50/36 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 20:07-20:39/32 | 04:56 20:50-21:01/11 | 05:02 20:56-21:09/13 | 05:50 20:19-20:48/29 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 20:09-20:44/35 | 22:14 20:14-20:50/36 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 20:07-20:41/34 | 04:55 20:52-21:00/8 | 05:03 20:55-21:09/14 | 05:52 20:20-20:46/26 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 20:09-20:44/35 | 22:13 20:14-20:51/37 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 20:06-20:41/35 | 04:55 20:52-20:59/7 | 05:04 20:54-21:10/16 | 05:54 20:22-20:44/22 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 20:09-20:43/34 | 22:12 20:14-20:51/37 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 20:48-20:53/5 | 04:54 20:55-20:58/3 | 05:05 20:54-21:11/17 | 05:56 20:24-20:42/18 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 20:05-20:42/37 | 22:12 20:10-20:43/33 | 22:12 20:14-20:51/37 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 20:46-20:54/8 | 04:54 20:11-20:44/33 | 05:06 20:53-21:11/18 | 05:58 20:27-20:38/11 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 20:04-20:42/38 | 22:13 | 22:11 20:13-20:52/39 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 | 06:40 | 05:32 20:44-20:56/12 | 04:53 20:10-20:43/33 | 05:08 20:53-21:12/19 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 20:04-20:42/38 | 22:14 | 22:10 20:13-20:52/39 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 20:44-20:58/14 | 04:53 20:11-20:43/32 | 05:09 20:14-21:13/59 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 20:04-20:43/39 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 20:03-21:00/57 | 04:52 20:12-20:43/31 | 05:10 20:13-21:14/61 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 20:03-21:01/58 | 04:52 20:12-20:44/32 | 05:12 20:13-21:14/61 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 20:03-21:03/60 | 04:52 20:13-20:44/31 | 05:13 20:13-21:14/61 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 | 06:27 | 05:23 20:02-21:04/62 | 04:52 20:13-20:44/31 | 05:15 20:13-21:15/62 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 | 06:25 | 05:21 20:03-21:06/63 | 04:52 20:13-20:44/31 | 05:16 20:13-21:15/62 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:18 20:12-21:15/63 | 06:13 | 07:11 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:19 20:13-21:16/63 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:43 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 20:02-21:05/63 | 04:52 20:14-20:44/30 | 05:21 20:12-21:16/64 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:14 20:03-21:06/63 | 04:52 20:14-20:44/30 | 05:22 20:13-21:16/63 | 06:18 | 07:17 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 20:03-21:06/63 | 04:52 20:15-20:45/30 | 05:24 20:13-21:16/63 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:18 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:11 20:03-21:05/62 | 04:53 20:14-20:45/31 | 05:25 20:13-21:16/63 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 20:03-21:06/63 | 04:53 20:14-20:45/31 | 05:27 20:13-21:16/63 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 20:04-21:06/62 | 04:53 20:15-20:46/31 | 05:29 20:13-21:16/63 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 20:04-21:06/62 | 04:54 20:14-20:46/32 | 05:30 20:13-21:14/61 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 20:04-21:05/61 | 04:54 20:15-20:47/32 | 05:32 20:13-21:13/60 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 20:05-21:05/60 | 04:55 20:14-20:46/32 | 05:34 20:14-21:12/58 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:01 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:11 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 20:05-21:05/60 | 04:56 20:15-20:47/32 | 05:36 20:14-21:09/55 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:02 20:05-21:05/60 | | 05:37 20:55-21:08/13 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 20:14-20:54/40 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 1509 | 1107 | 1722 | 338 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 21 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:56 | 05:39 | 06:37 19:30-19:53/23 | 07:34 18:05-18:36/31 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 19:30-19:53/23 | 07:36 18:06-18:34/28 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 19:40-19:46/6 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 19:30-19:53/23 | 07:38 18:07-18:33/26 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:17 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 19:37-19:47/10 | 05:48 | 04:58 | 04:59 | 05:45 | 06:43 19:29-19:52/23 | 07:40 18:08-18:31/23 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 19:35-19:49/14 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 19:29-19:49/20 | 07:42 18:10-18:29/19 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 19:34-19:51/17 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 19:30-19:47/17 | 07:44 18:12-18:25/13 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 17:38-17:46/8 | 06:52 19:33-19:53/20 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 19:30-19:45/15 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 17:34-17:50/16 | 06:50 19:32-19:55/23 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 19:32-19:42/10 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 17:31-17:52/21 | 06:47 19:32-19:55/23 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 19:33-19:39/6 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:10 | 07:04 17:29-17:54/25 | 06:45 19:31-19:54/23 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 17:27-17:55/28 | 06:42 19:31-19:54/23 | 05:34 | 04:54 | 05:06 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:27 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:55 | 08:05 | 06:59 17:25-17:55/30 | 06:40 19:30-19:53/23 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 17:25-17:57/32 | 06:37 19:31-19:53/22 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 17:23-17:57/34 | 06:35 19:31-19:51/20 | 05:28 | 04:52 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 17:23-17:57/34 | 06:32 19:32-19:50/18 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 18:19-18:33/14 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 17:22-17:57/35 | 06:30 19:34-19:49/15 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 18:16-18:35/19 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:08 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:54 | 06:46 17:22-17:58/36 | 06:27 19:35-19:46/11 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 18:14-18:37/23 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:44 17:22-17:57/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 18:12-18:38/26 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 17:21-17:56/35 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 18:10-18:39/29 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 17:22-17:56/34 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 18:09-18:40/31 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 22:00 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 17:21-17:55/34 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 18:08-18:40/32 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 17:22-17:55/33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 18:06-18:40/34 | 08:16 | 08:19 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:51 | 21:47 | 22:18 | 21:57 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 17:22-17:54/32 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 18:05-18:40/35 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:19 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 17:22-17:52/30 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 18:05-18:40/35 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 17:24-17:51/27 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 19:42-19:45/3 | 07:23 18:04-18:40/36 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 17:25-17:49/24 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 19:38-19:49/11 | 07:25 18:04-18:39/35 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 17:27-17:47/20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 19:35-19:51/16 | 07:27 18:04-18:39/35 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:19 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 17:29-17:44/15 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 19:34-19:52/18 | 07:28 18:04-18:38/34 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 18:34-18:38/4 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 19:32-19:52/20 | 07:30 18:04-18:38/34 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 19:31-19:53/22 | 07:32 18:04-18:37/33 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:36 19:30-19:53/23 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 622 | 268 | 0 | 0 | 0 | 113 | 645 | 140 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 22 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:47 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 225 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 23 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:07 | 05:55 | 05:01 | 04:57 | 05:39 | 06:37 | 07:34 | 07:36 | 08:34 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:17 | 21:39 | 20:29 | 19:12 | 16:57 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:52 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:37 | 20:26 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:23 | 07:21 | 07:02 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:04 | 22:16 | 21:35 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 08:59 | 08:21 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:33 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:16 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:44 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:15 | 21:31 | 20:19 | 19:01 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:46 | 08:42 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:29 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:11 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:48 | 08:44 |
| | 16:21 | 17:20 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:56 | 16:45 | 16:05 |
| 8 | 08:57 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:50 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:06 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:52 | 07:50 | 07:53 | 08:46 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:23 | 22:11 | 22:12 | 21:23 | 20:09 | 18:51 | 16:41 | 16:04 |
| 10 | 08:56 | 08:09 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:54 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:25 | 20:27 | 21:25 | 22:12 | 22:11 | 21:21 | 20:06 | 18:49 | 16:39 | 16:04 |
| 11 | 08:55 | 08:07 | 07:01 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:27 | 20:29 | 21:27 | 22:13 | 22:10 | 21:19 | 20:03 | 18:46 | 16:38 | 16:04 |
| 12 | 08:54 | 08:05 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:29 | 20:31 | 21:29 | 22:13 | 22:09 | 21:16 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:01 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:31 | 20:33 | 21:31 | 22:14 | 22:08 | 21:14 | 19:58 | 18:41 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:35 | 18:33 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:01 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:35 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:36 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:24 | 04:52 | 05:13 | 06:07 | 07:06 | 08:03 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:37 | 20:39 | 21:36 | 22:16 | 22:05 | 21:07 | 19:50 | 18:34 | 16:29 | 16:03 |
| 17 | 08:49 | 07:54 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:05 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:39 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:03 |
| 18 | 08:48 | 07:52 | 06:43 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:09 | 08:07 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:41 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:22 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:09 | 08:13 | 08:56 |
| | 16:42 | 17:46 | 18:43 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:38 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:45 | 20:46 | 21:43 | 22:18 | 21:59 | 20:58 | 19:40 | 18:24 | 16:23 | 16:04 |
| 21 | 08:44 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:45 | 17:50 | 18:47 | 20:48 | 21:45 | 22:18 | 21:58 | 20:56 | 19:37 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:18 | 07:17 | 08:16 | 08:18 | 08:58 |
| | 16:47 | 17:52 | 18:49 | 20:50 | 21:47 | 22:18 | 21:56 | 20:53 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:20 | 08:59 |
| | 16:49 | 17:54 | 18:51 | 20:52 | 21:48 | 22:18 | 21:55 | 20:51 | 19:32 | 18:17 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:25 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:51 | 17:57 | 18:53 | 20:54 | 21:50 | 22:19 | 21:53 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:25 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:55 | 20:56 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:33 | 06:23 | 06:06 | 05:09 | 04:53 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:58 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:20 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:26 | 07:26 | 08:28 | 09:00 |
| | 16:57 | 18:03 | 18:59 | 21:00 | 21:55 | 22:18 | 21:48 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:28 | 07:28 | 08:29 | 09:00 |
| | 16:59 | 18:05 | 19:01 | 21:02 | 21:56 | 22:18 | 21:47 | 20:39 | 19:19 | 17:06 | 16:13 | 16:09 |
| 29 | 08:32 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 | 08:31 | 09:00 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:36 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:00 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:37 | 06:35 | | 07:34 | | 09:00 |
| | 17:06 | | 20:07 | | 22:00 | | 21:41 | 20:31 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
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Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 24 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00<br>16:13 | 08:27 08:59-09:45/46<br>17:08 | 07:26 09:08-09:55/47<br>18:07 | 07:07<br>20:09 | 05:55<br>21:08 | 05:01<br>22:02 | 04:56<br>22:17 | 05:39<br>21:39 | 06:37<br>20:29 | 07:34<br>19:12 | 07:36 08:29-09:27/58<br>16:57 | 08:34<br>16:10 |
| 2 | 09:00<br>16:15 | 08:25 08:58-09:47/49<br>17:10 | 07:24 09:09-09:53/44<br>18:09 | 07:05<br>20:11 | 05:52<br>21:10 | 05:00<br>22:03 | 04:57<br>22:17 | 05:41<br>21:37 | 06:39<br>20:26 | 07:36<br>19:09 | 07:38 08:28-09:26/58<br>16:55 | 08:36<br>16:09 |
| 3 | 09:00<br>16:16 | 08:23 08:58-09:49/51<br>17:12 | 07:21 09:10-09:52/42<br>18:11 | 07:02<br>20:13 | 05:50<br>21:12 | 04:59<br>22:04 | 04:58<br>22:16 | 05:43<br>21:35 | 06:41<br>20:24 | 07:38<br>19:06 | 07:40 08:29-09:26/57<br>16:53 | 08:38<br>16:08 |
| 4 | 08:59<br>16:17 | 08:21 08:58-09:51/53<br>17:14 | 07:19 09:11-09:49/38<br>18:13 | 07:00<br>20:15 | 05:48<br>21:14 | 04:58<br>22:06 | 04:59<br>22:16 | 05:45<br>21:33 | 06:43<br>20:21 | 07:40<br>19:04 | 07:42 08:28-09:24/56<br>16:51 | 08:39<br>16:07 |
| 5 | 08:59<br>16:18 | 08:20 08:58-09:52/54<br>17:16 | 07:16 09:12-09:47/35<br>18:15 | 06:57<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 | 05:00<br>22:15 | 05:46<br>21:31 | 06:45<br>20:19 | 07:42 09:59-10:11/12<br>19:01 | 07:44 08:28-09:23/55<br>16:49 | 08:41<br>16:06 |
| 6 | 08:59<br>16:20 | 08:18 08:58-09:54/56<br>17:18 | 07:14 09:14-09:45/31<br>18:17 | 06:55<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 | 05:01<br>22:15 | 05:48<br>21:29 | 06:47<br>20:16 | 07:44 09:54-10:16/22<br>18:59 | 07:46 08:28-09:22/54<br>16:47 | 08:42<br>16:06 |
| 7 | 08:58<br>16:21 | 08:16 08:59-09:55/56<br>17:20 | 07:11 09:16-09:41/25<br>18:19 | 06:52<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 | 05:02<br>22:14 | 05:50<br>21:27 | 06:49<br>20:14 | 07:46 09:51-10:19/28<br>18:56 | 07:48 08:29-09:21/52<br>16:45 | 08:44<br>16:05 |
| 8 | 08:57<br>16:23 | 08:14 08:59-09:56/57<br>17:23 | 07:09 09:20-09:38/18<br>18:21 | 06:50<br>20:23 | 05:40<br>21:22 | 04:55<br>22:10 | 05:03<br>22:13 | 05:52<br>21:25 | 06:51<br>20:11 | 07:48 09:49-10:22/33<br>18:54 | 07:50 08:29-09:20/51<br>16:43 | 08:45<br>16:05 |
| 9 | 08:57<br>16:24 | 08:12 08:59-09:56/57<br>17:25 | 07:06<br>18:23 | 06:47<br>20:25 | 05:38<br>21:23 | 04:55<br>22:11 | 05:04<br>22:12 | 05:54<br>21:23 | 06:52<br>20:08 | 07:50 09:47-10:24/37<br>18:51 | 07:53 08:29-09:18/49<br>16:41 | 08:46<br>16:04 |
| 10 | 08:56<br>16:26 | 08:09 08:59-09:57/58<br>17:27 | 07:04<br>18:25 | 06:45<br>20:27 | 05:36<br>21:25 | 04:54<br>22:12 | 05:05<br>22:11 | 05:56<br>21:21 | 06:54<br>20:06 | 07:52 09:45-10:25/40<br>18:49 | 07:55 08:30-09:15/45<br>16:39 | 08:48<br>16:04 |
| 11 | 08:55<br>16:27 | 08:07 09:00-09:58/58<br>17:29 | 07:01<br>18:27 | 06:42<br>20:29 | 05:34<br>21:27 | 04:54<br>22:13 | 05:06<br>22:10 | 05:58<br>21:19 | 06:56<br>20:03 | 07:54 09:44-10:26/42<br>18:46 | 07:57 08:31-09:14/43<br>16:37 | 08:49<br>16:04 |
| 12 | 08:54<br>16:29 | 08:05 09:01-09:59/58<br>17:31 | 06:59<br>18:29 | 06:40<br>20:31 | 05:32<br>21:29 | 04:53<br>22:13 | 05:08<br>22:09 | 05:59<br>21:16 | 06:58<br>20:01 | 07:56 09:42-10:27/45<br>18:44 | 07:59 08:56-09:10/14<br>16:36 | 08:50<br>16:03 |
| 13 | 08:54<br>16:31 | 08:03 09:02-09:59/57<br>17:33 | 06:56<br>18:31 | 06:37<br>20:33 | 05:30<br>21:31 | 04:53<br>22:14 | 05:09<br>22:08 | 06:01<br>21:14 | 07:00<br>19:58 | 07:57 09:41-10:28/47<br>18:41 | 08:01 08:34-08:53/19<br>16:34 | 08:51<br>16:03 |
| 14 | 08:53<br>16:32 | 08:01 09:03-10:00/57<br>17:35 | 06:54<br>18:33 | 06:35<br>20:35 | 05:28<br>21:33 | 04:52<br>22:15 | 05:10<br>22:07 | 06:03<br>21:12 | 07:02<br>19:56 | 07:59 09:40-10:29/49<br>18:39 | 08:03 08:36-08:52/16<br>16:32 | 08:52<br>16:03 |
| 15 | 08:52<br>16:34 | 07:59 09:06-10:00/54<br>17:37 | 06:51<br>18:35 | 06:32<br>20:37 | 05:26<br>21:35 | 04:52<br>22:16 | 05:12<br>22:06 | 06:05<br>21:10 | 07:04<br>19:53 | 08:01 09:39-10:29/50<br>18:36 | 08:05 08:39-08:51/12<br>16:30 | 08:53<br>16:03 |
| 16 | 08:51<br>16:36 | 07:57 09:05-10:00/55<br>17:40 | 06:49<br>18:37 | 06:30<br>20:39 | 05:24<br>21:36 | 04:52<br>22:16 | 05:13<br>22:05 | 06:07<br>21:07 | 07:06<br>19:50 | 08:03 09:38-10:30/52<br>18:34 | 08:07 08:41-08:49/8<br>16:29 | 08:54<br>16:03 |
| 17 | 08:49<br>16:38 | 07:54 09:05-10:00/55<br>17:42 | 06:46<br>18:39 | 06:27<br>20:41 | 05:23<br>21:38 | 04:52<br>22:17 | 05:15<br>22:04 | 06:09<br>21:05 | 07:07<br>19:48 | 08:05 09:37-10:30/53<br>18:32 | 08:09<br>16:27 | 08:55<br>16:03 |
| 18 | 08:48<br>16:40 | 07:52 09:06-10:01/55<br>17:44 | 06:43<br>18:41 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:17 | 05:16<br>22:02 | 06:11<br>21:03 | 07:09<br>19:45 | 08:07 09:36-10:30/54<br>18:29 | 08:11<br>16:26 | 08:56<br>16:04 |
| 19 | 08:47<br>16:42 | 07:50 09:05-10:00/55<br>17:46 | 06:41<br>18:43 | 06:22<br>20:44 | 05:19<br>21:42 | 04:52<br>22:18 | 05:17<br>22:01 | 06:13<br>21:00 | 07:11<br>19:43 | 08:09 09:36-10:30/54<br>18:27 | 08:13<br>16:24 | 08:56<br>16:04 |
| 20 | 08:46<br>16:43 | 07:47 09:05-10:01/56<br>17:48 | 06:38<br>18:45 | 06:20<br>20:46 | 05:18<br>21:43 | 04:52<br>22:18 | 05:19<br>21:59 | 06:15<br>20:58 | 07:13<br>19:40 | 08:11 09:36-10:31/55<br>18:24 | 08:15<br>16:23 | 08:57<br>16:04 |
| 21 | 08:44<br>16:45 | 07:45 09:05-10:00/55<br>17:50 | 06:36<br>18:47 | 06:18<br>20:48 | 05:16<br>21:45 | 04:52<br>22:18 | 05:21<br>21:58 | 06:16<br>20:56 | 07:15<br>19:37 | 08:13 09:36-10:31/55<br>18:22 | 08:17<br>16:21 | 08:58<br>16:05 |
| 22 | 08:43<br>16:47 | 07:43 09:05-10:00/55<br>17:52 | 06:33<br>18:49 | 06:15<br>20:50 | 05:14<br>21:47 | 04:52<br>22:18 | 05:22<br>21:56 | 06:18<br>20:53 | 07:17<br>19:35 | 08:16 09:35-10:31/56<br>18:20 | 08:18<br>16:20 | 08:58<br>16:05 |
| 23 | 08:42<br>16:49 | 07:41 09:06-10:00/54<br>17:54 | 06:31<br>18:51 | 06:13<br>20:52 | 05:13<br>21:48 | 04:52<br>22:18 | 05:24<br>21:55 | 06:20<br>20:51 | 07:19<br>19:32 | 08:18 09:35-10:31/56<br>18:17 | 08:20<br>16:18 | 08:59<br>16:06 |
| 24 | 08:40<br>16:51 | 07:38 09:05-09:59/54<br>17:56 | 06:28<br>18:53 | 06:10<br>20:54 | 05:11<br>21:50 | 04:53<br>22:19 | 05:25<br>21:53 | 06:22<br>20:49 | 07:21<br>19:30 | 08:20 09:35-10:30/55<br>18:15 | 08:22<br>16:17 | 08:59<br>16:06 |
| 25 | 08:39<br>16:53 | 07:36 09:06-09:59/53<br>17:59 | 06:25<br>18:55 | 06:08<br>20:56 | 05:10<br>21:52 | 04:53<br>22:19 | 05:27<br>21:52 | 06:24<br>20:46 | 07:23<br>19:27 | 07:22 08:35-09:30/55<br>17:13 | 08:24<br>16:16 | 09:00<br>16:07 |
| 26 | 08:37 09:08-09:16/8<br>16:55 | 07:33 09:06-09:57/51<br>18:01 | 06:23<br>18:57 | 06:06<br>20:58 | 05:09<br>21:53 | 04:53<br>22:19 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:24 | 07:24 08:36-09:30/54<br>17:10 | 08:26<br>16:15 | 09:00<br>16:07 |
| 27 | 08:36 09:06-09:18/12<br>16:57 | 07:31 09:07-09:57/50<br>18:03 | 06:20<br>18:59 | 06:04<br>21:00 | 05:07<br>21:55 | 04:54<br>22:18 | 05:30<br>21:48 | 06:28<br>20:41 | 07:26<br>19:22 | 07:26 08:34-09:30/56<br>17:08 | 08:28<br>16:14 | 09:00<br>16:08 |
| 28 | 08:34 09:04-09:20/16<br>16:59 | 07:29 09:07-09:55/48<br>18:05 | 06:18<br>19:01 | 06:01<br>21:02 | 05:06<br>21:56 | 04:54<br>22:18 | 05:32<br>21:47 | 06:30<br>20:39 | 07:28<br>19:19 | 07:28 08:32-09:29/57<br>17:06 | 08:29<br>16:12 | 09:00<br>16:09 |
| 29 | 08:32 09:02-09:21/19<br>17:01 | | 07:15<br>20:03 | 05:59<br>21:04 | 05:05<br>21:58 | 04:55<br>22:18 | 05:34<br>21:45 | 06:32<br>20:36 | 07:30<br>19:17 | 08:31-09:28/57<br>17:04 | 08:31<br>16:11 | 09:00<br>16:10 |
| 30 | 08:31 09:24-09:39/15<br>17:04 09:00-09:22/22 | | 07:13<br>20:05 | 05:57<br>21:06 | 05:04<br>21:59 | 04:56<br>22:18 | 05:36<br>21:43 | 06:34<br>20:34 | 07:32<br>19:14 | 07:32 08:31-09:29/58<br>17:02 | 08:33<br>16:10 | 09:00<br>16:11 |
| 31 | 08:29 08:59-09:42/43<br>17:06 | | 07:10<br>20:07 | | 05:02<br>22:00 | | 05:37<br>21:41 | 06:35<br>20:31 | | 07:34 08:30-09:28/58<br>16:59 | | 09:00<br>16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 135 | 1517 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 1290 | 669 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 25 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:14-14:50/36 10:59-11:45/46 | 08:28 15:55-16:27/32 11:07-11:56/49 09:16-09:39/23 | 07:27 08:14-08:44/30 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:05-12:43/38 10:25-10:32/7 | 17:08 14:32-14:53/21 09:45-11:03/78 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:14-14:50/36 10:58-11:45/47 | 08:26 15:55-16:29/34 11:07-11:56/49 09:15-09:41/26 | 07:24 08:14-08:43/29 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:06-12:43/37 10:23-10:34/11 | 17:10 14:35-14:51/16 09:45-11:03/78 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:15-14:51/36 10:59-11:46/47 | 08:24 15:55-16:30/35 11:08-11:56/48 09:14-09:42/28 | 07:22 08:14-08:41/27 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:07-12:44/37 10:22-10:36/14 | 17:12 14:39-14:47/8 09:45-11:03/78 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:14-14:51/37 10:59-11:46/47 | 08:22 15:55-16:31/36 09:45-11:04/79 | 07:19 08:15-08:41/26 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:07-12:44/37 10:21-10:37/16 | 17:15 11:09-11:55/46 09:13-09:43/30 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:15-14:53/38 11:00-11:48/48 | 08:20 15:55-16:32/37 09:45-11:03/78 | 07:17 08:15-08:39/24 | 06:58 | 05:46 | 04:58 |
| | 16:19 12:08-12:44/36 10:20-10:40/20 | 17:17 11:10-11:54/44 09:13-09:44/31 | 18:16 | 20:18 | 21:17 | 22:08 |
| 6 | 08:59 14:15-14:53/38 11:00-11:48/48 | 08:18 16:37-16:42/5 11:12-11:53/41 | 07:15 08:17-08:38/21 | 06:55 | 05:44 | 04:57 |
| | 16:20 12:09-12:44/35 10:19-10:41/22 | 17:19 15:56-16:33/37 09:12-11:03/111 | 18:18 | 20:20 | 21:19 | 22:09 |
| 7 | 08:59 14:15-14:53/38 10:59-11:48/49 | 08:16 15:55-16:45/50 09:12-11:03/111 | 07:12 08:18-08:36/18 | 06:53 | 05:42 | 04:56 |
| | 16:22 12:09-12:44/35 10:19-10:42/23 | 17:21 11:13-11:52/39 08:55-09:05/10 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:15-14:54/39 10:59-11:49/50 | 08:14 15:56-16:47/51 09:11-11:02/111 | 07:10 08:20-08:34/14 | 06:50 | 05:40 | 04:56 |
| | 16:23 12:10-12:44/34 10:18-10:44/26 | 17:23 11:14-11:50/36 08:52-09:07/15 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:17-14:55/38 11:00-11:51/51 | 08:12 15:57-16:49/52 09:11-11:02/111 | 07:07 08:24-08:29/5 | 06:48 | 05:38 | 04:55 |
| | 16:25 12:12-12:45/33 10:18-10:46/28 | 17:25 11:16-11:49/33 08:50-09:09/19 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:17-14:56/39 11:01-11:51/50 | 08:10 15:58-16:50/52 08:49-11:01/132 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 12:13-12:45/32 10:18-10:47/29 | 17:27 11:18-11:47/29 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:17-14:56/39 11:01-11:52/51 | 08:08 15:59-16:51/52 08:48-11:01/133 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 12:14-12:44/30 10:17-10:48/31 | 17:30 11:21-11:44/23 | 18:28 | 20:29 | 21:28 | 22:14 |
| 12 | 08:55 14:17-14:56/39 11:00-11:52/52 | 08:06 16:00-16:51/51 08:46-10:59/133 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 12:14-12:43/29 10:16-10:49/33 | 17:32 11:24-11:39/15 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:17-14:57/40 11:00-11:52/52 | 08:04 16:02-16:52/50 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 12:15-12:43/28 10:15-10:50/35 | 17:34 08:46-10:58/132 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:17-14:57/40 11:01-11:53/52 | 08:02 16:06-16:52/46 08:46-09:47/61 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 12:17-12:43/26 10:15-10:51/36 | 17:36 09:48-10:57/69 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:18-14:58/40 11:01-11:54/53 | 08:00 16:07-16:52/45 08:45-09:46/61 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 12:18-12:42/24 10:15-10:53/38 | 17:38 09:48-10:54/66 08:33-08:38/5 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:18-14:58/40 11:01-11:54/53 09:58-10:07/9 | 07:57 16:08-16:53/45 08:45-09:46/61 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 12:19-12:40/21 10:14-10:53/39 | 17:40 09:50-10:53/63 08:28-08:41/13 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:19-14:58/39 11:01-11:55/54 09:56-10:10/14 | 07:55 16:09-16:53/44 09:51-10:24/33 08:27-08:44/17 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 12:22-12:39/17 10:14-10:54/40 | 17:42 10:27-10:50/23 08:45-09:46/61 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:19-14:59/40 11:02-11:56/54 09:54-10:13/19 | 07:53 16:10-16:53/43 09:52-10:22/30 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 12:25-12:38/13 10:14-10:56/42 | 17:44 10:30-10:46/16 08:24-09:45/81 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:19-14:59/40 11:01-11:55/54 | 07:51 16:13-16:53/40 08:24-09:44/80 | 06:42 | 06:23 | 05:20 | 04:52 |
| | 16:42 12:29-12:34/5 09:52-10:56/64 | 17:47 09:54-10:20/26 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:20-14:59/39 09:52-10:58/66 | 07:48 16:26-16:53/27 09:57-10:18/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:02-11:56/54 | 17:49 16:17-16:23/6 08:22-09:44/82 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:20-14:59/39 09:50-10:58/68 | 07:46 16:26-16:52/26 09:15-09:42/27 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 11:02-11:56/54 | 17:51 10:00-10:13/13 08:20-09:14/54 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:21-14:59/38 09:49-10:58/69 | 07:44 16:27-16:51/24 08:18-09:14/56 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 11:02-11:56/54 | 17:53 09:16-09:40/24 | 18:50 | 20:51 | 21:48 | 22:19 |
| 23 | 08:42 14:22-14:59/37 09:49-11:00/71 | 07:41 16:27-16:50/23 08:17-09:12/55 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:03-11:57/54 | 17:55 09:18-09:38/20 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 16:02-16:11/9 11:03-11:57/54 | 07:39 16:29-16:49/20 08:16-09:12/56 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 14:22-14:59/37 09:48-11:00/72 | 17:57 09:21-09:35/14 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 15:59-16:13/14 11:03-11:57/54 | 07:36 16:30-16:46/16 08:48-09:10/22 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 14:23-14:58/35 09:47-11:00/73 | 17:59 08:15-08:47/32 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:59-16:15/16 11:04-11:58/54 | 07:34 16:33-16:44/11 08:50-09:08/18 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:24-14:59/35 09:47-11:02/75 | 18:01 08:15-08:47/32 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:58-16:17/19 11:04-11:58/54 | 07:32 08:14-08:46/32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 14:25-14:58/33 09:47-11:02/75 | 18:03 08:52-09:05/13 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:57-16:18/21 11:05-11:58/53 | 07:29 08:14-08:45/31 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 14:26-14:58/32 09:46-11:02/76 | 18:05 08:57-09:00/3 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:56-16:19/23 11:05-11:57/52 09:23-09:31/8 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 14:27-14:57/30 09:46-11:03/77 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:56-16:22/26 11:06-11:57/51 09:20-09:35/15 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 14:29-14:56/27 09:45-11:03/78 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:55-16:25/30 11:06-11:57/51 09:18-09:37/19 | | 07:11 | | 05:03 | |
| | 17:06 14:30-14:54/24 09:45-11:03/78 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4956 | 4405 | 194 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 25 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:30 | 07:35<br>19:12 | 07:37 15:27-16:19/52 08:19-10:31/132<br>16:58 10:47-11:17/30 | 08:35 13:58-14:37/39 10:42-11:33/51<br>16:10 11:56-12:26/30 09:59-10:31/32 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 15:26-16:18/52 08:40-10:31/111<br>16:56 10:45-11:18/33 08:20-08:39/19 | 08:37 13:59-14:38/39 10:43-11:33/50<br>16:09 11:55-12:27/32 10:00-10:29/29 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39<br>19:07 | 07:41 15:25-16:16/51 08:40-10:32/112<br>16:54 10:43-11:20/37 08:22-08:36/14 | 08:38 14:00-14:38/38 10:44-11:34/50<br>16:08 11:55-12:28/33 10:01-10:29/28 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41<br>19:05 | 07:43 15:26-16:15/49 08:42-10:33/111<br>16:52 10:43-11:22/39 08:26-08:34/8 | 08:40 14:01-14:39/38 10:45-11:34/49<br>16:08 11:55-12:29/34 10:03-10:29/26 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:43 08:58-09:09/11<br>19:02 | 07:45 16:07-16:11/4 10:41-11:23/42<br>16:50 15:25-16:02/37 08:42-10:33/111 | 08:42 14:00-14:39/39 10:45-11:34/49<br>16:07 11:54-12:29/35 10:04-10:27/23 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 08:55-09:11/16<br>18:59 | 07:47 15:25-16:02/37 09:15-10:33/78<br>16:48 10:40-11:24/44 08:42-09:14/32 | 08:43 14:01-14:39/38 10:46-11:34/48<br>16:06 11:55-12:30/35 10:05-10:27/22 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 08:53-09:13/20<br>18:57 | 07:49 15:25-16:01/36 09:15-10:33/78<br>16:46 10:39-11:25/46 08:43-09:13/30 | 08:44 14:01-14:39/38 10:46-11:34/48<br>16:06 11:54-12:30/36 10:06-10:26/20 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48 08:51-09:14/23<br>18:54 | 07:51 15:26-16:01/35 10:39-11:26/47 08:45-09:13/28<br>16:44 14:09-14:18/9 09:16-10:34/78 | 08:46 14:03-14:40/37 10:47-11:34/47<br>16:05 11:55-12:32/37 10:09-10:26/17 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 08:50-09:15/25<br>18:52 | 07:53 15:26-15:59/33 10:38-11:27/49 08:46-09:11/25<br>16:42 14:05-14:22/17 09:16-10:34/78 | 08:47 14:03-14:39/36 10:47-11:34/47<br>16:05 11:55-12:32/37 10:10-10:24/14 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 08:49-09:15/26<br>18:49 | 07:55 15:26-15:58/32 10:37-11:27/50 08:47-09:10/23<br>16:40 14:03-14:24/21 09:16-10:34/78 | 08:48 14:04-14:40/36 10:48-11:35/47<br>16:05 11:56-12:33/37 10:13-10:24/11 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 08:48-09:15/27<br>18:47 | 07:57 15:26-15:56/30 10:37-11:28/51 08:49-09:08/19<br>16:38 14:01-14:25/24 09:16-10:34/78 | 08:50 14:04-14:40/36 10:49-11:35/46<br>16:04 11:56-12:33/37 10:15-10:22/7 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 08:47-09:16/29<br>18:44 | 07:59 15:27-15:53/26 10:37-11:29/52 08:52-09:07/15<br>16:36 14:00-14:28/28 09:17-10:35/78 | 08:51 14:05-14:40/35 10:49-11:35/46<br>16:04 11:56-12:34/38 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 08:48-09:18/30<br>18:42 | 08:01 15:28-15:51/23 10:37-11:29/52 08:55-09:03/8<br>16:34 13:59-14:29/30 09:18-10:35/77 | 08:52 14:05-14:40/35 10:50-11:35/45<br>16:04 11:56-12:34/38 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 08:47-09:19/32<br>18:39 09:27-09:36/9 | 08:03 15:29-15:50/21 10:37-11:30/53<br>16:33 13:58-14:29/31 09:18-10:34/76 | 08:53 14:06-14:41/35 10:50-11:35/45<br>16:04 11:56-12:35/39 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 17:08-17:13/5 09:24-09:39/15<br>18:37 08:47-09:19/32 | 08:06 15:30-15:49/19 10:36-11:30/54<br>16:31 13:57-14:30/33 09:19-10:34/75 | 08:54 14:06-14:41/35 10:52-11:36/44<br>16:04 11:57-12:36/39 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04 17:04-17:17/13 09:21-09:41/20<br>18:35 08:47-09:19/32 | 08:08 15:32-15:48/16 10:37-11:31/54<br>16:29 13:57-14:32/35 09:20-10:35/75 | 08:55 14:07-14:41/34 10:52-11:36/44<br>16:04 11:57-12:36/39 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 17:01-17:19/18 08:47-09:42/55<br>18:32 09:55-10:04/9 | 08:09 15:33-15:47/14 10:37-11:31/54<br>16:28 13:57-14:32/35 09:21-10:34/73 | 08:56 14:08-14:42/34 10:52-11:36/44<br>16:04 11:57-12:36/39 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 16:59-17:20/21 08:48-09:43/55<br>18:30 09:51-10:07/16 | 08:11 15:36-15:45/9 10:37-11:31/54<br>16:26 13:56-14:33/37 09:22-10:34/72 | 08:56 14:08-14:42/34 10:53-11:37/44<br>16:04 11:58-12:37/39 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 16:58-17:21/23 08:48-09:44/56<br>18:27 09:48-10:10/22 | 08:13 13:56-14:33/37 09:23-10:34/71<br>16:25 10:37-11:31/54 | 08:57 14:09-14:43/34 10:54-11:37/43<br>16:04 11:59-12:38/39 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 16:57-17:22/25 08:49-09:44/55<br>18:25 09:46-10:11/25 | 08:15 13:56-14:34/38 09:24-10:33/69<br>16:23 10:37-11:31/54 | 08:58 14:09-14:43/34 10:54-11:37/43<br>16:05 11:58-12:38/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:57 | 07:16<br>19:38 | 08:14 16:56-17:22/26 08:50-10:12/82<br>18:23 10:29-10:45/16 | 08:17 13:56-14:35/39 09:26-10:34/68<br>16:22 10:38-11:32/54 | 08:59 14:10-14:44/34 10:55-11:38/43<br>16:05 11:59-12:39/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 16:56-17:23/27 10:27-10:49/22<br>18:20 16:46-16:55/9 08:53-10:14/81 | 08:19 13:56-14:35/39 09:28-10:34/66<br>16:20 10:38-11:32/54 | 08:59 14:10-14:44/34 10:56-11:39/43<br>16:05 12:00-12:40/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 16:42-17:23/41 10:24-10:51/27<br>18:18 11:05-11:12/7 08:54-10:15/81 | 08:21 13:56-14:36/40 10:38-11:33/55<br>16:19 12:06-12:10/4 09:29-10:33/64 | 09:00 14:11-14:45/34 10:56-11:39/43<br>16:06 12:00-12:40/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 16:40-17:23/43 10:22-10:53/31<br>18:16 10:59-11:18/19 08:55-10:15/80 | 08:23 13:56-14:36/40 10:39-11:33/54 09:31-09:50/19<br>16:18 12:02-12:15/13 09:51-10:33/42 | 09:00 14:11-14:45/34 10:56-11:39/43<br>16:07 12:01-12:40/39 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 15:38-16:23/45 09:20-09:54/34 07:56-08:12/16<br>17:13 09:56-10:21/25 08:14-09:16/62 | 08:25 13:57-14:36/39 10:39-11:33/54 09:34-09:49/15<br>16:16 12:00-12:17/17 09:52-10:33/41 | 09:00 14:11-14:45/34 10:56-11:40/44<br>16:07 12:01-12:40/39 |
| 26 | 05:29<br>21:51 | 06:27<br>20:44 | 07:25<br>19:25 | 07:24 15:37-16:22/45 08:14-09:16/62<br>17:11 09:19-10:23/64 07:59-08:10/11 | 08:27 13:57-14:37/40 10:40-11:33/53 09:37-09:46/9<br>16:15 11:58-12:19/21 09:53-10:32/39 | 09:01 14:12-14:47/35 10:57-11:41/44<br>16:08 12:02-12:41/39 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:23 | 07:26 15:37-16:23/46 08:15-09:17/62<br>17:09 09:19-10:25/66 | 08:28 13:57-14:37/40 10:40-11:33/53<br>16:14 11:57-12:21/24 09:54-10:32/38 | 09:01 14:13-14:47/34 10:57-11:42/45<br>16:09 12:03-12:42/39 |
| 28 | 05:33<br>21:47 | 06:30<br>20:40 | 07:29<br>19:20 | 07:29 15:35-16:22/47 08:15-09:17/62<br>17:07 09:18-10:27/69 | 08:30 13:58-14:37/39 10:41-11:33/52<br>16:13 11:57-12:23/26 09:55-10:31/36 | 09:01 14:13-14:48/35 10:58-11:42/44<br>16:10 12:03-12:42/39 |
| 29 | 05:34<br>21:46 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 15:31-16:21/50<br>17:04 08:16-10:28/132 | 08:32 13:58-14:38/40 10:41-11:33/52<br>16:12 11:56-12:24/28 09:57-10:31/34 | 09:01 14:13-14:48/35 10:58-11:43/45<br>16:11 12:04-12:43/39 |
| 30 | 05:36<br>21:44 | 06:34<br>20:35 | 07:33<br>19:15 | 07:33 15:29-16:20/51 08:16-10:29/133<br>17:02 10:53-11:10/17 | 08:34 13:59-14:38/39 10:42-11:34/52<br>16:11 11:56-12:25/29 09:58-10:31/33 | 09:01 14:13-14:48/35 10:58-11:43/45<br>16:11 12:04-12:42/38 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 15:28-16:19/51 08:18-10:30/132<br>17:00 10:50-11:14/24 | | 09:01 14:13-14:49/36 10:58-11:44/46<br>16:13 12:04-12:43/39 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 2643 | 5426 | 3912 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm)<br>Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker<br>First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 14:33-15:27/54 11:14-11:29/15 09:53-10:02/9 | 08:28 15:16-15:36/20 08:57-09:07/10 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 12:53-13:10/17 10:13-10:45/32 | 17:08 09:10-10:20/70 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:33-15:28/55 11:15-11:29/14 09:51-10:03/12 | 08:26 15:19-15:30/11 08:55-09:09/14 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 12:53-13:09/16 10:12-10:45/33 | 17:10 09:10-10:19/69 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 14:34-15:29/55 11:17-11:29/12 09:51-10:04/13 | 08:24 08:54-10:18/84 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 12:55-13:09/14 10:13-10:47/34 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:34-15:30/56 11:18-11:27/9 09:50-10:05/15 | 08:22 08:53-10:17/84 | 07:19 | 07:00 | 05:49 | 04:59 |
| | 16:18 12:56-13:08/12 10:13-10:47/34 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:35-15:32/57 11:21-11:26/5 09:50-10:07/17 | 08:20 08:53-10:15/82 | 07:17 | 06:58 19:46-19:49/3 | 05:46 | 04:58 |
| | 16:19 12:59-13:07/8 10:14-10:48/34 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:35-15:32/57 09:50-10:08/18 | 08:18 10:04-10:12/8 08:52-09:37/45 | 07:14 | 06:55 19:42-19:52/10 | 05:44 | 04:57 |
| | 16:20 10:14-10:48/34 | 17:19 09:38-10:00/22 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:36-15:33/57 09:49-10:09/20 | 08:16 09:40-09:59/19 | 07:12 | 06:53 19:40-19:53/13 | 05:42 | 04:56 |
| | 16:22 10:14-10:48/34 | 17:21 08:52-09:37/45 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:36-15:34/58 09:49-10:10/21 | 08:14 09:41-09:56/15 08:42-08:45/3 | 07:09 | 06:50 19:39-19:56/17 | 05:40 | 04:56 |
| | 16:23 10:14-10:49/35 | 17:23 08:51-09:35/44 | 18:22 | 20:24 | 21:22 | 22:11 |
| 9 | 08:58 14:37-15:35/58 09:49-10:12/23 | 08:12 09:44-09:53/9 08:40-08:49/9 | 07:07 | 06:48 19:37-19:56/19 | 05:38 | 04:55 |
| | 16:25 10:15-10:50/35 | 17:25 08:51-09:35/44 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:38-15:37/59 09:49-10:13/24 | 08:10 08:52-09:34/42 | 07:04 | 06:45 19:37-19:57/20 | 05:36 | 04:55 |
| | 16:26 10:16-10:51/35 | 17:27 08:38-08:51/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 14:38-15:36/58 09:49-10:14/25 | 08:08 08:36-09:33/57 | 07:02 | 06:43 19:36-19:56/20 | 05:34 | 04:54 |
| | 16:28 10:16-10:51/35 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 14:39-15:37/58 09:48-10:14/26 | 08:06 09:16-09:31/15 | 06:59 | 06:40 19:36-19:56/20 | 05:32 | 04:54 |
| | 16:30 10:15-10:51/36 | 17:32 08:33-09:14/41 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 14:40-15:38/58 09:48-10:15/27 | 08:04 09:19-09:29/10 | 06:57 | 06:38 19:35-19:55/20 | 05:30 | 04:53 |
| | 16:31 10:16-10:51/35 09:38-09:47/9 | 17:34 08:32-09:13/41 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 14:41-15:39/58 09:37-10:16/39 | 08:02 08:31-09:13/42 | 06:54 | 06:35 19:36-19:55/19 | 05:29 | 04:53 |
| | 16:33 10:17-10:52/35 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 14:42-15:40/58 | 07:59 08:31-08:54/23 | 06:52 | 06:33 19:37-19:54/17 | 05:27 | 04:53 |
| | 16:35 09:36-10:52/76 | 17:38 08:55-09:12/17 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 14:43-15:40/57 | 07:57 08:29-08:53/24 | 06:49 | 06:30 19:37-19:53/16 | 05:25 | 04:52 |
| | 16:37 09:35-10:52/77 | 17:40 08:56-09:10/14 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 14:44-15:41/57 | 07:55 08:29-08:54/25 | 06:47 | 06:28 19:39-19:51/12 | 05:23 | 04:52 |
| | 16:38 09:34-10:53/79 | 17:42 08:59-09:07/8 | 18:40 | 20:41 | 21:39 | 22:18 |
| 18 | 08:49 14:46-15:42/56 | 07:53 08:29-08:52/23 | 06:44 | 06:25 19:40-19:48/8 | 05:21 | 04:52 |
| | 16:40 09:34-10:53/79 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 14:47-15:42/55 | 07:50 08:29-08:52/23 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:33-10:53/80 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 14:48-15:42/54 | 07:48 08:30-08:51/21 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 09:33-10:53/80 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 14:49-15:42/53 | 07:46 08:30-08:49/19 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:33-10:53/80 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 14:49-15:42/53 | 07:44 08:31-08:49/18 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:32-10:52/80 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 14:51-15:43/52 | 07:41 08:31-08:47/16 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:32-10:52/80 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 14:53-15:43/50 09:32-10:22/50 | 07:39 08:33-08:46/13 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 10:23-10:52/29 09:17-09:25/8 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 14:55-15:42/47 09:32-10:21/49 | 07:36 08:36-08:42/6 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 10:23-10:51/28 09:15-09:28/13 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 15:09-15:43/34 10:25-10:51/26 09:14-09:30/16 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 14:58-15:06/8 09:33-10:22/49 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 15:10-15:42/32 09:32-10:22/50 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:26-10:50/24 09:13-09:31/18 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 15:11-15:42/31 09:12-10:22/70 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 10:28-10:49/21 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 15:11-15:41/30 09:11-10:22/71 | | 07:16 | 06:00 | 05:05 | 04:55 |
| | 17:02 10:30-10:47/17 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 15:13-15:40/27 09:11-10:21/70 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 10:32-10:44/12 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 15:14-15:38/24 | | 07:11 | | 05:03 | |
| | 17:06 09:10-10:21/71 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3880 | 1218 | 0 | 214 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br> | 06:38 19:35-19:55/20<br>20:30 | 07:35<br>19:12 | 07:37 08:21-09:04/43<br>16:58 08:08-08:20/12 | 08:35 14:20-15:19/59 09:31-09:56/25<br>16:10 09:57-10:32/35 |
| 2 | 04:58<br>22:18 | 05:42<br>21:38 | 06:40 19:35-19:55/20<br>20:27 | 07:37<br>19:10 | 07:39 09:13-09:24/11 08:10-08:18/8<br>16:56 08:21-09:05/44 | 08:37 14:20-15:19/59 09:31-09:55/24<br>16:09 09:58-10:33/35 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42 19:35-19:54/19<br>20:24 | 07:39<br>19:07 | 07:41 09:10-09:26/16 08:12-08:14/2<br>16:54 08:21-09:05/44 | 08:38 14:21-15:19/58 09:32-09:55/23<br>16:08 09:58-10:33/35 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44 19:36-19:53/17<br>20:22 | 07:41<br>19:05 | 07:43 09:09-09:29/20<br>16:52 08:22-09:06/44 | 08:40 14:21-15:19/58 09:34-09:55/21<br>16:08 09:59-10:34/35 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45 19:37-19:50/13<br>20:19 | 07:42<br>19:02 | 07:45 09:33-09:42/9 08:22-09:06/44<br>16:50 09:08-09:30/22 | 08:41 14:21-15:18/57 09:34-09:54/20<br>16:07 09:59-10:34/35 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47 19:37-19:47/10<br>20:17 | 07:44<br>18:59 | 07:47 08:23-09:45/82<br>16:48 | 08:43 14:22-15:19/57 09:36-09:54/18<br>16:06 10:00-10:34/34 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49 19:41-19:45/4<br>20:14 | 07:46<br>18:57 | 07:49 08:23-09:47/84<br>16:46 | 08:44 14:21-15:18/57 11:07-11:12/5 09:36-09:53/17<br>16:06 12:45-12:53/8 10:00-10:34/34 |
| 8 | 05:03<br>22:14 | 05:53<br>21:26 | 06:51<br>20:12 | 07:48<br>18:54 | 07:51 08:25-09:49/84<br>16:44 | 08:46 14:22-15:18/56 11:06-11:15/9 09:38-09:54/16<br>16:05 12:44-12:56/12 10:01-10:35/34 |
| 9 | 05:05<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50<br>18:52 | 07:53 14:49-15:01/12 08:26-08:40/14<br>16:42 08:41-09:50/69 | 08:47 14:22-15:18/56 11:05-11:17/12 09:39-09:53/14<br>16:05 12:43-12:57/14 10:01-10:35/34 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52<br>18:49 | 07:55 14:47-15:07/20 08:28-08:37/9<br>16:40 08:41-09:51/70 | 08:48 14:23-15:18/55 11:05-11:19/14 09:41-09:53/12<br>16:04 12:43-12:59/16 10:02-10:36/34 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54<br>18:47 | 07:57 14:45-15:09/24<br>16:38 08:41-09:52/71 | 08:50 14:23-15:18/55 11:04-11:19/15 09:43-09:52/9<br>16:04 12:43-13:00/17 10:03-10:36/33 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56<br>18:44 | 07:59 14:44-15:12/28 08:43-09:53/70<br>16:36 10:04-10:16/12 | 08:51 14:24-15:17/53 11:04-11:20/16 09:44-09:51/7<br>16:04 12:42-13:01/19 10:03-10:36/33 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58<br>18:42 | 08:01 14:43-15:13/30 08:43-09:54/71<br>16:34 10:02-10:19/17 | 08:52 14:24-15:17/53 11:04-11:21/17 09:47-09:48/1<br>16:04 12:42-13:01/19 10:04-10:36/32 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00<br>18:39 | 08:03 14:42-15:14/32 08:44-09:54/70<br>16:33 10:00-10:21/21 | 08:53 14:24-15:16/52 11:04-11:22/18<br>16:04 12:42-13:02/20 10:04-10:36/32 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02<br>18:37 | 08:05 14:42-15:14/32 09:04-09:54/50<br>16:31 09:58-10:22/24 08:45-09:03/18 | 08:54 14:25-15:16/51 11:05-11:24/19<br>16:04 12:42-13:03/21 10:06-10:37/31 |
| 16 | 05:14<br>22:06 | 06:08<br>21:08 | 07:06<br>19:51 | 08:04<br>18:35 | 08:07 14:42-15:16/34 09:58-10:24/26 08:47-09:03/16<br>16:29 14:31-14:39/8 09:05-09:55/50 | 08:55 14:25-15:15/50 11:04-11:23/19<br>16:04 12:42-13:04/22 10:05-10:37/32 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08<br>19:48 | 08:06 09:07-09:15/8<br>18:32 | 08:09 14:28-15:16/48 09:06-09:55/49<br>16:28 09:57-10:25/28 08:49-09:01/12 | 08:56 15:00-15:12/12 12:43-13:05/22 10:06-10:37/31<br>16:04 14:26-14:59/33 11:04-11:24/20 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 09:04-09:18/14<br>18:30 | 08:11 14:27-15:17/50 09:06-09:56/50<br>16:26 09:57-10:26/29 08:51-08:59/8 | 08:56 15:01-15:12/11 12:43-13:05/22 10:07-10:38/31<br>16:04 14:26-15:00/34 11:05-11:25/20 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 09:02-09:19/17<br>18:27 | 08:13 14:25-15:17/52<br>16:25 09:06-10:26/80 | 08:57 15:02-15:13/11 12:44-13:06/22 10:07-10:39/32<br>16:04 14:27-15:01/34 11:06-11:26/20 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 09:01-09:19/18<br>18:25 | 08:15 14:24-15:17/53<br>16:23 09:07-10:27/80 | 08:58 15:02-15:12/10 12:44-13:06/22 10:07-10:38/31<br>16:05 14:27-15:00/33 11:05-11:26/21 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 09:00-09:20/20<br>18:23 | 08:17 14:25-15:18/53<br>16:22 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:08-10:39/31<br>16:05 14:28-15:01/33 11:06-11:27/21 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 09:00-09:22/22<br>18:20 | 08:19 14:24-15:19/55<br>16:20 09:09-10:29/80 | 08:59 15:03-15:13/10 12:44-13:07/23 10:09-10:40/31<br>16:05 14:28-15:01/33 11:07-11:28/21 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:59-09:23/24<br>18:18 | 08:21 14:24-15:19/55<br>16:19 09:10-10:30/80 | 09:00 15:04-15:14/10 12:45-13:08/23 10:09-10:40/31<br>16:06 14:29-15:02/33 11:07-11:28/21 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:59-09:23/24<br>18:16 | 08:23 14:23-15:19/56<br>16:18 09:11-10:30/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:40/31<br>16:07 14:29-15:02/33 11:07-11:28/21 |
| 25 | 05:28<br>21:52 | 06:25 19:43-19:52/9<br>20:47 | 07:23<br>19:28 | 07:22 07:59-08:23/24<br>17:13 08:28-08:38/10 | 08:25 14:22-15:19/57<br>16:16 09:12-10:31/79 | 09:00 15:04-15:15/11 12:46-13:08/22 10:09-10:41/32<br>16:07 14:29-15:03/34 11:08-11:28/20 |
| 26 | 05:29<br>21:51 | 06:27 19:41-19:54/13<br>20:44 | 07:25<br>19:25 | 07:24 07:59-08:23/24<br>17:11 08:25-08:40/15 | 08:27 14:22-15:19/57<br>16:15 09:14-10:31/77 | 09:01 15:05-15:17/12 12:48-13:10/22 10:11-10:42/31<br>16:08 14:31-15:04/33 11:09-11:29/20 |
| 27 | 05:31<br>21:49 | 06:28 19:39-19:54/15<br>20:42 | 07:27<br>19:23 | 07:26 08:00-08:42/42<br>17:09 | 08:28 14:21-15:19/58<br>16:14 09:15-10:31/76 | 09:01 14:31-15:20/49 11:10-11:29/19<br>16:09 12:48-13:10/22 10:11-10:43/32 |
| 28 | 05:33<br>21:47 | 06:30 19:38-19:55/17<br>20:39 | 07:29<br>19:20 | 07:29 08:01-08:43/42<br>17:07 | 08:30 14:21-15:19/58 09:17-09:56/39<br>16:13 09:57-10:32/35 | 09:01 14:31-15:22/51 11:11-11:30/19<br>16:10 12:49-13:10/21 10:11-10:43/32 |
| 29 | 05:34<br>21:45 | 06:32 19:37-19:56/19<br>20:37 | 07:31<br>19:17 | 07:31 08:47-08:59/12<br>17:04 08:01-08:43/42 | 08:32 14:21-15:19/58 09:29-09:56/27<br>16:12 09:57-10:32/35 09:19-09:28/9 | 09:01 14:32-15:24/52 11:11-11:30/19<br>16:11 12:50-13:10/20 10:12-10:44/32 |
| 30 | 05:36<br>21:44 | 06:34 19:36-19:56/20<br>20:35 | 07:33<br>19:15 | 07:33 08:45-09:01/16<br>17:02 08:03-08:43/40 | 08:34 14:21-15:19/58 09:30-09:56/26<br>16:11 09:58-10:33/35 | 09:01 14:32-15:24/52 11:11-11:29/18<br>16:11 12:50-13:09/19 10:11-10:44/33 |
| 31 | 05:38<br>21:42 | 06:36 19:36-19:56/20<br>20:32 | | 07:35 08:22-09:03/41<br>17:00 08:06-08:21/15 | | 09:01 14:32-15:25/53 11:13-11:29/16 09:53-09:59/6<br>16:13 12:51-13:10/19 10:12-10:44/32 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 113 | 103 | 470 | 3328 | 3740 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:59-14:33/34 09:41-09:49/8 | 08:28 09:33-09:49/16 | 07:27 | 07:08 19:09-19:32/23 | 05:55 | 05:02 |
| | 16:14 09:56-10:21/25 | 17:08 08:57-09:32/35 | 18:07 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 14:00-14:32/32 09:40-09:50/10 | 08:26 09:34-09:47/13 | 07:24 | 07:05 19:09-19:33/24 | 05:53 | 05:01 |
| | 16:15 09:55-10:21/26 | 17:10 08:55-09:32/37 | 18:10 | 20:12 | 21:11 | 22:04 |
| 3 | 09:00 14:01-14:33/32 09:40-09:51/11 | 08:24 09:37-09:45/8 | 07:22 | 07:03 19:08-19:32/24 | 05:51 | 05:00 |
| | 16:16 09:56-10:22/26 | 17:12 08:55-09:31/36 | 18:12 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 14:01-14:33/32 09:39-09:52/13 | 08:22 08:55-09:31/36 | 07:19 | 07:00 19:09-19:32/23 | 05:49 | 04:59 |
| | 16:18 09:56-10:22/26 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 14:03-14:33/30 09:39-09:54/15 | 08:20 08:56-09:30/34 | 07:17 | 06:58 19:09-19:30/21 | 05:46 | 04:58 |
| | 16:19 09:57-10:23/26 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 14:04-14:32/28 09:39-09:55/16 | 08:18 08:56-09:29/33 | 07:14 | 06:55 19:10-19:29/19 | 05:44 | 04:57 |
| | 16:20 09:57-10:24/27 | 17:19 08:47-08:50/3 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 14:05-14:32/27 09:38-09:56/18 | 08:16 09:18-09:27/9 08:57-09:15/18 | 07:12 | 06:53 19:10-19:27/17 | 05:42 | 04:56 |
| | 16:22 09:57-10:24/27 | 17:21 08:45-08:52/7 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 14:06-14:31/25 09:38-09:56/18 | 08:14 08:42-08:52/10 | 07:09 | 06:50 19:12-19:26/14 | 05:40 | 04:56 |
| | 16:23 09:57-10:24/27 | 17:23 08:56-09:13/17 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 14:22-14:30/8 09:59-10:26/27 | 08:12 08:40-08:54/14 | 07:07 | 06:48 19:14-19:22/8 | 05:38 | 04:55 |
| | 16:25 14:08-14:19/11 09:39-09:58/19 | 17:25 08:58-09:13/15 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 14:11-14:18/7 | 08:10 08:38-08:54/16 | 07:04 | 06:45 | 05:36 | 04:55 |
| | 16:26 09:39-10:26/47 | 17:27 08:59-09:12/13 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 09:39-10:26/47 | 08:08 08:37-08:55/18 | 07:02 | 06:43 | 05:34 | 04:54 |
| | 16:28 09:32-09:38/6 | 17:30 09:01-09:10/9 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:30-10:26/56 | 08:06 08:37-08:55/18 | 06:59 | 06:40 | 05:32 | 04:54 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:29-10:26/57 | 08:04 08:37-08:55/18 | 06:57 | 06:38 | 05:30 | 04:53 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 09:29-10:27/58 | 08:02 08:37-08:55/18 | 06:54 | 06:35 | 05:29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 |
| 15 | 08:52 09:28-10:27/59 | 07:59 08:38-08:55/17 | 06:52 | 06:33 | 05:27 | 04:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:27-10:26/59 | 07:57 08:38-08:53/15 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:27-10:27/60 | 07:55 08:40-08:52/12 | 06:47 | 06:28 | 05:23 | 04:52 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-10:27/59 | 07:53 08:41-08:49/8 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 09:27-10:26/59 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 09:27-10:27/60 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 10:06-10:26/20 09:17-09:22/5 | 07:46 | 06:36 | 06:18 | 05:17 | 04:52 |
| | 16:46 09:27-10:05/38 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 10:07-10:24/17 09:16-09:25/9 | 07:44 | 06:34 | 06:16 | 05:15 | 04:53 |
| | 16:48 09:27-10:05/38 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 10:09-10:24/15 09:14-09:26/12 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:27-10:05/38 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 10:11-10:22/11 | 07:39 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:12-10:05/53 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 10:14-10:19/5 | 07:36 | 06:26 | 06:09 | 05:11 | 04:53 |
| | 16:54 09:11-10:04/53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:11-10:05/54 | 07:34 | 06:23 18:17-18:29/12 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:11-10:04/53 | 07:32 | 06:21 18:14-18:30/16 | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 09:11-10:03/52 | 07:29 | 06:18 18:13-18:32/19 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:05-09:07/2 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:10-10:02/52 | | 07:16 19:11-19:32/21 | 06:00 | 05:05 | 04:55 |
| | 17:02 09:03-09:09/6 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:01-10:01/60 | | 07:13 19:10-19:32/22 | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 09:51-09:58/7 | | 07:11 19:10-19:33/23 | | 05:03 | |
| | 17:06 08:59-09:50/51 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1909 | 503 | 113 | 173 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 08:08-08:24/16 | 08:35 09:14-10:07/53 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 08:28-08:41/13 | 16:10 |
| 2 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 08:10-08:23/13 | 08:37 13:54-14:00/6 |
| | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 08:27-08:42/15 | 16:09 09:21-10:08/47 |
| 3 | 04:58 | 05:43 | 06:42 19:13-19:20/7 | 07:39 | 07:41 08:50-08:53/3 08:26-08:43/17 | 08:38 14:06-14:14/8 09:42-10:09/27 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 08:12-08:22/10 | 16:08 13:52-14:02/10 09:22-09:41/19 |
| 4 | 04:59 | 05:45 | 06:44 19:09-19:23/14 | 07:41 | 07:43 08:47-08:57/10 08:26-08:44/18 | 08:40 13:51-14:16/25 09:23-09:42/19 |
| | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 08:15-08:21/6 | 16:08 09:43-10:09/26 |
| 5 | 05:00 | 05:47 | 06:45 19:07-19:24/17 | 07:42 | 07:45 08:45-08:59/14 08:26-08:44/18 | 08:41 13:50-14:17/27 09:24-09:41/17 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 08:17-08:19/2 | 16:07 09:42-10:09/27 |
| 6 | 05:01 | 05:49 | 06:47 19:05-19:24/19 | 07:44 | 07:47 08:25-09:00/35 | 08:43 13:50-14:18/28 09:25-09:41/16 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 09:43-10:10/27 |
| 7 | 05:02 | 05:51 | 06:49 19:04-19:25/21 | 07:46 | 07:49 08:25-09:01/36 | 08:44 13:49-14:19/30 09:25-09:40/15 |
| | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 09:43-10:10/27 |
| 8 | 05:03 | 05:53 | 06:51 19:03-19:26/23 | 07:48 | 07:51 09:07-09:16/9 | 08:46 13:50-14:21/31 09:27-09:40/13 |
| | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 9 | 05:05 | 05:54 | 06:53 19:02-19:26/24 | 07:50 | 07:53 09:05-09:18/13 | 08:47 13:49-14:21/32 09:28-09:40/12 |
| | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 08:26-09:02/36 | 16:05 09:44-10:10/26 |
| 10 | 05:06 | 05:56 | 06:55 19:02-19:26/24 | 07:52 | 07:55 09:03-09:20/17 | 08:48 13:50-14:23/33 09:30-09:40/10 |
| | 22:12 | 21:22 | 20:07 | 18:49 | 16:40 08:28-09:02/34 | 16:04 09:45-10:11/26 |
| 11 | 05:07 | 05:58 | 06:57 19:02-19:26/24 | 07:54 | 07:57 08:31-09:29/58 | 08:50 13:49-14:23/34 09:31-09:39/8 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:46-10:11/25 |
| 12 | 05:08 | 06:00 | 06:59 19:01-19:24/23 | 07:56 | 07:59 08:33-09:33/60 | 08:51 13:49-14:24/35 09:32-09:38/6 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:46-10:11/25 |
| 13 | 05:09 | 06:02 | 07:01 19:01-19:24/23 | 07:58 | 08:01 08:42-09:34/52 | 08:52 13:49-14:24/35 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 08:35-08:41/6 | 16:04 09:46-10:12/26 |
| 14 | 05:11 | 06:04 | 07:02 19:02-19:23/21 | 08:00 | 08:03 08:42-09:35/53 | 08:53 13:50-14:25/35 10:42-10:44/2 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 08:37-08:39/2 | 16:04 13:42-13:43/1 09:47-10:12/25 |
| 15 | 05:12 | 06:06 | 07:04 19:02-19:22/20 | 08:02 | 08:05 08:43-09:36/53 | 08:54 13:50-14:25/35 10:42-10:47/5 |
| | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 13:40-13:46/6 09:48-10:13/25 |
| 16 | 05:14 | 06:08 | 07:06 19:03-19:20/17 | 08:04 | 08:07 08:44-09:38/54 | 08:55 13:50-14:26/36 10:40-10:47/7 |
| | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 13:40-13:47/7 09:48-10:13/25 |
| 17 | 05:15 | 06:09 | 07:08 19:05-19:18/13 | 08:06 | 08:09 09:48-09:53/5 | 08:56 13:51-14:27/36 10:40-10:49/9 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 08:45-09:38/53 | 16:04 13:40-13:48/8 09:49-10:13/24 |
| 18 | 05:16 | 06:11 | 07:10 19:07-19:13/6 | 08:08 | 08:11 09:45-09:56/11 | 08:56 13:51-14:27/36 10:41-10:50/9 |
| | 22:03 | 21:04 | 19:46 | 18:30 | 16:26 08:46-09:39/53 | 16:04 13:40-13:49/9 09:49-10:14/25 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 09:43-09:58/15 08:48-09:00/12 | 08:57 13:52-14:28/36 10:41-10:51/10 |
| | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 09:01-09:39/38 | 16:04 13:40-13:50/10 09:50-10:14/24 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 09:42-09:59/17 08:50-08:59/9 | 08:58 13:52-14:28/36 10:41-10:51/10 |
| | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 09:02-09:40/38 | 16:05 13:40-13:50/10 09:50-10:14/24 |
| 21 | 05:21 | 06:17 | 07:16 | 08:14 | 08:17 09:42-10:02/20 08:53-08:58/5 | 08:58 13:52-14:29/37 10:42-10:52/10 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 09:03-09:41/38 | 16:05 13:41-13:51/10 09:51-10:15/24 |
| 22 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 09:03-10:03/60 | 08:59 13:52-14:29/37 10:43-10:53/10 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 13:41-13:51/10 09:52-10:16/24 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 09:04-10:03/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 13:42-13:52/10 09:52-10:16/24 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 09:11-09:20/9 | 08:23 09:05-10:04/59 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 13:42-13:52/10 09:52-10:16/24 |
| 25 | 05:28 | 06:25 | 07:23 | 07:22 08:09-08:22/13 | 08:25 09:05-10:05/60 | 09:00 13:54-14:30/36 10:43-10:53/10 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 13:43-13:52/9 09:52-10:17/25 |
| 26 | 05:29 | 06:27 | 07:25 | 07:24 08:08-08:23/15 | 08:27 09:06-10:05/59 | 09:01 13:55-14:32/37 10:45-10:54/9 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 13:44-13:53/9 09:54-10:18/24 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 08:08-08:24/16 | 08:28 09:07-10:06/59 | 09:01 13:56-14:32/36 10:46-10:54/8 |
| | 21:49 | 20:42 | 19:23 | 17:09 | 16:14 | 16:09 13:45-13:53/8 09:54-10:18/24 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 08:07-08:24/17 | 08:30 09:09-10:07/58 | 09:01 13:56-14:32/36 10:47-10:53/6 |
| | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 13:47-13:53/6 09:54-10:19/25 |
| 29 | 05:34 | 06:32 | 07:31 | 07:31 08:06-08:24/18 | 08:32 09:10-10:07/57 | 09:01 13:57-14:32/35 10:49-10:53/4 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 13:49-13:52/3 09:55-10:20/25 |
| 30 | 05:36 | 06:34 | 07:33 | 07:33 08:06-08:24/18 | 08:34 09:12-10:08/56 | 09:01 13:57-14:32/35 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 09:54-10:19/25 |
| 31 | 05:38 | 06:36 | | 07:35 08:07-08:25/18 | | 09:01 13:58-14:32/34 09:42-09:46/4 |
| | 21:42 | 20:32 | | 17:00 08:30-08:40/10 | | 16:13 09:55-10:20/25 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 296 | 134 | 1550 | 2202 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 13:22-14:49/87 09:47-09:53/6 | 08:28 14:06-14:52/46 | 07:27 08:02-08:49/47 | 07:08 | 05:55 20:07-20:31/24 | 05:02 |
| | 16:14 10:52-11:32/40 | 17:08 09:49-10:10/21 | 18:07 07:52-08:00/8 | 20:10 | 21:09 | 22:03 |
| 2 | 09:01 13:22-14:49/87 09:46-09:54/8 | 08:26 14:08-14:50/42 | 07:24 08:03-08:40/37 | 07:05 | 05:53 20:07-20:31/24 | 05:01 |
| | 16:15 10:52-11:32/40 | 17:10 09:51-10:09/18 | 18:10 07:50-08:02/12 | 20:12 | 21:11 | 22:04 |
| 3 | 09:01 13:22-14:50/88 09:45-09:56/11 | 08:24 14:09-14:47/38 | 07:22 08:03-08:28/25 | 07:03 | 05:51 20:06-20:32/26 | 05:00 |
| | 16:16 10:53-11:33/40 | 17:12 09:53-10:07/14 | 18:12 07:47-08:02/15 | 20:14 | 21:13 | 22:05 |
| 4 | 09:00 13:22-14:50/88 09:44-09:57/13 | 08:22 14:12-14:35/23 09:02-09:09/7 | 07:19 08:20-08:24/4 08:05-08:17/12 | 07:00 | 05:49 20:06-20:32/26 | 04:59 |
| | 16:18 10:53-11:33/40 | 17:15 09:56-10:04/8 | 18:14 07:46-08:03/17 | 20:16 | 21:15 | 22:06 |
| 5 | 09:00 13:24-14:51/87 09:44-09:59/15 | 08:20 14:15-14:33/18 | 07:17 07:45-08:03/18 | 06:58 | 05:46 20:06-20:32/26 | 04:58 |
| | 16:19 10:54-11:34/40 | 17:17 08:59-09:13/14 | 18:16 08:07-08:14/7 | 20:18 | 21:17 | 22:07 |
| 6 | 08:59 13:24-14:52/88 09:44-10:00/16 | 08:18 14:19-14:29/10 | 07:14 07:45-08:03/18 | 06:55 | 05:44 20:05-20:32/27 | 04:57 |
| | 16:20 10:54-11:34/40 | 17:19 08:57-09:15/18 | 18:18 | 20:20 | 21:18 | 22:09 |
| 7 | 08:59 13:24-14:52/88 09:43-10:01/18 | 08:16 08:55-09:17/22 | 07:12 07:45-08:02/17 | 06:53 | 05:42 20:05-20:31/26 | 04:56 |
| | 16:22 10:54-11:34/40 | 17:21 | 18:20 | 20:22 | 21:20 | 22:10 |
| 8 | 08:58 13:24-14:52/88 09:43-10:02/19 | 08:14 08:53-09:17/24 | 07:09 07:46-08:02/16 | 06:50 | 05:40 20:05-20:31/26 | 04:56 |
| | 16:23 10:55-11:35/40 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 |
| 9 | 08:58 13:25-14:53/88 09:43-10:04/21 | 08:12 08:53-09:18/25 | 07:07 07:46-08:00/14 | 06:48 | 05:38 20:06-20:30/24 | 04:55 |
| | 16:25 10:56-11:36/40 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 |
| 10 | 08:57 13:26-14:54/88 09:43-10:05/22 | 08:10 08:52-09:19/27 | 07:04 07:47-07:58/11 | 06:45 | 05:36 20:06-20:30/24 | 04:55 |
| | 16:26 10:57-11:36/39 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 |
| 11 | 08:56 13:26-14:54/88 09:43-10:06/23 | 08:08 08:52-09:20/28 | 07:02 07:50-07:55/5 | 06:43 | 05:34 20:07-20:30/23 | 04:54 |
| | 16:28 10:57-11:36/39 | 17:29 08:43-08:50/7 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 13:26-14:55/89 09:42-10:06/24 | 08:06 08:39-09:20/41 | 06:59 | 06:40 | 05:32 20:07-20:29/22 | 04:54 |
| | 16:30 10:57-11:36/39 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 13:27-14:55/88 09:42-10:07/25 | 08:04 08:37-09:21/44 | 06:57 | 06:38 | 05:30 20:08-20:28/20 | 04:53 |
| | 16:31 10:58-11:36/38 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 |
| 14 | 08:53 13:28-14:56/88 09:42-10:08/26 | 08:02 08:34-09:21/47 | 06:54 | 06:35 | 05:29 20:09-20:27/18 | 04:53 |
| | 16:33 10:58-11:36/38 | 17:36 | 18:34 | 20:35 | 21:34 | 22:16 |
| 15 | 08:52 13:29-14:57/88 09:42-10:09/27 | 07:59 08:30-09:21/51 | 06:52 | 06:33 | 05:27 20:10-20:26/16 | 04:53 |
| | 16:35 10:59-11:37/38 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 13:29-14:56/87 09:42-10:09/27 | 07:57 08:28-09:21/53 | 06:49 | 06:30 | 05:25 20:11-20:24/13 | 04:52 |
| | 16:36 10:59-11:36/37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 13:30-14:57/87 09:42-10:10/28 | 07:55 08:27-09:21/54 | 06:47 | 06:28 | 05:23 20:14-20:23/9 | 04:52 |
| | 16:38 11:00-11:36/36 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 13:31-14:58/87 09:43-10:11/28 | 07:53 08:20-09:20/60 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 11:02-11:36/34 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 |
| 19 | 08:48 13:31-14:57/86 09:42-10:11/29 | 07:50 08:17-09:20/63 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 11:02-11:36/34 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:47 13:33-14:58/85 09:43-10:12/29 | 07:48 08:16-09:19/63 | 06:39 | 06:21 | 05:18 | 04:52 |
| | 16:44 11:04-11:36/32 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 |
| 21 | 08:45 13:33-14:58/85 09:43-10:12/29 | 07:46 08:12-09:18/66 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 11:04-11:35/31 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 13:34-14:57/83 09:42-10:12/30 | 07:44 08:10-09:17/67 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 11:05-11:34/29 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 13:36-14:58/82 09:43-10:13/30 | 07:41 08:07-09:15/68 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 11:07-11:34/27 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 13:37-14:58/81 09:43-10:13/30 | 07:39 08:05-09:13/68 | 06:29 | 06:11 | 05:12 | 04:53 |
| | 16:52 11:08-11:32/24 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 |
| 25 | 08:39 13:38-14:57/79 09:44-10:13/29 | 07:36 09:00-09:09/9 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 11:10-11:31/21 | 17:59 08:03-08:57/54 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 13:41-14:58/77 09:45-10:14/29 | 07:34 08:03-08:56/53 | 06:23 | 06:06 20:14-20:25/11 | 05:09 | 04:54 |
| | 16:56 11:13-11:30/17 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 13:43-14:57/74 09:45-10:13/28 | 07:32 08:02-08:54/52 | 06:21 | 06:04 20:12-20:27/15 | 05:08 | 04:54 |
| | 16:58 11:16-11:26/10 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:35 14:02-14:56/54 09:46-10:13/27 | 07:29 08:02-08:52/50 | 06:18 | 06:02 20:10-20:28/18 | 05:06 | 04:55 |
| | 17:00 13:46-14:01/15 | 18:05 07:55-07:59/4 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 14:03-14:56/53 09:46-10:12/26 | | 07:16 | 06:00 20:09-20:30/21 | 05:05 | 04:55 |
| | 17:02 13:52-13:55/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 14:04-14:55/51 | | 07:13 | 05:57 20:08-20:30/22 | 05:04 | 04:56 |
| | 17:04 09:47-10:12/25 | | 20:06 | 21:07 | 22:00 | 22:19 |
| 31 | 08:30 14:05-14:54/49 | | 07:11 | | 05:03 | |
| | 17:06 09:48-10:11/23 | | 20:08 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 4180 | 1377 | 283 | 87 | 374 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40 20:17-20:40/23<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:37 08:22-08:49/27<br>16:58 | 08:35 13:08-14:36/88 09:25-09:48/23<br>16:10 10:38-11:17/39 |
| 2 | 04:58<br>22:18 | 05:41 20:17-20:41/24<br>21:38 | 06:40<br>20:27 | 07:37<br>19:10 | 07:39 08:23-08:48/25<br>16:56 | 08:37 13:08-14:37/89 09:25-09:47/22<br>16:09 10:39-11:18/39 |
| 3 | 04:58<br>22:17 | 05:43 20:16-20:40/24<br>21:36 | 06:42<br>20:24 | 07:39 08:26-08:35/9<br>19:07 | 07:41 08:23-08:47/24<br>16:54 | 08:38 13:09-14:37/88 09:26-09:47/21<br>16:08 10:39-11:19/40 |
| 4 | 04:59<br>22:17 | 05:45 20:16-20:41/25<br>21:34 | 06:44<br>20:22 | 07:41 08:24-08:37/13<br>19:05 | 07:43 08:25-08:46/21<br>16:52 | 08:40 13:09-14:38/89 09:28-09:47/19<br>16:08 10:40-11:20/40 |
| 5 | 05:00<br>22:16 | 05:47 20:16-20:41/25<br>21:32 | 06:45<br>20:19 | 07:42 08:22-08:38/16<br>19:02 | 07:45 13:48-13:59/11<br>16:50 08:27-08:44/17 | 08:41 13:09-14:37/88 09:28-09:46/18<br>16:07 10:39-11:20/41 |
| 6 | 05:01<br>22:15 | 05:49 20:15-20:41/26<br>21:30 | 06:47<br>20:17 | 07:44 08:21-08:38/17<br>18:59 | 07:47 13:44-14:03/19<br>16:48 08:29-08:42/13 | 08:43 13:10-14:38/88 09:30-09:46/16<br>16:06 10:40-11:20/40 |
| 7 | 05:02<br>22:15 | 05:51 20:15-20:41/26<br>21:28 | 06:49<br>20:14 | 07:46 08:20-08:38/18<br>18:57 | 07:49 13:41-14:05/24 08:32-08:38/6<br>16:46 09:26-09:34/8 | 08:44 13:10-14:37/87 09:30-09:45/15<br>16:06 10:40-11:20/40 |
| 8 | 05:03<br>22:14 | 05:52 20:15-20:41/26<br>21:26 | 06:51<br>20:12 | 07:48 08:20-08:38/18<br>18:54 | 07:51 13:40-14:19/39<br>16:44 09:24-09:38/14 | 08:46 13:11-14:38/87 09:32-09:45/13<br>16:05 10:41-11:21/40 |
| 9 | 05:04<br>22:13 | 05:54 20:14-20:40/26<br>21:24 | 06:53<br>20:09 | 07:50 08:20-08:38/18<br>18:52 08:40-08:51/11 | 07:53 13:38-14:21/43<br>16:42 09:22-09:40/18 | 08:47 13:11-14:38/87 09:33-09:44/11<br>16:05 10:41-11:21/40 |
| 10 | 05:06<br>22:12 | 05:56 20:15-20:40/25<br>21:22 | 06:55<br>20:07 | 07:52 08:38-09:00/22<br>18:49 08:20-08:37/17 | 07:55 13:37-14:23/46<br>16:40 09:20-09:41/21 | 08:48 13:12-14:39/87 09:35-09:44/9<br>16:04 10:42-11:22/40 |
| 11 | 05:07<br>22:11 | 05:58 20:15-20:40/25<br>21:19 | 06:57<br>20:04 | 07:54 09:05-09:11/6 08:22-08:36/14<br>18:47 08:37-09:03/26 | 07:57 13:36-14:25/49<br>16:38 09:19-09:42/23 | 08:50 13:12-14:39/87 09:37-09:43/6<br>16:04 10:42-11:23/41 |
| 12 | 05:08<br>22:10 | 06:00 20:16-20:39/23<br>21:17 | 06:59<br>20:01 | 07:56 08:24-09:14/50<br>18:44 | 07:59 13:35-14:27/52<br>16:36 09:19-09:44/25 | 08:51 13:12-14:39/87<br>16:04 10:42-11:23/41 |
| 13 | 05:09<br>22:09 | 06:02 20:16-20:38/22<br>21:15 | 07:01<br>19:59 | 07:58 08:36-09:23/47<br>18:42 08:27-08:34/7 | 08:01 13:35-14:28/53 09:18-09:44/26<br>16:34 13:23-13:28/5 | 08:52 13:12-14:39/87<br>16:04 10:43-11:23/40 |
| 14 | 05:11<br>22:08 | 06:04 20:17-20:37/20<br>21:13 | 07:02<br>19:56 | 08:00 08:35-09:26/51<br>18:39 | 08:03 13:34-14:28/54 09:18-09:45/27<br>16:33 13:18-13:33/15 | 08:53 13:13-14:39/86<br>16:04 10:43-11:23/40 |
| 15 | 05:12<br>22:07 | 06:06 20:18-20:36/18<br>21:10 | 07:04<br>19:54 | 08:02 08:35-09:28/53<br>18:37 | 08:05 13:15-14:29/74 09:17-09:45/28<br>16:31 10:48-10:58/10 | 08:54 13:13-14:40/87<br>16:04 10:44-11:24/40 |
| 16 | 05:14<br>22:06 | 06:08 20:20-20:34/14<br>21:08 | 07:06<br>19:51 | 08:04 08:35-09:29/54<br>18:35 | 08:07 13:14-14:31/77 09:18-09:47/29<br>16:29 10:46-11:03/17 | 08:55 13:14-14:40/86<br>16:04 10:44-11:24/40 |
| 17 | 05:15<br>22:04 | 06:09 20:22-20:31/9<br>21:06 | 07:08<br>19:48 | 08:06 09:31-09:43/12<br>18:32 08:35-09:29/54 | 08:09 13:12-14:31/79 09:18-09:47/29<br>16:28 10:44-11:05/21 | 08:56 13:14-14:40/86<br>16:04 10:45-11:25/40 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10<br>19:46 | 08:08 08:37-09:45/68<br>18:30 | 08:11 13:11-14:32/81 09:17-09:47/30<br>16:26 10:42-11:06/24 | 08:56 13:15-14:41/86<br>16:04 10:45-11:25/40 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12<br>19:43 | 08:10 08:39-09:47/68<br>18:27 | 08:13 13:10-14:32/82 09:17-09:47/30<br>16:25 10:41-11:08/27 | 08:57 13:16-14:42/86<br>16:04 10:46-11:26/40 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14<br>19:41 | 08:12 08:41-09:48/67<br>18:25 | 08:15 13:09-14:32/83 09:17-09:47/30<br>16:23 10:40-11:09/29 | 08:58 13:16-14:41/85<br>16:05 10:46-11:26/40 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16<br>19:38 | 08:14 08:45-09:48/63<br>18:23 | 08:17 13:09-14:34/85 09:19-09:48/29<br>16:22 10:40-11:11/31 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18<br>19:35 | 08:16 08:47-09:50/63<br>18:20 | 08:19 13:09-14:34/85 09:19-09:48/29<br>16:20 10:40-11:12/32 | 08:59 13:16-14:42/86<br>16:05 10:47-11:27/40 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19<br>19:33 | 08:18 08:48-09:50/62<br>18:18 | 08:21 13:09-14:34/85 09:19-09:48/29<br>16:19 10:39-11:13/34 | 09:00 13:17-14:43/86<br>16:06 10:48-11:28/40 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 08:51-09:50/59<br>18:16 | 08:23 13:08-14:35/87 09:20-09:48/28<br>16:18 10:39-11:13/34 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 07:56-08:50/54<br>17:13 | 08:25 13:08-14:35/87 09:20-09:48/28<br>16:16 10:39-11:14/35 | 09:00 13:18-14:44/86<br>16:07 10:48-11:28/40 |
| 26 | 05:29 20:26-20:31/5<br>21:51 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 07:58-08:50/52<br>17:11 | 08:27 13:08-14:35/87 09:21-09:48/27<br>16:15 10:38-11:15/37 | 09:01 13:19-14:45/86<br>16:08 10:50-11:30/40 |
| 27 | 05:31 20:23-20:34/11<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 08:01-08:51/50<br>17:09 | 08:28 13:08-14:36/88 09:21-09:48/27<br>16:14 10:38-11:16/38 | 09:01 13:19-14:46/87<br>16:09 10:50-11:30/40 |
| 28 | 05:33 20:21-20:35/14<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 08:06-08:51/45<br>17:07 | 08:30 13:08-14:36/88 09:22-09:48/26<br>16:13 10:39-11:16/37 | 09:01 13:20-14:46/86<br>16:10 10:50-11:31/41 |
| 29 | 05:34 20:20-20:37/17<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:31 08:07-08:50/43<br>17:04 | 08:32 13:08-14:36/88 09:23-09:48/25<br>16:12 10:39-11:17/38 | 09:01 13:20-14:47/87<br>16:10 10:51-11:31/40 |
| 30 | 05:36 20:19-20:38/19<br>21:44 | 06:34<br>20:34 | 07:33<br>19:15 | 07:33 08:09-08:50/41<br>17:02 | 08:34 13:08-14:37/89 09:24-09:48/24<br>16:11 10:39-11:18/39 | 09:01 13:20-14:47/87<br>16:11 10:50-11:31/41 |
| 31 | 05:38 20:18-20:39/21<br>21:42 | 06:36<br>20:32 | | 07:35 08:22-08:50/28<br>17:00 08:14-08:18/4 | | 09:01 13:21-14:48/87<br>16:12 10:51-11:31/40 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 87 | 381 | 0 | 1300 | 2981 | 4107 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 11:59-12:48/49<br>16:14 | 08:28 11:39-14:28/169<br>17:08 | 07:27 11:43-14:29/166 08:18-08:46/28<br>18:07 08:56-09:39/43 | 07:08<br>20:10 | 05:55<br>21:09 | 05:02<br>22:03 |
| 2 | 09:01 11:58-12:48/50<br>16:15 | 08:26 11:39-14:29/170<br>17:10 | 07:24 11:45-14:28/163 08:19-08:46/27<br>18:09 08:57-09:38/41 | 07:05<br>20:12 | 05:53<br>21:11 | 05:01<br>22:04 |
| 3 | 09:01 11:59-12:49/50<br>16:16 | 08:24 11:39-14:30/171<br>17:12 | 07:22 11:46-14:27/161 08:19-08:45/26<br>18:12 08:57-09:37/40 | 07:03<br>20:14 | 05:51<br>21:13 | 05:00<br>22:05 |
| 4 | 09:00 11:58-12:50/52<br>16:18 | 08:22 11:38-14:30/172<br>17:15 | 07:19 11:48-14:26/158 08:20-08:44/24<br>18:14 08:58-09:36/38 | 07:00<br>20:16 | 05:49<br>21:15 | 04:59<br>22:06 |
| 5 | 09:00 11:59-12:51/52<br>16:19 | 08:20 11:38-14:31/173<br>17:17 | 07:17 11:49-14:24/155 08:21-08:42/21<br>18:16 08:58-09:34/36 | 06:58<br>20:18 | 05:46<br>21:17 | 04:58<br>22:07 |
| 6 | 08:59 11:59-12:52/53<br>16:20 | 08:18 11:38-14:32/174<br>17:19 | 07:14 11:52-14:23/151 08:23-08:40/17<br>18:18 09:00-09:33/33 | 06:55<br>20:20 | 05:44<br>21:18 | 04:57<br>22:09 |
| 7 | 08:59 11:57-12:52/55<br>16:22 | 08:16 11:37-14:32/175<br>17:21 | 07:12 11:55-14:20/145 08:25-08:37/12<br>18:20 09:01-09:30/29 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:10 |
| 8 | 08:58 11:56-12:53/57<br>16:23 | 08:14 11:37-14:33/176<br>17:23 09:13-09:24/11 | 07:09 11:58-14:17/139<br>18:22 09:02-09:27/25 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:11 |
| 9 | 08:58 11:54-12:54/60<br>16:25 | 08:12 11:37-14:33/176<br>17:25 09:09-09:28/19 | 07:07 12:06-14:15/129<br>18:24 09:05-09:25/20 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:12 |
| 10 | 08:57 11:54-12:55/61<br>16:26 | 08:10 11:37-14:34/177<br>17:27 09:07-09:31/24 | 07:04 12:13-14:11/118 07:36-07:44/8<br>18:26 09:09-09:19/10 | 06:45<br>20:27 | 05:36<br>21:26 | 04:54<br>22:13 |
| 11 | 08:56 11:52-12:55/63<br>16:28 | 08:08 11:37-14:34/177<br>17:29 09:05-09:33/28 | 07:02 12:14-14:07/113<br>18:28 07:33-07:48/15 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 13:45-13:50/5<br>16:29 11:51-12:56/65 | 08:06 11:37-14:34/177<br>17:32 09:03-09:34/31 | 06:59 12:14-13:44/90<br>18:30 07:30-07:49/19 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 13:40-13:56/16<br>16:31 11:51-12:57/66 | 08:04 11:37-14:35/178<br>17:34 09:02-09:36/34 | 06:57 12:14-13:42/88<br>18:32 07:22-07:51/29 | 06:38<br>20:33 | 05:30<br>21:32 | 04:53<br>22:15 |
| 14 | 08:53 13:38-14:00/22<br>16:33 11:50-12:58/68 | 08:02 11:37-14:35/178<br>17:36 09:01-09:37/36 | 06:54 12:16-13:41/85<br>18:34 07:19-07:51/32 | 06:35<br>20:35 | 05:28<br>21:34 | 04:53<br>22:16 |
| 15 | 08:52 13:36-14:03/27<br>16:35 11:49-12:59/70 | 07:59 11:36-14:35/179<br>17:38 08:59-09:38/39 | 06:52 12:16-13:40/84<br>18:36 07:16-07:51/35 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 13:33-14:04/31<br>16:36 11:48-12:59/71 | 07:57 11:37-14:35/178<br>17:40 08:59-09:39/40 | 06:49 12:18-13:39/81<br>18:38 07:14-07:52/38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 13:32-14:07/35<br>16:38 11:48-13:00/72 | 07:55 11:37-14:35/178 08:30-08:39/9<br>17:42 08:58-09:40/42 | 06:47 12:19-13:36/77<br>18:40 07:13-07:52/39 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:18 |
| 18 | 08:49 13:31-14:09/38<br>16:40 11:47-13:01/74 | 07:53 11:37-14:35/178 08:26-08:41/15<br>17:44 08:57-09:40/43 | 06:44 12:20-13:34/74<br>18:42 07:13-07:52/39 | 06:25<br>20:43 | 05:21<br>21:41 | 04:52<br>22:18 |
| 19 | 08:48 13:30-14:11/41<br>16:42 11:46-13:02/76 | 07:50 11:37-14:35/178 08:24-08:43/19<br>17:46 08:57-09:41/44 | 06:41 12:23-13:32/69<br>18:44 07:12-07:51/39 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:47 13:29-14:13/44<br>16:44 11:46-13:03/77 | 07:48 11:38-14:35/177 08:23-08:45/22<br>17:49 08:57-09:41/44 | 06:39 12:25-13:30/65<br>18:46 07:11-07:50/39 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:19 |
| 21 | 08:45 13:28-14:14/46<br>16:46 11:45-13:03/78 | 07:46 11:38-14:34/176 08:21-08:46/25<br>17:51 08:56-09:41/45 | 06:36 12:28-13:27/59<br>18:48 07:12-07:50/38 | 06:18<br>20:49 | 05:16<br>21:46 | 04:52<br>22:19 |
| 22 | 08:44 13:26-14:16/50<br>16:48 11:44-13:07/83 | 07:44 11:39-14:34/175 08:21-08:47/26<br>17:53 08:56-09:42/46 | 06:34 12:31-13:23/52<br>18:50 07:12-07:49/37 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 13:26-14:18/52<br>16:50 11:44-13:13/89 | 07:41 11:38-14:33/175 08:19-08:47/28<br>17:55 08:55-09:41/46 | 06:31 12:35-13:19/44<br>18:52 07:13-07:48/35 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 13:25-14:19/54<br>16:52 11:43-13:16/93 | 07:39 11:39-14:33/174 08:19-08:48/29<br>17:57 08:55-09:41/46 | 06:29 12:41-13:13/32<br>18:54 07:14-07:46/32 | 06:11<br>20:55 | 05:12<br>21:51 | 04:53<br>22:19 |
| 25 | 08:39 13:24-14:20/56<br>16:54 11:42-13:18/96 | 07:36 11:40-14:32/172 08:18-08:47/29<br>17:59 08:55-09:41/46 | 06:26 12:55-12:59/4<br>18:56 07:14-07:44/30 | 06:09<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 13:24-14:22/58<br>16:56 11:43-13:22/99 | 07:34 11:41-14:32/171 08:19-08:48/29<br>18:01 08:55-09:41/46 | 06:23 07:17-07:42/25<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:42-14:23/161<br>16:58 | 07:32 11:41-14:31/170 08:18-08:47/29<br>18:03 08:55-09:40/45 | 06:21 07:33-07:36/3<br>19:00 07:20-07:31/11 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:35 11:41-14:24/163<br>17:00 | 07:29 11:42-14:30/168 08:18-08:47/29<br>18:05 08:56-09:40/44 | 06:18<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:41-14:25/164<br>17:02 | | 07:16<br>20:04 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 11:40-14:26/166<br>17:04 | | 07:13<br>20:06 | 05:57<br>21:07 | 05:04<br>22:00 | 04:56<br>22:19 |
| 31 | 08:30 11:40-14:27/167<br>17:06 | | 07:11<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3175 | 5980 | 3515 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35 12:53-14:22/89<br>19:12 08:07-08:28/21 | 07:37 11:07-14:03/176<br>16:58 08:37-09:00/23 | 08:35 11:34-12:37/63<br>16:10 |
| 2 | 04:58<br>22:18 | 05:41<br>21:38 | 06:40<br>20:27 | 07:37 14:24-14:42/18 08:10-08:26/16<br>19:10 12:52-14:23/91 | 07:39 11:07-14:03/176<br>16:56 08:40-08:57/17 | 08:37 11:36-12:38/62<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:39 12:51-14:47/116<br>19:07 08:12-08:24/12 | 07:41 11:07-14:02/175<br>16:54 08:44-08:53/9 | 08:38 11:38-12:38/60<br>16:08 |
| 4 | 04:59<br>22:17 | 05:45<br>21:34 | 06:44<br>20:22 | 07:41 12:50-14:51/121<br>19:04 09:44-10:00/16 | 07:43 11:08-14:02/174<br>16:52 | 08:40 11:41-12:38/57<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:38-14:53/135<br>19:02 09:41-10:03/22 | 07:45 11:08-14:02/174<br>16:50 | 08:41 11:42-12:37/55<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49<br>21:30 | 06:47<br>20:17 | 07:44 12:33-14:55/142 09:03-09:11/8<br>18:59 09:38-10:05/27 | 07:47 11:08-14:01/173<br>16:48 | 08:43 11:45-12:38/53<br>16:06 |
| 7 | 05:02<br>22:15 | 05:51<br>21:28 | 06:49<br>20:14 | 07:46 12:29-14:57/148 08:59-09:14/15<br>18:57 09:36-10:07/31 | 07:49 11:08-14:00/172<br>16:46 | 08:44 11:45-12:37/52<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52<br>21:26 | 06:51<br>20:12 | 07:48 12:26-14:58/152 08:57-09:16/19<br>18:54 09:34-10:08/34 | 07:51 11:10-14:00/170<br>16:44 | 08:46 11:46-12:38/52<br>16:05 |
| 9 | 05:04<br>22:13 | 05:54<br>21:24 | 06:53<br>20:09 | 07:50 12:23-14:59/156 08:55-09:18/23<br>18:52 09:33-10:09/36 | 07:53 11:10-14:00/170<br>16:42 | 08:47 11:47-12:37/50<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56<br>21:22 | 06:55<br>20:07 | 07:52 12:21-15:00/159 08:54-09:18/24<br>18:49 09:31-10:10/39 | 07:55 11:10-13:59/169<br>16:40 | 08:48 11:48-12:38/50<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58<br>21:19 | 06:57<br>20:04 | 07:54 12:19-15:01/162 08:53-09:19/26<br>18:47 09:30-10:11/41 | 07:57 11:11-13:58/167<br>16:38 | 08:50 11:49-12:38/49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00<br>21:17 | 06:59<br>20:01 | 07:56 12:17-15:02/165 08:52-09:19/27<br>18:44 09:29-10:11/42 | 07:59 11:12-13:58/166<br>16:36 | 08:51 11:49-12:38/49<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02<br>21:15 | 07:01<br>19:59 | 07:58 12:15-15:02/167 08:51-09:19/28<br>18:42 09:28-10:12/44 | 08:01 11:13-13:57/164<br>16:34 | 08:52 11:50-12:38/48<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04<br>21:13 | 07:02<br>19:56 | 08:00 12:14-15:03/169 08:51-09:20/29<br>18:39 09:29-10:13/44 | 08:03 11:13-13:56/163<br>16:33 | 08:53 11:50-12:38/48<br>16:04 |
| 15 | 05:12<br>22:07 | 06:06<br>21:10 | 07:04<br>19:54 | 08:02 12:14-15:04/170 08:51-09:20/29<br>18:37 09:28-10:13/45 | 08:05 11:14-13:55/161<br>16:31 | 08:54 11:51-12:38/47<br>16:04 |
| 16 | 05:13<br>22:06 | 06:07<br>21:08 | 07:06 08:10-08:19/9<br>19:51 | 08:04 12:12-15:04/172 08:51-09:20/29<br>18:35 09:27-10:13/46 | 08:07 12:57-13:55/58<br>16:29 11:16-12:55/99 | 08:55 11:52-12:38/46<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09<br>21:06 | 07:08 08:06-08:30/24<br>19:48 | 08:06 12:11-15:05/174 08:51-09:19/28<br>18:32 09:27-10:13/46 | 08:09 12:58-13:54/56<br>16:28 11:16-12:52/96 | 08:56 11:53-12:39/46<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11<br>21:04 | 07:10 08:03-08:32/29<br>19:46 | 08:08 12:10-15:05/175 08:51-09:19/28<br>18:30 09:27-10:13/46 | 08:11 12:59-13:53/54<br>16:26 11:17-12:50/93 | 08:56 11:53-12:39/46<br>16:04 |
| 19 | 05:18<br>22:02 | 06:13<br>21:01 | 07:12 13:29-13:58/29<br>19:43 08:01-08:32/31 | 08:10 12:10-15:05/175 08:51-09:18/27<br>18:27 09:26-10:12/46 | 08:13 13:00-13:52/52<br>16:25 11:18-12:47/89 | 08:57 11:54-12:40/46<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15<br>20:59 | 07:14 13:22-14:04/42<br>19:41 07:59-08:34/35 | 08:12 12:09-15:05/176 08:51-09:17/26<br>18:25 09:26-10:12/46 | 08:15 13:01-13:51/50<br>16:23 11:19-12:42/83 | 08:58 11:54-12:40/46<br>16:05 |
| 21 | 05:21<br>21:59 | 06:17<br>20:56 | 07:16 13:17-14:08/51<br>19:38 07:58-08:34/36 | 08:14 12:08-15:05/177 08:52-09:16/24<br>18:23 09:26-10:11/45 | 08:17 13:04-13:50/46<br>16:22 11:21-12:39/78 | 08:59 11:55-12:40/45<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:18 13:13-14:11/58<br>19:35 07:57-08:35/38 | 08:16 12:08-15:05/177 08:54-09:15/21<br>18:20 09:27-10:12/45 | 08:19 13:05-13:49/44<br>16:20 11:22-12:39/77 | 08:59 11:55-12:40/45<br>16:05 |
| 23 | 05:24<br>21:56 | 06:21<br>20:52 | 07:19 13:10-14:13/63<br>19:33 07:56-08:35/39 | 08:18 12:08-15:05/177 08:55-09:13/18<br>18:18 09:27-10:11/44 | 08:21 13:07-13:48/41<br>16:19 11:23-12:39/76 | 09:00 11:56-12:42/46<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21 13:07-14:16/69<br>19:30 07:55-08:35/40 | 08:20 12:07-15:05/178 08:57-09:11/14<br>18:16 09:28-10:10/42 | 08:23 13:08-13:47/39<br>16:18 11:24-12:39/75 | 09:00 11:56-12:42/46<br>16:07 |
| 25 | 05:27<br>21:52 | 06:25<br>20:47 | 07:23 13:05-14:17/72<br>19:28 07:55-08:35/40 | 07:22 11:07-14:05/178 08:00-08:07/7<br>17:13 08:28-09:09/41 | 08:25 13:10-13:45/35<br>16:16 11:26-12:38/72 | 09:00 11:56-12:42/46<br>16:07 |
| 26 | 05:29<br>21:51 | 06:26<br>20:44 | 07:25 13:03-14:19/76<br>19:25 07:55-08:34/39 | 07:24 11:06-14:04/178<br>17:11 08:28-09:08/40 | 08:27 13:12-13:44/32<br>16:15 11:27-12:38/71 | 09:01 11:58-12:44/46<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27 13:00-14:19/79<br>19:22 07:56-08:34/38 | 07:26 11:07-14:05/178<br>17:09 08:30-09:08/38 | 08:28 13:15-13:42/27<br>16:14 11:28-12:38/70 | 09:01 11:58-12:44/46<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29 12:58-14:20/82<br>19:20 07:57-08:32/35 | 07:28 11:07-14:05/178<br>17:07 08:31-09:06/35 | 08:30 13:18-13:40/22<br>16:13 11:30-12:38/68 | 09:01 11:58-12:45/47<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31 12:56-14:21/85<br>19:17 07:58-08:31/33 | 07:31 11:06-14:04/178<br>17:04 08:32-09:05/33 | 08:32 13:21-13:37/16<br>16:12 11:32-12:38/66 | 09:01 11:58-12:46/48<br>16:10 |
| 30 | 05:36<br>21:44 | 06:34<br>20:34 | 07:33 12:55-14:22/87<br>19:15 08:00-08:30/30 | 07:33 11:06-14:04/178<br>17:02 08:33-09:03/30 | 08:34 13:26-13:33/7<br>16:11 11:33-12:38/65 | 09:01 11:58-12:45/47<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:35 11:06-14:03/177<br>17:00 08:35-09:02/27 | | 09:01 11:58-12:46/48<br>16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 1289 | 6556 | 4356 | 1535 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | | 07:27 | 08:24-09:13/49 | 07:08 | | 05:55 | 19:59-20:36/37 | 05:02 | 20:37-21:02/25 |
| | 16:14 | 17:08 | | 18:07 | 08:02-08:23/21 | 20:10 | | 21:09 | | 22:02 | |
| 2 | 09:01 | 08:26 | | 07:24 | 08:57-09:10/13 | 08:03-08:23/20 | 07:05 | | 05:53 | 19:59-20:38/39 | 05:01 | 20:38-21:02/24 |
| | 16:15 | 17:10 | | 18:09 | 08:25-08:56/31 | | 20:12 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | | 07:22 | 08:24-08:55/31 | | 07:03 | | 05:51 | 19:58-20:40/42 | 05:00 | 20:39-21:03/24 |
| | 16:16 | 17:12 | | 18:12 | 08:03-08:22/19 | | 20:14 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 09:01-09:07/6 | 07:19 | 08:25-08:55/30 | | 07:00 | | 05:48 | 19:58-20:41/43 | 04:59 | 20:39-21:02/23 |
| | 16:18 | 17:14 | | 18:14 | 08:04-08:21/17 | | 20:16 | | 21:15 | | 22:06 | |
| 5 | 09:00 | 08:20 | 08:58-09:11/13 | 07:17 | 08:26-08:53/27 | | 06:58 | | 05:46 | 19:57-20:42/45 | 04:58 | 20:39-21:02/23 |
| | 16:19 | 17:17 | | 18:16 | 08:04-08:19/15 | | 20:17 | | 21:16 | | 22:07 | |
| 6 | 08:59 | 08:18 | 08:56-09:13/17 | 07:14 | 08:27-08:52/25 | | 06:55 | | 05:44 | 19:57-20:43/46 | 04:57 | 20:39-21:01/22 |
| | 16:20 | 17:19 | | 18:18 | 08:07-08:17/10 | | 20:19 | | 21:18 | | 22:09 | |
| 7 | 08:59 | 08:16 | 08:54-09:14/20 | 07:12 | 08:28-08:50/22 | | 06:53 | | 05:42 | 19:57-20:43/46 | 04:56 | 21:25-21:27/2 |
| | 16:22 | 17:21 | | 18:20 | | | 20:21 | | 21:20 | | 22:10 | 20:40-21:02/22 |
| 8 | 08:58 | 08:14 | 08:53-09:16/23 | 07:09 | 08:30-08:47/17 | | 06:50 | | 05:40 | 19:57-20:43/46 | 04:56 | 21:22-21:29/7 |
| | 16:23 | 17:23 | | 18:22 | | | 20:23 | | 21:22 | | 22:11 | 20:40-21:01/21 |
| 9 | 08:57 | 08:12 | 08:52-09:17/25 | 07:07 | 08:33-08:44/11 | | 06:48 | | 05:38 | 19:57-20:43/46 | 04:55 | 21:22-21:31/9 |
| | 16:25 | 17:25 | | 18:24 | | | 20:25 | | 21:24 | | 22:12 | 20:41-21:02/21 |
| 10 | 08:57 | 08:10 | 08:52-09:18/26 | 07:04 | | | 06:45 | | 05:36 | 19:57-20:43/46 | 04:54 | 21:21-21:32/11 |
| | 16:26 | 17:27 | | 18:26 | | | 20:27 | | 21:26 | | 22:13 | 20:41-21:01/20 |
| 11 | 08:56 | 08:08 | 08:51-09:19/28 | 07:02 | | | 06:43 | | 05:34 | 19:57-20:43/46 | 04:54 | 21:21-21:33/12 |
| | 16:28 | 17:29 | | 18:28 | | | 20:29 | | 21:28 | 20:46-20:50/4 | 22:13 | 20:42-21:01/19 |
| 12 | 08:55 | 08:06 | 08:50-09:19/29 | 06:59 | | | 06:40 | | 05:32 | 19:58-20:54/56 | 04:53 | 21:21-21:34/13 |
| | 16:29 | 17:32 | | 18:30 | | | 20:31 | | 21:30 | | 22:14 | 20:43-21:02/19 |
| 13 | 08:54 | 08:04 | 08:41-09:20/39 | 06:57 | | | 06:38 | | 05:30 | 19:58-20:56/58 | 04:53 | 21:20-21:34/14 |
| | 16:31 | 17:34 | | 18:32 | | | 20:33 | | 21:32 | | 22:15 | 20:43-21:01/18 |
| 14 | 08:53 | 08:02 | 08:38-09:21/43 | 06:54 | | | 06:35 | | 05:28 | 19:58-20:57/59 | 04:53 | 21:20-21:35/15 |
| | 16:33 | 17:36 | | 18:34 | | | 20:35 | | 21:33 | | 22:16 | 20:43-21:01/18 |
| 15 | 08:52 | 07:59 | 08:36-09:21/45 | 06:52 | | | 06:33 | | 05:27 | 20:00-20:59/59 | 04:53 | 21:20-21:35/15 |
| | 16:35 | 17:38 | | 18:36 | | | 20:37 | | 21:35 | | 22:16 | 20:44-21:01/17 |
| 16 | 08:51 | 07:57 | 08:35-09:22/47 | 06:49 | | | 06:30 | | 05:25 | 20:00-20:59/59 | 04:52 | 21:20-21:36/16 |
| | 16:36 | 17:40 | | 18:38 | | | 20:39 | | 21:37 | | 22:17 | 20:45-21:01/16 |
| 17 | 08:50 | 07:55 | 08:34-09:23/49 | 06:47 | | | 06:28 | | 05:23 | 20:01-21:00/59 | 04:52 | 21:20-21:36/16 |
| | 16:38 | 17:42 | | 18:40 | | | 20:41 | | 21:39 | | 22:17 | 20:45-21:01/16 |
| 18 | 08:49 | 07:53 | 08:32-09:22/50 | 06:44 | | | 06:25 | | 05:21 | 20:02-21:00/58 | 04:52 | 21:20-21:37/17 |
| | 16:40 | 17:44 | | 18:42 | | | 20:43 | | 21:41 | | 22:18 | 20:45-21:01/16 |
| 19 | 08:48 | 07:50 | 08:30-09:23/53 | 06:41 | | | 06:23 | | 05:20 | 20:04-21:01/57 | 04:52 | 21:20-21:37/17 |
| | 16:42 | 17:46 | | 18:44 | | | 20:45 | | 21:42 | | 22:18 | 20:46-21:01/15 |
| 20 | 08:46 | 07:48 | 08:29-09:23/54 | 06:39 | | | 06:20 | | 05:18 | 20:05-21:01/56 | 04:52 | 21:20-21:37/17 |
| | 16:44 | 17:49 | | 18:46 | | | 20:47 | | 21:44 | | 22:19 | 20:46-21:01/15 |
| 21 | 08:45 | 07:46 | 08:27-09:22/55 | 06:36 | | | 06:18 | | 05:16 | 20:21-21:02/41 | 04:52 | 21:20-21:37/17 |
| | 16:46 | 17:51 | | 18:48 | | | 20:49 | | 21:46 | 20:07-20:18/11 | 22:19 | 20:46-21:01/15 |
| 22 | 08:44 | 07:43 | 08:27-09:22/55 | 06:34 | | | 06:16 | | 05:15 | 20:24-21:02/38 | 04:52 | 21:21-21:38/17 |
| | 16:48 | 17:53 | 08:10-08:19/9 | 18:50 | | | 20:51 | | 21:47 | 20:10-20:15/5 | 22:19 | 20:47-21:02/15 |
| 23 | 08:42 | 07:41 | 08:26-09:21/55 | 06:31 | | | 06:13 | | 05:13 | 20:26-21:02/36 | 04:53 | 21:21-21:38/17 |
| | 16:50 | 17:55 | 08:07-08:20/13 | 18:52 | | | 20:53 | | 21:49 | | 22:19 | 20:47-21:02/15 |
| 24 | 08:41 | 07:39 | 08:25-09:21/56 | 06:29 | | | 06:11 | | 05:12 | 20:28-20:35/7 | 04:53 | 21:21-21:38/17 |
| | 16:52 | 17:57 | 08:05-08:22/17 | 18:54 | | | 20:55 | | 21:51 | 20:36-21:03/27 | 22:19 | 20:47-21:02/15 |
| 25 | 08:39 | 07:36 | 08:24-09:19/55 | 06:26 | | | 06:09 | 20:09-20:17/8 | 05:10 | 20:35-21:02/27 | 04:53 | 21:22-21:38/16 |
| | 16:54 | 17:59 | 08:04-08:22/18 | 18:56 | | | 20:57 | | 21:52 | | 22:19 | 20:47-21:03/16 |
| 26 | 08:38 | 07:34 | 08:25-09:19/54 | 06:23 | | | 06:06 | 20:23-20:28/5 | 05:09 | 20:36-21:02/26 | 04:54 | 21:22-21:38/16 |
| | 16:56 | 18:01 | 08:03-08:23/20 | 18:58 | | | 20:59 | 20:06-20:21/15 | 21:54 | | 22:19 | 20:47-21:03/16 |
| 27 | 08:36 | 07:32 | 08:24-09:17/53 | 06:21 | | | 06:04 | 20:04-20:30/26 | 05:08 | 20:36-21:02/26 | 04:54 | 21:23-21:39/16 |
| | 16:58 | 18:03 | 08:02-08:23/21 | 19:00 | | | 21:01 | | 21:55 | | 22:19 | 20:47-21:04/17 |
| 28 | 08:35 | 07:29 | 08:03-09:15/72 | 06:18 | | | 06:02 | 20:02-20:32/30 | 05:06 | 20:36-21:03/27 | 04:55 | 21:23-21:38/15 |
| | 17:00 | 18:05 | | 19:02 | | | 21:03 | | 21:57 | | 22:19 | 20:47-21:04/17 |
| 29 | 08:33 | | | 07:16 | | | 05:59 | 20:01-20:34/33 | 05:05 | 20:37-21:03/26 | 04:55 | 21:24-21:38/14 |
| | 17:02 | | | 20:04 | | | 21:05 | | 21:58 | | 22:19 | 20:47-21:05/18 |
| 30 | 08:31 | | | 07:13 | | | 05:57 | 20:00-20:36/36 | 05:04 | 20:37-21:03/26 | 04:56 | 21:24-21:37/13 |
| | 17:04 | | | 20:06 | | | 21:07 | | 22:00 | | 22:19 | 20:46-21:05/19 |
| 31 | 08:29 | | | 07:11 | | | | | 05:03 | 20:37-21:02/25 | | |
| | 17:06 | | | 20:08 | | | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | | 366 | | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 1120 | | 358 | | | 153 | | 1355 | | 896 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 21:25-21:37/12 | 05:40 20:08-20:54/46 | 06:38 | 07:35 | 07:37 08:21-08:47/26 | 08:35 |
| | 22:18 20:47-21:05/18 | 21:40 20:55-21:04/9 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 21:26-21:37/11 | 05:41 20:07-20:53/46 | 06:40 | 07:37 | 07:39 08:22-08:46/24 | 08:37 |
| | 22:18 20:47-21:06/19 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 21:27-21:37/10 | 05:43 20:07-20:53/46 | 06:42 | 07:39 | 07:41 08:23-08:45/22 | 08:38 |
| | 22:17 20:47-21:07/20 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 21:27-21:35/8 | 05:45 20:07-20:53/46 | 06:43 | 07:40 09:13-09:18/5 | 07:43 08:24-08:45/21 | 08:40 |
| | 22:17 20:46-21:07/21 | 21:34 | 20:22 | 19:04 | 16:52 | 16:08 |
| 5 | 05:00 21:29-21:34/5 | 05:47 20:07-20:53/46 | 06:45 | 07:42 09:08-09:23/15 | 07:45 08:26-08:43/17 | 08:41 |
| | 22:16 20:46-21:07/21 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 20:46-21:08/22 | 05:49 20:06-20:52/46 | 06:47 | 07:44 09:05-09:25/20 | 07:47 08:28-08:41/13 | 08:43 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 20:46-21:08/22 | 05:51 20:07-20:52/45 | 06:49 | 07:46 09:03-09:26/23 | 07:49 08:31-08:37/6 | 08:44 |
| | 22:15 | 21:28 | 20:14 | 18:57 08:43-08:51/8 | 16:45 | 16:06 |
| 8 | 05:03 20:46-21:09/23 | 05:52 20:07-20:51/44 | 06:51 | 07:48 09:01-09:27/26 | 07:51 | 08:46 |
| | 22:14 | 21:26 | 20:12 | 18:54 08:40-08:53/13 | 16:44 | 16:05 |
| 9 | 05:04 20:45-21:09/24 | 05:54 20:06-20:49/43 | 06:53 | 07:50 09:00-09:28/28 | 07:53 | 08:47 |
| | 22:13 | 21:24 | 20:09 | 18:52 08:39-08:55/16 | 16:42 | 16:05 |
| 10 | 05:06 20:45-21:09/24 | 05:56 20:07-20:48/41 | 06:55 | 07:52 08:59-09:29/30 | 07:55 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 08:37-08:55/18 | 16:40 | 16:04 |
| 11 | 05:07 20:46-21:11/25 | 05:58 20:07-20:46/39 | 06:57 | 07:54 09:33-09:41/8 08:36-08:56/20 | 07:57 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 08:58-09:29/31 | 16:38 | 16:04 |
| 12 | 05:08 20:46-21:11/25 | 06:00 20:08-20:44/36 | 06:59 | 07:56 08:57-09:44/47 | 07:59 | 08:51 |
| | 22:10 | 21:17 | 20:01 | 18:44 08:35-08:56/21 | 16:36 | 16:04 |
| 13 | 05:09 20:46-21:11/25 | 06:02 20:08-20:43/35 | 07:00 | 07:58 08:57-09:47/50 | 08:01 | 08:52 |
| | 22:09 | 21:15 | 19:59 | 18:42 08:35-08:56/21 | 16:34 | 16:04 |
| 14 | 05:11 20:45-21:11/26 | 06:04 20:09-20:41/32 | 07:02 | 08:00 08:36-09:48/72 | 08:03 | 08:53 |
| | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 20:45-21:11/26 | 06:06 20:10-20:39/29 | 07:04 | 08:02 08:57-09:50/53 | 08:05 | 08:54 |
| | 22:07 | 21:10 | 19:54 | 18:37 08:36-08:56/20 | 16:31 | 16:04 |
| 16 | 05:13 20:46-21:12/26 | 06:07 20:12-20:37/25 | 07:06 | 08:04 08:57-09:51/54 | 08:07 | 08:55 |
| | 22:06 | 21:08 | 19:51 | 18:34 08:36-08:55/19 | 16:29 | 16:04 |
| 17 | 05:15 20:45-21:12/27 | 06:09 20:31-20:34/3 | 07:08 | 08:06 08:57-09:52/55 | 08:09 | 08:56 |
| | 22:04 | 21:06 20:13-20:27/14 | 19:48 | 18:32 08:36-08:54/18 | 16:28 | 16:04 |
| 18 | 05:16 20:45-21:12/27 | 06:11 20:17-20:23/6 | 07:10 | 08:08 08:57-09:52/55 | 08:11 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 08:37-08:53/16 | 16:26 | 16:04 |
| 19 | 05:18 20:39-20:43/4 | 06:13 | 07:12 | 08:10 08:57-09:52/55 | 08:13 | 08:57 |
| | 22:02 20:46-21:12/26 | 21:01 | 19:43 | 18:27 08:39-08:51/12 | 16:25 | 16:04 |
| 20 | 05:19 20:36-21:12/36 | 06:15 | 07:14 | 08:12 08:57-09:52/55 | 08:15 | 08:58 |
| | 22:00 | 20:59 | 19:41 | 18:25 08:41-08:48/7 | 16:23 | 16:05 |
| 21 | 05:21 20:35-21:12/37 | 06:17 | 07:16 | 08:14 08:58-09:52/54 | 08:17 | 08:58 |
| | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 20:34-21:12/38 | 06:19 | 07:17 | 08:16 09:00-09:53/53 | 08:19 | 08:59 |
| | 21:57 20:18-20:27/9 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 20:16-21:12/56 | 06:21 | 07:19 | 08:18 09:01-09:53/52 | 08:21 | 09:00 |
| | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 20:14-21:11/57 | 06:23 | 07:21 | 08:20 09:03-09:52/49 | 08:23 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 20:14-21:12/58 | 06:25 | 07:23 | 07:22 08:04-08:52/48 | 08:25 | 09:00 |
| | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 20:12-21:11/59 | 06:26 | 07:25 | 07:24 08:05-08:51/46 | 08:27 | 09:01 |
| | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 20:11-21:10/59 | 06:28 | 07:27 | 07:26 08:07-08:51/44 | 08:28 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 20:10-21:09/59 | 06:30 | 07:29 | 07:28 08:08-08:50/42 | 08:30 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 20:10-21:09/59 | 06:32 | 07:31 | 07:30 08:11-08:49/38 | 08:32 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 20:09-21:08/59 | 06:34 | 07:33 | 07:33 08:20-08:48/28 | 08:33 | 09:01 |
| | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 20:08-21:06/58 | 06:36 | | 07:35 08:20-08:47/27 | | 09:01 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1141 | 677 | 0 | 1372 | 129 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 07:53-08:03/10 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 08:04-08:42/38 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 07:51-08:05/14 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:40 | 07:37 08:06-08:43/37 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 07:49-08:06/17 | 07:03 | 05:51 | 05:00 | 04:58 | 05:43 | 06:42 | 07:38 08:09-08:44/35 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 07:48-08:08/20 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 08:10-08:44/34 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:14 | 20:15 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 07:47-08:08/21 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 08:11-08:44/33 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 07:44-08:08/24 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 08:13-08:44/31 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 07:38-08:08/30 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 08:15-08:44/29 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 07:35-08:07/32 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 08:20-08:43/23 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 07:34-08:07/33 | 06:48 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 08:22-08:42/20 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 07:32-08:06/34 | 06:45 | 05:36 | 04:54 | 05:06 | 05:56 | 06:55 | 07:52 08:22-08:41/19 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 07:29-08:05/36 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 08:23-08:40/17 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 07:26-08:03/37 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:59 | 07:56 08:25-08:38/13 | 07:59 | 08:51 |
| | 16:29 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 07:24-08:01/37 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 08:27-08:34/7 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 | 06:54 07:23-07:59/36 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 07:22-07:58/36 | 06:33 | 05:27 | 04:52 | 05:12 | 06:06 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 07:22-07:58/36 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:47 07:21-07:56/35 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 07:20-07:55/35 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 07:20-07:53/33 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 08:12-08:22/10 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 07:20-07:50/30 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:14 08:09-08:24/15 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 07:21-07:42/21 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:16 08:07-08:25/18 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 07:21-07:40/19 | 06:16 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 08:06-08:26/20 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 07:23-07:39/16 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 08:05-08:34/29 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 07:25-07:36/11 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 08:04-08:36/32 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 08:04-08:38/34 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 08:03-08:39/36 | 07:24 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:32 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 08:02-08:38/36 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:33 | 06:30 | 07:29 08:02-08:39/37 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 08:03-08:39/36 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 08:03-08:40/37 | 07:33 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 653 | 0 | 0 | 0 | 0 | 0 | 340 | 336 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

Licensed user:
UAB Infraplanas
Inovacijy k. 3, Biruliskiy k.,
LT-54469 Kauno r. sav.
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt

Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 32 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | 07:08 | 05:55 | 05:02 | | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 | 07:24 | 07:05 | 05:53 | 05:01 | | 04:57 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:11 | 22:04 | | 22:18 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:51 | 05:00 | | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:13 | 22:05 | | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | | 22:17 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 09:00 | 08:20 | 07:17 | 06:58 | 05:46 | 04:58 | | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:17 | 21:16 | 22:07 | | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:19 | 21:18 | 22:08 | | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 08:59 | 08:16 | 07:12 | 06:53 | 05:42 | 04:56 | | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | | 22:15 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | | 22:14 | 21:26 | 20:12 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:51 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:30 | 22:14 | | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 | 06:57 | 06:37 | 05:30 | 04:53 | | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:51-05:56/5 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | | 22:08 | 21:13 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:52 | 06:33 | 05:27 | 04:52 | 05:50-05:58/8 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:50-05:59/9 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:55 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:49-06:00/11 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:49-06:00/11 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:49-06:01/12 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:49-06:01/12 | 05:19 | 06:15 | 07:14 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:19 | | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:49-06:01/12 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | | 21:59 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:44 | 07:43 | 06:34 | 06:16 | 05:15 | 04:52 | 05:50-06:02/12 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:50-06:02/12 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 | 06:28 | 06:11 | 05:12 | 04:53 | 05:50-06:01/11 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:51-06:02/11 | 05:27 | 06:24 | 07:23 | 07:22 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:51-06:01/10 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:53-06:01/8 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:54-06:00/6 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:16 | 05:59 | 05:05 | 04:55 | 05:57-05:58/1 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | | 05:38 | 06:36 | | 07:35 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | | 21:42 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 151 | | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:50-08:19/29 | 05:55 | 06:31-07:45/74 | 05:02 |
| | 16:14 | 17:08 | 18:07 | | 20:09 | | 21:09 | | 22:02 |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:50-08:19/29 | 05:53 | 06:29-07:45/76 | 05:01 |
| | 16:15 | 17:10 | 18:09 | | 20:11 | | 21:11 | | 22:04 |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:49-08:18/29 | 05:51 | 06:28-07:45/77 | 05:00 |
| | 16:16 | 17:12 | 18:11 | | 20:13 | | 21:12 | | 22:05 |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:41-08:19/38 | 05:48 | 06:27-07:45/78 | 04:59 |
| | 16:17 | 17:14 | 18:13 | | 20:15 | | 21:14 | | 22:06 |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:37-08:17/40 | 05:46 | 06:26-07:45/79 | 04:58 |
| | 16:19 | 17:16 | 18:15 | | 20:17 | | 21:16 | | 22:07 |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:35-08:17/42 | 05:44 | 06:25-07:45/80 | 04:57 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | | 21:18 | | 22:08 |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:33-08:16/43 | 05:42 | 06:24-07:44/80 | 04:56 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:09 |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:32-08:15/43 | 05:40 | 06:24-06:55/31 | 04:56 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | 06:56-07:44/48 | 22:11 |
| 9 | 08:57 | 08:12 | 07:07 | | 06:47 | 07:30-08:13/43 | 05:38 | 06:23-06:54/31 | 04:55 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | 06:57-07:43/46 | 22:11 |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:29-08:11/42 | 05:36 | 06:23-06:52/29 | 04:54 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | 06:58-07:42/44 | 22:12 |
| 11 | 08:56 | 08:08 | 07:02 | | 06:42 | 07:27-08:08/41 | 05:34 | 06:22-06:52/30 | 04:54 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | 06:59-07:42/43 | 22:13 |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:22-08:05/43 | 05:32 | 06:23-06:52/29 | 04:53 |
| | 16:29 | 17:31 | 18:30 | | 20:31 | | 21:30 | 07:01-07:42/41 | 22:14 |
| 13 | 08:54 | 08:04 | 06:57 | | 06:37 | 07:19-08:01/42 | 05:30 | 06:23-06:52/29 | 04:53 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:31 | 07:02-07:41/39 | 22:15 |
| 14 | 08:53 | 08:01 | 06:54 | | 06:35 | 07:17-08:01/44 | 05:28 | 06:23-06:52/29 | 04:53 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | 07:02-07:40/38 | 22:16 |
| 15 | 08:52 | 07:59 | 06:52 | | 06:32 | 07:16-08:01/45 | 05:27 | 06:24-06:52/28 | 04:52 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | 07:03-07:40/37 | 22:16 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:14-08:00/46 | 05:25 | 06:23-06:51/28 | 04:52 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | 07:04-07:39/35 | 22:17 |
| 17 | 08:50 | 07:55 | 06:46 | | 06:28 | 07:08-08:00/52 | 05:23 | 06:24-06:51/27 | 04:52 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | 07:05-07:38/33 | 22:17 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:03-07:59/56 | 05:21 | 06:24-06:51/27 | 04:52 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:40 | 07:05-07:37/32 | 22:18 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:01-07:58/57 | 05:20 | 06:25-06:51/26 | 04:52 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | 07:06-07:35/29 | 22:18 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:00-07:58/58 | 05:18 | 06:25-06:49/24 | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | | 21:44 | 07:07-07:35/28 | 22:18 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 06:57-07:56/59 | 05:16 | 06:27-06:49/22 | 04:52 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | 07:09-07:34/25 | 22:19 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 06:46-06:52/6 | 05:15 | 06:27-06:48/21 | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 06:56-07:55/59 | 21:47 | 07:09-07:32/23 | 22:19 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 06:43-06:55/12 | 05:13 | 06:28-06:47/19 | 04:53 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 06:56-07:54/58 | 21:49 | 07:11-07:31/20 | 22:19 |
| 24 | 08:41 | 07:39 | 06:28 | | 06:11 | 06:41-07:53/72 | 05:12 | 06:29-06:47/18 | 04:53 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | 07:13-07:29/16 | 22:19 |
| 25 | 08:39 | 07:36 | 06:26 | 07:01-07:13/12 | 06:08 | 06:40-07:50/70 | 05:10 | 06:30-06:45/15 | 04:53 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | 07:15-07:26/11 | 22:19 |
| 26 | 08:38 | 07:34 | 06:23 | 06:58-07:16/18 | 06:06 | 06:38-07:47/69 | 05:09 | 06:31-06:44/13 | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 |
| 27 | 08:36 | 07:31 | 06:21 | 06:56-07:17/21 | 06:04 | 06:37-07:44/67 | 05:08 | 06:33-06:42/9 | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 |
| 28 | 08:34 | 07:29 | 06:18 | 06:54-07:17/23 | 06:02 | 06:37-07:45/68 | 05:06 | | 04:55 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 |
| 29 | 08:33 | | 07:16 | 07:53-08:18/25 | 05:59 | 06:36-07:45/69 | 05:05 | | 04:55 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 |
| 30 | 08:31 | | 07:13 | 07:51-08:18/27 | 05:57 | 06:33-07:45/72 | 05:04 | | 04:56 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:18 |
| 31 | 08:29 | | 07:10 | 07:51-08:19/28 | | | 05:03 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 |
| Sum of minutes with flicker | 0 | 0 | 154 | | 1543 | | 1617 | | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | | 05:40 | 06:34-07:03/29 | 06:38 | 07:26-08:07/41 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | 07:12-07:52/40 | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | | 05:41 | 06:33-07:02/29 | 06:40 | 07:27-08:09/42 | 07:36 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | 07:09-07:52/43 | 20:27 | | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | | 05:43 | 06:33-07:03/30 | 06:41 | 07:28-08:11/43 | 07:38 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | 07:08-07:53/45 | 20:24 | | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | | 05:45 | 06:34-07:05/31 | 06:43 | 07:29-08:12/43 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | 07:07-07:54/47 | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | | 05:47 | 06:34-07:54/80 | 06:45 | 07:30-08:13/43 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | | 05:49 | 06:34-07:54/80 | 06:47 | 07:30-08:12/42 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | | 05:50 | 06:35-07:54/79 | 06:49 | 07:32-08:12/40 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | | 05:52 | 06:35-07:54/79 | 06:51 | 07:35-08:13/38 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:11 | | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | | 05:54 | 06:35-07:54/79 | 06:53 | 07:43-08:13/30 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:23 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:05 | | 05:56 | 06:37-07:54/77 | 06:55 | 07:43-08:12/29 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:21 | | 20:06 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | | 05:58 | 06:38-07:54/76 | 06:57 | 07:42-08:11/29 | 07:54 | 07:57 | 08:49 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | | 06:00 | 06:40-07:54/74 | 06:58 | 07:42-08:11/29 | 07:56 | 07:59 | 08:50 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | | 06:02 | 06:42-07:53/71 | 07:00 | 07:42-08:10/28 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | | 06:04 | 06:44-07:52/68 | 07:02 | 07:43-08:09/26 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:12 | | 19:56 | | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | | 06:05 | 06:44-07:52/68 | 07:04 | 07:44-08:08/24 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:53 | | 18:37 | 16:31 | 16:03 |
| 16 | 05:13 | 06:44-06:50/6 | 06:07 | 06:45-07:52/67 | 07:06 | 07:45-08:06/21 | 08:04 | 08:07 | 08:55 |
| | 22:05 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:42-06:53/11 | 06:09 | 06:45-07:55/70 | 07:08 | 07:46-08:04/18 | 08:06 | 08:09 | 08:55 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:40-06:54/14 | 06:11 | 06:46-07:57/71 | 07:10 | 07:47-08:01/14 | 08:08 | 08:11 | 08:56 |
| | 22:03 | 07:27-07:34/7 | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:39-06:56/17 | 06:13 | 06:47-07:58/71 | 07:12 | 07:52-07:55/3 | 08:10 | 08:13 | 08:57 |
| | 22:01 | 07:24-07:38/14 | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:38-06:57/19 | 06:15 | 06:49-08:00/71 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | 07:22-07:40/18 | 20:59 | | 19:40 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:38-06:58/20 | 06:17 | 06:53-06:57/4 | 07:15 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | 07:21-07:42/21 | 20:56 | 07:02-08:01/59 | 19:38 | | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:37-06:59/22 | 06:19 | 07:02-08:01/59 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | 07:19-07:43/24 | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:37-07:00/23 | 06:21 | 07:03-08:01/58 | 07:19 | | 08:18 | 08:21 | 08:59 |
| | 21:55 | 07:19-07:45/26 | 20:51 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:36-07:00/24 | 06:23 | 07:05-08:02/57 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | 07:17-07:46/29 | 20:49 | | 19:30 | | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:36-07:01/25 | 06:24 | 07:07-08:02/55 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | 07:17-07:47/30 | 20:47 | | 19:27 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:35-07:01/26 | 06:26 | 07:12-08:03/51 | 07:25 | | 07:24 | 08:26 | 09:00 |
| | 21:51 | 07:15-07:48/33 | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:35-07:02/27 | 06:28 | 07:16-08:02/46 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | 07:15-07:49/34 | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:34-07:02/28 | 06:30 | 07:17-08:02/45 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | 07:14-07:49/35 | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:34-07:02/28 | 06:32 | 07:18-08:02/44 | 07:31 | | 07:30 | 08:32 | 09:01 |
| | 21:45 | 07:13-07:51/38 | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34-07:03/29 | 06:34 | 07:20-08:01/41 | 07:33 | | 07:32 | 08:33 | 09:01 |
| | 21:43 | 07:13-07:52/39 | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:33-07:02/29 | 06:36 | 07:22-08:05/43 | | | 07:34 | | 09:01 |
| | 21:42 | 07:12-07:52/40 | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 736 | | 2037 | | 583 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 11:50-13:05/75<br>17:08 | 07:27 11:54-12:59/65<br>18:07 | 07:08<br>20:09 | 05:55 06:32-06:51/19<br>21:09 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 11:49-13:06/77<br>17:10 | 07:24 11:55-12:58/63<br>18:09 | 07:05<br>20:11 | 05:53 06:33-06:51/18<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00 12:13-12:22/9<br>16:16 | 08:24 11:49-13:06/77<br>17:12 | 07:22 11:56-12:55/59<br>18:11 | 07:03<br>20:13 | 05:51 06:33-06:50/17<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 12:11-12:26/15<br>16:18 | 08:22 11:49-13:07/78<br>17:15 | 07:19 11:58-12:53/55<br>18:14 | 07:00<br>20:15 | 05:48 06:34-06:49/15<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 12:08-12:28/20<br>16:19 | 08:20 11:48-13:06/78<br>17:17 | 07:17 12:00-12:51/51<br>18:16 | 06:58<br>20:17 | 05:46 06:35-06:47/12<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 12:08-12:31/23<br>16:20 | 08:18 11:48-13:07/79<br>17:19 | 07:14 12:02-12:47/45<br>18:18 | 06:55<br>20:19 | 05:44 06:37-06:45/8<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 12:06-12:33/27<br>16:22 | 08:16 11:47-13:08/81<br>17:21 | 07:12 12:06-12:44/38<br>18:20 | 06:53<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 12:05-12:35/30<br>16:23 | 08:14 11:47-13:08/81<br>17:23 | 07:09 12:10-12:38/28<br>18:22 | 06:50<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 12:04-12:36/32<br>16:25 | 08:12 11:47-13:09/82<br>17:25 | 07:07 12:18-12:30/12<br>18:24 | 06:48<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 12:03-12:38/35<br>16:26 | 08:10 11:48-13:09/81<br>17:27 | 07:04<br>18:26 | 06:45<br>20:27 | 05:36<br>21:26 | 04:55<br>22:12 |
| 11 | 08:56 12:02-12:40/38<br>16:28 | 08:08 11:47-13:09/82<br>17:29 | 07:02<br>18:28 | 06:43<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 12:01-12:42/41<br>16:30 | 08:06 11:47-13:09/82<br>17:32 | 06:59<br>18:30 | 06:40<br>20:31 | 05:32<br>21:30 | 04:54<br>22:14 |
| 13 | 08:54 12:00-12:43/43<br>16:31 | 08:04 11:47-13:09/82<br>17:34 | 06:57<br>18:32 | 06:38<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 12:00-12:45/45<br>16:33 | 08:01 11:46-13:09/83<br>17:36 | 06:54<br>18:34 | 06:35<br>20:35 | 05:29<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 11:58-12:46/48<br>16:35 | 07:59 11:47-13:09/82<br>17:38 | 06:52<br>18:36 | 06:33<br>20:37 | 05:27<br>21:35 | 04:53<br>22:16 |
| 16 | 08:51 11:58-12:48/50<br>16:36 | 07:57 11:47-13:09/82<br>17:40 | 06:49<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 11:58-12:49/51<br>16:38 | 07:55 11:47-13:08/81<br>17:42 | 06:46<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 11:56-12:50/54<br>16:40 | 07:53 11:47-13:08/81<br>17:44 | 06:44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 11:56-12:52/56<br>16:42 | 07:50 11:48-13:08/80<br>17:46 | 06:41<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 11:55-12:53/58<br>16:44 | 07:48 11:48-13:07/79<br>17:49 | 06:39<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 11:55-12:54/59<br>16:46 | 07:46 11:48-13:07/79<br>17:51 | 06:36<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 11:54-12:55/61<br>16:48 | 07:43 11:48-13:06/78<br>17:53 | 06:34<br>18:50 | 06:16 06:41-06:47/6<br>20:51 | 05:15<br>21:47 | 04:53<br>22:19 |
| 23 | 08:42 11:53-12:56/63<br>16:50 | 07:41 11:49-13:06/77<br>17:55 | 06:31<br>18:52 | 06:13 06:39-06:49/10<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 11:53-12:58/65<br>16:52 | 07:39 11:49-13:05/76<br>17:57 | 06:28<br>18:54 | 06:11 06:37-06:50/13<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 11:52-12:59/67<br>16:54 | 07:36 11:50-13:04/74<br>17:59 | 06:26<br>18:56 | 06:09 06:35-06:51/16<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 11:52-12:59/67<br>16:56 | 07:34 11:51-13:04/73<br>18:01 | 06:23<br>18:58 | 06:06 06:33-06:51/18<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 11:51-13:00/69<br>16:58 | 07:31 11:52-13:02/70<br>18:03 | 06:21<br>19:00 | 06:04 06:32-06:51/19<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 11:51-13:02/71<br>17:00 | 07:29 11:53-13:01/68<br>18:05 | 06:18<br>19:02 | 06:02 06:32-06:52/20<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 11:51-13:03/72<br>17:02 | | 07:16<br>20:04 | 05:59 06:32-06:52/20<br>21:05 | 05:05<br>21:58 | 04:56<br>22:18 |
| 30 | 08:31 11:50-13:03/73<br>17:04 | | 07:13<br>20:06 | 05:57 06:32-06:52/20<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 11:50-13:04/74<br>17:06 | | 07:10<br>20:08 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 1416 | 2198 | 416 | 142 | 89 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57<br>22:18 | 05:40<br>21:40 | 06:38<br>20:29 | 07:35<br>19:12 | 07:36 11:16-12:38/82<br>16:58 | 08:35 11:44-12:22/38<br>16:10 |
| 2 | 04:58<br>22:17 | 05:41<br>21:38 | 06:40<br>20:27 | 07:36<br>19:09 | 07:39 11:17-12:38/81<br>16:56 | 08:37 11:46-12:21/35<br>16:09 |
| 3 | 04:58<br>22:17 | 05:43<br>21:36 | 06:42<br>20:24 | 07:38<br>19:07 | 07:41 11:17-12:38/81<br>16:54 | 08:38 11:48-12:21/33<br>16:08 |
| 4 | 04:59<br>22:16 | 05:45<br>21:34 | 06:43<br>20:22 | 07:40<br>19:04 | 07:43 11:17-12:37/80<br>16:52 | 08:40 11:49-12:19/30<br>16:08 |
| 5 | 05:00<br>22:16 | 05:47<br>21:32 | 06:45<br>20:19 | 07:42 12:50-13:12/22<br>19:02 | 07:45 11:18-12:38/80<br>16:49 | 08:41 11:51-12:18/27<br>16:07 |
| 6 | 05:01<br>22:15 | 05:49 06:48-06:52/4<br>21:30 | 06:47<br>20:17 | 07:44 12:44-13:18/34<br>18:59 | 07:47 11:18-12:37/79<br>16:47 | 08:43 11:54-12:17/23<br>16:06 |
| 7 | 05:02<br>22:14 | 05:51 06:45-06:55/10<br>21:28 | 06:49<br>20:14 | 07:46 12:40-13:22/42<br>18:57 | 07:49 11:19-12:37/78<br>16:46 | 08:44 11:55-12:15/20<br>16:06 |
| 8 | 05:03<br>22:14 | 05:52 06:44-06:57/13<br>21:26 | 06:51<br>20:11 | 07:48 12:37-13:24/47<br>18:54 | 07:51 11:19-12:36/77<br>16:44 | 08:45 11:59-12:14/15<br>16:05 |
| 9 | 05:05<br>22:13 | 05:54 06:43-06:59/16<br>21:23 | 06:53<br>20:09 | 07:50 12:34-13:27/53<br>18:52 | 07:53 11:20-12:36/76<br>16:42 | 08:47 12:02-12:11/9<br>16:05 |
| 10 | 05:06<br>22:12 | 05:56 06:41-06:58/17<br>21:21 | 06:55<br>20:06 | 07:52 12:32-13:29/57<br>18:49 | 07:55 11:20-12:36/76<br>16:40 | 08:48<br>16:04 |
| 11 | 05:07<br>22:11 | 05:58 06:41-06:59/18<br>21:19 | 06:57<br>20:04 | 07:54 12:30-13:30/60<br>18:47 | 07:57 11:21-12:35/74<br>16:38 | 08:49<br>16:04 |
| 12 | 05:08<br>22:10 | 06:00 06:41-07:00/19<br>21:17 | 06:59<br>20:01 | 07:56 12:28-13:31/63<br>18:44 | 07:59 11:21-12:34/73<br>16:36 | 08:50<br>16:04 |
| 13 | 05:09<br>22:09 | 06:02 06:40-07:00/20<br>21:15 | 07:00<br>19:59 | 07:58 12:26-13:33/67<br>18:42 | 08:01 11:23-12:35/72<br>16:34 | 08:51<br>16:04 |
| 14 | 05:11<br>22:08 | 06:04 06:39-06:59/20<br>21:12 | 07:02<br>19:56 | 08:00 12:25-13:34/69<br>18:39 | 08:03 11:23-12:34/71<br>16:33 | 08:52<br>16:04 |
| 15 | 05:12<br>22:06 | 06:06 06:40-06:59/19<br>21:10 | 07:04<br>19:53 | 08:02 12:23-13:34/71<br>18:37 | 08:05 11:24-12:33/69<br>16:31 | 08:53<br>16:04 |
| 16 | 05:14<br>22:05 | 06:07 06:40-06:59/19<br>21:08 | 07:06<br>19:51 | 08:04 12:22-13:35/73<br>18:34 | 08:07 11:25-12:32/67<br>16:29 | 08:54<br>16:04 |
| 17 | 05:15<br>22:04 | 06:09 06:40-06:59/19<br>21:06 | 07:08<br>19:48 | 08:06 12:22-13:37/75<br>18:32 | 08:09 11:26-12:33/67<br>16:28 | 08:55<br>16:04 |
| 18 | 05:16<br>22:03 | 06:11 06:41-06:57/16<br>21:03 | 07:10<br>19:46 | 08:08 12:21-13:37/76<br>18:30 | 08:11 11:27-12:32/65<br>16:26 | 08:56<br>16:04 |
| 19 | 05:18<br>22:01 | 06:13 06:43-06:56/13<br>21:01 | 07:12<br>19:43 | 08:10 12:20-13:37/77<br>18:27 | 08:13 11:28-12:31/63<br>16:25 | 08:57<br>16:04 |
| 20 | 05:19<br>22:00 | 06:15 06:45-06:54/9<br>20:59 | 07:14<br>19:40 | 08:12 12:19-13:38/79<br>18:25 | 08:15 11:29-12:30/61<br>16:23 | 08:58<br>16:05 |
| 21 | 05:21<br>21:58 | 06:17 06:47-06:52/5<br>20:56 | 07:15<br>19:38 | 08:14 12:18-13:38/80<br>18:22 | 08:17 11:30-12:29/59<br>16:22 | 08:58<br>16:05 |
| 22 | 05:23<br>21:57 | 06:19<br>20:54 | 07:17<br>19:35 | 08:16 12:18-13:38/80<br>18:20 | 08:19 11:31-12:29/58<br>16:20 | 08:59<br>16:05 |
| 23 | 05:24<br>21:55 | 06:21<br>20:51 | 07:19<br>19:33 | 08:18 12:17-13:38/81<br>18:18 | 08:21 11:32-12:28/56<br>16:19 | 08:59<br>16:06 |
| 24 | 05:26<br>21:54 | 06:23<br>20:49 | 07:21<br>19:30 | 08:20 12:18-13:39/81<br>18:16 | 08:23 11:33-12:27/54<br>16:18 | 09:00<br>16:07 |
| 25 | 05:28<br>21:52 | 06:25<br>20:47 | 07:23<br>19:28 | 07:22 11:17-12:39/82<br>17:13 | 08:24 11:36-12:27/51<br>16:16 | 09:00<br>16:07 |
| 26 | 05:29<br>21:50 | 06:26<br>20:44 | 07:25<br>19:25 | 07:24 11:17-12:39/82<br>17:11 | 08:26 11:37-12:27/50<br>16:15 | 09:00<br>16:08 |
| 27 | 05:31<br>21:49 | 06:28<br>20:42 | 07:27<br>19:22 | 07:26 11:16-12:38/82<br>17:09 | 08:28 11:38-12:26/48<br>16:14 | 09:01<br>16:09 |
| 28 | 05:33<br>21:47 | 06:30<br>20:39 | 07:29<br>19:20 | 07:28 11:16-12:38/82<br>17:06 | 08:30 11:39-12:24/45<br>16:13 | 09:01<br>16:10 |
| 29 | 05:34<br>21:45 | 06:32<br>20:37 | 07:31<br>19:17 | 07:30 11:17-12:39/82<br>17:04 | 08:32 11:40-12:23/43<br>16:12 | 09:01<br>16:11 |
| 30 | 05:36<br>21:43 | 06:34<br>20:34 | 07:33<br>19:15 | 07:32 11:16-12:38/82<br>17:02 | 08:33 11:42-12:23/41<br>16:11 | 09:01<br>16:11 |
| 31 | 05:38<br>21:42 | 06:36<br>20:32 | | 07:34 11:16-12:38/82<br>17:00 | | 09:01<br>16:13 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 237 | 0 | 1861 | 1977 | 230 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 | 08:27 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:25 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:39 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:42 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:22 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 | 06:46 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:03 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:57 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:40 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 | 08:59 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:37 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:34 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:31 | 09:01 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:00 10:20-10:33/13 | 08:27 09:03-09:55/52 | 07:26 | 07:08 | 05:55 | 05:02 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 08:33-09:01/28 | 08:35 09:15-10:00/45 |
| | 16:14 09:38-10:13/35 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:39 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 10:22-10:34/12 | 08:25 09:02-09:54/52 | 07:24 | 07:05 | 05:53 | 05:01 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 08:33-09:05/32 | 08:36 09:17-10:01/44 |
| | 16:15 09:38-10:14/36 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 10:22-10:33/11 | 08:24 09:02-09:54/52 | 07:21 | 07:03 | 05:50 | 05:00 | 04:58 | 05:43 | 06:41 | 07:38 | 07:40 08:32-09:11/39 | 08:38 09:19-10:01/42 |
| | 16:16 09:37-10:14/37 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 10:24-10:33/9 | 08:22 09:01-09:52/51 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:42 08:32-09:15/43 | 08:39 09:19-10:01/42 |
| | 16:17 09:38-10:15/37 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:21 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 10:25-10:32/7 | 08:20 09:01-09:51/50 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 08:31-09:19/48 | 08:41 09:21-10:02/41 |
| | 16:19 09:37-10:15/38 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 09:37-10:17/40 | 08:18 09:02-09:49/47 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 08:32-09:21/49 | 08:42 09:22-10:02/40 |
| | 16:20 | 17:19 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 09:36-10:17/41 | 08:16 09:02-09:44/42 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 08:32-09:23/51 | 08:44 10:13-10:19/6 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:27 | 20:14 | 18:57 | 16:45 | 16:05 09:24-10:03/39 |
| 8 | 08:58 09:35-10:17/42 | 08:14 09:03-09:41/38 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 08:32-09:24/52 | 08:45 10:11-10:20/9 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:13 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 09:25-10:02/37 |
| 9 | 08:57 09:35-10:17/42 | 08:12 09:03-09:35/32 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 08:32-09:24/52 | 08:47 10:11-10:22/11 |
| | 16:24 | 17:25 | 18:23 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 09:26-10:03/37 |
| 10 | 08:56 09:34-10:18/44 | 08:10 09:03-09:30/27 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 08:34-09:26/52 | 08:48 10:11-10:23/12 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 09:27-10:03/36 |
| 11 | 08:56 09:33-10:18/45 | 08:08 09:05-09:27/22 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 08:34-09:28/54 | 08:49 10:11-10:24/13 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:27 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 09:28-10:05/37 |
| 12 | 08:55 09:32-10:18/46 | 08:06 09:06-09:22/16 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 08:35-09:29/54 | 08:50 10:11-10:25/14 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 09:30-10:05/35 |
| 13 | 08:54 09:32-10:18/46 | 08:03 09:08-09:20/12 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 08:37-09:32/55 | 08:51 10:11-10:26/15 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:14 | 19:58 | 18:42 | 16:34 | 16:04 09:31-10:05/34 |
| 14 | 08:53 09:32-10:19/47 | 08:01 09:11-09:16/5 | 06:54 | 06:35 | 05:28 | 04:53 | 05:11 | 06:03 | 07:02 | 08:00 | 08:03 08:38-09:33/55 | 08:52 10:11-10:26/15 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:07 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 09:32-10:05/33 |
| 15 | 08:52 09:30-10:18/48 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 08:40-09:35/55 | 08:53 10:11-10:27/16 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 09:33-10:05/32 |
| 16 | 08:51 09:28-10:18/50 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 08:44-09:37/53 | 08:54 10:12-10:28/16 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:16 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 09:34-10:06/32 |
| 17 | 08:50 09:27-10:18/51 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 08:45-09:38/53 | 08:55 10:12-10:29/17 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:38 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 09:35-10:06/31 |
| 18 | 08:49 09:25-10:17/52 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 08:48-09:41/53 | 08:56 10:13-10:29/16 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:17 | 22:02 | 21:03 | 19:45 | 18:29 | 16:26 | 16:04 09:36-10:07/31 |
| 19 | 08:47 09:23-10:17/54 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:11 | 08:10 | 08:13 08:50-09:42/52 | 08:57 10:12-10:29/17 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:35-10:07/32 |
| 20 | 08:46 09:20-10:16/56 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 08:52-09:47/55 | 08:57 10:13-10:30/17 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 09:36-10:08/32 |
| 21 | 08:45 09:19-10:15/56 | 07:45 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 08:54-09:50/56 | 08:58 10:14-10:31/17 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:18 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 09:36-10:07/31 |
| 22 | 08:43 09:17-10:12/55 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 08:56-09:52/56 | 08:59 10:14-10:31/17 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:37-10:08/31 |
| 23 | 08:42 09:15-10:07/52 | 07:41 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 08:59-09:53/54 | 08:59 10:14-10:31/17 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:32 | 18:18 | 16:19 | 16:06 09:37-10:08/31 |
| 24 | 08:40 09:14-10:07/53 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:22 09:02-09:54/52 | 08:59 10:15-10:32/17 |
| | 16:51 | 17:57 | 18:53 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 09:38-10:10/32 |
| 25 | 08:39 09:12-10:05/53 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 09:04-09:55/51 | 09:00 10:16-10:32/16 |
| | 16:53 | 17:59 | 18:55 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 09:39-10:10/31 |
| 26 | 08:37 09:11-10:04/53 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 09:06-09:56/50 | 09:00 10:16-10:33/17 |
| | 16:56 | 18:01 | 18:57 | 20:59 | 21:53 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 09:39-10:10/31 |
| 27 | 08:36 09:07-10:02/55 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 09:09-09:57/48 | 09:00 10:16-10:33/17 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:41 | 19:22 | 17:08 | 16:14 | 16:08 09:39-10:11/32 |
| 28 | 08:34 09:05-10:00/55 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 08:39-08:47/8 | 08:30 09:11-09:58/47 | 09:01 10:17-10:33/16 |
| | 17:00 | 18:05 | 19:01 | 21:02 | 21:56 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 09:39-10:11/32 |
| 29 | 08:33 09:05-10:00/55 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:30 | 07:30 08:37-08:50/13 | 08:31 09:12-09:59/47 | 09:01 10:18-10:33/15 |
| | 17:02 | | 20:03 | 21:04 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 09:39-10:12/33 |
| 30 | 08:31 09:04-09:58/54 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 08:35-08:52/17 | 08:33 09:13-09:59/46 | 09:01 10:19-10:34/15 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 09:39-10:13/34 |
| 31 | 08:29 09:03-09:57/54 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 08:34-08:57/23 | | 09:01 10:20-10:34/14 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 09:39-10:13/34 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 1534 | 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 1492 | 1456 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 37 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:27 | 07:26 | 07:08 | 05:55 | 05:01 | 04:57 | 05:39 | 06:38 | 07:34 | 07:36 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:09 | 21:08 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:00 | 08:26 | 07:24 | 07:05 | 05:53 | 05:00 | 04:57 | 05:41 | 06:39 | 07:36 | 07:38 | 08:36 |
| | 16:15 | 17:10 | 18:09 | 20:11 | 21:10 | 22:03 | 22:17 | 21:38 | 20:27 | 19:09 | 16:55 | 16:09 |
| 3 | 09:00 | 08:24 | 07:22 | 07:03 | 05:50 | 04:59 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 |
| | 16:16 | 17:12 | 18:11 | 20:13 | 21:12 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 09:00 | 08:22 | 07:19 | 07:00 | 05:48 | 04:59 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 |
| | 16:17 | 17:14 | 18:13 | 20:15 | 21:14 | 22:06 | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 08:59 | 08:20 | 07:17 | 06:57 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 |
| | 16:19 | 17:16 | 18:15 | 20:17 | 21:16 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 08:59 | 08:18 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:48 | 06:47 | 07:44 | 07:47 | 08:43 |
| | 16:20 | 17:18 | 18:17 | 20:19 | 21:18 | 22:08 | 22:15 | 21:30 | 20:16 | 18:59 | 16:47 | 16:06 |
| 7 | 08:58 | 08:16 | 07:12 | 06:52 | 05:42 | 04:56 | 05:02 | 05:50 | 06:49 | 07:46 | 07:49 | 08:44 |
| | 16:21 | 17:21 | 18:19 | 20:21 | 21:20 | 22:09 | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:05 |
| 8 | 08:58 | 08:14 | 07:09 | 06:50 | 05:40 | 04:55 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 |
| | 16:23 | 17:23 | 18:21 | 20:23 | 21:22 | 22:10 | 22:14 | 21:25 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 08:57 | 08:12 | 07:07 | 06:47 | 05:38 | 04:55 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 |
| | 16:24 | 17:25 | 18:24 | 20:25 | 21:24 | 22:11 | 22:13 | 21:23 | 20:09 | 18:52 | 16:41 | 16:05 |
| 10 | 08:56 | 08:10 | 07:04 | 06:45 | 05:36 | 04:54 | 05:05 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:12 | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 08:56 | 08:08 | 07:02 | 06:42 | 05:34 | 04:54 | 05:07 | 05:58 | 06:56 | 07:54 | 07:57 | 08:49 |
| | 16:28 | 17:29 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 | 06:59 | 06:40 | 05:32 | 04:53 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 | 08:50 |
| | 16:29 | 17:31 | 18:30 | 20:31 | 21:29 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:03 | 06:56 | 06:37 | 05:30 | 04:53 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 | 08:51 |
| | 16:31 | 17:33 | 18:32 | 20:33 | 21:31 | 22:15 | 22:09 | 21:15 | 19:58 | 18:42 | 16:34 | 16:03 |
| 14 | 08:53 | 08:01 | 06:54 | 06:35 | 05:28 | 04:53 | 05:10 | 06:03 | 07:02 | 08:00 | 08:03 | 08:52 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:15 | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:03 |
| 15 | 08:52 | 07:59 | 06:51 | 06:32 | 05:26 | 04:52 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 | 08:53 |
| | 16:34 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:03 |
| 16 | 08:51 | 07:57 | 06:49 | 06:30 | 05:25 | 04:52 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 | 08:54 |
| | 16:36 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:03 |
| 17 | 08:50 | 07:55 | 06:46 | 06:27 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 | 08:09 | 08:55 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:05 | 19:48 | 18:32 | 16:27 | 16:04 |
| 18 | 08:49 | 07:52 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 | 22:03 | 21:03 | 19:46 | 18:29 | 16:26 | 16:04 |
| 19 | 08:47 | 07:50 | 06:41 | 06:23 | 05:19 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 | 08:13 | 08:57 |
| | 16:42 | 17:46 | 18:44 | 20:45 | 21:42 | 22:18 | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:20 | 05:18 | 04:52 | 05:19 | 06:15 | 07:13 | 08:12 | 08:15 | 08:58 |
| | 16:44 | 17:48 | 18:46 | 20:47 | 21:44 | 22:18 | 22:00 | 20:58 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 08:45 | 07:46 | 06:36 | 06:18 | 05:16 | 04:52 | 05:21 | 06:17 | 07:15 | 08:14 | 08:17 | 08:58 |
| | 16:46 | 17:50 | 18:48 | 20:49 | 21:45 | 22:19 | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 08:43 | 07:43 | 06:33 | 06:15 | 05:15 | 04:52 | 05:22 | 06:19 | 07:17 | 08:16 | 08:19 | 08:59 |
| | 16:47 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 | 06:31 | 06:13 | 05:13 | 04:52 | 05:24 | 06:20 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:49 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:38 | 06:28 | 06:11 | 05:12 | 04:53 | 05:26 | 06:22 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:51 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 08:39 | 07:36 | 06:26 | 06:08 | 05:10 | 04:53 | 05:27 | 06:24 | 07:23 | 07:22 | 08:24 | 09:00 |
| | 16:53 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:46 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:26 | 07:25 | 07:24 | 08:26 | 09:00 |
| | 16:55 | 18:01 | 18:57 | 20:59 | 21:54 | 22:19 | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 | 07:31 | 06:21 | 06:04 | 05:07 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 | 08:28 | 09:00 |
| | 16:58 | 18:03 | 18:59 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:08 | 16:14 | 16:08 |
| 28 | 08:34 | 07:29 | 06:18 | 06:01 | 05:06 | 04:55 | 05:32 | 06:30 | 07:29 | 07:28 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:01 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 08:33 | | 07:15 | 05:59 | 05:05 | 04:55 | 05:34 | 06:32 | 07:31 | 07:30 | 08:32 | 09:01 |
| | 17:02 | | 20:03 | 21:05 | 21:58 | 22:18 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 08:31 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:32 | 07:32 | 08:33 | 09:01 |
| | 17:04 | | 20:05 | 21:06 | 21:59 | 22:18 | 21:43 | 20:34 | 19:14 | 17:02 | 16:11 | 16:11 |
| 31 | 08:29 | | 07:10 | | 05:03 | | 05:38 | 06:36 | | 07:34 | | 09:01 |
| | 17:06 | | 20:07 | | 22:01 | | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 38 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 16:00-16:26/26 | 07:27 17:11-17:30/19 | 07:08 | 05:55 | 05:02 | 04:57 | 05:40 | 06:38 | 07:35 | 07:37 15:29-15:57/28 | 08:35 |
| | 16:14 | 17:08 | 18:07 | 20:10 | 21:09 | 22:02 | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 09:01 | 08:26 15:59-16:26/27 | 07:24 17:12-17:30/18 | 07:05 | 05:53 | 05:01 | 04:58 | 05:42 | 06:40 | 07:37 | 07:39 15:29-15:57/28 | 08:37 |
| | 16:15 | 17:10 | 18:10 | 20:12 | 21:11 | 22:04 | 22:18 | 21:38 | 20:27 | 19:10 | 16:56 | 16:09 |
| 3 | 09:00 | 08:24 15:59-16:27/28 | 07:22 17:12-17:29/17 | 07:03 | 05:51 | 05:00 | 04:59 | 05:43 | 06:42 | 07:39 | 07:41 15:28-15:57/29 | 08:38 |
| | 16:16 | 17:12 | 18:12 | 20:14 | 21:13 | 22:05 | 22:17 | 21:36 | 20:24 | 19:07 | 16:54 | 16:08 |
| 4 | 09:00 | 08:22 15:59-16:28/29 | 07:19 17:14-17:28/14 | 07:00 | 05:49 | 04:59 | 04:59 | 05:45 | 06:44 | 07:41 | 07:43 15:28-15:57/29 | 08:40 |
| | 16:18 | 17:15 | 18:14 | 20:16 | 21:15 | 22:06 | 22:17 | 21:34 | 20:22 | 19:05 | 16:52 | 16:08 |
| 5 | 09:00 | 08:20 15:59-16:28/29 | 07:17 17:15-17:25/10 | 06:58 | 05:46 | 04:58 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 15:29-15:58/29 | 08:41 |
| | 16:19 | 17:17 | 18:16 | 20:18 | 21:17 | 22:07 | 22:16 | 21:32 | 20:19 | 19:02 | 16:50 | 16:07 |
| 6 | 08:59 | 08:18 15:59-16:28/29 | 07:14 | 06:55 | 05:44 | 04:57 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 15:29-15:58/29 | 08:43 |
| | 16:20 | 17:19 | 18:18 | 20:20 | 21:18 | 22:09 | 22:15 | 21:30 | 20:17 | 18:59 | 16:48 | 16:06 |
| 7 | 08:59 | 08:16 15:58-16:28/30 | 07:12 | 06:53 | 05:42 | 04:56 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 15:29-15:57/28 | 08:44 |
| | 16:22 | 17:21 | 18:20 | 20:21 | 21:20 | 22:10 | 22:15 | 21:28 | 20:14 | 18:57 | 16:46 | 16:06 |
| 8 | 08:58 | 08:14 15:59-16:28/29 | 07:09 | 06:50 | 05:40 | 04:56 | 05:03 | 05:53 | 06:51 | 07:48 17:52-17:59/7 | 07:51 15:30-15:58/28 | 08:46 |
| | 16:23 | 17:23 | 18:22 | 20:23 | 21:22 | 22:11 | 22:14 | 21:26 | 20:12 | 18:54 | 16:44 | 16:05 |
| 9 | 08:57 | 08:12 15:59-16:28/29 | 07:07 | 06:48 | 05:38 | 04:55 | 05:05 | 05:54 | 06:53 | 07:50 17:49-18:01/12 | 07:53 15:30-15:57/27 | 08:47 |
| | 16:25 | 17:25 | 18:24 | 20:25 | 21:24 | 22:12 | 22:13 | 21:24 | 20:09 | 18:52 | 16:42 | 16:05 |
| 10 | 08:57 | 08:10 16:00-16:28/28 | 07:04 | 06:45 | 05:36 | 04:55 | 05:06 | 05:56 | 06:55 | 07:52 17:47-18:02/15 | 07:55 15:30-15:56/26 | 08:48 |
| | 16:26 | 17:27 | 18:26 | 20:27 | 21:26 | 22:13 | 22:12 | 21:21 | 20:07 | 18:49 | 16:40 | 16:05 |
| 11 | 08:56 | 08:08 16:01-16:27/26 | 07:02 | 06:43 | 05:34 | 04:54 | 05:07 | 05:58 | 06:57 | 07:54 17:45-18:03/18 | 07:57 15:31-15:56/25 | 08:49 |
| | 16:28 | 17:30 | 18:28 | 20:29 | 21:28 | 22:13 | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 08:55 | 08:06 16:01-16:26/25 | 06:59 | 06:40 | 05:32 | 04:54 | 05:08 | 06:00 | 06:59 | 07:56 17:44-18:04/20 | 07:59 15:33-15:56/23 | 08:51 |
| | 16:30 | 17:32 | 18:30 | 20:31 | 21:30 | 22:14 | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 08:54 | 08:04 16:02-16:26/24 | 06:57 | 06:38 | 05:30 | 04:53 | 05:09 | 06:02 | 07:01 | 07:58 17:44-18:04/20 | 08:01 15:34-15:54/20 | 08:52 |
| | 16:31 | 17:34 | 18:32 | 20:33 | 21:32 | 22:15 | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 08:53 | 08:02 16:04-16:25/21 | 06:54 | 06:35 | 05:29 | 04:53 | 05:11 | 06:04 | 07:02 | 08:00 17:43-18:04/21 | 08:03 15:35-15:53/18 | 08:53 |
| | 16:33 | 17:36 | 18:34 | 20:35 | 21:33 | 22:16 | 22:08 | 21:13 | 19:56 | 18:39 | 16:33 | 16:04 |
| 15 | 08:52 | 07:59 16:04-16:22/18 | 06:52 | 06:33 | 05:27 | 04:53 | 05:12 | 06:06 | 07:04 | 08:02 17:43-18:03/20 | 08:05 15:36-15:51/15 | 08:54 |
| | 16:35 | 17:38 | 18:36 | 20:37 | 21:35 | 22:16 | 22:07 | 21:10 | 19:54 | 18:37 | 16:31 | 16:04 |
| 16 | 08:51 | 07:57 16:07-16:21/14 | 06:49 | 06:30 | 05:25 | 04:52 | 05:14 | 06:08 | 07:06 | 08:04 17:44-18:04/20 | 08:07 15:39-15:50/11 | 08:55 |
| | 16:37 | 17:40 | 18:38 | 20:39 | 21:37 | 22:17 | 22:06 | 21:08 | 19:51 | 18:35 | 16:29 | 16:04 |
| 17 | 08:50 | 07:55 16:12-16:17/5 | 06:47 | 06:28 | 05:23 | 04:52 | 05:15 | 06:09 | 07:08 | 08:06 17:44-18:01/17 | 08:09 15:44-15:45/1 | 08:56 |
| | 16:38 | 17:42 | 18:40 | 20:41 | 21:39 | 22:17 | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 08:49 | 07:53 | 06:44 | 06:25 | 05:21 | 04:52 | 05:16 | 06:11 | 07:10 | 08:08 17:45-17:59/14 | 08:11 | 08:56 |
| | 16:40 | 17:44 | 18:42 | 20:43 | 21:41 | 22:18 | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 08:48 | 07:50 | 06:41 | 06:23 | 05:20 | 04:52 | 05:18 | 06:13 | 07:12 | 08:10 17:45-17:56/11 | 08:13 | 08:57 |
| | 16:42 | 17:47 | 18:44 | 20:45 | 21:42 | 22:18 | 22:02 | 21:01 | 19:43 | 18:27 | 16:25 | 16:04 |
| 20 | 08:46 | 07:48 | 06:39 | 06:21 | 05:18 | 04:52 | 05:20 | 06:15 | 07:14 | 08:12 17:47-17:54/7 | 08:15 | 08:58 |
| | 16:44 | 17:49 | 18:46 | 20:47 | 21:44 | 22:19 | 22:00 | 20:59 | 19:41 | 18:25 | 16:23 | 16:05 |
| 21 | 08:45 | 07:46 17:18-17:21/3 | 06:36 | 06:18 | 05:17 | 04:52 | 05:21 | 06:17 | 07:16 | 08:14 17:50-17:51/1 | 08:17 | 08:58 |
| | 16:46 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 | 21:59 | 20:56 | 19:38 | 18:23 | 16:22 | 16:05 |
| 22 | 08:44 | 07:44 17:16-17:24/8 | 06:34 | 06:16 | 05:15 | 04:53 | 05:23 | 06:19 | 07:18 | 08:16 | 08:19 | 08:59 |
| | 16:48 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 08:42 | 07:41 17:14-17:26/12 | 06:31 | 06:13 | 05:13 | 04:53 | 05:24 | 06:21 | 07:19 | 08:18 | 08:21 | 08:59 |
| | 16:50 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 | 21:56 | 20:52 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 08:41 | 07:39 17:13-17:28/15 | 06:29 | 06:11 | 05:12 | 04:53 | 05:26 | 06:23 | 07:21 | 08:20 | 08:23 | 09:00 |
| | 16:52 | 17:57 | 18:54 | 20:55 | 21:51 | 22:19 | 21:54 | 20:49 | 19:30 | 18:16 | 16:18 | 16:07 |
| 25 | 08:39 16:10-16:12/2 | 07:36 17:12-17:30/18 | 06:26 | 06:09 | 05:11 | 04:53 | 05:28 | 06:25 | 07:23 | 07:22 15:39-15:48/9 | 08:25 | 09:00 |
| | 16:54 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 | 21:52 | 20:47 | 19:28 | 17:13 | 16:16 | 16:07 |
| 26 | 08:38 16:05-16:16/11 | 07:34 17:12-17:32/20 | 06:23 | 06:06 | 05:09 | 04:54 | 05:29 | 06:27 | 07:25 | 07:24 15:36-15:51/15 | 08:27 | 09:01 |
| | 16:56 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 | 21:51 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 08:36 16:04-16:20/16 | 07:32 17:11-17:31/20 | 06:21 | 06:04 | 05:08 | 04:54 | 05:31 | 06:28 | 07:27 | 07:26 15:33-15:52/19 | 08:28 | 09:01 |
| | 16:58 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 08:35 16:03-16:21/18 | 07:29 17:11-17:31/20 | 06:18 | 06:02 | 05:07 | 04:55 | 05:33 | 06:30 | 07:29 | 07:28 15:33-15:54/21 | 08:30 | 09:01 |
| | 17:00 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 | 21:47 | 20:39 | 19:20 | 17:07 | 16:13 | 16:10 |
| 29 | 08:33 16:02-16:23/21 | | 07:16 | 06:00 | 05:05 | 04:56 | 05:34 | 06:32 | 07:31 | 07:31 15:31-15:55/24 | 08:32 | 09:01 |
| | 17:02 | | 20:04 | 21:05 | 21:58 | 22:19 | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:11 |
| 30 | 08:31 16:01-16:24/23 | | 07:13 | 05:57 | 05:04 | 04:56 | 05:36 | 06:34 | 07:33 | 07:33 15:30-15:56/26 | 08:33 | 09:01 |
| | 17:04 | | 20:06 | 21:07 | 22:00 | 22:18 | 21:44 | 20:34 | 19:15 | 17:02 | 16:11 | 16:12 |
| 31 | 08:29 16:00-16:25/25 | | 07:11 | | 05:03 | | 05:38 | 06:36 | | 07:35 15:29-15:56/27 | | 09:01 |
| | 17:06 | | 20:08 | | 22:01 | | 21:42 | 20:32 | | 17:00 | | 16:13 |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 116 | 533 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 344 | 394 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01<br>16:14 | 08:27 09:43-10:16/33<br>17:08 | 07:27 17:18-17:39/21<br>18:07 | 07:08 18:55-19:32/37<br>20:09 | 05:55<br>21:08 | 05:02<br>22:02 |
| 2 | 09:00<br>16:15 | 08:26 09:44-10:15/31<br>17:10 | 07:24 17:17-17:39/22<br>18:09 | 07:05 18:58-19:33/35<br>20:11 | 05:53<br>21:10 | 05:01<br>22:03 |
| 3 | 09:00<br>16:16 | 08:24 09:45-10:15/30<br>17:12 | 07:22 17:17-17:40/23<br>18:11 | 07:03 18:59-19:32/33<br>20:13 | 05:51<br>21:12 | 05:00<br>22:05 |
| 4 | 09:00 09:48-09:53/5<br>16:17 | 08:22 09:46-10:14/28<br>17:14 | 07:19 17:16-17:39/23<br>18:13 17:44-17:45/1 | 07:00 18:59-19:31/32<br>20:15 | 05:48<br>21:14 | 04:59<br>22:06 |
| 5 | 08:59 09:46-09:55/9<br>16:19 | 08:20 09:47-10:13/26<br>17:16 | 07:17 17:16-17:40/24<br>18:15 17:41-17:48/7 | 06:58 19:00-19:31/31<br>20:17 | 05:46<br>21:16 | 04:58<br>22:07 |
| 6 | 08:59 09:45-09:58/13<br>16:20 | 08:18 09:48-10:11/23<br>17:19 | 07:14 17:16-17:49/33<br>18:18 | 06:55 19:00-19:30/30<br>20:19 | 05:44<br>21:18 | 04:57<br>22:08 |
| 7 | 08:58 09:44-09:59/15<br>16:22 | 08:16 09:50-10:09/19<br>17:21 | 07:12 17:17-17:52/35<br>18:20 | 06:52 19:01-19:30/29<br>20:21 | 05:42<br>21:20 | 04:56<br>22:09 |
| 8 | 08:58 09:43-10:01/18<br>16:23 | 08:14 09:52-10:07/15<br>17:23 | 07:09 17:17-17:54/37<br>18:22 | 06:50 19:01-19:28/27<br>20:23 | 05:40<br>21:22 | 04:56<br>22:10 |
| 9 | 08:57 09:43-10:02/19<br>16:25 | 08:12 09:56-10:04/8<br>17:25 | 07:07 17:17-17:55/38<br>18:24 | 06:47 19:02-19:28/26<br>20:25 | 05:38<br>21:24 | 04:55<br>22:11 |
| 10 | 08:57 09:42-10:03/21<br>16:26 | 08:10<br>17:27 | 07:04 17:19-17:58/39<br>18:26 | 06:45 19:02-19:26/24<br>20:27 | 05:36<br>21:26 | 04:54<br>22:12 |
| 11 | 08:56 09:42-10:04/22<br>16:28 | 08:08<br>17:29 | 07:02 17:20-18:00/40<br>18:28 | 06:42 19:04-19:24/20<br>20:29 | 05:34<br>21:28 | 04:54<br>22:13 |
| 12 | 08:55 09:42-10:06/24<br>16:29 | 08:06<br>17:31 | 06:59 17:26-17:27/1<br>18:30 17:31-18:02/31 | 06:40 19:06-19:23/17<br>20:31 | 05:32<br>21:30 | 04:53<br>22:14 |
| 13 | 08:54 09:41-10:07/26<br>16:31 | 08:04<br>17:34 | 06:57 17:30-18:04/34<br>18:32 | 06:37 19:08-19:19/11<br>20:33 | 05:30<br>21:31 | 04:53<br>22:15 |
| 14 | 08:53 09:41-10:08/27<br>16:33 | 08:01<br>17:36 | 06:54 17:30-18:07/37<br>18:34 | 06:35<br>20:35 | 05:28<br>21:33 | 04:53<br>22:15 |
| 15 | 08:52 09:40-10:08/28<br>16:35 | 07:59<br>17:38 | 06:51 17:30-18:08/38<br>18:36 | 06:32<br>20:37 | 05:27<br>21:35 | 04:52<br>22:16 |
| 16 | 08:51 09:40-10:10/30<br>16:36 | 07:57<br>17:40 | 06:49 17:29-18:10/41<br>18:38 | 06:30<br>20:39 | 05:25<br>21:37 | 04:52<br>22:17 |
| 17 | 08:50 09:41-10:11/30<br>16:38 | 07:55<br>17:42 | 06:46 17:30-18:13/43<br>18:40 | 06:28<br>20:41 | 05:23<br>21:39 | 04:52<br>22:17 |
| 18 | 08:49 09:40-10:11/31<br>16:40 | 07:52<br>17:44 | 06:44 17:30-18:14/44<br>18:42 | 06:25<br>20:43 | 05:21<br>21:40 | 04:52<br>22:18 |
| 19 | 08:47 09:40-10:12/32<br>16:42 | 07:50<br>17:46 | 06:41 17:32-18:17/45<br>18:44 | 06:23<br>20:45 | 05:20<br>21:42 | 04:52<br>22:18 |
| 20 | 08:46 09:40-10:12/32<br>16:44 | 07:48<br>17:48 | 06:39 17:33-18:18/45<br>18:46 | 06:20<br>20:47 | 05:18<br>21:44 | 04:52<br>22:18 |
| 21 | 08:45 09:40-10:14/34<br>16:46 | 07:46<br>17:51 | 06:36 17:34-18:19/45<br>18:48 | 06:18<br>20:49 | 05:16<br>21:45 | 04:52<br>22:19 |
| 22 | 08:44 09:40-10:14/34<br>16:48 | 07:43<br>17:53 | 06:34 17:37-18:21/44<br>18:50 | 06:16<br>20:51 | 05:15<br>21:47 | 04:52<br>22:19 |
| 23 | 08:42 09:40-10:14/34<br>16:50 | 07:41<br>17:55 | 06:31 17:39-18:24/45<br>18:52 | 06:13<br>20:53 | 05:13<br>21:49 | 04:53<br>22:19 |
| 24 | 08:41 09:41-10:15/34<br>16:52 | 07:39<br>17:57 | 06:28 17:41-18:27/46<br>18:54 | 06:11<br>20:55 | 05:12<br>21:50 | 04:53<br>22:19 |
| 25 | 08:39 09:40-10:15/35<br>16:54 | 07:36 17:27-17:30/3<br>17:59 | 06:26 17:42-18:28/46<br>18:56 | 06:08<br>20:57 | 05:10<br>21:52 | 04:53<br>22:19 |
| 26 | 08:38 09:40-10:15/35<br>16:56 | 07:34 17:22-17:32/10<br>18:01 | 06:23 17:44-18:29/45<br>18:58 | 06:06<br>20:59 | 05:09<br>21:54 | 04:54<br>22:19 |
| 27 | 08:36 09:41-10:15/34<br>16:58 | 07:31 17:21-17:35/14<br>18:03 | 06:21 17:46-18:30/44<br>19:00 | 06:04<br>21:01 | 05:08<br>21:55 | 04:54<br>22:19 |
| 28 | 08:34 09:42-10:16/34<br>17:00 | 07:29 17:19-17:36/17<br>18:05 | 06:18 17:48-18:30/42<br>19:02 | 06:02<br>21:03 | 05:06<br>21:57 | 04:55<br>22:19 |
| 29 | 08:33 09:42-10:16/34<br>17:02 | | 07:15 18:50-19:31/41<br>20:03 | 05:59<br>21:05 | 05:05<br>21:58 | 04:55<br>22:19 |
| 30 | 08:31 09:42-10:16/34<br>17:04 | | 07:13 18:51-19:31/40<br>20:05 | 05:57<br>21:07 | 05:04<br>21:59 | 04:56<br>22:18 |
| 31 | 08:29 09:43-10:16/33<br>17:06 | | 07:10 18:54-19:32/38<br>20:07 | | 05:03<br>22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 757 | 257 | 1178 | 352 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 19:03-19:23/20 | 07:34 18:10-18:42/32 | 07:36 | 08:35 09:24-09:47/23 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 |
| 2 | 04:57 | 05:41 | 06:40 19:01-19:25/24 | 07:36 18:01-18:40/39 | 07:39 09:25-09:34/9 | 08:37 09:25-09:46/21 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 |
| 3 | 04:58 | 05:43 | 06:41 19:00-19:26/26 | 07:38 17:58-18:37/39 | 07:41 09:22-09:37/15 | 08:38 09:27-09:46/19 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 |
| 4 | 04:59 | 05:45 | 06:43 18:59-19:26/27 | 07:40 17:56-18:35/39 | 07:43 09:19-09:39/20 | 08:40 09:27-09:45/18 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 05:47 | 06:45 18:57-19:26/29 | 07:42 17:54-18:32/38 | 07:45 09:18-09:42/24 | 08:41 09:29-09:45/16 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 05:49 | 06:47 18:56-19:26/30 | 07:44 17:53-18:29/36 | 07:47 09:17-09:43/26 | 08:43 09:31-09:44/13 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 05:50 | 06:49 18:56-19:26/30 | 07:46 17:52-18:27/35 | 07:49 09:16-09:44/28 | 08:44 09:33-09:43/10 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 05:52 | 06:51 18:55-19:26/31 | 07:48 17:52-18:24/32 | 07:51 09:15-09:44/29 | 08:45 09:36-09:41/5 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 |
| 9 | 05:04 | 05:54 | 06:53 18:54-19:26/32 | 07:50 17:51-18:15/24 | 07:53 09:15-09:46/31 | 08:47 |
| | 22:13 | 21:23 | 20:09 | 18:52 18:17-18:22/5 | 16:42 | 16:05 |
| 10 | 05:06 | 05:56 | 06:55 18:50-19:25/35 | 07:52 17:51-18:14/23 | 07:55 09:14-09:46/32 | 08:48 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 05:58 | 06:57 18:48-19:24/36 | 07:54 17:51-18:14/23 | 07:57 09:14-09:47/33 | 08:49 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:00 | 06:58 18:46-19:24/38 | 07:56 17:51-18:13/22 | 07:59 09:13-09:47/34 | 08:50 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:02 | 07:00 18:43-19:23/40 | 07:58 17:52-18:11/19 | 08:01 09:14-09:48/34 | 08:51 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:04 | 07:02 18:41-19:22/41 | 08:00 17:52-18:08/16 | 08:03 09:14-09:48/34 | 08:53 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:32 | 16:04 |
| 15 | 05:12 | 06:05 | 07:04 18:38-19:20/42 | 08:02 17:54-18:06/12 | 08:05 09:13-09:48/35 | 08:53 |
| | 22:06 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:07 | 07:06 18:35-19:19/44 | 08:04 17:56-18:03/7 | 08:07 09:13-09:48/35 | 08:54 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:09 | 07:08 18:33-19:17/44 | 08:06 | 08:09 09:14-09:49/35 | 08:55 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:11 | 07:10 18:30-19:16/46 | 08:08 | 08:11 09:15-09:49/34 | 08:56 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:13 | 07:12 18:28-19:14/46 | 08:10 | 08:13 09:15-09:49/34 | 08:57 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:15 | 07:14 18:26-19:11/45 | 08:12 | 08:15 09:15-09:49/34 | 08:58 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:17 | 07:15 18:23-19:07/44 | 08:14 | 08:17 09:15-09:49/34 | 08:58 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:21 | 16:05 |
| 22 | 05:22 | 06:19 | 07:17 18:21-19:05/44 | 08:16 | 08:19 09:16-09:49/33 | 08:59 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:21 | 07:19 18:18-19:04/46 | 08:18 | 08:21 09:16-09:48/32 | 08:59 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:22 | 07:21 18:15-19:00/45 | 08:20 | 08:23 09:18-09:49/31 | 09:00 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:17 | 16:06 |
| 25 | 05:27 | 06:24 | 07:23 18:13-18:58/45 | 07:22 | 08:24 09:19-09:49/30 | 09:00 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:26 | 07:25 18:12-18:55/43 | 07:24 | 08:26 09:20-09:49/29 | 09:00 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:28 | 07:27 18:11-18:53/42 | 07:26 | 08:28 09:20-09:49/29 | 09:01 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 | 16:09 |
| 28 | 05:32 | 06:30 | 07:29 18:11-18:50/39 | 07:28 | 08:30 09:21-09:48/27 | 09:01 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:32 | 07:31 18:10-18:47/37 | 07:30 | 08:32 09:21-09:47/26 | 09:01 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:34 19:09-19:20/11 | 07:33 18:10-18:45/35 | 07:32 | 08:33 09:23-09:47/24 | 09:01 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:36 19:05-19:22/17 | | 07:34 | | 09:01 |
| | 21:41 | 20:32 | | 17:00 | | 16:12 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 28 | 1126 | 441 | 851 | 125 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | May | June |
|---|---|---|---|---|---|---|---|
| 1 | 09:01 11:58-12:21/23 09:46-10:22/36 | 08:27 | 07:27 | | 07:08 | 05:55 | 05:02 |
| | 16:14 10:24-10:36/12 | 17:08 | 18:07 | | 20:09 | 21:09 | 22:02 |
| 2 | 09:00 12:00-12:21/21 09:46-10:22/36 | 08:26 | 07:24 | | 07:05 | 05:53 | 05:01 |
| | 16:15 10:24-10:36/12 | 17:10 | 18:09 | | 20:11 | 21:10 | 22:04 |
| 3 | 09:00 12:01-12:21/20 09:47-10:22/35 | 08:24 | 07:22 | | 07:03 | 05:51 | 05:00 |
| | 16:16 10:26-10:36/10 | 17:12 | 18:11 | | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:02-12:20/18 09:47-10:22/35 | 08:22 | 07:19 | | 07:00 | 05:48 | 04:59 |
| | 16:17 10:27-10:34/7 | 17:14 | 18:13 | | 20:15 | 21:14 | 22:06 |
| 5 | 08:59 12:03-12:19/16 10:29-10:32/3 | 08:20 | 07:17 | | 06:58 | 05:46 | 04:58 |
| | 16:19 09:35-09:37/2 09:47-10:22/35 | 17:17 | 18:16 | | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:06-12:19/13 09:48-10:23/35 | 08:18 | 07:14 | | 06:55 | 05:44 | 04:57 |
| | 16:20 09:35-09:39/4 | 17:19 | 18:18 | | 20:19 | 21:18 | 22:08 |
| 7 | 08:58 12:07-12:18/11 09:48-10:22/34 | 08:16 | 07:12 | | 06:53 | 05:42 | 04:56 |
| | 16:22 09:34-09:41/7 | 17:21 | 18:20 | | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:11-12:14/3 09:48-10:22/34 | 08:14 | 07:09 | | 06:50 | 05:40 | 04:56 |
| | 16:23 09:33-09:42/9 | 17:23 | 18:22 | | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 09:32-09:43/11 | 08:12 | 07:07 | | 06:47 | 05:38 | 04:55 |
| | 16:25 09:49-10:22/33 | 17:25 | 18:24 | | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 09:31-09:44/13 | 08:10 | 07:04 | | 06:45 | 05:36 | 04:54 |
| | 16:26 09:49-10:21/32 | 17:27 | 18:26 | | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 09:30-09:45/15 | 08:08 | 07:02 | | 06:42 | 05:34 | 04:54 |
| | 16:28 09:50-10:20/30 | 17:29 | 18:28 | | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 09:29-09:46/17 09:51-10:11/20 | 08:06 | 06:59 | | 06:40 | 05:32 | 04:53 |
| | 16:29 10:13-10:19/6 | 17:31 | 18:30 | | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 09:28-09:47/19 | 08:04 | 06:57 | | 06:37 | 05:30 | 04:53 |
| | 16:31 09:52-10:11/19 | 17:34 | 18:32 | | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 09:28-09:48/20 | 08:01 | 06:54 | 18:04-18:07/3 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:53-10:11/18 | 17:36 | 18:34 | | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 09:28-09:49/21 | 07:59 | 06:52 | 18:01-18:08/7 | 06:33 | 05:27 | 04:53 |
| | 16:35 09:54-10:11/17 | 17:38 | 18:36 | | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 09:28-09:49/21 | 07:57 | 06:49 | 17:59-18:10/11 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:54-10:10/16 | 17:40 | 18:38 | | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 09:28-09:50/22 | 07:55 | 06:46 | 17:58-18:13/15 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:56-10:10/14 | 17:42 | 18:40 | | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 09:28-09:50/22 | 07:53 | 06:44 | 17:57-18:14/17 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:57-10:09/12 | 17:44 | 18:42 | | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 09:28-09:51/23 | 07:50 | 06:41 | 17:57-18:17/20 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:59-10:08/9 | 17:46 | 18:44 | | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 09:28-09:51/23 | 07:48 | 06:39 | 17:56-18:17/21 | 06:20 | 05:18 | 04:52 |
| | 16:44 | 17:48 | 18:46 | | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 09:29-09:52/23 | 07:46 | 06:36 | 17:56-18:16/20 | 06:18 | 05:16 | 04:52 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 09:29-09:51/22 | 07:43 | 06:34 | 17:56-18:16/20 | 06:16 | 05:15 | 04:52 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 09:30-09:52/22 | 07:41 | 06:31 | 17:56-18:14/18 | 06:13 | 05:13 | 04:53 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 09:30-09:52/22 | 07:39 | 06:28 | 17:58-18:13/15 | 06:11 | 05:12 | 04:53 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 09:31-09:51/20 | 07:36 | 06:26 | 17:59-18:11/12 | 06:09 | 05:10 | 04:53 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 09:31-09:51/20 | 07:34 | 06:23 | 18:01-18:07/6 | 06:06 | 05:09 | 04:54 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 09:33-09:51/18 | 07:31 | 06:21 | | 06:04 | 05:08 | 04:54 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 09:34-09:50/16 | 07:29 | 06:18 | | 06:02 | 05:06 | 04:55 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 09:36-09:49/13 | | 07:16 | | 05:59 | 05:05 | 04:55 |
| | 17:02 | | 20:04 | | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 09:38-09:47/9 | | 07:13 | | 05:57 | 05:04 | 04:56 |
| | 17:04 | | 20:06 | | 21:07 | 21:59 | 22:18 |
| 31 | 08:29 | | 07:10 | | | 05:03 | |
| | 17:06 | | 20:07 | | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | | 423 | 501 | 520 |
| Sum of minutes with flicker | 1109 | 0 | 185 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | 07:36 | 08:35 09:12-09:27/15 |
| | 22:18 | 21:40 | 20:29 | 19:12 | 16:58 | 16:10 09:32-10:02/30 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | 07:39 | 08:37 09:14-09:27/13 |
| | 22:17 | 21:38 | 20:27 | 19:09 | 16:56 | 16:09 09:32-10:04/32 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | 07:41 | 08:38 09:16-09:27/11 |
| | 22:17 | 21:36 | 20:24 | 19:07 | 16:53 | 16:08 09:33-10:06/33 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | 07:43 | 08:40 11:56-11:58/2 09:32-10:06/34 |
| | 22:16 | 21:34 | 20:22 | 19:04 | 16:51 | 16:07 09:17-09:26/9 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | 07:45 | 08:41 11:53-12:03/10 09:33-10:07/34 |
| | 22:16 | 21:32 | 20:19 | 19:02 | 16:49 | 16:07 09:19-09:26/7 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | 07:47 | 08:43 11:52-12:05/13 09:34-10:09/35 |
| | 22:15 | 21:30 | 20:17 | 18:59 | 16:47 | 16:06 09:21-09:26/5 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | 07:49 | 08:44 11:50-12:06/16 10:17-10:19/2 |
| | 22:14 | 21:28 | 20:14 | 18:57 | 16:45 | 16:06 09:22-09:24/2 09:34-10:09/35 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | 07:51 | 08:45 11:50-12:08/18 09:35-10:10/35 |
| | 22:14 | 21:26 | 20:11 | 18:54 | 16:43 | 16:05 10:15-10:22/7 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | 07:53 | 08:47 11:50-12:09/19 09:35-10:10/35 |
| | 22:13 | 21:23 | 20:09 | 18:52 | 16:42 | 16:05 10:14-10:24/10 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | 07:55 | 08:48 11:49-12:10/21 09:35-10:11/36 |
| | 22:12 | 21:21 | 20:06 | 18:49 | 16:40 | 16:04 10:13-10:25/12 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | 07:57 | 08:49 11:49-12:12/23 09:36-10:12/36 |
| | 22:11 | 21:19 | 20:04 | 18:47 | 16:38 | 16:04 10:14-10:26/12 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | 07:59 09:09-09:18/9 | 08:50 11:49-12:12/23 09:36-10:12/36 |
| | 22:10 | 21:17 | 20:01 | 18:44 | 16:36 | 16:04 10:14-10:27/13 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | 08:01 09:08-09:21/13 | 08:51 11:49-12:13/24 |
| | 22:09 | 21:15 | 19:59 | 18:42 | 16:34 | 16:04 09:37-10:28/51 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | 08:03 09:06-09:22/16 | 08:53 11:49-12:14/25 |
| | 22:08 | 21:12 | 19:56 | 18:39 | 16:33 | 16:04 09:37-10:29/52 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | 08:05 09:05-09:23/18 | 08:54 11:49-12:14/25 |
| | 22:07 | 21:10 | 19:53 | 18:37 | 16:31 | 16:04 09:37-10:29/52 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | 08:07 09:04-09:24/20 | 08:54 11:49-12:15/26 |
| | 22:05 | 21:08 | 19:51 | 18:34 | 16:29 | 16:04 09:38-10:30/52 |
| 17 | 05:15 | 06:09 | 07:08 18:51-18:55/4 | 08:06 | 08:09 09:05-09:25/20 | 08:55 11:50-12:16/26 |
| | 22:04 | 21:06 | 19:48 | 18:32 | 16:28 | 16:04 09:39-10:31/52 |
| 18 | 05:16 | 06:11 | 07:10 18:47-18:58/11 | 08:08 | 08:11 09:04-09:26/22 | 08:56 11:50-12:17/27 |
| | 22:03 | 21:03 | 19:46 | 18:30 | 16:26 | 16:04 09:39-10:32/53 |
| 19 | 05:18 | 06:13 | 07:12 18:45-19:00/15 | 08:10 | 08:13 09:04-09:26/22 | 08:57 11:50-12:17/27 |
| | 22:01 | 21:01 | 19:43 | 18:27 | 16:24 | 16:04 09:40-10:32/52 |
| 20 | 05:19 | 06:15 | 07:14 18:43-19:01/18 | 08:12 | 08:15 09:04-09:26/22 | 08:58 11:51-12:18/27 |
| | 22:00 | 20:59 | 19:40 | 18:25 | 16:23 | 16:04 09:40-10:32/52 |
| 21 | 05:21 | 06:17 | 07:15 18:42-19:01/19 | 08:14 | 08:17 09:04-09:27/23 | 08:58 11:52-12:18/26 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 16:22 | 16:05 09:41-10:33/52 |
| 22 | 05:23 | 06:19 | 07:17 18:41-19:01/20 | 08:16 | 08:19 09:04-09:27/23 | 08:59 11:52-12:18/26 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 16:20 | 16:05 09:41-10:33/52 |
| 23 | 05:24 | 06:21 | 07:19 18:41-19:01/20 | 08:18 | 08:21 09:05-09:28/23 | 08:59 11:53-12:19/26 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 16:19 09:36-09:45/9 | 16:06 09:42-10:34/52 |
| 24 | 05:26 | 06:23 | 07:21 18:40-19:00/20 | 08:20 | 08:23 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 16:18 09:35-09:47/12 | 16:06 09:42-10:34/52 |
| 25 | 05:27 | 06:24 | 07:23 18:40-18:58/18 | 07:22 | 08:24 09:06-09:28/22 | 09:00 11:53-12:20/27 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 16:16 09:34-09:48/14 | 16:07 09:42-10:34/52 |
| 26 | 05:29 | 06:26 | 07:25 18:40-18:55/15 | 07:24 | 08:26 09:07-09:28/21 | 09:00 11:54-12:20/26 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 16:15 09:33-09:49/16 | 16:08 09:42-10:35/53 |
| 27 | 05:31 | 06:28 | 07:27 18:40-18:53/13 | 07:26 | 08:28 09:07-09:28/21 | 09:01 11:54-12:20/26 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 16:14 09:33-09:50/17 | 16:09 09:43-10:35/52 |
| 28 | 05:33 | 06:30 | 07:29 18:41-18:50/9 | 07:28 | 08:30 09:08-09:28/20 | 09:01 11:55-12:20/25 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 16:13 09:33-09:51/18 | 16:09 09:43-10:35/52 |
| 29 | 05:34 | 06:32 | 07:31 18:43-18:47/4 | 07:30 | 08:32 09:09-09:28/19 | 09:01 11:56-12:21/25 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 16:12 09:33-09:52/19 | 16:10 09:44-10:35/51 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 08:33 09:10-09:27/17 09:32-09:52/20 | 09:01 11:57-12:21/24 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 16:11 09:54-10:00/6 | 16:11 09:44-10:36/52 |
| 31 | 05:38 | 06:36 | | 07:34 | | 09:01 11:58-12:21/23 09:45-10:21/36 |
| | 21:42 | 20:32 | | 17:00 | | 16:12 10:22-10:36/14 |
| Potential sun hours | 521 | 465 | 383 | 326 | 253 | 224 |
| Sum of minutes with flicker | 0 | 0 | 186 | 0 | 504 | 2148 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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Calculated:
2021.12.03 12:45/3.5.552

# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | 09:01 12:44-13:42/58 | 08:27 12:52-13:57/65 10:04-10:09/5 | 07:27 | 07:08 | 05:55 | 05:02 |
| | 16:14 09:39-10:37/58 | 17:08 09:03-09:23/20 09:32-10:00/28 | 18:07 | 20:09 | 21:09 | 22:02 |
| 2 | 09:01 12:45-13:43/58 | 08:26 12:53-13:56/63 09:33-09:59/26 | 07:24 | 07:05 | 05:53 | 05:01 |
| | 16:15 09:38-10:37/59 | 17:10 09:02-09:24/22 | 18:09 | 20:11 | 21:11 | 22:04 |
| 3 | 09:00 12:46-13:45/59 | 08:24 12:53-13:56/63 09:34-09:59/25 | 07:22 | 07:03 | 05:51 | 05:00 |
| | 16:16 09:39-10:38/59 | 17:12 09:01-09:26/25 | 18:11 | 20:13 | 21:12 | 22:05 |
| 4 | 09:00 12:45-13:45/60 | 08:22 12:54-13:56/62 09:35-09:58/23 | 07:19 | 07:00 | 05:48 | 04:59 |
| | 16:17 09:38-10:38/60 | 17:14 09:01-09:27/26 | 18:13 | 20:15 | 21:14 | 22:06 |
| 5 | 09:00 12:45-13:45/60 | 08:20 12:55-13:56/61 09:36-09:57/21 | 07:17 | 06:58 | 05:46 | 04:58 |
| | 16:19 09:39-10:38/59 | 17:17 09:00-09:28/28 | 18:16 | 20:17 | 21:16 | 22:07 |
| 6 | 08:59 12:46-13:46/60 | 08:18 12:55-13:54/59 09:37-09:55/18 | 07:14 | 06:55 | 05:44 | 04:57 |
| | 16:20 09:39-10:39/60 | 17:19 08:59-09:27/28 | 18:18 | 20:19 | 21:18 | 22:08 |
| 7 | 08:59 12:46-13:47/61 | 08:16 12:56-13:54/58 08:59-09:28/29 | 07:12 | 06:53 | 05:42 | 04:56 |
| | 16:22 09:38-10:39/61 | 17:21 08:46-08:55/9 09:39-09:53/14 | 18:20 | 20:21 | 21:20 | 22:09 |
| 8 | 08:58 12:46-13:47/61 | 08:14 12:57-13:53/56 08:59-09:29/30 | 07:09 | 06:50 | 05:40 | 04:56 |
| | 16:23 09:38-10:40/62 | 17:23 08:44-08:58/14 09:43-09:50/7 | 18:22 | 20:23 | 21:22 | 22:10 |
| 9 | 08:57 12:46-13:48/62 | 08:12 12:58-13:52/54 | 07:07 | 06:47 | 05:38 | 04:55 |
| | 16:25 09:38-10:40/62 | 17:25 08:42-09:29/47 | 18:24 | 20:25 | 21:24 | 22:11 |
| 10 | 08:57 12:46-13:49/63 | 08:10 13:00-13:52/52 | 07:04 | 06:45 | 05:36 | 04:54 |
| | 16:26 09:38-10:40/62 | 17:27 08:41-09:29/48 | 18:26 | 20:27 | 21:26 | 22:12 |
| 11 | 08:56 12:46-13:49/63 | 08:08 13:00-13:50/50 | 07:02 | 06:42 | 05:34 | 04:54 |
| | 16:28 09:35-10:41/66 | 17:29 08:40-09:29/49 | 18:28 | 20:29 | 21:28 | 22:13 |
| 12 | 08:55 12:47-13:50/63 | 08:06 13:02-13:49/47 | 06:59 | 06:40 | 05:32 | 04:53 |
| | 16:29 09:34-10:41/67 | 17:31 08:39-09:29/50 | 18:30 | 20:31 | 21:30 | 22:14 |
| 13 | 08:54 12:47-13:51/64 | 08:04 13:04-13:47/43 | 06:57 | 06:37 | 05:30 | 04:53 |
| | 16:31 09:33-10:42/69 | 17:34 08:39-09:29/50 | 18:32 | 20:33 | 21:31 | 22:15 |
| 14 | 08:53 12:47-13:52/65 | 08:01 13:07-13:46/39 | 06:54 | 06:35 | 05:28 | 04:53 |
| | 16:33 09:33-10:42/69 | 17:36 08:39-09:29/50 | 18:34 | 20:35 | 21:33 | 22:15 |
| 15 | 08:52 12:47-13:51/64 | 07:59 13:09-13:43/34 | 06:52 | 06:33 | 05:27 | 04:52 |
| | 16:35 09:32-10:42/70 | 17:38 08:38-09:27/49 | 18:36 | 20:37 | 21:35 | 22:16 |
| 16 | 08:51 12:47-13:52/65 | 07:57 13:12-13:40/28 | 06:49 | 06:30 | 05:25 | 04:52 |
| | 16:36 09:31-10:42/71 | 17:40 08:38-09:27/49 | 18:38 | 20:39 | 21:37 | 22:17 |
| 17 | 08:50 12:48-13:53/65 | 07:55 13:16-13:35/19 | 06:46 | 06:28 | 05:23 | 04:52 |
| | 16:38 09:31-10:42/71 | 17:42 08:39-09:26/47 | 18:40 | 20:41 | 21:39 | 22:17 |
| 18 | 08:49 12:47-13:53/66 | 07:53 08:38-09:24/46 | 06:44 | 06:25 | 05:21 | 04:52 |
| | 16:40 09:30-10:42/72 | 17:44 | 18:42 | 20:43 | 21:40 | 22:18 |
| 19 | 08:48 12:48-13:54/66 | 07:50 08:39-09:04/25 | 06:41 | 06:23 | 05:20 | 04:52 |
| | 16:42 09:30-10:42/72 | 17:46 09:05-09:23/18 | 18:44 | 20:45 | 21:42 | 22:18 |
| 20 | 08:46 12:48-13:54/66 | 07:48 08:39-09:03/24 | 06:39 | 06:20 | 05:18 | 04:52 |
| | 16:44 09:29-10:41/72 | 17:48 09:07-09:19/12 | 18:46 | 20:47 | 21:44 | 22:18 |
| 21 | 08:45 12:48-13:55/67 | 07:46 08:40-09:02/22 | 06:36 | 06:18 | 05:16 | 04:52 |
| | 16:46 09:30-10:41/71 | 17:51 | 18:48 | 20:49 | 21:46 | 22:19 |
| 22 | 08:44 12:48-13:55/67 | 07:43 08:42-09:01/19 | 06:34 | 06:16 | 05:15 | 04:52 |
| | 16:48 09:29-10:41/72 | 17:53 | 18:50 | 20:51 | 21:47 | 22:19 |
| 23 | 08:42 12:48-13:55/67 | 07:41 08:42-08:59/17 | 06:31 | 06:13 | 05:13 | 04:53 |
| | 16:50 09:30-10:41/71 | 17:55 | 18:52 | 20:53 | 21:49 | 22:19 |
| 24 | 08:41 12:49-13:56/67 | 07:39 08:45-08:57/12 | 06:28 | 06:11 | 05:12 | 04:53 |
| | 16:52 09:30-10:39/69 | 17:57 | 18:54 | 20:55 | 21:50 | 22:19 |
| 25 | 08:39 12:49-13:56/67 09:29-10:18/49 | 07:36 | 06:26 | 06:09 | 05:10 | 04:53 |
| | 16:54 10:20-10:38/18 | 17:59 | 18:56 | 20:57 | 21:52 | 22:19 |
| 26 | 08:38 12:49-13:56/67 09:29-10:18/49 | 07:34 | 06:23 | 06:06 | 05:09 | 04:54 |
| | 16:56 10:21-10:36/15 | 18:01 | 18:58 | 20:59 | 21:54 | 22:19 |
| 27 | 08:36 12:49-13:56/67 09:30-10:18/48 | 07:31 | 06:21 | 06:04 | 05:08 | 04:54 |
| | 16:58 10:25-10:34/9 | 18:03 | 19:00 | 21:01 | 21:55 | 22:19 |
| 28 | 08:34 12:51-13:57/66 | 07:29 | 06:18 | 06:02 | 05:06 | 04:55 |
| | 17:00 09:31-10:17/46 | 18:05 | 19:02 | 21:03 | 21:57 | 22:19 |
| 29 | 08:33 12:51-13:57/66 09:31-10:16/45 | | 07:16 | 05:59 | 05:05 | 04:55 |
| | 17:02 09:11-09:14/3 | | 20:04 | 21:05 | 21:58 | 22:19 |
| 30 | 08:31 12:51-13:57/66 09:31-10:15/44 | | 07:13 | 05:57 | 05:04 | 04:56 |
| | 17:04 09:07-09:19/12 | | 20:06 | 21:07 | 22:00 | 22:18 |
| 31 | 08:29 12:52-13:57/65 09:32-10:13/41 | | 07:10 | | 05:03 | |
| | 17:06 09:05-09:21/16 | | 20:07 | | 22:01 | |
| Potential sun hours | 242 | 269 | 366 | 423 | 501 | 520 |
| Sum of minutes with flicker | 3960 | 1885 | 0 | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | August | September | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 05:40 | 06:38 | 07:35 | | 07:37 | 12:28-13:20/52 | 08:35 | 12:28-13:31/63 |
| | 22:18 | 21:40 | 20:29 | 19:12 | | 16:58 | 08:11-08:59/48 | 16:10 | 09:17-10:23/66 |
| 2 | 04:58 | 05:41 | 06:40 | 07:36 | | 07:39 | 12:28-13:22/54 | 08:37 | 12:29-13:32/63 |
| | 22:17 | 21:38 | 20:27 | 19:09 | | 16:56 | 08:12-08:59/47 | 16:09 | 09:21-10:23/62 |
| 3 | 04:58 | 05:43 | 06:41 | 07:38 | | 07:41 | 12:27-13:23/56 09:12-09:20/8 | 08:38 | 12:30-13:32/62 |
| | 22:17 | 21:36 | 20:24 | 19:07 | | 16:53 | 08:14-08:58/44 | 16:08 | 09:22-10:24/62 |
| 4 | 04:59 | 05:45 | 06:43 | 07:40 | | 07:43 | 12:25-13:23/58 08:28-08:58/30 | 08:40 | 12:30-13:32/62 |
| | 22:16 | 21:34 | 20:22 | 19:04 | | 16:51 | 08:16-08:24/8 09:08-09:23/15 | 16:07 | 09:22-10:24/62 |
| 5 | 05:00 | 05:47 | 06:45 | 07:42 | | 07:45 | 12:25-13:25/60 09:07-09:26/19 | 08:41 | 12:31-13:32/61 |
| | 22:16 | 21:32 | 20:19 | 19:02 | | 16:49 | 08:30-08:58/28 | 16:07 | 09:23-10:24/61 |
| 6 | 05:01 | 05:49 | 06:47 | 07:44 | | 07:47 | 12:25-13:25/60 09:06-09:27/21 | 08:43 | 12:32-13:33/61 |
| | 22:15 | 21:30 | 20:17 | 18:59 | | 16:47 | 08:30-08:57/27 | 16:06 | 09:25-10:25/60 |
| 7 | 05:02 | 05:51 | 06:49 | 07:46 | | 07:49 | 12:24-13:26/62 09:04-09:28/24 | 08:44 | 12:32-13:32/60 |
| | 22:14 | 21:28 | 20:14 | 18:57 | | 16:45 | 08:31-08:56/25 | 16:06 | 09:25-10:25/60 |
| 8 | 05:03 | 05:52 | 06:51 | 07:48 | | 07:51 | 12:23-13:26/63 09:03-09:29/26 | 08:45 | 12:33-13:33/60 |
| | 22:14 | 21:26 | 20:11 | 18:54 | | 16:43 | 08:31-08:55/24 | 16:05 | 09:26-10:26/60 |
| 9 | 05:04 | 05:54 | 06:53 | 07:50 | | 07:53 | 12:23-13:27/64 09:04-09:30/26 | 08:47 | 12:34-13:33/59 |
| | 22:13 | 21:23 | 20:09 | 18:52 | | 16:42 | 08:33-08:55/22 | 16:05 | 09:27-10:26/59 |
| 10 | 05:06 | 05:56 | 06:55 | 07:52 | | 07:55 | 12:23-13:27/64 09:34-09:41/7 | 08:48 | 12:34-13:33/59 |
| | 22:12 | 21:21 | 20:06 | 18:49 | | 16:40 | 08:34-08:54/20 09:03-09:31/28 | 16:04 | 09:28-10:26/58 |
| 11 | 05:07 | 05:58 | 06:57 | 07:54 | | 07:57 | 12:22-13:28/66 09:02-09:44/42 | 08:49 | 12:35-13:33/58 |
| | 22:11 | 21:19 | 20:04 | 18:47 | | 16:38 | 08:36-08:52/16 | 16:04 | 09:29-10:27/58 |
| 12 | 05:08 | 06:00 | 06:58 | 07:56 | | 07:59 | 12:22-13:28/66 09:02-09:46/44 | 08:50 | 12:36-13:34/58 |
| | 22:10 | 21:17 | 20:01 | 18:44 | | 16:36 | 08:38-08:49/11 | 16:04 | 09:29-10:27/58 |
| 13 | 05:09 | 06:02 | 07:00 | 07:58 | | 08:01 | 12:23-13:29/66 | 08:52 | 12:36-13:34/58 |
| | 22:09 | 21:15 | 19:59 | 18:42 | | 16:34 | 09:03-09:48/45 | 16:04 | 09:30-10:27/57 |
| 14 | 05:11 | 06:04 | 07:02 | 08:00 | | 08:03 | 12:23-13:29/66 | 08:53 | 12:37-13:34/57 |
| | 22:08 | 21:12 | 19:56 | 18:39 | | 16:33 | 09:02-09:49/47 | 16:04 | 09:31-10:27/56 |
| 15 | 05:12 | 06:05 | 07:04 | 08:02 | | 08:05 | 12:22-13:29/67 09:02-09:50/48 | 08:54 | 12:37-13:34/57 |
| | 22:07 | 21:10 | 19:53 | 18:37 | | 16:31 | 09:57-10:06/9 | 16:04 | 09:32-10:28/56 |
| 16 | 05:13 | 06:07 | 07:06 | 08:04 | | 08:07 | 12:22-13:29/67 09:02-09:51/49 | 08:54 | 12:38-13:34/56 |
| | 22:05 | 21:08 | 19:51 | 18:34 | | 16:29 | 09:54-10:09/15 | 16:04 | 09:33-10:28/55 |
| 17 | 05:15 | 06:09 | 07:08 | 08:06 | 09:19-09:26/7 | 08:09 | 12:23-13:30/67 09:03-09:52/49 | 08:55 | 12:39-13:35/56 |
| | 22:04 | 21:06 | 19:48 | 18:32 | | 16:28 | 09:54-10:12/18 | 16:04 | 09:34-10:29/55 |
| 18 | 05:16 | 06:11 | 07:10 | 08:08 | 09:15-09:29/14 | 08:11 | 12:23-13:30/67 | 08:56 | 12:39-13:36/57 |
| | 22:03 | 21:03 | 19:46 | 18:30 | | 16:26 | 09:04-10:13/69 | 16:04 | 09:35-10:29/54 |
| 19 | 05:18 | 06:13 | 07:12 | 08:10 | 09:13-09:31/18 | 08:13 | 12:23-13:30/67 | 08:57 | 12:39-13:35/56 |
| | 22:01 | 21:01 | 19:43 | 18:27 | | 16:24 | 09:04-10:15/71 | 16:04 | 09:36-10:30/54 |
| 20 | 05:19 | 06:15 | 07:14 | 08:12 | 09:11-09:32/21 | 08:15 | 12:23-13:30/67 | 08:58 | 12:40-13:36/56 |
| | 22:00 | 20:59 | 19:40 | 18:25 | | 16:23 | 09:04-10:16/72 | 16:04 | 09:36-10:30/54 |
| 21 | 05:21 | 06:17 | 07:15 | 08:14 | 09:10-09:33/23 | 08:17 | 12:23-13:30/67 | 08:58 | 12:41-13:37/56 |
| | 21:58 | 20:56 | 19:38 | 18:22 | 09:41-09:47/6 | 16:22 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 22 | 05:22 | 06:19 | 07:17 | 08:16 | 09:09-09:33/24 | 08:19 | 12:24-13:30/66 | 08:59 | 12:41-13:37/56 |
| | 21:57 | 20:54 | 19:35 | 18:20 | 09:36-09:51/15 | 16:20 | 09:05-10:17/72 | 16:05 | 09:37-10:31/54 |
| 23 | 05:24 | 06:21 | 07:19 | 08:18 | 09:09-09:34/25 | 08:21 | 12:24-13:30/66 | 08:59 | 12:42-13:38/56 |
| | 21:55 | 20:51 | 19:33 | 18:18 | 09:35-09:54/19 | 16:19 | 09:07-10:19/72 | 16:06 | 09:38-10:32/54 |
| 24 | 05:26 | 06:23 | 07:21 | 08:20 | 13:54-13:59/5 | 08:23 | 12:25-13:31/66 | 09:00 | 12:42-13:38/56 |
| | 21:54 | 20:49 | 19:30 | 18:15 | 09:09-09:55/46 | 16:17 | 09:08-10:20/72 | 16:06 | 09:38-10:32/54 |
| 25 | 05:27 | 06:24 | 07:23 | 07:22 | 12:45-13:07/22 | 08:25 | 12:26-13:31/65 | 09:00 | 12:42-13:38/56 |
| | 21:52 | 20:47 | 19:27 | 17:13 | 08:08-08:56/48 | 16:16 | 09:09-10:20/71 | 16:07 | 09:38-10:32/54 |
| 26 | 05:29 | 06:26 | 07:25 | 07:24 | 12:41-13:10/29 | 08:26 | 12:26-13:31/65 | 09:00 | 12:43-13:39/56 |
| | 21:50 | 20:44 | 19:25 | 17:11 | 08:08-08:57/49 | 16:15 | 09:10-10:21/71 | 16:08 | 09:38-10:33/55 |
| 27 | 05:31 | 06:28 | 07:27 | 07:26 | 12:37-13:13/36 | 08:28 | 12:27-13:31/64 | 09:01 | 12:43-13:39/56 |
| | 21:49 | 20:42 | 19:22 | 17:09 | 08:08-08:57/49 | 16:14 | 09:11-10:21/70 | 16:09 | 09:38-10:33/55 |
| 28 | 05:33 | 06:30 | 07:29 | 07:28 | 12:36-13:16/40 | 08:30 | 12:27-13:32/65 | 09:01 | 12:43-13:40/57 |
| | 21:47 | 20:39 | 19:20 | 17:06 | 08:09-08:58/49 | 16:13 | 09:13-10:22/69 | 16:09 | 09:38-10:34/56 |
| 29 | 05:34 | 06:32 | 07:31 | 07:30 | 12:33-13:17/44 | 08:32 | 12:27-13:31/64 | 09:01 | 12:44-13:41/57 |
| | 21:45 | 20:37 | 19:17 | 17:04 | 08:09-08:58/49 | 16:12 | 09:14-10:23/69 | 16:10 | 09:38-10:34/56 |
| 30 | 05:36 | 06:34 | 07:33 | 07:32 | 12:32-13:18/46 | 08:33 | 12:28-13:31/63 | 09:01 | 12:44-13:41/57 |
| | 21:43 | 20:34 | 19:15 | 17:02 | 08:09-08:58/49 | 16:11 | 09:15-10:22/67 | 16:11 | 09:38-10:35/57 |
| 31 | 05:38 | 06:36 | | 07:34 | 12:30-13:20/50 | | | 09:01 | 12:45-13:42/57 |
| | 21:42 | 20:32 | | 17:00 | 08:10-08:58/48 | | | 16:12 | 09:38-10:36/58 |
| Potential sun hours | 521 | 465 | 383 | 326 | | 253 | | 224 | |
| Sum of minutes with flicker | 0 | 0 | 0 | 831 | | 3717 | | 3573 | |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | January | February | March | | April | | May | | June | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 09:01 | 08:28 | 07:27 | | 07:08 | 07:38-08:01/23 | 05:55 | 06:49-08:15/86 | 05:02 | 06:38-07:53/75 |
| | 16:14 | 17:08 | 18:07 | | 20:10 | | 21:09 | | 22:03 | |
| 2 | 09:01 | 08:26 | 07:24 | | 07:05 | 07:36-08:01/25 | 05:53 | 06:47-08:13/86 | 05:01 | 06:38-07:53/75 |
| | 16:15 | 17:10 | 18:09 | | 20:12 | | 21:11 | | 22:04 | |
| 3 | 09:00 | 08:24 | 07:22 | | 07:03 | 07:32-08:07/35 | 05:51 | 06:46-08:12/86 | 05:00 | 06:39-07:54/75 |
| | 16:16 | 17:12 | 18:12 | | 20:14 | | 21:13 | | 22:05 | |
| 4 | 09:00 | 08:22 | 07:19 | | 07:00 | 07:31-08:11/40 | 05:48 | 06:44-08:11/87 | 04:59 | 06:39-07:54/75 |
| | 16:17 | 17:14 | 18:14 | | 20:16 | | 21:15 | | 22:06 | |
| 5 | 09:00 | 08:20 | 07:17 | | 06:58 | 07:29-08:13/44 | 05:46 | 06:43-08:09/86 | 04:58 | 06:39-07:53/74 |
| | 16:19 | 17:17 | 18:16 | | 20:18 | | 21:17 | | 22:07 | |
| 6 | 08:59 | 08:18 | 07:14 | | 06:55 | 07:28-08:16/48 | 05:44 | 06:42-08:08/86 | 04:57 | 06:40-07:54/74 |
| | 16:20 | 17:19 | 18:18 | | 20:19 | 07:20-07:26/6 | 21:18 | | 22:09 | |
| 7 | 08:59 | 08:16 | 07:12 | | 06:53 | 07:17-08:17/60 | 05:42 | 06:41-08:06/85 | 04:56 | 06:40-07:53/73 |
| | 16:22 | 17:21 | 18:20 | | 20:21 | | 21:20 | | 22:10 | |
| 8 | 08:58 | 08:14 | 07:09 | | 06:50 | 07:15-08:19/64 | 05:40 | 06:40-08:03/83 | 04:56 | 06:40-07:53/73 |
| | 16:23 | 17:23 | 18:22 | | 20:23 | | 21:22 | | 22:11 | |
| 9 | 08:58 | 08:12 | 07:07 | | 06:48 | 07:12-08:19/67 | 05:38 | 06:39-08:01/82 | 04:55 | 06:41-07:53/72 |
| | 16:25 | 17:25 | 18:24 | | 20:25 | | 21:24 | | 22:12 | |
| 10 | 08:57 | 08:10 | 07:04 | | 06:45 | 07:10-08:20/70 | 05:36 | 06:39-07:57/78 | 04:54 | 06:41-07:53/72 |
| | 16:26 | 17:27 | 18:26 | | 20:27 | | 21:26 | | 22:13 | |
| 11 | 08:56 | 08:08 | 07:02 | | 06:43 | 07:09-08:20/71 | 05:34 | 06:39-07:53/74 | 04:54 | 06:41-07:53/72 |
| | 16:28 | 17:29 | 18:28 | | 20:29 | | 21:28 | | 22:13 | |
| 12 | 08:55 | 08:06 | 06:59 | | 06:40 | 07:09-08:21/72 | 05:32 | 06:38-07:53/75 | 04:53 | 06:42-07:54/72 |
| | 16:29 | 17:32 | 18:30 | | 20:31 | | 21:30 | | 22:14 | |
| 13 | 08:54 | 08:04 | 06:57 | | 06:38 | 07:09-08:21/72 | 05:30 | 06:37-07:53/76 | 04:53 | 06:43-07:54/71 |
| | 16:31 | 17:34 | 18:32 | | 20:33 | | 21:32 | | 22:15 | |
| 14 | 08:53 | 08:02 | 06:54 | | 06:35 | 07:08-08:22/74 | 05:28 | 06:37-07:53/76 | 04:53 | 06:42-07:53/71 |
| | 16:33 | 17:36 | 18:34 | | 20:35 | | 21:33 | | 22:16 | |
| 15 | 08:52 | 07:59 | 06:52 | | 06:33 | 07:09-08:22/73 | 05:27 | 06:37-07:54/77 | 04:52 | 21:37-21:38/1 |
| | 16:35 | 17:38 | 18:36 | | 20:37 | | 21:35 | | 22:16 | 06:43-07:53/70 |
| 16 | 08:51 | 07:57 | 06:49 | | 06:30 | 07:09-08:22/73 | 05:25 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:36 | 17:40 | 18:38 | | 20:39 | | 21:37 | | 22:17 | 06:43-07:54/71 |
| 17 | 08:50 | 07:55 | 06:47 | | 06:28 | 07:10-08:22/72 | 05:23 | 06:37-07:54/77 | 04:52 | 21:36-21:39/3 |
| | 16:38 | 17:42 | 18:40 | | 20:41 | | 21:39 | | 22:17 | 06:43-07:54/71 |
| 18 | 08:49 | 07:53 | 06:44 | | 06:25 | 07:11-08:23/72 | 05:21 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:40 | 17:44 | 18:42 | | 20:43 | | 21:41 | | 22:18 | 06:44-07:54/70 |
| 19 | 08:48 | 07:50 | 06:41 | | 06:23 | 07:11-08:22/71 | 05:20 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:42 | 17:46 | 18:44 | | 20:45 | | 21:42 | | 22:18 | 06:44-07:54/70 |
| 20 | 08:46 | 07:48 | 06:39 | | 06:20 | 07:10-08:22/72 | 05:18 | 06:36-07:54/78 | 04:52 | 21:36-21:40/4 |
| | 16:44 | 17:49 | 18:46 | | 20:47 | | 21:44 | | 22:19 | 06:44-07:54/70 |
| 21 | 08:45 | 07:46 | 06:36 | | 06:18 | 07:09-08:22/73 | 05:16 | 06:37-07:54/77 | 04:52 | 21:36-21:40/4 |
| | 16:46 | 17:51 | 18:48 | | 20:49 | | 21:46 | | 22:19 | 06:44-07:54/70 |
| 22 | 08:44 | 07:43 | 06:34 | | 06:16 | 07:07-08:21/74 | 05:15 | 06:36-07:54/78 | 04:52 | 21:37-21:41/4 |
| | 16:48 | 17:53 | 18:50 | | 20:51 | | 21:47 | | 22:19 | 06:45-07:55/70 |
| 23 | 08:42 | 07:41 | 06:31 | | 06:13 | 07:06-08:20/74 | 05:13 | 06:36-07:54/78 | 04:53 | 21:37-21:41/4 |
| | 16:50 | 17:55 | 18:52 | | 20:53 | | 21:49 | | 22:19 | 06:45-07:55/70 |
| 24 | 08:41 | 07:39 | 06:29 | | 06:11 | 07:06-08:20/74 | 05:12 | 06:37-07:54/77 | 04:53 | 21:37-21:41/4 |
| | 16:52 | 17:57 | 18:54 | | 20:55 | | 21:51 | | 22:19 | 06:45-07:55/70 |
| 25 | 08:39 | 07:36 | 06:26 | 06:50-06:54/4 | 06:09 | 07:05-08:20/75 | 05:10 | 06:37-07:54/77 | 04:53 | 21:38-21:41/3 |
| | 16:54 | 17:59 | 18:56 | | 20:57 | | 21:52 | | 22:19 | 06:45-07:56/71 |
| 26 | 08:38 | 07:34 | 06:23 | 06:48-06:58/10 | 06:06 | 07:03-08:18/75 | 05:09 | 06:36-07:53/77 | 04:54 | 21:38-21:41/3 |
| | 16:56 | 18:01 | 18:58 | | 20:59 | | 21:54 | | 22:19 | 06:45-07:56/71 |
| 27 | 08:36 | 07:32 | 06:21 | 06:45-06:59/14 | 06:04 | 07:01-08:18/77 | 05:08 | 06:37-07:54/77 | 04:54 | 21:40-21:41/1 |
| | 16:58 | 18:03 | 19:00 | | 21:01 | | 21:55 | | 22:19 | 06:46-07:57/71 |
| 28 | 08:35 | 07:29 | 06:18 | 06:43-07:01/18 | 06:02 | 06:56-08:17/81 | 05:06 | 06:37-07:54/77 | 04:55 | 06:45-07:56/71 |
| | 17:00 | 18:05 | 19:02 | | 21:03 | | 21:57 | | 22:19 | |
| 29 | 08:33 | | 07:16 | 07:40-08:01/21 | 05:59 | 06:53-08:16/83 | 05:05 | 06:37-07:54/77 | 04:55 | 06:46-07:57/71 |
| | 17:02 | | 20:04 | | 21:05 | | 21:58 | | 22:19 | |
| 30 | 08:31 | | 07:13 | 07:40-08:02/22 | 05:57 | 06:51-08:15/84 | 05:04 | 06:38-07:54/76 | 04:56 | 06:45-07:57/72 |
| | 17:04 | | 20:06 | | 21:07 | | 22:00 | | 22:19 | |
| 31 | 08:29 | | 07:11 | 07:39-08:01/22 | | | 05:03 | 06:38-07:53/75 | | |
| | 17:06 | | 20:08 | | | | 22:01 | | | |
| Potential sun hours | 242 | 269 | 366 | | 423 | | 501 | | 520 | |
| Sum of minutes with flicker | 0 | 0 | 111 | | 1974 | | 2456 | | 2195 | |

Table layout: For each day in each month the following matrix apply

| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
|---|---|---|
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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# SHADOW - Calendar per WTG

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,41 | 2,36 | 4,03 | 5,55 | 8,35 | 8,36 | 8,16 | 7,72 | 5,06 | 3,23 | 1,33 | 0,98 |

Operational time

| 0 | 1 | Sum |
|---|---|---|
| 4.380 | 4.380 | 8.760 |

| | July | | August | | September | | October | November | December |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 04:57 | 06:46-07:57/71 | 05:40 | 06:49-08:03/74 | 06:38 | 07:09-08:19/70 | 07:35 | 07:37 | 08:35 |
| | 22:18 | | 21:40 | | 20:29 | | 19:12 | 16:58 | 16:10 |
| 2 | 04:58 | 06:46-07:58/72 | 05:41 | 06:49-08:03/74 | 06:40 | 07:08-08:18/70 | 07:37 | 07:39 | 08:37 |
| | 22:18 | | 21:38 | | 20:27 | | 19:10 | 16:56 | 16:09 |
| 3 | 04:58 | 06:46-07:59/73 | 05:43 | 06:49-08:09/80 | 06:42 | 07:10-08:17/67 | 07:39 | 07:41 | 08:38 |
| | 22:17 | | 21:36 | | 20:24 | | 19:07 | 16:54 | 16:08 |
| 4 | 04:59 | 06:46-07:59/73 | 05:45 | 06:50-08:12/82 | 06:43 | 07:12-08:16/64 | 07:40 | 07:43 | 08:40 |
| | 22:17 | | 21:34 | | 20:22 | | 19:04 | 16:51 | 16:07 |
| 5 | 05:00 | 06:46-07:59/73 | 05:47 | 06:51-08:15/84 | 06:45 | 07:14-08:14/60 | 07:42 | 07:45 | 08:41 |
| | 22:16 | | 21:32 | | 20:19 | | 19:02 | 16:49 | 16:07 |
| 6 | 05:01 | 06:46-07:59/73 | 05:49 | 06:51-08:16/85 | 06:47 | 07:24-08:11/47 | 07:44 | 07:47 | 08:43 |
| | 22:15 | | 21:30 | | 20:17 | 07:16-07:22/6 | 18:59 | 16:47 | 16:06 |
| 7 | 05:02 | 06:46-07:59/73 | 05:51 | 06:52-08:18/86 | 06:49 | 07:24-08:09/45 | 07:46 | 07:49 | 08:44 |
| | 22:15 | | 21:28 | | 20:14 | | 18:57 | 16:45 | 16:06 |
| 8 | 05:03 | 06:46-08:00/74 | 05:52 | 06:53-08:19/86 | 06:51 | 07:25-08:06/41 | 07:48 | 07:51 | 08:46 |
| | 22:14 | | 21:26 | | 20:12 | | 18:54 | 16:44 | 16:05 |
| 9 | 05:04 | 06:46-08:00/74 | 05:54 | 06:53-08:20/87 | 06:53 | 07:26-08:01/35 | 07:50 | 07:53 | 08:47 |
| | 22:13 | | 21:24 | | 20:09 | | 18:52 | 16:42 | 16:05 |
| 10 | 05:06 | 06:46-08:00/74 | 05:56 | 06:54-08:21/87 | 06:55 | 07:29-07:54/25 | 07:52 | 07:55 | 08:48 |
| | 22:12 | | 21:22 | | 20:07 | | 18:49 | 16:40 | 16:04 |
| 11 | 05:07 | 06:47-08:02/75 | 05:58 | 06:56-08:22/86 | 06:57 | 07:31-07:54/23 | 07:54 | 07:57 | 08:50 |
| | 22:11 | | 21:19 | | 20:04 | | 18:47 | 16:38 | 16:04 |
| 12 | 05:08 | 06:46-08:02/76 | 06:00 | 06:58-08:23/85 | 06:59 | 07:30-07:53/23 | 07:56 | 07:59 | 08:51 |
| | 22:10 | | 21:17 | | 20:01 | | 18:44 | 16:36 | 16:04 |
| 13 | 05:09 | 06:46-08:02/76 | 06:02 | 06:59-08:23/84 | 07:00 | 07:30-07:52/22 | 07:58 | 08:01 | 08:52 |
| | 22:09 | | 21:15 | | 19:59 | | 18:42 | 16:34 | 16:04 |
| 14 | 05:11 | 06:46-08:02/76 | 06:04 | 07:01-08:24/83 | 07:02 | 07:31-07:51/20 | 08:00 | 08:03 | 08:53 |
| | 22:08 | | 21:13 | | 19:56 | | 18:39 | 16:33 | 16:04 |
| 15 | 05:12 | 06:46-08:02/76 | 06:06 | 07:05-08:25/80 | 07:04 | 07:32-07:50/18 | 08:02 | 08:05 | 08:54 |
| | 22:07 | | 21:10 | | 19:54 | | 18:37 | 16:31 | 16:04 |
| 16 | 05:13 | 06:46-08:03/77 | 06:07 | 07:11-08:25/74 | 07:06 | 07:34-07:49/15 | 08:04 | 08:07 | 08:55 |
| | 22:06 | | 21:08 | | 19:51 | | 18:34 | 16:29 | 16:04 |
| 17 | 05:15 | 06:46-08:03/77 | 06:09 | 07:11-08:26/75 | 07:08 | 07:36-07:47/11 | 08:06 | 08:09 | 08:56 |
| | 22:04 | | 21:06 | | 19:48 | | 18:32 | 16:28 | 16:04 |
| 18 | 05:16 | 06:46-08:03/77 | 06:11 | 07:11-08:25/74 | 07:10 | 07:38-07:44/6 | 08:08 | 08:11 | 08:56 |
| | 22:03 | | 21:03 | | 19:46 | | 18:30 | 16:26 | 16:04 |
| 19 | 05:18 | 06:46-08:04/78 | 06:13 | 07:11-08:26/75 | 07:12 | | 08:10 | 08:13 | 08:57 |
| | 22:02 | | 21:01 | | 19:43 | | 18:27 | 16:24 | 16:04 |
| 20 | 05:19 | 06:46-08:04/78 | 06:15 | 07:12-08:26/74 | 07:14 | | 08:12 | 08:15 | 08:58 |
| | 22:00 | | 20:59 | | 19:41 | | 18:25 | 16:23 | 16:04 |
| 21 | 05:21 | 06:47-08:04/77 | 06:17 | 07:13-08:26/73 | 07:16 | | 08:14 | 08:17 | 08:58 |
| | 21:59 | | 20:56 | | 19:38 | | 18:23 | 16:22 | 16:05 |
| 22 | 05:23 | 06:46-08:04/78 | 06:19 | 07:13-08:25/72 | 07:17 | | 08:16 | 08:19 | 08:59 |
| | 21:57 | | 20:54 | | 19:35 | | 18:20 | 16:20 | 16:05 |
| 23 | 05:24 | 06:47-08:05/78 | 06:21 | 07:14-08:26/72 | 07:19 | | 08:18 | 08:21 | 09:00 |
| | 21:56 | | 20:52 | | 19:33 | | 18:18 | 16:19 | 16:06 |
| 24 | 05:26 | 06:47-08:04/77 | 06:23 | 07:15-08:25/70 | 07:21 | | 08:20 | 08:23 | 09:00 |
| | 21:54 | | 20:49 | | 19:30 | | 18:16 | 16:18 | 16:06 |
| 25 | 05:27 | 06:47-08:05/78 | 06:25 | 07:14-08:25/71 | 07:23 | | 07:22 | 08:25 | 09:00 |
| | 21:52 | | 20:47 | | 19:28 | | 17:13 | 16:16 | 16:07 |
| 26 | 05:29 | 06:47-08:04/77 | 06:26 | 07:13-08:25/72 | 07:25 | | 07:24 | 08:27 | 09:01 |
| | 21:51 | | 20:44 | | 19:25 | | 17:11 | 16:15 | 16:08 |
| 27 | 05:31 | 06:47-08:04/77 | 06:28 | 07:11-08:24/73 | 07:27 | | 07:26 | 08:28 | 09:01 |
| | 21:49 | | 20:42 | | 19:22 | | 17:09 | 16:14 | 16:09 |
| 28 | 05:33 | 06:47-08:04/77 | 06:30 | 07:10-08:23/73 | 07:29 | | 07:28 | 08:30 | 09:01 |
| | 21:47 | | 20:39 | | 19:20 | | 17:06 | 16:13 | 16:09 |
| 29 | 05:34 | 06:48-08:04/76 | 06:32 | 07:09-08:23/74 | 07:31 | | 07:31 | 08:32 | 09:01 |
| | 21:45 | | 20:37 | | 19:17 | | 17:04 | 16:12 | 16:10 |
| 30 | 05:36 | 06:48-08:04/76 | 06:34 | 07:09-08:22/73 | 07:33 | | 07:33 | 08:34 | 09:01 |
| | 21:44 | | 20:34 | | 19:15 | | 17:02 | 16:11 | 16:11 |
| 31 | 05:38 | 06:48-08:03/75 | 06:36 | 07:09-08:21/72 | | | 07:35 | | 09:01 |
| | 21:42 | | 20:32 | | | | 17:00 | | 16:12 |
| Potential sun hours | 521 | | 465 | | 383 | | 326 | 253 | 224 |
| Sum of minutes with flicker | 2342 | | 2410 | | 668 | | 0 | 0 | 0 |

Table layout: For each day in each month the following matrix apply

| | | |
|---|---|---|
| Day in month | Sun rise (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |
| | Sun set (hh:mm) | First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker |

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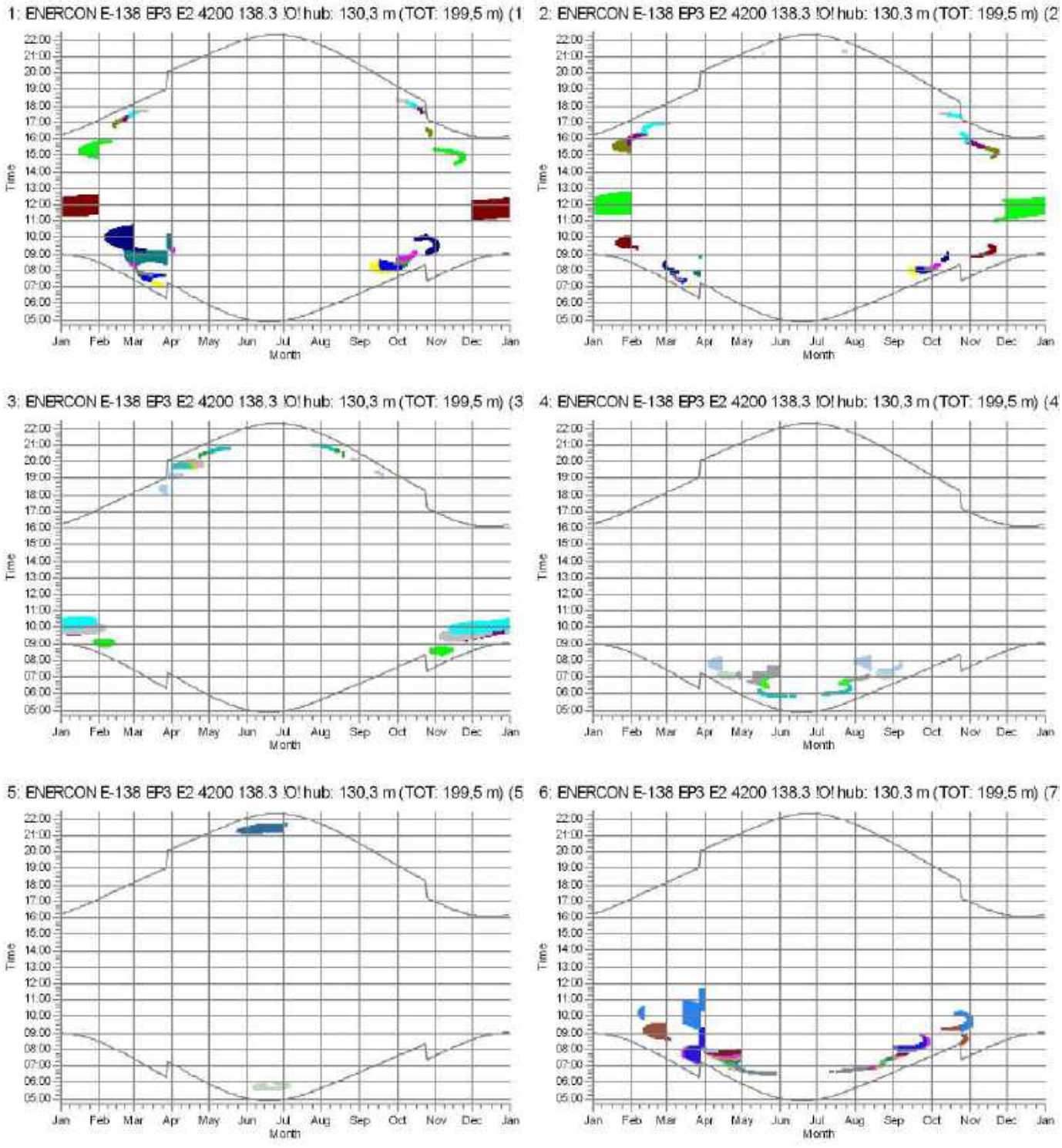
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




Shadow receptors

A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)*
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)*
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)*
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)*
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)*
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)*
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*

* Its reduced by flicker curtailment

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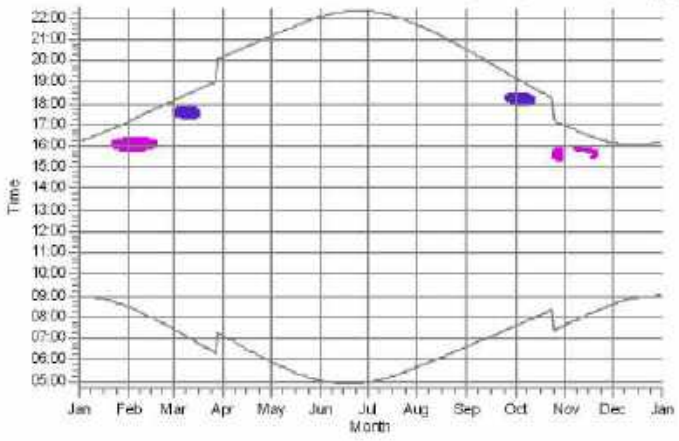
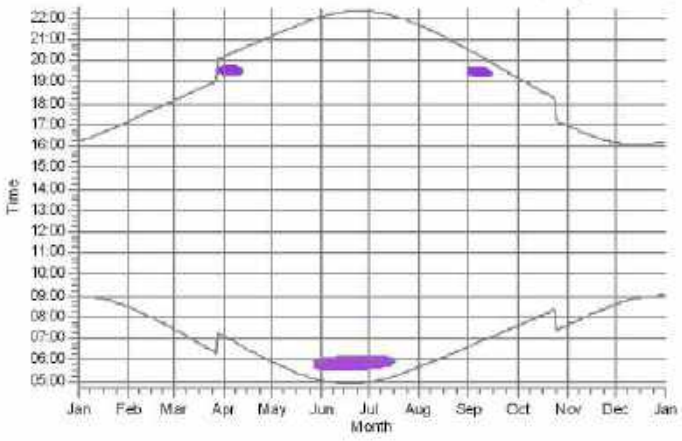
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

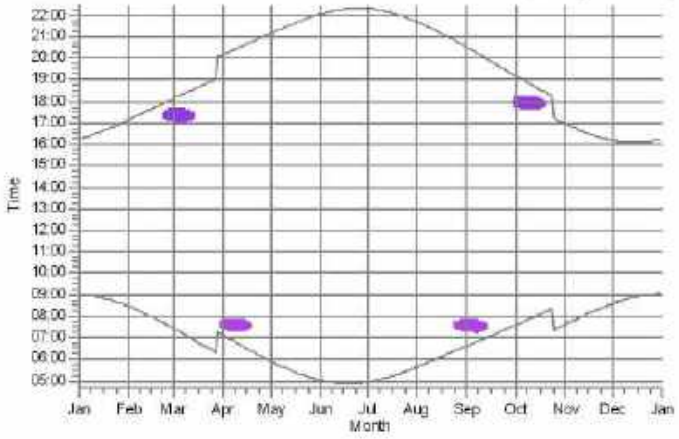
7: ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8



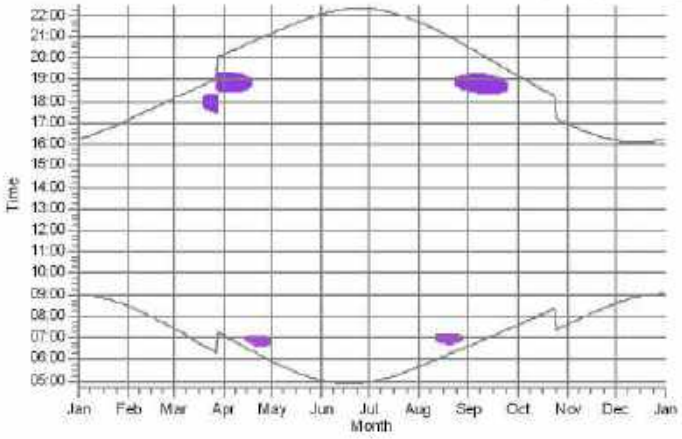

8: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0



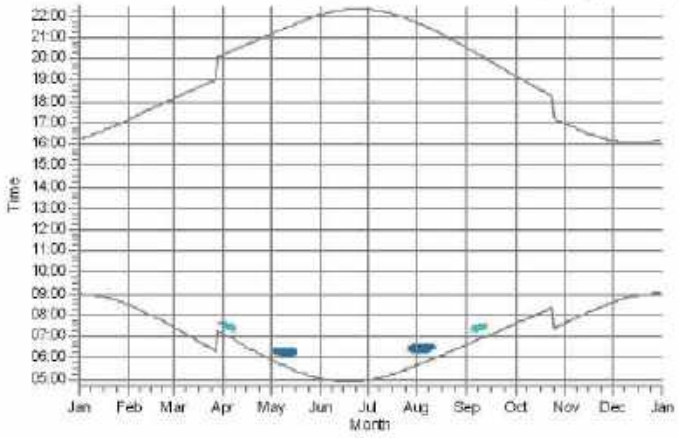

9: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0



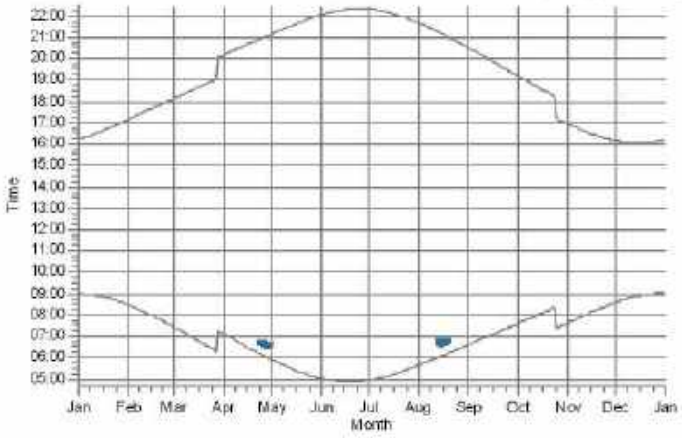

10: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




11: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170




12: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*
AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)
AQ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (104)
AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

* Results reduced by flicker curtailment

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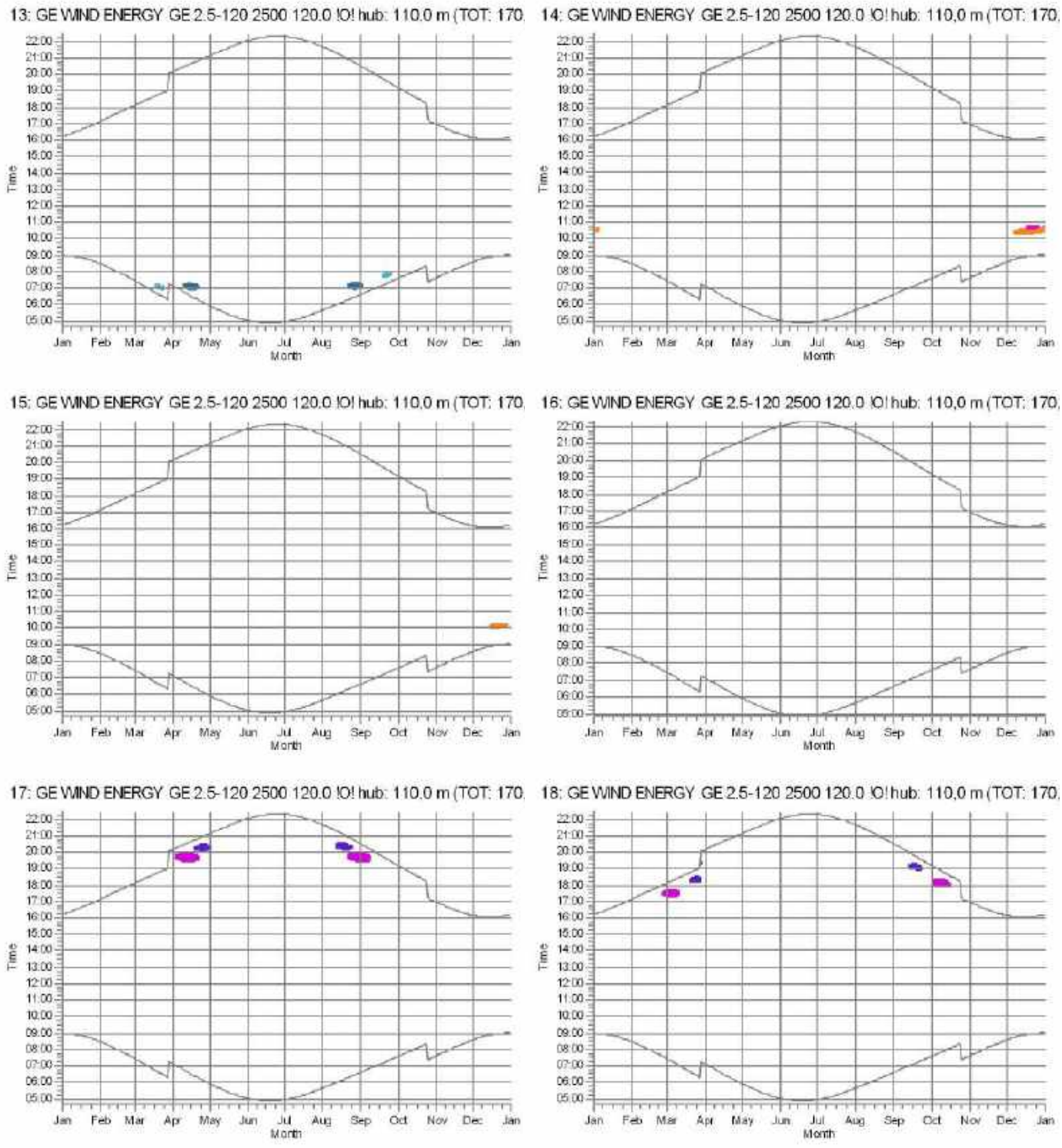
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




* Results reduced by flicker curtailment

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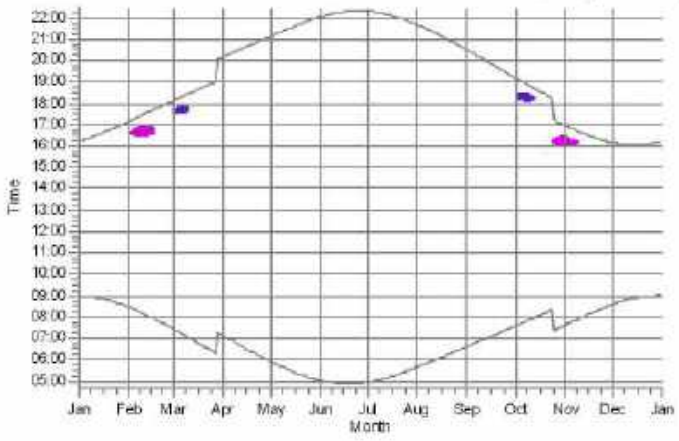
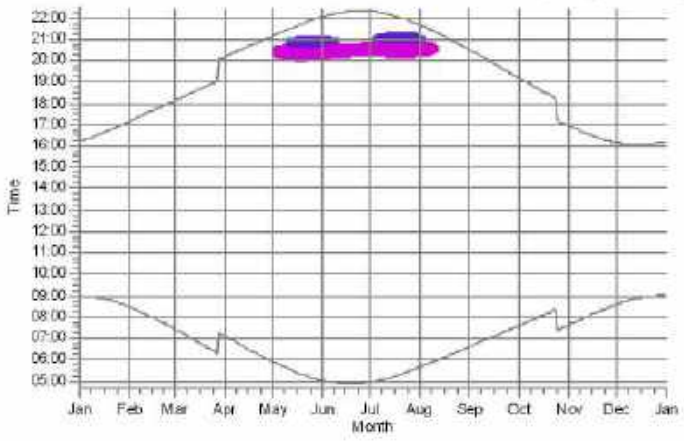
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

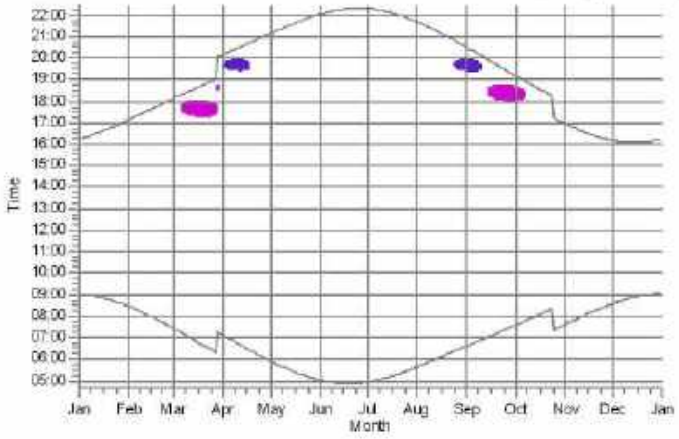
19: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



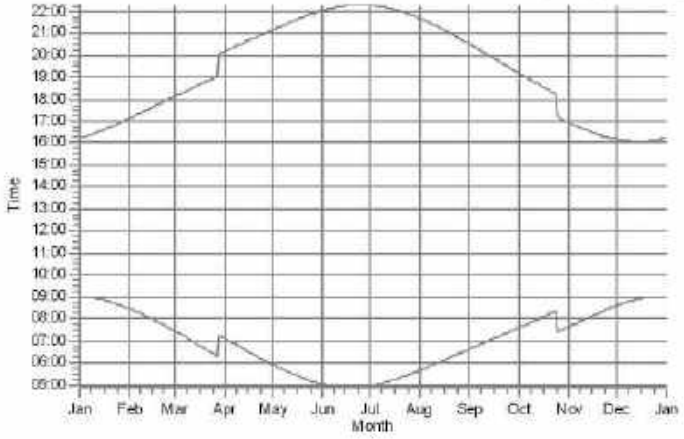

20: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



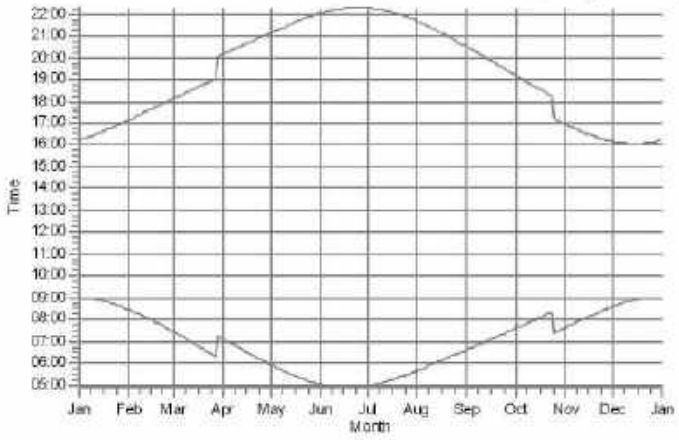

21: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,



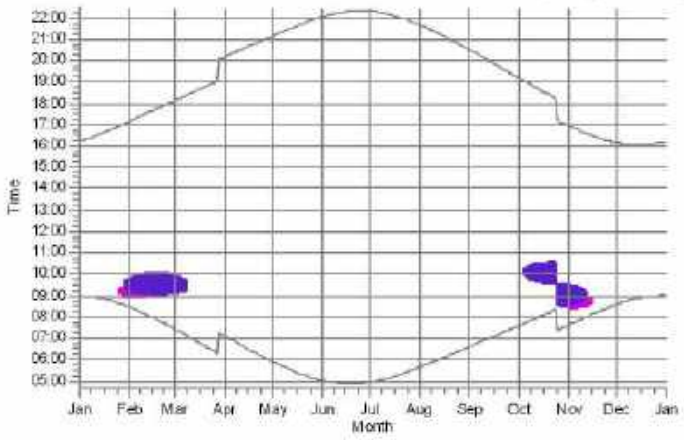

22: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




23: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




24: GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,




Shadow receptors

AO: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (102)*

AP: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (103)

* Results reduced by flicker curtailment

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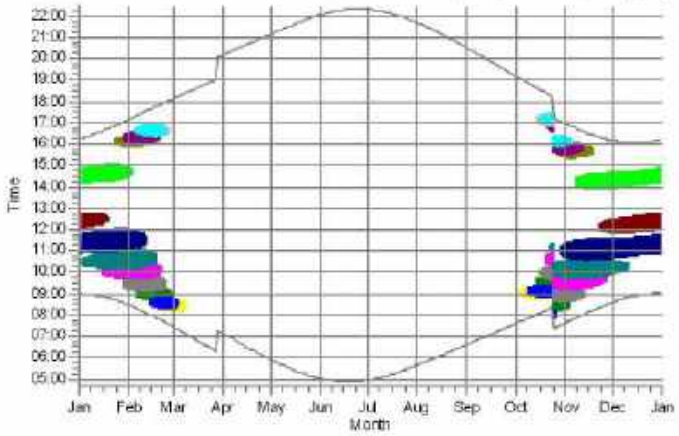
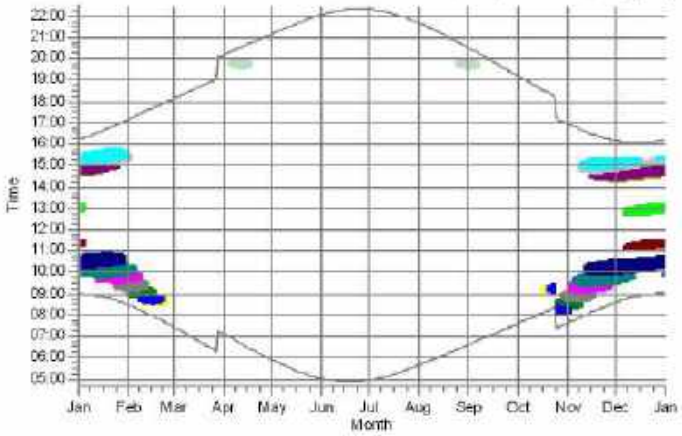
## SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

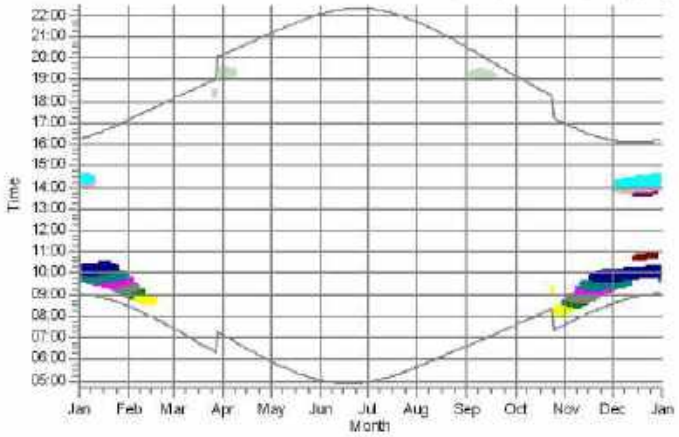
25: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (18)



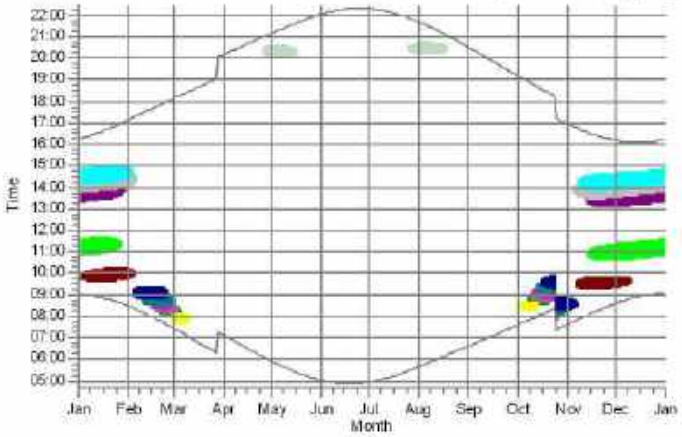

26: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (19)



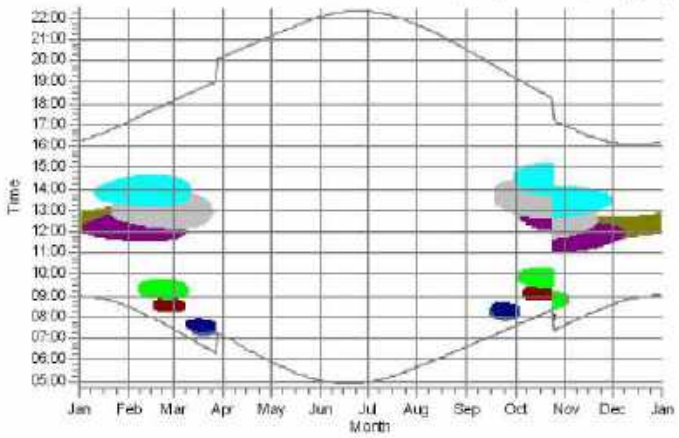

27: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (20)



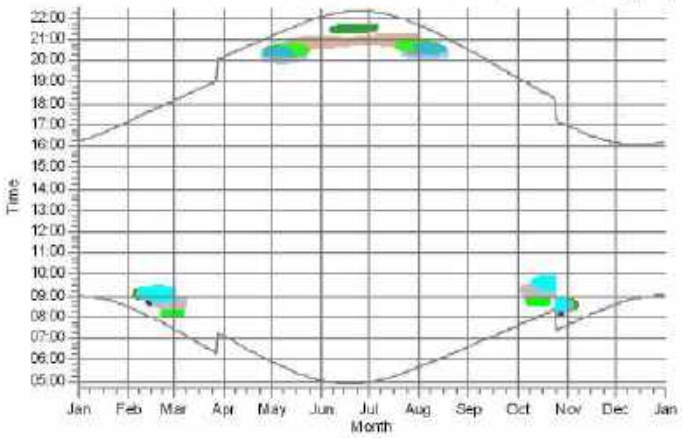

28: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (21)




29: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (22)




30: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (23)




Shadow receptors

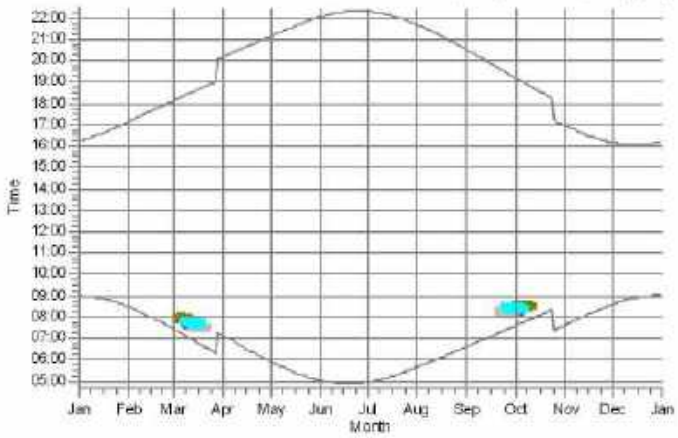
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (62)*
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (63)*
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (64)*
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (65)*
E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (66)*
F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (67)*
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*

* Results reduced by flicker curtailment

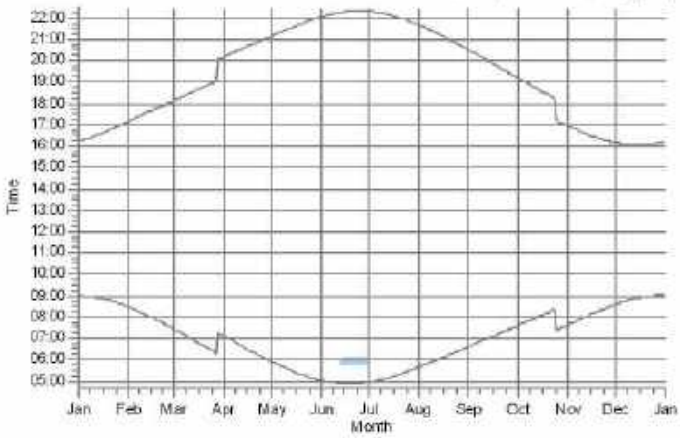
# SHADOW - Calendar per WTG, graphical

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

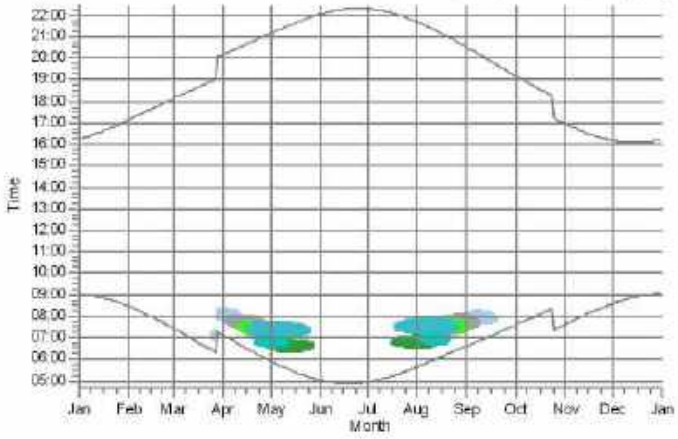
31: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (24)



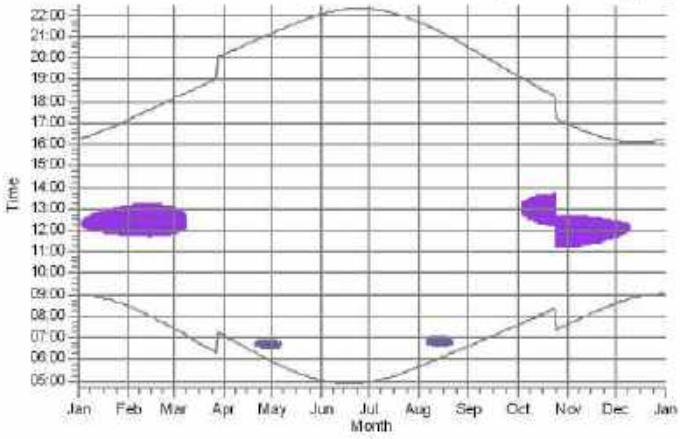

32: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (25)



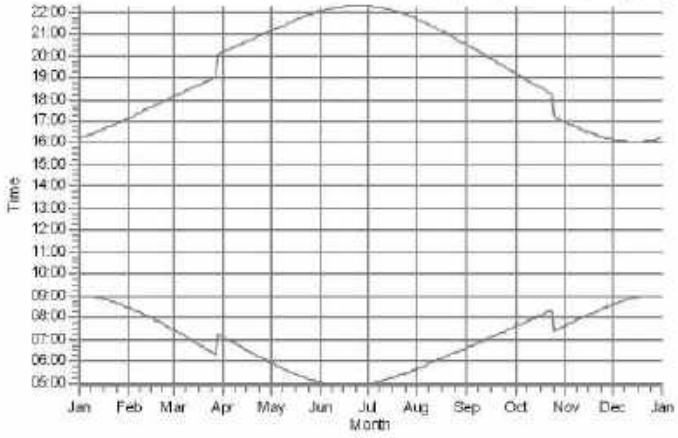

33: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (26)



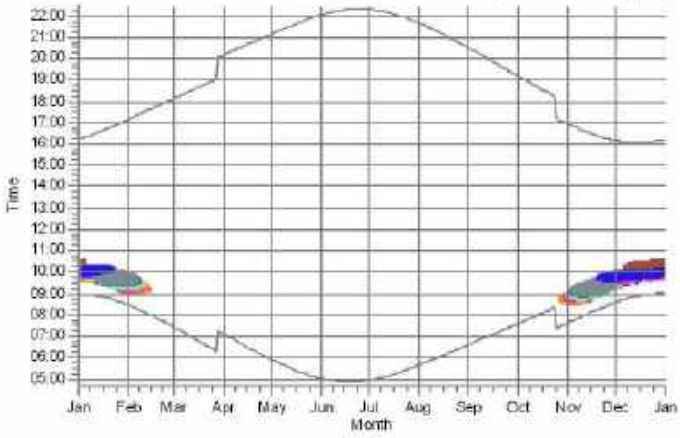

34: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (27)




35: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (28)




36: NORDEX N131/3000 3000 131,0 !O! hub: 141,0 m (TOT: 206,5 m) (29)




Shadow receptors

- J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
- O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
- Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
- R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
- S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
- T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
- U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
- W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
- X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
- Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
- Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
- AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
- AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
- AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
- AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
- AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
- AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
- AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
- AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
- AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
- AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
- AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
- AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
- AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*
- AR: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (105)
- AT: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (107)

* Results reduced by flicker curtailment

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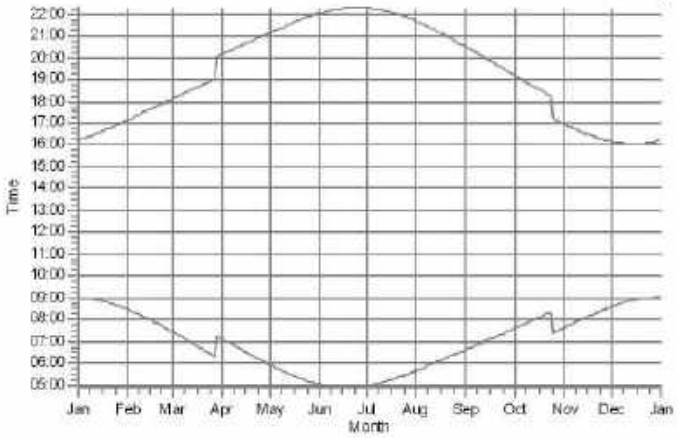
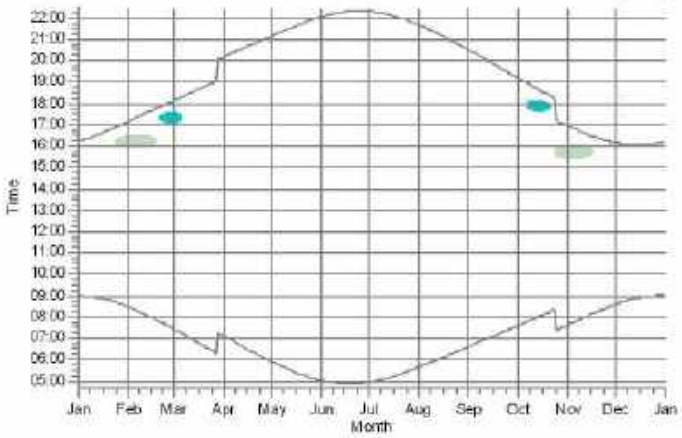
# SHADOW - Calendar per WTG, graphical

## Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)

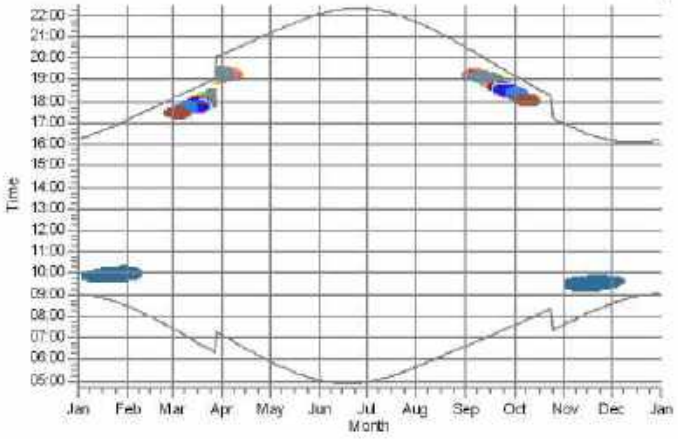
37: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



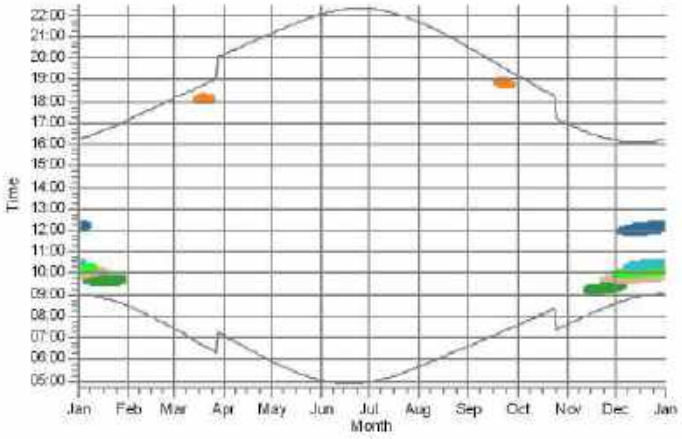

38: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



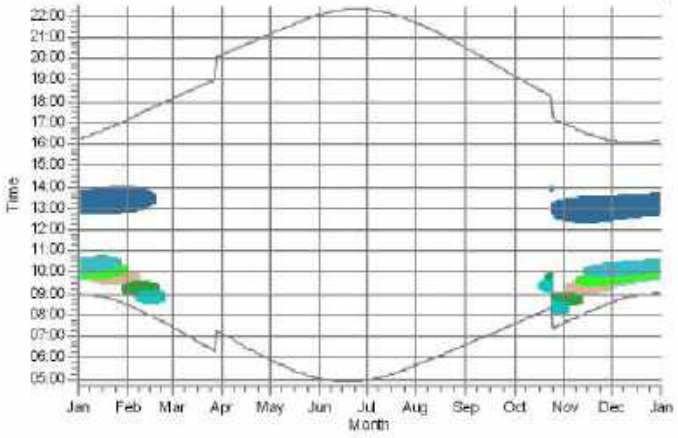

39: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T



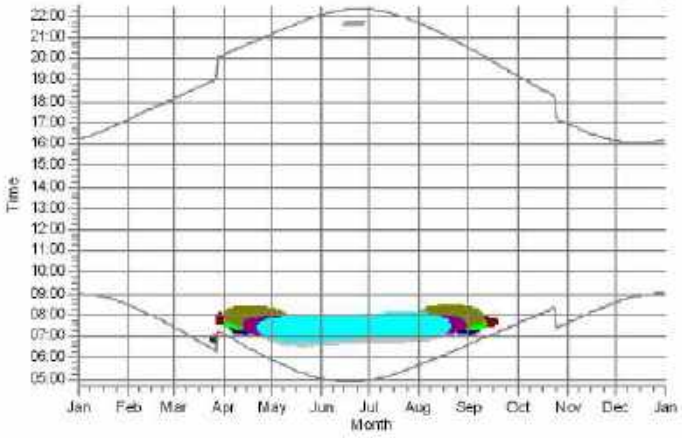

40: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




41: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




42: GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (T




Shadow receptors

G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (68)*
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (69)*
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (70)*
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (71)*
K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (72)*
L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (73)*
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (74)*
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (75)*
O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (76)*
P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (77)*
Q: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (78)*
R: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (79)*
S: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (80)*
T: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (81)*
U: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (82)*
V: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (83)*
W: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (84)*
X: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (85)*
Y: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (86)*
Z: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (87)*
AA: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (88)*
AB: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (89)*
AC: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (90)*
AD: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (91)*
AE: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (92)*
AF: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (93)*
AG: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (94)*
AH: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (95)*
AI: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (96)*
AJ: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (97)*
AK: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (98)*
AL: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (99)*
AM: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (100)*
AN: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (101)*

* Its reduced by flicker curtailment

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 14:52-15:43 11:28-12:33 | 16:35-17:33 15:00-15:40 09:19-10:43 | 10:21-11:08 09:17-10:11 08:11-08:28 | | |
| 2 | | 14:51-15:44 11:29-12:33 | 16:36-17:35 15:03-15:38 09:18-10:43 | 10:24-11:05 09:18-10:09 08:14-08:25 | | |
| 3 | | 14:51-15:45 11:30-12:32 | 16:36-17:35 15:06-15:35 09:17-10:43 08:08-08:18 | 10:26-11:00 09:18-10:06 | | |
| 4 | | 14:51-15:46 11:30-12:32 | 16:38-17:37 15:10-15:32 09:17-10:44 08:04-08:23 | 10:30-10:56 09:28-10:03 | | |
| 5 | | 14:50-15:47 11:31-12:32 | 16:39-17:38 15:16-15:25 09:15-10:43 08:00-08:26 | 10:37-10:46 09:30-09:59 | | |
| 6 | | 14:50-15:48 11:32-12:31 | 16:42-17:40 09:15-10:44 07:58-08:28 | 09:34-09:55 | | |
| 7 | | 14:50-15:49 11:33-12:30 | 16:45-17:40 09:14-10:43 07:55-08:29 | 09:42-09:46 | | |
| 8 | | 14:49-15:49 11:33-12:29 | 16:47-17:41 09:13-10:43 07:53-08:30 | | | |
| 9 | | 14:49-15:50 11:35-12:28 | 16:48-17:42 09:13-10:43 07:52-08:32 | | | |
| 10 | | 14:49-15:51 11:36-12:27 | 16:48-17:42 09:12-10:42 07:50-08:32 | | | |
| 11 | | 14:49-15:51 11:38-12:26 | 16:50-17:43 09:12-10:42 07:50-08:34 | | | |
| 12 | | 14:49-15:51 11:39-12:23 | 16:50-17:42 09:11-10:41 07:48-08:34 | | | |
| 13 | | 14:49-15:52 11:41-12:21 | 16:51-17:42 09:11-10:41 07:48-08:35 | | | |
| 14 | | 16:44-16:55 14:49-15:52 11:44-12:19 | 16:54-17:42 09:10-10:40 07:47-08:35 | | | |
| 15 | | 16:40-16:58 14:49-15:51 11:46-12:16 | 16:56-17:41 09:09-10:39 07:46-08:34 07:24-07:30 | | | |
| 16 | | 16:39-17:01 14:49-15:51 11:50-12:12 | 17:08-17:41 09:09-10:39 07:46-08:35 07:20-07:35 | | | |
| 17 | | 16:38-17:03 14:50-15:52 11:58-12:05 | 17:08-17:40 09:09-10:38 07:45-08:34 07:16-07:37 | | | |
| 18 | | 16:37-17:04 14:50-15:51 | 17:09-17:38 09:09-10:37 07:45-08:35 07:15-07:39 | | | |
| 19 | | 16:36-17:05 14:50-15:51 | 17:10-17:37 09:08-10:36 07:44-08:34 07:13-07:40 | | | |
| 20 | | 16:36-17:07 14:51-15:51 | 17:11-17:35 09:08-10:34 07:44-08:33 07:11-07:41 | | | |
| 21 | | 16:35-17:07 14:51-15:49 | 17:14-17:33 09:08-10:33 07:44-08:33 07:10-07:42 | | | |
| 22 | | 16:35-17:12 14:52-15:49 | 17:16-17:30 09:08-10:31 07:44-08:32 07:09-07:42 | | | |
| 23 | | 16:34-17:15 14:53-15:48 | 09:08-10:30 07:44-08:32 07:09-07:43 | | | |
| 24 | | 16:34-17:17 14:54-15:47 | 09:08-10:28 07:44-08:31 07:07-07:42 | | | |
| 25 | | 16:34-17:18 14:54-15:46 | 09:08-10:26 07:44-08:29 07:07-07:42 | | | |
| 26 | | 16:34-17:20 14:56-15:45 | 09:08-10:25 07:45-08:28 07:07-07:38 | | | |
| 27 | | 16:34-17:28 14:57-15:43 | 09:08-10:22 07:51-08:27 07:07-07:36 | | | |
| 28 | | 16:35-17:31 14:59-15:42 | 09:09-10:20 07:54-08:26 07:07-07:36 | | | |
| 29 | | | 10:09-11:18 08:58-09:24 08:08-08:34 | | | |
| 30 | | | 10:19-11:15 10:10-10:16 09:06-09:22 08:09-08:33 | | | |
| 31 | | | 10:20-11:12 10:09-10:13 09:07-09:19 08:09-08:31 | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 1 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (1)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | | | 17:30-18:22 08:44-11:20 | 14:19-15:20 11:06-11:57 | |
| 2 | | | | 17:28-18:21 08:44-11:20 | 14:19-15:19 11:04-11:58 | |
| 3 | | | | 17:27-18:20 08:45-11:20 | 14:19-15:19 11:03-11:58 | |
| 4 | | | | 17:26-18:19 08:45-11:20 | 14:20-15:19 11:03-12:00 | |
| 5 | | | 09:40-09:41 | 17:25-18:18 08:46-11:20 | 14:20-15:18 11:02-12:01 | |
| 6 | | | 09:31-09:51 | 17:24-18:17 08:47-11:19 | 14:20-15:17 11:01-12:01 | |
| 7 | | | 10:34-10:40 09:26-09:54 | 17:19-18:16 08:48-11:19 | 14:20-15:16 11:00-12:02 | |
| 8 | | | 10:25-10:49 09:23-09:57 | 17:15-18:14 08:49-11:19 | 14:22-15:16 11:00-12:03 | |
| 9 | | | 10:21-10:54 09:09-10:00 | 17:13-18:12 15:47-16:03 08:50-11:18 | 14:22-15:15 11:00-12:04 | |
| 10 | | | 10:17-10:58 09:05-10:02 | 17:11-18:10 15:42-16:07 08:52-11:18 | 14:23-15:14 10:59-12:04 | |
| 11 | | | 10:15-11:01 09:02-10:04 | 17:10-18:09 15:38-16:10 08:54-11:17 | 14:23-15:12 10:59-12:04 | |
| 12 | | | 10:11-11:03 08:59-10:05 | 17:08-18:07 15:35-16:12 08:56-11:16 | 14:25-15:12 10:59-12:05 | |
| 13 | | | 10:09-11:05 08:56-10:06 | 17:07-18:05 15:33-16:13 09:00-11:15 | 14:25-15:11 10:59-12:06 | |
| 14 | | | 10:08-11:08 08:49-10:07 | 17:06-18:02 15:31-16:16 09:07-11:16 | 14:26-15:09 10:58-12:06 | |
| 15 | | | 08:44-11:10 | 17:07-17:59 15:29-16:17 09:08-11:15 | 14:27-15:08 10:58-12:06 | |
| 16 | | | 08:41-11:11 | 17:06-17:52 15:28-16:17 09:55-11:14 09:10-09:52 | 14:29-15:07 10:59-12:07 | |
| 17 | | | 08:34-11:13 | 17:06-17:50 15:26-16:18 09:56-11:13 09:12-09:49 | 14:31-15:06 10:59-12:07 | |
| 18 | | | 08:33-11:14 | 17:05-17:48 15:25-16:19 09:57-11:12 09:14-09:46 | 14:33-15:04 10:59-12:07 | |
| 19 | | | 08:31-11:15 | 17:05-17:45 15:24-16:19 09:57-11:11 09:17-09:43 | 14:36-15:01 10:59-12:07 | |
| 20 | | | 08:30-11:16 | 17:05-17:41 15:22-16:20 09:59-11:09 09:22-09:38 | 14:38-14:59 10:59-12:07 | |
| 21 | | | 18:02-18:14 08:29-11:17 | 17:05-17:37 15:21-16:20 10:00-11:08 | 14:44-14:56 11:00-12:08 | |
| 22 | | | 17:59-18:17 08:29-11:18 | 17:06-17:37 15:21-16:21 10:02-11:08 | 11:00-12:08 | |
| 23 | | | 17:56-18:19 08:28-11:18 | 17:07-17:35 15:21-16:21 10:03-11:06 | 11:00-12:09 | |
| 24 | | | 17:54-18:20 08:28-11:19 | 17:07-17:34 15:20-16:21 10:05-11:05 | 11:01-12:09 | |
| 25 | | | 17:53-18:21 08:28-11:20 | 16:08-16:32 14:19-15:21 11:24-11:37 09:06-10:03 | 11:01-12:09 | |
| 26 | | | 17:52-18:22 08:27-11:20 | 16:09-16:30 14:19-15:21 11:18-11:43 09:08-10:01 | 11:02-12:09 | |
| 27 | | | 17:49-18:22 08:27-11:21 | 16:11-16:28 14:19-15:22 11:15-11:47 09:12-09:59 | 11:02-12:09 | |
| 28 | | | 17:39-18:22 08:27-11:20 | 16:15-16:24 14:19-15:22 11:13-11:49 09:14-09:56 | 11:03-12:09 | |
| 29 | | | 17:35-18:22 08:26-11:20 | 14:18-15:21 11:10-11:51 09:17-09:52 | 11:03-12:10 | |
| 30 | | | 17:32-18:22 08:27-11:20 | 14:18-15:21 11:08-11:53 09:21-09:47 | 11:04-12:10 | |
| 31 | | | | 14:19-15:21 11:07-11:55 09:29-09:41 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | 15:13-15:57 11:27-12:44 09:25-10:05 | 15:27-16:56 08:13-08:34 | | | 20:50-21:07 |
| 2 | | 15:12-15:59 11:27-12:44 09:24-10:06 | 15:28-16:57 08:10-08:36 | | | 20:51-21:06 |
| 3 | | 15:12-16:02 11:27-12:44 09:24-10:06 | 15:28-16:57 08:07-08:37 | | | 20:52-21:07 |
| 4 | | 15:12-16:05 11:28-12:44 09:23-10:07 | 15:30-16:57 08:06-08:39 | | | 20:53-21:06 |
| 5 | | 15:12-16:07 11:28-12:44 09:23-10:08 | 15:31-16:57 08:04-08:39 | | | 20:53-21:05 |
| 6 | | 15:12-16:10 11:28-12:44 09:23-10:08 | 15:33-16:58 08:03-08:41 | | | 20:55-21:05 |
| 7 | | 15:11-16:10 11:29-12:44 09:22-10:09 | 15:35-16:57 08:01-08:41 | | | 20:56-21:04 |
| 8 | | 15:11-16:12 11:28-12:43 09:21-10:08 | 15:36-16:56 07:59-08:41 07:40-07:47 | | | 20:57-21:02 |
| 9 | | 15:11-16:14 11:29-12:43 09:21-10:08 | 15:40-16:56 07:59-08:42 07:36-07:52 | | | |
| 10 | | 15:12-16:15 11:30-12:43 09:21-10:09 | 16:01-16:55 15:44-16:00 07:57-08:41 07:33-07:54 | | | |
| 11 | | 15:12-16:17 11:31-12:43 09:21-10:09 | 16:02-16:55 07:57-08:42 07:32-07:56 | | | |
| 12 | | 16:28-16:32 15:12-16:17 11:30-12:41 09:21-10:08 | 16:02-16:53 07:30-08:41 | | 20:51-20:57 | |
| 13 | | 16:21-16:39 15:12-16:18 11:31-12:41 09:21-10:08 | 16:02-16:52 07:29-08:42 | | 20:50-20:58 | |
| 14 | | 15:13-16:42 11:32-12:40 09:22-10:08 | 16:04-16:51 07:27-08:41 | | 20:48-21:00 | |
| 15 | | 15:13-16:44 11:32-12:39 09:22-10:07 | 16:04-16:50 07:26-08:40 | | 20:48-21:02 | |
| 16 | | 15:14-16:47 11:34-12:38 09:23-10:06 | 16:06-16:49 07:26-08:40 07:14-07:21 | | 20:47-21:03 | |
| 17 | | 15:15-16:49 11:35-12:37 09:24-10:06 | 16:07-16:47 07:25-08:39 07:11-07:24 | | 20:47-21:05 | |
| 18 | | 15:15-16:49 11:36-12:35 09:24-10:05 | 16:08-16:44 07:09-08:39 | | 20:47-21:07 | |
| 19 | | 15:16-16:51 11:37-12:34 09:25-10:04 | 16:11-16:43 07:06-08:37 | | 20:47-21:08 | |
| 20 | | 15:17-16:53 11:39-12:33 09:26-10:03 | 16:13-16:39 07:04-08:36 | | 20:46-21:08 | |
| 21 | | 15:18-16:53 11:40-12:30 09:27-10:01 | 16:17-16:36 07:03-08:35 | | 20:47-21:09 | |
| 22 | | 15:20-16:54 11:43-12:28 09:29-10:00 | 16:25-16:27 07:02-08:33 | | 20:46-21:08 | |
| 23 | | 15:21-16:54 11:44-12:25 09:30-09:57 | 07:02-08:32 | | 20:46-21:09 | |
| 24 | | 15:24-16:55 11:48-12:22 09:33-09:55 | 07:54-08:30 07:30-07:53 07:02-07:25 | | 20:47-21:09 | |
| 25 | | 15:24-16:55 11:51-12:17 09:36-09:50 | 07:54-08:27 07:33-07:51 07:02-07:22 | | 20:47-21:09 | |
| 26 | | 15:25-16:56 12:00-12:09 | 07:55-08:25 07:35-07:50 07:03-07:22 | | 20:47-21:08 | |
| 27 | | 15:25-16:56 | 08:04-08:21 07:56-08:03 07:37-07:47 07:03-07:20 | | 20:47-21:08 | |
| 28 | | 15:26-16:56 | 07:57-08:01 07:05-07:18 | | 20:48-21:08 | |
| 29 | | | 08:08-08:14 | | 20:48-21:08 | |
| 30 | | | | | 20:49-21:08 | |
| 31 | | | | | 20:49-21:07 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 2 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (2)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | | 21:03-21:07 | | 16:42-17:32 08:14-09:20 | 14:41-15:45 10:59-12:12 08:51-09:38 | |
| 2 | | | | 16:40-17:32 08:15-09:20 | 14:41-15:43 10:59-12:13 08:51-09:38 | |
| 3 | | | | 16:39-17:33 16:25-16:35 08:16-09:20 | 14:41-15:42 10:58-12:13 08:51-09:38 | |
| 4 | 21:04-21:08 | | | 16:19-17:33 08:17-09:19 | 14:42-15:41 10:58-12:14 08:52-09:38 | |
| 5 | 21:02-21:09 | | | 16:15-17:33 08:19-09:18 | 14:42-15:39 10:58-12:14 08:52-09:38 | |
| 6 | 21:01-21:10 | | | 16:12-17:33 08:21-09:17 | 14:42-15:37 10:58-12:14 08:53-09:37 | |
| 7 | 21:00-21:11 | | | 16:09-17:33 08:23-09:16 | 14:42-15:34 10:57-12:14 08:53-09:37 | |
| 8 | 20:59-21:12 | | | 16:07-17:32 08:25-09:15 | 14:43-15:33 10:58-12:15 08:55-09:37 | |
| 9 | 20:59-21:13 | | | 16:05-17:32 08:29-09:14 | 14:43-15:29 10:58-12:15 08:55-09:36 | |
| 10 | 20:58-21:13 | | | 16:03-17:31 08:41-09:12 | 14:44-15:28 10:58-12:14 08:56-09:36 | |
| 11 | 20:59-21:15 | | | 16:02-17:30 08:42-09:11 | 14:44-15:27 10:57-12:14 08:57-09:35 | |
| 12 | 20:58-21:16 | | | 16:00-17:29 08:45-09:09 | 14:46-15:27 10:58-12:15 08:59-09:35 | |
| 13 | 20:58-21:16 | | | 15:59-17:29 08:48-09:06 | 14:46-15:26 10:58-12:15 09:00-09:34 | |
| 14 | 20:57-21:16 | | 08:41-08:43 | 15:58-17:28 08:55-09:00 | 14:47-15:25 10:58-12:15 09:01-09:33 | |
| 15 | 20:57-21:16 | | 08:34-08:49 | 15:58-17:29 | 14:48-15:23 10:58-12:15 09:03-09:32 | |
| 16 | 20:57-21:18 | | 08:55-09:09 08:27-08:52 | 15:57-17:28 12:28-12:45 10:13-10:18 | 14:50-15:23 11:00-12:15 09:05-09:32 | |
| 17 | 20:57-21:18 | | 08:24-09:13 | 15:56-17:27 12:22-12:51 10:06-10:24 | 14:51-15:21 11:00-12:15 09:07-09:30 | |
| 18 | 20:56-21:18 | | 08:22-09:15 | 15:54-17:26 12:18-12:54 10:03-10:27 | 14:52-15:19 11:00-12:15 09:10-09:27 | |
| 19 | 20:57-21:19 | | 08:17-09:16 | 15:52-17:25 12:15-12:57 10:01-10:29 | 14:54-15:17 11:00-12:15 09:13-09:24 | |
| 20 | 20:56-21:18 | | 08:11-09:17 | 15:50-17:24 12:12-12:59 09:59-10:30 | 14:57-15:15 11:01-12:15 | |
| 21 | 20:57-21:19 | | 08:10-09:19 | 15:48-17:23 12:10-13:01 09:57-10:32 | 15:02-15:12 11:03-12:15 | |
| 22 | 20:56-21:18 | | 17:03-17:19 08:10-09:20 | 15:47-17:23 12:09-13:04 09:56-10:34 | 11:03-12:15 | |
| 23 | 20:57-21:19 | | 16:59-17:23 08:09-09:20 | 15:46-17:21 12:07-13:05 09:55-10:35 | 11:04-12:15 | |
| 24 | 20:57-21:18 | | 16:56-17:26 08:08-09:21 | 15:45-17:19 12:06-13:06 09:54-10:35 | 11:05-12:15 | |
| 25 | 20:57-21:18 | | 16:53-17:27 08:08-09:21 | 14:44-16:18 11:04-12:07 08:53-09:36 | 11:06-12:15 | |
| 26 | 20:57-21:16 | | 16:51-17:29 08:08-09:22 | 14:43-16:16 11:03-12:08 08:52-09:36 | 11:06-12:15 | |
| 27 | 20:58-21:15 | | 16:48-17:29 08:08-09:22 | 14:43-16:14 11:03-12:09 08:52-09:37 | 11:07-12:15 | |
| 28 | 20:58-21:13 | | 16:46-17:30 08:08-09:21 | 14:42-16:11 11:02-12:10 08:52-09:37 | 11:08-12:15 | |
| 29 | 20:59-21:12 | | 16:44-17:31 08:07-09:21 | 15:52-16:07 14:42-15:48 11:01-12:10 08:51-09:38 | 11:09-12:14 | |
| 30 | 21:00-21:10 | | 16:43-17:31 08:08-09:21 | 14:41-15:46 11:00-12:11 08:50-09:38 | 11:10-12:14 | |
| 31 | 21:00-21:08 | | | 14:41-15:45 11:00-12:12 08:51-09:38 | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 3 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (3)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 10:10-10:11 | | 19:15-19:42 | 20:08-20:33 | 20:20-20:46 | 20:32-20:46 | 20:20-20:56 | 19:20-20:00 | | | |
| 2 | | | | 19:15-19:40 | 20:07-20:33 | 20:21-20:46 | 20:32-20:47 | 20:18-20:55 | 19:19-19:57 19:10-19:16 | | | |
| 3 | | | | 19:15-19:40 | 20:07-20:34 | 20:22-20:46 | 20:32-20:48 | 20:18-20:54 | 19:06-19:55 | | | |
| 4 | | | | 19:15-19:40 | 20:07-20:35 | 20:23-20:46 | 20:31-20:48 | 20:18-20:54 | 19:04-19:51 | | | |
| 5 | | | | 19:15-19:40 | 20:07-20:38 | 20:23-20:45 | 20:30-20:49 | 20:17-20:53 | 19:02-19:50 | | | |
| 6 | | | | 19:15-19:40 | 20:07-20:40 | 20:23-20:44 | 20:30-20:50 | 20:16-20:51 | 19:00-19:47 | | | |
| 7 | | | | 19:15-19:40 | 20:07-20:42 | 20:25-20:44 | 20:30-20:51 | 20:16-20:49 | 18:59-19:45 | | | |
| 8 | | | | 19:15-19:40 | 20:07-20:43 | 20:25-20:43 | 20:29-20:52 | 20:16-20:47 | 18:58-19:42 | | | |
| 9 | | | | 19:15-19:40 | 20:07-20:44 | 20:26-20:43 | 20:29-20:52 | 20:15-20:42 | 18:57-19:40 | | | |
| 10 | | | | 19:21-19:40 19:15-19:18 | 20:08-20:44 | 20:27-20:42 | 20:28-20:53 | 20:15-20:42 | 18:57-19:38 | | | |
| 11 | | | | 19:21-19:40 | 20:08-20:45 | 20:28-20:42 | 20:29-20:54 | 20:16-20:42 | 18:55-19:34 | | | |
| 12 | | | | 19:23-19:40 | 20:10-20:46 | 20:29-20:42 | 20:28-20:55 | 20:16-20:41 | 18:55-19:32 | | | |
| 13 | | | | 19:24-19:40 | 20:11-20:47 | 20:29-20:41 | 20:28-20:55 | 20:16-20:40 | 18:55-19:29 | | | |
| 14 | | | | 19:26-19:40 | 20:12-20:47 | 20:30-20:41 | 20:27-20:56 | 20:16-20:39 | 19:24-19:27 18:55-19:21 | | | |
| 15 | | | | 19:31-19:40 | 20:14-20:48 | 20:31-20:41 | 20:27-20:56 | 20:17-20:38 | 18:56-19:20 | | | |
| 16 | | | | 19:32-19:40 | 20:15-20:48 | 20:32-20:40 | 20:27-20:57 | 20:18-20:37 | 18:56-19:19 | | | |
| 17 | | | | 19:34-19:40 | 20:15-20:49 | 20:33-20:40 | 20:26-20:57 | 20:18-20:34 19:52-20:03 | 18:57-19:17 | | | |
| 18 | | | | | 20:15-20:48 | 20:34-20:40 | 20:26-20:57 | 20:20-20:31 19:50-20:05 | 18:57-19:14 | | | |
| 19 | | | | | 20:15-20:49 | 20:34-20:39 | 20:26-20:58 | 19:48-20:06 | 18:59-19:10 | | | |
| 20 | | | | | 20:15-20:49 | 20:35-20:39 | 20:26-20:58 | 19:47-20:08 | | | | |
| 21 | | | | | 20:16-20:49 | 20:35-20:39 | 20:26-20:59 | 19:46-20:08 | | | | |
| 22 | | | | | 20:15-20:48 | 20:36-20:40 | 20:25-20:59 | 19:44-20:08 | | | | |
| 23 | | | | | 20:16-20:49 | 20:36-20:40 | 20:26-20:59 | 19:44-20:09 | | | | |
| 24 | | | | | 20:16-20:49 | 20:35-20:40 | 20:25-20:59 | 19:43-20:09 | | | | |
| 25 | | | | 20:13-20:25 | 20:17-20:49 | 20:35-20:42 | 20:26-20:59 | 19:40-20:09 | | | | |
| 26 | | | | 20:12-20:28 | 20:17-20:48 | 20:35-20:42 | 20:25-20:59 | 19:37-20:08 | | | | |
| 27 | | | | 20:10-20:29 | 20:17-20:48 | 20:35-20:44 | 20:26-20:59 | 19:34-20:07 | | | | |
| 28 | | | | 20:09-20:31 | 20:18-20:47 | 20:34-20:44 | 20:25-20:58 | 19:32-20:06 | | | | |
| 29 | | | | 20:09-20:32 | 20:18-20:47 | 20:34-20:45 | 20:24-20:58 | 19:27-20:05 | | | | |
| 30 | | | 19:15-19:38 | 20:08-20:32 | 20:19-20:47 | 20:33-20:45 | 20:22-20:58 | 19:24-20:04 | | | | |
| 31 | | | 19:15-19:40 | | 20:20-20:47 | | 20:21-20:57 | 19:23-20:03 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 4 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (4)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 06:52-08:05 | 05:52-07:40 | 05:57-07:46 | 06:53-07:52 | 07:31-08:06 | | | |
| 2 | | | | | 06:50-08:04 | 05:52-07:40 | 05:57-07:46 | 06:53-07:50 | 07:33-08:05 | | | |
| 3 | | | | | 06:48-08:03 | 05:53-07:41 | 05:58-07:47 | 06:55-07:50 | 07:35-08:03 | | | |
| 4 | | | | | 06:46-08:02 | 05:52-07:41 | 05:57-07:46 | 06:56-07:49 | 07:37-08:01 | | | |
| 5 | | | | | 06:45-08:01 | 05:52-07:41 | 05:58-07:46 | 06:57-07:48 | 07:41-07:59 | | | |
| 6 | | | | | 06:45-07:59 | 05:52-07:40 | 05:58-07:47 | 06:58-07:46 | 07:48-07:49 | | | |
| 7 | | | | | 06:45-07:58 | 05:52-07:41 | 05:58-07:47 | 07:00-07:44 | | | | |
| 8 | | | | | 06:45-07:56 | 05:52-07:41 | 05:59-07:47 | 07:01-07:43 | | | | |
| 9 | | | | | 06:45-07:54 | 05:53-07:41 | 05:59-07:47 | 07:02-07:40 | | | | |
| 10 | | | | | 06:45-07:52 | 05:52-07:41 | 05:59-07:48 | 07:05-07:38 | | | | |
| 11 | | | | | 07:15-07:49 | 05:53-07:41 | 06:01-07:49 | 07:08-07:35 | | | | |
| 12 | | | | | 07:37-07:45 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:01-07:32 | | | | |
| 13 | | | | | 07:15-07:36 | 05:53-07:41 | 06:01-07:49 | 07:03-07:29 | | | | |
| 14 | | | | | 07:15-07:36 | 05:53-07:42 | 06:01-07:49 | 07:27-08:14 07:06-07:25 | | | | |
| 15 | | | | 07:24-08:10 | 07:15-07:37 | 05:53-07:42 | 06:01-07:49 | 07:27-08:15 07:13-07:18 | | | | |
| 16 | | | | 07:22-08:10 | 07:15-07:37 | 05:54-07:42 | 06:03-07:49 | 07:27-08:15 | | | | |
| 17 | | | | 07:22-08:10 | 07:15-07:38 06:05-06:16 | 05:54-07:42 | 06:03-07:49 | 07:25-08:15 | | | | |
| 18 | | | | 07:21-08:10 | 07:15-07:38 06:02-06:17 | 05:54-07:43 | 06:03-07:49 | 07:25-08:15 | | | | |
| 19 | | | | 07:20-08:10 | 07:15-07:39 06:00-06:19 | 05:54-07:43 | 06:04-07:49 | 07:25-08:15 | | | | |
| 20 | | | | 07:20-08:11 | 07:15-07:39 05:58-06:20 | 05:54-07:43 | 06:37-07:49 06:05-06:35 | 07:26-08:15 | | | | |
| 21 | | | | 07:19-08:10 | 07:15-07:39 06:34-06:51 05:58-06:23 | 05:54-07:43 | 06:40-07:50 06:06-06:35 | 07:26-08:15 | | | | |
| 22 | | | | 07:19-08:10 | 06:30-06:54 05:56-06:23 | 05:55-07:44 | 06:42-07:49 06:07-06:33 | 07:25-08:14 | | | | |
| 23 | | | | 07:19-08:10 | 06:28-06:57 05:56-06:25 | 05:55-07:44 | 06:47-07:49 06:08-06:31 | 07:26-08:14 | | | | |
| 24 | | | | 07:19-08:10 | 05:55-06:59 | 05:55-07:44 | 06:48-07:49 06:09-06:30 | 07:26-08:14 | | | | |
| 25 | | | | 07:19-08:08 | 05:55-07:00 | 05:56-07:44 | 06:49-07:49 06:11-06:29 | 07:26-08:14 | | | | |
| 26 | | | | 07:19-08:08 | 05:54-07:02 | 05:56-07:44 | 06:49-07:48 06:13-06:27 | 07:27-08:13 | | | | |
| 27 | | | | 07:19-08:08 | 05:53-07:03 | 05:56-07:45 | 06:50-07:48 06:17-06:25 | 07:27-08:12 | | | | |
| 28 | | | | 07:20-08:07 | 05:53-07:05 | 05:56-07:45 | 06:50-07:48 | 07:27-08:11 | | | | |
| 29 | | | | 07:20-08:07 07:15-07:19 | 05:53-07:06 | 05:57-07:45 | 06:51-07:48 | 07:28-08:10 | | | | |
| 30 | | | | 07:07-08:06 | 05:53-07:07 | 05:56-07:45 | 06:52-07:47 | 07:29-08:09 | | | | |
| 31 | | | | | 05:52-07:08 | | 06:52-07:46 | 07:31-08:08 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 5 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (5)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 07:52-08:15 | | | | 21:16-21:39 05:48-05:52 | | | | | |
| 2 | | | 07:50-08:15 | | | | 21:17-21:39 | | | | | |
| 3 | | | 07:47-08:14 | | | | 21:17-21:39 | | | 08:26-08:34 | | |
| 4 | | | 07:45-08:14 | | | | 21:17-21:38 | | | 08:24-08:36 | | |
| 5 | | | 07:44-08:12 | | | | 21:17-21:38 | | | 08:22-08:37 | | |
| 6 | | | 07:44-08:11 | | | | 21:17-21:38 | | | 08:21-08:38 | | |
| 7 | | | 07:44-08:06 | | | | 21:18-21:37 | | | 08:20-08:44 | | |
| 8 | | | 07:44-08:01 | | | | 21:18-21:36 | | | 08:19-08:46 | | |
| 9 | | | 07:46-08:00 | | | | 21:18-21:35 | | | 08:19-08:48 | | |
| 10 | | | 07:47-07:57 | | | | 21:19-21:35 | | | 08:20-08:48 | | |
| 11 | | | | | | | 21:19-21:34 | | | 08:22-08:49 | | |
| 12 | | | | | | 05:43-05:50 | 21:20-21:34 | | | 08:24-08:49 | | |
| 13 | | | | | | 05:42-05:52 | 21:20-21:33 | | | 08:26-08:48 | | |
| 14 | | | | | | 05:41-05:52 | 21:21-21:31 | | | 08:28-08:48 | | |
| 15 | | | | | | 05:40-05:53 | 21:21-21:30 | | | 08:31-08:48 | | |
| 16 | | | | | | 05:40-05:54 | 21:22-21:30 | | | 08:33-08:47 | | |
| 17 | | | | | | 05:40-05:55 | 21:23-21:28 | | | 08:35-08:46 | | |
| 18 | | | | | | 05:40-05:55 | 21:24-21:27 | | | 08:37-08:45 | | |
| 19 | | | | | | 05:40-05:56 | | | | 08:39-08:42 | | |
| 20 | | | | | | 05:40-05:56 | | | | | | |
| 21 | | | | | | 05:40-05:56 | | | | | | |
| 22 | | | | | | 05:41-05:57 | | | | | | |
| 23 | | 08:07-08:12 | | | | 05:41-05:57 | | | | | | |
| 24 | | 08:05-08:14 | | | | 05:41-05:56 | | | | | | |
| 25 | | 08:02-08:14 | | | | 05:42-05:57 | | | | | | |
| 26 | | 08:00-08:16 | | | | 05:42-05:56 | | | | | | |
| 27 | | 07:57-08:15 | | | | 05:43-05:57 | | | | | | |
| 28 | | 07:55-08:16 | | | | 05:43-05:56 | | | | | | |
| 29 | | | | | | 05:45-05:55 | | | | | | |
| 30 | | | | | | 05:46-05:54 | | | | | | |
| 31 | | | | | | | | | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| 1 | | | 08:40-10:58 | 10:23-11:33 08:02-09:12 | 06:43-08:20 | 06:31-07:40 |
| 2 | | | 08:39-10:58 | 10:23-11:30 08:02-09:12 | 06:42-08:18 | 06:31-07:39 |
| 3 | | | 08:39-10:59 | 10:25-11:28 08:00-09:12 | 06:41-08:16 | 06:31-07:38 |
| 4 | | | 08:38-10:59 | 10:26-11:24 07:58-09:11 | 06:41-08:14 | 06:32-07:38 |
| 5 | | | 08:38-10:59 | 10:28-11:22 07:58-09:11 | 06:40-08:13 | 06:32-07:36 |
| 6 | | | 08:37-10:59 | 10:29-11:18 07:57-09:10 | 06:41-08:11 | 06:32-07:35 |
| 7 | | | 08:38-11:00 | 10:32-11:14 07:56-09:10 | 06:40-08:10 | 06:33-07:34 |
| 8 | | | 08:38-10:59 | 10:34-11:09 07:55-09:09 | 06:39-08:08 | 06:32-07:33 |
| 9 | | | 08:37-10:59 | 10:39-11:04 07:55-09:09 | 06:38-08:07 | 06:33-07:32 |
| 10 | | | 08:38-10:59 | 10:47-10:52 07:54-09:07 | 06:37-08:05 | 06:33-07:31 |
| 11 | | | 08:38-10:58 | 07:54-09:07 | 06:36-08:03 | 06:33-07:31 |
| 12 | | 09:48-10:38 | 08:39-10:59 | 07:54-09:06 | 06:36-08:02 | 06:34-07:32 |
| 13 | | 09:46-10:40 | 08:40-10:58 | 07:53-09:05 | 06:35-08:00 | 06:34-07:31 |
| 14 | | 09:43-10:42 | 08:41-10:58 | 07:53-09:04 | 06:34-07:59 | 06:34-07:31 |
| 15 | | 09:42-10:44 | 08:41-10:57 | 07:52-09:02 | 06:34-07:58 | 06:34-07:32 |
| 16 | | 09:40-10:46 | 08:42-09:36 | 07:53-09:01 | 06:34-07:56 | 06:35-07:32 |
| 17 | | 09:38-10:47 | 08:44-09:35 | 07:53-09:00 | 06:33-07:54 | 06:35-07:32 |
| 18 | | 09:37-10:49 | 08:45-09:33 | 07:52-08:58 | 06:33-07:53 | 06:35-07:32 |
| 19 | | 09:36-10:50 09:30-09:31 | 09:18-09:32 08:48-09:15 | 07:53-08:56 | 06:32-07:52 | 06:36-07:32 |
| 20 | | 09:34-10:51 09:30-09:32 | 09:18-09:30 08:51-09:11 | 07:53-08:55 | 06:32-07:51 | 06:36-07:32 |
| 21 | | 09:30-10:52 | 09:17-09:28 08:56-09:04 | 07:53-08:52 | 06:32-07:51 | 06:36-07:33 |
| 22 | | 09:30-10:53 | 09:18-09:26 | 07:54-08:50 | 06:31-07:49 | 06:36-07:32 |
| 23 | | 09:30-10:54 | 09:18-09:23 | 07:54-08:47 | 06:31-07:48 | 06:37-07:33 |
| 24 | | 09:30-10:55 | 09:19-09:21 | 07:55-08:43 | 06:32-07:47 | 06:36-07:33 |
| 25 | | 09:30-10:56 | | 08:31-08:35 07:55-08:30 | 06:31-07:45 | 06:37-07:34 |
| 26 | | 09:30-10:56 | | 07:56-08:29 | 06:31-07:44 | 06:37-07:34 |
| 27 | | 09:30-10:57 | | 07:57-08:27 | 06:31-07:44 | 06:37-07:34 |
| 28 | | 09:30-10:57 | | 07:58-08:26 06:58-07:14 | 06:31-07:43 | 06:37-07:35 |
| 29 | | | | 07:59-08:24 06:54-07:18 | 06:31-07:42 | 06:38-07:35 |
| 30 | | | | 08:00-08:22 06:51-07:21 | 06:31-07:42 | 06:37-07:35 |
| 31 | | | | | 06:31-07:41 | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 6 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (7)

## Flicker curtailment according to specified plan

| | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| 1 | 06:38-07:35 | 06:47-08:13 | 08:08-09:06 07:34-08:07 | 09:19-11:38 | | |
| 2 | 06:38-07:36 | 06:46-08:14 | 10:46-10:51 08:08-09:06 07:36-08:04 | 09:17-11:37 | | |
| 3 | 06:37-07:36 | 06:47-08:16 | 10:37-11:02 08:08-09:07 07:40-08:00 | 09:17-11:37 | | |
| 4 | 06:38-07:37 | 06:48-08:18 | 10:32-11:07 08:08-09:07 07:49-07:51 | 09:16-11:37 | | |
| 5 | 06:38-07:39 | 06:48-08:18 | 10:28-11:10 08:07-09:06 | 09:15-11:36 | | |
| 6 | 06:38-07:41 | 06:50-08:20 | 10:25-11:14 08:07-09:06 | 09:14-11:36 | | |
| 7 | 06:38-07:42 | 06:50-08:22 | 10:23-11:17 08:07-09:06 | 09:14-11:35 | | |
| 8 | 06:38-07:43 | 06:51-08:24 | 10:21-11:19 08:07-09:06 | 09:13-11:35 | | |
| 9 | 06:38-07:45 | 06:50-08:24 | 10:19-11:22 08:07-09:06 | 09:13-11:34 | | |
| 10 | 06:38-07:46 | 06:51-08:26 | 10:17-11:23 08:06-09:05 | 09:13-11:33 | | |
| 11 | 06:38-07:47 | 06:51-08:27 | 10:15-11:25 08:07-09:04 | 09:13-11:33 | | |
| 12 | 06:40-07:49 | 06:51-08:28 | 10:14-11:27 08:07-09:04 | 09:13-11:32 | | |
| 13 | 06:40-07:50 | 06:52-08:30 | 10:12-11:29 08:08-09:03 | 09:13-11:31 | | |
| 14 | 06:40-07:50 | 06:53-08:32 | 10:11-11:30 08:08-09:03 | 09:13-11:30 | | |
| 15 | 06:39-07:51 | 06:54-08:34 | 10:10-11:32 08:09-09:02 | 09:14-11:29 | | |
| 16 | 06:40-07:53 | 06:55-08:35 | 10:08-11:32 08:09-09:00 | 09:14-11:28 | | |
| 17 | 06:40-07:53 | 06:55-08:35 | 10:07-11:33 08:10-08:59 | 09:15-11:27 | | |
| 18 | 06:40-07:54 | 06:57-08:44 | 10:06-11:34 08:11-08:58 | 09:16-11:26 | | |
| 19 | 06:41-07:56 | 06:59-08:50 | 10:05-11:35 08:12-08:57 | 09:17-11:25 | | |
| 20 | 06:41-07:57 | 07:01-08:53 | 10:05-11:36 08:14-08:56 | 10:11-11:24 09:18-10:08 | | |
| 21 | 06:41-07:58 | 07:03-08:55 | 10:04-11:36 08:15-08:55 | 10:12-11:22 10:04-10:06 09:19-10:03 | | |
| 22 | 06:42-08:00 | 07:16-08:57 07:10-07:13 | 10:03-11:37 08:17-08:54 | 10:13-11:21 09:20-10:02 | | |
| 23 | 06:42-08:00 | 07:18-08:59 | 10:02-11:38 09:37-09:54 08:20-08:51 | 10:15-11:19 09:21-10:00 | | |
| 24 | 06:43-08:02 | 07:20-09:00 | 10:01-11:37 09:32-09:57 08:22-08:46 | 10:18-11:18 09:24-10:00 | | |
| 25 | 06:42-08:03 | 07:23-09:02 | 09:29-11:37 08:27-08:41 | 09:20-10:15 08:26-08:58 | | |
| 26 | 06:43-08:04 | 07:23-09:02 | 09:26-11:38 | 09:22-10:12 08:28-08:56 | | |
| 27 | 06:44-08:06 | 07:25-09:03 | 09:24-11:38 | 09:25-10:09 08:32-08:52 | | |
| 28 | 06:44-08:07 | 07:27-09:04 | 09:23-11:38 | 09:28-10:05 08:38-08:45 | | |
| 29 | 06:45-08:09 | 07:29-09:05 | 09:21-11:38 | 09:33-10:01 | | |
| 30 | 06:45-08:09 | 07:31-09:06 | 09:20-11:38 | 09:39-09:55 | | |
| 31 | 06:46-08:11 | 07:32-09:05 | | | | |

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# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 7 - ENERCON E-138 EP3 E2 4200 138.3 !O! hub: 130,3 m (TOT: 199,5 m) (8)

## Flicker curtailment according to specified plan

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | 15:20-15:51 | |
| 2 | | | | | | | | | | | 15:19-15:51 | |
| 3 | | | | | | | | | | | 15:19-15:52 | |
| 4 | | | | | | | | | | | 15:19-15:52 | |
| 5 | | | | | | | | | | | 15:19-15:52 | |
| 6 | | | | | | | | | | | 15:18-15:52 | |
| 7 | | | | | | | | | | | 15:19-15:52 | |
| 8 | | | | | | | | | | | 15:19-15:52 | |
| 9 | | | | | | | | | | | 15:19-15:51 | |
| 10 | | | | | | | | | | | 15:19-15:50 | |
| 11 | | | | | | | | | | | 15:21-15:50 | |
| 12 | | | | | | | | | | | 15:21-15:49 | |
| 13 | | | | | | | | | | | 15:22-15:48 | |
| 14 | | | | | | | | | | | 15:22-15:47 | |
| 15 | | | | | | | | | | | 15:24-15:47 | |
| 16 | | | | | | | | | | | 15:25-15:45 | |
| 17 | | | | | | | | | | | 15:26-15:43 | |
| 18 | | | | | | | | | | | 15:29-15:41 | |
| 19 | | | | | | | | | | | 15:34-15:36 | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | | | | | | | | | | 15:21-15:51 | | |

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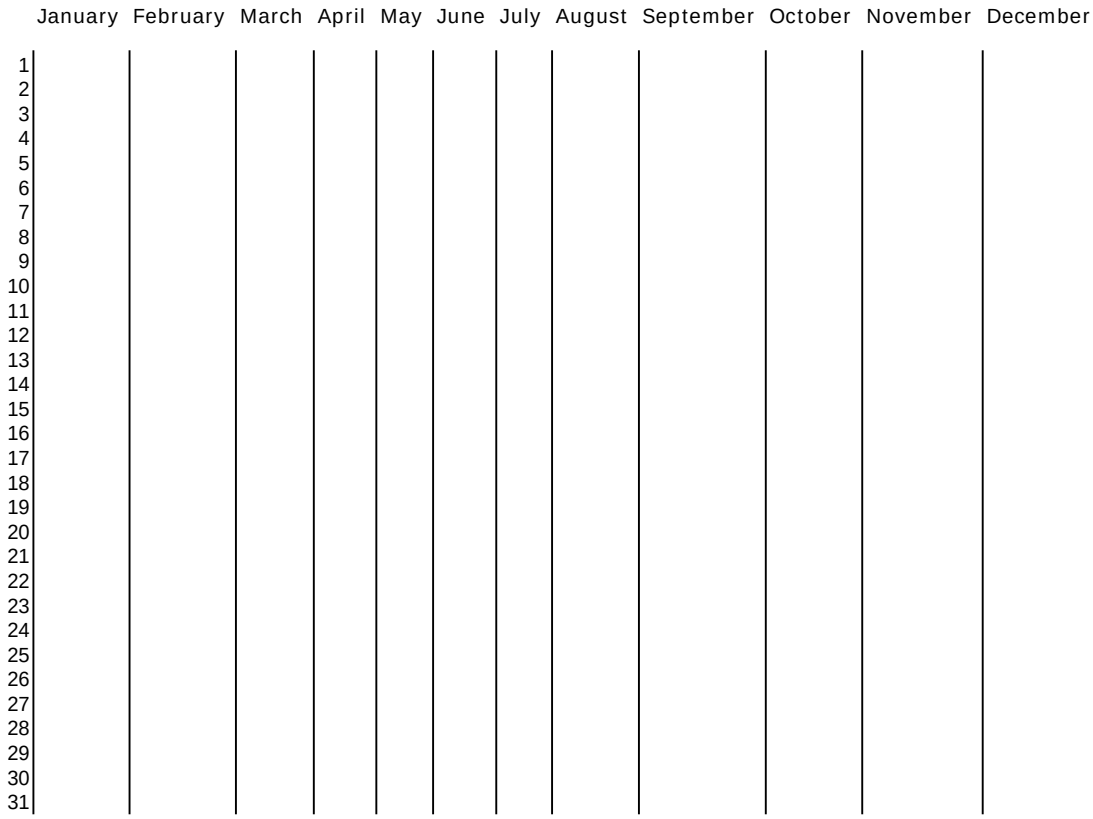
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) WTG: 8 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (1)

## Flicker curtailment according to specified plan



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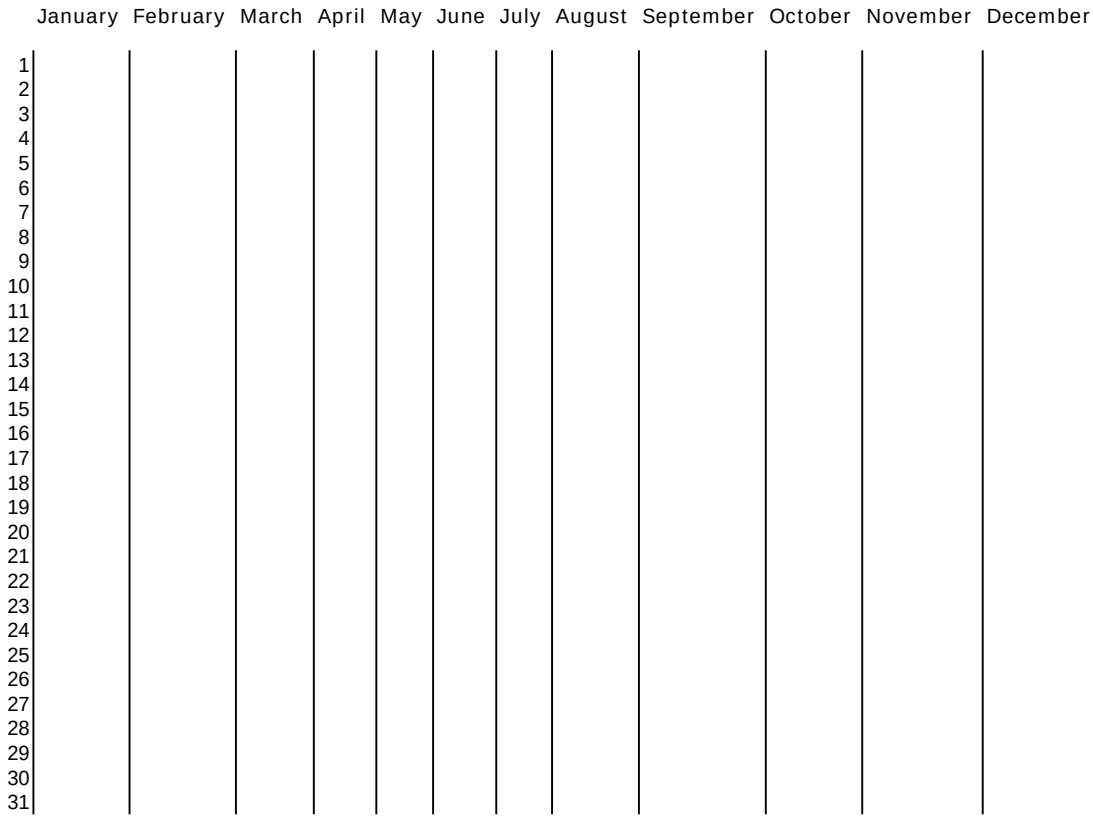
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE) WTG: 9 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (2)

## Flicker curtailment according to specified plan



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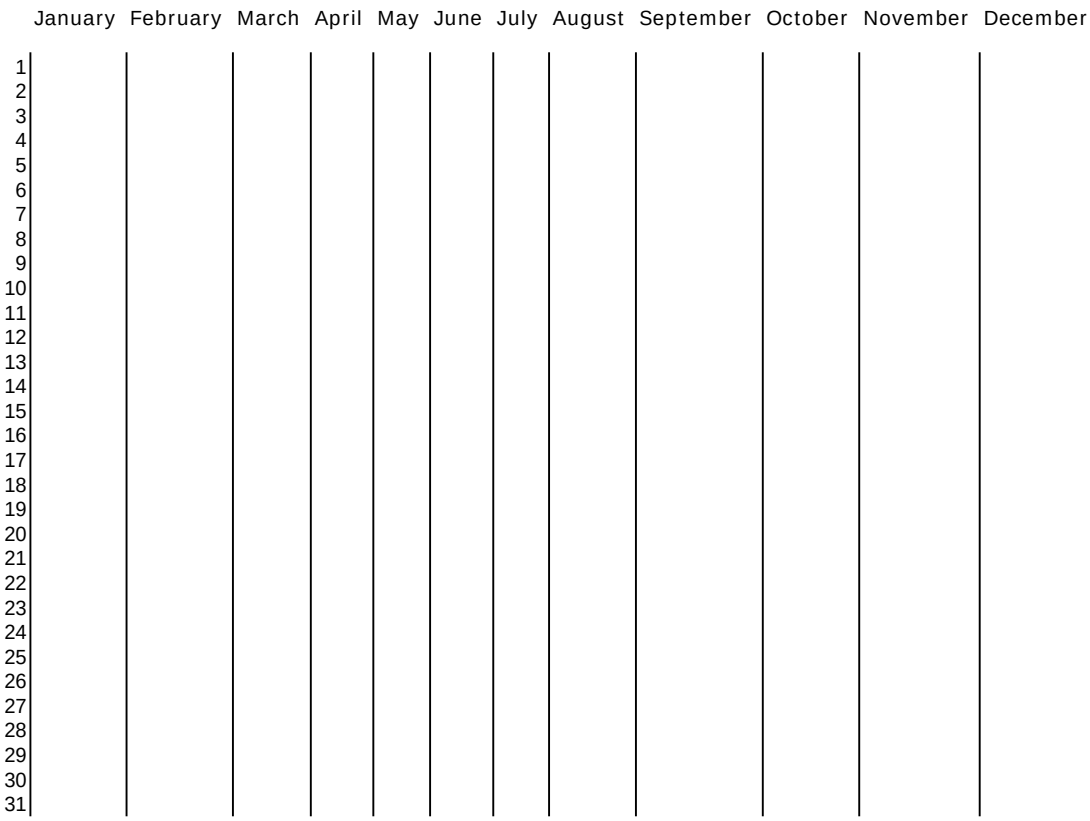
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 10 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (3)

### Flicker curtailment according to specified plan



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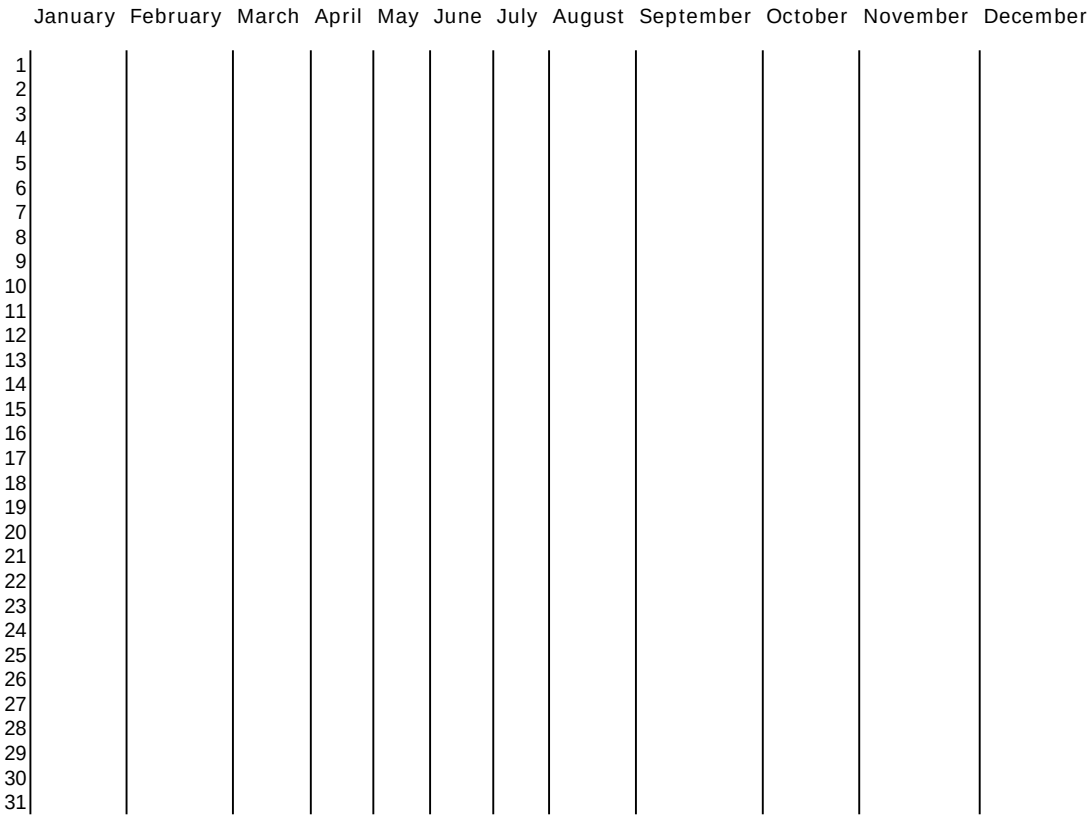
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 11 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (4)

### Flicker curtailment according to specified plan



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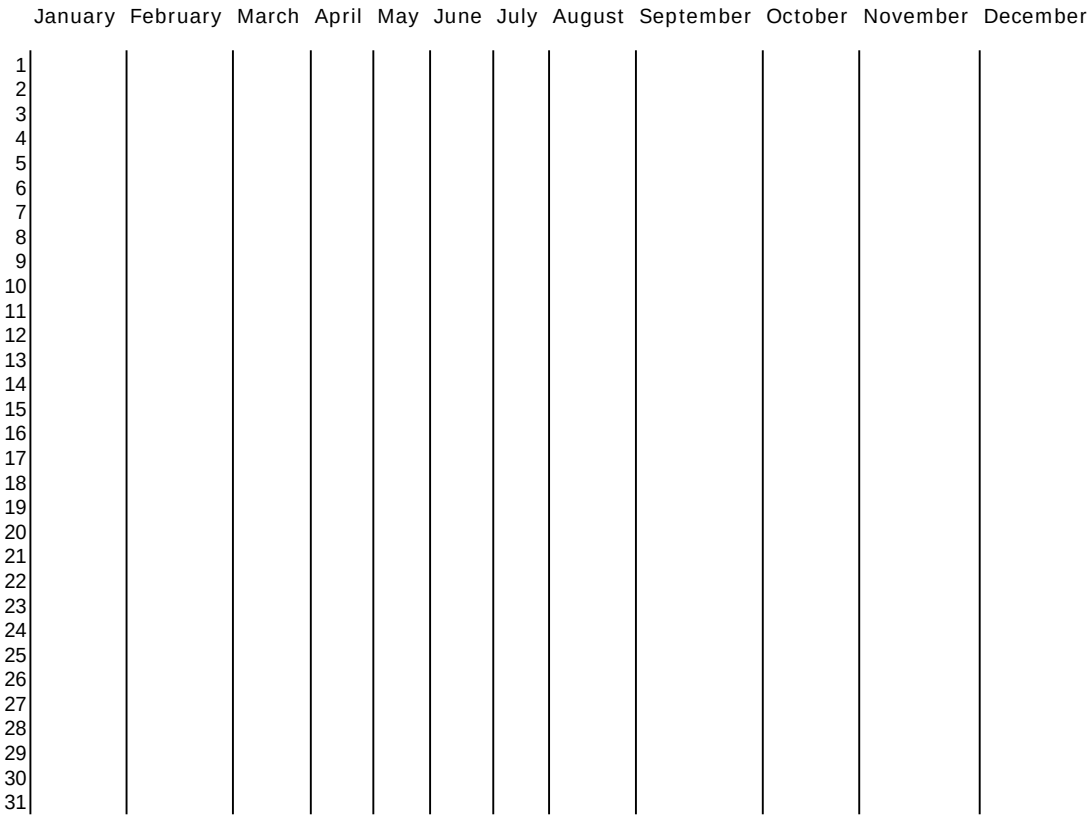
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 12 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (5)

### Flicker curtailment according to specified plan



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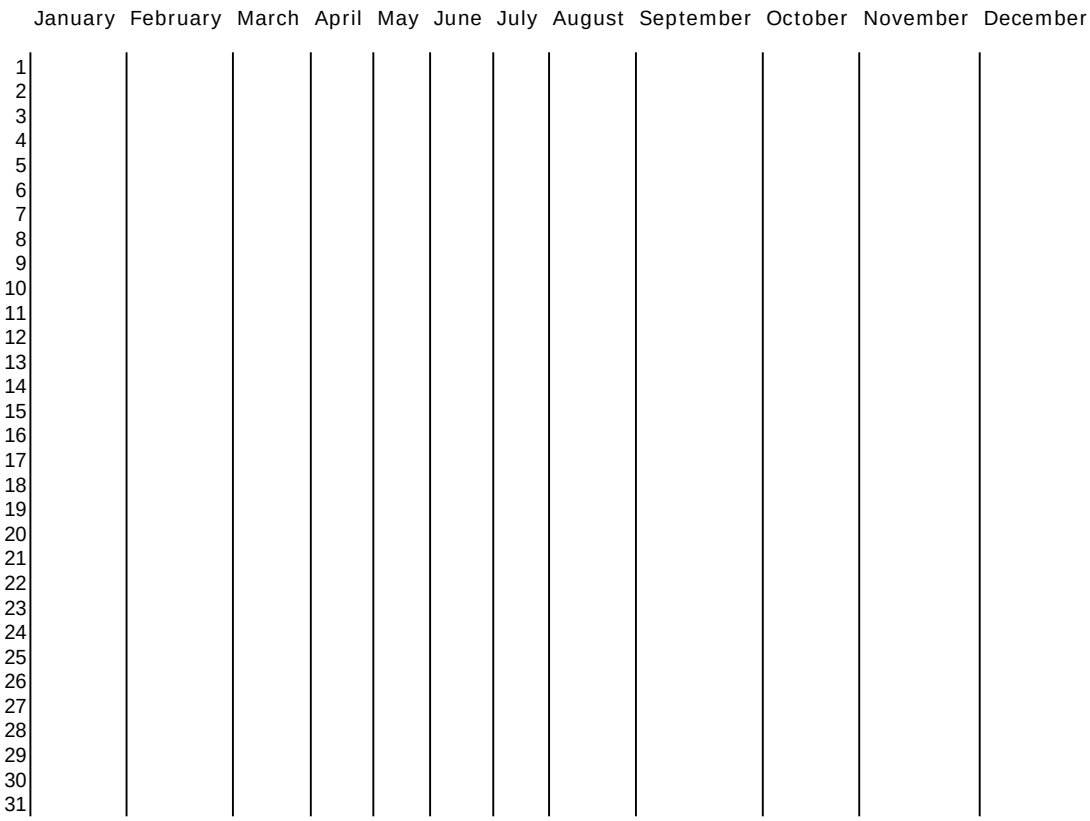
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 13 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (6)

### Flicker curtailment according to specified plan



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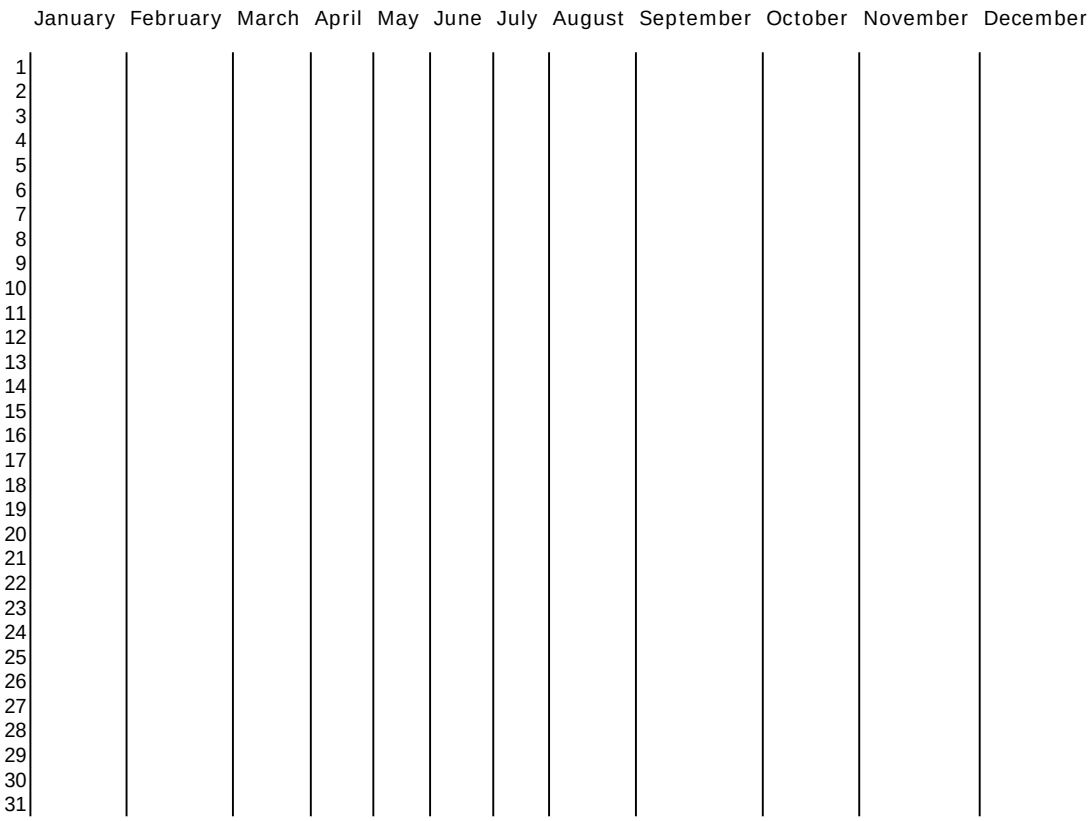
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 14 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (7)

### Flicker curtailment according to specified plan



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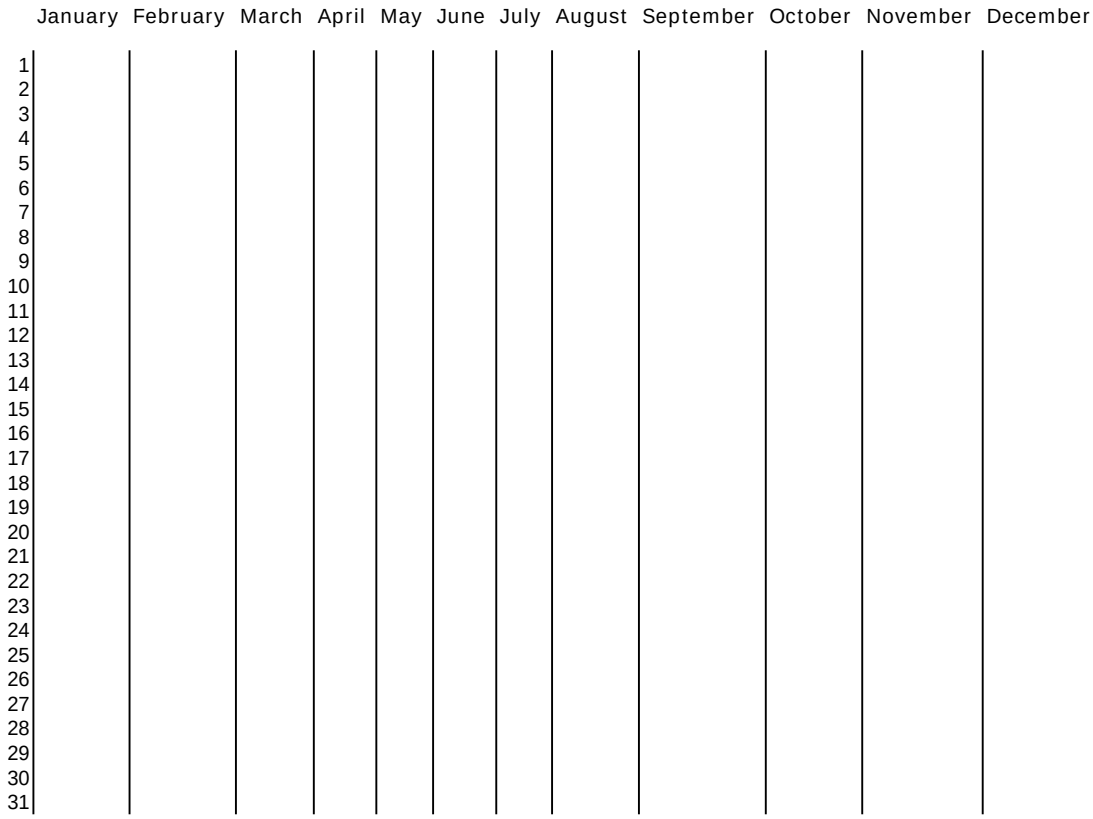
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 15 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (8)

### Flicker curtailment according to specified plan



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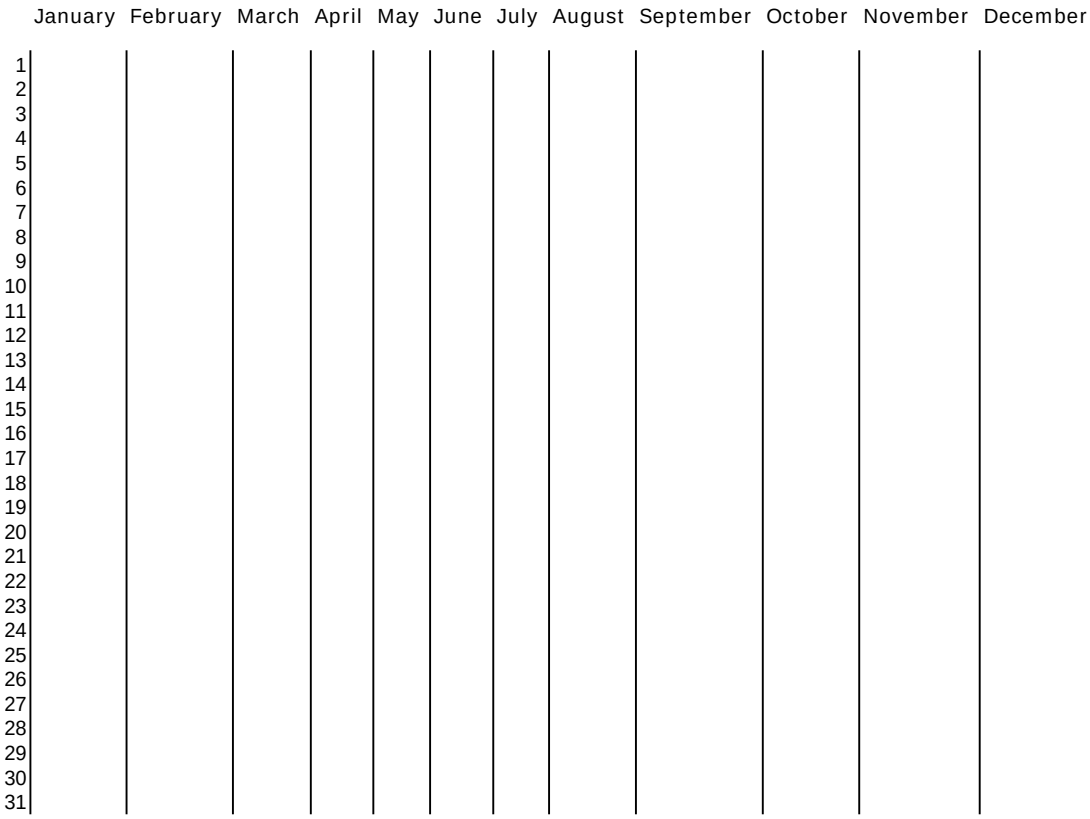
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 16 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (9)

### Flicker curtailment according to specified plan



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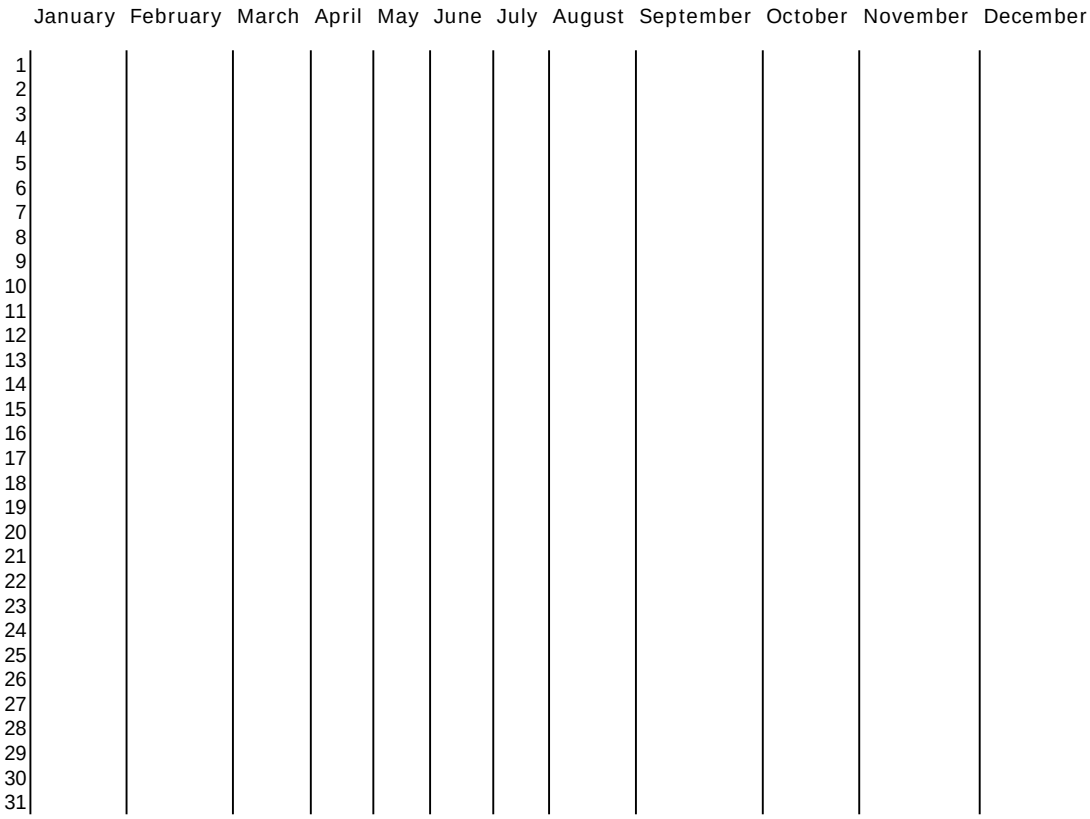
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 17 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (10)

## Flicker curtailment according to specified plan



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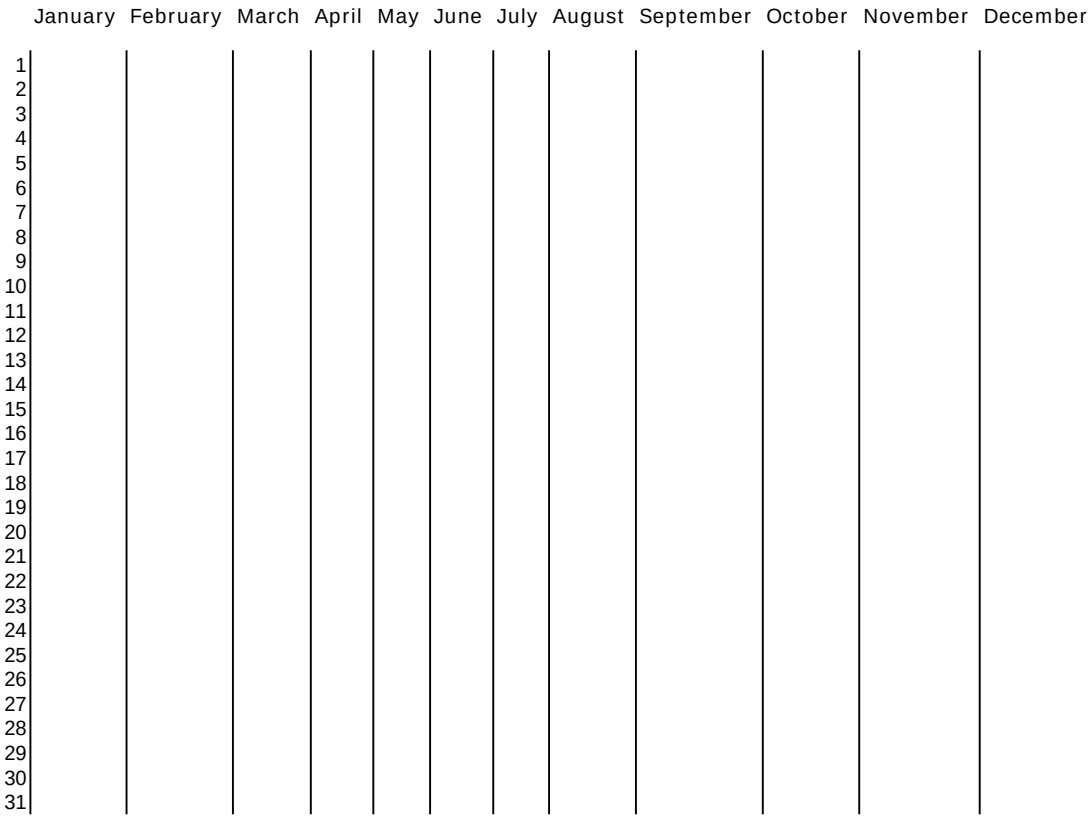
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 18 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (11)

## Flicker curtailment according to specified plan



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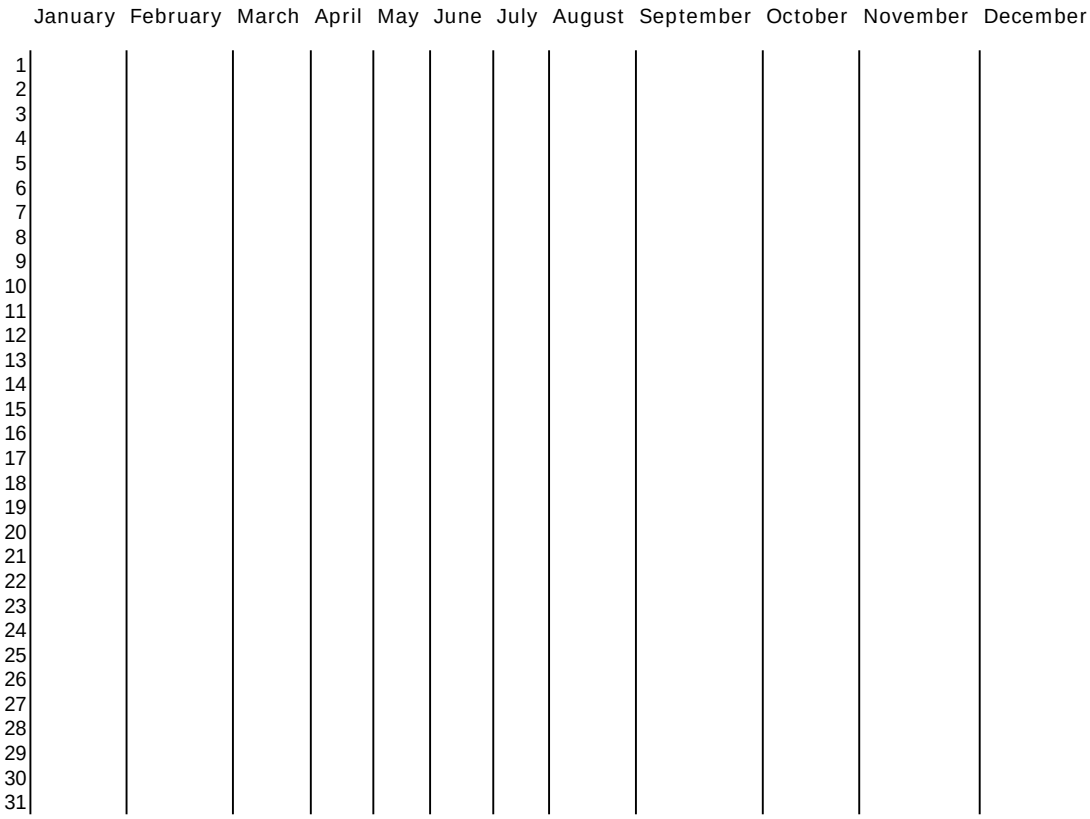
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 19 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (12)

### Flicker curtailment according to specified plan



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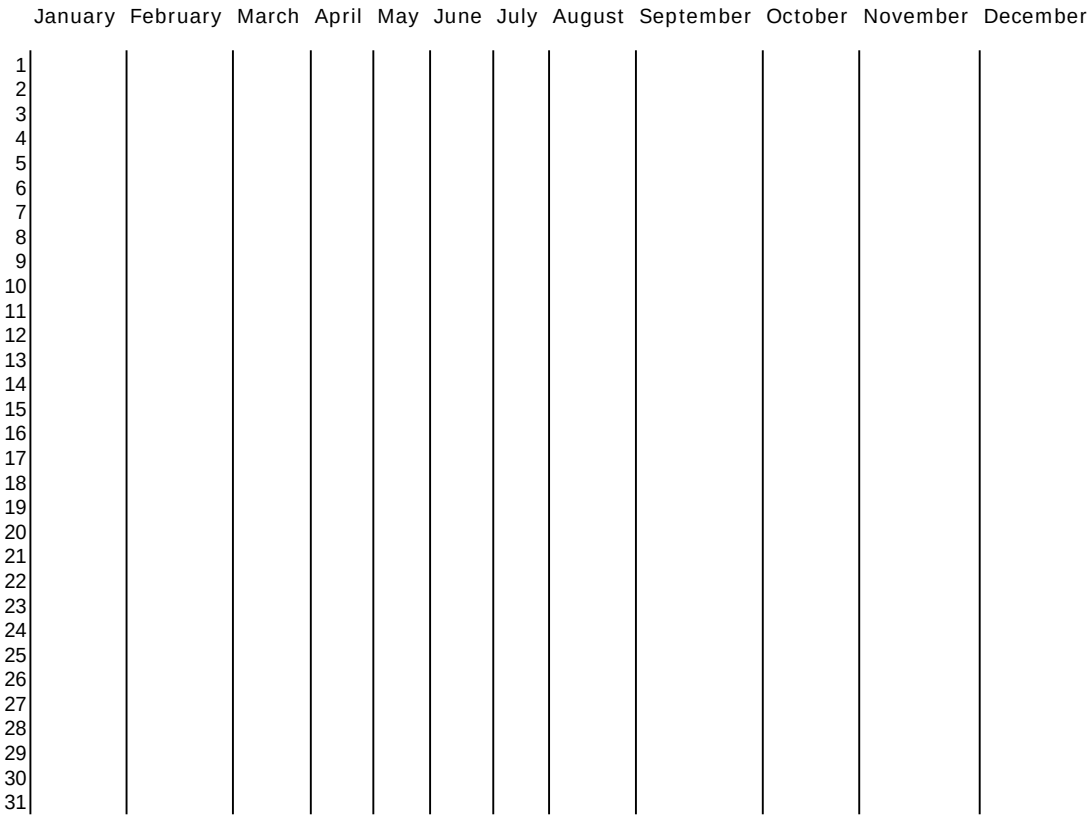
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 20 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (13)

### Flicker curtailment according to specified plan



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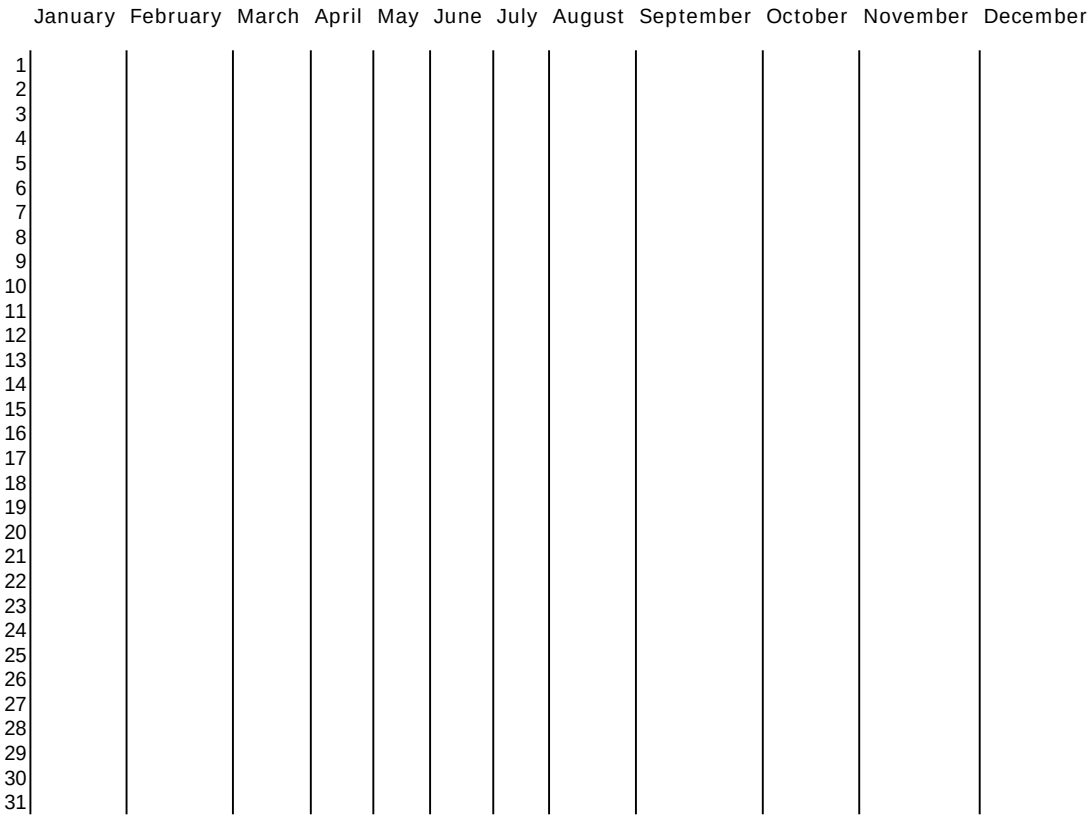
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 21 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (14)

### Flicker curtailment according to specified plan



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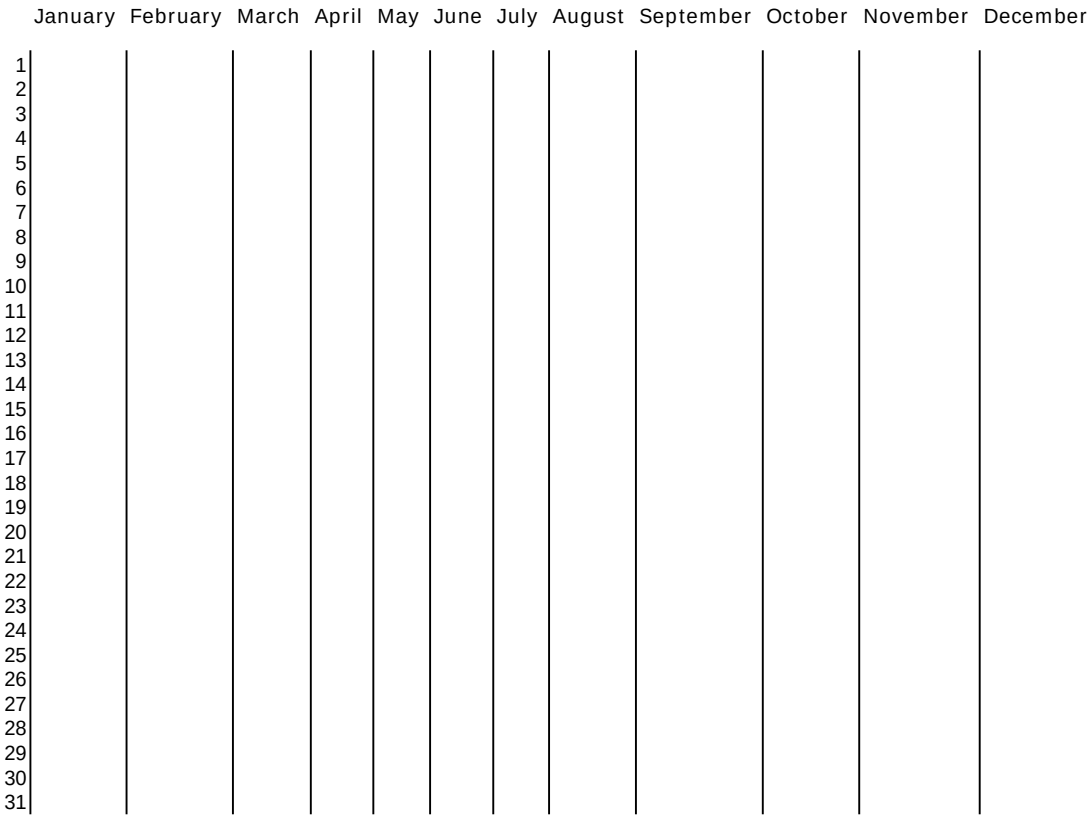
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 22 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (15)

### Flicker curtailment according to specified plan



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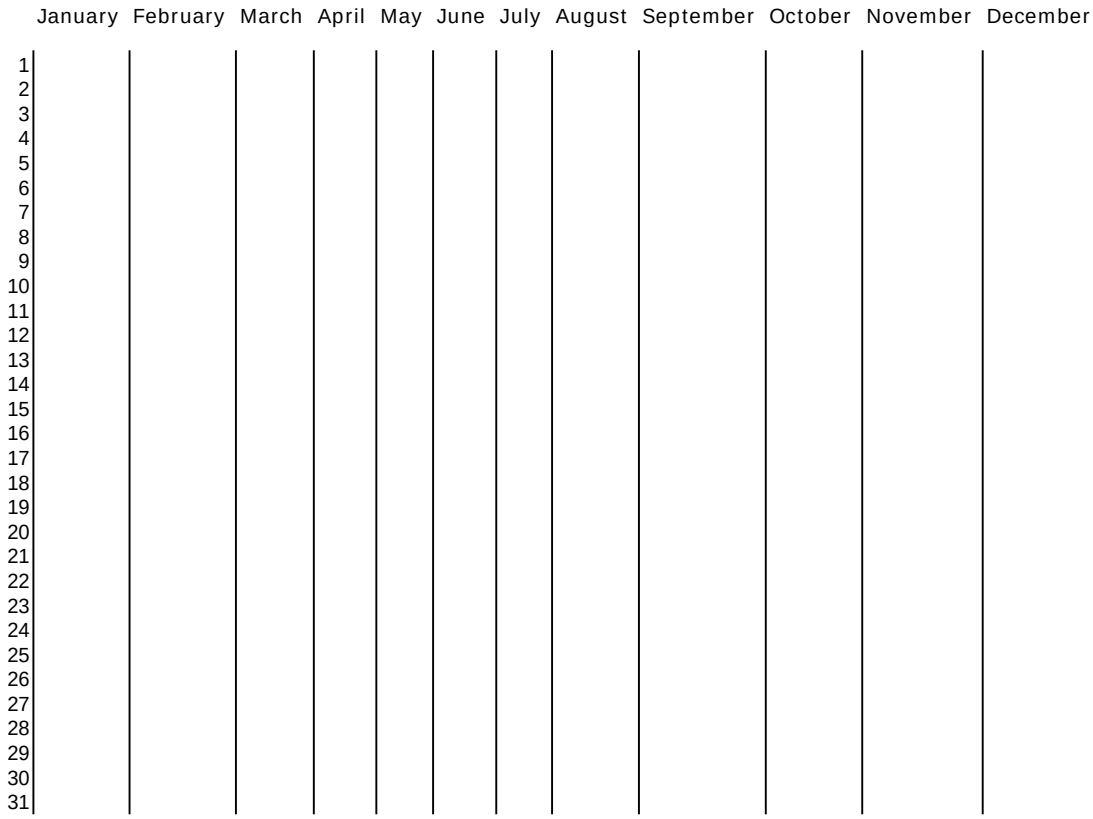
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 23 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (16)

### Flicker curtailment according to specified plan



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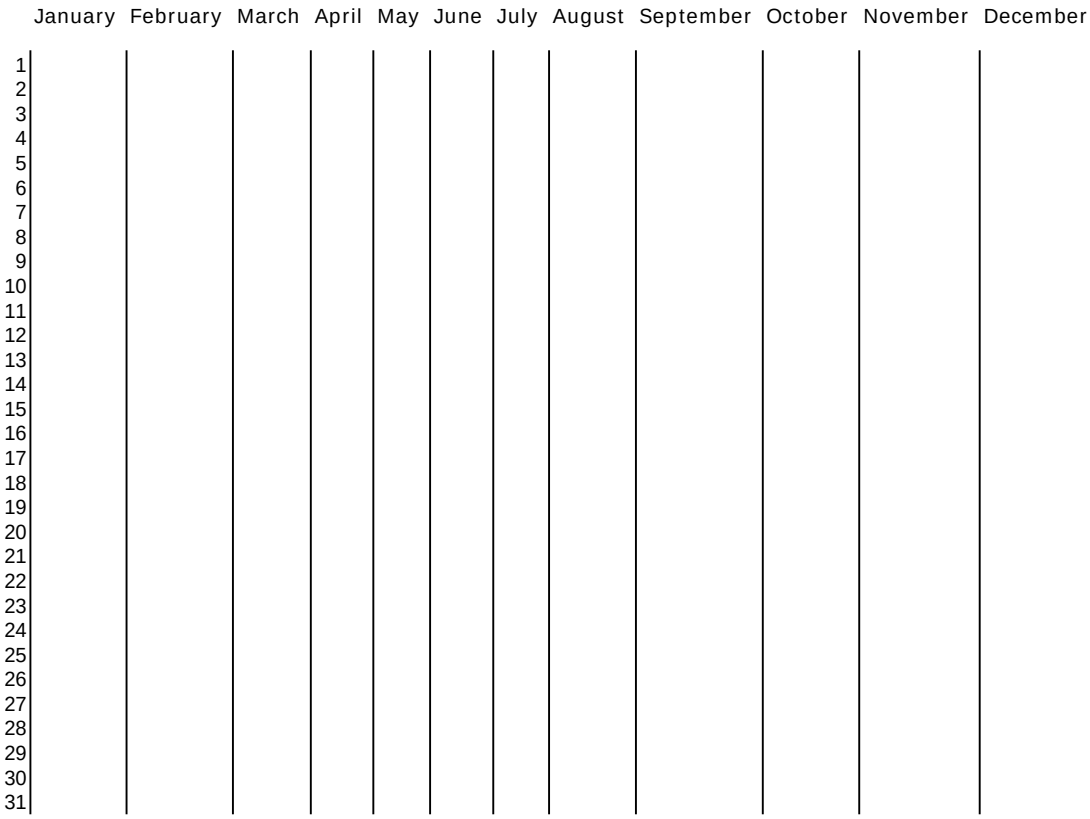
+8 621 66746
Raminta Survilë / r.survile@infraplanas.lt



## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 24 - GE WIND ENERGY GE 2.5-120 2500 120.0 !O! hub: 110,0 m (TOT: 170,0 m) (17)

### Flicker curtailment according to specified plan



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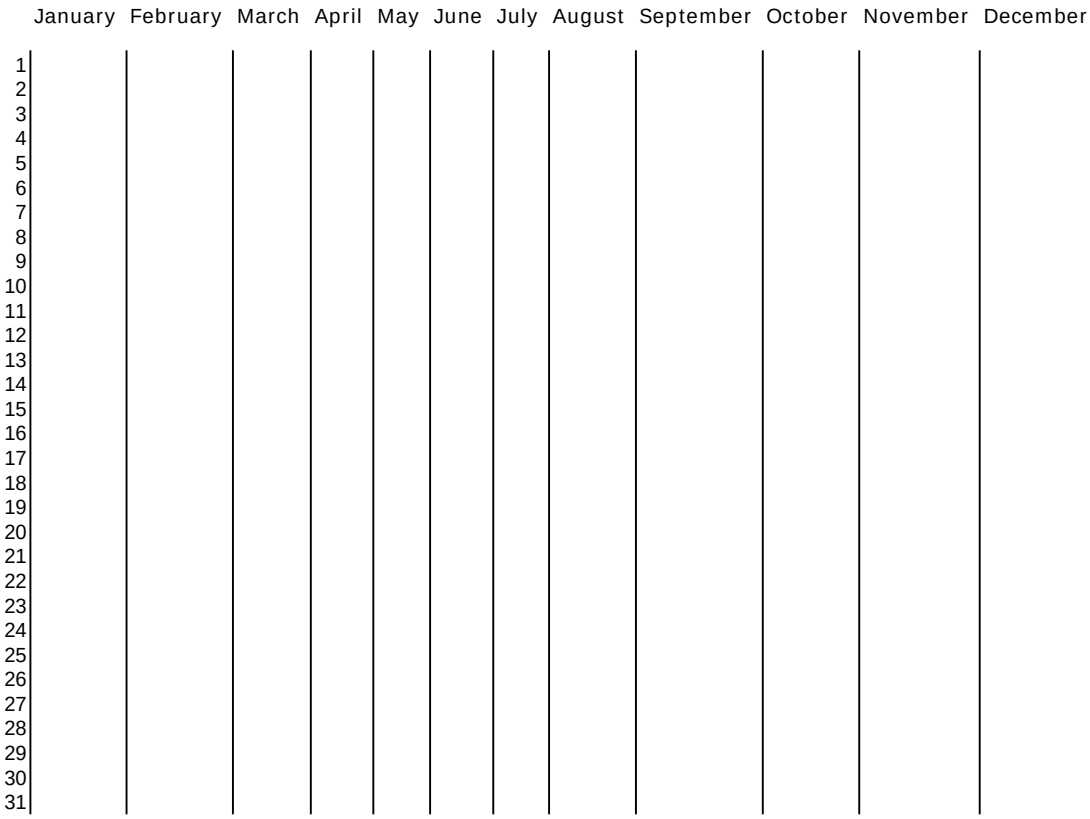
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 25 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (18)

## Flicker curtailment according to specified plan



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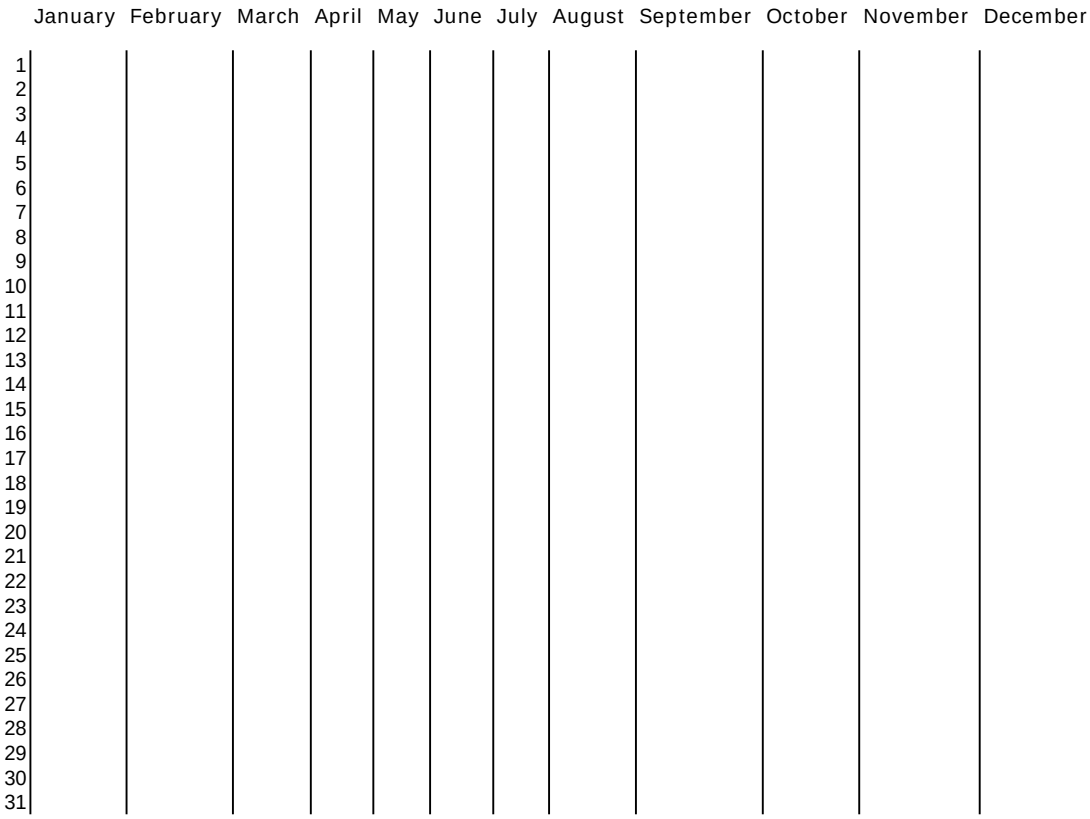
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 26 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (19)

## Flicker curtailment according to specified plan



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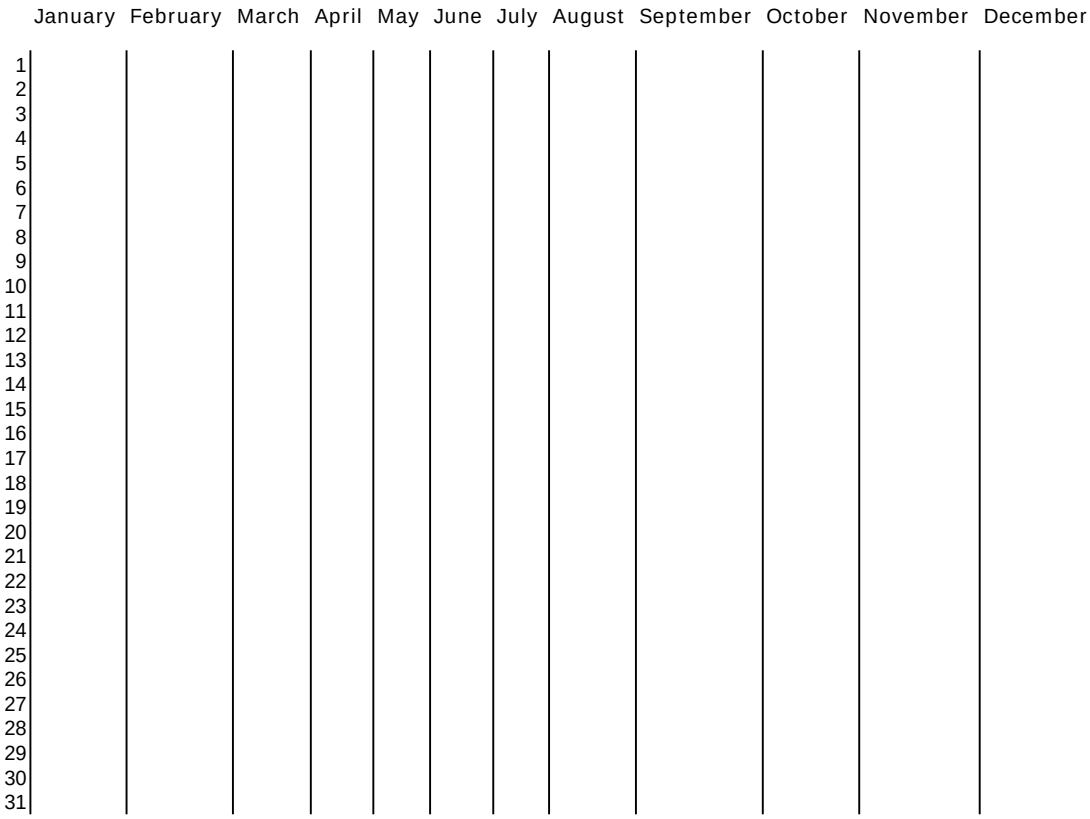
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 27 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (20)

## Flicker curtailment according to specified plan



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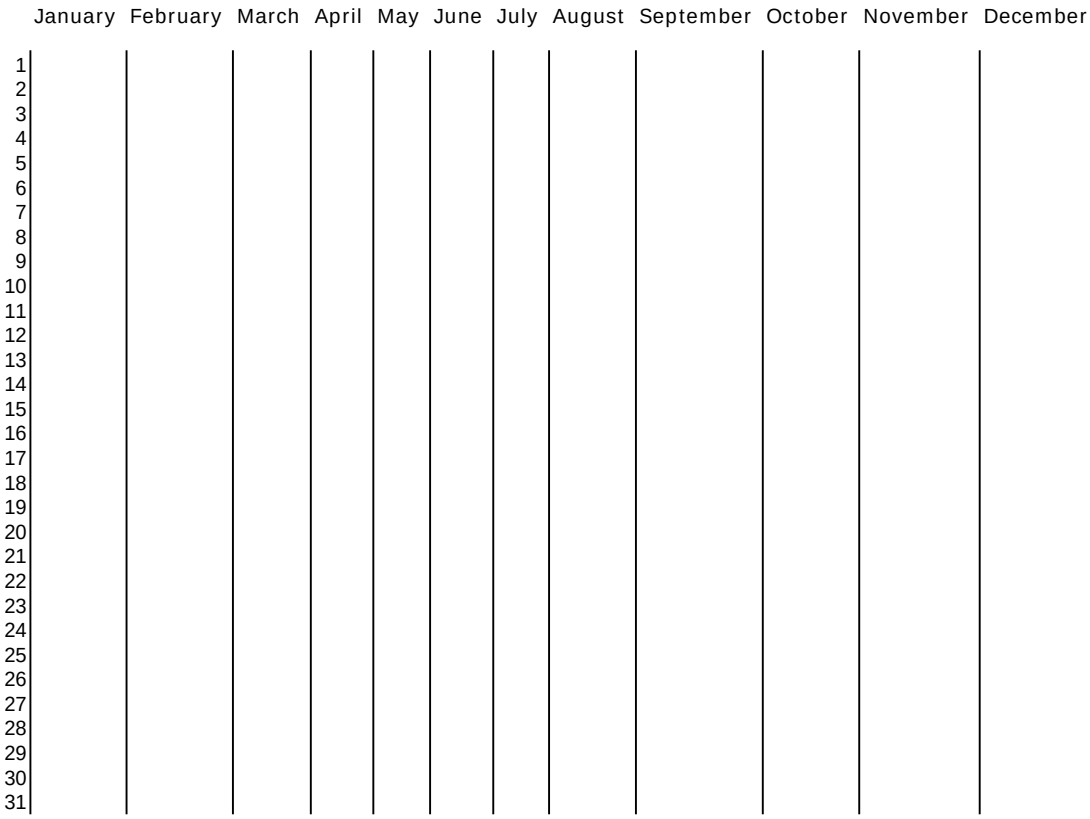
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 28 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (21)

## Flicker curtailment according to specified plan



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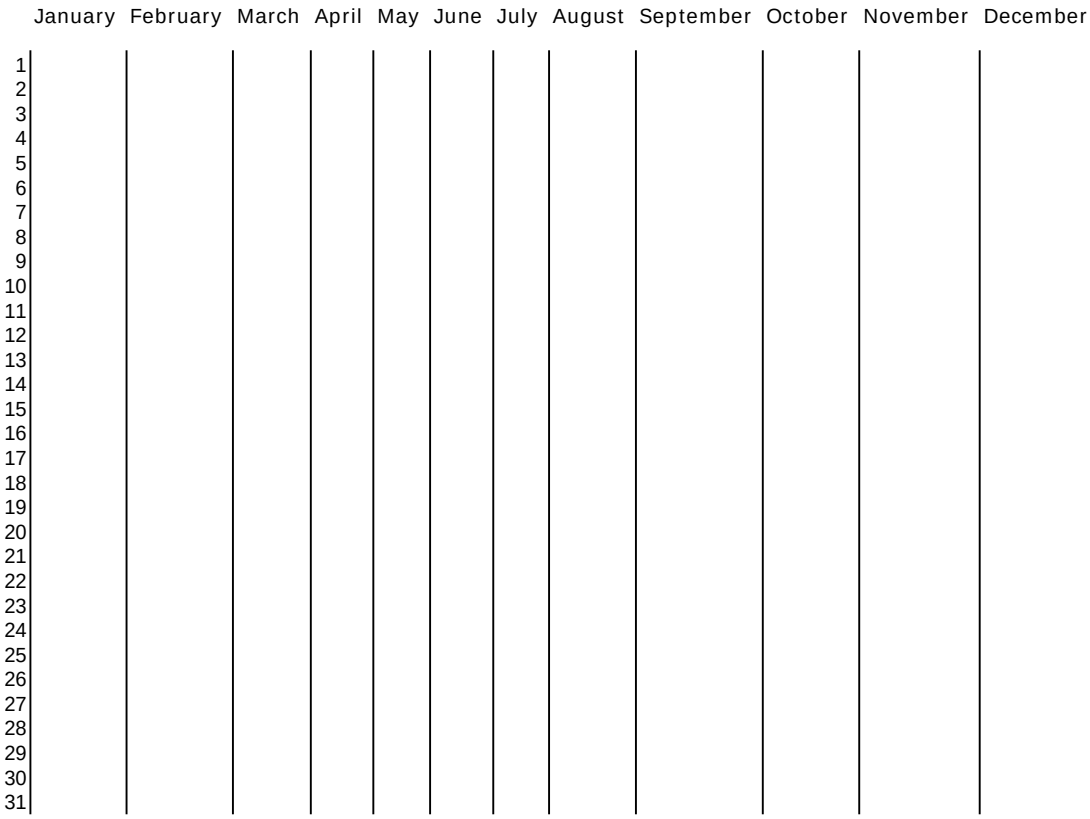
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 29 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (22)

## Flicker curtailment according to specified plan



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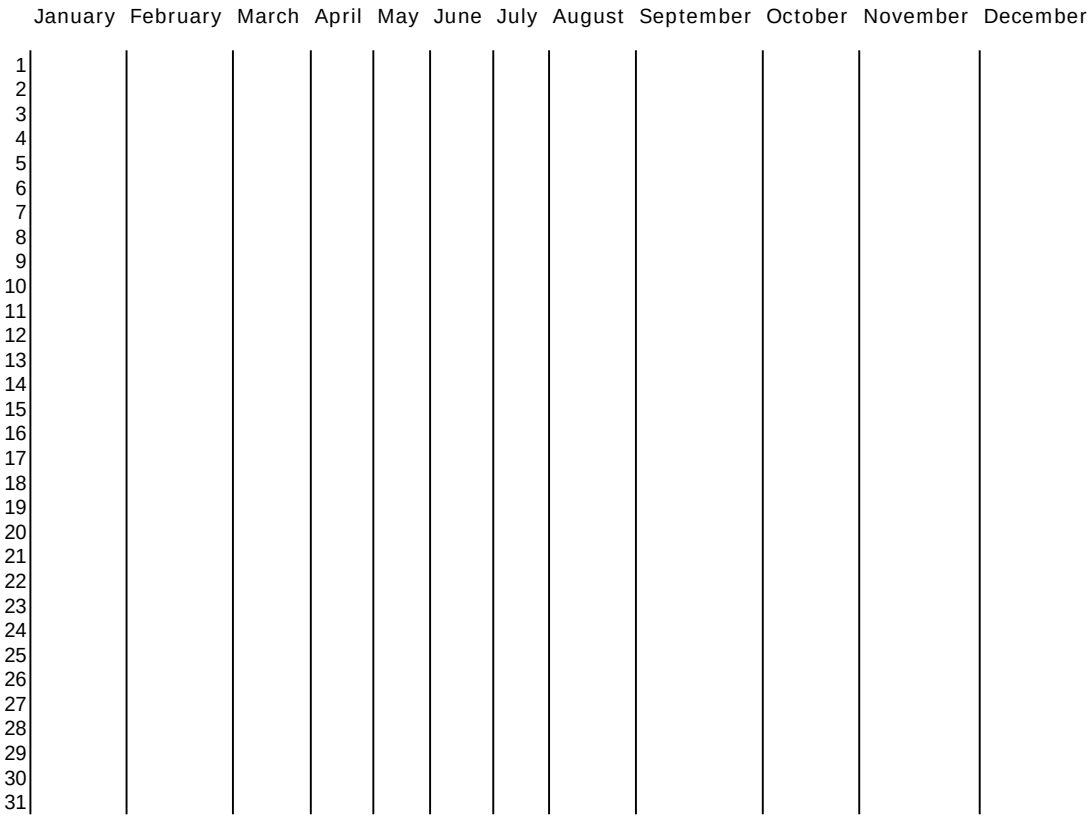
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 30 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (23)

## Flicker curtailment according to specified plan



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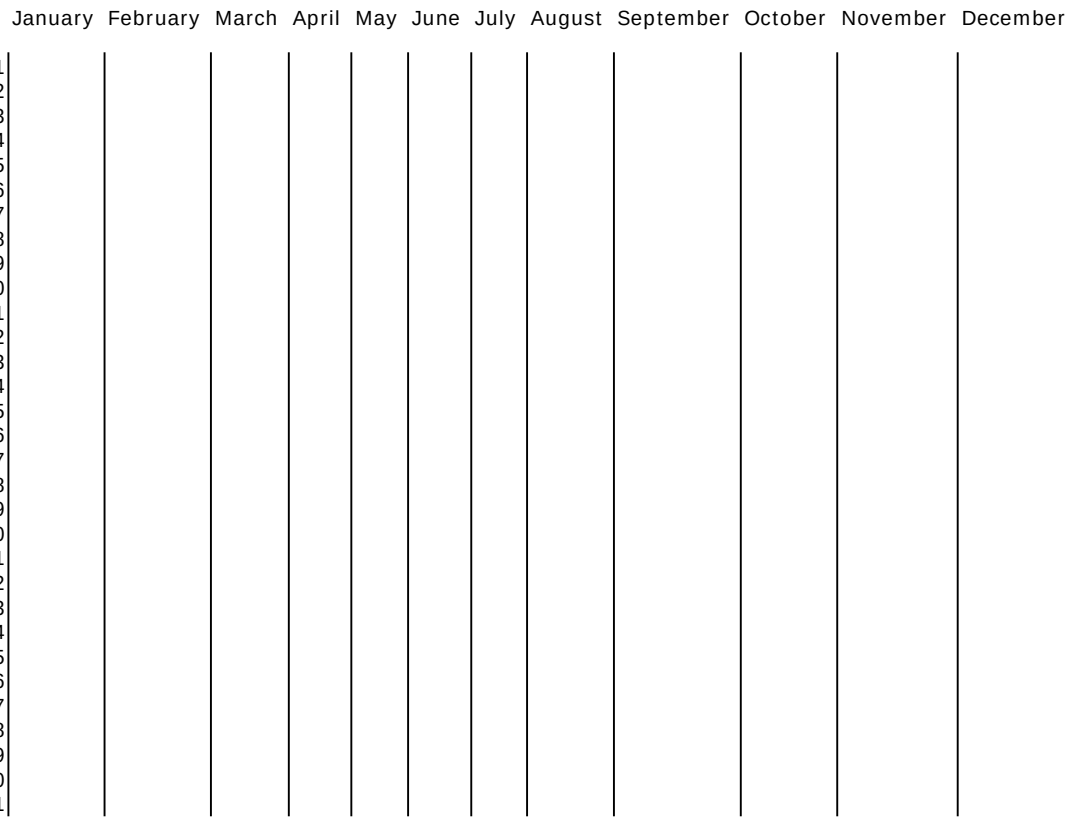
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 31 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (24)

### Flicker curtailment according to specified plan



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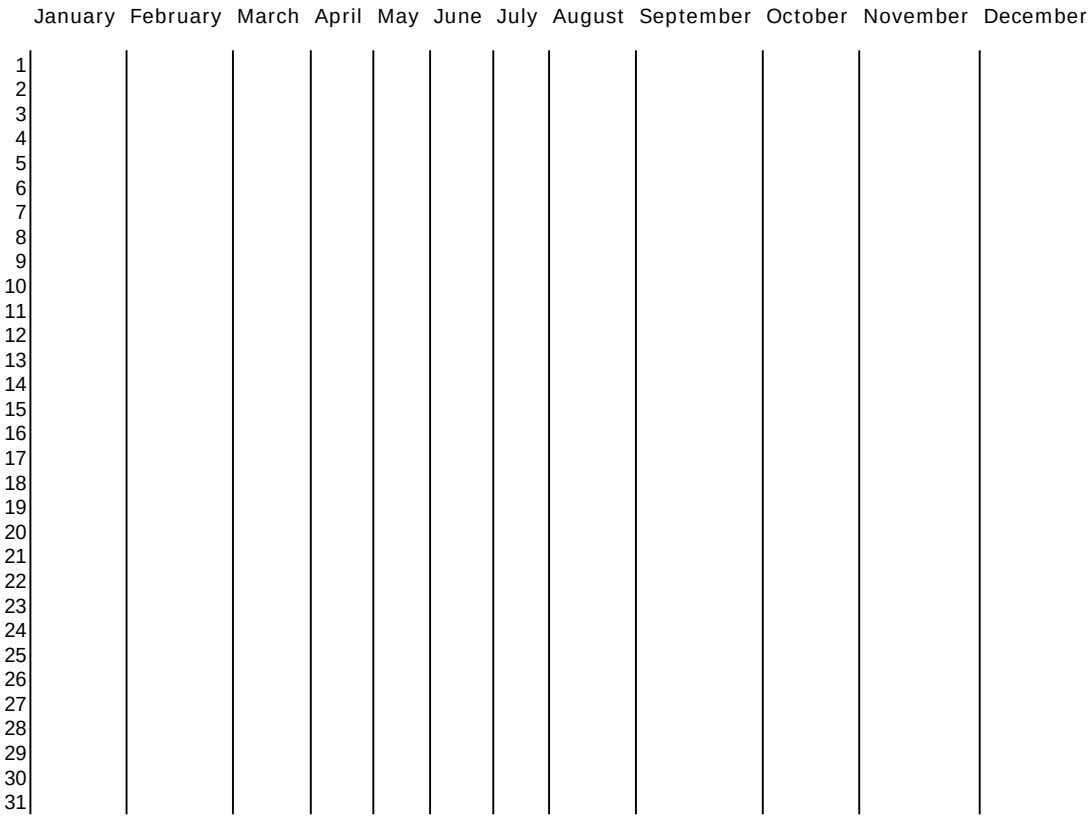
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 32 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (25)

## Flicker curtailment according to specified plan



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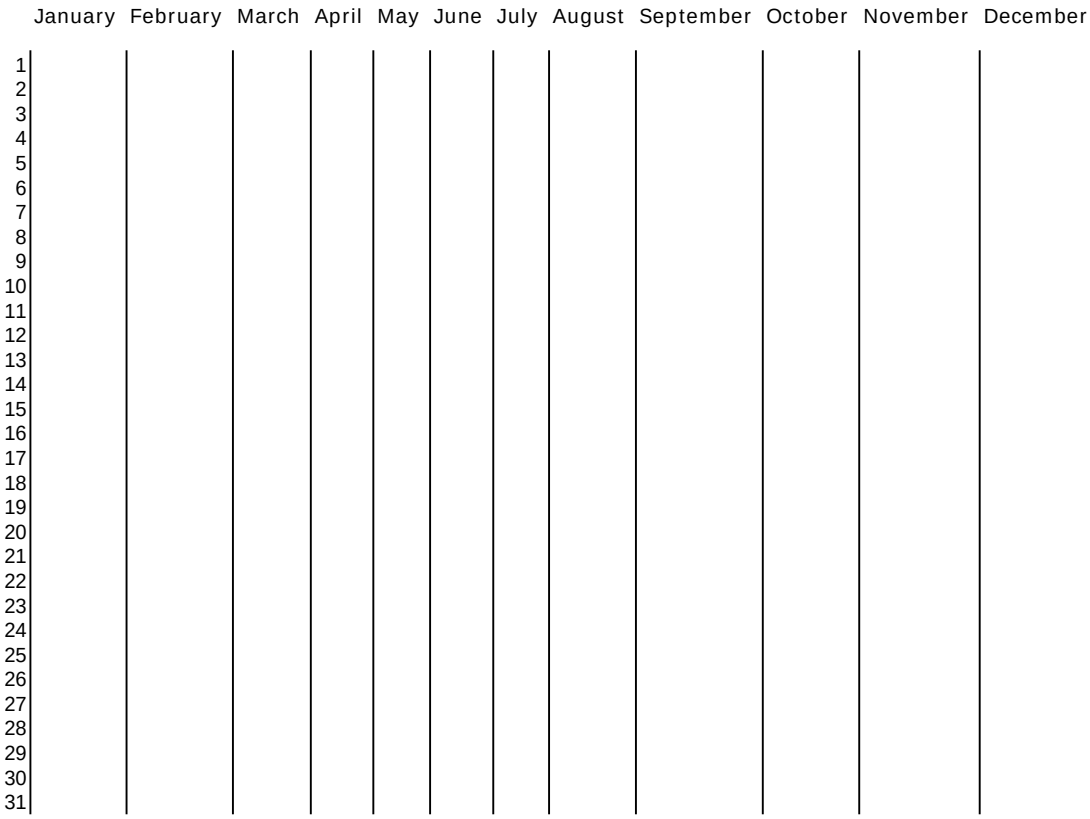
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 33 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (26)

## Flicker curtailment according to specified plan



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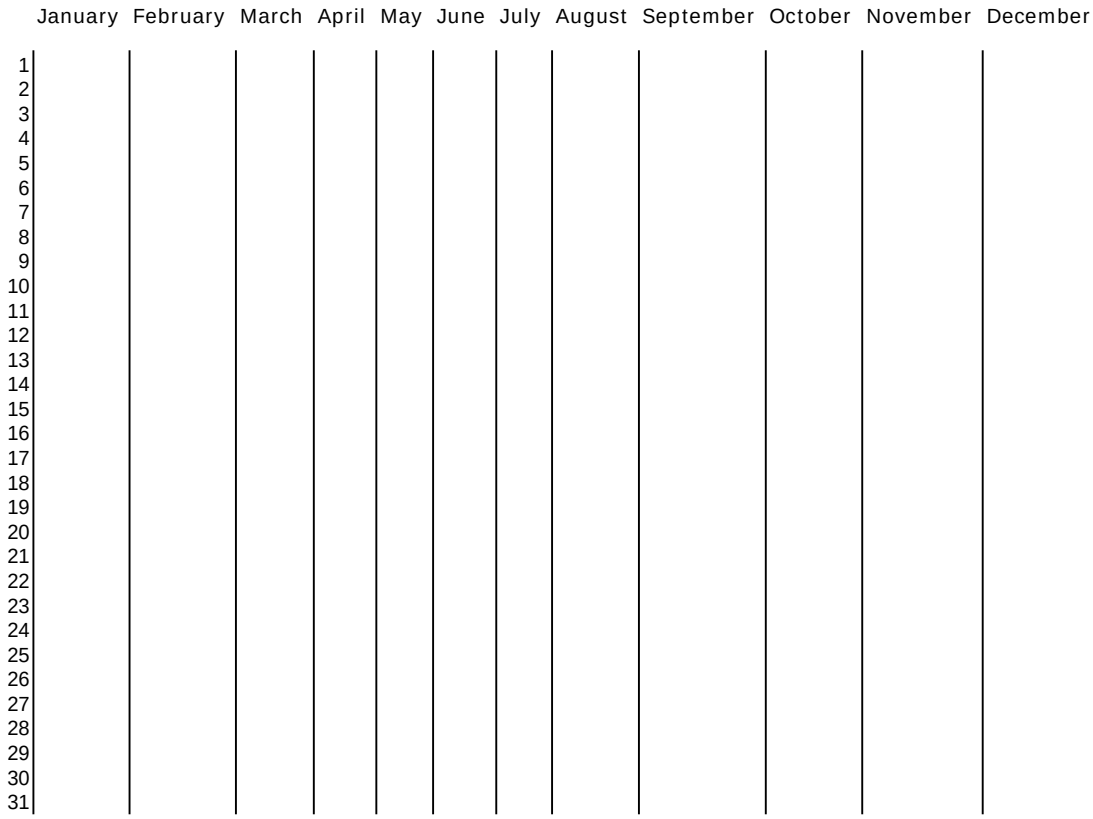
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 34 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (27)

## Flicker curtailment according to specified plan



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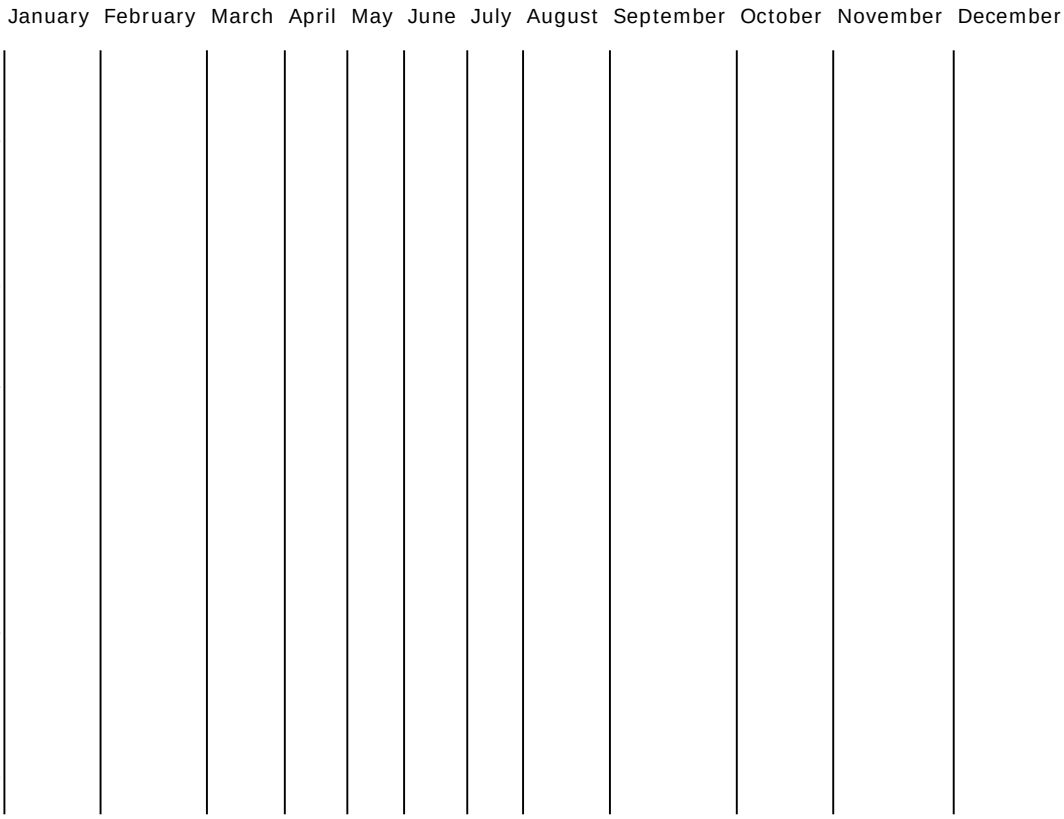
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 35 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (28)

## Flicker curtailment according to specified plan



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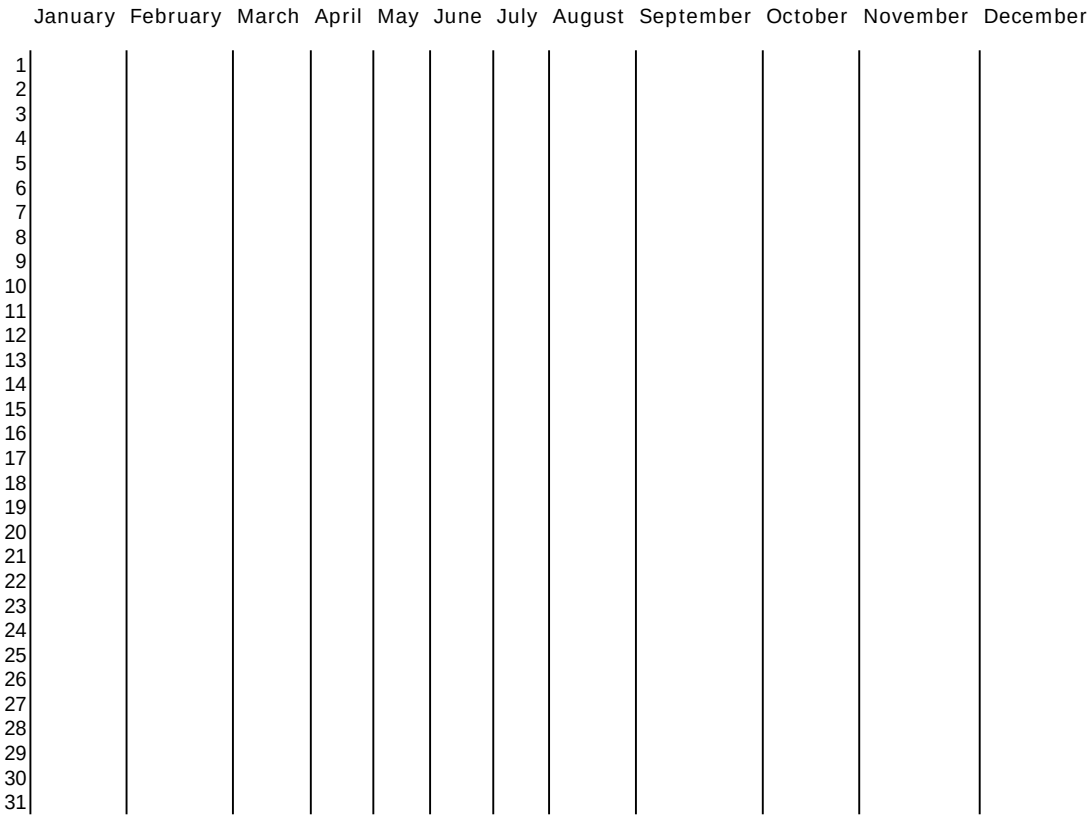
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 36 - NORDEX N131/3000 3000 131.0 !O! hub: 141,0 m (TOT: 206,5 m) (29)

## Flicker curtailment according to specified plan



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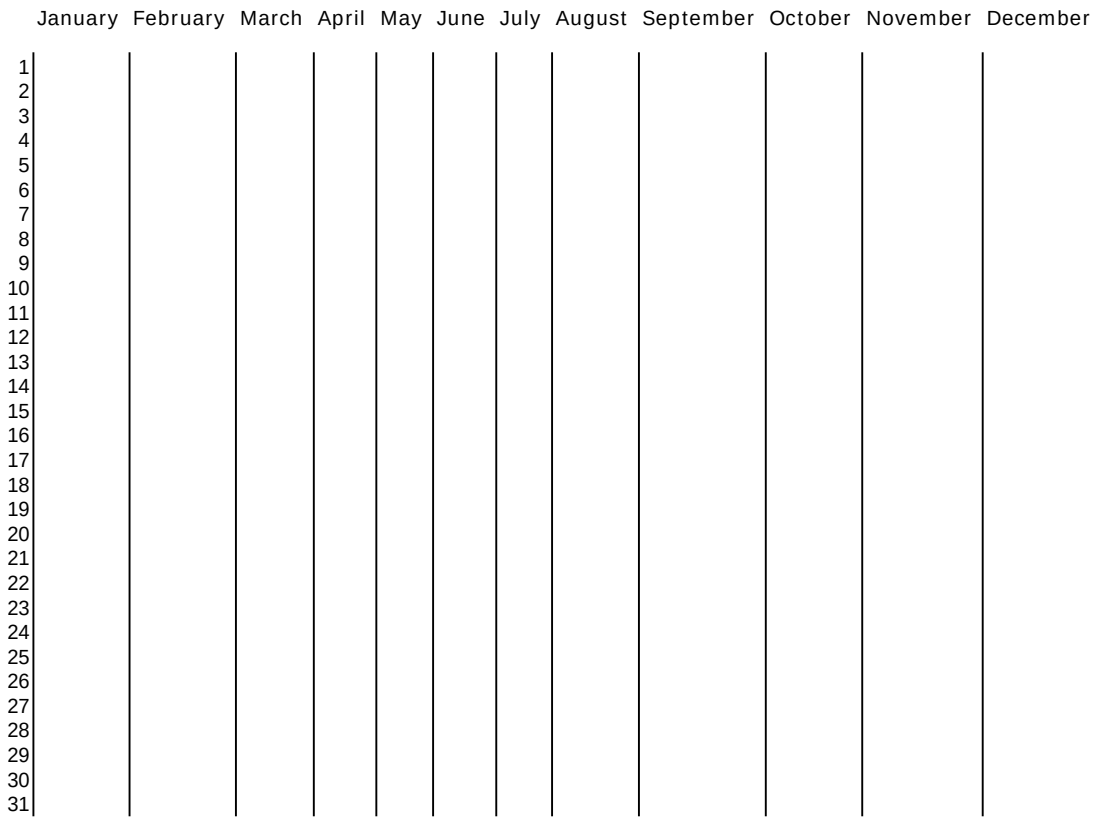
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 37 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (30)

## Flicker curtailment according to specified plan



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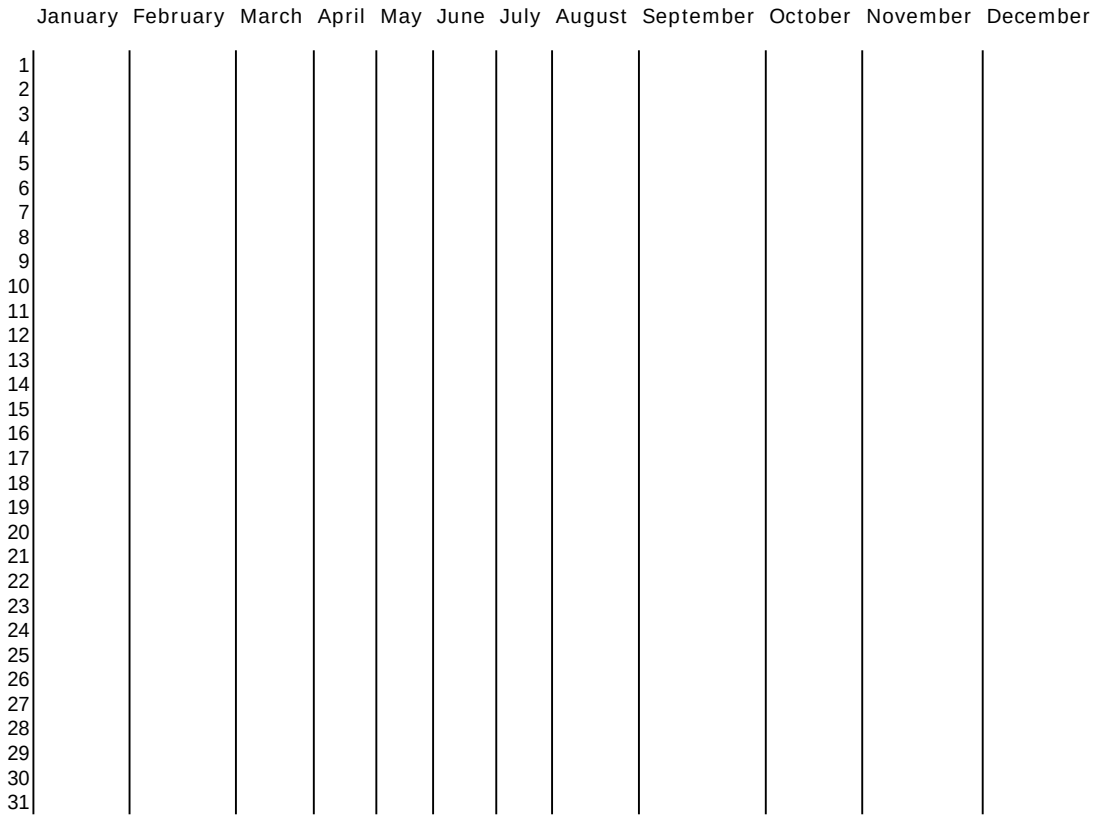
## SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 38 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (31)

### Flicker curtailment according to specified plan



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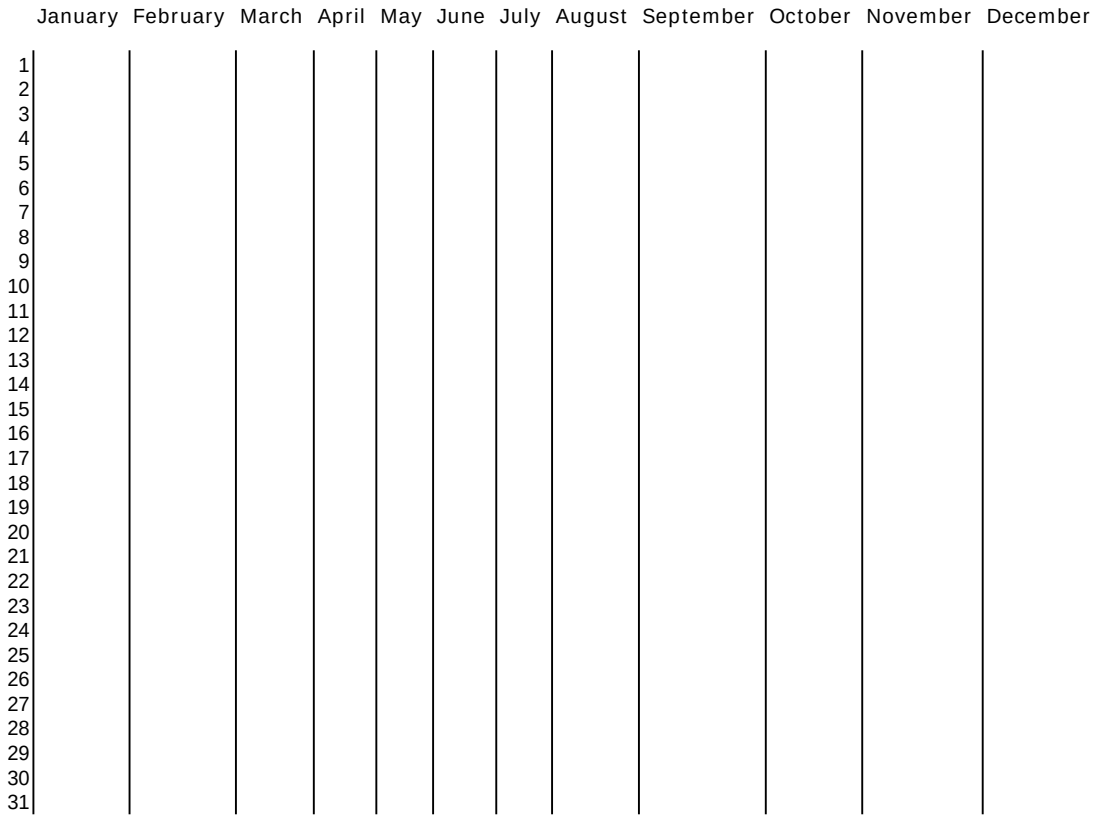
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 39 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (32)

## Flicker curtailment according to specified plan



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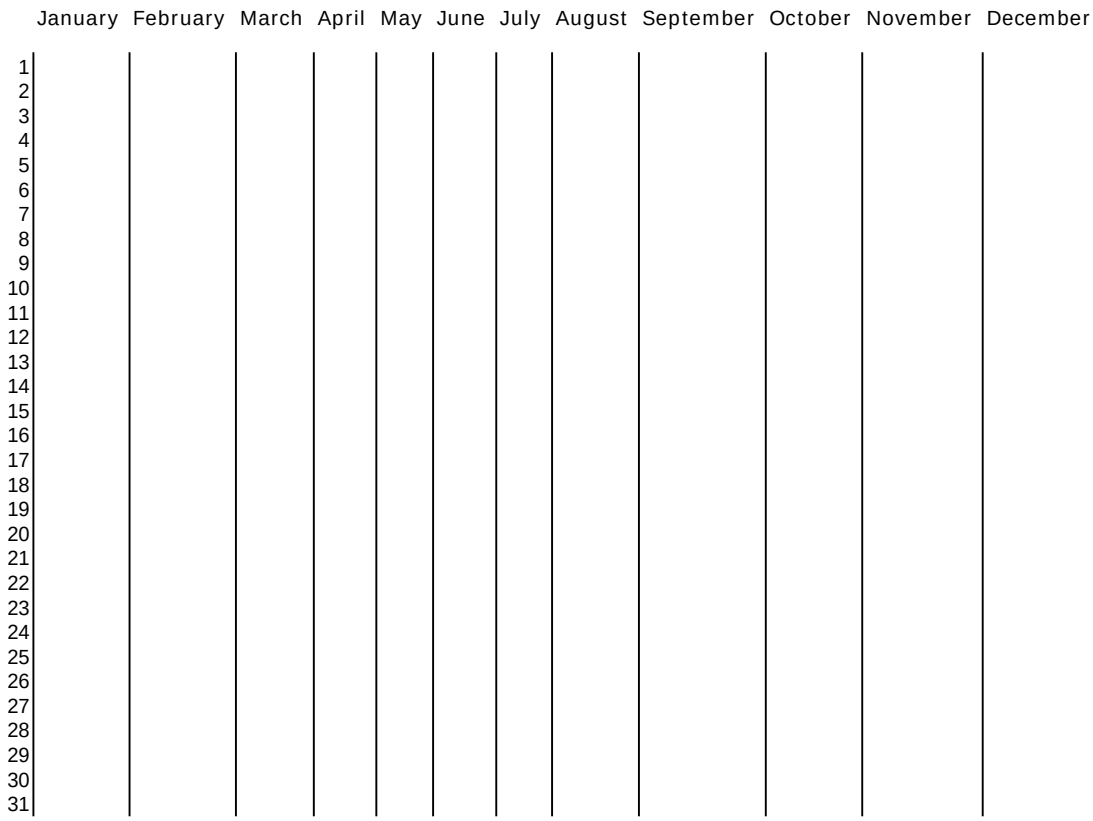
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 40 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (33)

## Flicker curtailment according to specified plan



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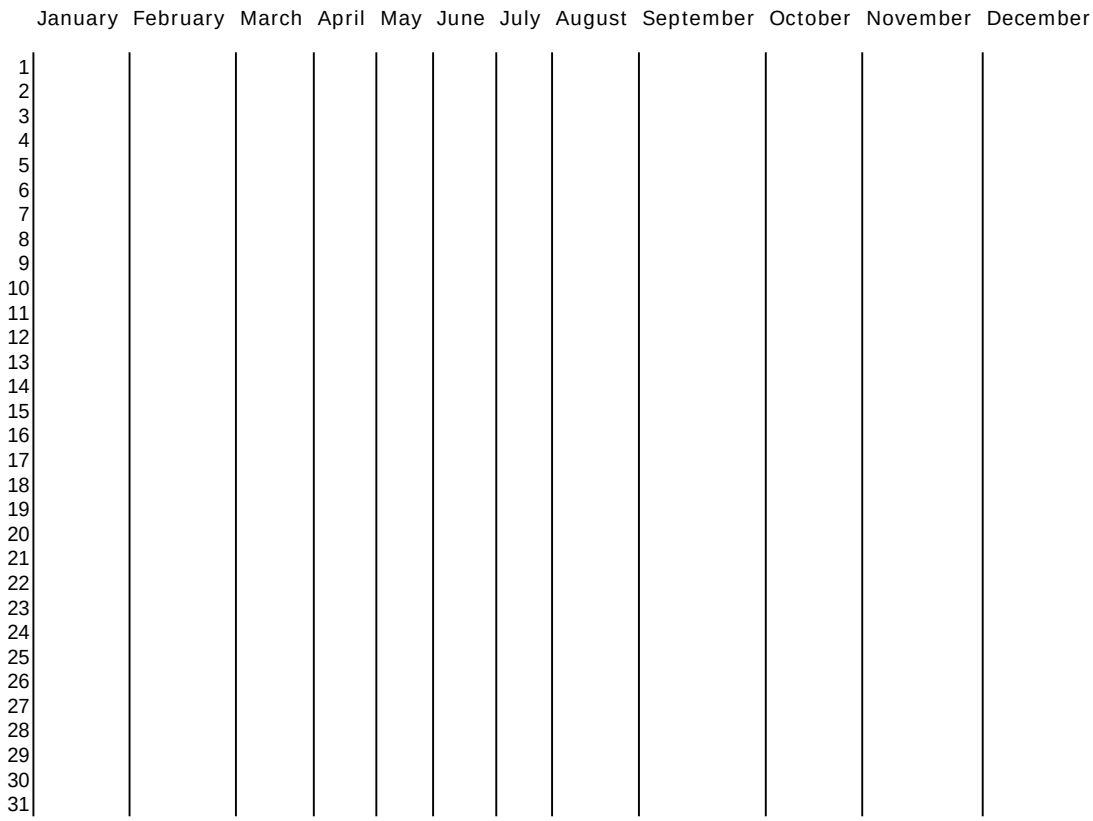
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 41 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (34)

## Flicker curtailment according to specified plan



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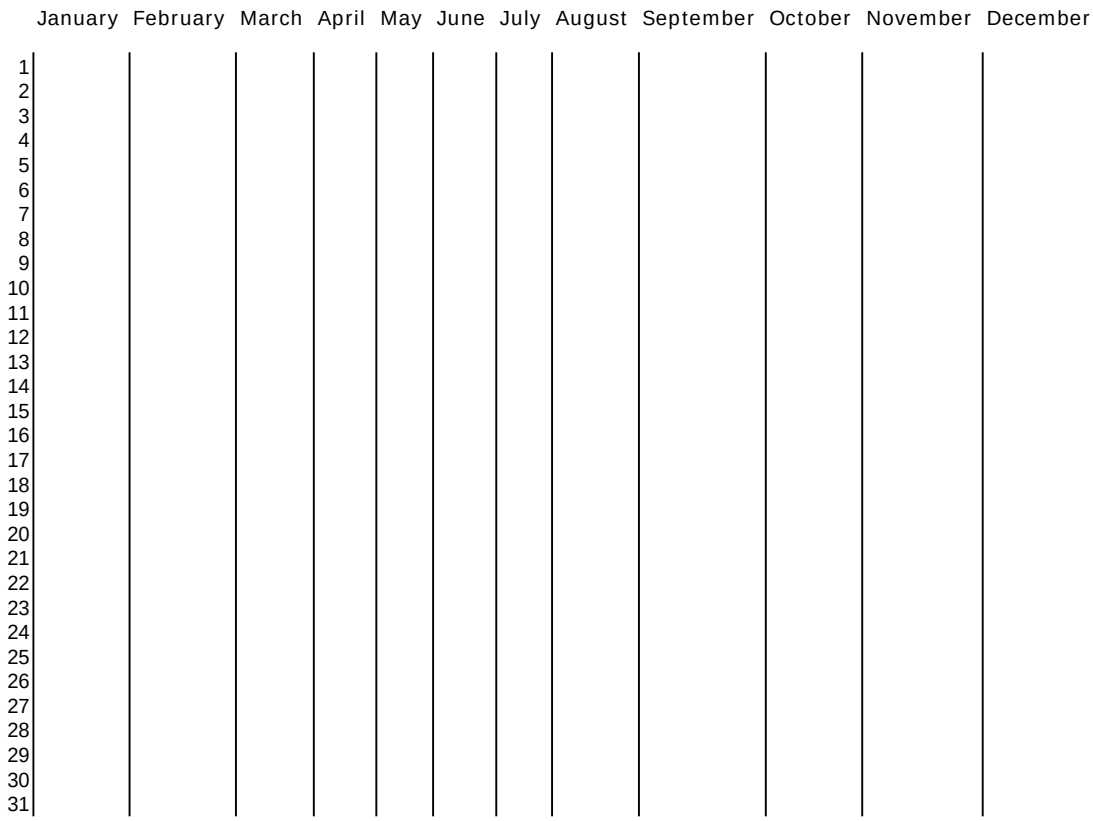
# SHADOW - Flicker curtailment calendar

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)WTG: 42 - GE WIND ENERGY 5.5-158 Thrust 700 5500 158.0 !O! hub: 159,0 m (TOT: 238,0 m) (35)

## Flicker curtailment according to specified plan



Project:
8 VE Ðilutës r.

Description:
Vëjo elektriniø (Ðilutës raj. sav. Usënø ir Juknaièiø sen.: Kavoliø, Stremeniø, Kûgeliø, Okslindþiø, Skieriø bei Menklaukiø kaimuose) statyba ir eksploatacija

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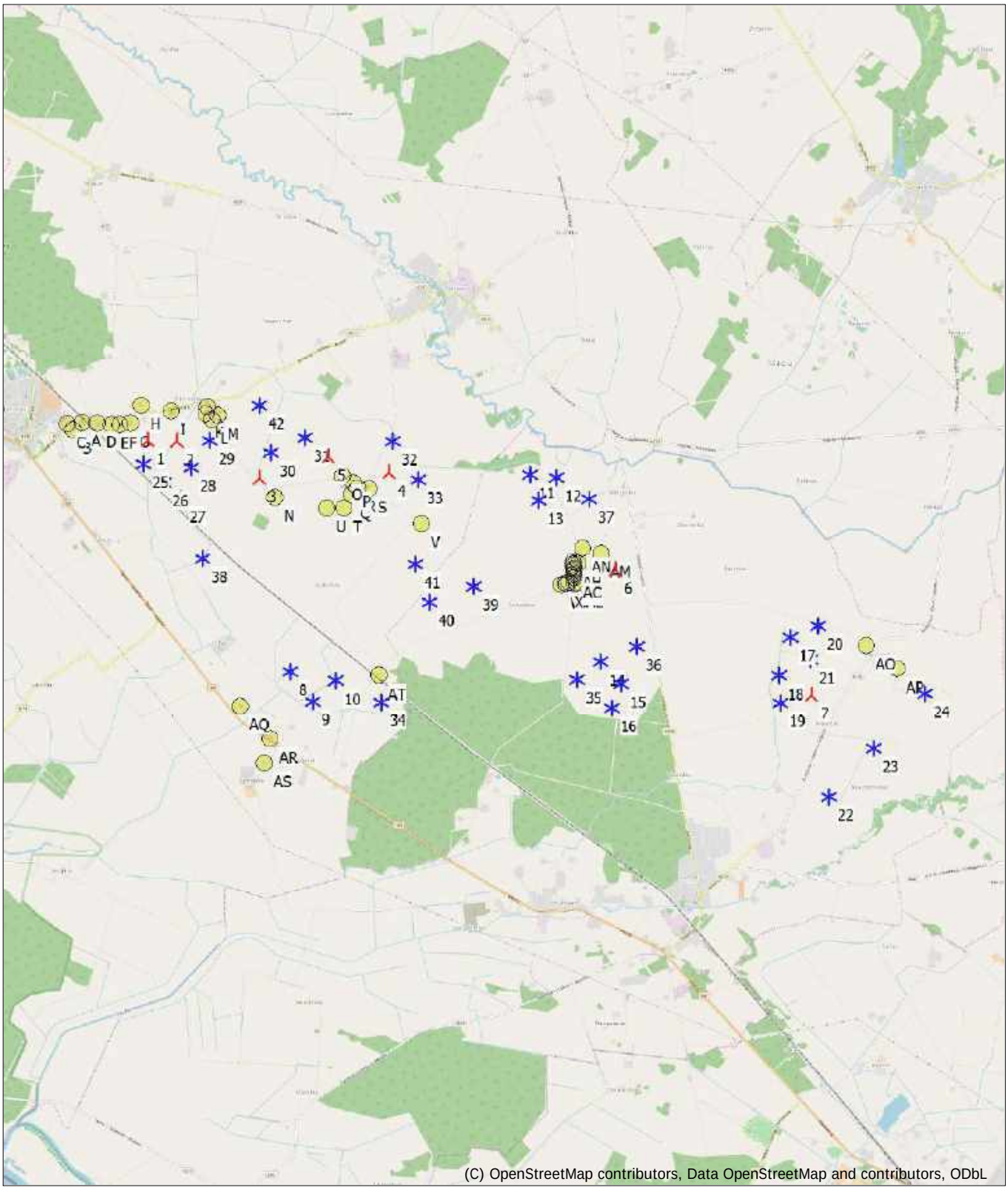
Calculated:
2021.12.03 12:45/3.5.552

## SHADOW - Map

Calculation: Suminis poveikis Enercon E138 shut down (be 6 VE)




Map: EMD OpenStreetMap , Print scale 1:75.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 352.592 North: 6.128.131

New WTG Existing WTG Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_8 VE Ðilutës r_0.wpo (1)

## 1.6 Priedėlis. Rekomenduojama sanitarinė apsaugos zona

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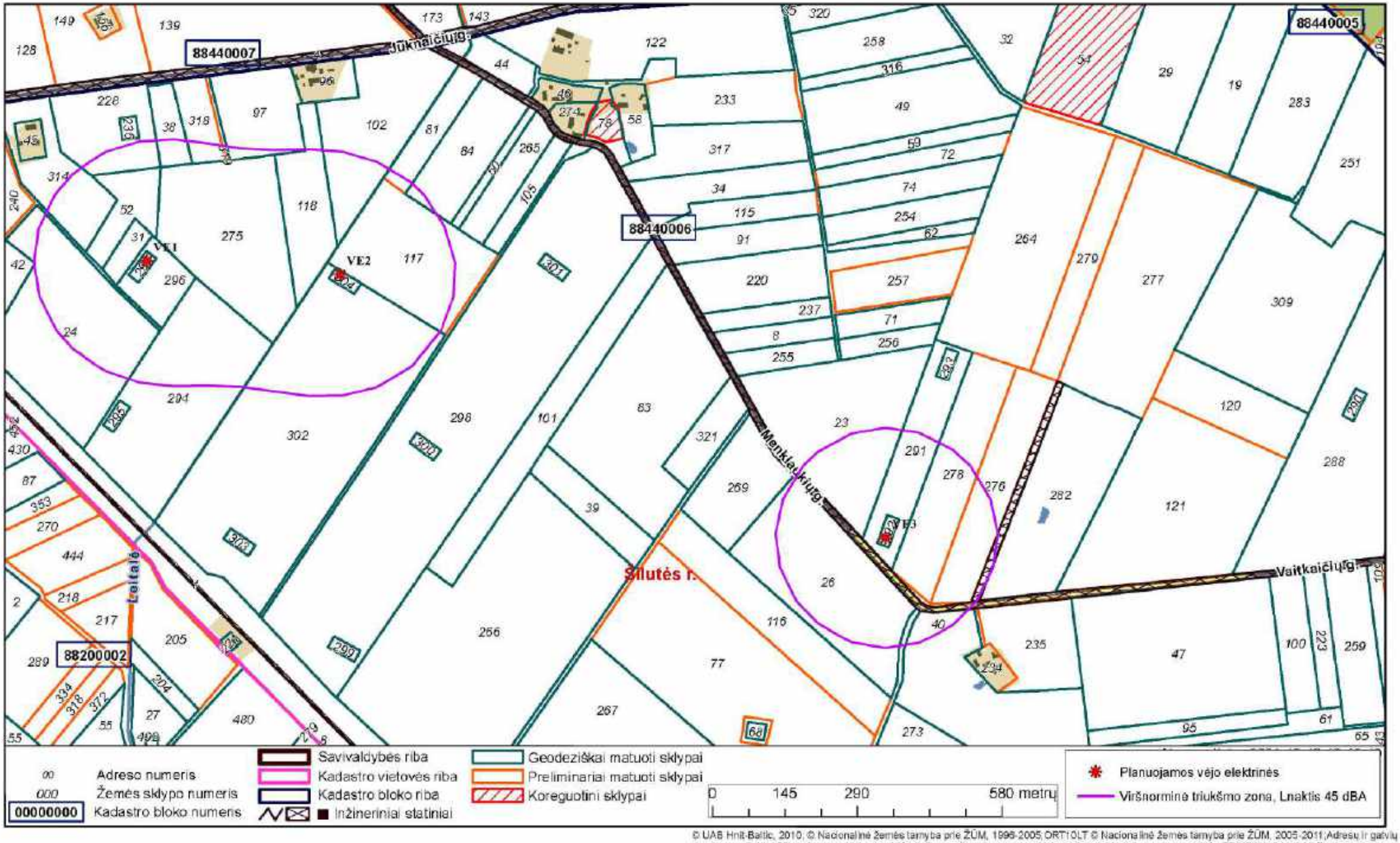
# KADASTRO ŽEMĖLAPIO IŠTRAUKA

Mastelis 1:10000

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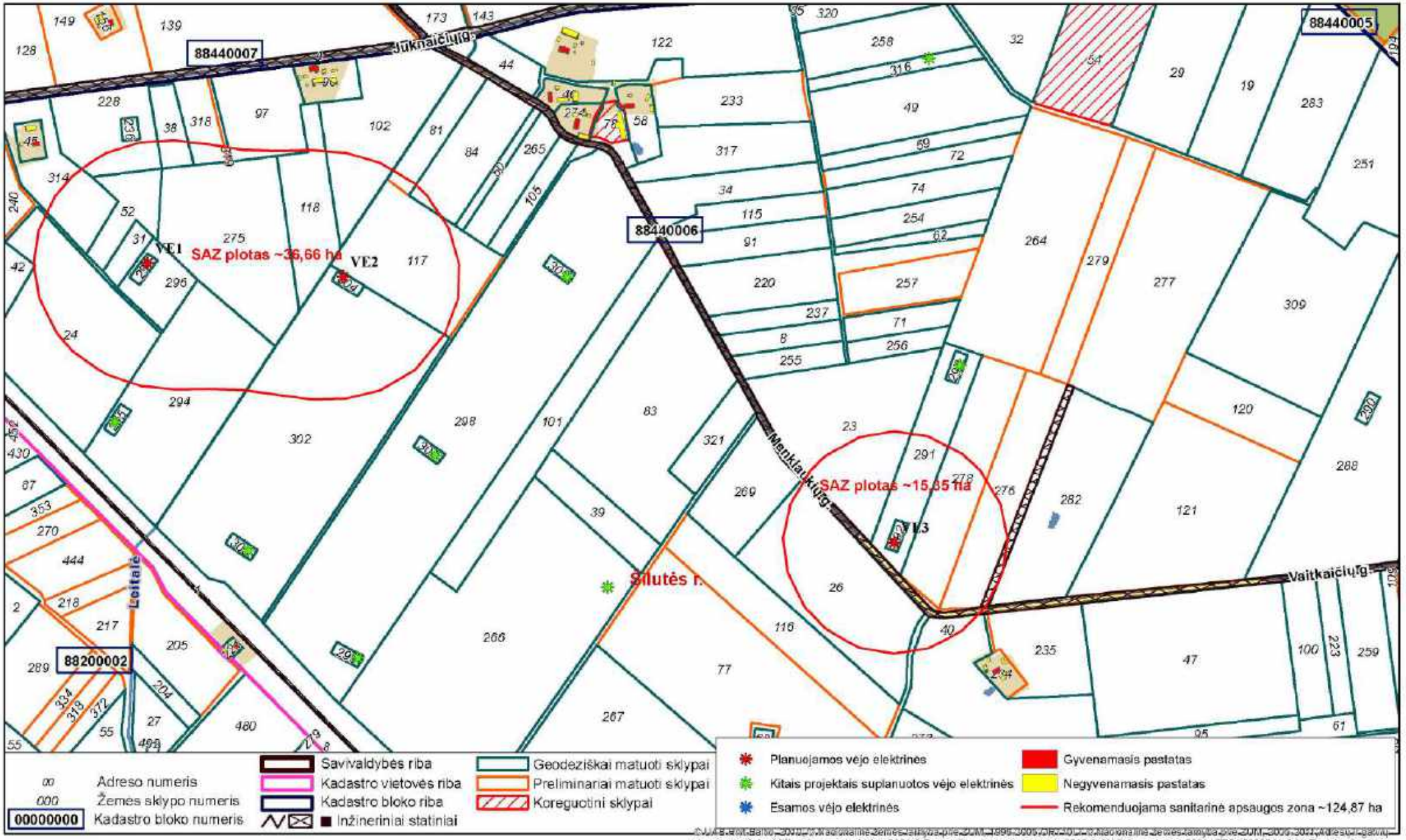


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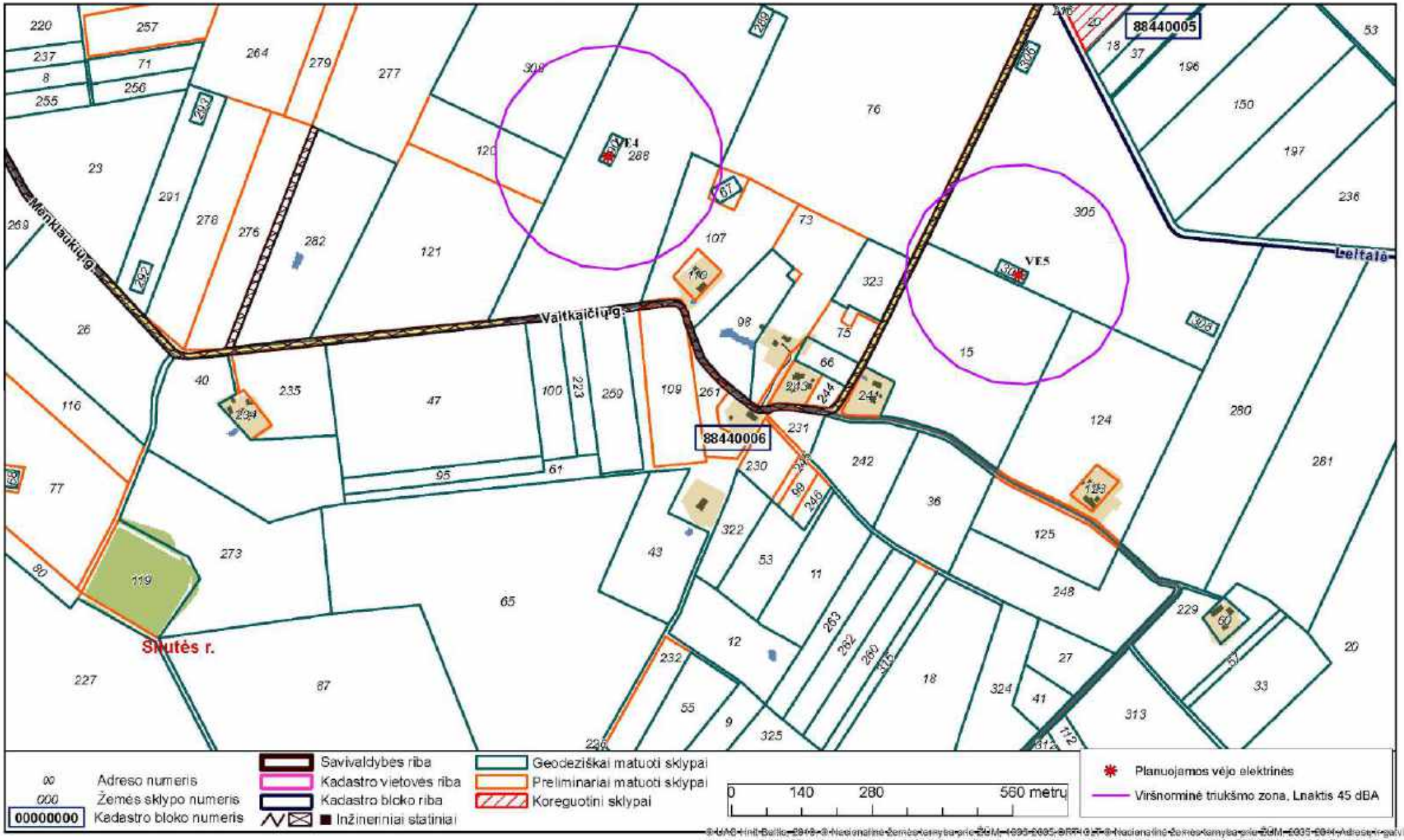


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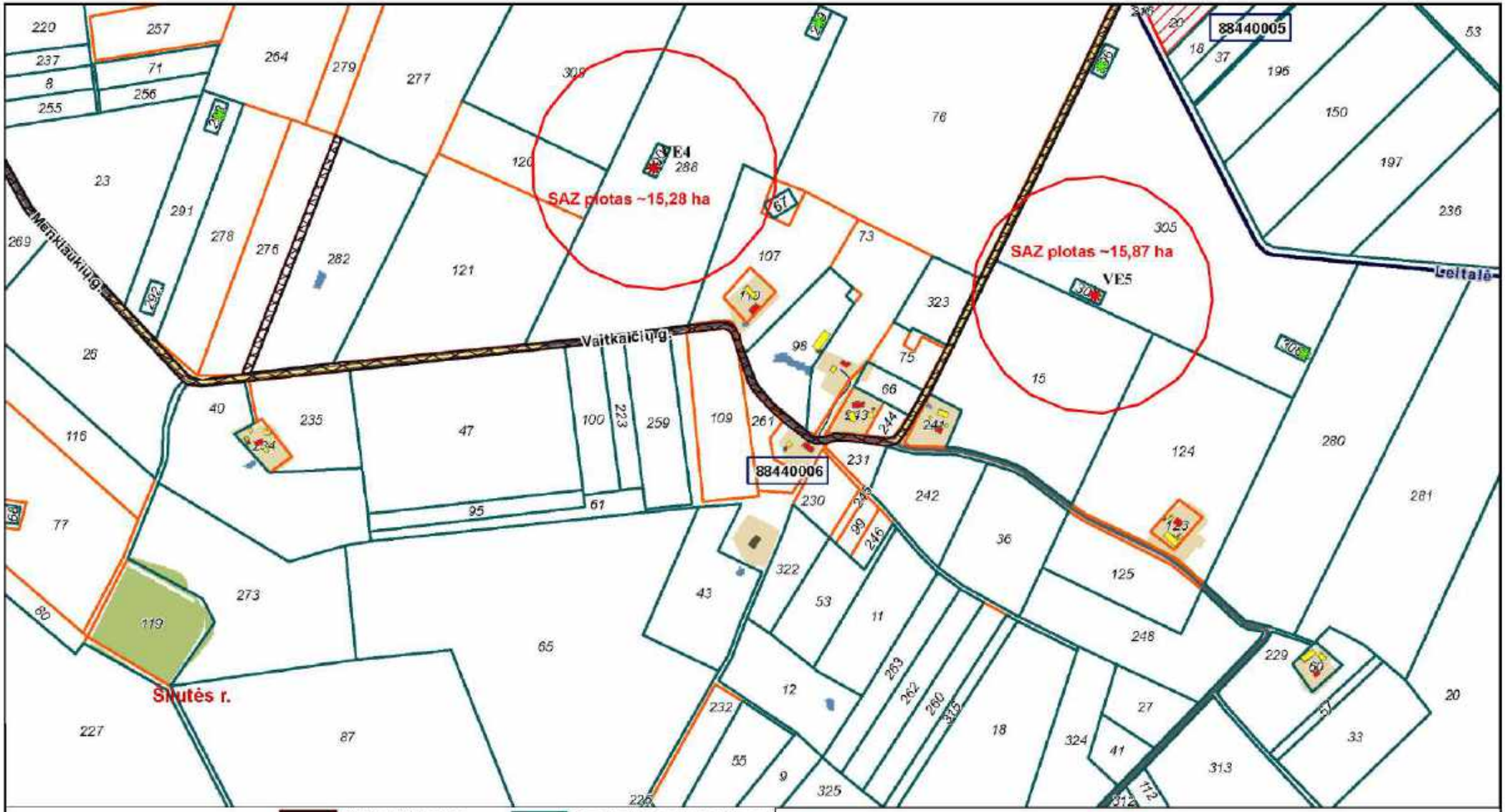


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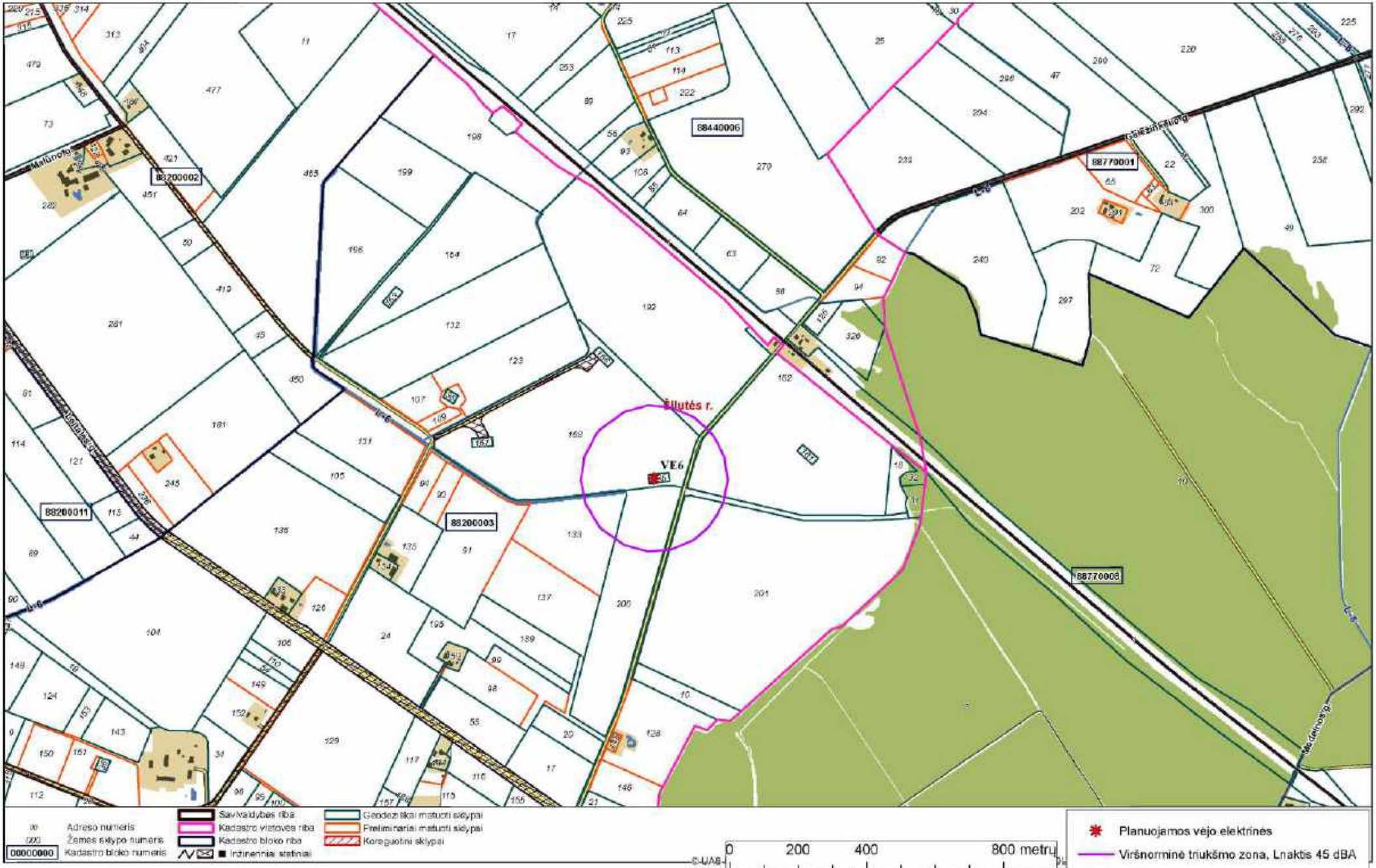
# KADASTRO ŽEMĖLAPIO IŠTRAUKA

Mastelis 1:10000

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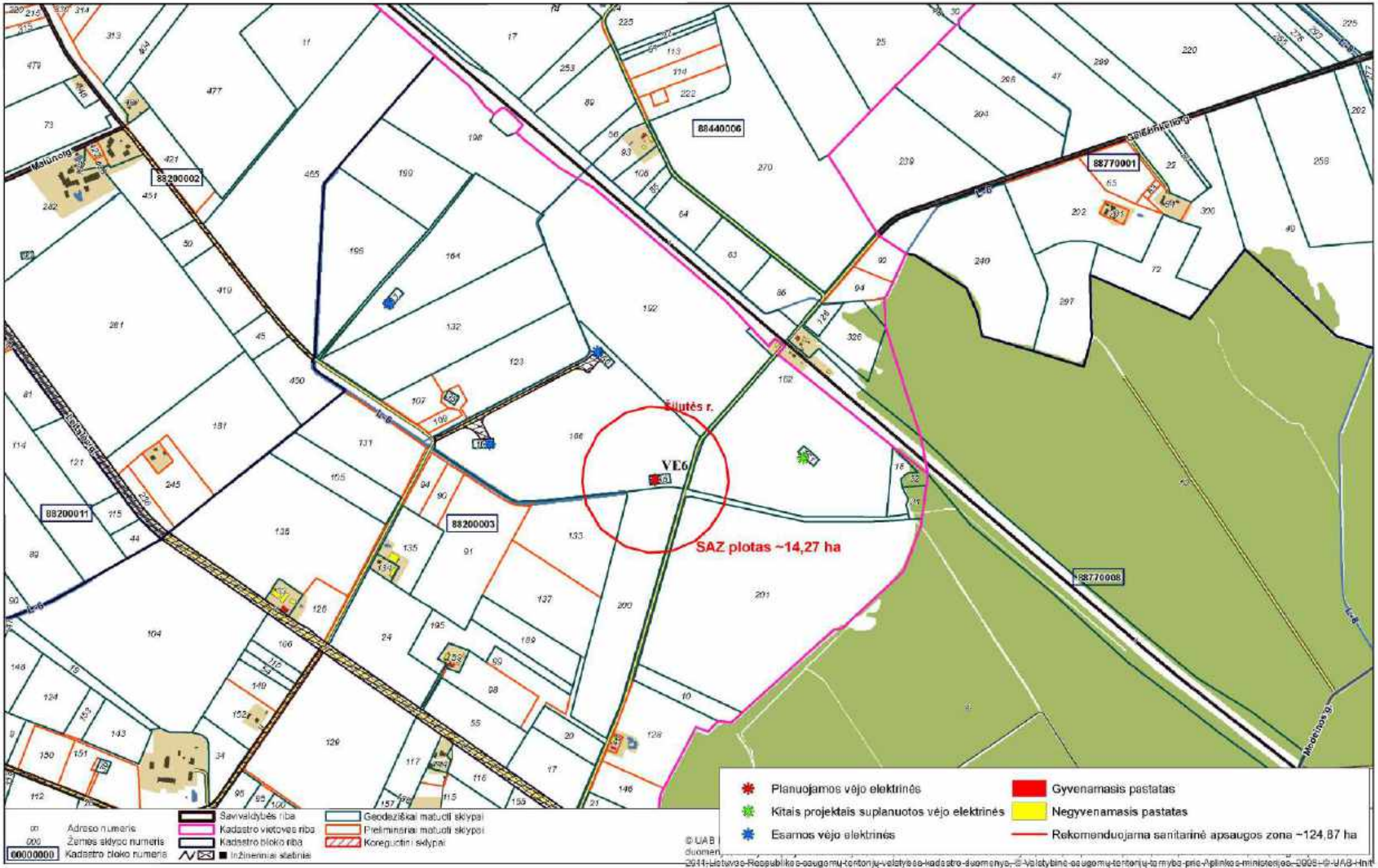


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duomen
2944-Lietuvos-Respublikos-saugomų-teritorijų-valstybės-kadastro-duomenys--ir-Valstybinė-saugomų-teritorijų-tarnyba-prie-Aplinkos-ministerijos--2005--ir-UAB-Int
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REGISTRŲ CENTRAS

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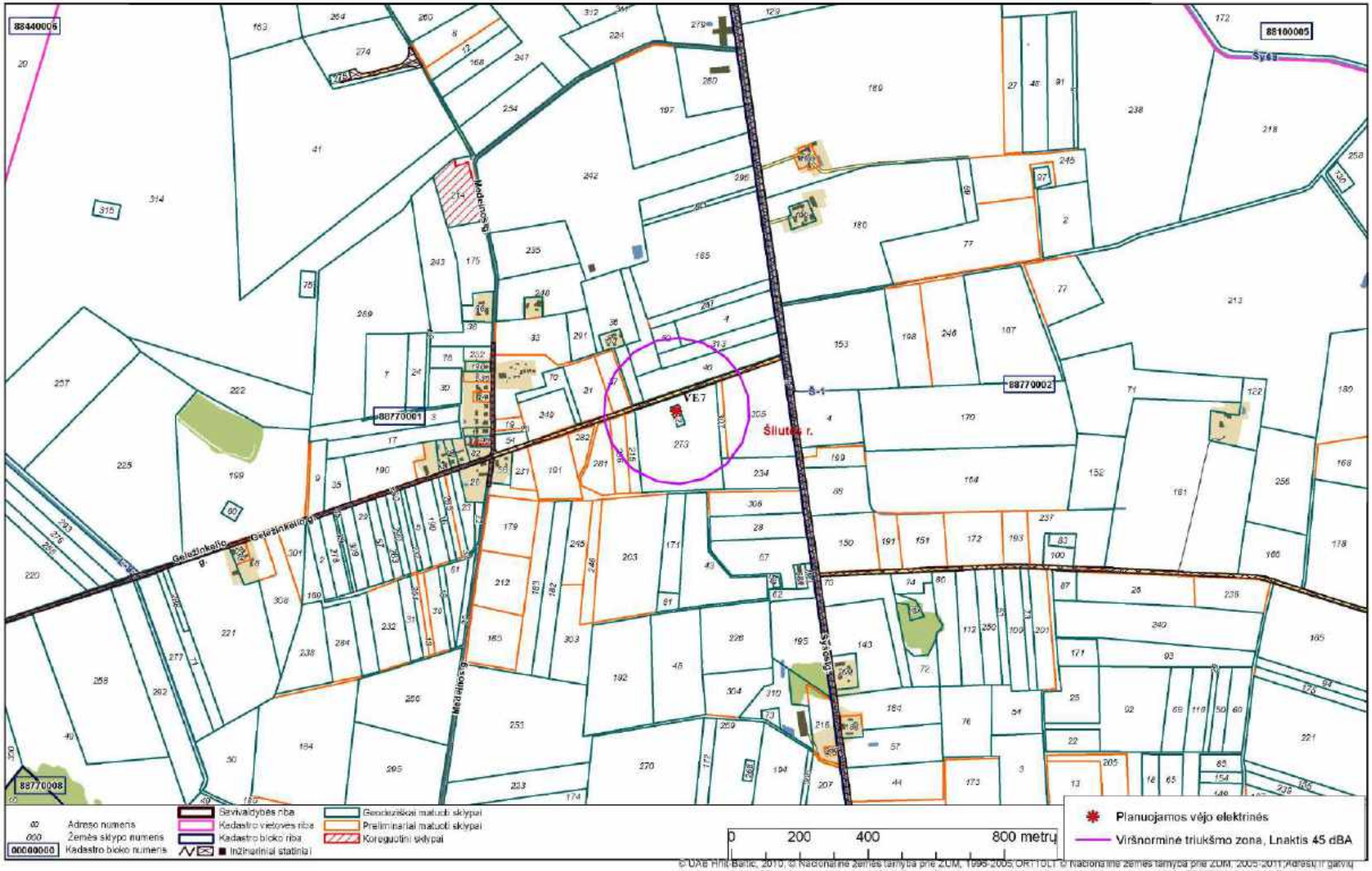


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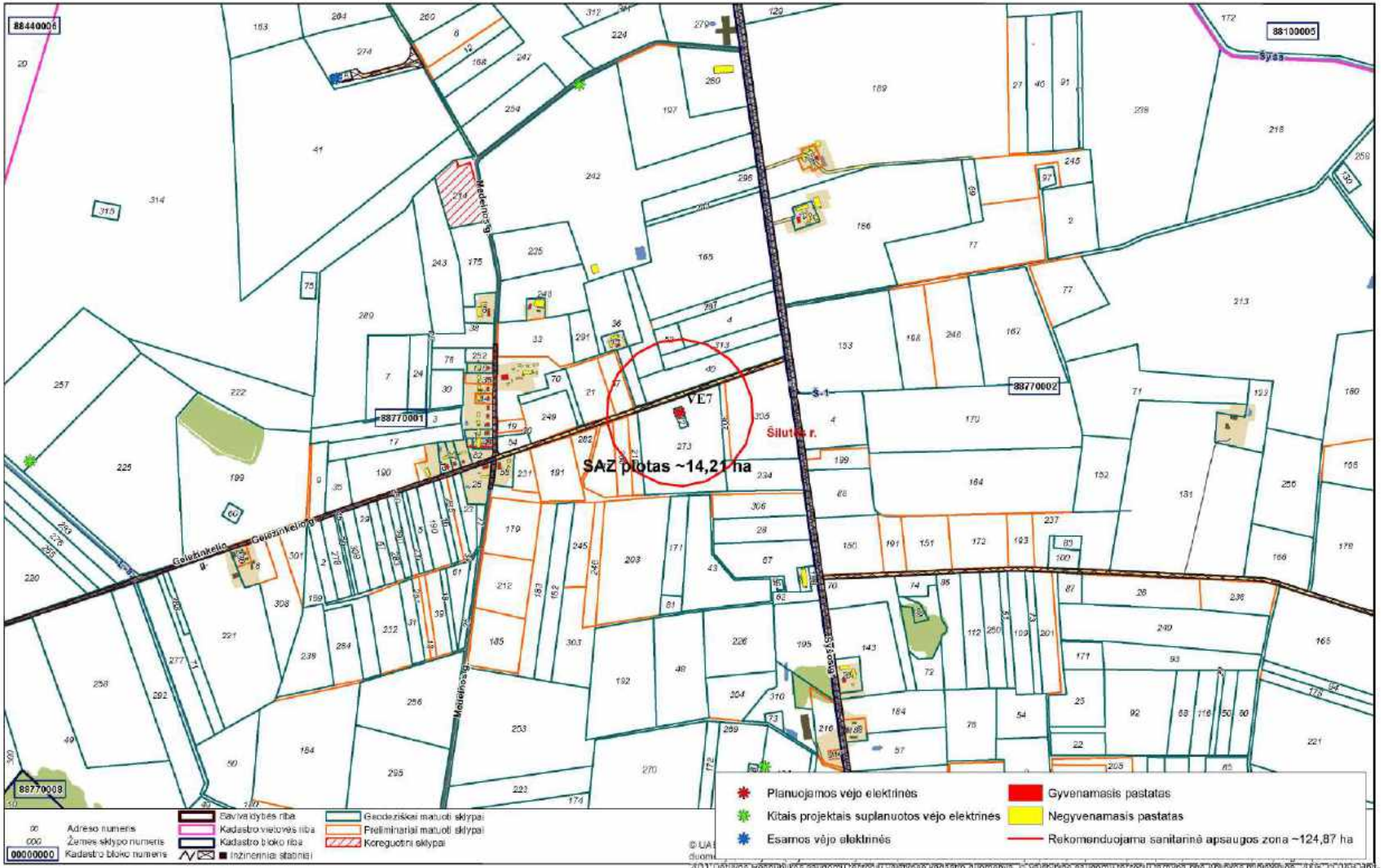


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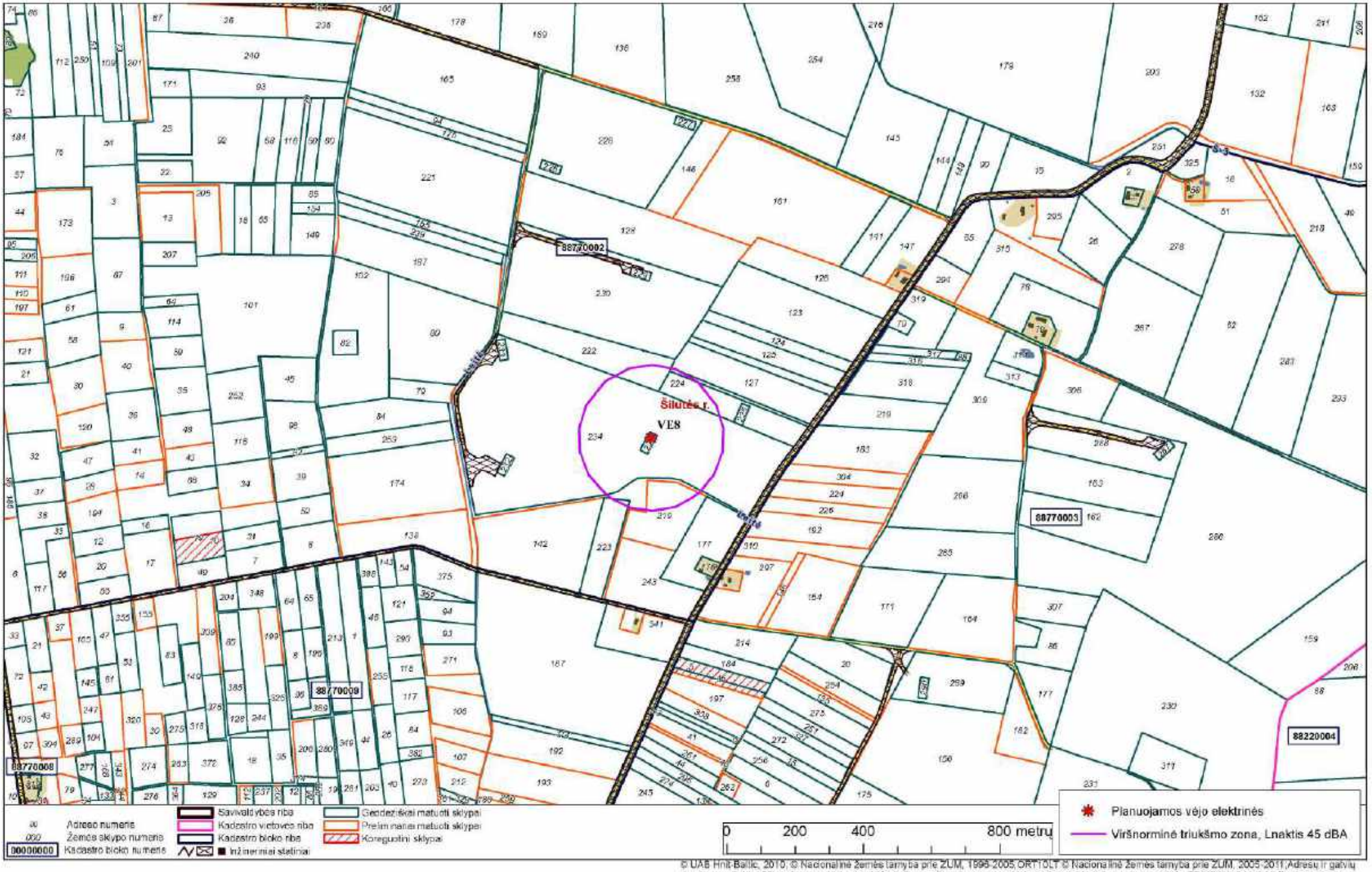


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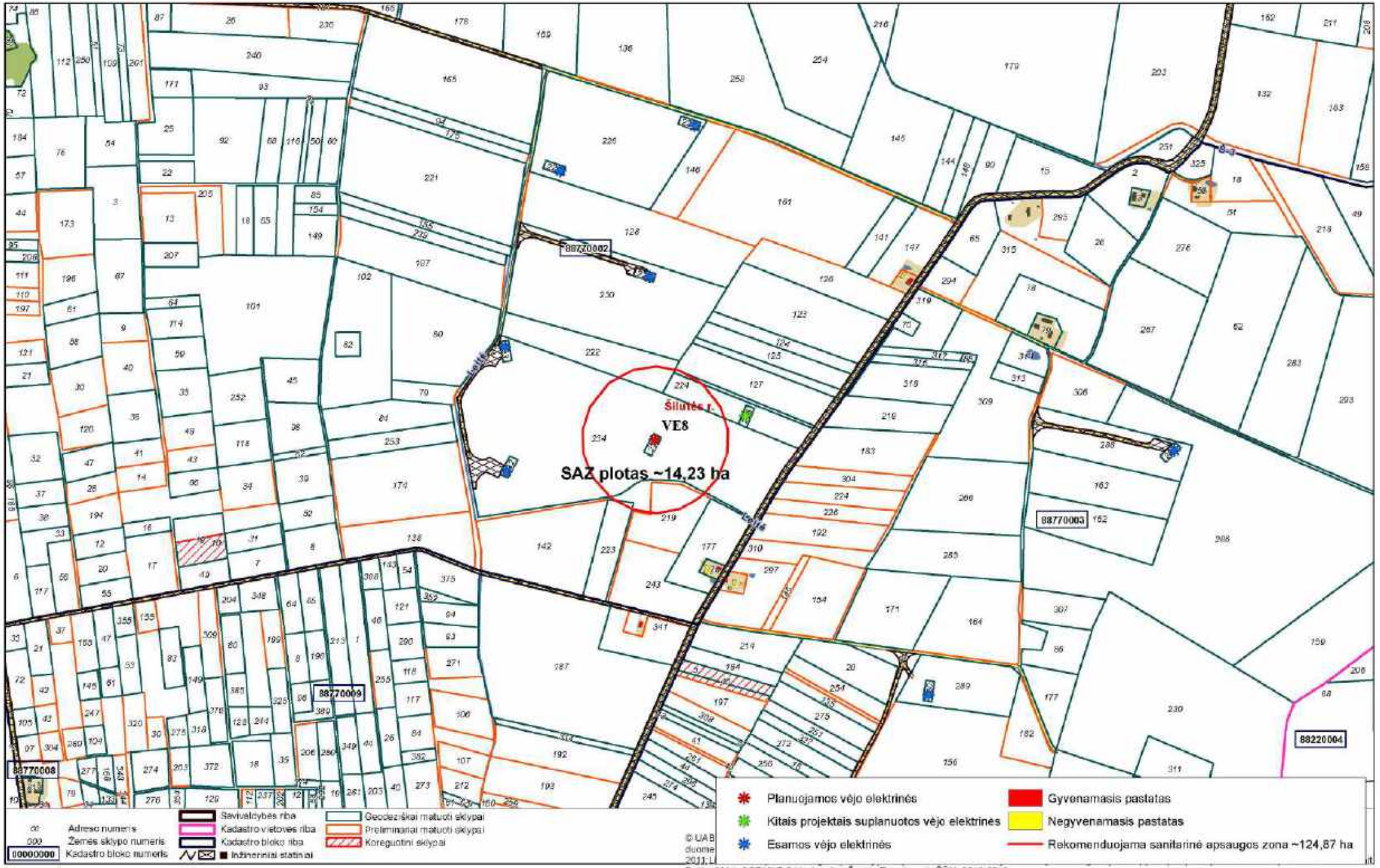


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# 5 Priedas. Kiti svarbūs dokumentai

# 5.1 Priedėlis. PAV atrankos išvada

**APLINKOS APSAUGOS AGENTŪRA**

Biudžetinė įstaiga, A. Juozapavičiaus g. 9, LT-09311 Vilnius, tel.8 70662008, el. p. aaa@aaa.am.lt, http://gamta.lt.
Duomenys kaupiami ir saugomi Juridinių asmenų registre, kodas 188784898

UAB „SV projektai“
El. p. mantasj@hidroenergija.lt

Į 2021-06-18 Nr. S-2021-58

UAB „Infraplanas“
El. p. info@infraplanas.lt

Adresatams pagal sąrašą

**ATRANKOS IŠVADA DĖL – AŠTUONIŲ VĖJO ELEKTRINIŲ (ŠILUTĖS R. SAV. USĖNŲ IR JUKNAIČIŲ SEN., KAVOLIŲ, STREMENIŲ, KŪGELIŲ, OKSLINDŽIŲ, SKIERIŲ BEI MENKLAUKIŲ KAIMUOSE) STATYBOS IR EKSPLOATACIJOS POVEIKIO APLINKAI VERTINIMO**

**2021-07- Nr. (30.2)-A4E-**

**1. Planuojamos ūkinės veiklos organizatorius (fizinio asmens vardas, pavardė; juridinio asmens pavadinimas, adresas, telefono numeris, el. pašto adresas).**

UAB „SV projektai“, Darbo g. 9, Kaunas, tel. Nr. (8-662) 27 571, mantasj@hidroenergija.lt.

**2. Poveikio aplinkai vertinimo dokumentų rengėjas (fizinio asmens vardas, pavardė; juridinio asmens pavadinimas, adresas, telefono numeris, el. pašto adresas).**

UAB „Infraplanas“, K. Donelaičio g. 55–2, Kaunas LT–44245, tel. Nr. (8 37) 40 75 48, faks. (8 37) 40 75 49, el. p. info@infraplanas.lt.

**3. Planuojamos ūkinės veiklos atrankos dėl poveikio aplinkai vertinimo atlikimo teisinis pagrindas pagal Lietuvos Respublikos planuojamos ūkinės veiklos poveikio aplinkai vertinimo įstatymo 7 straipsnio 2 dalį, nurodant šio įstatymo 2 priedo punktą (-us).**

Atranka atliekama, vadovaujantis Lietuvos Respublikos planuojamos ūkinės veiklos poveikio aplinkai vertinimo įstatymo (toliau – PAV įstatymas) 2 priedo 3.8. punkto 3.8.1 papunkčiu – kai įrengiamos 3 vėjo elektrinės, kurių bent vienos aukštis 50 m (matuojant iki aukščiausio konstrukcijų taško) ar daugiau.

**4. Planuojamos ūkinės veiklos vieta.**

Planuojamos ūkinės veiklos (toliau – PŪV) vieta – Šilutės r. sav., Usėnų ir Juknaičių sen. Kavolių, Stremenių, Kūgelių, Okslindžių, Skierių bei Menklaukių kaimuose (sklypų kadastriniai 8844/0006:297, 8844/0006:304, 8844/0006:292, 8844/0006:307, 8844/0006:290, 8820/0003:165, 8877/0001:272, 8877/0002:231). Žemės sklypų naudojimo paskirtis – kita, žemės sklypų naudojimo būdas – susisiekimo ir inžinerinių komunikacijų aptarnavimo objektų teritorijos.

Pagal Šilutės rajono savivaldybės teritorijos bendrojo plano keitimo (toliau – Bendrasis planas), patvirtinto Šilutės rajono savivaldybės tarybos 2019-03-28 sprendimu Nr. T1-1331 „Dėl Šilutės rajono savivaldybės teritorijos bendrojo plano keitimo patvirtinimo“ pagrindinio brėžinio sprendinius, PŪV vieta patenka į žemės ūkio teritorijas. Vadovaujantis Bendrojo plano sprendiniais

PŪV patenka į teritoriją, kurioje rekomenduojama nagrinėti vėjo elektrinių statybos galimybę. Pagal Bendrojo plano sprendinius viena vėjo elektrinė – Nr. 2 patenka į gamtinio karkaso teritoriją.

PŪV nuo gyvenamųjų pastatų bei jų sklypų/40 m gyvenamųjų aplinkų nutolusi nuo 246-807 m atstumu.

Artimiausia apgyvendinta teritorija - Aužkykiai, nuo analizuojamos PŪV, nutolę ~0,9 km atstumu pietryčių kryptimi ir Vaitkaičiai, nuo analizuojamos PŪV, nutolę ~0,9 km atstumu šiaurės vakarų kryptimi. Artimiausia gydymo įstaiga UAB „Puriena“, Medicinos centras, Juknaičių filialas, analizuojamos PŪV nutolusi apie 1,8 km vakarų kryptimi. Artimiausia ugdymo įstaiga Šilutės r. Juknaičių pagrindinė mokykla, nuo analizuojamos PŪV nutolusi apie 1,6 km vakarų kryptimi.

PŪV sklypuose nei jų gretimybėse nėra eksploatuojamų žemės gelmių telkinių (naudingų iškasenų, gėlo ir mineralinio vandens vandenviečių), įskaitant dirvožemio, geologinius procesus ir reiškinius (pvz., eroziją, sufoziją, karstus, nuošliaužas) bei geotopus. Artimiausias PŪV gretimybėse esantis naudingųjų iškasenų telkinys yra Juknaičių II smėlio telkinys Nr. 4585 (Klaipėdos apskr., Šilutės r. sav., Juknaičių sen.) nutolęs apie 2,7-12,2 km šiaurės vakarų kryptimi.

Vadovaujantis Nacionalinio kraštovaizdžio tvarkymo plano, patvirtinto Lietuvos Respublikos aplinkos ministro 2015-10-02 įsakymu Nr. D1-703 „Dėl nacionalinio kraštovaizdžio tvarkymo plano“ kraštovaizdžio vizualinio estetinio potencialo brėžiniu, dalis PŪV vietos patenka į V0H3-c indeksais pažymėtą kraštovaizdžio vizualinės struktūros tipą. Šio vizualinio struktūros tipo kraštovaizdyje vyrauja neraiški vertikalioji sąskaida (V0) (lyguminis kraštovaizdis su vieno lygmens videotopais). Kraštovaizdžio horizontalioji vizualinė sąskaida su vyraujančių atvirų gerai apžvelgiamų erdvių kraštovaizdžiu (H3). Kraštovaizdžio erdvinėje struktūroje raiškios tik vertikalios dominatės (c). Kita dalis PŪV patenka į V0H2-c indeksais pažymėtą kraštovaizdžio vizualinės struktūros tipą. Šio vizualinio struktūros tipo kraštovaizdyje vyrauja neraiški vertikalioji sąskaida (V0) (lyguminis kraštovaizdis su vieno lygmens videotopais). Kraštovaizdžio horizontalioji vizualinė sąskaida su vyraujančių pusiau atvirų didžiąja dalimi apžvelgiamų erdvių kraštovaizdžiu (H2). Kraštovaizdžio erdvinėje struktūroje raiškios tik vertikalios dominatės (c).

PŪV teritorija nepatenka į draustinių, rezervatų, „Natura 2000“ ar kitas saugomas teritorijas. Artimiausia saugoma „Natura 2000“ paukščių apsaugai svarbi teritorija (PAST) teritorija – Nemuno delta – nuo analizuojamos teritorijos yra nutolusi apie 4 km atstumu. Nemuno deltos regioninis parkas, nuo PŪV nutolęs apie 3,98-9,946 km vakarų – pietvakarių kryptimis.

Remiantis Lietuvos Respublikos miškų valstybės kadastro duomenimis, PŪV nuo miško nutolusi 0,45-2,8 km atstumu visomis kryptimis. Europos Bendrijos svarbos natūralios buveinės nuo PŪV nutolusios 229 m atstumu.

Saugomų rūšių informacinės sistemos (toliau – SRIS) duomenimis analizuojamoje teritorijoje stebėta 10 paukščių rūšių – baltasis gandras (Ciconia ciconia) užfiksuotas 21 kartą, dirvinis sėjikas (Pluvialis apricaria) rudasis peslys (Milvus milvus) – po 9 kartus, dirvoninis kalviukas (Anthus campestris), pievinė lingė (Circus pygargus), pilkoji starta (Miliaria calandra) ir gulbė giesmininkė (Cygnus cygnus) – po 1 kartą, eurazinis sketsakalis (Falco subbuteo) – 2 kartus, javinė lingė (Circus cyaneus) – 6 kartus, sodinė starta (Emberiza hortulana) – 4 kartus, natuzijaus šikšniukas (Pipistrellus nathusii) – 8 kartus, šiaurinis šikšnys (Eptesicus nilssoni) – 10 kartų.

Vadovaujantis Lietuvos ornitologų draugijos su partneriais (Pajūrio tyrimų ir planavimo institutu ir Lietuvos energetikos institutu) nuo 2015 m. vasario iki 2017 kovo mėn. įgyvendinto projekto „Vėjo energetikos plėtra ir biologinei įvairovei svarbios teritorijos (VENBIS)“ duomenimis, PŪV teritorija perinčių, migruojančių ir žiemojančių paukščių ir šikšnosparnių atžvilgiu patenka į laibai jautrias, vidutiniškai jautrias, mažai jautrias ar teritorijas, kuriose nepakanka duomenų jautrumui nustatyti.

Artimiausias vandens telkinys (up. Leitalė, Kad. Nr. 10012583) nuo PŪV yra nutolęs 0,04-4,9 km atstumu.

PŪV vieta į nekilnojamųjų kultūros vertybių teritorijas ir jų apsaugos zonas nepatenka. Artimiausios kultūros vertybės nuo vėjo elektrinių statybos vietų išsidėsčiusios 0,26 – 2,7 km atstumu.

**5. Trumpas planuojamos ūkinės veiklos aprašymas.**

Planuojama įrengti iki 8 vėjo elektrines (atsisakoma vienos vėjo elektrinės – Nr. 6, planuojama 7 vėjo elektrinių statyba), kurios kiekvienos galia numatoma iki 3,6 MW, sparnuotės diametras – iki 131 m, stiebo aukštis iki 134 m, aukštis matuojant iki aukščiausio konstrukcijų taško iki 199,5 m, maksimalus garso lygis 106,4 dBA.

Teritorijoje, kurioje UAB „SV projektai“ planuoja vėjo jėgainių statybą, 2 km spinduliu yra apie 17 esamų vėjo elektrinių. UAB „Šilutės vėjo parkas 3“ planuojamą vėjo elektrinių 7 vėjo elektrinių parką, tačiau į 2 km vertinimo zoną patenka tik 6 vėjo elektrinės. Į 2 km vertinimo zoną patenka visas UAB „Šilutės vėjo parkas 2“ planuojamas 13 vėjo elektrinių parkas. UAB „Sunergo“ planuoja 11 vėjo elektrinių parką, tačiau į 2 km vertinimo zoną patenka 4 vėjo elektrinės.

Vėjo jėgainių statyba apima gamyklose pagamintų konstrukcijų bei įrenginių parinktuose sklypuose sumontavimą, pamatų paruošimą ir visų reikalingų parengiamųjų darbų atlikimą. Vėjo jėgainių sklandžiai veiklai vykdyti yra sumontuotos saugumo (stabdymo sistema ir apsaugos nuo žaibavimo sistema) ir valdymo sistemos. Vėjo jėgainių statybai planuojama naudoti metalines konstrukcijas, surenkamus gelžbetoninius/polinius pamatus ir kt. įrangą, kurie bus tiekiami jau pagaminti ir statybos vietoje vyks jų montavimas. Projekto įgyvendinimo metu didelių kasybos darbų atlikti nenumatoma.

Vėjo jėgainės statybos ir eksploatacijos metu cheminės medžiagos ir preparatai (mišiniai), įskaitant ir pavojingas chemines, radioaktyvias medžiagas, nenaudojamos.

Elektros kabelio tiesimo trasos bus suderintos su suinteresuotais juridiniais ir fiziniais asmenimis. Požeminė elektros kabelio linija bus tiesiama iškasant tranšėjas ir į jas paklojant kabelius. Po keliais, geležinkeliais, ir upeliais vykdant kabelio tiesimo darbus ir siekiant išvengti, bet kokio neigiamo poveikio aplinkai darbai bus vykdomi uždaruoju būdu (naudojant pastūmimo ar kryptinio gręžimo būdą), paviršiniai kasimo darbai nebus vykdomi.

Nedideli kiekiai metalo ir mišrių statybinių atliekų gali susidaryti numatomų vėjo elektrinių įrengimo – statybos metu, pamatų statybos darbų metu. Šios atliekos bus talpinamos į specialius konteinerius ir pagal sutartis su atliekų tvarkytojais išvežamos tolimesniam tvarkymui. Visos susidariusios atliekos tvarkomos vadovaujantis atliekų tvarkymą reglamentuojančių teisės aktų nuostatomis.

Vykdant vėjo jėgainių eksploatacijos metu vanduo nenaudojamas, gamybinių nuotekų nesusidarys.

Triukšmo sklaidos modeliavimas atliktas programa WindPRO (versija 3.4). Pagal atliktus triukšmo sklaidos skaičiavimus nustatyta, kad vėjo elektrinių sukeliamas triukšmo lygis gyvenamuose pastatuose bei jų sklypų/40 m gyvenamoje aplinkoje dienos, vakaro ir nakties metu gali siekti 32,7 – 44,2 dBA.

Atliktas suminis triukšmo sklaidos modeliavimas parodė, kad vėjo elektrinių sukeliamas triukšmo lygis gyvenamoje aplinkoje dienos, vakaro ir nakties metu gali siekti 37,3 – 45,4 dBA.

Šešėliavimo artimiausioje gyvenamojoje aplinkoje įvertinimui atliktas modeliavimas programa WindPRO programa. Atliktas planuojamų vėjo elektrinių šešėliavimo sklaidos modeliavimas parodė, kad artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 02:37 val./m iki 49:17 val./m, viršys 8 val. /m šešėliavimo normą. Pritaikius šešėliavimo mažinimo priemonę artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 00:00 val./m iki 07:07 val./m.

Atliktas suminis šešėliavimo sklaidos modeliavimas parodė, kad artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 08:59 val./m iki 84:49 val./m, viršys 8 val. /m šešėliavimo normą. Pritaikius šešėliavimo mažinimo priemonę artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 04:51 val./m iki 70:24 val./m, viršys 8 val. /m šešėliavimo normą.

EML elektrinio lauko stipris, kuris kinta pagal kubinę atstumo priklausomybę, neviršys leistinos normos – 1 kV/m ir nesieks gyvenamosios ir visuomeninės paskirties pastatų patalpose reglamentuojamų verčių – 0,5 kV/m.

Analizuojamo objekto statybos ir eksploatacijos metu biologinės taršos susidarymas nenumatomas.

**6. Priemonės numatomam reikšmingam neigiamam poveikiui aplinkai išvengti arba užkirsti jam kelią ir jų įgyvendinimo grafikas.**

6.1. Statybos darbai turi būti vykdomi tik šviesiuoju paros metu.

6.2. Nukastas derlingas dirvožemio sluoksnis turi būti panaudojamas statybos darbų metu pažeistų teritorijų rekultivacijai.

6.3. Biologinės įvairovės apsaugai numatoma didinti vėjo elektrinių matomumą, pvz.: vieną vėjo turbinos mentę nudažyti juodai. Taip pat galima naudoti reflektorius, veidrodžius ar kitas šviesą atspindinčias priemones. Paukščių pavojaus garsų įrašų leidimas šalia vėjo elektrinių.

6.4. Bus parengta paukščių ir šikšnosparnių monitoringo programa, kuri bus derinama su Aplinkos apsaugos agentūra.

6.5. Vėjo elektrinė Nr. 6 galimai turėtų reikšmingą neigiamą poveikį Kavolių miške perintiems ir greta jo besimaitinantiems saugomiems paukščiams, todėl planuojamos veiklos organizatorius atsisako vėjo elektrinės Nr. 6 statybos ir toliau planuos septynių 7 vėjo elektrinių statybą.

6.6. Šešėlių mirgėjimo poveikio mažinimui artimiausioms gyvenamosioms sodyboms, numatomas šešėliavimo stabdymo mechanizmas (shadow shut-down) ir šešėliavimo mažinimo kompiuterinė programa, kuri bus integruota į vėjo jėgainės kontrolės sistemą.

6.7. Saugiam vėjo elektrinių darbui yra numatyti vibracijos jutikliai, sraigto menčių patikra, apsauga nuo didelių sūkių, aerodinaminių stabdžių sistema, mechaninė antiblokavimo sistema, sistema, sauganti nuo apledėjimo.

6.8. Po keliais, geležinkeliais, ir upeliais vykdant kabelio tiesimo darbus ir siekiant išvengti, bet kokio neigiamo poveikio aplinkai darbai bus vykdomi uždaruoju būdu (naudojant pastūmimo ar kryptinio gręžimo būdą), paviršiniai kasimo darbai nebus vykdomi.

6.9. Vykdomos veiklos metu paaiškėjus, kad daromas didesnis poveikis aplinkai už atrankos informacijoje pateiktus arba teisės aktuose nustatytus rodiklius, veiklos vykdytojas privalės nedelsiant taikyti papildomas poveikį aplinkai mažinančias priemones arba mažinti veiklos apimtis/nutraukti veiklą.

6.10. Veiklos vykdytojas visais atvejais privalės laikytis visų aktualių veiklą reglamentuojančių teisės aktų reikalavimų, keičiantis teisiniam reglamentavimui atitinkamai keisti veiklos rodiklius.

**7. Motyvai, kuriais remtasi priimant atrankos išvadą.**

7.1. Vadovaujantis PAV įstatymo 2 priedo 3.8.1 papunkčio nuostatomis, PŪV atranka dėl poveikio aplinkai vertinimo atliekama, kai įrengiamos 3 vėjo elektrinės, kurių bent vienos aukštis 50 m (matuojant iki aukščiausio konstrukcijų taško) ar daugiau. Šiuo atveju, planuojama statyti iki 7 vėjo elektrinės, kurių kiekvienos aukštis bus iki 199,5 m (matuojant iki aukščiausio konstrukcijų taško). Atsižvelgiant į gretimybėje esamas ir planuojamas vėjo elektrines, didelį PŪV mastą, lyginant su PAV įstatyme nustatytais ribiniais dydžiais, PŪV vietą galimas reikšmingas poveikis aplinkai, todėl atliekant poveikio aplinkai vertinimą būtų detaliai įvertintas PŪV galimas poveikis (taip pat ir suminis) aplinkos elementams ir visuomenės sveikatai, parinktos poveikį mažinančios priemonės.

7.2. Agentūra kreipėsi tarnybinės pagalbos į Valstybinę saugomų teritorijų tarnybą prie Aplinkos ministerijos (toliau – VSTT) dėl PŪV poveikio greta esančioms saugomoms teritorijoms. VSTT 2021-05-07 raštu Nr. (4)-V3-730 pateikė rašytinę nuomonę, kad PŪV reikia atlikti poveikio aplinkai vertinimą. Agentūra, įvertinusi VSTT pateiktą rašytinę nuomonę ir informaciją, nustatė, kad:

- informacijoje atrankai pateikti duomenys nepagrindė, kad planuojamos vėjo elektrinės nedarys neigiamo poveikio paukščiams ir šikšnosparniams. Dalis vėjo elektrinių planuojama greta UAB „Enefit wind“ (ankščiau „Šilutės vėjo projektai“) vėjo elektrinių parko. Pagal nuo 2016 metų vykdomos ūkio subjekto stebėsenos rezultatus UAB „Enefit wind“ vėjo elektirnių parkas daro reikšmingą poveikį plėšriesiems paukščiams ir šikšnosparniams. Artimiausia saugoma „Natura 2000“ paukščių apsaugai svarbi teritorija (PAST) teritorija – Nemuno delta – nuo analizuojamos teritorijos yra nutolusi apie 4 km atstumu. SRIS duomenimis analizuojamoje teritorijoje stebėta 10 paukščių rūšių – baltasis gandras (Ciconia ciconia) užfiksuotas 21 kartą, dirvinis sėjikas (Pluvialis apricaria) rudasis peslys (Milvus milvus) – po 9 kartus, dirvoninis kalviukas (Anthus campestris), pievinė lingė (Circus pygargus), pilkoji starta (Miliaria calandra) ir gulbė giesmininkė (Cygnus cygnus) – po 1 kartą, eurazinis sketsakalis (Falco subbuteo) – 2 kartus, javinė lingė (Circus cyaneus) – 6 kartus, sodinė starta (Emberiza hortulana) – 4 kartus, natuzijaus šikšniukas (Pipistrellus nathusii) – 8 kartus, šiaurinis šikšnys (Eptesicus nilssoni) – 10 kartų. Atliekant poveikio aplinkai vertinimą būtų įvertintas galimas reikšmingas PŪV poveikis (taip pat ir suminis) gyvenančioms, perinčioms ir besimaitinančioms paukščių, šikšnosparnių rūšims bei būtų nustatytas paukščių ir šikšnosparnių migracijos kelių ir sankaupų vietų, buveinių ir mitybinės bazės pokytis bei numatytos tinkamos prevencinės, poveikio mažinimo ar kompensacinės priemonės.
- informacijoje atrankai pateikti duomenys nepagrindė, kad planuojamos vėjo elektrinės nedarys neigiamo poveikio saugomų teritorijų kraštovaizdžiui. PŪV nuo Nemuno deltos regioninio parko nutolusi apie 3,98-9,946 km atstumu, kurių kiekvienos aukštis 199,5 m, todėl PŪV gali sukelti reikšmingą vizualinį poveikį apžvelgiant iš svarbių Nemuno deltos regioninio parko taškų ir (ar) maršrutų. Dėl PŪV galimas reikšmingas vizualinis poveikis kraštovaizdžiui, atliekant poveikio aplinkai vertinimą bus išsamiai įvertintas PŪV (taip pat ir suminis) poveikis kraštovaizdžiui, atliktos vizualizacijos, įvertintos alternatyvos (vietos, technologinės ir kt.) ir bus atliktas vizualinės taršos gamtiniams kraštovaizdžio kompleksams ir objektams vertinimas.

7.3. Triukšmo sklaidos modeliavimas atliktas programa WindPRO (versija 3.4). Pagal atliktus triukšmo sklaidos skaičiavimus nustatyta, kad vėjo elektrinių sukeliamas triukšmo lygis gyvenamuose pastatuose bei jų sklypų/40 m gyvenamoje aplinkoje dienos, vakaro ir nakties metu gali siekti 32,7 – 44,2 dBA. Atliktas suminis triukšmo sklaidos modeliavimas parodė, kad vėjo elektrinių sukeliamas triukšmo lygis gyvenamoje aplinkoje dienos, vakaro ir nakties metu gali siekti 37,3 – 45,4 dBA ir viršys Lietuvos higienos normoje HN 33:2011 „Triukšmo ribiniai dydžiai gyvenamuosiuose ir visuomeninės paskirties pastatuose bei jų aplinkoje“, patvirtintoje Lietuvos Respublikos sveikatos apsaugos ministro 2011 m. birželio 13 d. įsakymu Nr. V-604 „Dėl Lietuvos higienos normos HN 33:2011 „Triukšmo ribiniai dydžiai gyvenamuosiuose ir visuomeninės paskirties pastatuose bei jų aplinkoje“ patvirtinimo“, reglamentuojamą/nustatytą nakties triukšmo ribinį dydį 45 dBA.

Šešėliavimo artimiausioje gyvenamojoje aplinkoje įvertinimui atliktas modeliavimas programa WindPRO programa. Atliktas planuojamų vėjo elektrinių šešėliavimo sklaidos modeliavimas parodė, kad artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 02:37 val./m iki 49:17 val./m, viršys 8 val. /m šešėliavimo normą. Pritaikius šešėliavimo mažinimo priemonę artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 00:00 val./m iki 07:07 val./m. Atliktas suminis šešėliavimo sklaidos modeliavimas parodė, kad artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 08:59 val./m iki 84:49 val./m, viršys 8 val. /m šešėliavimo normą. Pritaikius šešėliavimo mažinimo priemonę artimiausioje gyvenamojoje aplinkoje šešėliavimas gali siekti nuo 04:51 val./m iki 70:24 val./m, viršys 8 val. /m šešėliavimo normą. Atliekant poveikio aplinkai vertinimą būtų detaliai įvertintas PŪV galimas poveikis visuomenės sveikatai, išnagrinėtas ir įvertintas galimas PŪV sanitarinės apsaugos zonos dydis, įvertintos galimos vėjo elektrinių įrengimo vietos alternatyvos, parinktos poveikį mažinančios priemonės.

7.4. Agentūra, pasibaigus pasiūlymų teikimo terminui dėl PŪV poveikio aplinkai vertinimo, pastabų ir pasiūlymų iš suinteresuotos visuomenės negavo. Poveikio aplinkai vertinimo metu visuomenė būtų visapusiškai supažindinta su PŪV, būtų suteikta galimybė suinteresuotai visuomenei dalyvauti poveikio aplinkai vertinimo procese, teikti pasiūlymus dėl PŪV, kuriuos PŪV užsakovas privalėtų argumentuotai įvertinti.

7.5. Poveikio aplinkai vertinimo metu būtų išanalizuotos alternatyvos (vietos, technologijos, techninės įrangos ir pan.), ko pasėkoje būtų galima parinkti geriausią sprendimą PŪV.

Poveikio aplinkai vertinimo subjektai: Šilutės rajono savivaldybės administracija pagal PAV įstatymo 6 straipsnio 5 dalies 5 punktą, atsakinga už PŪV poveikio aplinkai vertinimo ir šios veiklos galimo poveikio aplinkai, atsižvelgiant į patvirtintų ir galiojančių teritorijų planavimo dokumentų sprendinius bei galimybes pagal teisės aktų reikalavimus juos keisti ir į pagal įstatymus vykdomo savivaldybės aplinkos stebėsenos (monitoringo) duomenis, išvados, kad PŪV reikalinga atlikti poveikio aplinkai vertinimą nepateikė. Nacionalinio visuomenės sveikatos centro prie Sveikatos apsaugos ministerijos Klaipėdos departamentas pagal PAV įstatymo 6 straipsnio 5 dalies 1 punktą, atsakingas už PŪV veiksnių, darančių įtaką visuomenės sveikatai, galimo poveikio visuomenės sveikatai vertinimą, 2021-07-02 raštu Nr. (3-24 14.3.5 Mr)2-96369 pateikė išvadą, kad PŪV poveikio aplinkai vertinimo neatlikti. Priešgaisrinės apsaugos ir gelbėjimo departamento prie Vidaus reikalų ministerijos Klaipėdos priešgaisrinė gelbėjimo valdyba pagal PAV įstatymo 6 straipsnio 5 dalies 3 punktą, atsakinga už PŪV vykdymo metu galimų įvykių, ekstremaliųjų įvykių, ekstremaliųjų situacijų, numatomų priemonių joms išvengti ar sušvelninti ir padariniams likviduoti, išvados, kad PŪV reikalinga atlikti poveikio aplinkai vertinimą nepateikė. Kultūros paveldo departamento prie Kultūros ministerijos Klaipėdos teritorinis skyrius pagal PAV įstatymo 6 straipsnio 5 dalies 2 punktą, atsakingas už galimą PŪV poveikį nekilnojamajam kultūros paveldui, 2021-06-23 raštu Nr. (9.38-KI)2KI-672 pateikė išvadą, kad pastabų ir pasiūlymų dėl PŪV poveikio aplinkai neturi.

**8. Priimta atrankos išvada.**

Vadovaujantis PAV įstatymo 7 straipsnio 7 dalimi ir atsižvelgus į išdėstytus motyvus priimama atrankos išvada: UAB „SV projektai“ PŪV – aštuonių vėjo elektrinių (Šilutės r. sav. Usėnų ir Juknaičių sen., Kavolių, Stremenių, Kūgelių, Okslindžių, Skierių bei Menklaukių kaimuose) statybai ir eksploatacijai poveikio aplinkai vertinimas privalomas.

Atrankos išvada yra priimta pagal pateiktą atrankos informaciją, kuri yra patalpinta Agentūros tinklalapyje *www.gamta.lt* nuorodoje *Poveikio aplinkai vertinimas (PAV) > 2021 metai > 3. Atrankos dėl poveikio aplinkai vertinimo informacija 2021 m. > Klaipėdos regionas* ir yra atrankos išvados sudedamoji dalis.

**9. Nurodoma atrankos išvados apskundimo tvarka.**

Šį sprendimą Jūs turite teisę apskųsti Lietuvos administracinių ginčų komisijai (Vilniaus g. 27, 01402 Vilnius) Lietuvos Respublikos ikiteisminio administracinių ginčų nagrinėjimo tvarkos įstatymo nustatyta tvarka arba Vilniaus apygardos administraciniam teismui (Žygimantų g. 2, 01102 Vilnius) Lietuvos Respublikos administracinių bylų teisenos įstatymo nustatyta tvarka per vieną mėnesį nuo jo paskelbimo arba įteikimo dienos.

Direktoriaus pavaduotojas Rikantas Aukškalnis

Dovilė Petraškaitė, tel. (8 315) 56735, el. p. dovile.petraskaite@aaa.am.lt

**APLINKOS APSAUGOS AGENTŪROS 2021-07- RAŠTO NR. (30.2)-A4E-ADRESATŲ SĄRAŠAS**

Šilutės rajono savivaldybės administracijai
*Siunčiama per e. pristatymas sistemą*

Nacionaliniam visuomenės sveikatos centrui prie Sveikatos apsaugos ministerijos
*Siunčiama per e. pristatymas sistemą*

Priešgaisrinės apsaugos ir gelbėjimo departamento prie Vidaus reikalų ministerijos Klaipėdos priešgaisrinei gelbėjimo valdybai
El. p. klaipeda.pgv@vpgt.lt

Kultūros paveldo departamento prie Kultūros ministerijos Klaipėdos skyriui
El. p. klaipeda@kpd.lt

Valstybinei saugomų teritorijų tarnybai prie Aplinkos ministerijos
*Siunčiama per e. pristatymas sistemą*

Kopija
Aplinkos apsaugos departamentui prie Aplinkos ministerijos
*Siunčiama per e. pristatymas sistemą*

| DETALŪS METADUOMENYS | |
|---|---|
| **Dokumento sudarytojas (-ai)** | Aplinkos apsaugos agentūra, A. Juozapavičiaus g. 9, LT-09311 Vilnius |
| **Dokumento pavadinimas (antraštė)** | (Skubu) ATRANKOS IŠVADA DĖL – AŠTUONIŲ VĖJO ELEKTRINIŲ (ŠILUTĖS R. SAV. USĖNŲ IR JUKNAIČIŲ SEN., KAVOLIŲ, STREMENIŲ, KŪGELIŲ, OKSLINDŽIŲ, SKIERIŲ BEI MENKLAUKIŲ KAIMUOSE) STATYBOS IR EKSPLOATACIJOSPOVEIKIO APLINKAI VERTINIMO |
| **Dokumento registracijos data ir numeris** | 2021-07-05 Nr. (30.2)-A4E-8042 |
| **Dokumento specifikacijos identifikavimo žymuo** | ADOC-V1.0, GEDOC |
| **Parašo paskirtis** | Pasirašymas |
| **Parašą sukūrusio asmens vardas, pavardė ir pareigos** | RIKANTAS AUKŠKALNIS, Direktoriaus pavaduotojas |
| **Parašo sukūrimo data ir laikas** | 2021-07-05 14:40:48 |
| **Parašo formatas** | Parašas, pažymėtas laiko žyma |
| **Laiko žymoje nurodytas laikas** | 2021-07-05 14:41:00 |
| **Informacija apie sertifikavimo paslaugų teikėją** | ADIC CA-B |
| **Sertifikato galiojimo laikas** | 2020-12-16 - 2023-12-16 |
| **Parašo paskirtis** | Registravimas |
| **Parašą sukūrusio asmens vardas, pavardė ir pareigos** | Danguolė Petravičienė, Vyriausioji specialistė |
| **Parašo sukūrimo data ir laikas** | 2021-07-05 14:47:51 |
| **Parašo formatas** | Trumpalaikis skaitmeninis parašas, kuriame taip pat saugoma sertifikato informacija |
| **Laiko žymoje nurodytas laikas** | |
| **Informacija apie sertifikavimo paslaugų teikėją** | RCSC IssuingCA |
| **Sertifikato galiojimo laikas** | 2021-01-07 - 2023-01-07 |
| **Pagrindinio dokumento priedų skaičius** | 0 |
| **Pagrindinio dokumento pridedamų dokumentų skaičius** | 0 |
| **Programinės įrangos, kuria naudojantis sudarytas elektroninis dokumentas, pavadinimas** | Elektroninė dokumentų valdymo sistema VDVIS, versija v. 3.04.02 |
| **El. dokumento įvykius aprašantys metaduomenys** | |
| **Informacija apie elektroninio dokumento ir elektroninio (-ių) parašo (-ų) tikrinimą (tikrinimo data)** | El. dokumentas atitinka specifikacijos keliamus reikalavimus. Visi dokumente esantys elektroniniai parašai galioja. Tikrinimo data: 2021-07-05 14:49:56 |
| **Elektroninio dokumento nuorašo atspausdinimo data ir ją atspausdinęs darbuotojas** | 2021-07-05 atspausdino Danguolė Petravičienė |
| **Paieškos nuoroda** | |

# 5.3 Priedėlis. SRIS išrašas

Valstybinė saugomų teritorijų tarnyba prie Aplinkos Ministerijos
Antakalnio g.25, Vilnius, LT-10312
tel. +370 5 272 3284, faks. +370 5 272 2572
el. paštas: vstt@vstt.lt

# IŠRAŠAS

## IŠ SAUGOMŲ RŪŠIŲ INFORMACINĖS SISTEMOS

Nr. SRIS-2021-14867198

Išrašo suformavimo data: 2021-03-02 15:49:20

| | |
|---|---|
| **Prašymo numeris** | SRIS-2021-14867198 |
| **Prašymo data** | 2021-03-01 |
| **Išrašo gavimo tikslas** | Aštuonių vėjo elektrinių (Šilutės raj. sav. Usėnų ir Juknaičių sen.: Kavolių, Stremenių, Kūgelių, Okslindžių, Skierių bei Menklaukių kaimuose) statybos ir eksploatacijos atrankos dėl PAV rengimas |

**Prašyta teritorija:** Laisvai pažymėta teritorija

**Prašytos rūšys:** Visos rūšys

**Išrašą suformavo:** *Saugomų rūšių informacinė sistema*

**Išraše pateikiama situacija iki:** *2021-03-01*

DĖMESIO! Išraše esančius duomenis, kuriuose yra tikslios saugomų gyvūnų, augalų ir gyvūnų rūšių radaviečių ar augaviečių koordinatės, galima naudoti tik nurodytais tikslais, neatskleisti jų kitiems asmenims, jei tai galėtų sukelti grėsmę saugomų rūšių išlikimui.

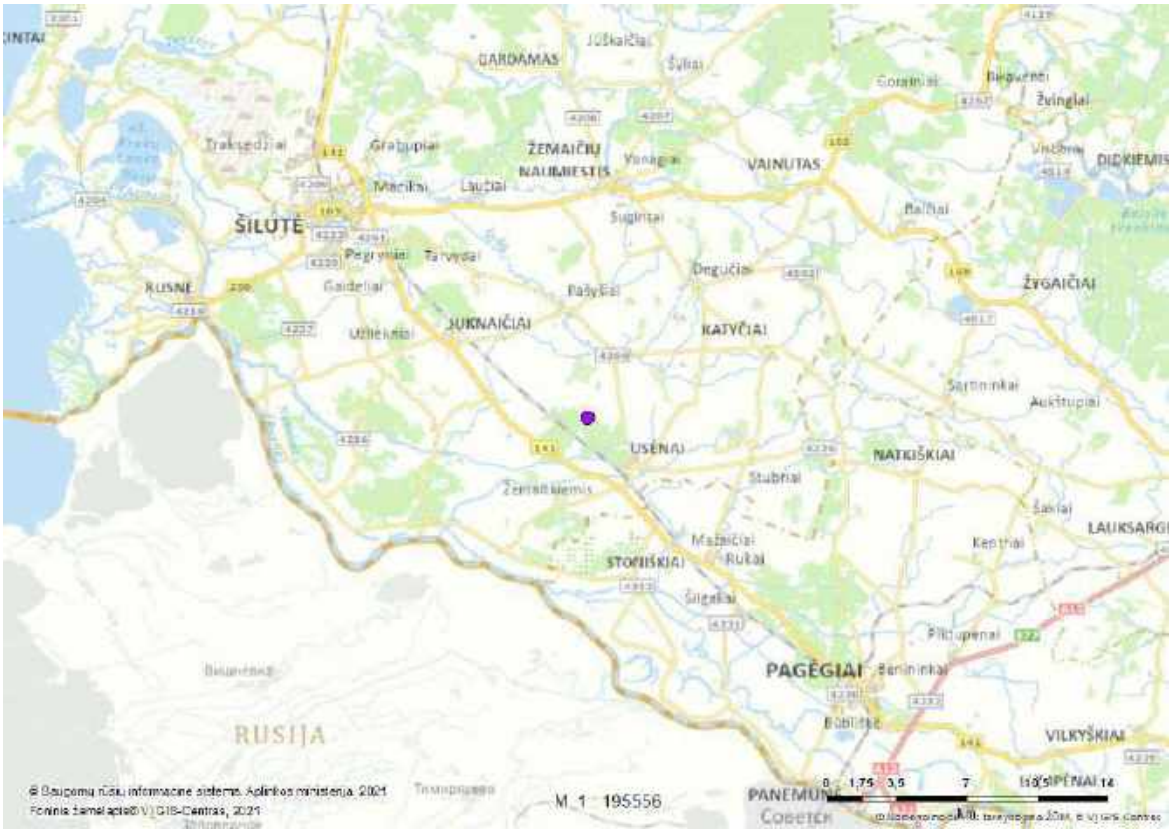
**Kituose puslapiuose pateikiami detalūs prašytoje teritorijoje aptinkamų saugomų rūšių radaviečių ar augaviečių bei jų stebėjimų duomenys:**

# 1. AUG-DACFUC028556 (Aukštoji gegūnė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | AUG-DACFUC028556 |
| **Rūšis (lietuviškas pavadinimas)** | Aukštoji gegūnė |
| **Rūšis (lotyniškas pavadinimas)** | Dactylorhiza fuchsii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-08-22 | Pirmas stebėjimas | vaisius duodantis augalas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

Taškas [352975,00 6126879,00]

# 2. AUG-DACFUC014202 (Aukštoji gegūnė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | AUG-DACFUC014202 |
| **Rūšis (lietuviškas pavadinimas)** | Aukštoji gegūnė |
| **Rūšis (lotyniškas pavadinimas)** | Dactylorhiza fuchsii |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-08-23 | Pirmas stebėjimas | daigas/vegetuojantis augalas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

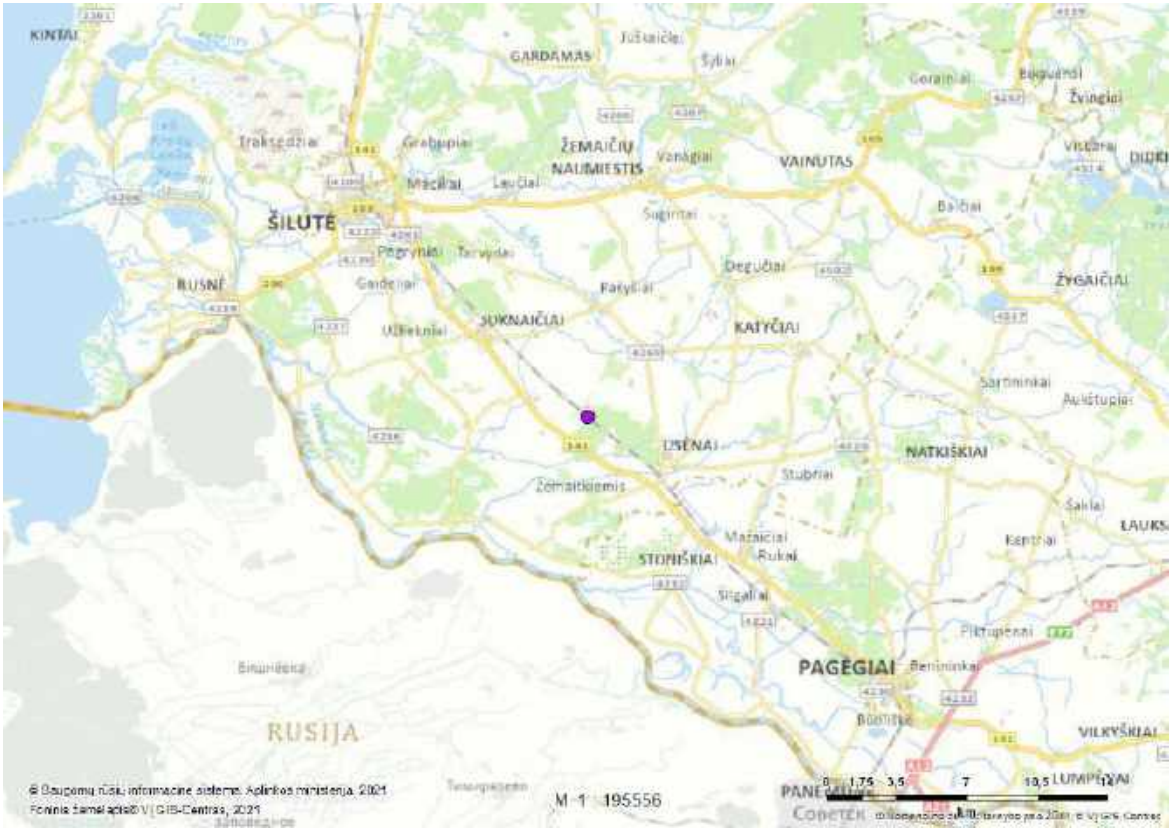
Poligonas [353042,06 6126850,00, 353035,75 6126866,24, 353027,29 6126882,64, 353014,59 6126900,10, 353001,06 6126912,00, 352930,06 6126871,01, 352967,06 6126816,00, 352984,43 6126827,61, 352989,19 6126836,60, 352998,18 6126841,89, 353007,71 6126844,01, 353018,82 6126843,48, 353042,06 6126850,00]

# 3. AUG-DACFUC011839 (Aukštoji gegūnė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | AUG-DACFUC011839 |
| **Rūšis (lietuviškas pavadinimas)** | Aukštoji gegūnė |
| **Rūšis (lotyniškas pavadinimas)** | Dactylorhiza fuchsii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-02 | Pirmas stebėjimas | daigas/vegetuojantis augalas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

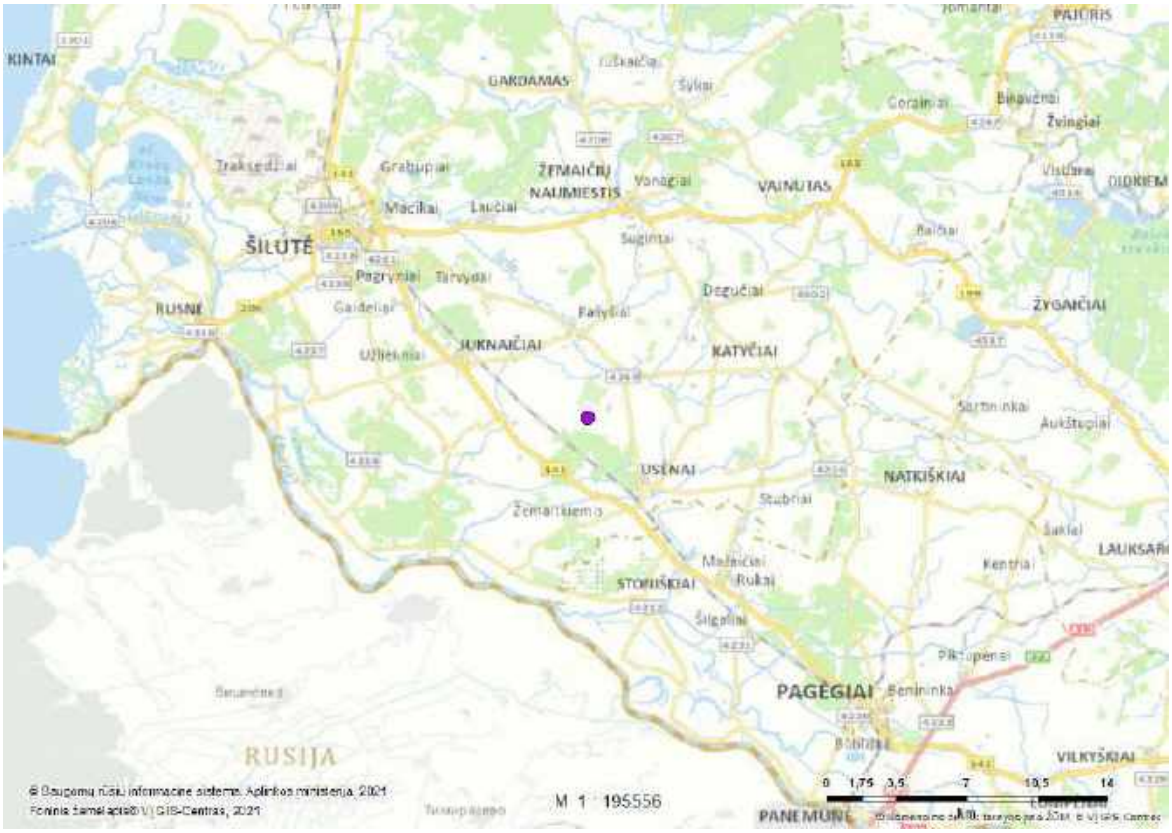
Taškas [351346,00 6126783,00]

# 4. RAD-CICCIC050903 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC050903 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

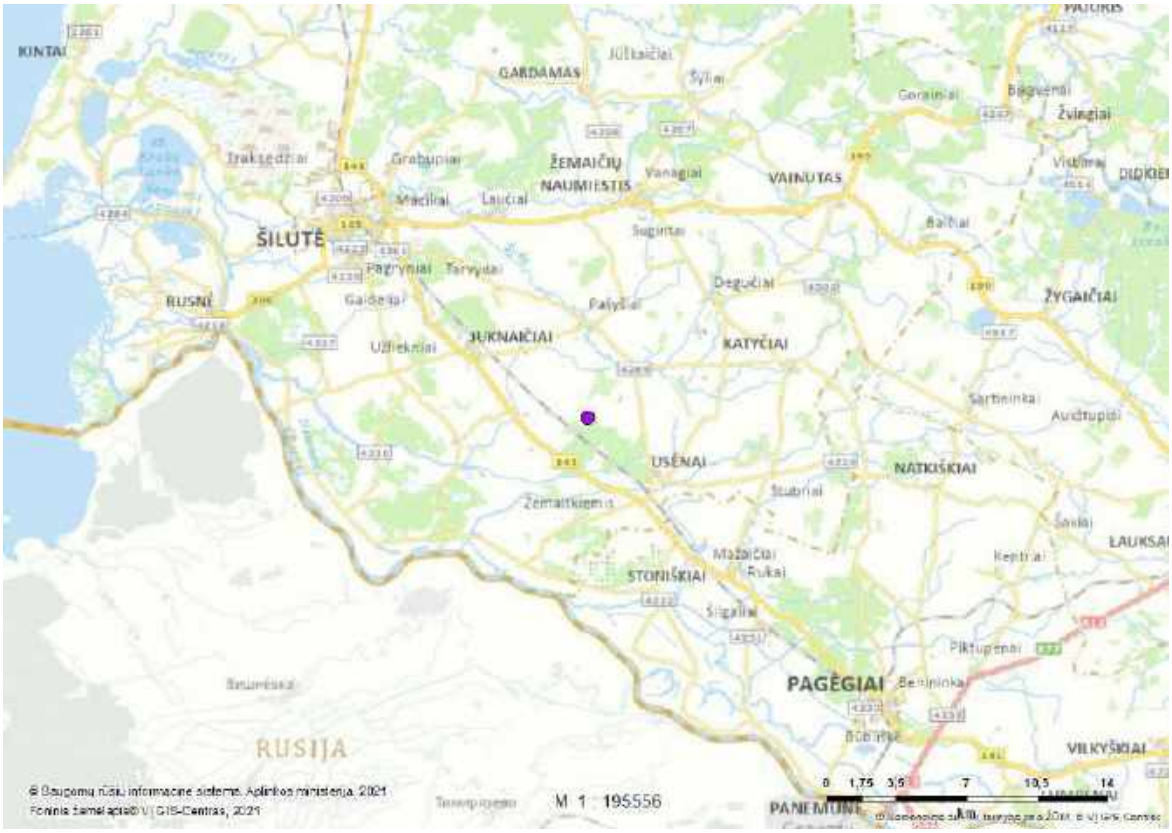
Taškas [352449,00 6127943,00]

# 5. RAD-CICCIC063864 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063864 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

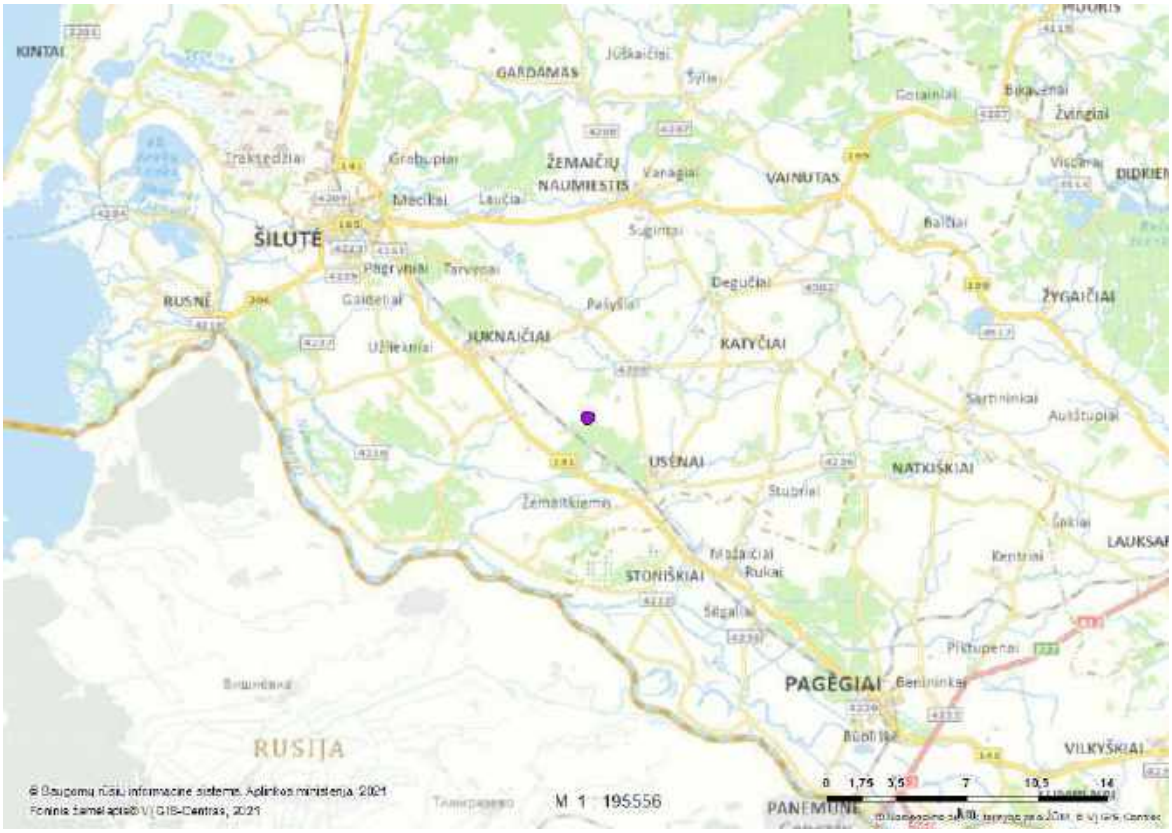
Taškas [351910,00 6127556,00]

# 6. RAD-CICCIC050904 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC050904 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

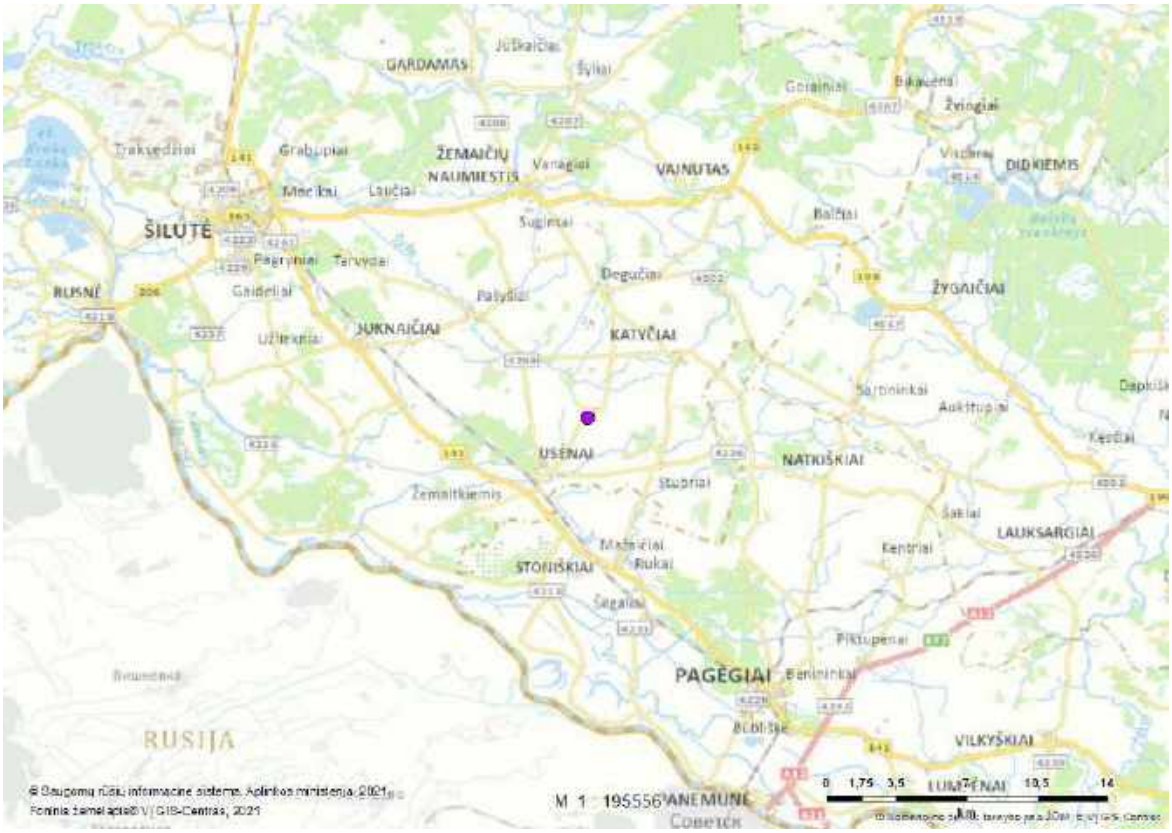
Taškas [352031,00 6127552,00]

# 7. RAD-CICCIC063915 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063915 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

Taškas [357519,00 6127127,00]

# 8. RAD-CICCIC063862 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063862 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

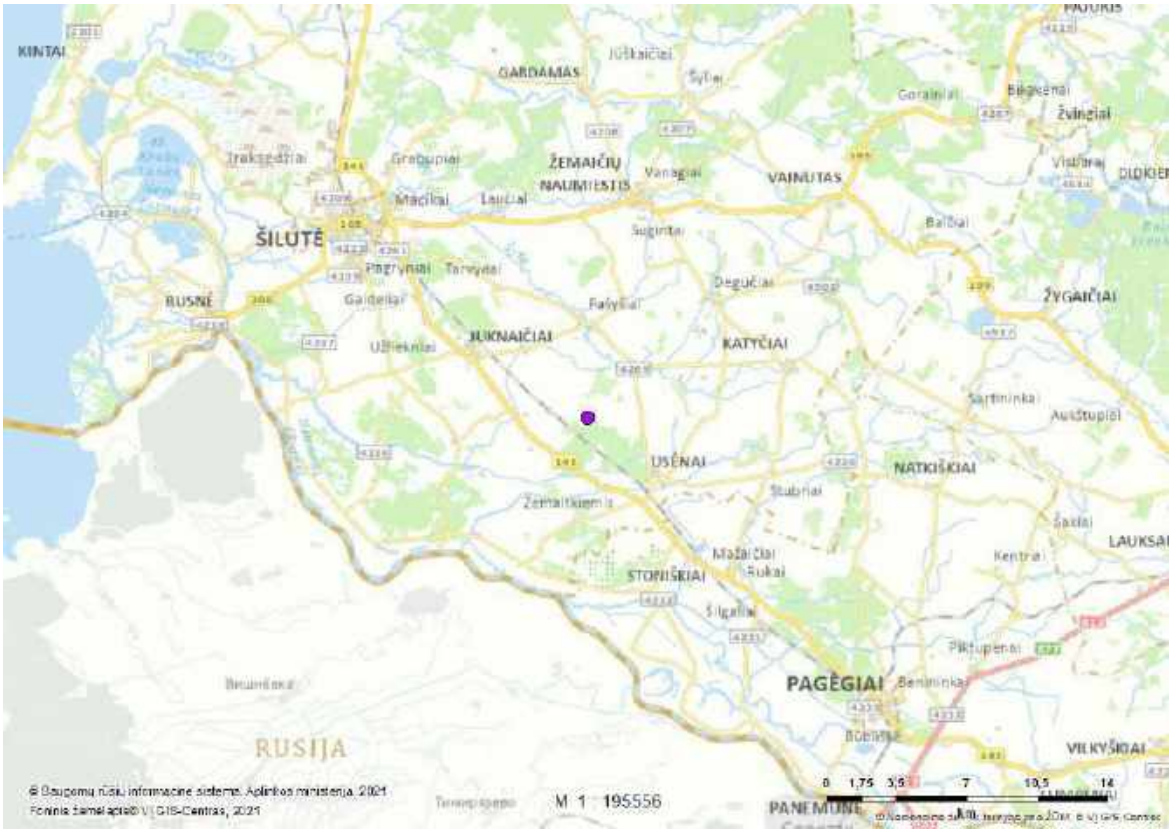
Taškas [354484,00 6128919,00]

# 9. RAD-CICCIC063863 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063863 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

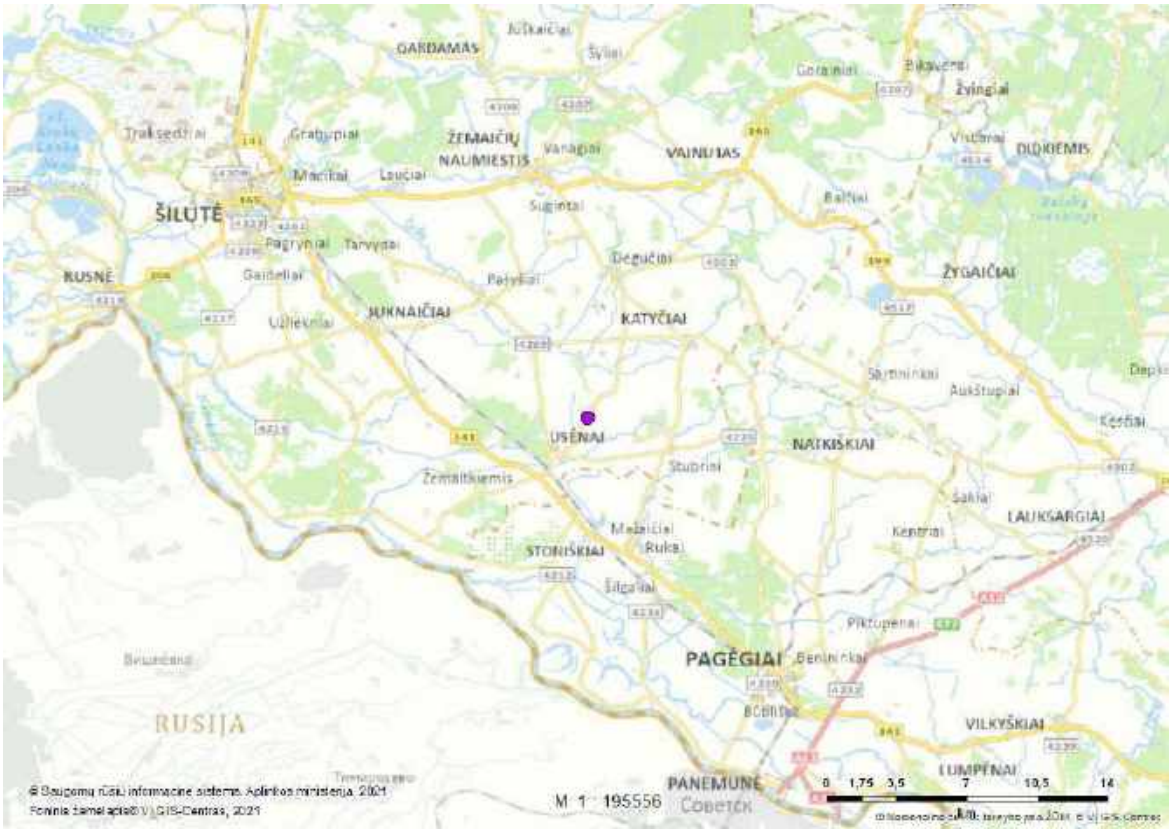
Taškas [351936,00 6127543,00]

# 10. RAD-CICCIC063912 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063912 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

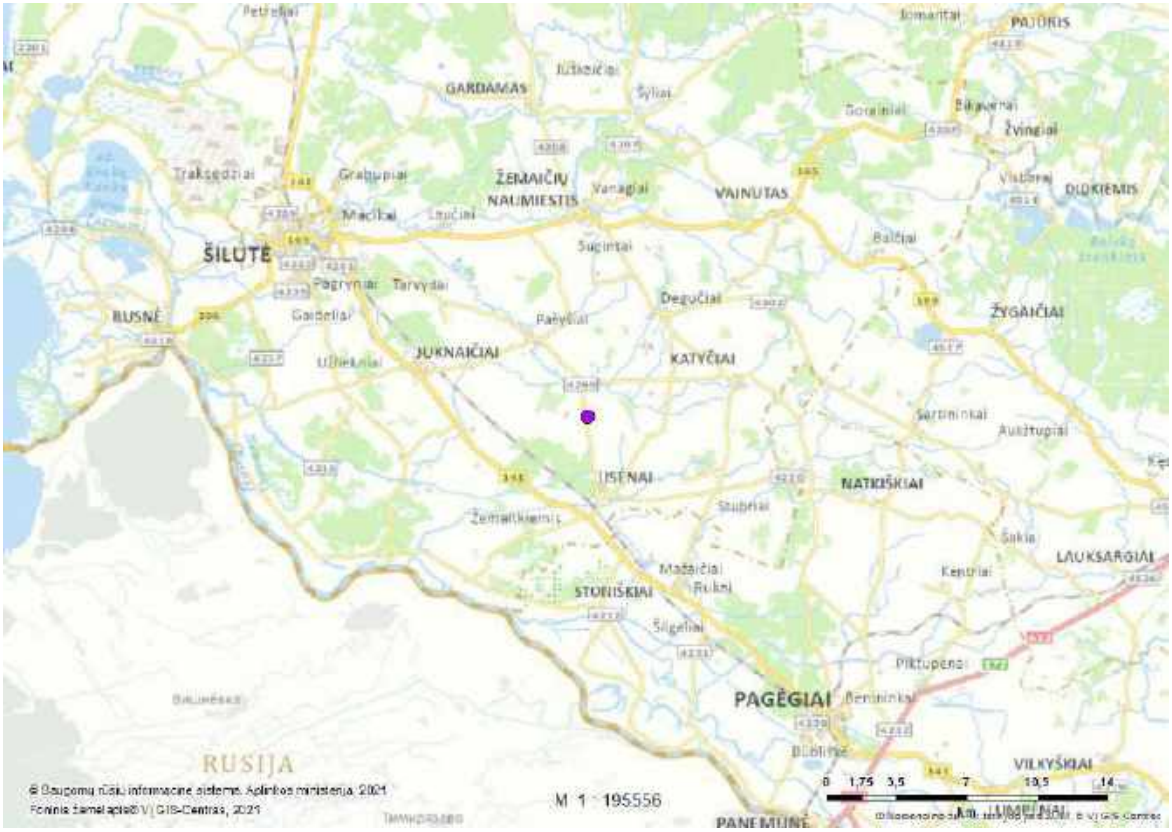
Taškas [356985,00 6126322,00]

# 11. RAD-CICCIC063865 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063865 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

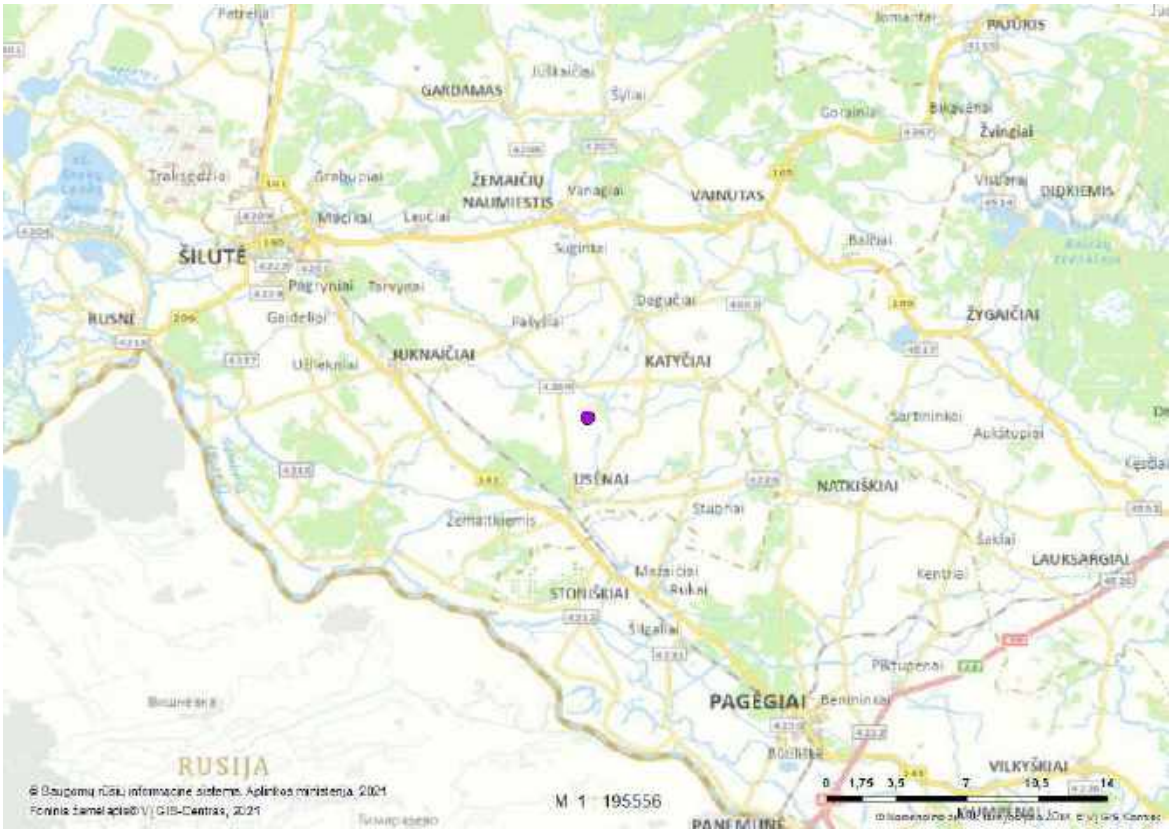
Taškas [354565,00 6128368,00]

# 12. RAD-CICCIC063866 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063866 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

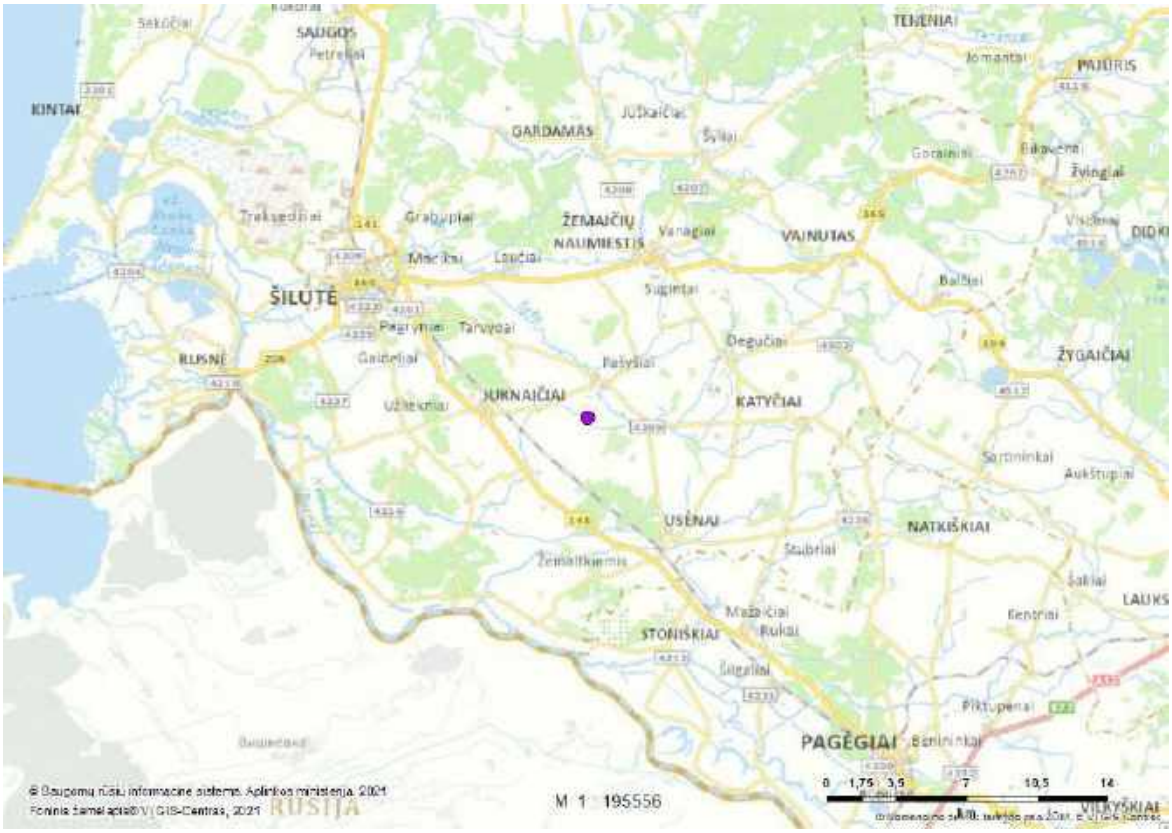
Taškas [355790,00 6128429,00]

# 13. RAD-CICCIC020770 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020770 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

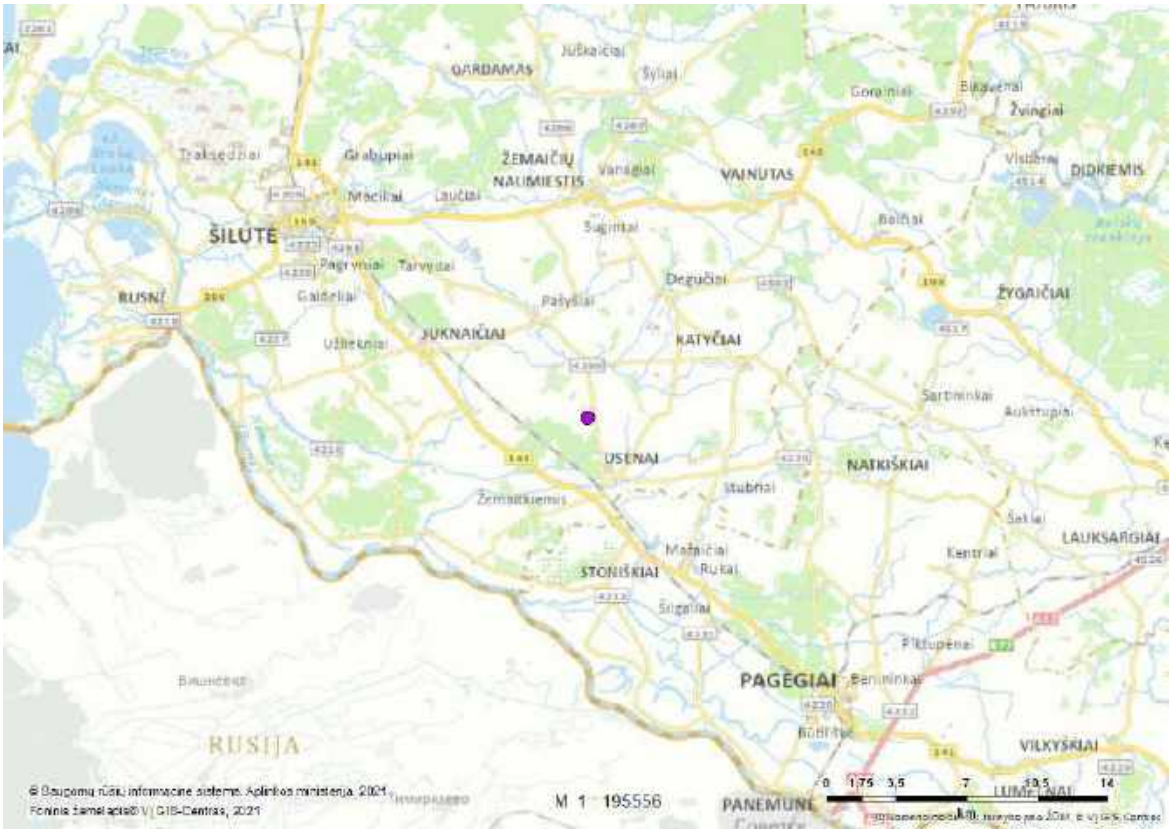
Taškas [351260,00 6130454,00]

# 14. RAD-PLUAPR090129 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090129 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-29 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

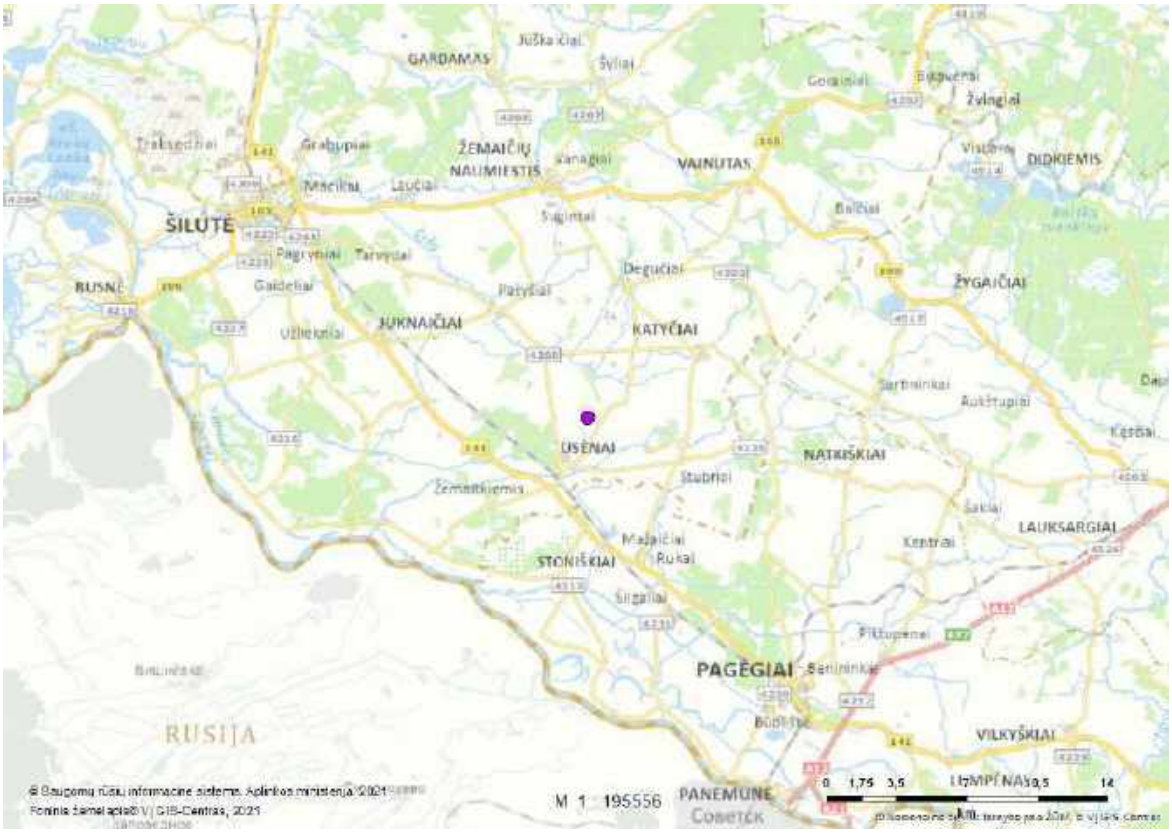
Taškas [354273,84 6127376,66]

# 15. RAD-PLUAPR090096 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090096 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-29 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

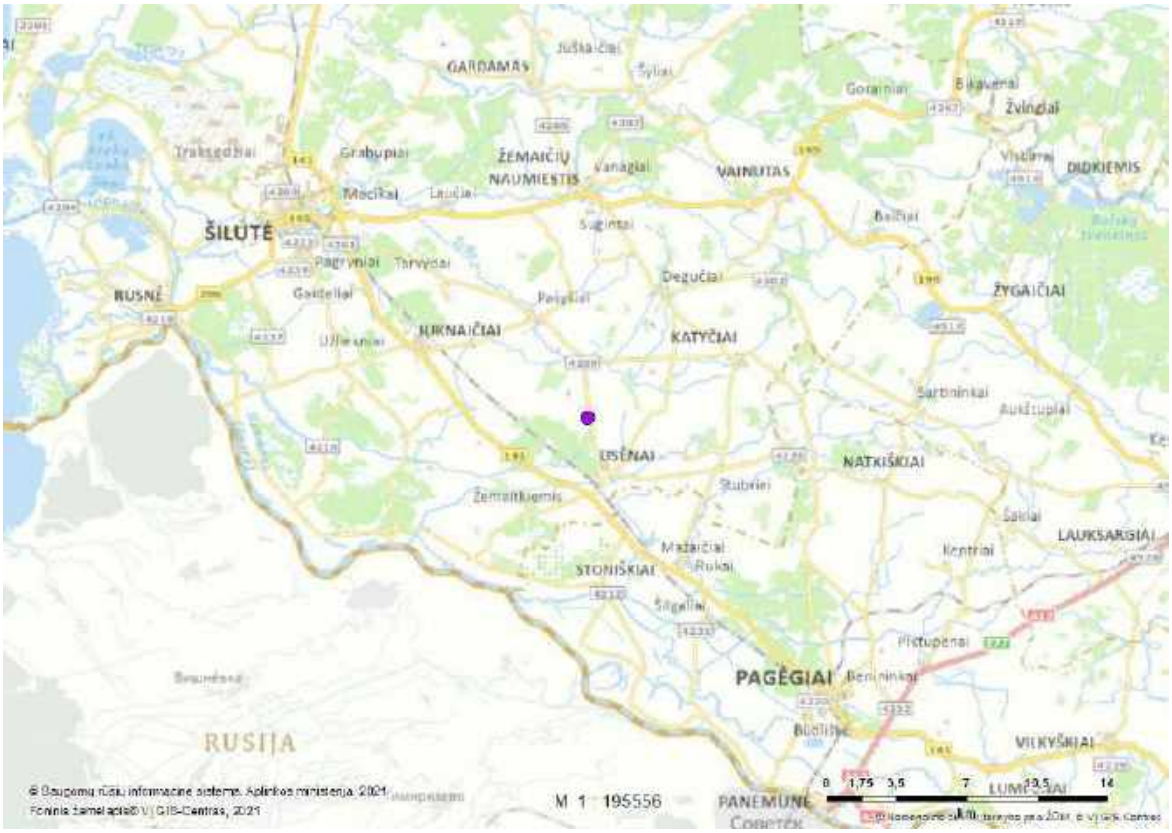
Taškas [356433,54 6126851,12]

# 16. RAD-PLUAPR090144 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090144 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-29 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

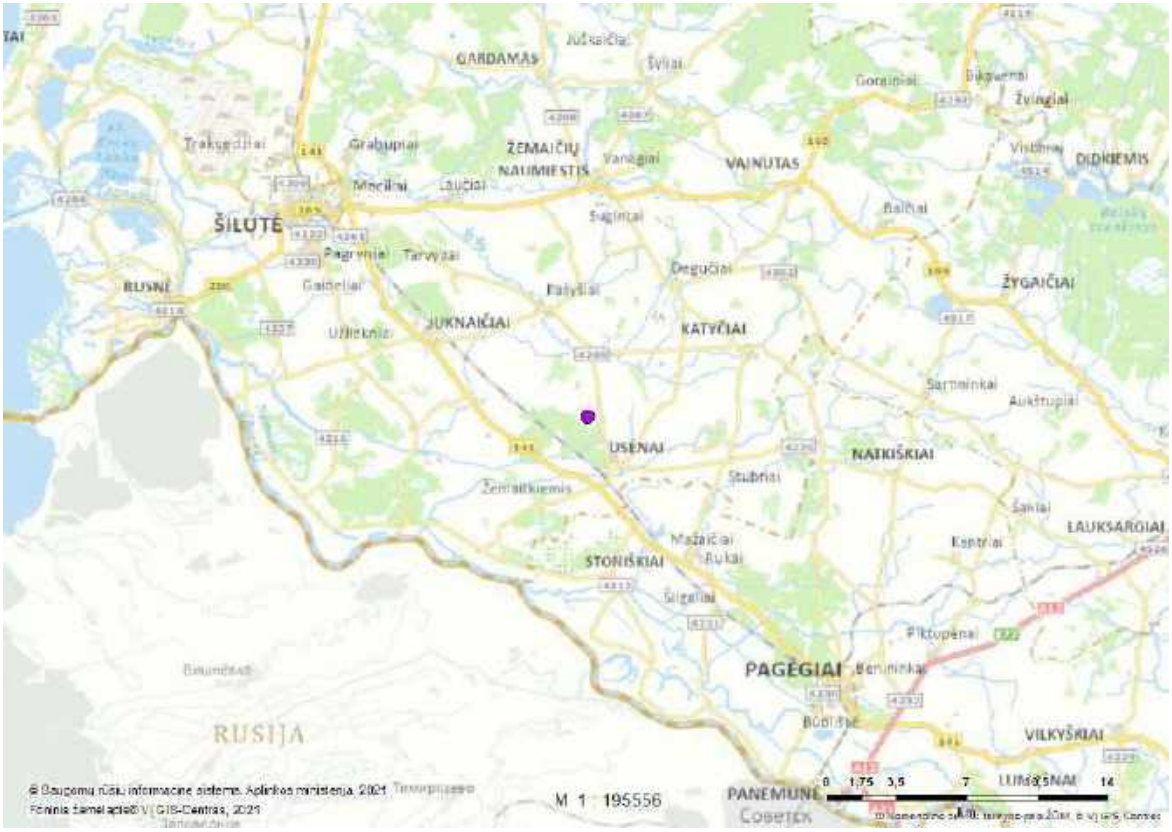
Taškas [354485,63 6127243,17]

# 17. RAD-PLUAPR090136 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090136 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-04 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

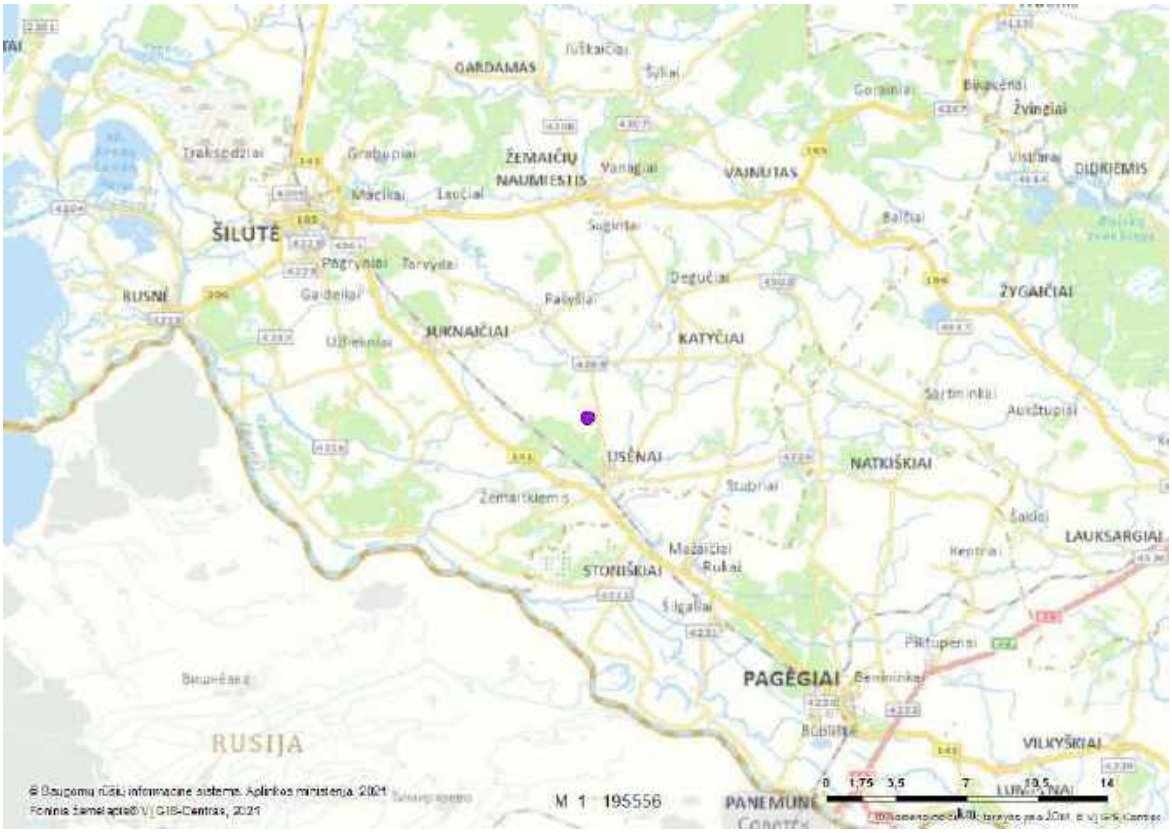
Taškas [354022,61 6126885,98]

# 18. RAD-PLUAPR090145 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090145 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-22 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

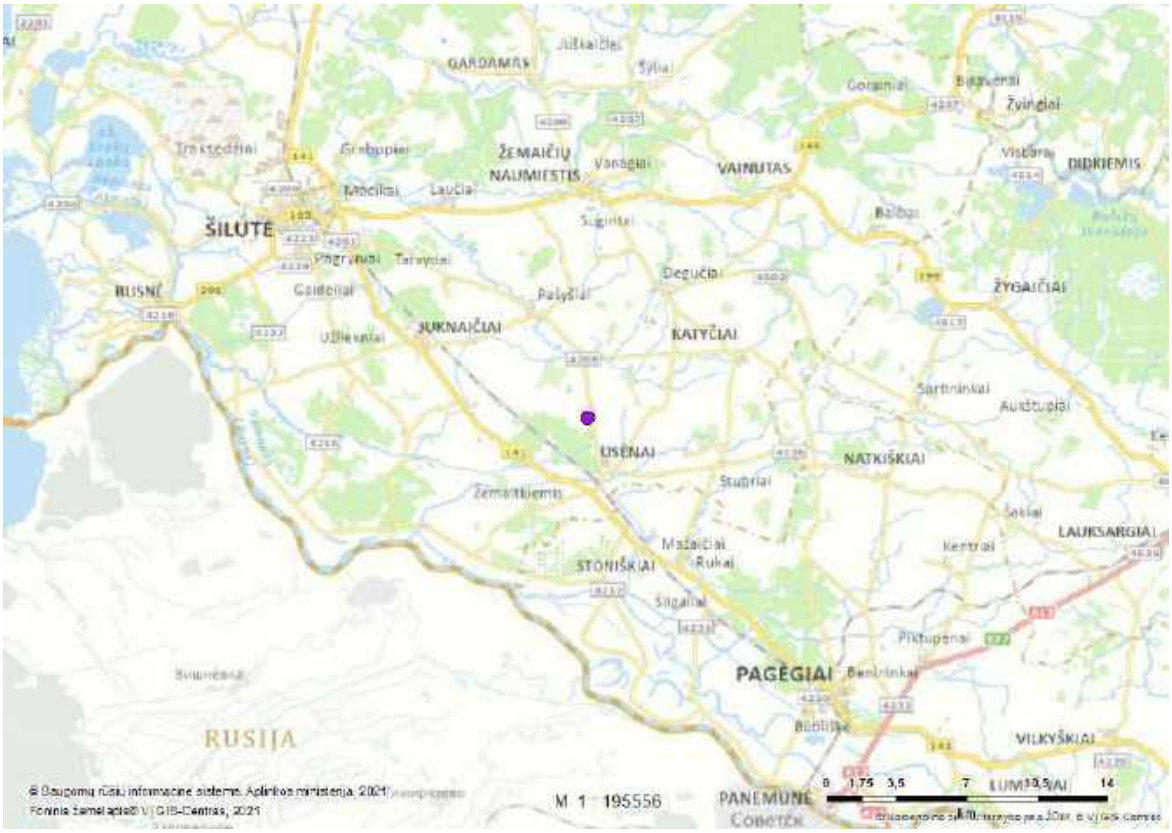
Taškas [354115,21 6127296,09]

# 19. RAD-PLUAPR090137 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090137 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-25 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

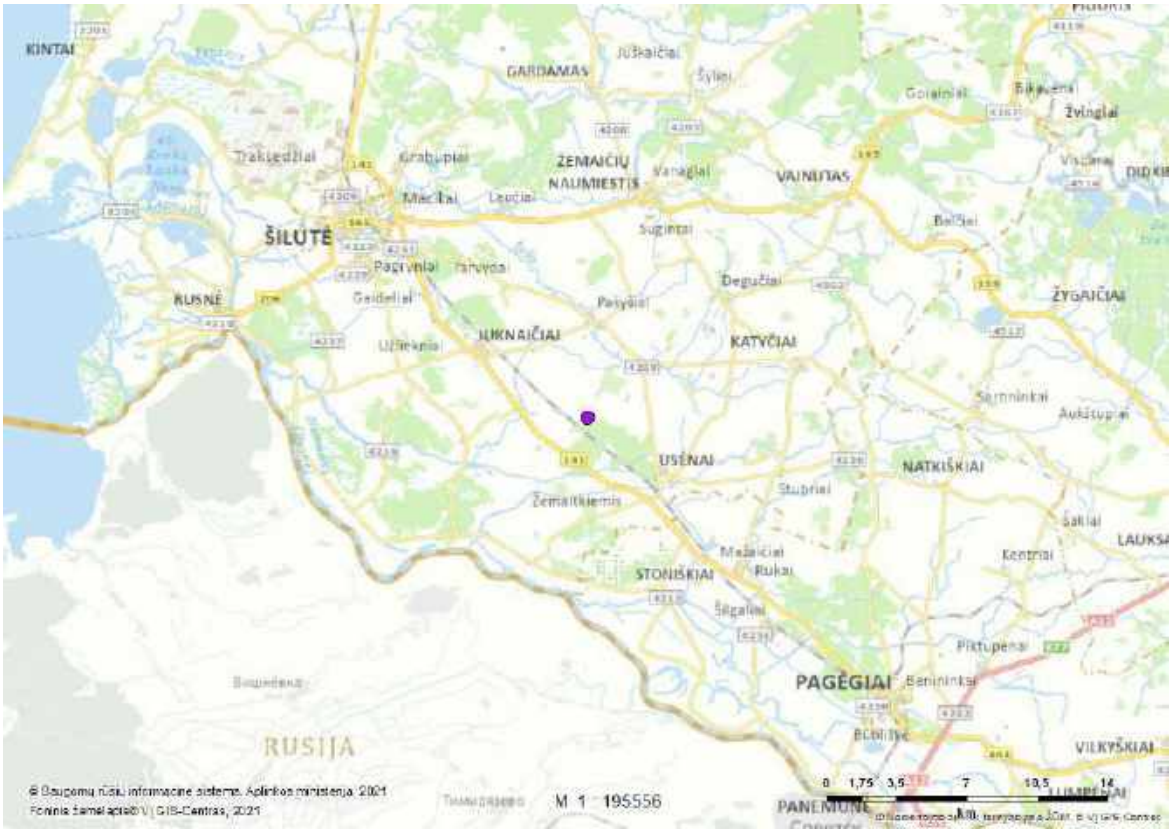
Taškas [354455,08 6127066,30]

# 20. RAD-FALSUB080235 (Eurazinis sketsakalis)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-FALSUB080235 |
| **Rūšis (lietuviškas pavadinimas)** | Eurazinis sketsakalis |
| **Rūšis (lotyniškas pavadinimas)** | Falco subbuteo |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-02 | [nėra duomenų] | suaugęs individas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

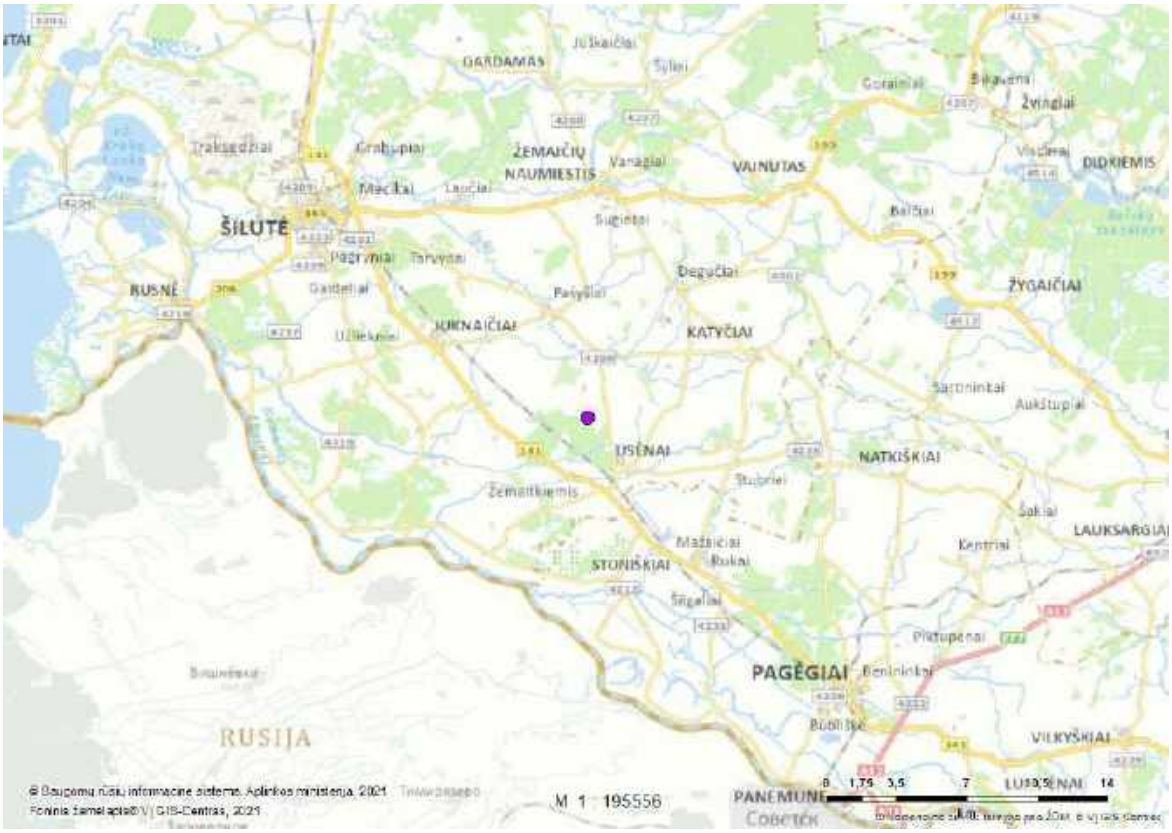
Taškas [351522,29 6127468,07]

# 21. RAD-CIRCYA090183 (Javinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRCYA090183 |
| **Rūšis (lietuviškas pavadinimas)** | Javinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus cyaneus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-26 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

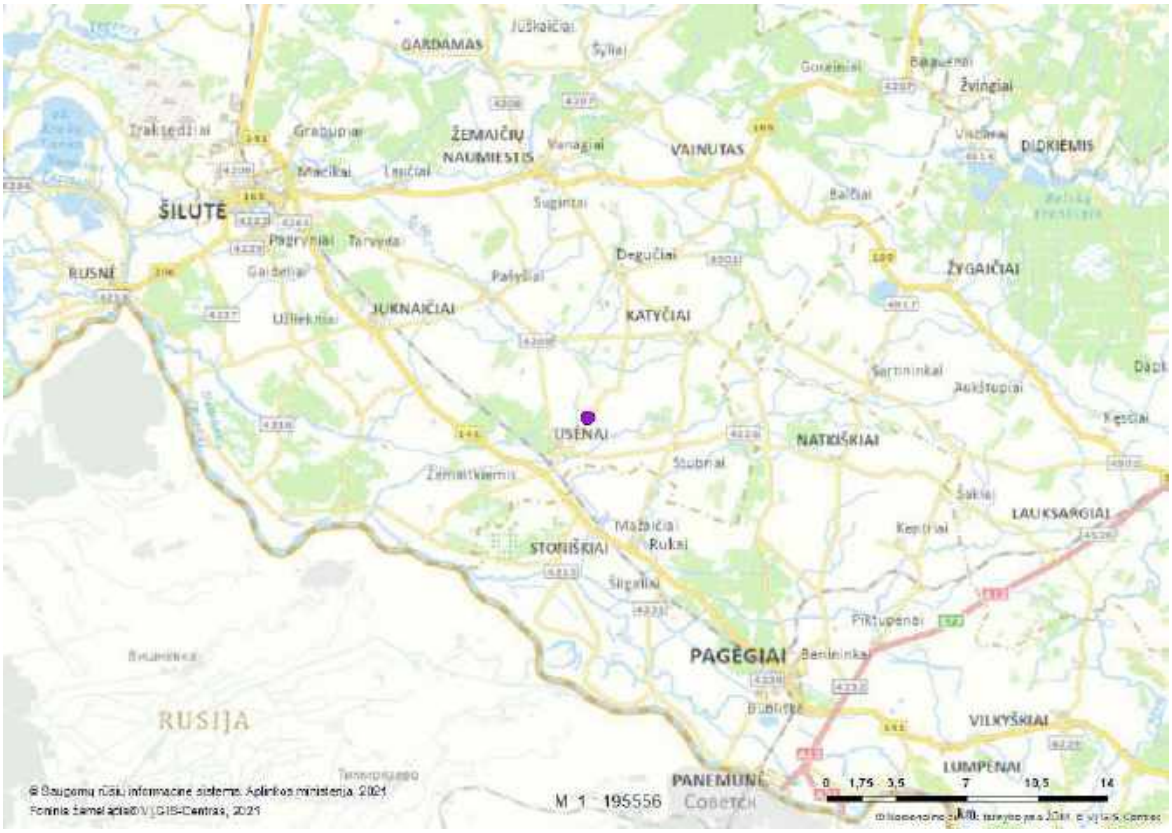
Taškas [353698,78 6126992,35]

# 22. RAD-CIRCYA090176 (Javinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRCYA090176 |
| **Rūšis (lietuviškas pavadinimas)** | Javinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus cyaneus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-29 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

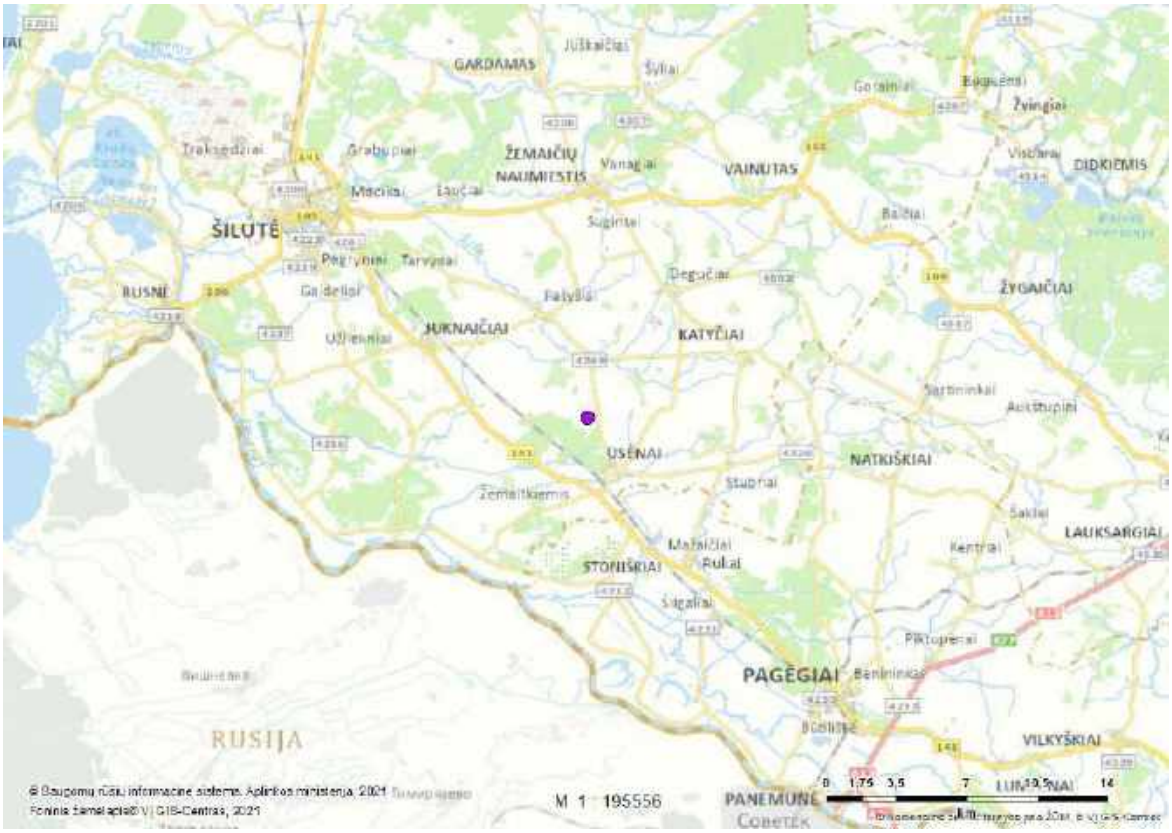
Taškas [356774,28 6126158,38]

# 23. RAD-CIRCYA090178 (Javinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRCYA090178 |
| **Rūšis (lietuviškas pavadinimas)** | Javinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus cyaneus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-12 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

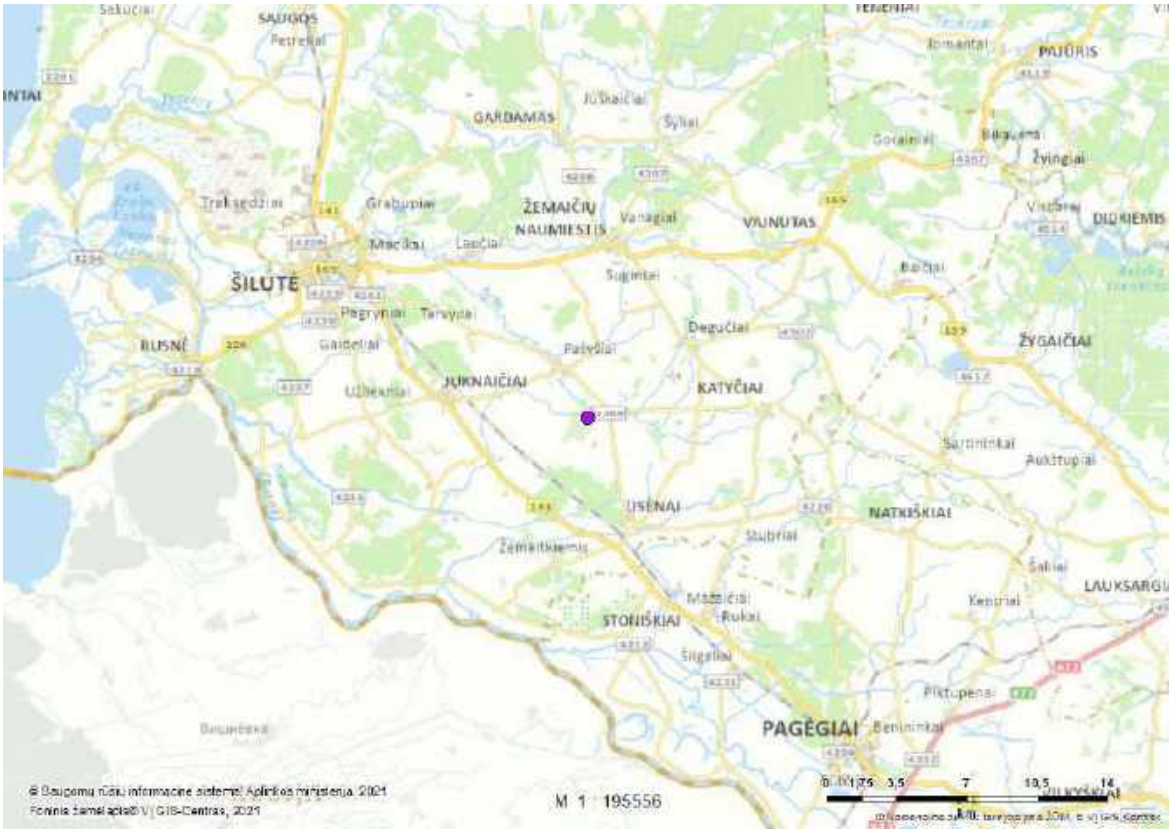
Taškas [354135,20 6127115,51]

# 24. RAD-CIRCYA090196 (Javinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRCYA090196 |
| **Rūšis (lietuviškas pavadinimas)** | Javinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus cyaneus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-13 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

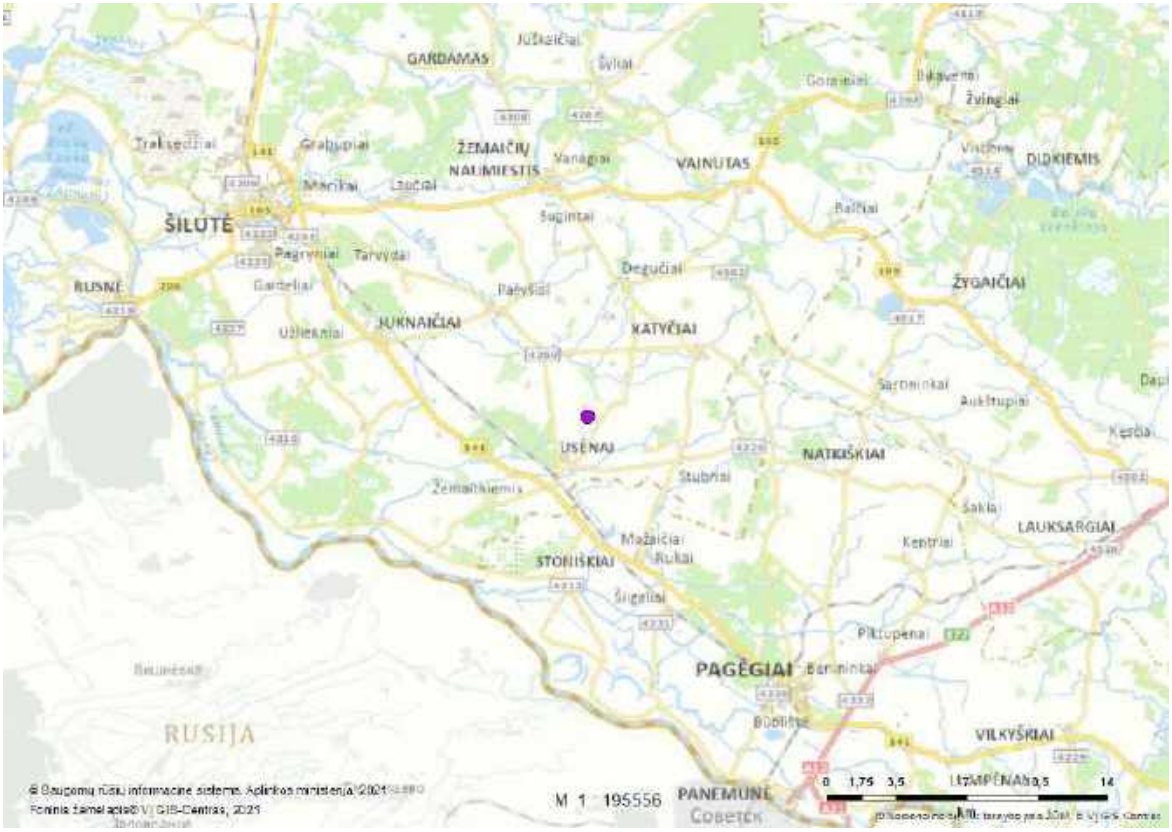
Taškas [353181,38 6129769,82]

# 25. RAD-CIRCYA090194 (Javinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRCYA090194 |
| **Rūšis (lietuviškas pavadinimas)** | Javinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus cyaneus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-23 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [356483,12 6126886,65]

# 26. RAD-MYONAT072037 (Natererio pelėausis)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MYONAT072037 |
| **Rūšis (lietuviškas pavadinimas)** | Natererio pelėausis |
| **Rūšis (lotyniškas pavadinimas)** | Myotis nattereri |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

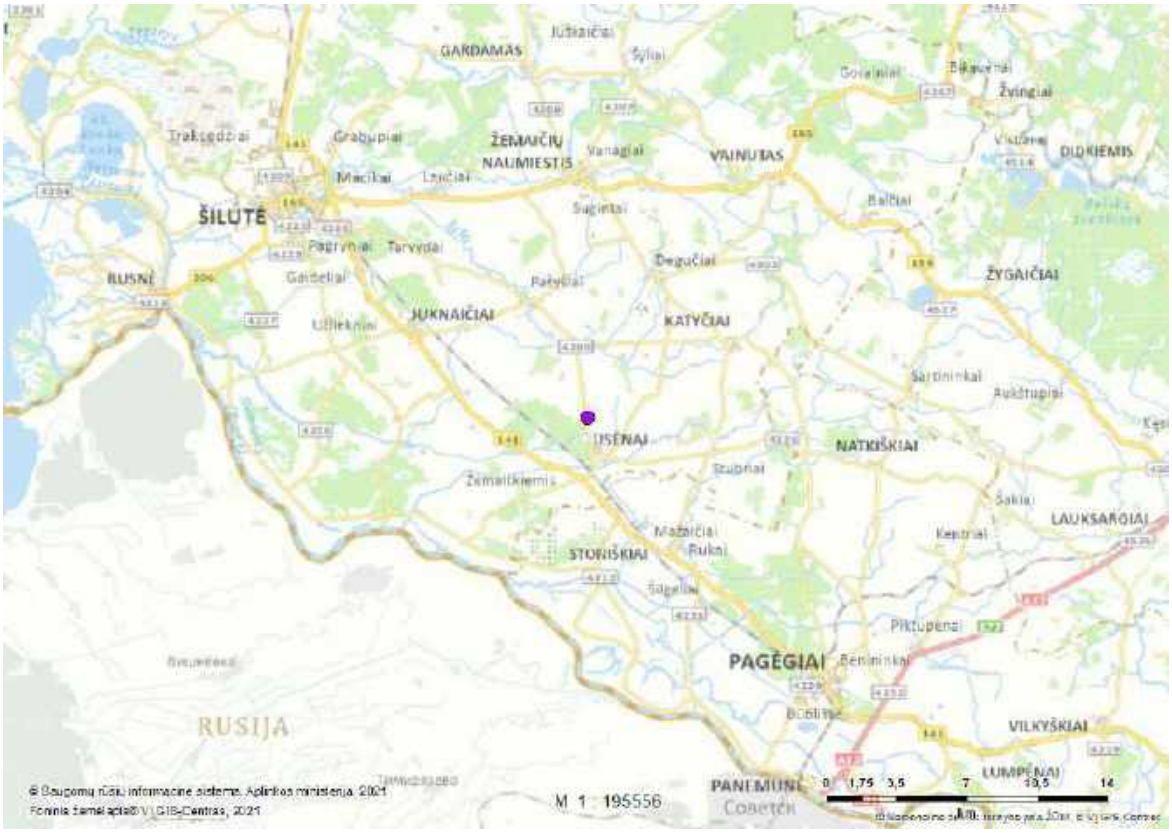
Poligonas [354146,14 6129543,61, 354110,65 6129564,49, 353998,49 6129514,50, 354000,31 6129488,82, 354146,14 6129543,61]

# 27. RAD-PIPNAT072724 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072724 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-19 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

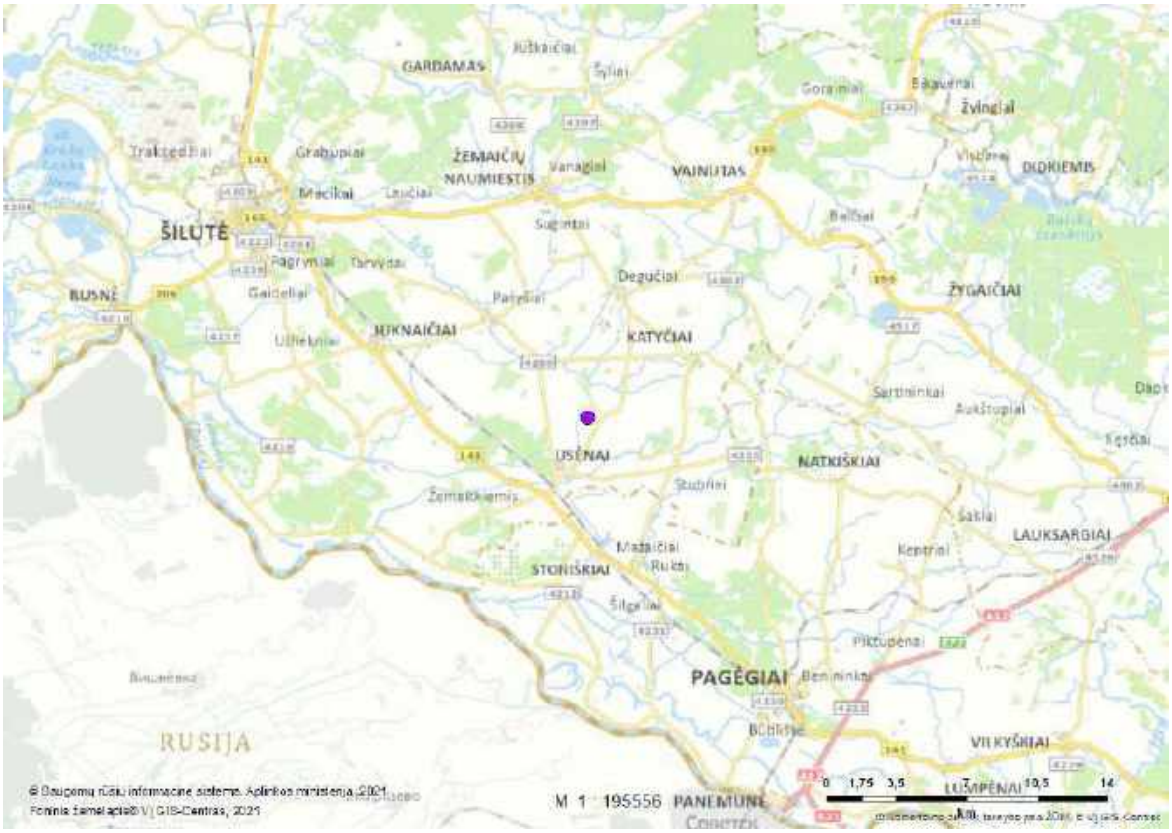
Taškas [354821,66 6126440,44]

# 28. RAD-PIPNAT072728 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072728 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-19 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

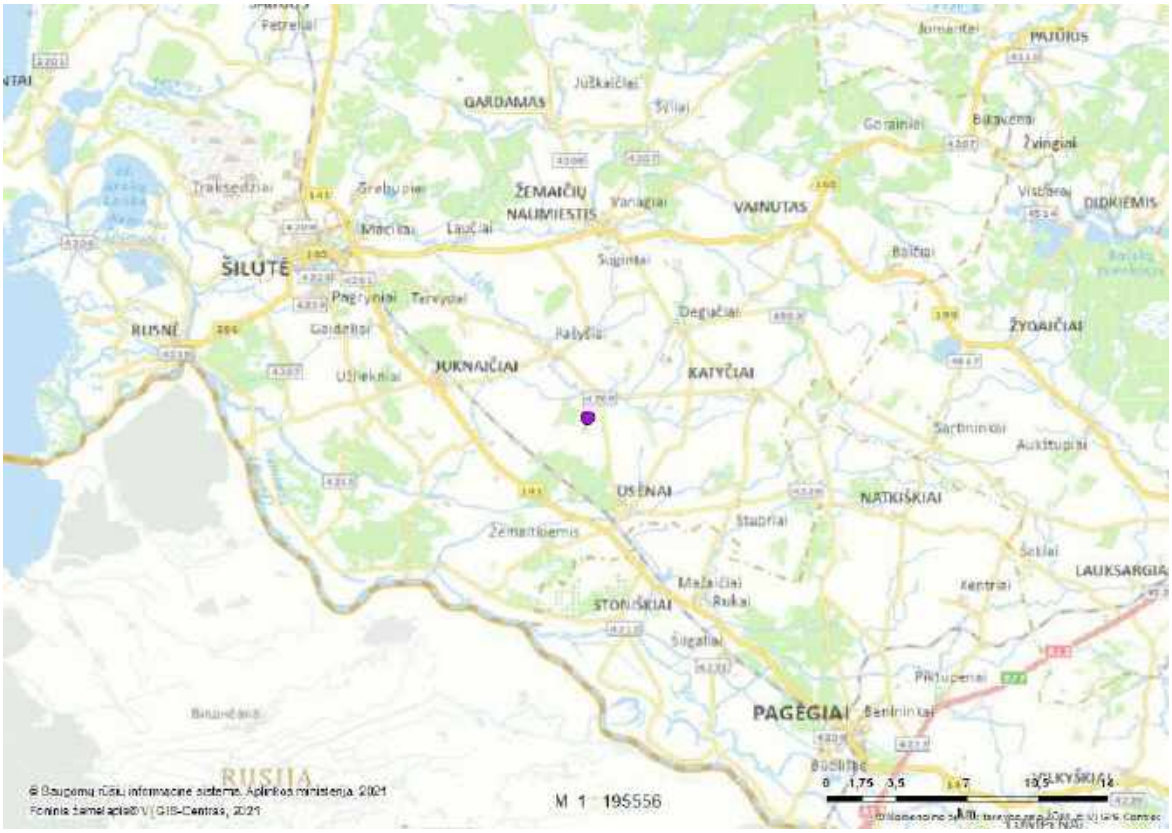
Taškas [356709,12 6127231,21]

# 29. RAD-PIPNAT071995 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT071995 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

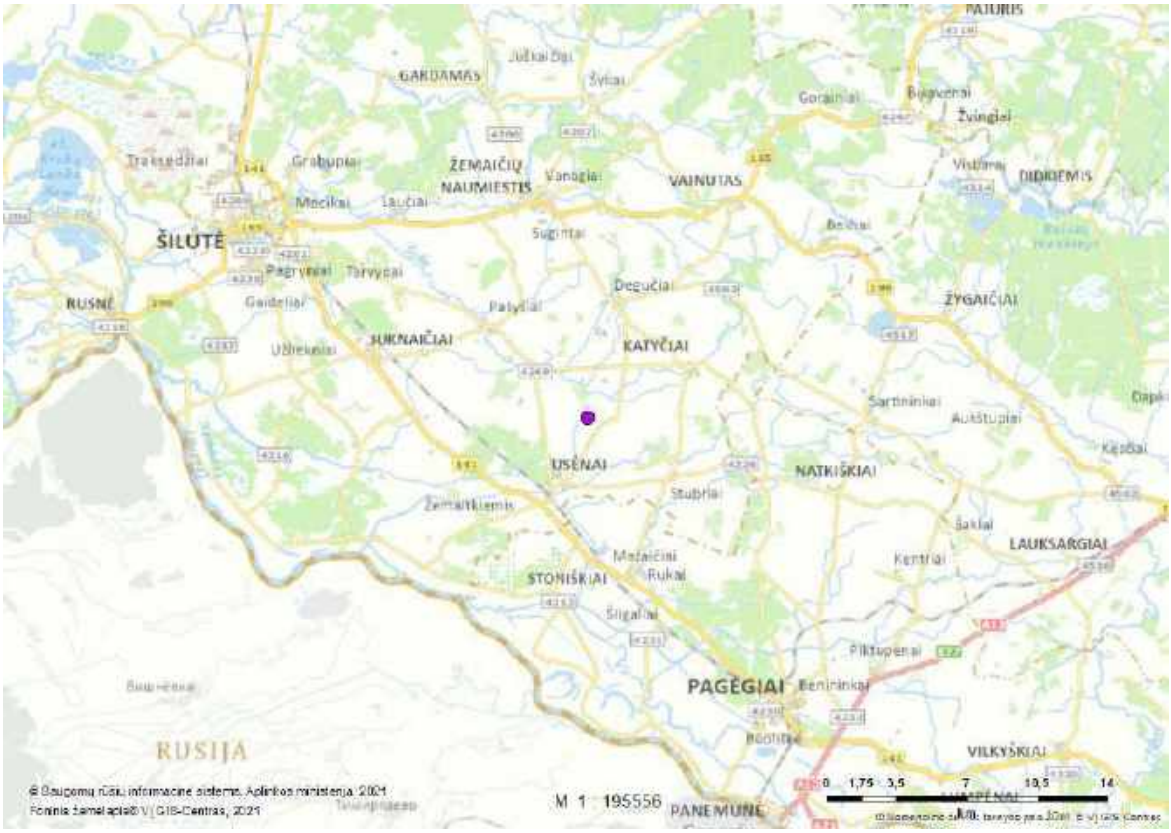
Taškas [353633,95 6129005,09]

# 30. RAD-PIPNAT072061 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072061 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [356880,28 6127679,57]

# 31. RAD-PIPNAT072019 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072019 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

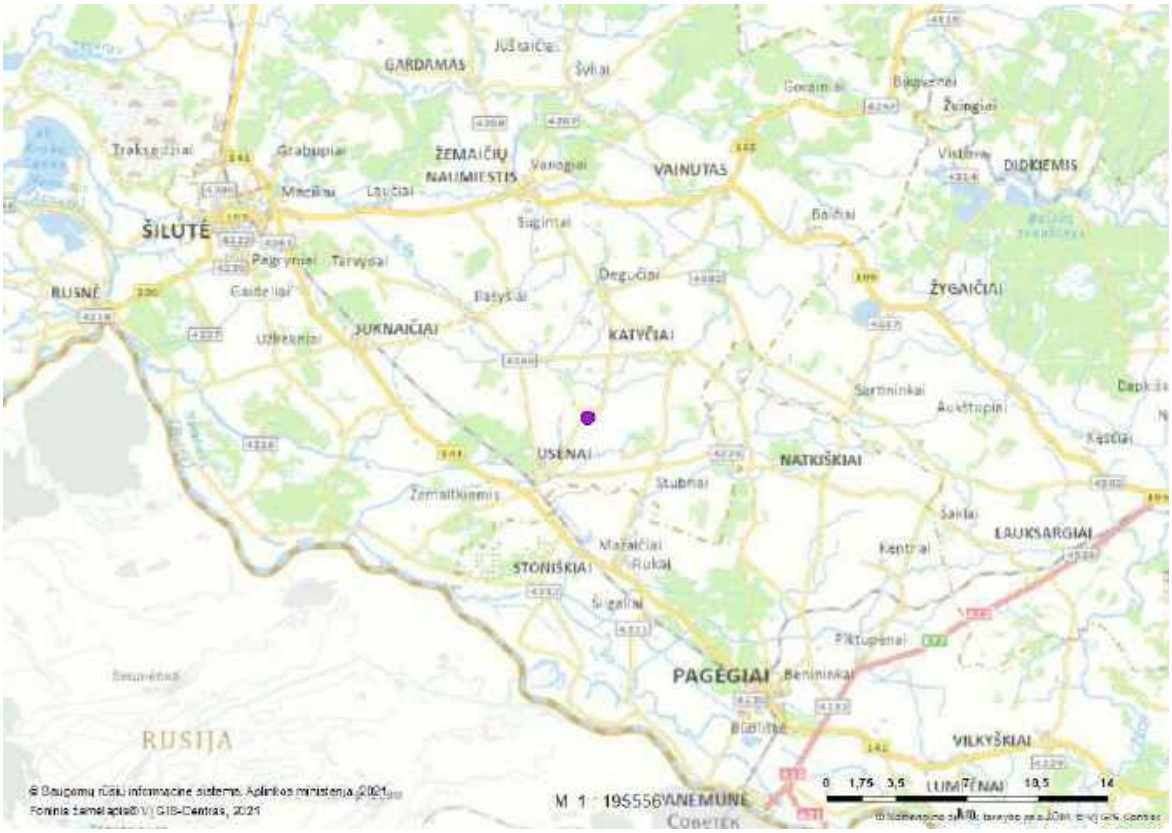
Poligonas [354146,14 6129543,61, 354110,65 6129564,49, 353998,49 6129514,50, 354000,31 6129488,82, 354146,14 6129543,61]

# 32. RAD-PIPNAT072058 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072058 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

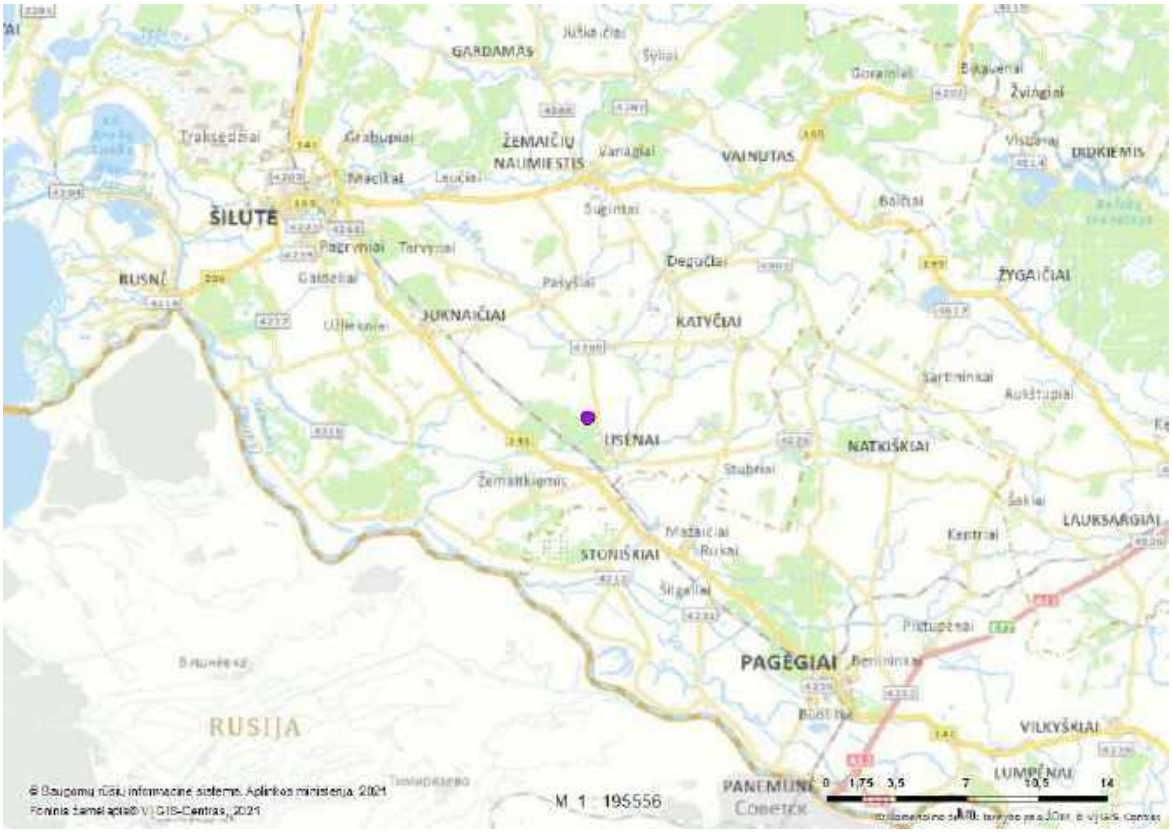
Taškas [357615,90 6127142,87]

# 33. RAD-PIPNAT072052 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072052 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [354245,63 6126475,02]

# 34. AUG-NECPEN018363 (Plunksninė pliusnė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | AUG-NECPEN018363 |
| **Rūšis (lietuviškas pavadinimas)** | Plunksninė pliusnė |
| **Rūšis (lotyniškas pavadinimas)** | Neckera pennata |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-08-30 | Pirmas stebėjimas | augantis grybas arba kerpė | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

Poligonas [354572,13 6126291,50, 354575,72 6126307,00, 354589,50 6126364,50, 354580,26 6126378,85, 354572,32 6126384,15, 354551,16 6126386,79, 354518,08 6126390,76, 354485,01 6126391,82, 354446,38 6126376,47, 354401,40 6126363,77, 354378,22 6126345,51, 354387,23 6126333,50, 354429,22 6126322,49, 354478,22 6126306,50, 354566,22 6126281,50, 354569,06 6126278,50, 354572,13 6126291,50]

# 35. RAD-MILMIL080233 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL080233 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-02 | [nėra duomenų] | suaugęs individas veisimosi vietoje (lizde, oloje ir pan.) | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

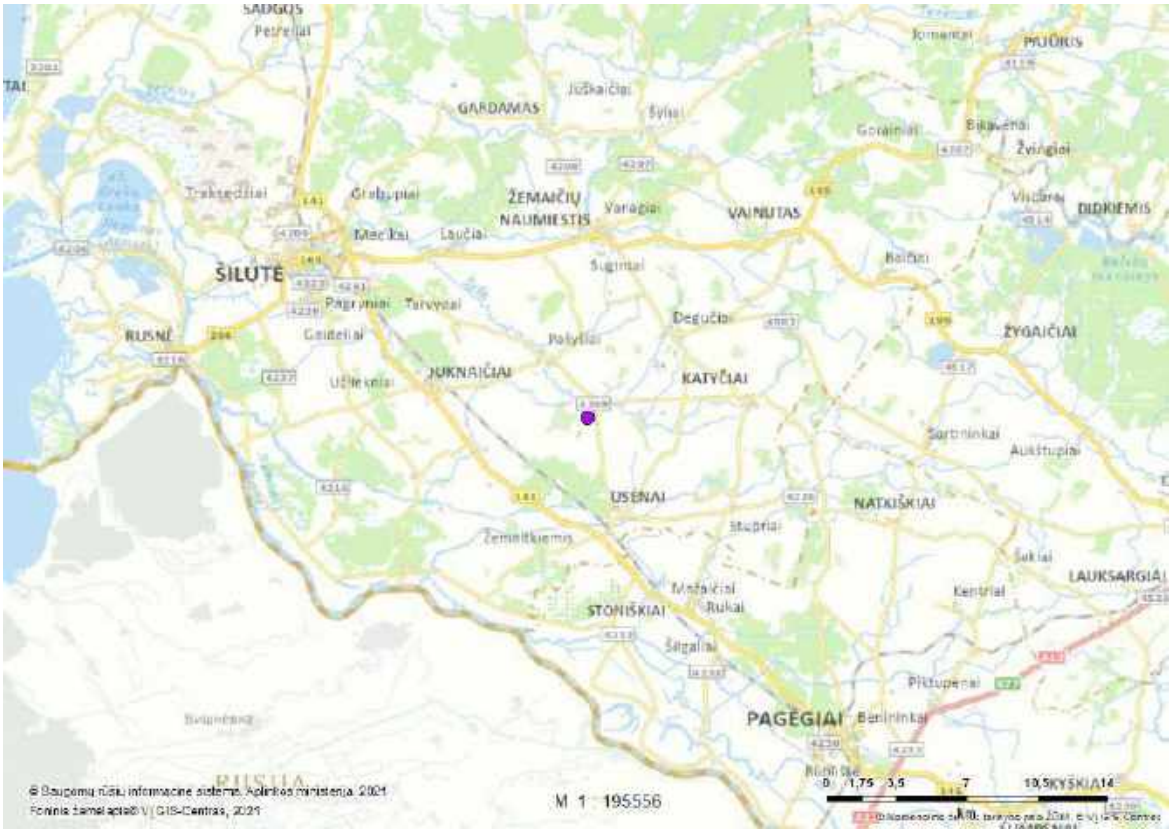
Poligonas [355107,40 6124531,19, 354789,90 6126383,27, 353718,33 6126594,94, 352884,90 6125629,21, 354485,63 6124293,06, 355107,40 6124531,19]

# 36. RAD-MILMIL090150 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090150 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-27 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

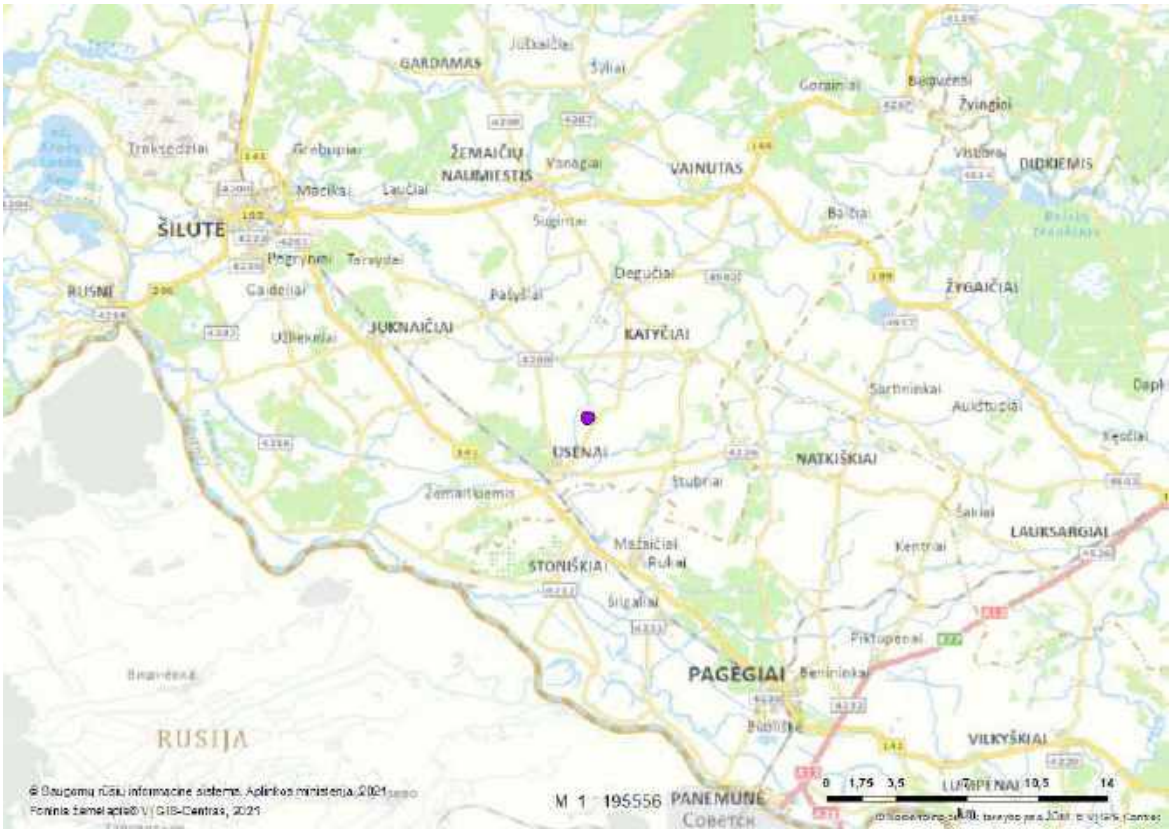
Taškas [353948,14 6129291,18]

# 37. RAD-MILMIL090089 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090089 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-29 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [356838,54 6127073,63]

# 38. RAD-MILMIL090075 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090075 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-02 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

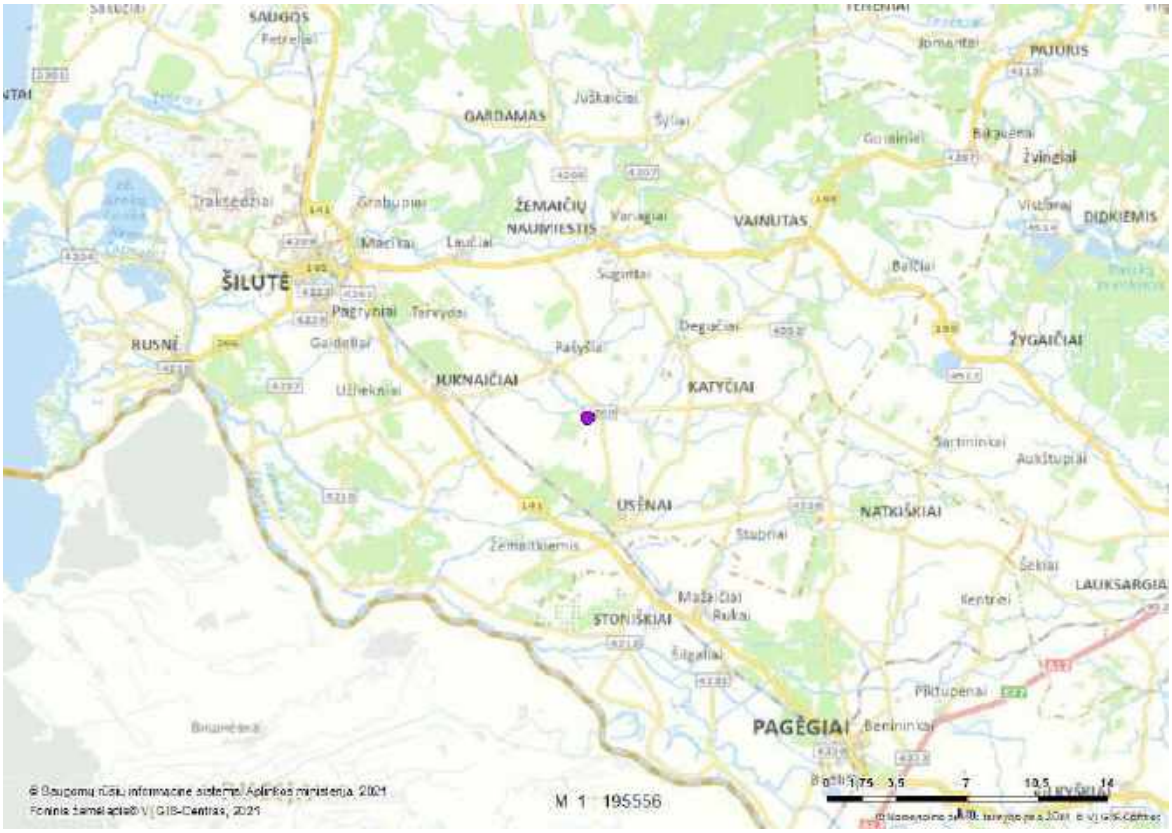
Poligonas [351252,43 6126687,27, 350008,89 6127077,53, 349717,85 6126270,55, 350465,30 6125754,61, 351252,43 6126687,27]

# 39. RAD-MILMIL090134 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090134 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-10 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

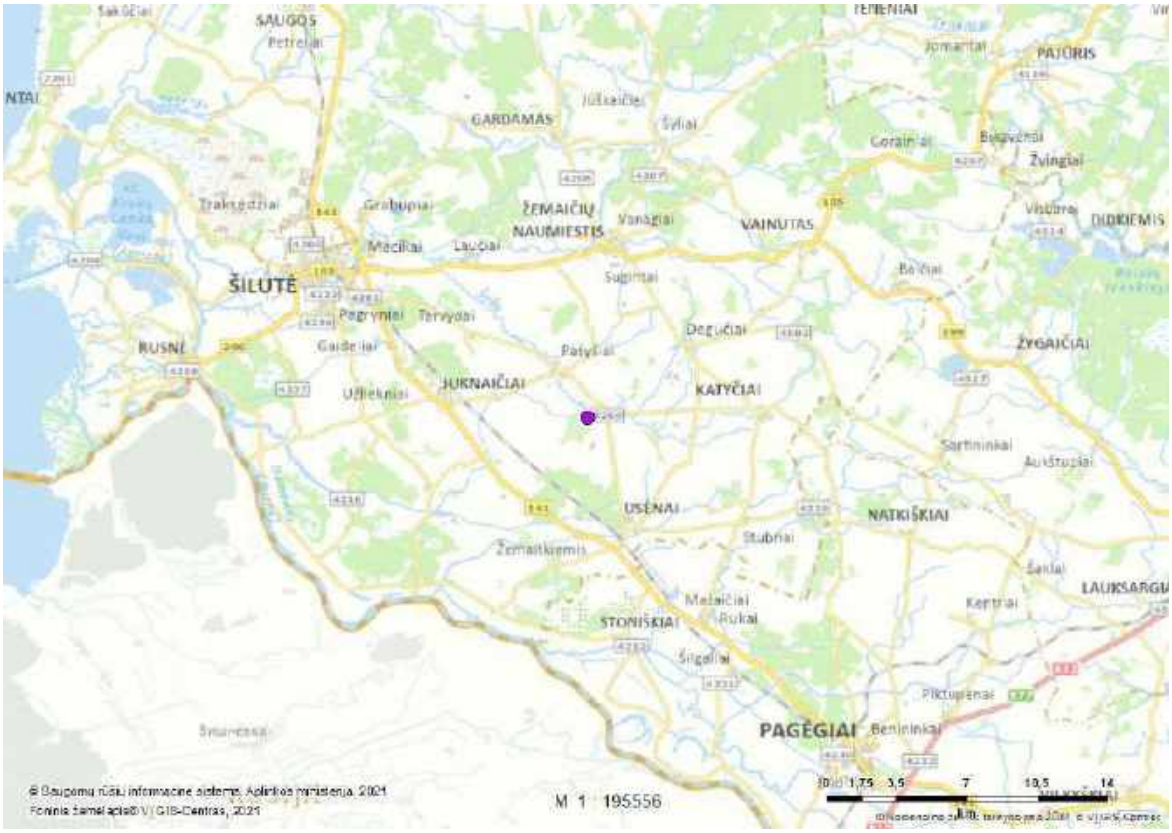
Taškas [353634,16 6129708,70]

# 40. RAD-MILMIL090135 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090135 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-10 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

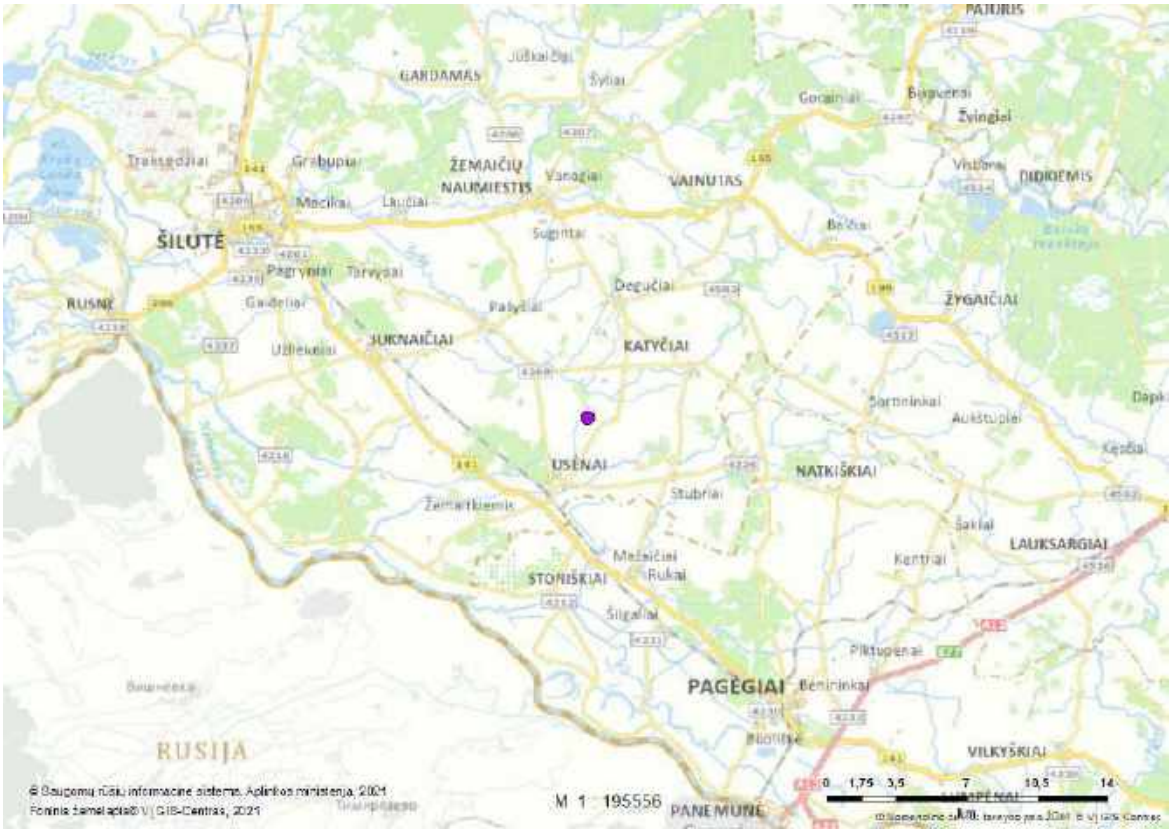
Taškas [353283,77 6129865,33]

# 41. RAD-EPTNIL072727 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072727 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-19 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

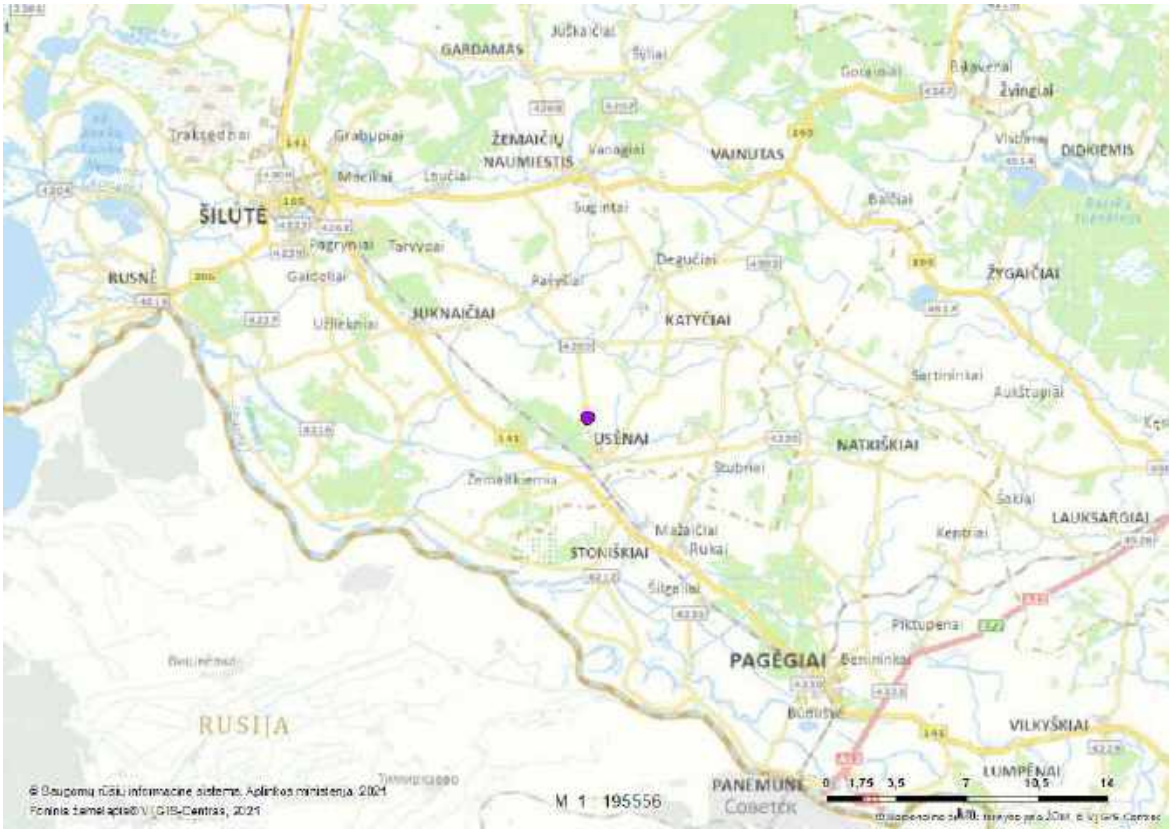
Taškas [356865,00 6127686,14]

# 42. RAD-EPTNIL072725 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072725 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-19 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

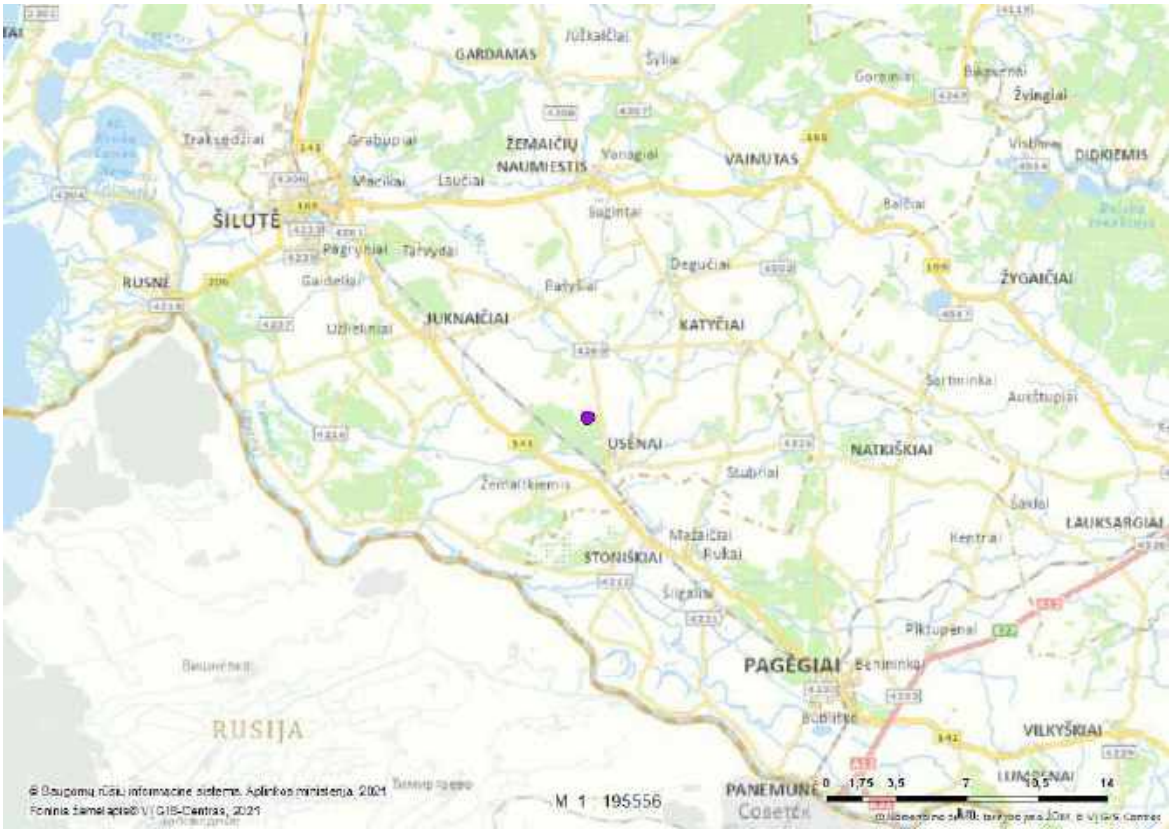
Taškas [354781,71 6126392,51]

# 43. RAD-EPTNIL072726 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072726 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-19 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

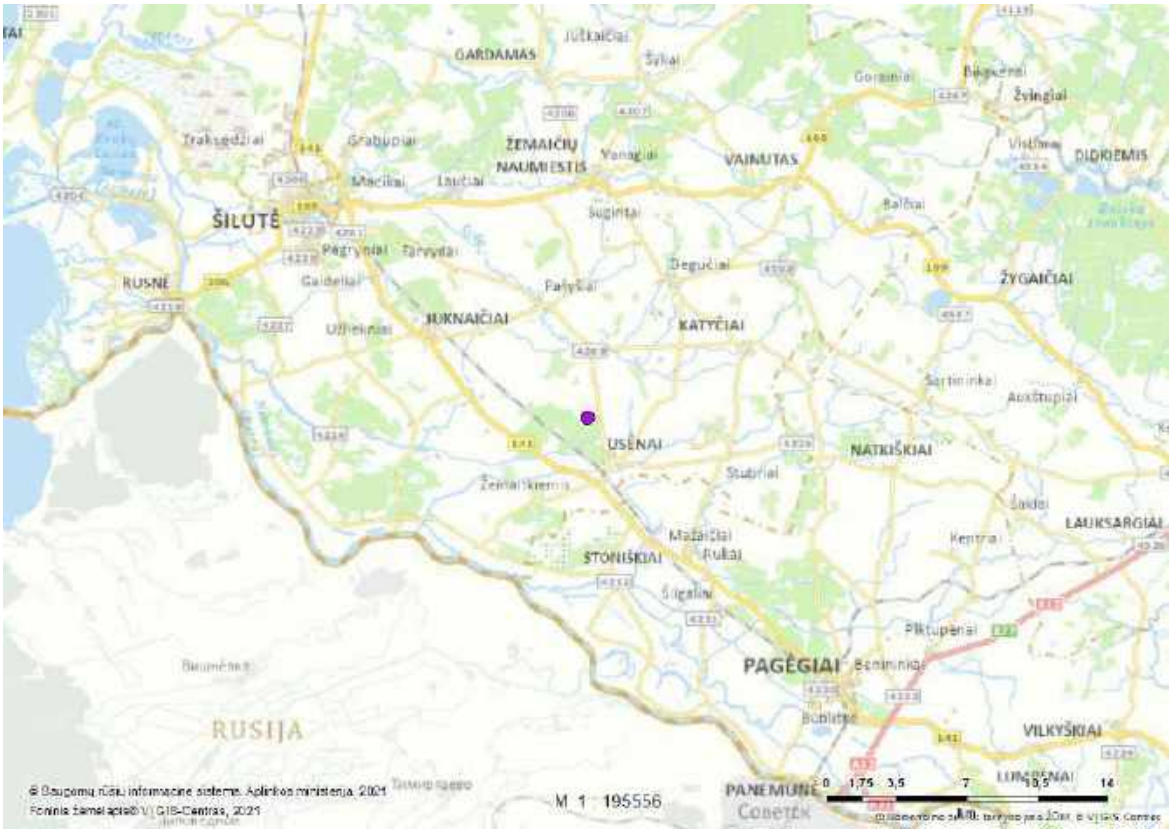
Taškas [354090,51 6126632,67]

# 44. RAD-EPTNIL072047 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072047 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

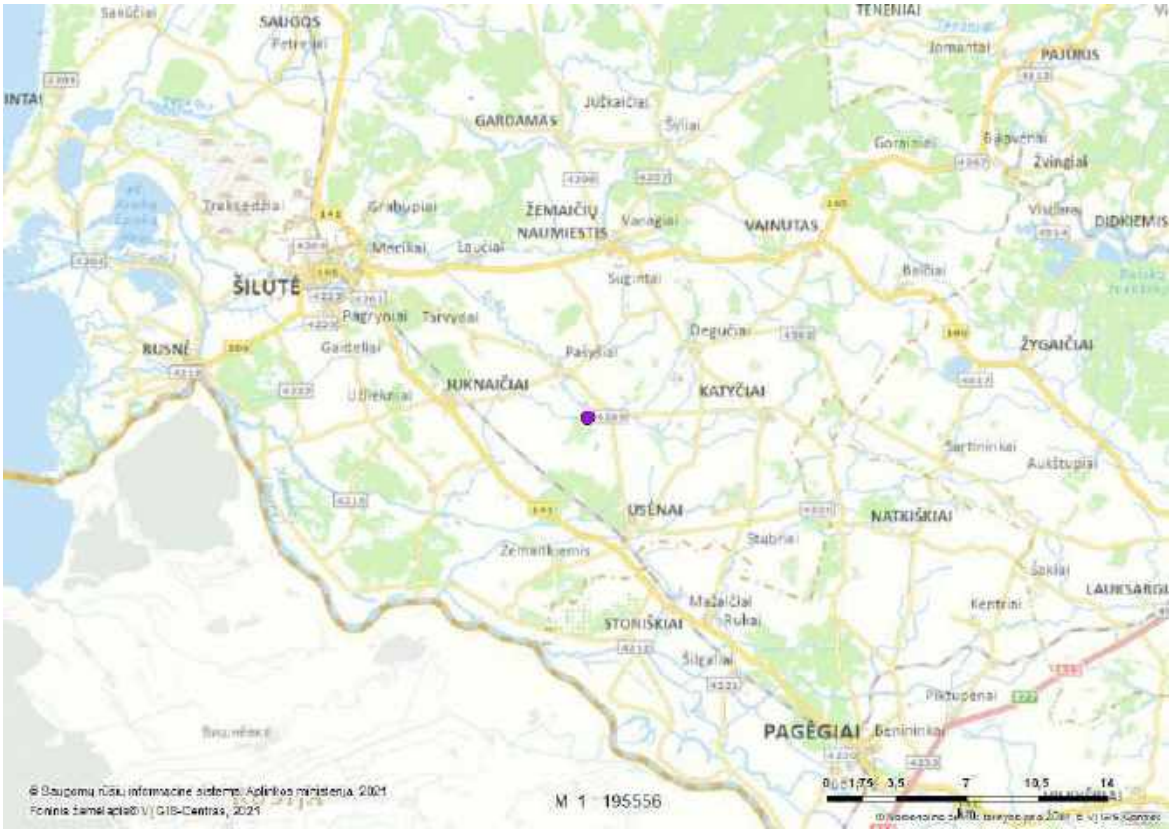
Taškas [354108,50 6126646,56]

# 45. RAD-EPTNIL071987 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL071987 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

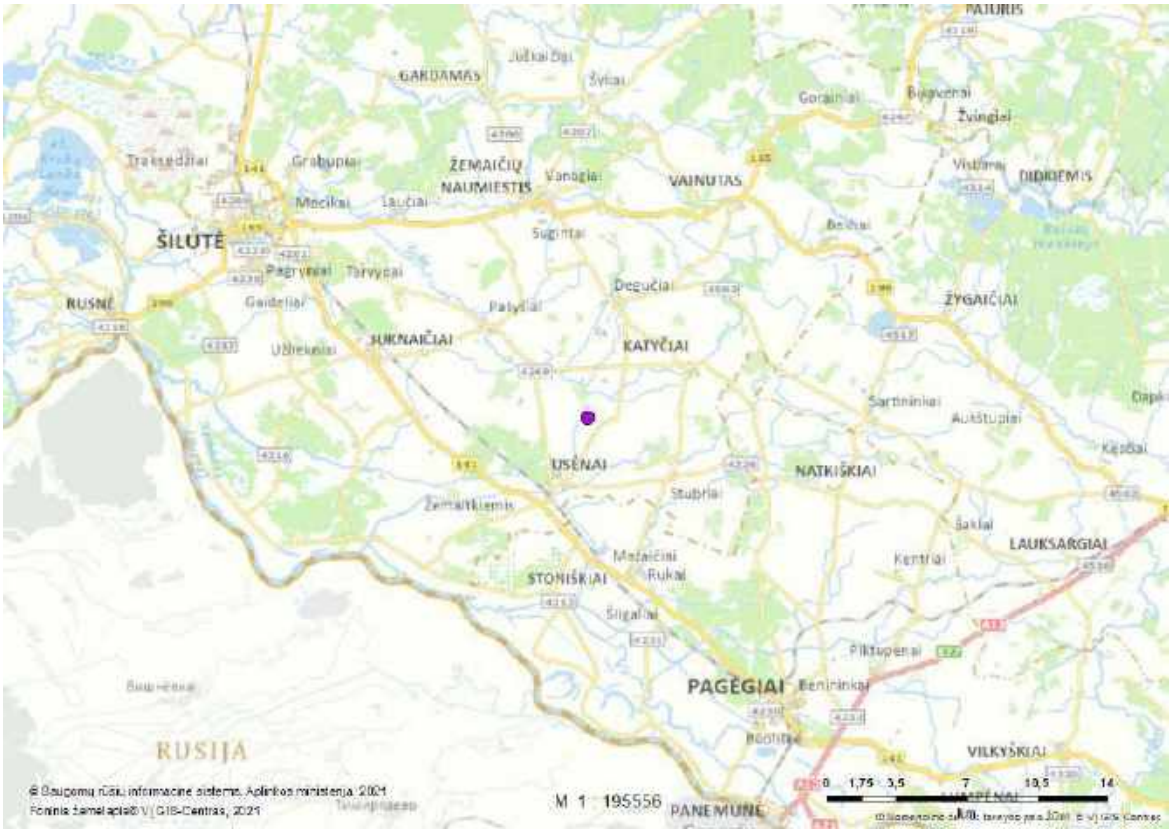
Taškas [353092,62 6129936,59]

# 46. RAD-EPTNIL072062 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072062 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

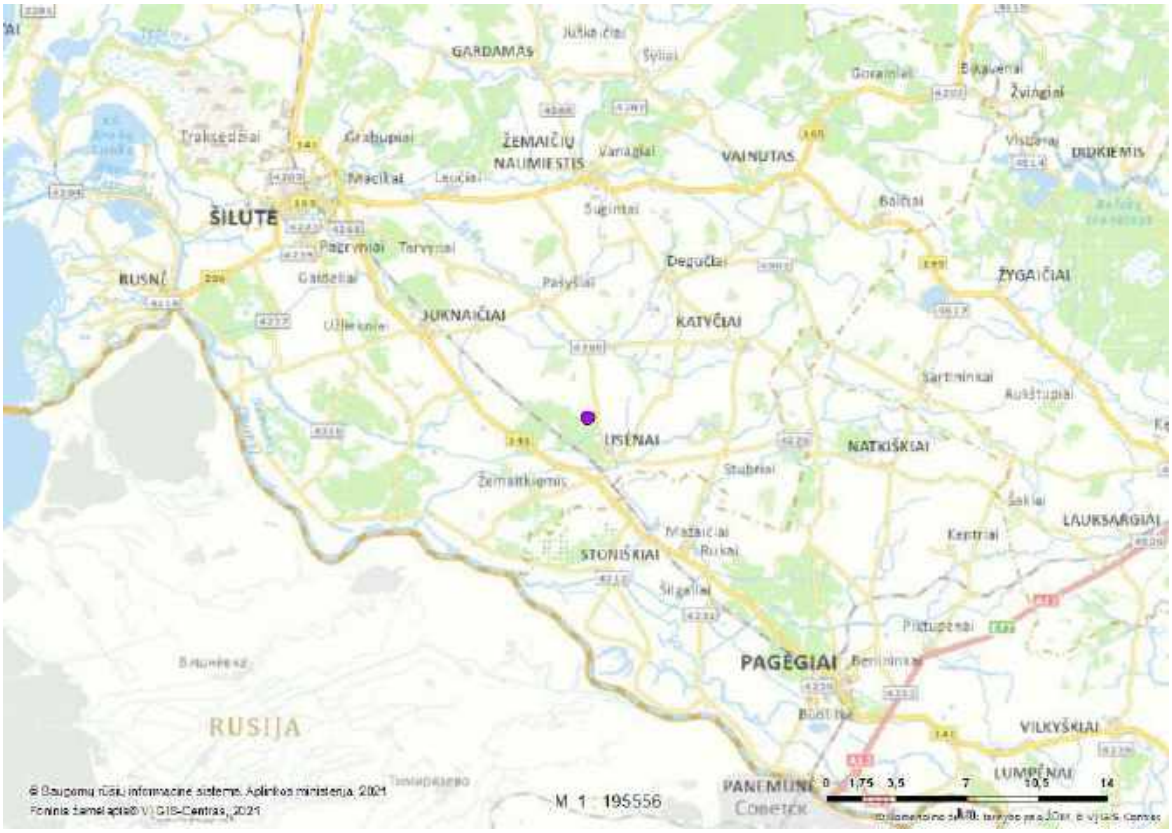
Taškas [356880,28 6127679,57]

# 47. RAD-EPTNIL072053 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072053 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

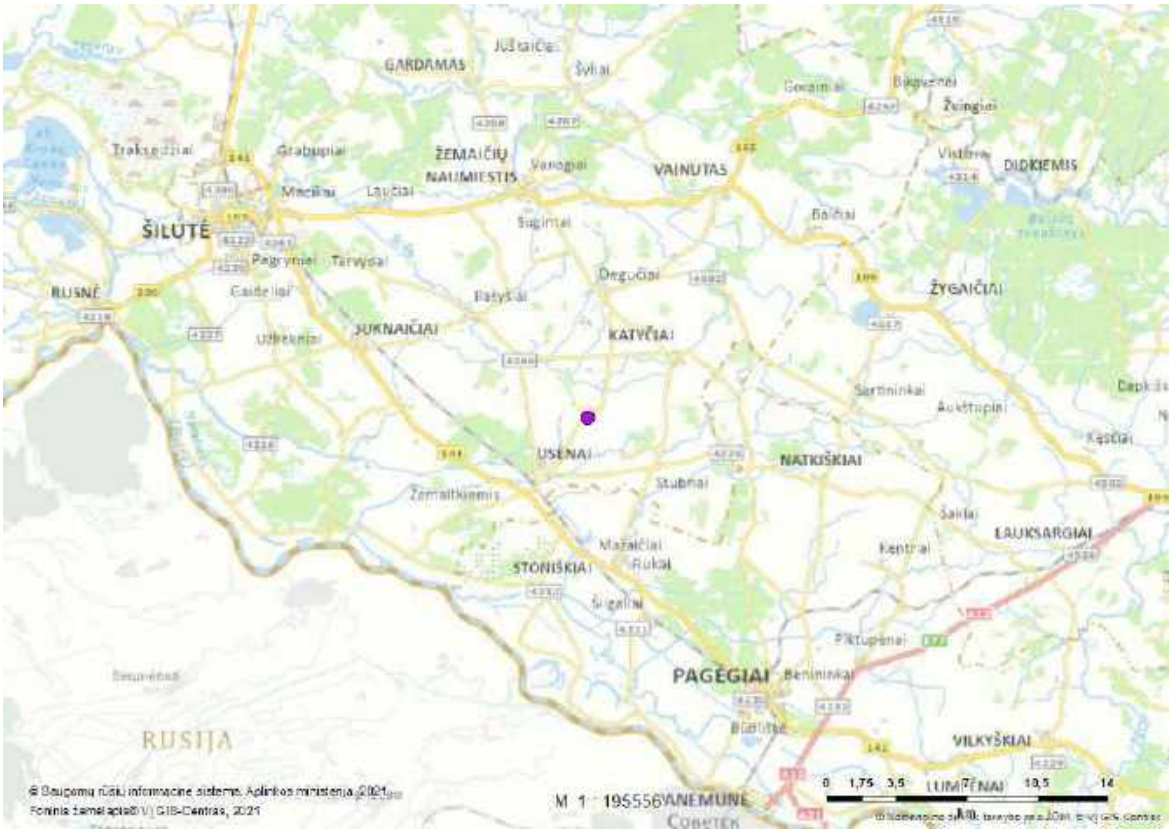
Taškas [354245,63 6126475,02]

# 48. RAD-EPTNIL072057 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072057 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

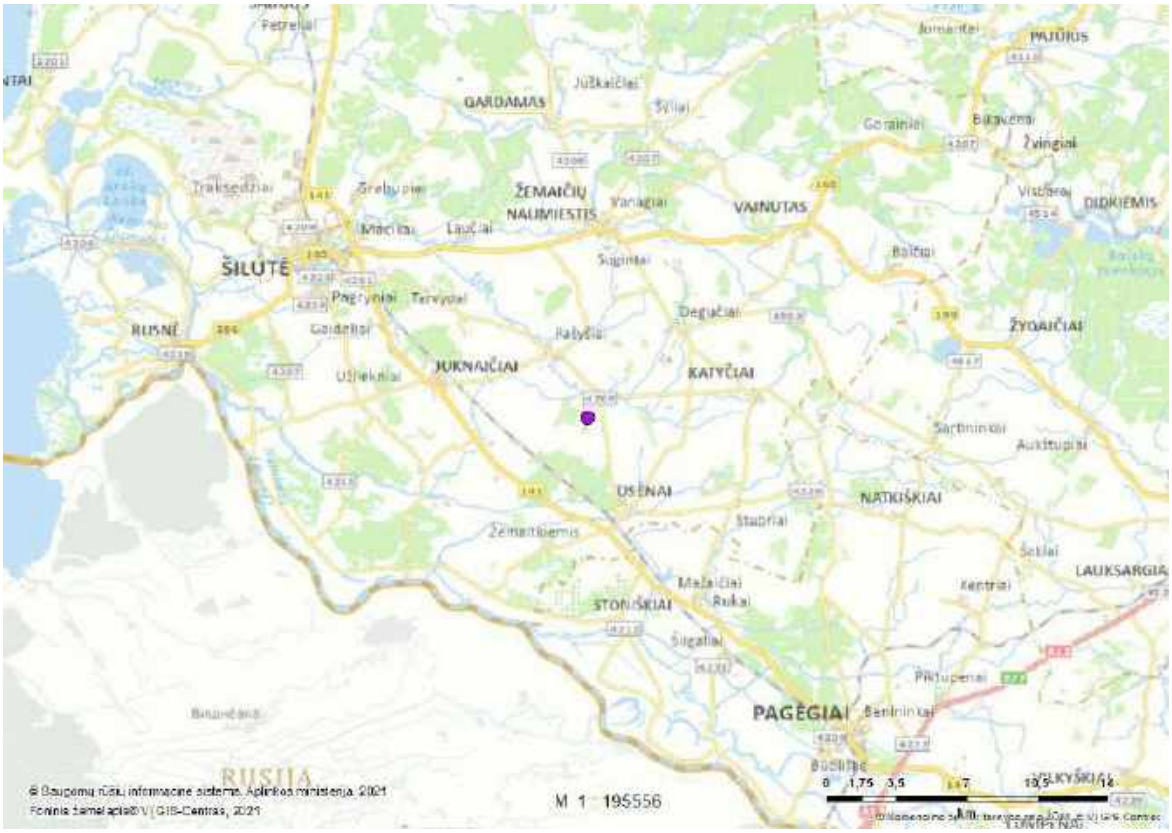
Taškas [357615,90 6127142,87]

# 49. RAD-EPTNIL071992 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL071992 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [353633,95 6129005,09]

# 50. RAD-EPTNIL072026 (Šiaurinis šikšnys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EPTNIL072026 |
| **Rūšis (lietuviškas pavadinimas)** | Šiaurinis šikšnys |
| **Rūšis (lotyniškas pavadinimas)** | Eptesicus nilssoni |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-20 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Poligonas [354146,14 6129543,61, 354110,65 6129564,49, 353998,49 6129514,50, 354000,31 6129488,82, 354146,14 6129543,61]

# 51. RAD-LUTLUT042371 (Ūdra)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-LUTLUT042371 |
| **Rūšis (lietuviškas pavadinimas)** | Ūdra |
| **Rūšis (lotyniškas pavadinimas)** | Lutra lutra |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2008-07-15 | [nėra duomenų] | stebėti veiklos požymiai | išmatos |

**Radavietės/augavietės koordinatės:**

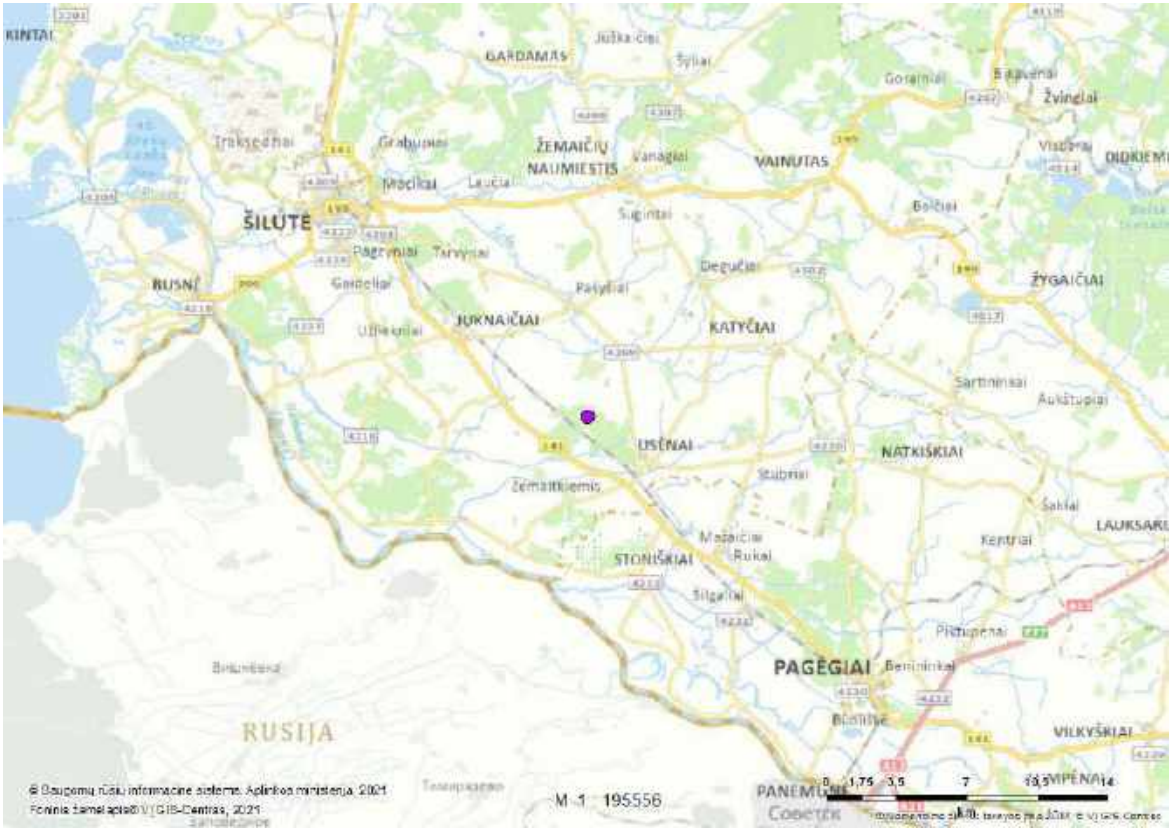
Taškas [354307,79 6129947,66]

# 52. AUG-PLACHL032976 (Žalsvažiedė blandis)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | AUG-PLACHL032976 |
| **Rūšis (lietuviškas pavadinimas)** | Žalsvažiedė blandis |
| **Rūšis (lotyniškas pavadinimas)** | Platanthera chlorantha |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-08-22 | Pirmas stebėjimas | žydintis augalas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

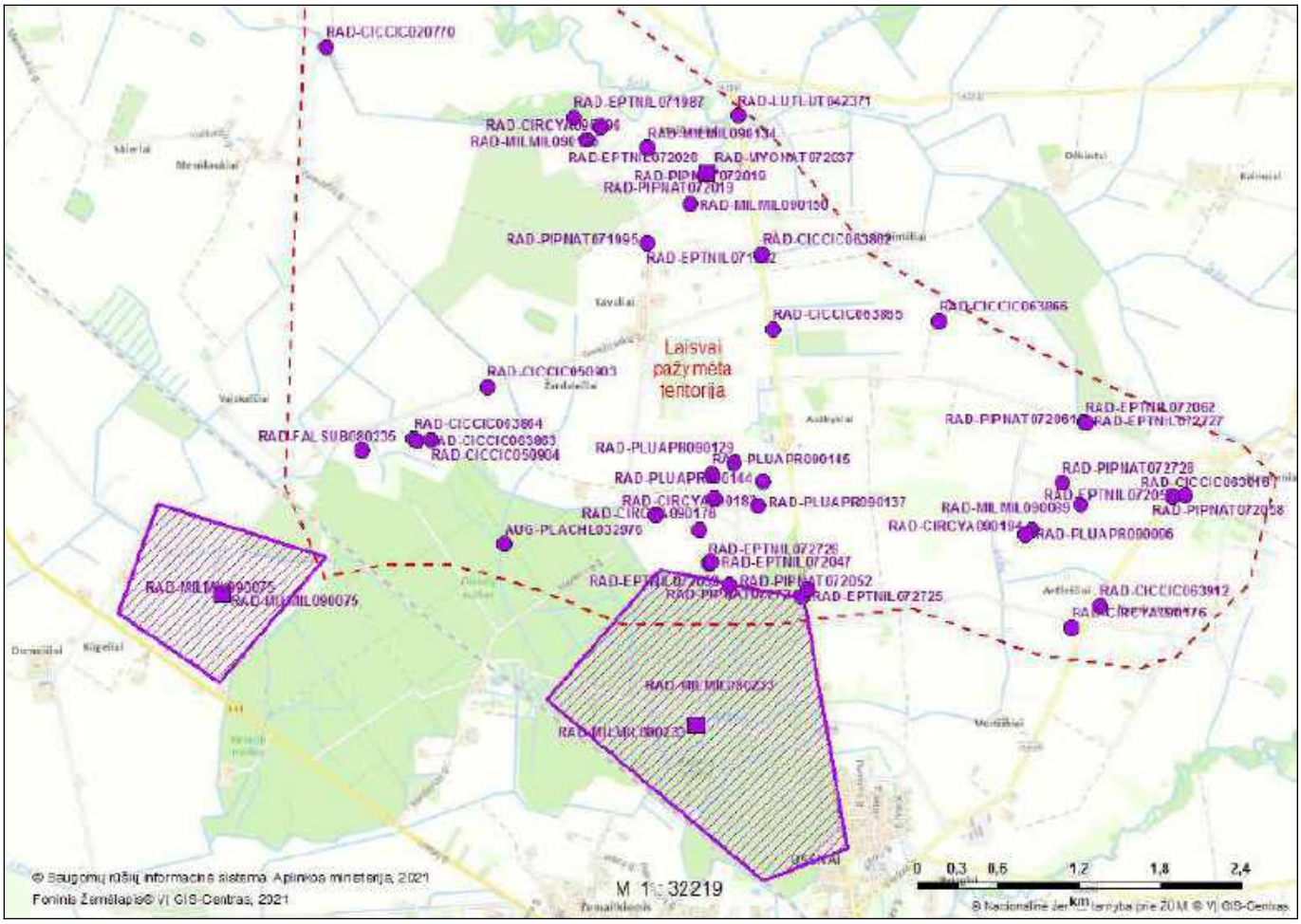
Taškas [352578,00 6126779,00]

# Išrašo santrauka

**Prašyta teritorija:** Laisvai pažymėta teritorija

**Prašytos rūšys:** Visos rūšys

**Teritorijoje aptinkamų prašytų saugomų rūšių radaviečių ir augaviečių apžvalginis žemėlapis:**




**Išraše pateikiamų teritorijoje aptinkamų prašytų saugomų rūšių radaviečių ir augaviečių sąrašas:**

| Eil. nr. | Rūšis (lietuviškas pavadinimas) | Rūšis (lotyniškas pavadinimas) | Radavietės kodas | Paskutinio stebėjimo data |
|---|---|---|---|---|
| 1. | Aukštoji gegūnė | *Dactylorhiza fuchsii* | AUG-DACFUC028556 | 2010-08-22 |
| 2. | Aukštoji gegūnė | *Dactylorhiza fuchsii* | AUG-DACFUC014202 | 2010-08-23 |
| 3. | Aukštoji gegūnė | *Dactylorhiza fuchsii* | AUG-DACFUC011839 | 2014-06-02 |
| 4. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC050903 | 2009-09-16 |
| 5. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063864 | 2009-09-16 |
| 6. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC050904 | 2009-09-16 |
| 7. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063915 | 2009-09-16 |
| 8. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063862 | 2009-09-16 |
| 9. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063863 | 2009-09-16 |
| 10. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063912 | 2009-09-16 |
| 11. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063865 | 2009-09-16 |

| Eil. nr. | Rūšis (lietuviškas pavadinimas) | Rūšis (lotyniškas pavadinimas) | Radavietės kodas | Paskutinio stebėjimo data |
|---|---|---|---|---|
| 12. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063866 | 2009-09-16 |
| 13. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020770 | 2010-07-30 |
| 14. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090129 | 2016-09-29 |
| 15. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090096 | 2016-09-29 |
| 16. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090144 | 2016-09-29 |
| 17. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090136 | 2016-10-04 |
| 18. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090145 | 2016-10-22 |
| 19. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090137 | 2016-10-25 |
| 20. | Eurazinis sketsakalis | *Falco subbuteo* | RAD-FALSUB080235 | 2014-06-02 |
| 21. | Javinė lingė | *Circus cyaneus* | RAD-CIRCYA090183 | 2016-09-26 |
| 22. | Javinė lingė | *Circus cyaneus* | RAD-CIRCYA090176 | 2016-09-29 |
| 23. | Javinė lingė | *Circus cyaneus* | RAD-CIRCYA090178 | 2016-10-12 |
| 24. | Javinė lingė | *Circus cyaneus* | RAD-CIRCYA090196 | 2016-10-13 |
| 25. | Javinė lingė | *Circus cyaneus* | RAD-CIRCYA090194 | 2016-10-23 |
| 26. | Natererio pelėausis | *Myotis nattereri* | RAD-MYONAT072037 | 2015-06-20 |
| 27. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072724 | 2015-06-19 |
| 28. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072728 | 2015-06-19 |
| 29. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT071995 | 2015-06-20 |
| 30. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072061 | 2015-06-20 |
| 31. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072019 | 2015-06-20 |
| 32. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072058 | 2015-06-20 |
| 33. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072052 | 2015-06-20 |
| 34. | Plunksninė pliusnė | *Neckera pennata* | AUG-NECPEN018363 | 2010-08-30 |
| 35. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL080233 | 2014-06-02 |
| 36. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090150 | 2016-09-27 |
| 37. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090089 | 2016-09-29 |
| 38. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090075 | 2016-10-02 |
| 39. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090134 | 2016-10-10 |
| 40. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090135 | 2016-10-10 |
| 41. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072727 | 2015-06-19 |
| 42. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072725 | 2015-06-19 |
| 43. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072726 | 2015-06-19 |
| 44. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072047 | 2015-06-20 |
| 45. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL071987 | 2015-06-20 |
| 46. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072062 | 2015-06-20 |

| Eil. nr. | Rūšis (lietuviškas pavadinimas) | Rūšis (lotyniškas pavadinimas) | Radavietės kodas | Paskutinio stebėjimo data |
|---|---|---|---|---|
| 47. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072053 | 2015-06-20 |
| 48. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072057 | 2015-06-20 |
| 49. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL071992 | 2015-06-20 |
| 50. | Šiaurinis šikšnys | *Eptesicus nilssoni* | RAD-EPTNIL072026 | 2015-06-20 |
| 51. | Ūdra | *Lutra lutra* | RAD-LUTLUT042371 | 2008-07-15 |
| 52. | Žalsvažiedė blandis | *Platanthera chlorantha* | AUG-PLACHL032976 | 2010-08-22 |

Valstybinė saugomų teritorijų tarnyba prie Aplinkos Ministerijos
Antakalnio g.25, Vilnius, LT-10312
tel. +370 5 272 3284, faks. +370 5 272 2572
el. paštas: vstt@vstt.lt

# IŠRAŠAS

## IŠ SAUGOMŲ RŪŠIŲ INFORMACINĖS SISTEMOS

Nr. SRIS-2021-14869107

Išrašo suformavimo data: 2021-03-05 14:39:15

| | |
|---|---|
| **Prašymo numeris** | SRIS-2021-14869107 |
| **Prašymo data** | 2021-03-02 |
| **Išrašo gavimo tikslas** | Aštuonių vėjo elektrinių (Šilutės raj. sav. Usėnų ir Juknaičių sen.: Kavolių, Stremenių, Kūgelių, Okslindžių, Skierių bei Menklaukių kaimuose) statybos ir eksploatacijos, informacija atrankai dėl poveikio aplinkai vertinimo<br>Kita dalis rengiamos VJ parko PAV atrankos ataskaitos. Vienos dalies išrašą jau gavau. |

**Prašyta teritorija:** Laisvai pažymėta teritorija

**Prašytos rūšys:** Visos rūšys

**Išrašą suformavo:** *Saugomų rūšių informacinė sistema*

**Išraše pateikiama situacija iki:** *2021-02-03*

DĖMESIO! Išraše esančius duomenis, kuriuose yra tikslios saugomų gyvūnų, augalų ir gyvūnų rūšių radaviečių ar augaviečių koordinatės, galima naudoti tik nurodytais tikslais, neatskleisti jų kitiems asmenims, jei tai galėtų sukelti grėsmę saugomų rūšių išlikimui.

**Kituose puslapiuose pateikiami detalūs prašytoje teritorijoje aptinkamų saugomų rūšių radaviečių ar augaviečių bei jų stebėjimų duomenys:**



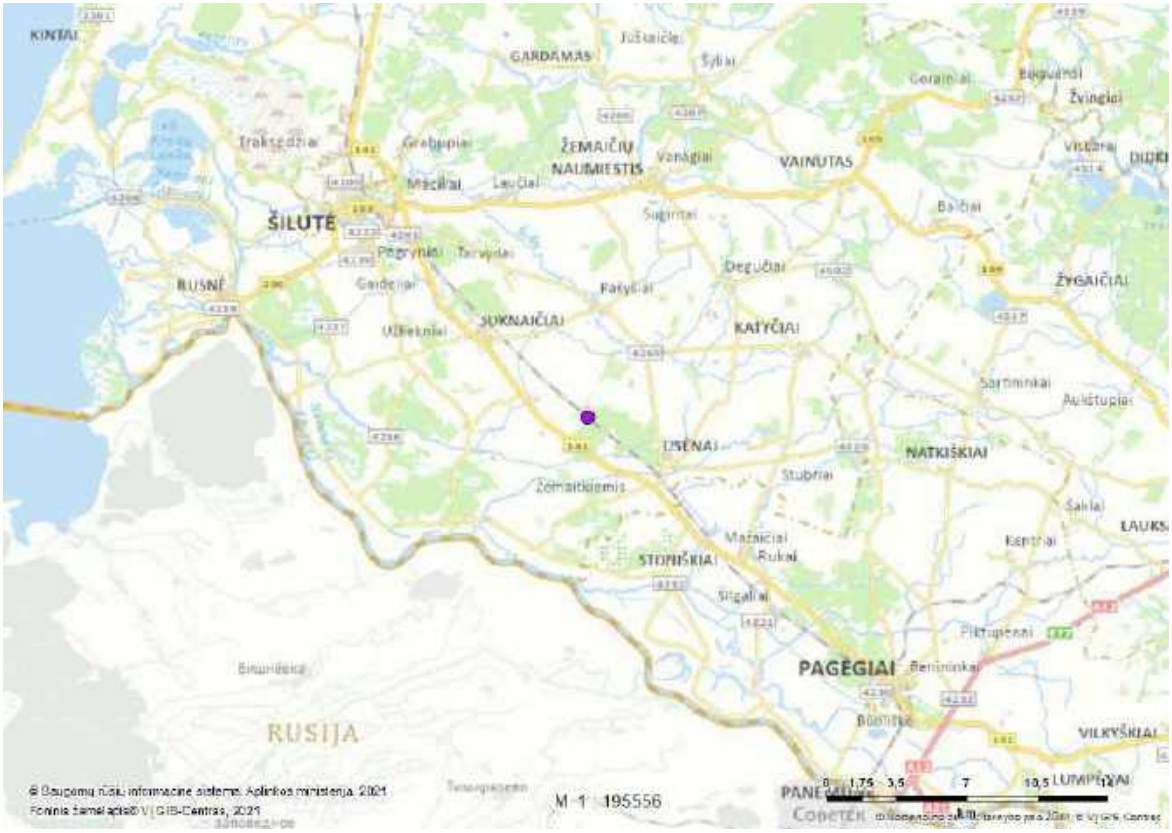
Išrašas iš Saugomų rūšių informacinės sistemos
Nr. SRIS-2021-14869107

# 1. AUG-DACFUC011839 (Aukštoji gegūnė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | AUG-DACFUC011839 |
| **Rūšis (lietuviškas pavadinimas)** | Aukštoji gegūnė |
| **Rūšis (lotyniškas pavadinimas)** | Dactylorhiza fuchsii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-02 | Pirmas stebėjimas | daigas/vegetuojantis augalas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

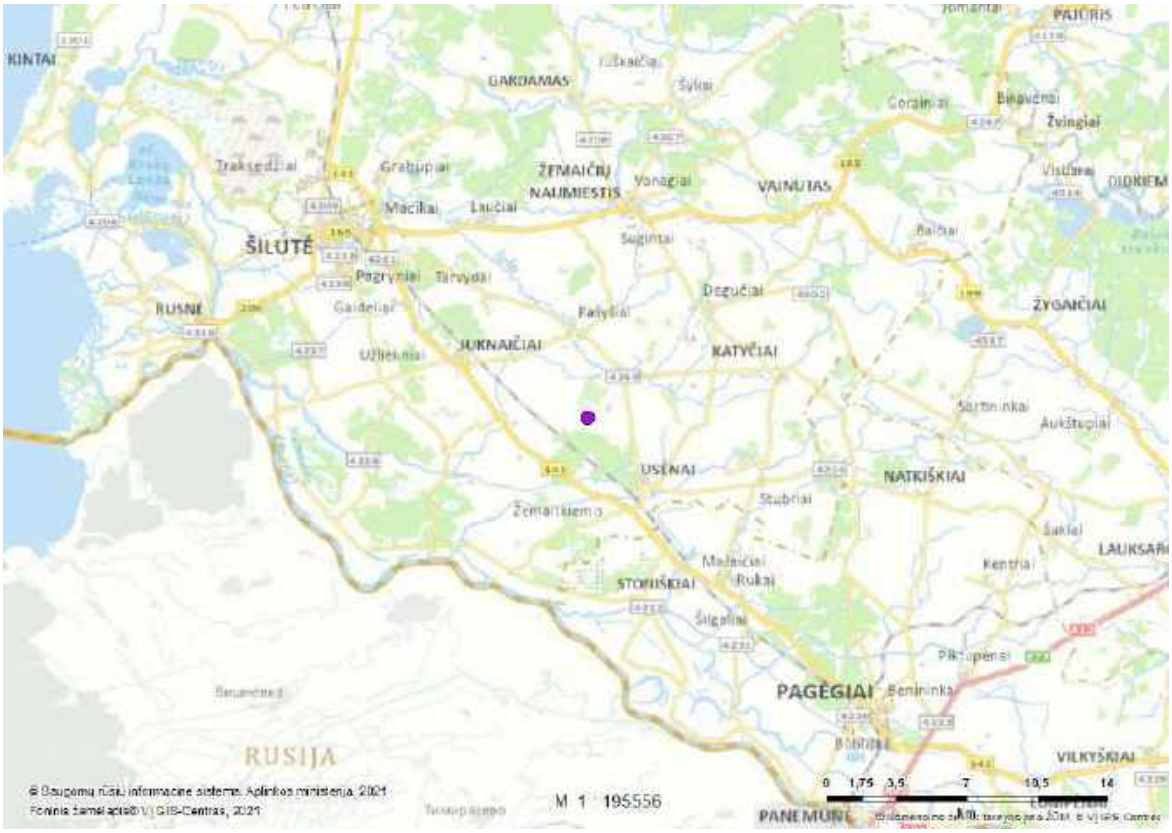
Taškas [351346,00 6126783,00]

# 2. RAD-CICCIC050903 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC050903 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

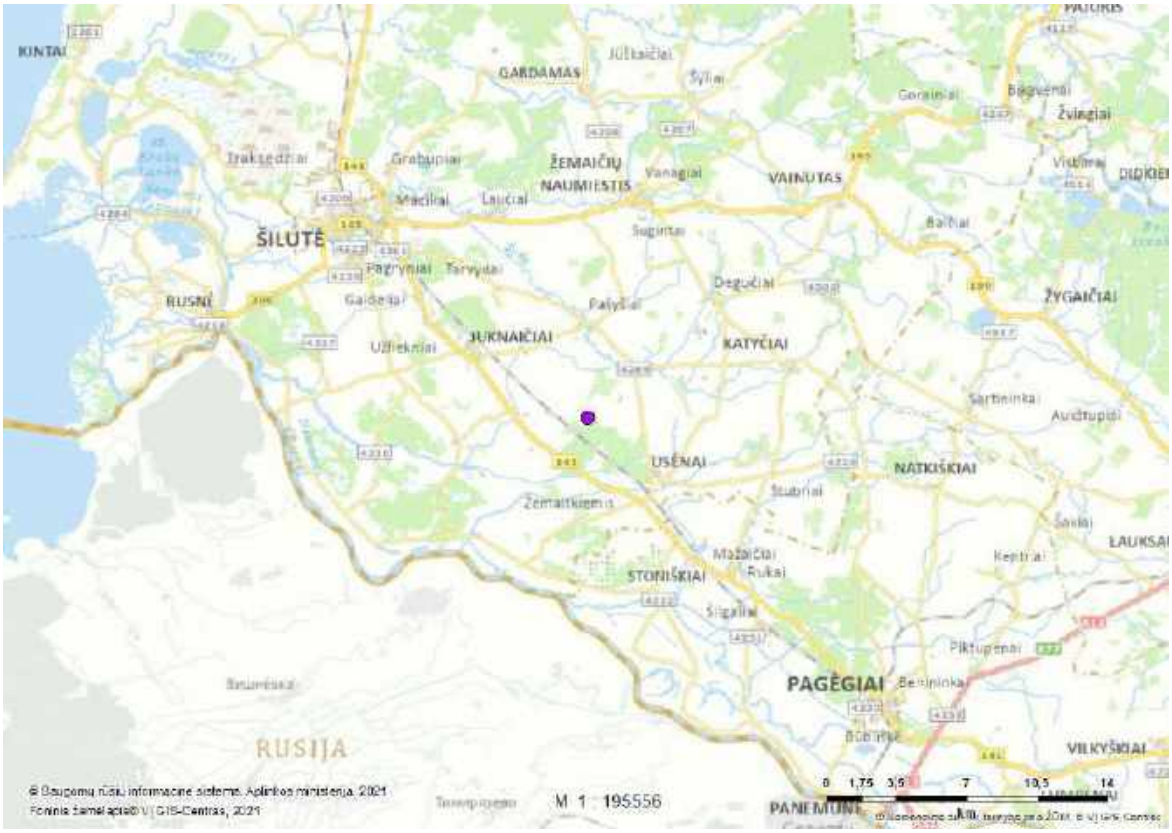
Taškas [352449,00 6127943,00]

# 3. RAD-CICCIC063864 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063864 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

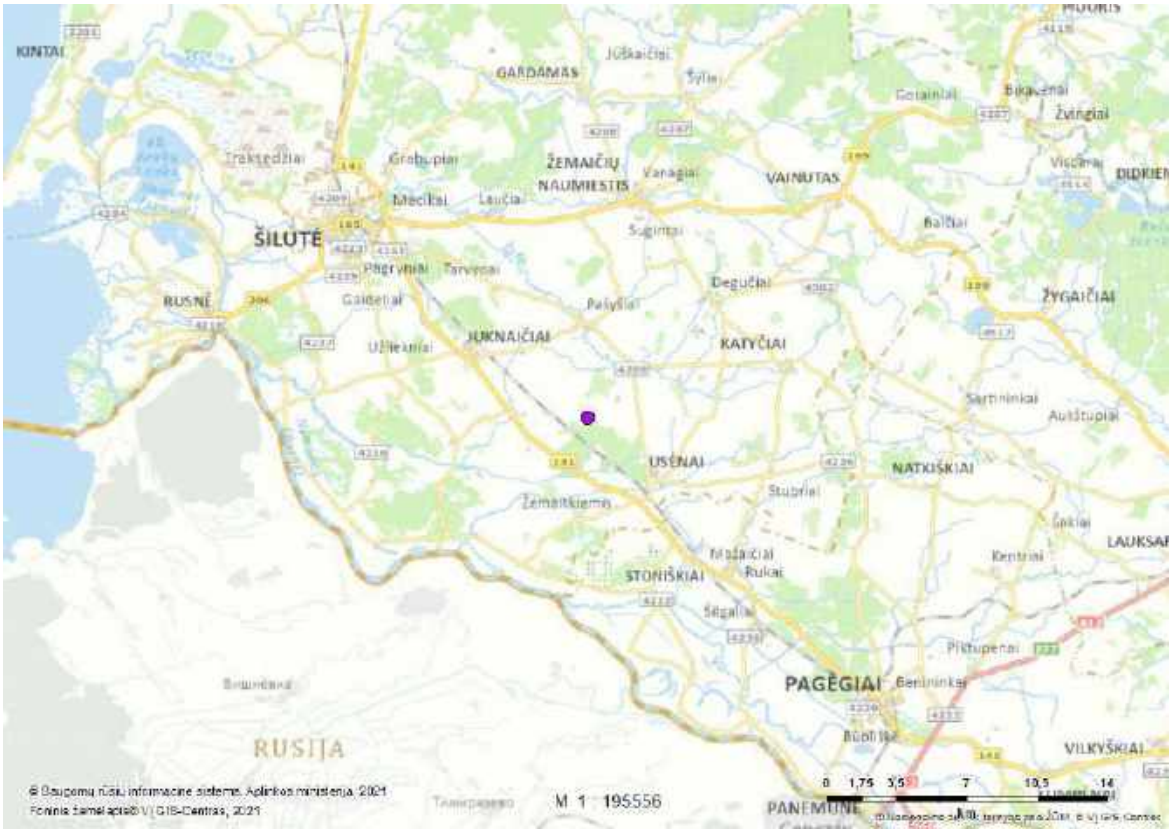
Taškas [351910,00 6127556,00]

# 4. RAD-CICCIC050904 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC050904 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

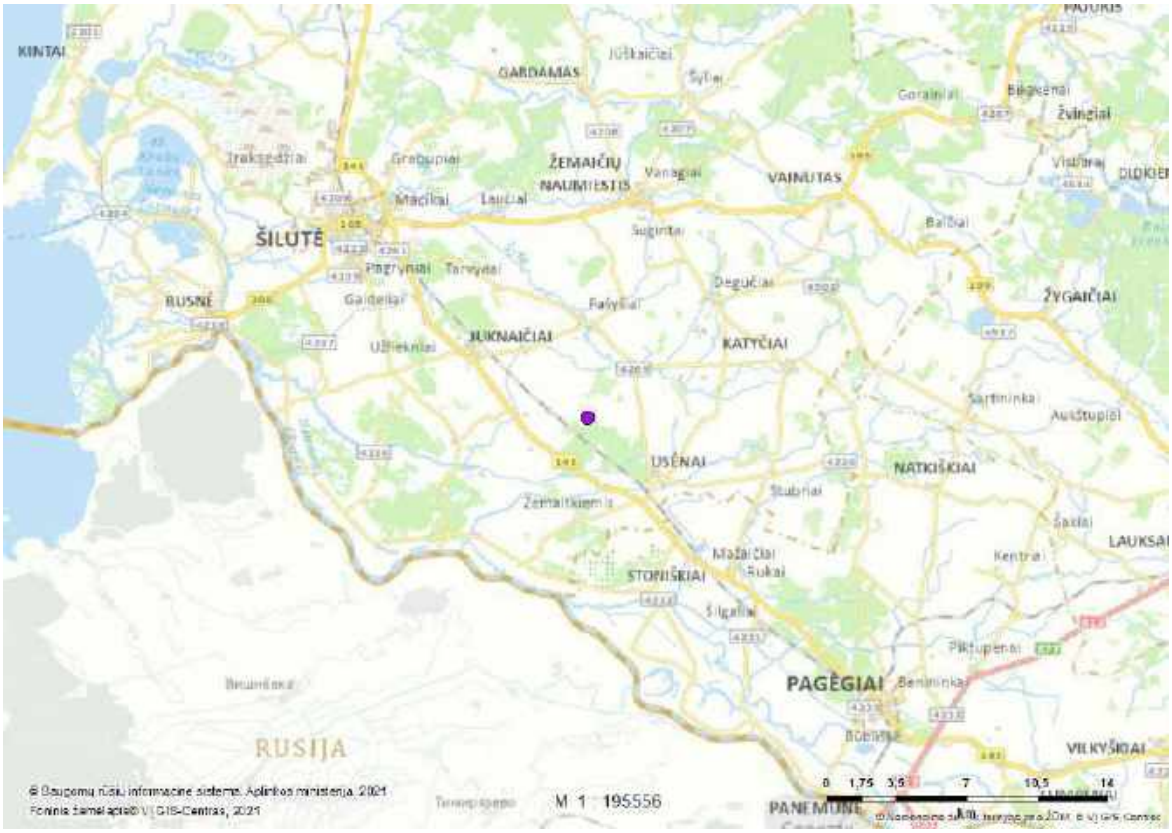
Taškas [352031,00 6127552,00]

# 5. RAD-CICCIC063863 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC063863 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2009-09-16 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

Taškas [351936,00 6127543,00]

# 6. RAD-CICCIC070487 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC070487 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | suaugęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

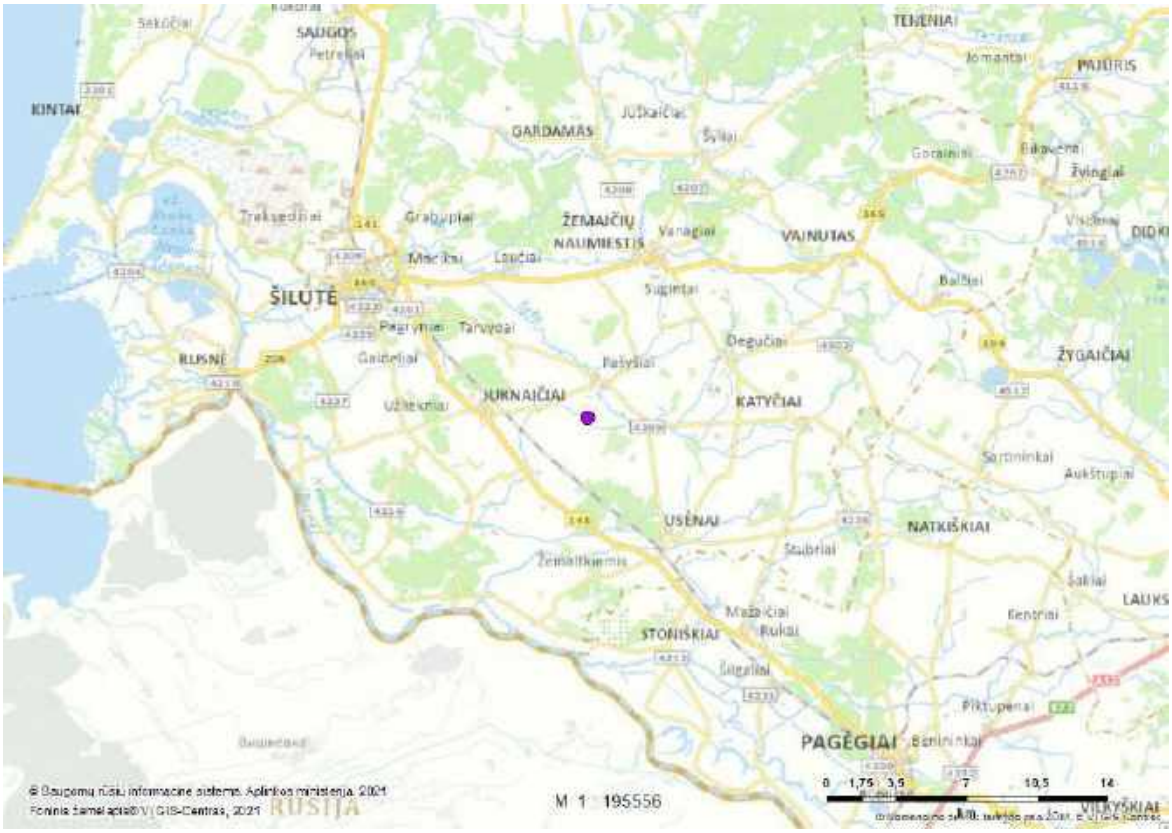
Taškas [348121,00 6129659,00]

# 7. RAD-CICCIC020770 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020770 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

Taškas [351260,00 6130454,00]

# 8. RAD-CICCIC020751 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020751 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

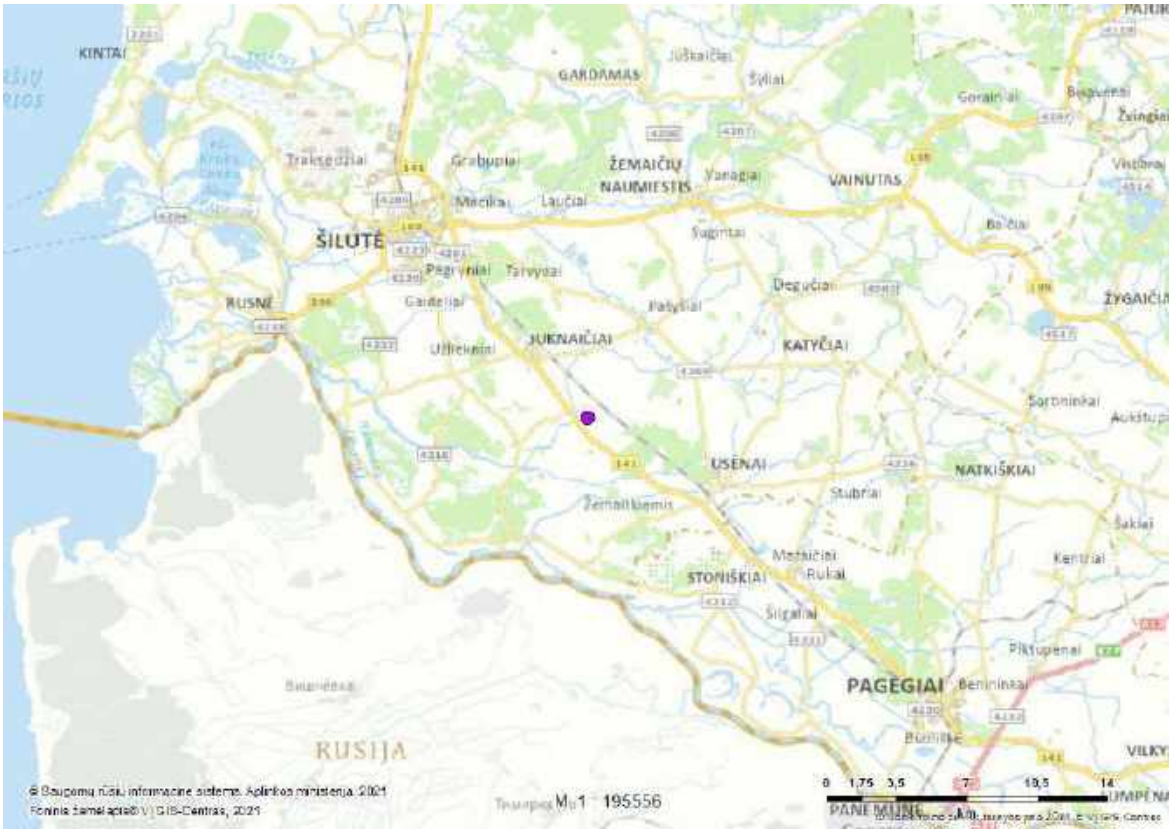
Taškas [347917,00 6130767,00]

# 9. RAD-CICCIC020748 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020748 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

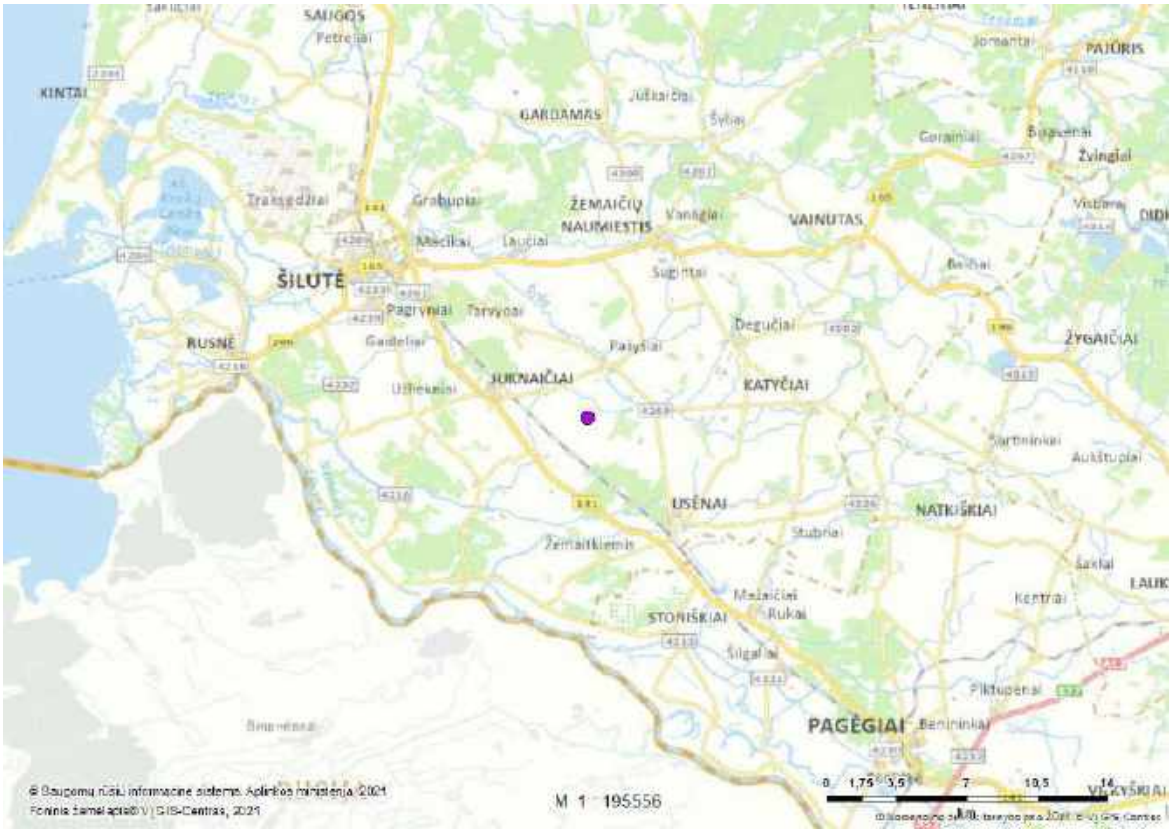
Taškas [348934,00 6127644,00]

# 10. RAD-CICCIC020768 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020768 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

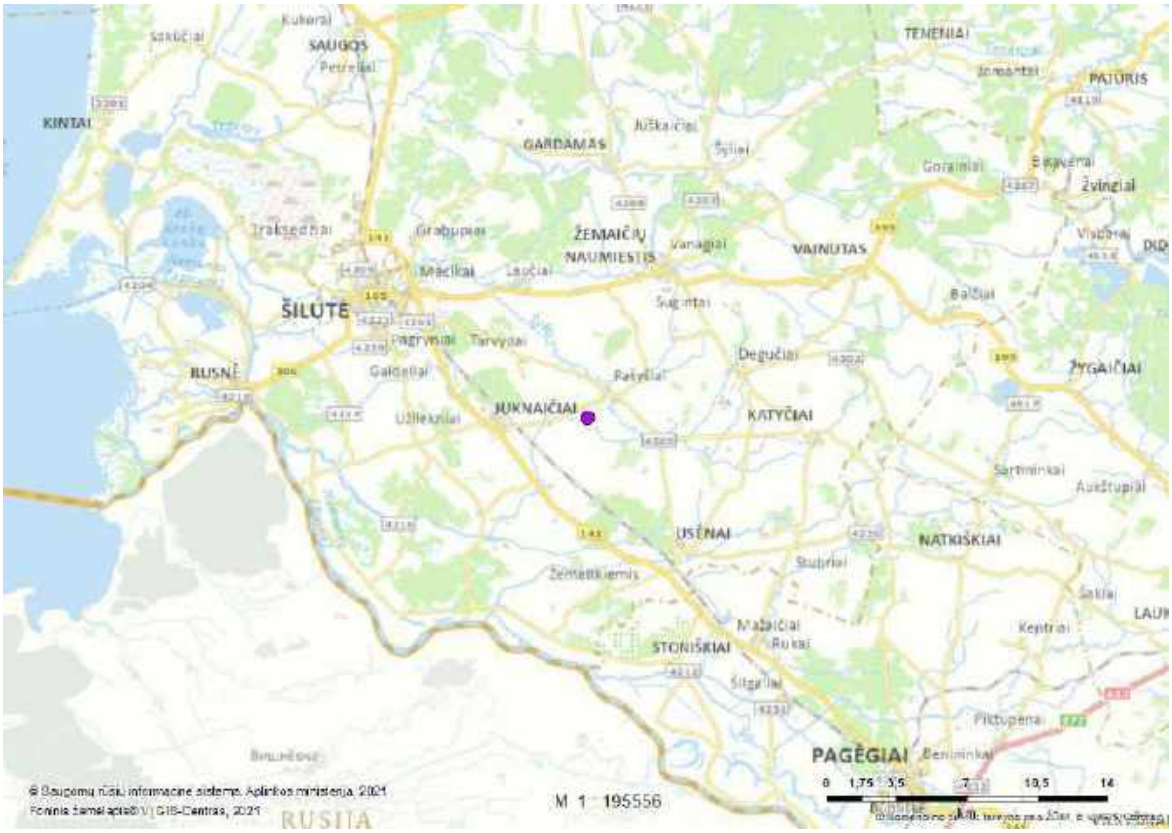
Taškas [350877,00 6129630,00]

# 11. RAD-CICCIC020773 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020773 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

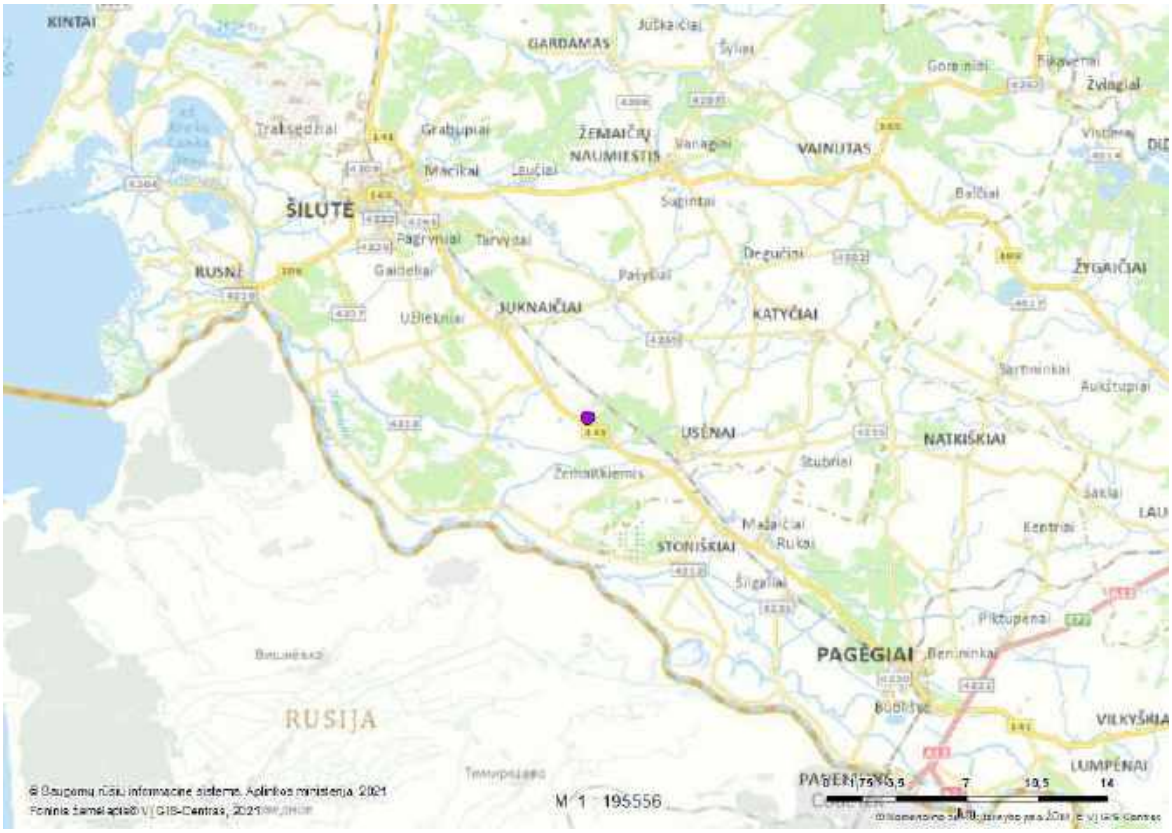
Taškas [350690,00 6131113,00]

# 12. RAD-CICCIC020747 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020747 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

Taškas [350448,00 6126097,00]

# 13. RAD-CICCIC020758 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020758 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

Taškas [348847,00 6130710,00]

# 14. RAD-CICCIC020766 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020766 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

Taškas [349738,00 6129773,00]

# 15. RAD-CICCIC020750 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020750 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

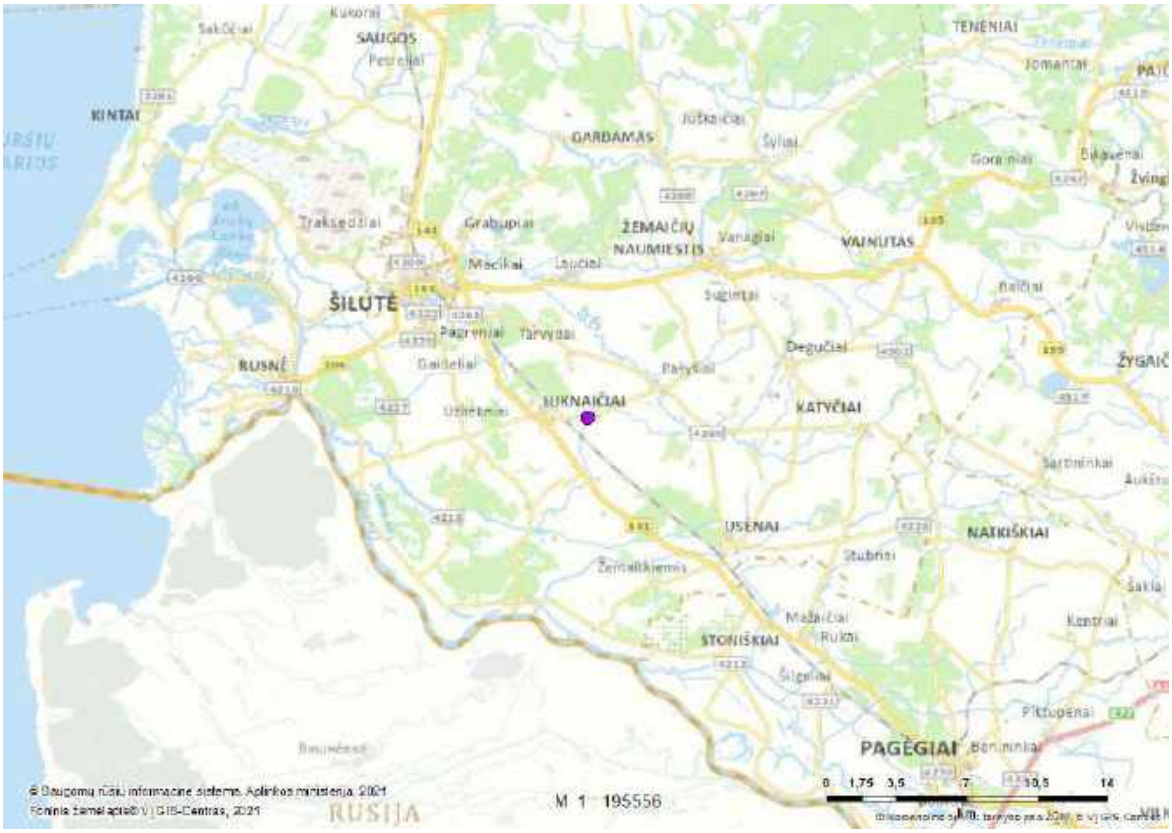
Taškas [347729,00 6130741,00]

# 16. RAD-CICCIC020753 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020753 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

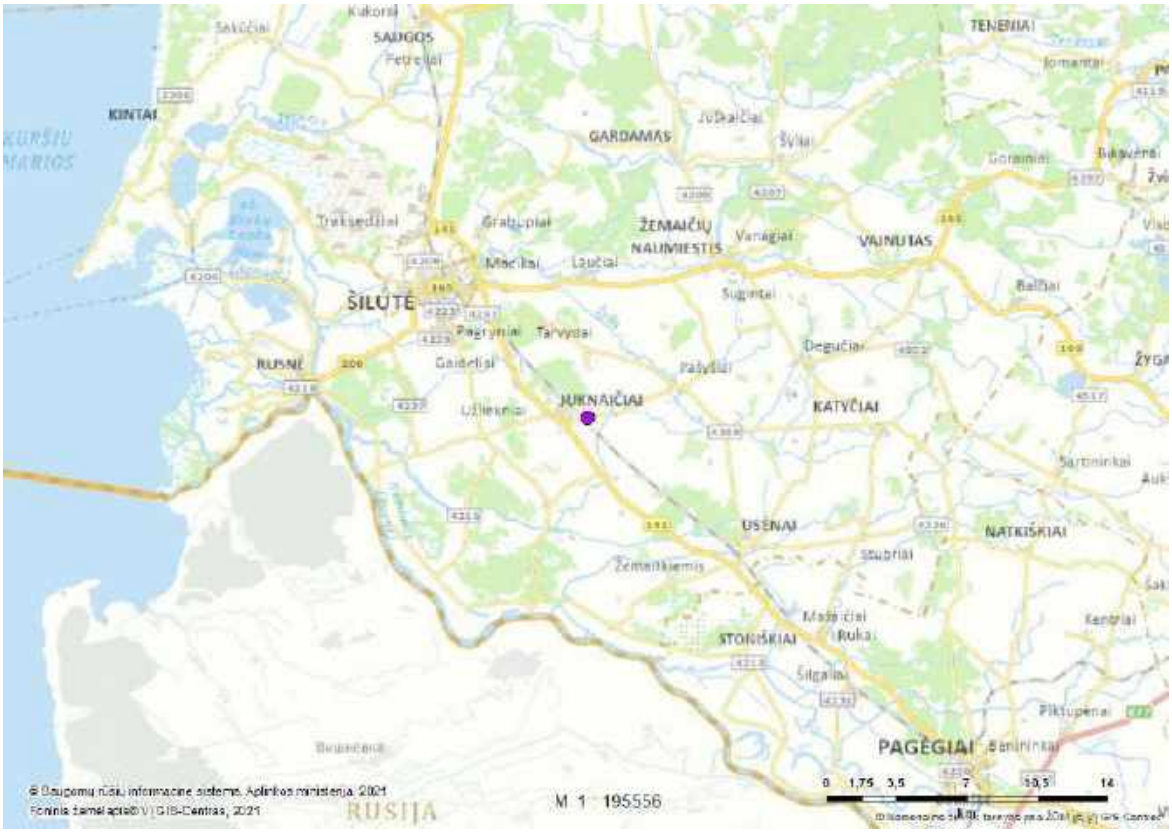
Taškas [348279,00 6130755,00]

# 17. RAD-CICCIC020749 (Baltasis gandras)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CICCIC020749 |
| **Rūšis (lietuviškas pavadinimas)** | Baltasis gandras |
| **Rūšis (lotyniškas pavadinimas)** | Ciconia ciconia |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2010-07-30 | Pirmas stebėjimas | jaunas, nesubrendęs individas | lizdas, ola ir pan. |

**Radavietės/augavietės koordinatės:**

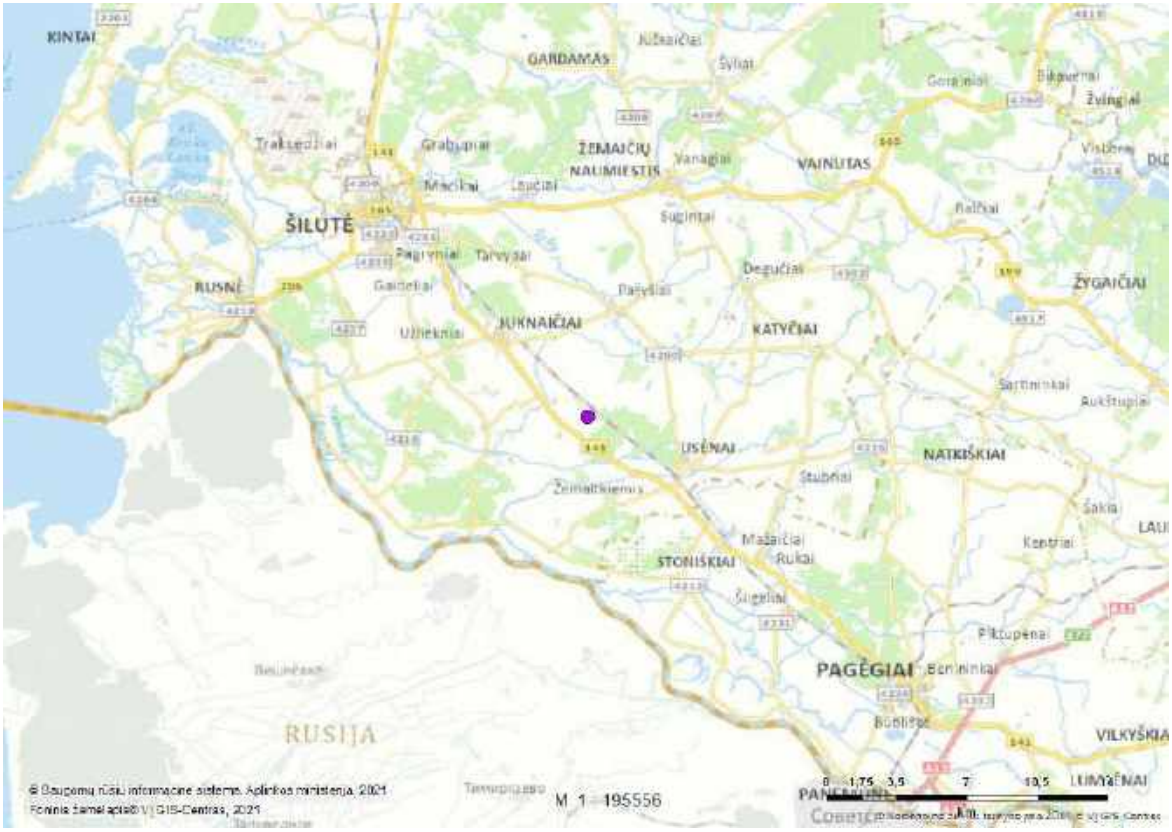
Taškas [347410,00 6130698,00]

# 18. RAD-PLUAPR090073 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090073 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-27 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

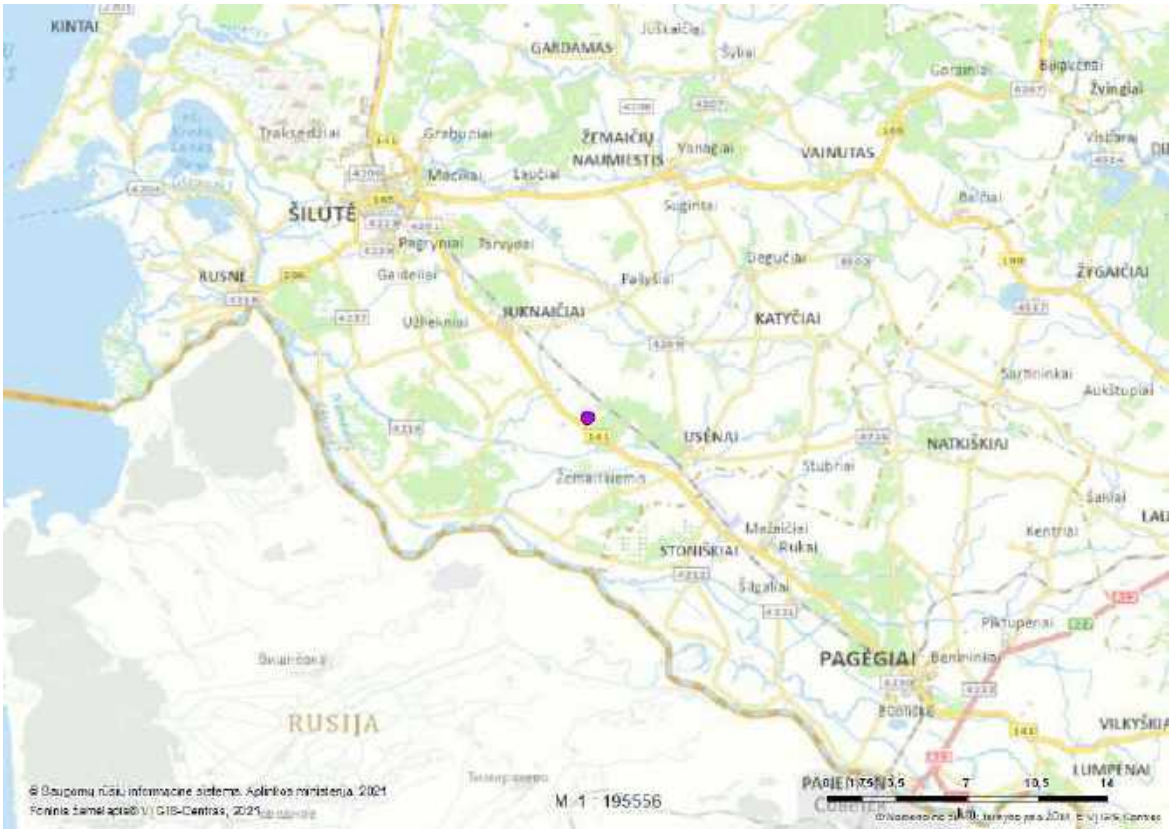
Taškas [350465,56 6126901,05]

# 19. RAD-PLUAPR090077 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090077 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-02 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

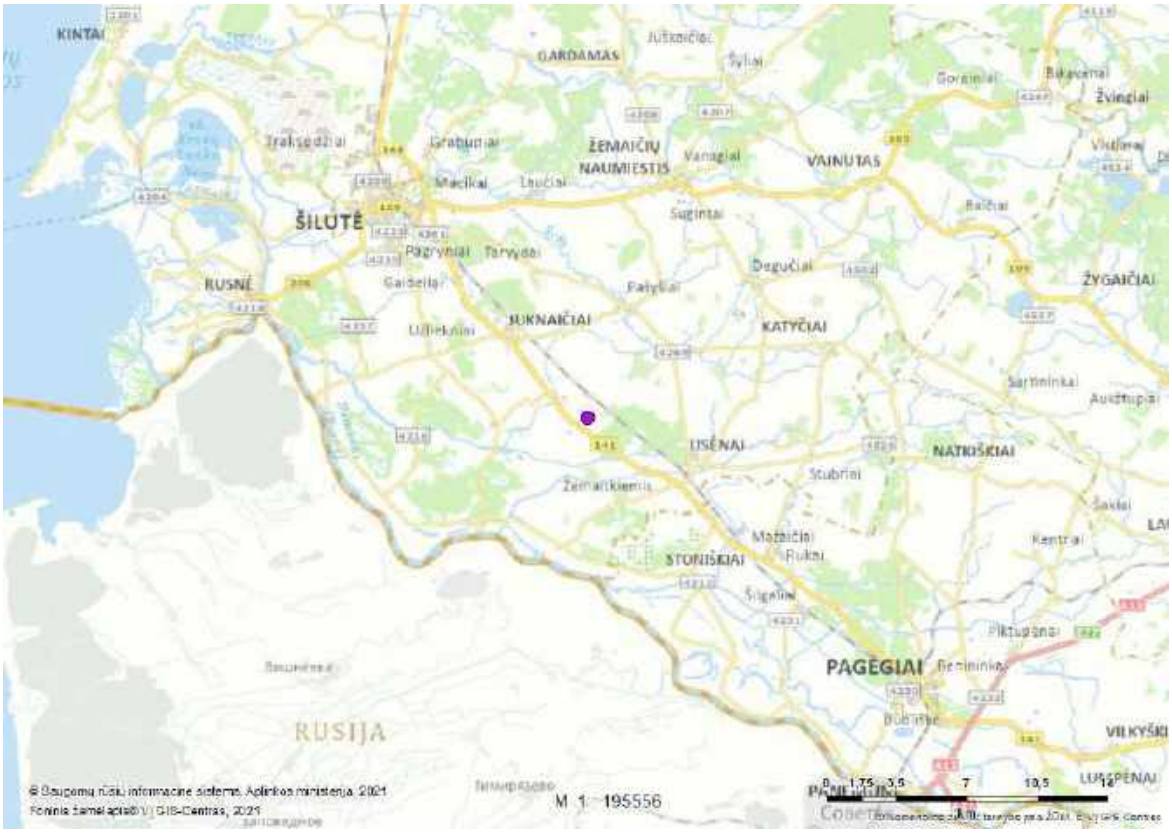
Taškas [350304,17 6126306,53]

# 20. RAD-PLUAPR090080 (Dirvinis sėjikas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PLUAPR090080 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvinis sėjikas |
| **Rūšis (lotyniškas pavadinimas)** | Pluvialis apricaria |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-10 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [349989,05 6126709,23]

# 21. RAD-ANTCAM087061 (Dirvoninis kalviukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-ANTCAM087061 |
| **Rūšis (lietuviškas pavadinimas)** | Dirvoninis kalviukas |
| **Rūšis (lotyniškas pavadinimas)** | Anthus campestris |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-05-04 | Stabili | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

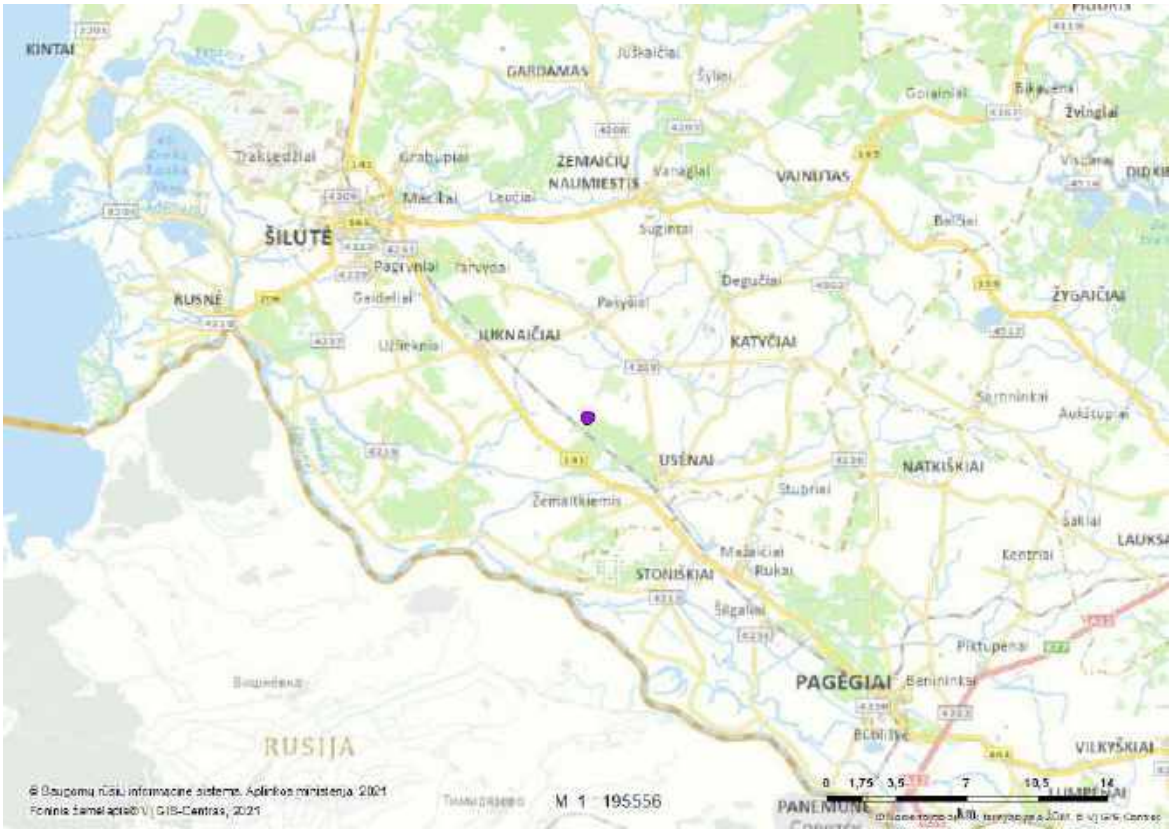
Taškas [349018,10 6130140,37]

# 22. RAD-FALSUB080235 (Eurazinis sketsakalis)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-FALSUB080235 |
| **Rūšis (lietuviškas pavadinimas)** | Eurazinis sketsakalis |
| **Rūšis (lotyniškas pavadinimas)** | Falco subbuteo |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-02 | [nėra duomenų] | suaugęs individas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

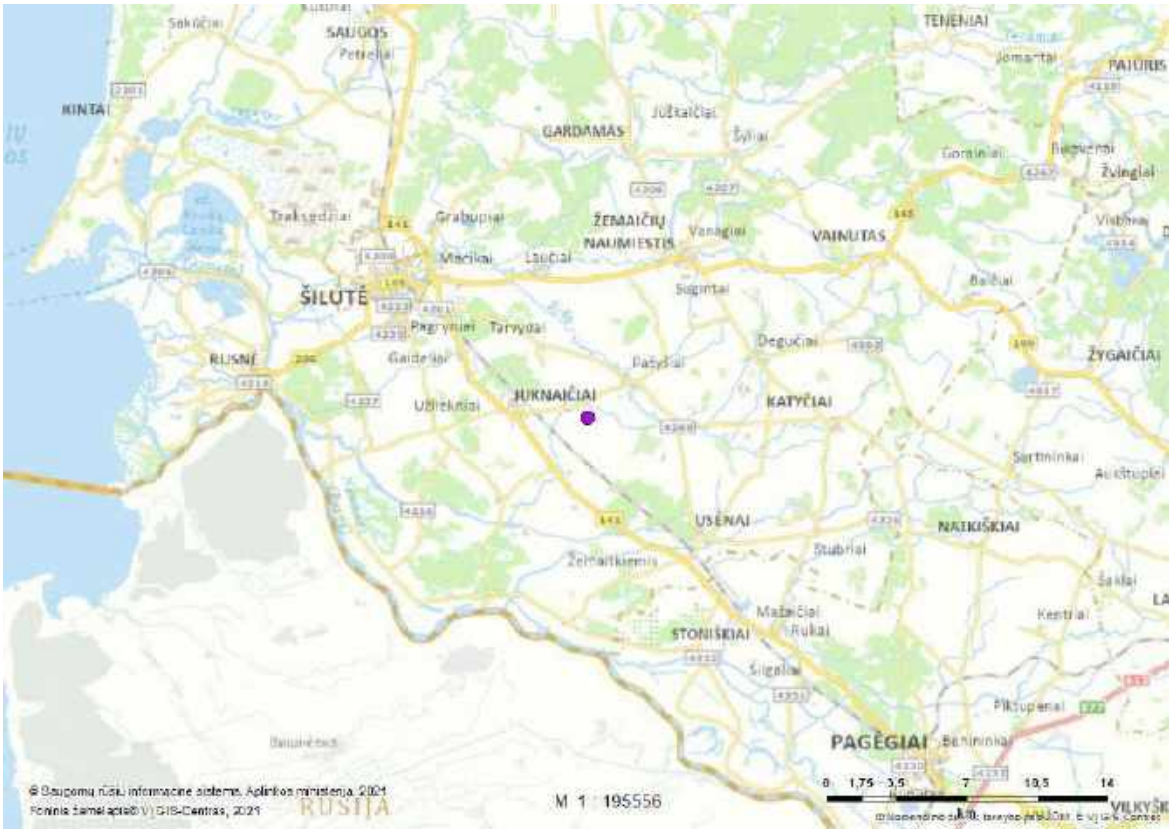
Taškas [351522,29 6127468,07]

# 23. RAD-FALSUB040170 (Eurazinis sketsakalis)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-FALSUB040170 |
| **Rūšis (lietuviškas pavadinimas)** | Eurazinis sketsakalis |
| **Rūšis (lotyniškas pavadinimas)** | Falco subbuteo |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-05-08 | [nėra duomenų] | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

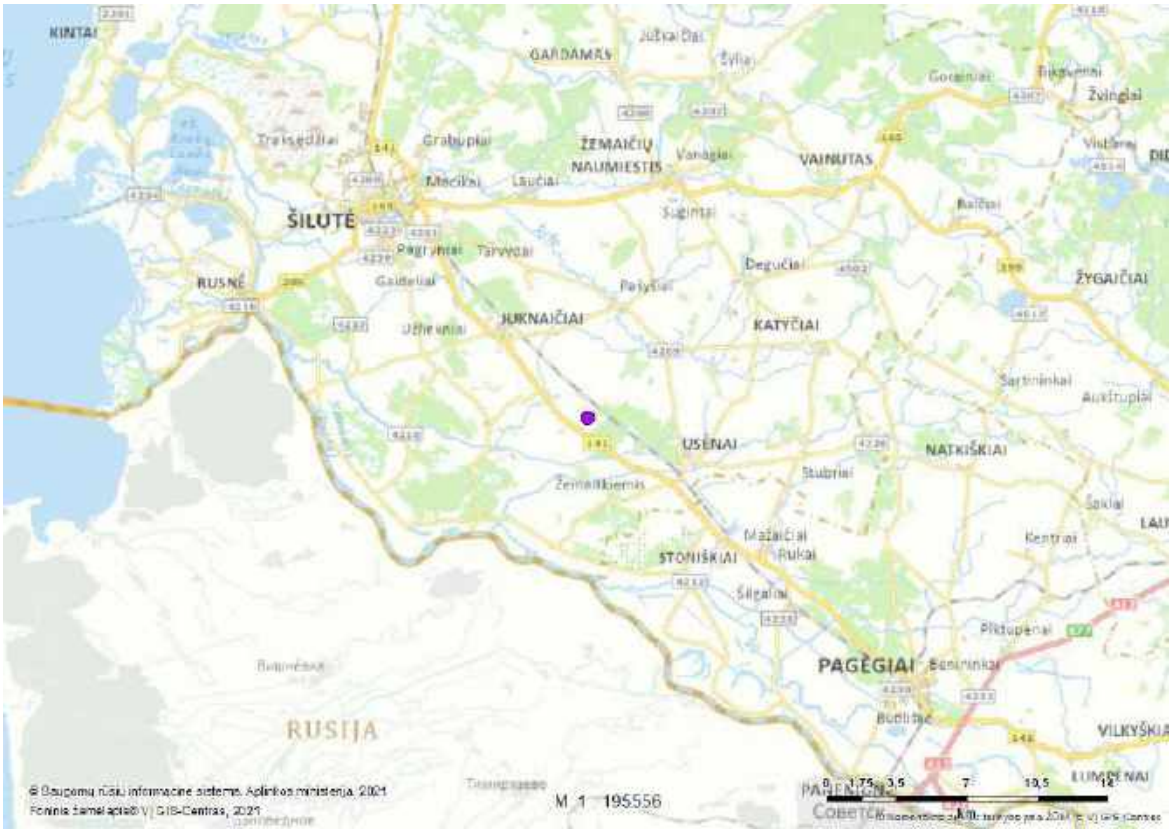
Taškas [349739,63 6130451,32]

# 24. RAD-CYGCYG090071 (Gulbė giesmininkė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CYGCYG090071 |
| **Rūšis (lietuviškas pavadinimas)** | Gulbė giesmininkė |
| **Rūšis (lotyniškas pavadinimas)** | Cygnus cygnus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-28 | Stabili | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

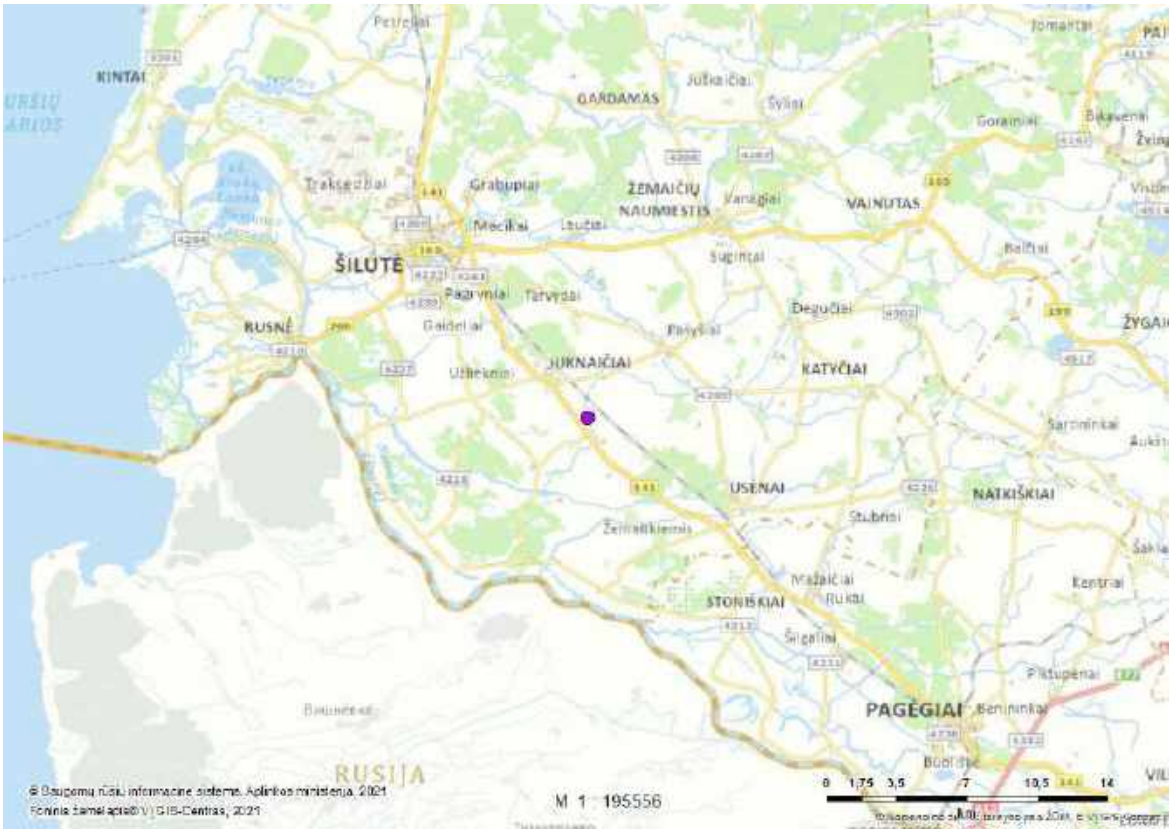
Taškas [350370,84 6126640,70]

# 25. RAD-CIRCYA056287 (Javinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRCYA056287 |
| **Rūšis (lietuviškas pavadinimas)** | Javinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus cyaneus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2011-03-12 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

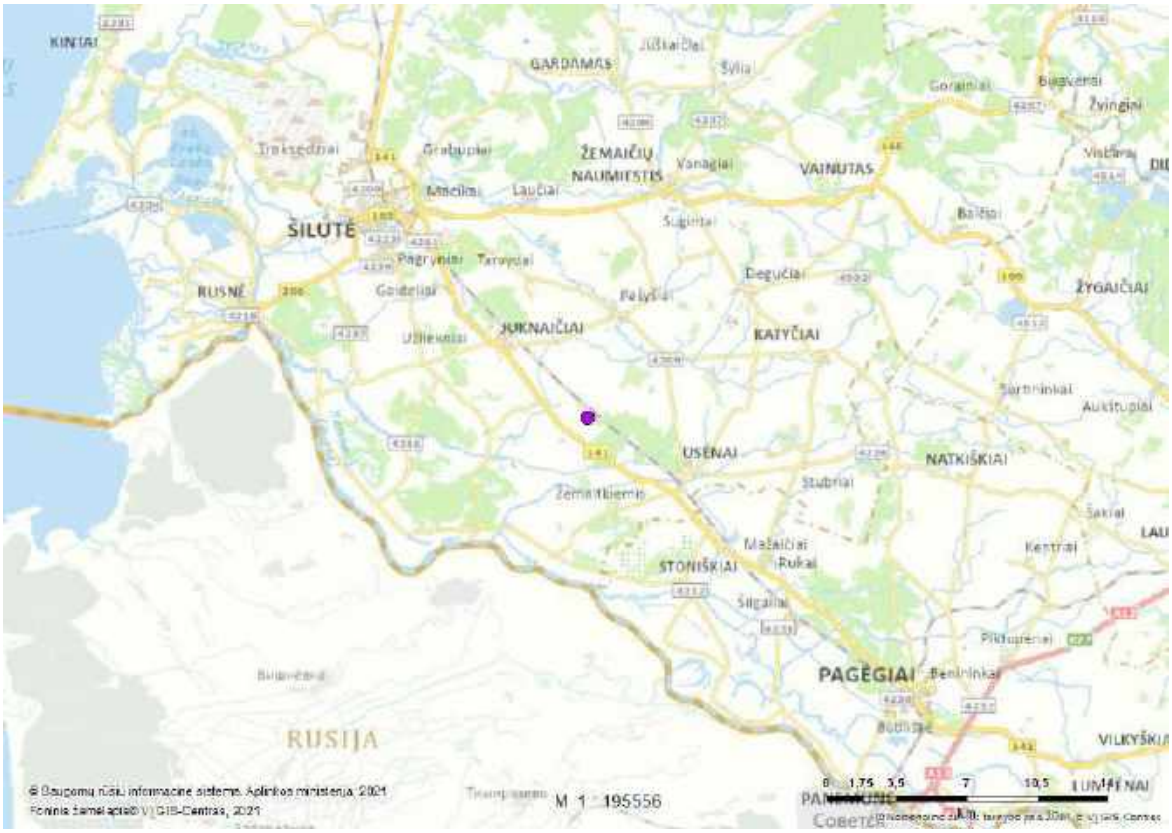
Taškas [348002,06 6128839,71]

# 26. RAD-PIPNAT072723 (Natuzijaus šikšniukas)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-PIPNAT072723 |
| **Rūšis (lietuviškas pavadinimas)** | Natuzijaus šikšniukas |
| **Rūšis (lotyniškas pavadinimas)** | Pipistrellus nathusii |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-06-17 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [350351,23 6127096,58]

# 27. RAD-CIRPYG040172 (Pievinė lingė)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-CIRPYG040172 |
| **Rūšis (lietuviškas pavadinimas)** | Pievinė lingė |
| **Rūšis (lotyniškas pavadinimas)** | Circus pygargus |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-05-08 | [nėra duomenų] | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [350324,81 6130158,95]

# 28. RAD-MILCAL086704 (Pilkoji starta)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILCAL086704 |
| **Rūšis (lietuviškas pavadinimas)** | Pilkoji starta |
| **Rūšis (lotyniškas pavadinimas)** | Miliaria calandra |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-05-04 | Pirmas stebėjimas | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

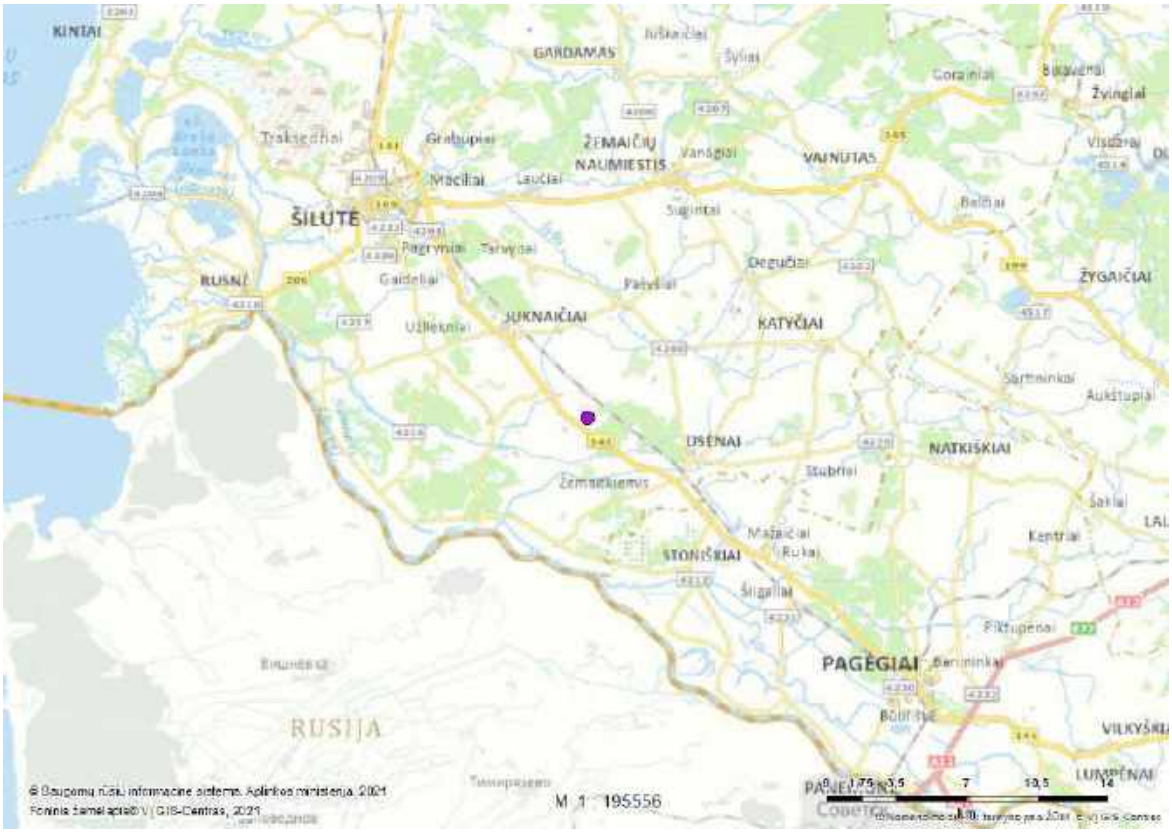
Taškas [349402,54 6129782,98]

# 29. RAD-MILMIL049796 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL049796 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-05-12 | Stabili | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [350182,26 6126542,03]

# 30. RAD-MILMIL088317 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL088317 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-05-04 | Stabili | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

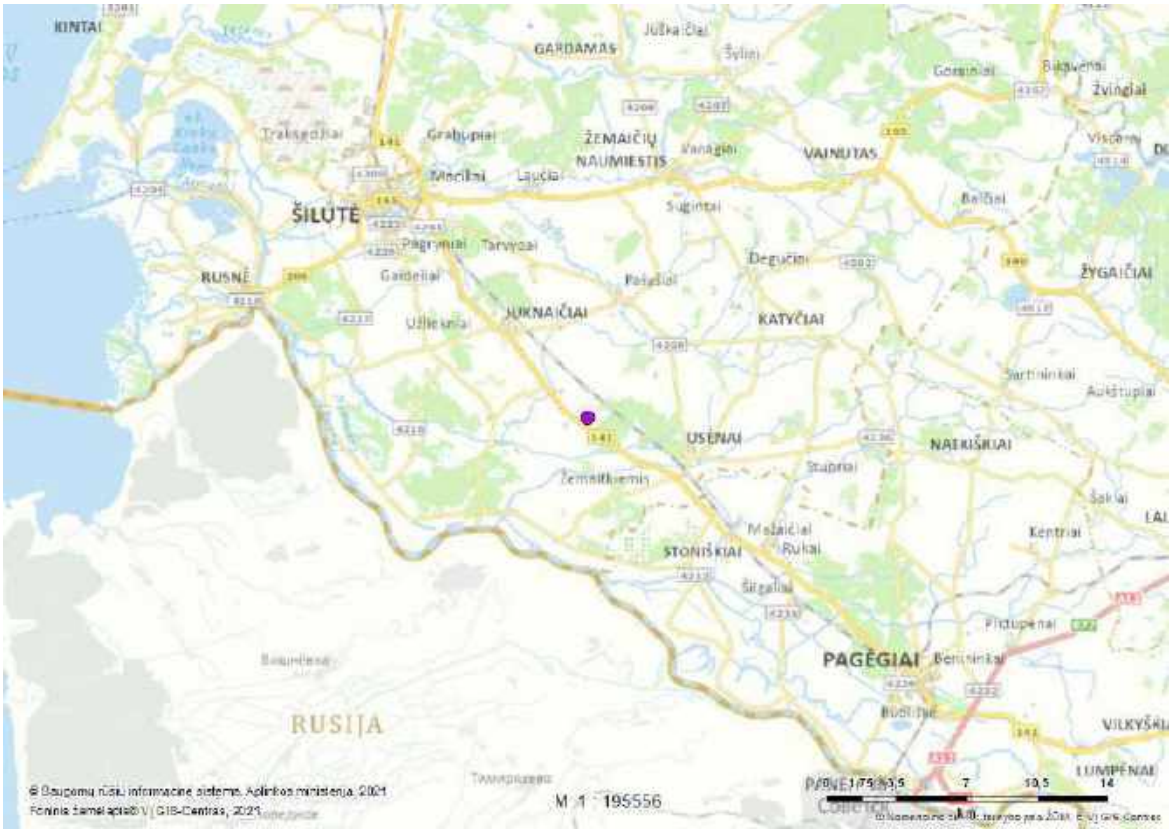
Taškas [349363,23 6130239,58]

# 31. RAD-MILMIL090069 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090069 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**




**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-09-27 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Taškas [350147,27 6126352,83]

# 32. RAD-MILMIL090075 (Rudasis peslys)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-MILMIL090075 |
| **Rūšis (lietuviškas pavadinimas)** | Rudasis peslys |
| **Rūšis (lotyniškas pavadinimas)** | Milvus milvus |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-10-02 | [nėra duomenų] | [nėra duomenų] | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Poligonas [351252,43 6126687,27, 350008,89 6127077,53, 349717,85 6126270,55, 350465,30 6125754,61, 351252,43 6126687,27]

# 33. RAD-EMBHOR035483 (Sodinė starta)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EMBHOR035483 |
| **Rūšis (lietuviškas pavadinimas)** | Sodinė starta |
| **Rūšis (lotyniškas pavadinimas)** | Emberiza hortulana |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-05 | Pirmas stebėjimas | suaugęs individas | [nėra duomenų] |

**Radavietės/augavietės koordinatės:**

MULTIPOLYGON (((348568,32 6130894,43, 348899,05 6130629,85, 349176,86 6130113,91, 349560,51 6129703,80, 350499,78 6129796,41, 350632,07 6130127,14, 349851,55 6130312,35, 349573,74 6130510,78, 349284,77 6130996,78, 348568,32 6130894,43],(( 349284,77 6130996,78, 349309,15 6131000,26, 349282,70 6131000,26, 349284,77 6130996,78]]

# 34. RAD-EMBHOR086876 (Sodinė starta)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EMBHOR086876 |
| **Rūšis (lietuviškas pavadinimas)** | Sodinė starta |
| **Rūšis (lotyniškas pavadinimas)** | Emberiza hortulana |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2014-06-06 | Stabili | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Linija [348611,27 6130832,24, 348902,31 6130627,19, 349233,04 6130038,49, 349524,08 6129734,22, 350397,21 6129820,21]

# 35. RAD-EMBHOR038585 (Sodinė starta)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EMBHOR038585 |
| **Rūšis (lietuviškas pavadinimas)** | Sodinė starta |
| **Rūšis (lotyniškas pavadinimas)** | Emberiza hortulana |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2015-05-06 | Pagausėjo | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

Linija [348539,29 6130867,55, 349491,79 6129729,84, 350457,52 6129822,44]

# 36. RAD-EMBHOR086857 (Sodinė starta)

**Radavietės/augavietės duomenys:**

| | |
|---|---|
| **Radavietės/augavietės kodas** | RAD-EMBHOR086857 |
| **Rūšis (lietuviškas pavadinimas)** | Sodinė starta |
| **Rūšis (lotyniškas pavadinimas)** | Emberiza hortulana |

**Radavietės/augavietės žemėlapis:**

**Radavietės/augavietės stebėjimų duomenys:**

| Stebėjimo data | Radavietės būsena | Vystymosi stadija | Veiklos požymiai |
|---|---|---|---|
| 2016-05-09 | Stabili | suaugęs individas | stebėtas gyvas (praskrendantis, besimaitinantis ir kt.) |

**Radavietės/augavietės koordinatės:**

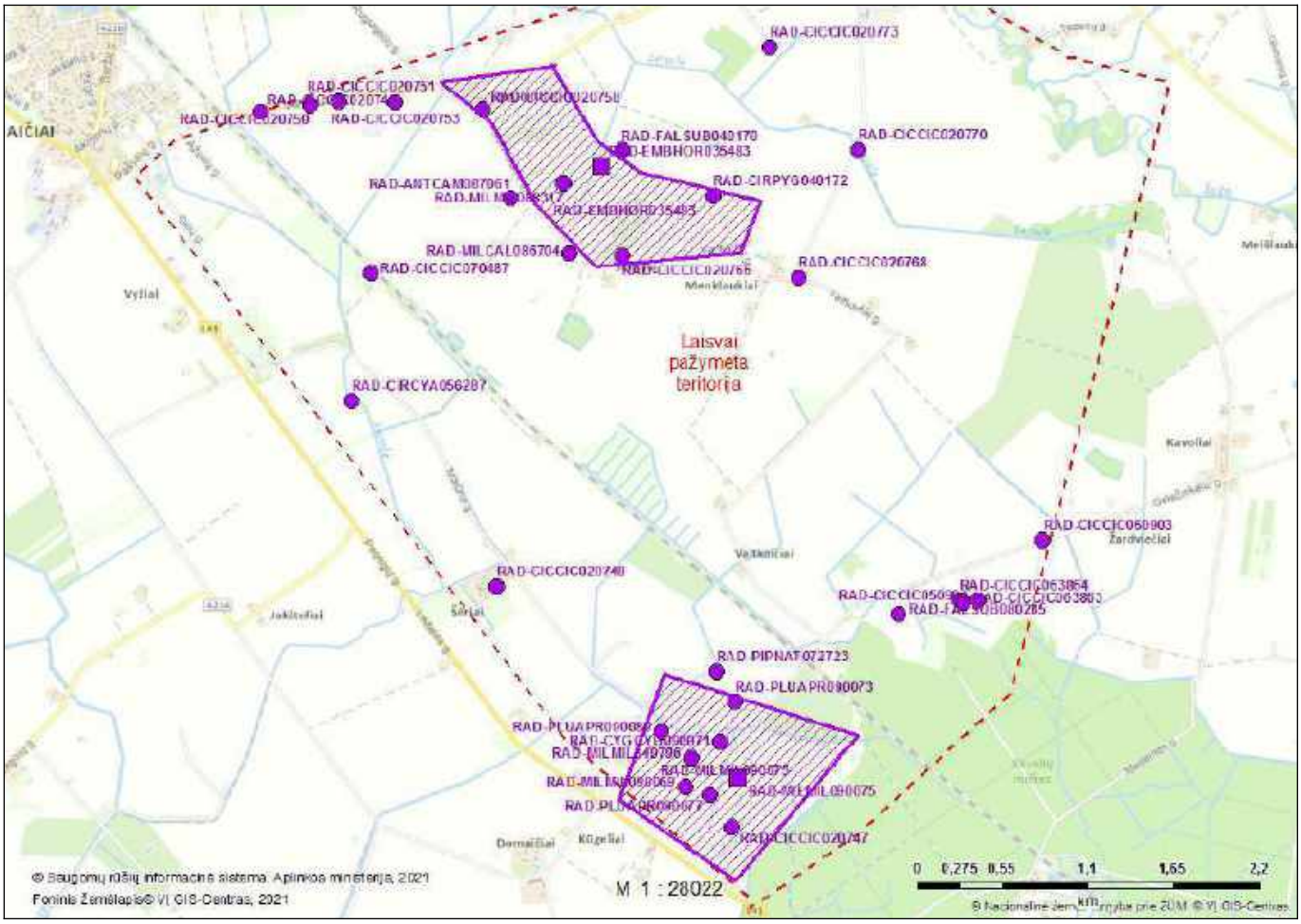
Linija [348632,11 6130821,28, 348903,31 6130636,07, 349505,24 6129716,64, 350484,20 6129842,32]

# Išrašo santrauka

**Prašyta teritorija:** Laisvai pažymėta teritorija

**Prašytos rūšys:** Visos rūšys

**Teritorijoje aptinkamų prašytų saugomų rūšių radaviečių ir augaviečių apžvalginis žemėlapis:**




**Išraše pateikiamų teritorijoje aptinkamų prašytų saugomų rūšių radaviečių ir augaviečių sąrašas:**

| Eil. nr. | Rūšis (lietuviškas pavadinimas) | Rūšis (lotyniškas pavadinimas) | Radavietės kodas | Paskutinio stebėjimo data |
|---|---|---|---|---|
| 1. | Aukštoji gegūnė | *Dactylorhiza fuchsii* | AUG-DACFUC011839 | 2014-06-02 |
| 2. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC050903 | 2009-09-16 |
| 3. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063864 | 2009-09-16 |
| 4. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC050904 | 2009-09-16 |
| 5. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC063863 | 2009-09-16 |
| 6. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC070487 | 2010-07-30 |
| 7. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020770 | 2010-07-30 |
| 8. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020751 | 2010-07-30 |
| 9. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020748 | 2010-07-30 |
| 10. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020768 | 2010-07-30 |
| 11. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020773 | 2010-07-30 |

| Eil. nr. | Rūšis (lietuviškas pavadinimas) | Rūšis (lotyniškas pavadinimas) | Radavietės kodas | Paskutinio stebėjimo data |
|---|---|---|---|---|
| 12. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020747 | 2010-07-30 |
| 13. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020758 | 2010-07-30 |
| 14. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020766 | 2010-07-30 |
| 15. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020750 | 2010-07-30 |
| 16. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020753 | 2010-07-30 |
| 17. | Baltasis gandras | *Ciconia ciconia* | RAD-CICCIC020749 | 2010-07-30 |
| 18. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090073 | 2016-09-27 |
| 19. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090077 | 2016-10-02 |
| 20. | Dirvinis sėjikas | *Pluvialis apricaria* | RAD-PLUAPR090080 | 2016-10-10 |
| 21. | Dirvoninis kalviukas | *Anthus campestris* | RAD-ANTCAM087061 | 2016-05-04 |
| 22. | Eurazinis sketsakalis | *Falco subbuteo* | RAD-FALSUB080235 | 2014-06-02 |
| 23. | Eurazinis sketsakalis | *Falco subbuteo* | RAD-FALSUB040170 | 2015-05-08 |
| 24. | Gulbė giesmininkė | *Cygnus cygnus* | RAD-CYGCYG090071 | 2016-10-28 |
| 25. | Javinė lingė | *Circus cyaneus* | RAD-CIRCYA056287 | 2011-03-12 |
| 26. | Natuzijaus šikšniukas | *Pipistrellus nathusii* | RAD-PIPNAT072723 | 2015-06-17 |
| 27. | Pievinė lingė | *Circus pygargus* | RAD-CIRPYG040172 | 2015-05-08 |
| 28. | Pilkoji starta | *Miliaria calandra* | RAD-MILCAL086704 | 2016-05-04 |
| 29. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL049796 | 2015-05-12 |
| 30. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL088317 | 2016-05-04 |
| 31. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090069 | 2016-09-27 |
| 32. | Rudasis peslys | *Milvus milvus* | RAD-MILMIL090075 | 2016-10-02 |
| 33. | Sodinė starta | *Emberiza hortulana* | RAD-EMBHOR035483 | 2014-06-05 |
| 34. | Sodinė starta | *Emberiza hortulana* | RAD-EMBHOR086876 | 2014-06-06 |
| 35. | Sodinė starta | *Emberiza hortulana* | RAD-EMBHOR038585 | 2015-05-06 |
| 36. | Sodinė starta | *Emberiza hortulana* | RAD-EMBHOR086857 | 2016-05-09 |

# 5.4 Priedėlis. Ornitologinių tyrimų ataskaita

Pajūrio tyrimų ir planavimo institutas

# PLANUOJAMO VĖJO ELEKTRINIŲ PARKO USĖNŲ IR JUKNAIČIŲ SEN. ŠILUTĖS RAJONE PAUKŠČIŲ IR ŠIKŠNOSPARNIŲ STEBĖJIMO 2021 METŲ ATASKAITA

Klaipėda 2021

Pajūrio tyrimų ir planavimo institutas

# PLANUOJAMO VĖJO ELEKTRINIŲ PARKO USĖNŲ IR JUKNAIČIŲ SEN. ŠILUTĖS RAJONE PAUKŠČIŲ IR ŠIKŠNOSPARNIŲ STEBĖJIMO 2021 METŲ ATASKAITA

| | |
|---|---|
| Planuojamos ūkinės veiklos organizatorius (užsakovas): | UAB „SV Projektai“ |
| Rengėjas: | Pajūrio tyrimų ir planavimo institutas |
| Direktorė: | Rosita Milerienė |
| Projekto vadovas: | Julius Morkūnas |
| Rengėjai: | Julius Morkūnas<br>Vita Augutė<br>Viačeslav Jurkin |

Klaipėda, 2021

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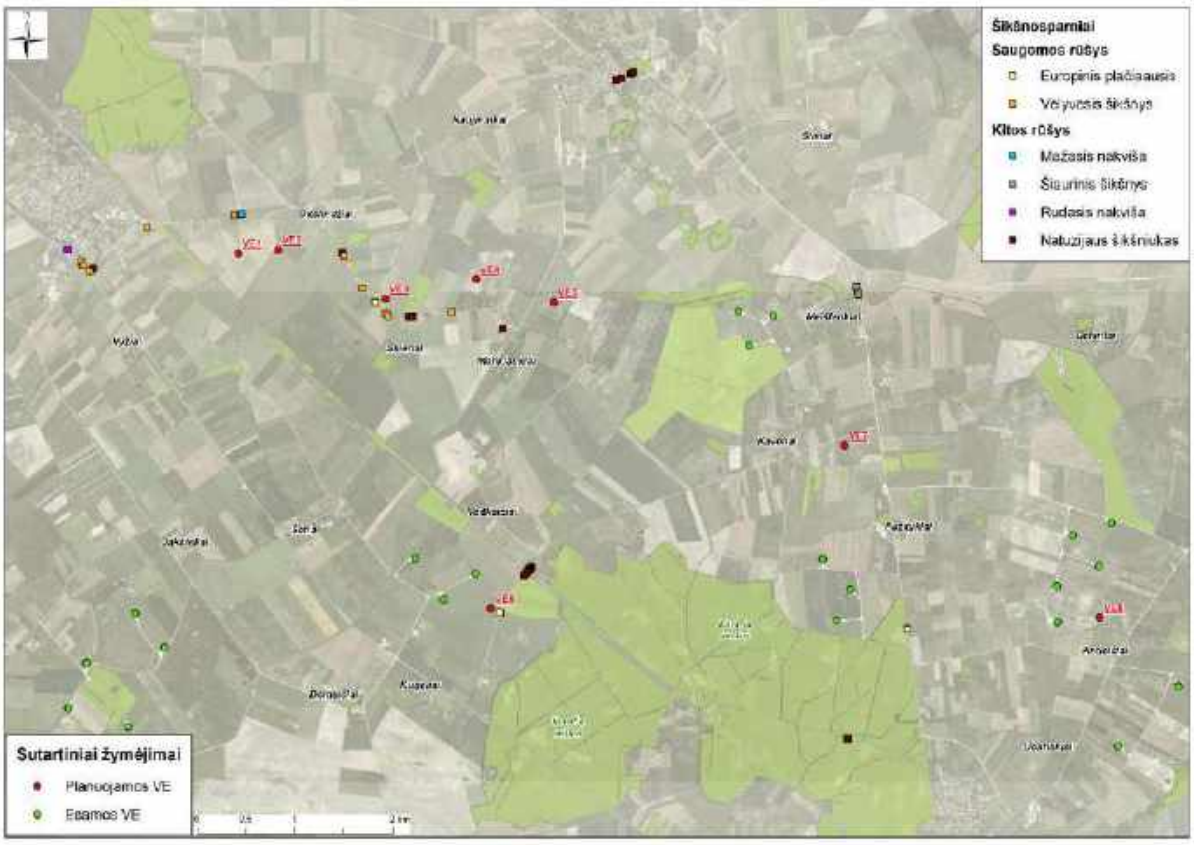
# 1. ĮVADAS

UAB “SV Projektai” Šilutės rajone, Juknaičių ir Usėnų seniūnijose, planuoja įrengti 8 vėjo elektrinių (toliau – VE) parką (1.1 pav.). Siekiant nustatyti galimą poveikį paukščiams ir šikšnosparniams 2021 metais rudenį buvo atlikti jautrių VE poveikiui paukščių ir šikšnosparnių stebėjimai. Šioje ataskaitoje pateikiami 2021 metų tyrimų duomenys apie migruojančių, perinčių ir sankaupas sudarančių paukščių stebėjimų rezultatus, migruojančių šikšnosparnių tyrimų rezultatai ir gretimoje teritorijoje esančiame VE parke 2020 metais atlikto žuvusių dėl susidūrimų su VE paukščių ir šikšnosparnių tyrimo rezultatai.

Ataskaitoje įvardijami galimi konfliktai su jautriomis VE poveikiui paukščių grupėmis ir šikšnosparnių rūšimis. Aprašomos galimos grėsmės ir numanomi konfliktai kurie gali kilti pastačius planuojamas VE.




1.1 Paveikslas. VE išdėstymas ir stebėjimų vietos planuojamame UAB „SV Projektai“ parke Šilutės rajone.

# 2. METODIKA

Paukščių migracijos ir perskridimo stebėjimai buvo vykdomi 2021 metų rugsėjo paskutinį dešimtadienį ir spalio mėnesį iš 7 pastovių stebėjimo taškų. Taip pat buvo atliekami ir

maršrutiniai stebėjimai planuojamo VE parko teritorijoje. Migruojantys paukščiai buvo stebimi jų intensyviausiu paros skraidymo metu. Stebėjimų metu registruojamas migruojančių paukščių individų kiekis, skridimo aukščiai ir kryptys, skridimo laikas, elgesio parametrai, žymimos migruojančių paukščių judėjimo trajektorijos. Be to, buvo vykdomos plėšriųjų paukščių perskirdimo apskaitos ir mitybos plotų identifikacija. Žemėlapiai sudaryti atlikus visų registruotų paukščių gausumo ir skrydžių trajektorijų analizę, kurios metu buvo skaičiuotas paukščių tankumas 25x25 m kvadratuose, ataskaitoje pateiktas paukščių tankumas yra į 25x25m kvadratą, suskirsčius paukščius į skirtingas ekologines grupes.

Sankaupų skaičiavimas buvo atliekamas reguliariai lankantis planuojamame VE parke. Jautrios VE rūšys teritorijoje buvo identifikuotos ir vykdant paukščių perskridimo, sankaupų stebėjimo darbus.

Suminis poveikis buvo vertinimas iš atliktų tyrimų duomenų gretimame UAB „Šilutės Vėjo projektai“ 24 VE parke. Žuvusių dėl susidūrimo su VE paukščių ir šikšnosparnių tyrimai buvo atliekami 2016-2020 metais nuo liepos 26 iki spalio 29 dienos, kas penkias dienas apieškant 50 m spinduliu po VE mentėmis esančią teritoriją po dešimt VE, pastatytų Juknaičių, Usėnų seniūnijose greta planuojamo VE parko.

Migruojantys šikšnosparniai buvo registruojami „Wildlife Acoustics“ mobiliuoju detektoriumi „Echo Meter Touch“ 2021 metų rugsėjo 21 – spalio 13 d. laikotarpiu. Šikšnosparnių ultragarso signalų registravimas prasidėdavo 30 min. iki saulėlydžio ir tęsdavosi 3-4 valandas. Maršrutinės apskaitos apėmė visą planuojamo VE parko teritoriją ir aplinkines teritorijas.

Rezultatų analizė buvo atlikta naudojant Microsoft Office paketą, Wildlife Acoustics Kaleidoscope Pro, AcrGis ir AcrMap.

# 3. TYRIMŲ REZULTATAI

## 3.1. Paukščių migracijos kelių nustatymas (rūšinė sudėtis ir gausumas)

Intensyviausia paukščių migracija planuojamo VE parko teritorijoje fiksuojama rudens metu. Todėl buvo atlikti paukščių migracijos ir perskridimų tyrimai 2021 metų rudenį. Apskaitų metu buvo užregistruota 70 paukščių rūšių (3.1.1 lentelė). Bendras praskridusių paukščių skaičius teritorijoje siekė 57480 individų. Iš jų pagal IUCN saugomų gyvūnų

klasifikaciją, visi registruoti paukščiai buvo priskiriami „nekelianti susirūpinimo (LC)“ apsaugos kategorijai, išskyrus rudajį peslį ir javinę lingę, priskiriamiems „mažėjantis gausumas“ (NT) apsaugos kategorijai. Pagal Europos Sąjungos Paukščių direktyvos I priedo sąrašą buvo registruotos 14 paukščių rūšių, patenkančių į jį: didysis baltasis garnys, pilkoji gervė, jūrinis erelis, mažasis erelis rėksnys, javinė lingė, pievinė lingė, nendrinė lingė, rudasis peslys, sakalas keleivis, starsakalis, dirvinis sėjikas, pilkoji meleta, gulbė giesmininkė ir mažoji gulbė. Pagal Lietuvos saugomų rūšių sąrašą buvo registruota 10 rūšių: jūrinis erelis, mažasis erelis rėksnys, paprastasis pelėsakalis, pievinė lingė, rudasis peslys, startsakalis, vištvanagis, pilkoji meleta, dirvinis sėjikas ir uldukas.

**3.1.1. Lentelė.** Aptiktos migruojančių ir perskrendančių paukščių rūšys Šilutės r. planuojamame VE parke 2021 metų rudenį (IUCN – pasaulio gamtos apsagos organizacija, EU/BD I priedas – Europos sąjungos Paukščių direktyvos I priedo rūšių sąrašas, LSRS – Lietuvos saugomų rūšių sąrašas).

| Grupė | Nr. | Rūšis | Skaičius | IUCN | EU/BD I priedas | LSRS |
|---|---|---|---|---|---|---|
| Gandriniai ir gervės | 1 | Didysis baltasis garnys | 2 | LC | Taip | Ne |
| | 2 | Pilkasis garnys | 2 | LC | Ne | Ne |
| | 3 | Pilkoji gervė | 326 | LC | Taip | Ne |
| | | Iš viso: | 330 | | | |
| Plėšrieji | 4 | Javinė lingė | 47 | NT | Taip | Ne |
| | 5 | Jūrinis erelis | 26 | LC | Taip | Taip |
| | 6 | Mažasis erelis rėksnys | 2 | LC | Taip | Taip |
| | 7 | Nendrinė lingė | 5 | LC | Taip | Ne |
| | 8 | Paprastasis pelėsakalis | 13 | LC | Ne | Taip |
| | 9 | Paprastasis suopis | 110 | LC | Ne | Ne |
| | 10 | Paukštvanagis | 47 | LC | Ne | Ne |
| | 11 | Pievinė lingė | 2 | LC | Taip | Taip |
| | 12 | Rudasis peslys | 11 | NT | Taip | Taip |
| | 13 | Sakalas keleivis | 1 | LC | Taip | Ne |
| | 14 | Startsakalis | 11 | LC | Taip | Taip |
| | 15 | Tūbuotasis suopis | 38 | LC | Ne | Ne |
| | 16 | Vištvanagis | 3 | LC | Ne | Taip |
| | | Iš viso: | 316 | | | |
| Sėjikiniai | 17 | Dirvinis sėjikas | 394 | LC | Taip | Taip |
| | 18 | Jūrinis sėjikas | 1 | LC | Ne | Ne |
| | 19 | Kirai sp. | 556 | | | |
| | 20 | Paprastasis kiras | 2378 | LC | Ne | Ne |
| | 21 | Paprastoji pempė | 2697 | LC | Ne | Ne |
| | 22 | Perkūno oželis | 5 | LC | Ne | Ne |
| | 23 | Rudagalvis kiras | 2576 | LC | Ne | Ne |
| | 24 | Sidabrinis kiras | 18 | LC | Ne | Ne |
| | | Iš viso: | 8625 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Žąsiniai | 25 | Baltakaktė žąsis | 3897 | LC | Ne | Ne |
| | 26 | Didysis kormoranas | 28 | LC | Ne | Ne |
| | 27 | Didžioji antis | 32 | LC | Ne | Ne |
| | 28 | Eurazinė cyplė | 42 | LC | Ne | Ne |
| | 29 | Gulbė giesmininkė | 18 | LC | Taip | Ne |
| | 30 | Gulbė nebylė | 3 | LC | Ne | Ne |
| | 31 | Mažoji gulbė | 6 | LC | Taip | Ne |
| | 32 | Pilkoji žąsis | 33 | LC | Ne | Ne |
| | 33 | Rudagalvė kryklė | 6 | LC | Ne | Ne |
| | 34 | Žąsys sp. | 9172 | | | |
| | 35 | Želmeninė žąsis | 2388 | LC | Ne | Ne |
| | | Iš viso: | 15625 | | | |
| Žvirbliniai | 36 | Alksninukas | 133 | LC | Ne | Ne |
| | 37 | Baltabruvis strazdas | 35 | LC | Ne | Ne |
| | 38 | Baltoji kielė | 2 | LC | Ne | Ne |
| | 39 | Dagilis | 34 | LC | Ne | Ne |
| | 40 | Didžioji zylė | 85 | LC | Ne | Ne |
| | 41 | Dirvinis vieversys | 1994 | LC | Ne | Ne |
| | 42 | Geltonoji starta | 73 | LC | Ne | Ne |
| | 43 | Ilgauodegė zylė | 13 | LC | Ne | Ne |
| | 44 | Karklažvirblis | 8 | LC | Ne | Ne |
| | 45 | Kėkštas | 62 | LC | Ne | Ne |
| | 46 | Keršulis | 1219 | LC | Ne | Ne |
| | 47 | Kovas | 77 | LC | Ne | Ne |
| | 48 | Kranklys | 194 | LC | Ne | Ne |
| | 49 | Kuosa | 139 | LC | Ne | Ne |
| | 50 | Lygutė | 9 | LC | Ne | Ne |
| | 51 | Mėlynoji zylė | 817 | LC | Ne | Ne |
| | 52 | Nendrinė starta | 1 | LC | Ne | Ne |
| | 53 | Paprastasis čivylis | 593 | LC | Ne | Ne |
| | 54 | Paprastasis erškėtžvirblis | 2 | LC | Ne | Ne |
| | 55 | Paprastasis kikilis | 19653 | LC | Ne | Ne |
| | 56 | Paprastasis kūltupys | 1 | LC | Ne | Ne |
| | 57 | Paprastasis varnėnas | 5397 | LC | Ne | Ne |
| | 58 | Pievinis kalviukas | 1419 | LC | Ne | Ne |
| | 59 | Pilkoji meleta | 1 | LC | Taip | Taip |
| | 60 | Pilkoji varna | 99 | LC | Ne | Ne |
| | 61 | Plėšrioji medšarkė | 2 | LC | Ne | Ne |
| | 62 | Šarka | 23 | LC | Ne | Ne |
| | 63 | Šelmeninė kregždė | 17 | LC | Ne | Ne |
| | 64 | Šiaurinis kikilis | 248 | LC | Ne | Ne |
| | 65 | Smilginis strazdas | 68 | LC | Ne | Ne |
| | 66 | Strazdas giesmininkas | 15 | LC | Ne | Ne |
| | 67 | Svilikas | 1 | LC | Ne | Ne |
| | 68 | Uldukas | 76 | LC | Ne | Taip |
| | 69 | Uolinis karvelis | 72 | LC | Ne | Ne |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 70 | Žaliukė | 2 | LC | Ne | Ne |
| | | Iš viso: | 32584 | | | |
| Iš viso: | | | 57480 | | | |

Gausiausiai pro stebimą teritoriją skrido žvirbliniai paukščiai (56,7 %), antroje vietoje pagal gausumą buvo žąsiniai (27,2 %), trečioje – sėjikiniai paukščiai (15 %). Jautrios susidūrimams su VE paukščių rūšių grupės gandriniai-gerviniai paukščiai sudarė 0,6 %, o plėšrieji paukščiai – 0,5 % (3.1.2 lentelė). Vis tik reikia atkreipti dėmesį, jog nuoseklių stebėjimų metu gausiausia gandrinių paukščių ir gervių migracija jau buvo pasibaigusi, kaip ir kai kurių anksčiau žiemoti išskrendančių plėšriųjų paukščių rūšių. Iš plėšriųjų paukščių daugiausiai registruota paprastųjų suopių, paukštvanagių, javinių lingių, tūbuotųjų suopių ir jūrinių erelių. Žvirbliniai paukščiai visoje Lietuvoje sudaro didžiąją dalį migrantų rudeninių stebėjimų metu.

**3.1.2. Lentelė.** Pro planuojamąVE parką praskrendančių paukščių gausumas pagal grupes.

| | Gausumas | |
|---|---|---|
| **Grupė** | Individai | % |
| Gandriniai ir gervės | 330 | 0.6 |
| Plėšrieji | 316 | 0.5 |
| Sėjikiniai | 8625 | 15.0 |
| Žąsiniai | 15625 | 27.2 |
| Žvirbliniai | 32584 | 56.7 |
| Iš viso: | 57480 | 100 |

## 3.2. Paukščių migracijos ir perskridimų pasiskirstymas teritorijoje

Planuojamame VE parke praskridimų žemėlapiai buvo suskirstyti pagal paukščių funkcines grupes. Kiekviename žemėlapyje pateikiama informacija apie paukščių skrydžio trajektorijas ir paukščių suminį tankumą 25x25m kvadratuose.

*Gandriniai ir gerviniai* paukščiai – labai negausiai stebėta paukščių grupė migracijų, perskridimų metu. Daugiausiai šios grupės paukščių praskridimų registruota prie planuojamos VE Nr. 7, čia stebėti tiek nedideli migruojančių gervių pulkai iki 25 individų, tiek keli pulkai su 130, 73 ir 44 individais. Pavieniai garniai skrido išilgai VE Nr. 5, 4, ir 3, taip pat netoli VE Nr. 6 (3.2.1 pav.).

*Plėšrieji* paukščiai skraidė ir medžiojo įvairiomis trajektorijomis tarp atskirų planuojamų VE, dažniausiai stebėta rūšis buvo paprastasis suopis, taip pat javinė lingė, paukštvanagis ir tūbuotasis suopis. Dalis paprastųjų suopių laikėsi savo veisimosi teritorijų plotuose, kiti stebėti individai – praskrido tranzitu pro VE parko teritoriją. Nebuvo nustatyta konkrečių perskridimo trajektorijų, plėšrieji paukščiai savo teritorijose ar migruodami maitinosi tinkamose buveinėse – pievose, dirbamuose laukuose, palei melioracijos kanalus ir medžių alėjas. Didžiausias tankumas, siekiantis 11-17 individų į 25x25 m plotą, registruotas VE Nr. 7, 4 ir 3 teritorijose. Vos mažesnis, 6-10 individų, tankumas nutatytas taip pat prie šių išvardytų VE bei prie VE Nr. 1, 5 ir 7. (3.2.2 pav.)

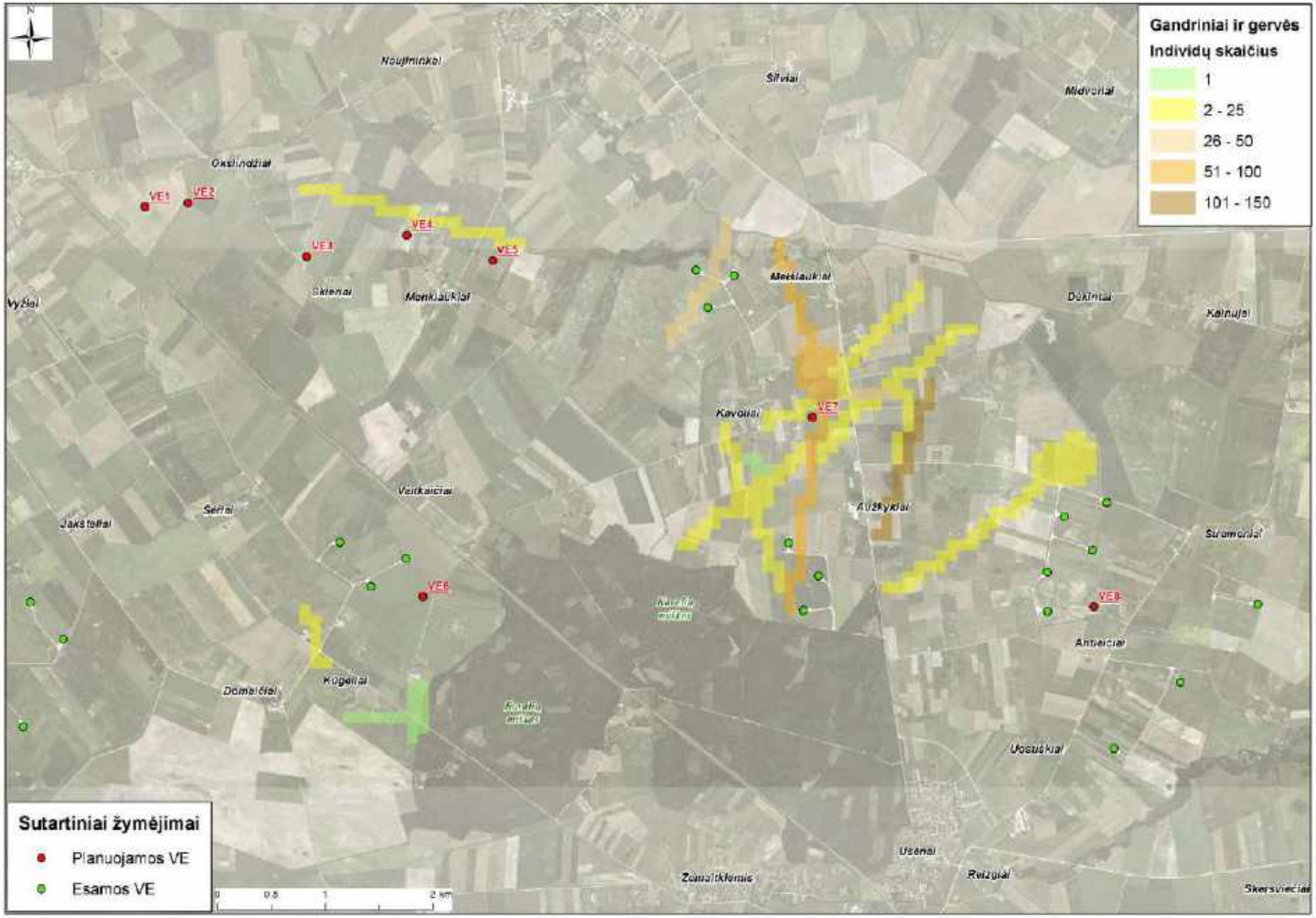
Iš *sėjikinių* paukščių per planuojamą VE teritoriją gausiausiai migravo kirai, kartais jų būriai, skridę pažeme virš ūkio naudmenų su dažnais tūpimais pasimaitinti, siekdavo virš 1000 individų. Daugiausiai kirų stebėta prie VE Nr. 4, 5, 6 ir 7. Atviruose ariamose žemės plotuose prie VE Nr. 5, 6 ir 8 laikėsi negausūs būriai migruojančių dirvinių sėjikų, kurie sutrikdyti plėšrių paukščių ar ūkininkavimo darbų, kildavo į viršų ir sukdavo ratus. Šalia šių VE buveinės buvo tinkamos ir paprastosioms pempėms. Bendrai didžiausias sėjikinių paukščių gausumas, 500-5000ind./25x25 m, nustatytas teritorijose šalia VE Nr. 4-7 (3.2.3 pav.).

*Žąsiniai* paukščiai rudeninės migraijos metu traukia pro planuojamą VE parką. Dėl tinkamų drėgesnių buveinių bei nuimtų kukurūzų kultūrų laukų daugiausiai apsistojusių ir nedidelius atstumus dažnai perskrendančių žąsų, gulbių ir ančių stebėta vakarinėje planuojamo parko dalyje, netoli ir šalia VE Nr. 8. Čia nustatytas didžiausias skrendančių žąsinių paukščių tankumas, siekiantis 1001-1560 ind./25x25 m. Gana intensyvus žąsų skridimas buvo prie planuojamų VE Nr. 3-6, kur nustatytas 501-1000 ins./25x25 m tankumas. Tačiau žąsinių paukščių migracija vyksta plačiu frontu ir išskirti jautriausius VE sudėtinga (3.2.4 pav.).

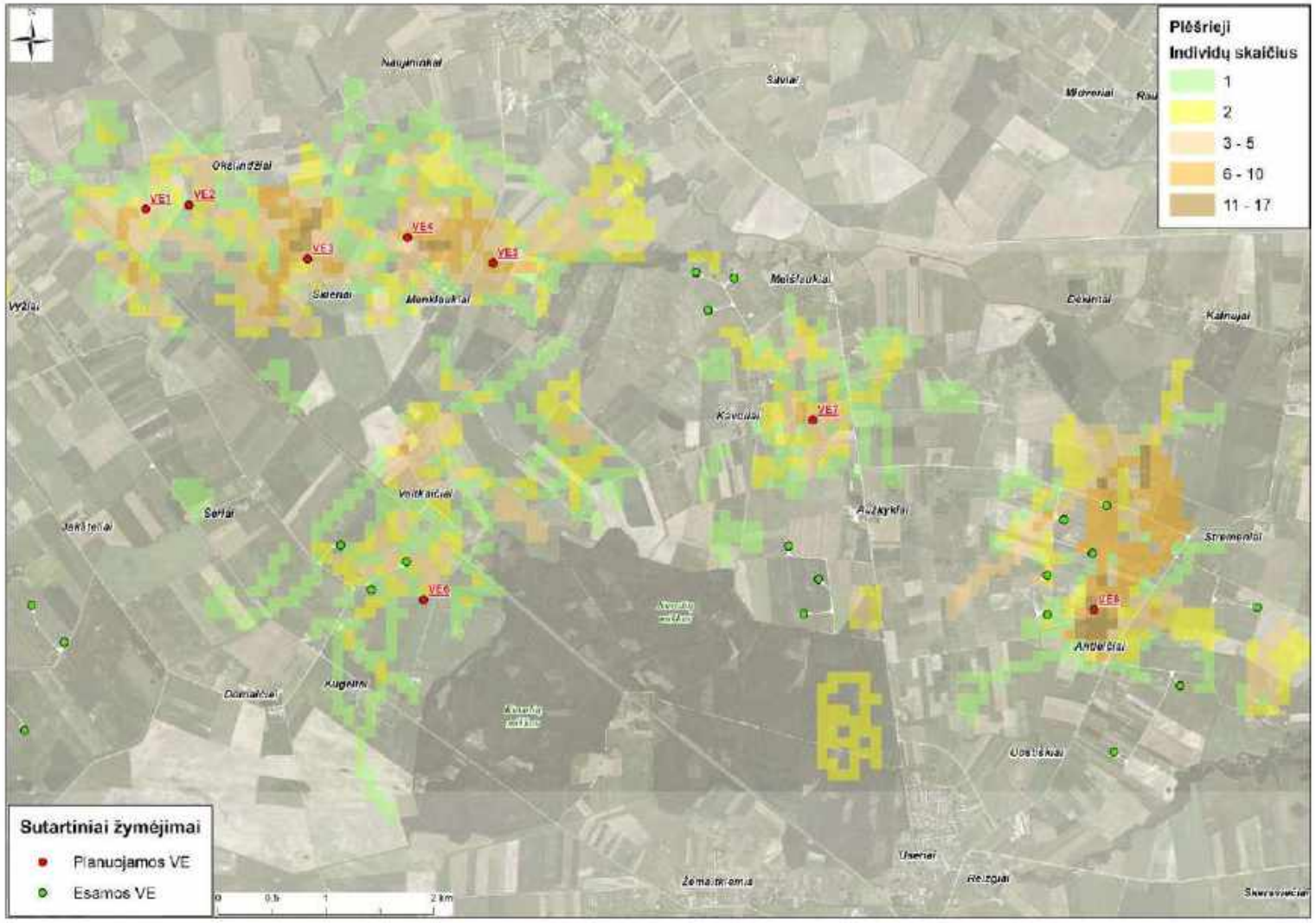
*Žvirbliniai* paukščiai – įprasta ir gausi paukščių grupė planuojamo VE parko teritorijoje. Stebėjimų metu buvo registruojami didesni būriai kikilių, dirvinių vieversių, pievinių kalviukų, paprastųjų varnėnų ir keršulių, kiti paukščiai stebėti pavieniai ar mažomis grupelėmis. Didžiausias tankumas, 5001-7322 ind./25x25 m, registruotas prie VE Nr. 4 ir 5, o prie VE Nr. 1-2 bei atkarpoje tarp VE Nr. 5 ir 6 jis siekė 1001-5000 ind./25x25 m (3.2.5 pav.).

Bendras paukščių gausumas buvo didžiausias prie VE Nr. 4 ir 5, kur buvo registruojami skaitlingi žvirblinių ir sėjikinių paukščių būriai ir stebėta gana intensyvi žąsų migracija bei didelė plėšriųjų paukščių įvairovė (3.2.6 pav.). Rudeninės migracijos metu nebuvo nustatyta

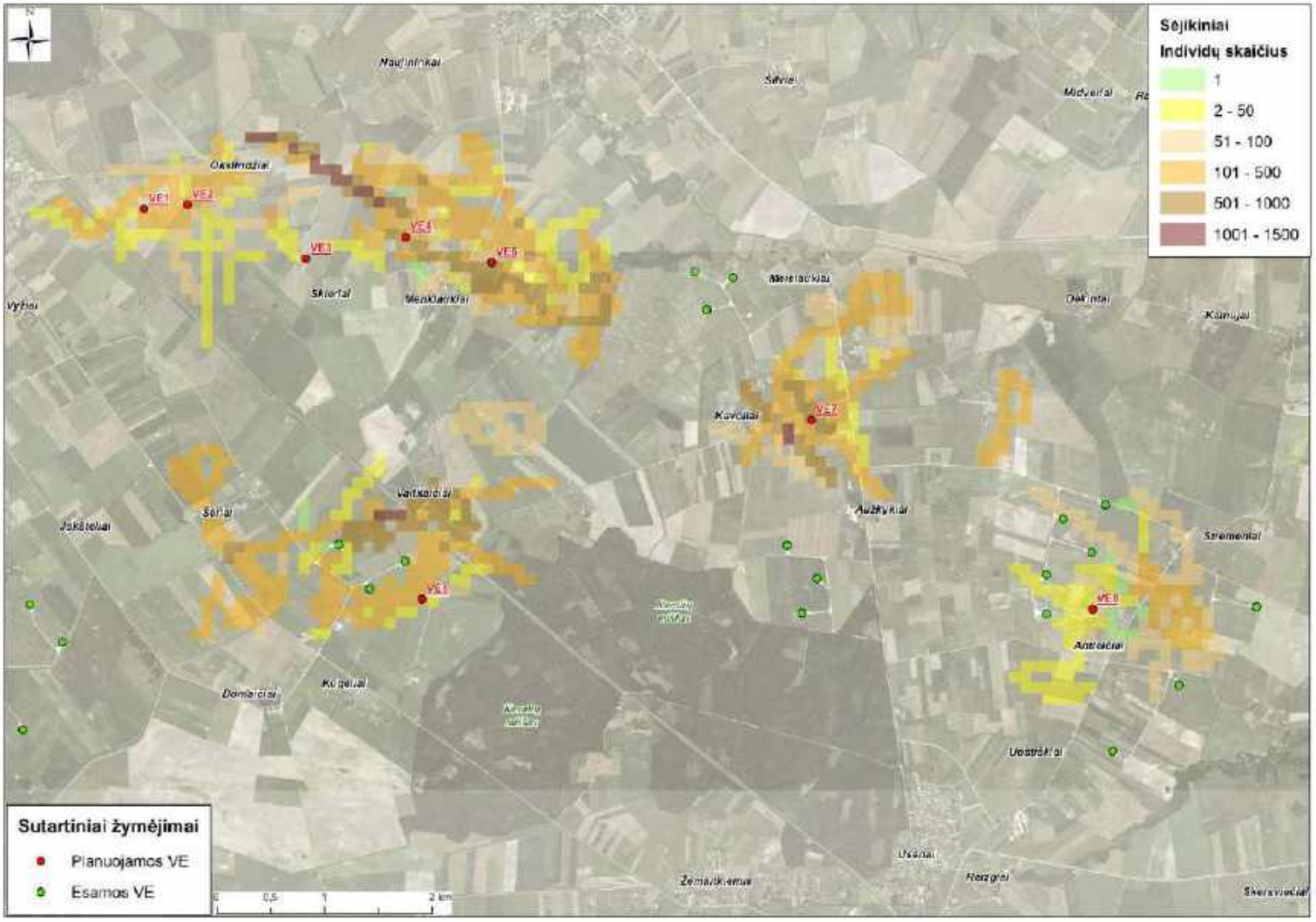
patikimų paukščių judėjimo kryptingumų. Panuojamo VE parko teritorijoje esančios buveinės ir žemės ūkio naudmenos buvo taip pat paukščių naudojamos poilsiui ir maitinimuisi.



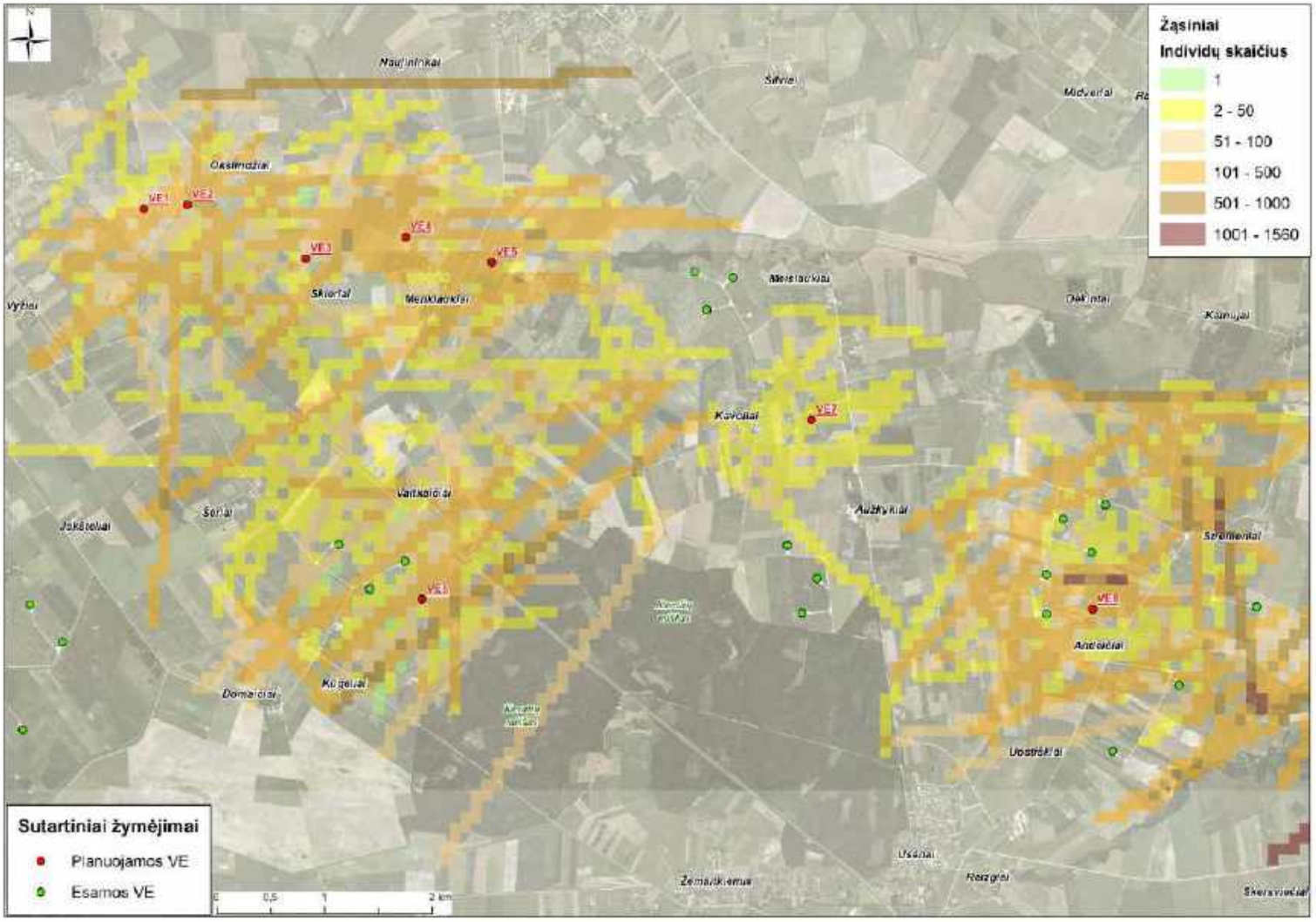

3.2.1 Paveikslas. Gandrinių ir gervinių paukščių migracijų ir perskridimų intensyvumas planuojamo VE parko centrinėje dalyje.




3.2.2 Paveikslas. Plėšriųjų paukščių migracijų ir perskridimų intensyvumas planuojamo VE parko centrinėje dalyje.

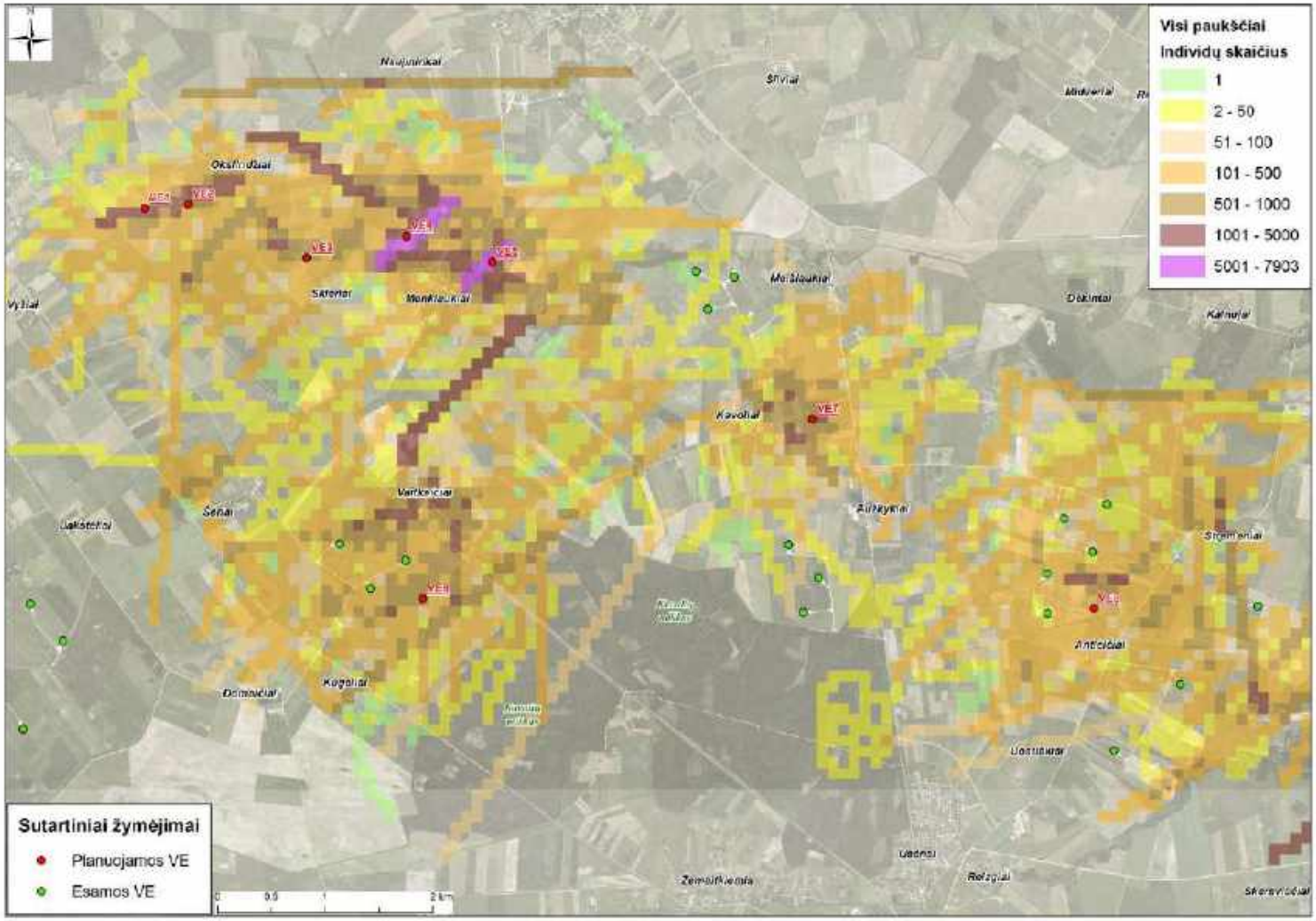



3.2.3 Paveikslas. Sėjikinių paukščių migracijų ir perskridimų intensyvumas planuojamame VE parke.




3.2.4 Paveikslas. Žąsinių paukščių migracijų ir perskridimų intensyvumas planuojamame VE parke.

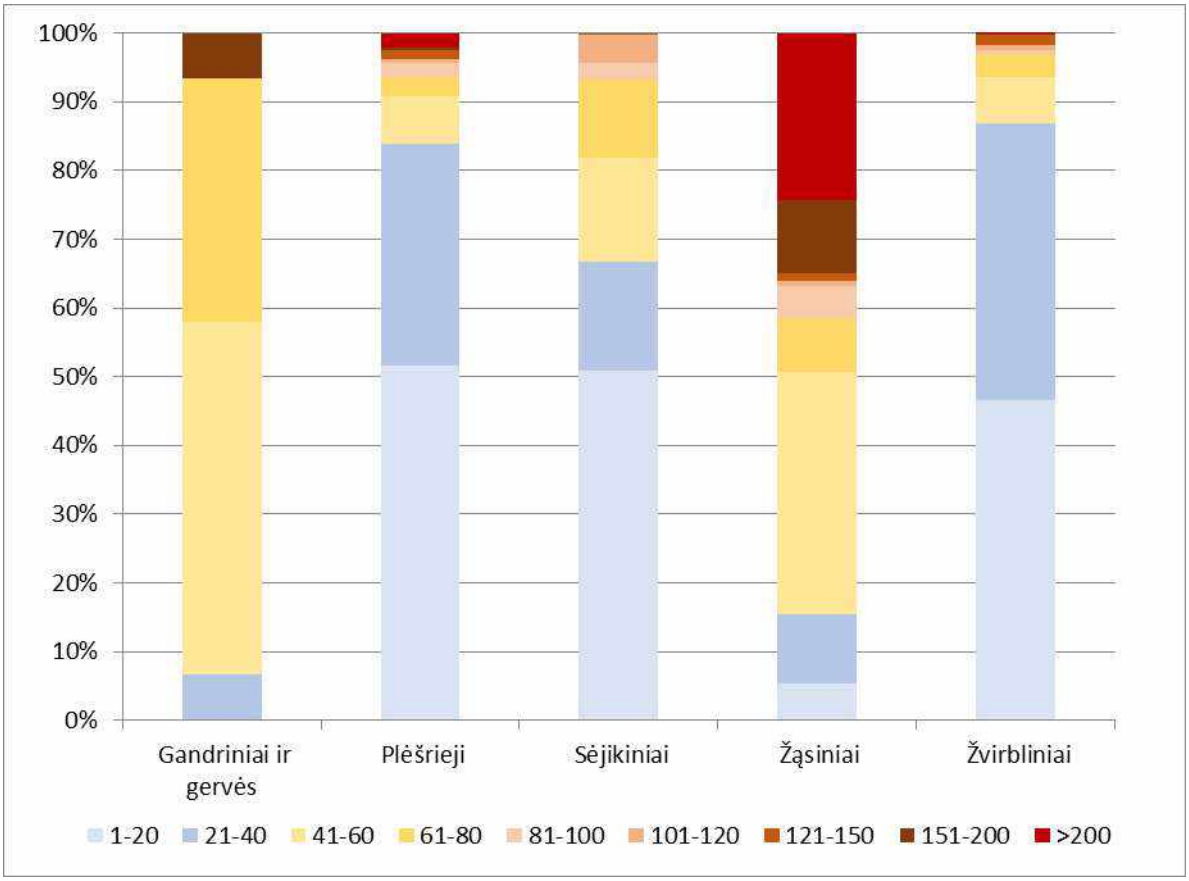
3.2.5 paveikslas. Žvirblinių paukščių migracijų ir perskridimų intensyvumas planuojamo VE parko centrinėje dalyje.




3.2.6 Paveikslas. Visų paukščių migracijų ir perskridimų intensyvumas planuojamame VE parke**.**

## 3.3. Paukščių skridimo parametrai

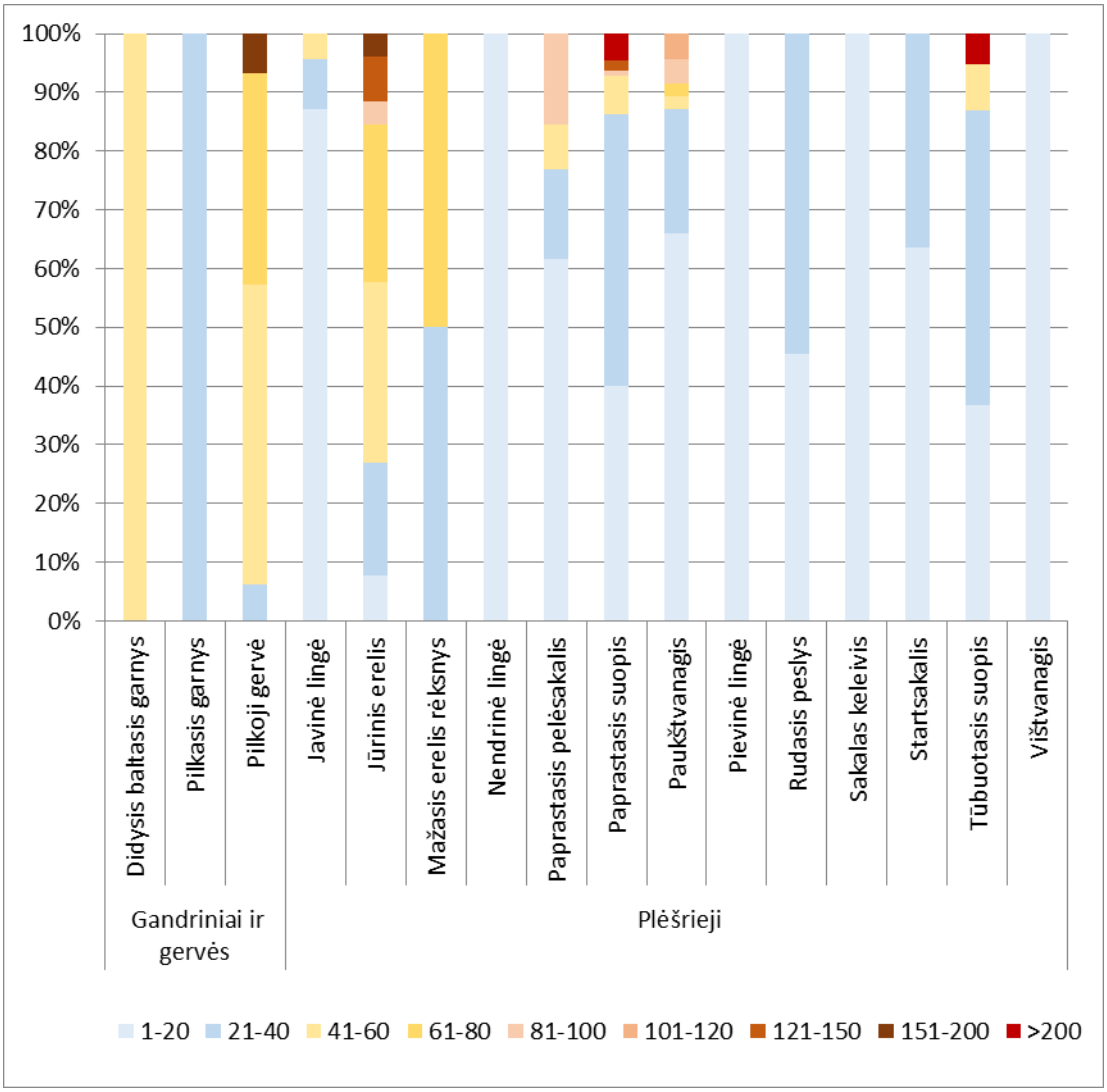
Rudens metu paukščiai skrido įvairiame aukštyje. Pagal planuojamas įrengti VE ir pagal rotoriaus bei sparnų diametrą jautrus paukščių praskridimui aukštis apytiksliai gali būti nuo 40 iki 200 metrų. Net 93 % gandrinių ir gervinių paukščių ir 60 % žąsinių paukščių skrido jautriame susidūrimams aukštyje nuo 40 iki 200 metrų. Dauguma paukščių iš kitų sistematinių grupių skrido aukštyje iki 40 metrų, tačiau dalis – 33 % sėjikinių, 14 % plėšriųjų ir 13 % žvirblinių paukščių – jautriame susidūrimams aukštyje. Virš 200 metrų skrido 24 % žąsinių paukščių, 2 % plėšriųjų paukščių, o užfiksuotas labai nedidelis kiekis aukštai skridusių žvirblinių paukščių gali ne visai tiksliai atspindėti tikrąjį jų migracijos mastą šiame aukštyje dėl daugumos šios grupės paukščių mažo dydžio, kai dideliame aukštyje skrendančius juos sudėtinga pastebėti (3.3.1 pav.).




3.3.1 Paveikslas. Paukščių skridimo aukštis pagal aukščio klases (aukštis nurodytas metrais).

Iš jautrių susidūrimams su VE paukščių, gandrinių-gervinių ir plėšriųjų paukščių, aukščiausiai skrido tūbuotieji ir paprastieji suopiai (>200 m, nors dauguma – iki 40 m), pilkosios gervės (150-200 m, dauguma 40-80 m aukštyje), jūriniai ereliai (120-200 m, dauguma 40-80 m

aukštyje), paukštvanagiai, paprastieji pelėsakaliai (80-120 m, nors dauguma – aukštyje iki 20 m), mažasis erelis rėksnys (60-80 m). Pievinės, nendrinės, javinės lingės, rudasis peslys, višvanagis, starsakalis ir sakalas keleivis skrido iki 40 m aukštyje. (3.3.2 pav.)




3.3.2 Paveikslas. Jautrių susidūrimams su VE paukščių skridimo aukštis procentais pagal aukščio klases (aukštis nurodytas metrais).

Didžioji dalis (nuo 50 iki 100 % praskridusių individų) pilkųjų gervių, didžiųjų baltųjų garnių, jūrinių erelių ir mažųjų erelių rėksnių, o bendrai – 56 % jautrių VE poveikiui paukščių skrido 40–200 metrų aukštyje (3.3.1 lent.). Todėl egzistuoja galimybė, kad pavieniai paukščiai gali patirti tiesioginio susidūrimo riziką, ypač plėšriųjų paukščių rūšys, kurios skraido

aukščiausiai, pavyzdžiui, jūrinis erelis, mažasis erelis rėksnys, rudasis peslys ir paprastasis ir tūbuotasis suopiai.

3.3.1. Lentelė. Jautrių VE paukščių grupių skrydžių pasiskirstymas iki pavojingo aukščio ir pavojingame aukštyje.

| Grupė | Rūšis | Individų sk. iki 40m | Individų sk. virš 40 m | % jautriame pavojingame aukštyje |
|---|---|---|---|---|
| Gandriniai ir gervės | Didysis baltasis garnys | 0 | 2 | 100 |
| | Pilkasis garnys | 2 | 0 | 0 |
| | Pilkoji gervė | 20 | 306 | 94 |
| Plėšrieji | Javinė lingė | 45 | 2 | 4 |
| | Jūrinis erelis | 7 | 19 | 73 |
| | Mažasis erelis rėksnys | 1 | 1 | 50 |
| | Nendrinė lingė | 5 | 0 | 0 |
| | Paprastasis pelėsakalis | 10 | 3 | 23 |
| | Paprastasis suopis | 95 | 15 | 14 |
| | Paukštvanagis | 41 | 6 | 13 |
| | Pievinė lingė | 2 | 0 | 0 |
| | Rudasis peslys | 11 | 0 | 0 |
| | Sakalas keleivis | 1 | 0 | 0 |
| | Startsakalis | 11 | 0 | 0 |
| | Tūbuotasis suopis | 33 | 5 | 13 |
| | Vištvanagis | 3 | 0 | 0 |
| Iš viso: | | 287 | 359 | 56 |

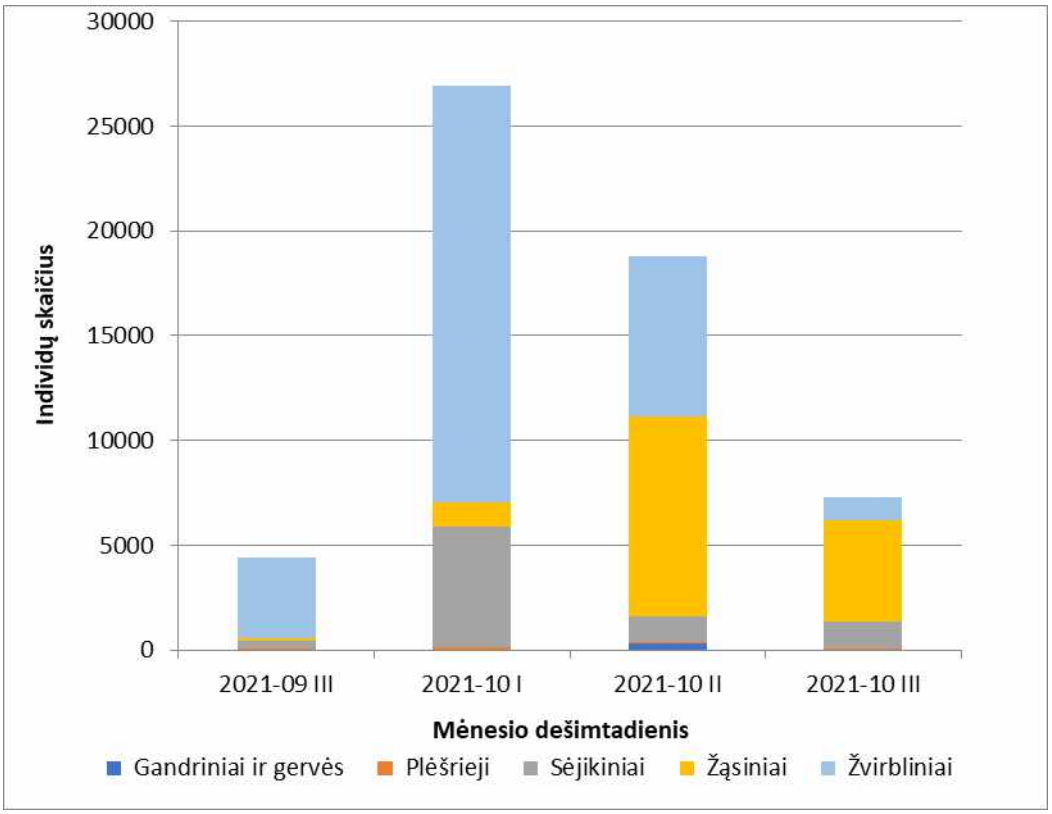
## 3.4. Fenologija

Stebėjimai buvo pradėti vykdyti rugsėjo 21 dieną ir praskridimų dinamika fiksuota iki spalio mėnesio 29 dienos. Intensyviausias paukščių traukimo periodas buvo spalio pirmasis ir antrasis dešimtadieniai (3.4.1. pav.)

Plėšrieji paukščiai nėra gausi grupė, todėl tarp daugybės individų stebėjimų jų migracijos pikų nesimato. Remiantis kitais tyrimais, aiškios plėšriųjų paukščių grupės fenologijos dinamikos nesimato, nes vietines rūšis (mažuosius erelius rėksnius, ruduosius ir juoduosius peslius) pakeičia iš kitur atskirdę paprastieji ir tūbuotieji suopiai, migruojantys paukštvanagiai.

Pagal stebėjimus planuojamo VE parko teritorijoje gervių migracija rugsėjo pabaigoje nevyko, matyt, dėl netinkamų oro sąlygų, o paskutiniai būriai gausiau skrido spalio antrąjį

dešimtadienį. Žvirblinių paukščių skridimo pikas stebėtas spalio pirmąjį, o žąsinių – spalio antrąjį dešimtadienį. Tai atitinka daugiamečius šių paukščių fenologinius tyrimus Lietuvoje. Spalio mėnesį gausiau skrido žąsiniai paukščiai.




3.4.1Paveikslas. Paukščių grupių migracijos ir perskridimų dinamika planuojamo VE parko teritorijoje.

## 3.5. Paukščių skridimas vėjaračio zonoje

Buvo atliktas modeliavimas ir sumodeliuoti paukščių skrydžiai tokiame aukštyje, kur yra vėjaratis. Pagal paukščių skrydžio trajektoriją ir aukštį buvo sukurtas modelis kiek, kurių paukščių būtų patekę į vėjaračio zoną, jei skirstų nežiūrėdami į tariamas VE. Šių paukščių skrydžiai pavaizduoti 3.2 skyriuje pateiktuose žemėlapiuose. Pateikti duomenys rodo, kad jautriausios VE dėl galimo teorinio paukščių susidūrimo su vėjaračio zona yra VE2, pro kurią praskrido 650 paprastųjų kikilių, 346 žąsys ir 85 pempės, bei VE4, pro kurią praskrido 500 mėlynųjų zylių, 217 žąsų, 200 dirvinių vieversių. Taip pat išsiskyrė VE7, kur praskrido 390

pempių ir 73 pilkosios gervės (3.5.1 lentelė). Teoriškai visos VE gali turėti neigiamą poveikį dėl susidūrimo, nes iš šių surinktų duomenų nėra galimybės tiksliai prognozuoti neigiamo poveikio. Migruojantys paukščiai, matydami kliūtį prieš save, gali įvertinti ją ir pasukti į šoną. Iš atliktų panašių tyrimų kituose VE parkuose buvo nustatyta, kad taip elgiasi gervės, gulbės, žąsys ir daugelis vandens paukščių. Todėl susidūrimo rizika žąsiniams, gerviniams paukščiams šiame VE parke yra labai maža. Didžiausią riziką tikėtina gali patirti vietoje perinčios ar migruojančios plėšriųjų paukščių rūšys, kaip paprastasis suopis, jūrinis erelis ar mažasis erelis rėksnys. Nors tyrimų metu nenustatytas intensyvus plėšriųjų paukščių skraidymas planuojamų VE vėjaračio zonoje (išskirta lentelėje), tačiau perėjimo metu teritorija yra intensyviai naudojama šios grupės paukščių (3.5.1. lentelė).

3.5.1. Lentelė. Migruojančių paukščių skridimas vėjaračio zonoje, Šilutės VE 2021m.

| Rūšis | Planoujamos VE Nr. | | | | | | | | Iš viso |
|---|---|---|---|---|---|---|---|---|---|
| | VE1 | VE2 | VE3 | VE4 | VE5 | VE6 | VE7 | VE8 | |
| Baltakaktė žąsis | 85 | 91 | 90 | 90 | | 30 | 35 | | 421 |
| Didysis kormoranas | | | | | 3 | | | | 3 |
| Didžioji antis | | | | | | | | 8 | 8 |
| Dirvinis sėjikas | | | | | 83 | | | 25 | 108 |
| Dirvinis vieversys | 100 | | 24 | 200 | | | 10 | | 334 |
| Javinė lingė | | | | | 1 | | | | 1 |
| Jūrinis erelis | | | | | | | | 1 | 1 |
| Kirai sp. | | | | | | 26 | | | 26 |
| Kranklys | | | | | | | | 1 | 1 |
| Kuosa | | | | | | 58 | | | 58 |
| Lygutė | | | | 3 | | | | | 3 |
| Mėlynoji zylė | | | | 500 | | | | | 500 |
| Paprastasis kikilis | | 650 | | | | | | | 650 |
| Paprastasis kiras | | | | | | | 7 | | 7 |
| Paprastoji pempė | | 85 | | 1 | | | 390 | | 476 |
| Perkūno oželis | | | | 1 | | | | | 1 |
| Pilkoji gervė | | | | | | | 73 | | 73 |
| Pilkoji varna | | | | | | 7 | 8 | | 15 |
| Smilginis strazdas | | | | 2 | | | | | 2 |
| Uolinis karvelis | | | | | | 16 | | | 16 |
| Žąsys sp. | 130 | 130 | | | | | | 163 | 423 |
| Želmeninė žąsis | 60 | 125 | | 127 | | 32 | | | 344 |
| Iš viso | 375 | 1081 | 114 | 924 | 87 | 169 | 523 | 198 | 3471 |

## 3.6. Paukščių sankaupos

Iš viso 2021 metų rudens tyrimų ir apskaitų metų buvo suskaičiuoti 32198 paukščiai santalkose. Daugiausiai buvo stebima žvirblinių paukščių – 44,9 %. Panašiu santykiu sankaupose stebėti žąsiniai ir sėjikiniai paukščiai, atitinkamai po 29,1 % ir 25,8 %. Likusią labai nežymią dalį sudarė plėšrieji bei gandriniai-gerviniai paukščiai – iki 0,1 % (3.6.1. lentelė).

3.6.1. Lentelė. Paukščių, sudarančių santalkas, gausumas ir procentinė sudėtis

| Paukščių grupės | Individai | Gausumas, % |
|---|---|---|
| Gandriniai ir gervės | 1 | 0.0 |
| Plėšrieji | 38 | 0.1 |
| Sėjikiniai | 8314 | 25.8 |
| Žąsiniai | 9383 | 29.1 |
| Žvirbliniai | 14462 | 44.9 |
| Iš viso | 32198 | 100 |

Rusėjo trečiąjį ir spalio pirmąjį dešimtadienį, dirbamos žemės plotuose ir pievose buvo stebimos dirvinių vieversių santalkos iki 400 indvidų. Tuo metu gausiai migruojant žvirbliniams paukščiams, registruotos trumpalaikės iki 1000 individų besimaitinančių paprastųjų ir šiaurinių kikilių, taip pat paprastųjų varnėnų iki 2000 individų santalkos dirbamuose laukuose. Spalio antrąjį ir trečiąjį dešimtadieniais pagausėjo paprastųjų čivylių (iki 250 individų) ir geltonųjų stratų (iki 50 individų) būreliai pakelių bei melioracijos kanalų piktžolynuose ar dirbamuose laukuose (3.6.1 pav., 3.6.2. lentelė).

3.6.2. Lentelė. Paukščių santalkų suminis gausumas planuojamo VE parko teritorijoje ir gretimose teritorijose

| Grupė | Rūšis | Stebėjimų dešimtadienis | | | | Iš viso |
|---|---|---|---|---|---|---|
| | | 2021-09 III | 2021-10 I | 2021-10 II | 2021-10 III | |
| Gandriniai ir gervės | Baltasis gandras | | | 1 | | 1 |
| Iš viso (gandriniai ir gervės) | | | | 1 | | 1 |
| Plėšrieji | Jūrinis erelis | | | | 1 | 1 |
| | Paprastasis suopis | 11 | 7 | 3 | 11 | 32 |
| | Paukštvanagis | | | | 1 | 1 |
| | Tūbuotasis suopis | | 3 | | 1 | 4 |
| Iš viso (plėšrieji) | | 11 | 10 | 3 | 14 | 38 |
| Sėjikiniai | Dirvinis sėjikas | 304 | 80 | 751 | 26 | 1161 |

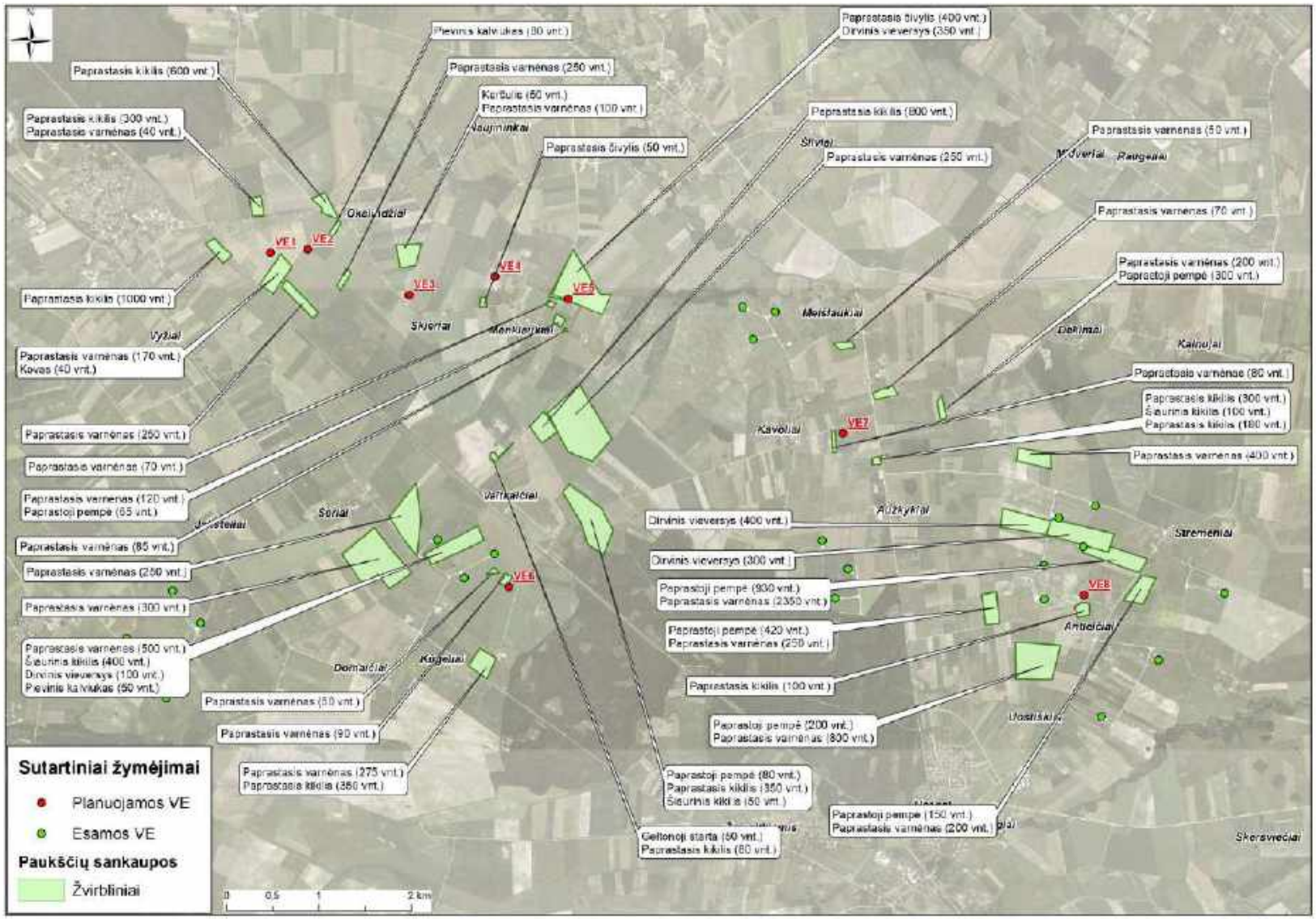
| | | | | | | |
|---|---|---|---|---|---|---|
| | Gaidukas | | 7 | | | 7 |
| | Kirai | 250 | | | 46 | 296 |
| | Oželis nykštukas | | | | 1 | 1 |
| | Paprastasis kiras | 105 | 367 | 20 | 1264 | 1756 |
| | Paprastoji pempė | 640 | 1385 | 1796 | 592 | 4413 |
| | Perkūno oželis | | | | 2 | 2 |
| | Rudagalvis kiras | 334 | 274 | 30 | 40 | 678 |
| Iš viso (sėjikiniai) | | 1633 | 2113 | 2597 | 1971 | 8314 |
| Žąsiniai | Baltakaktė žąsis | | | 65 | 5935 | 6000 |
| | Baltaskruostė berniklė | | | | 26 | 26 |
| | Didžioji antis | | 7 | | 32 | 39 |
| | Eurazinė cyplė | | | | 254 | 254 |
| | Gulbė giesmininkė | | 20 | 10 | 5 | 35 |
| | Mažoji gulbė | | | 6 | | 6 |
| | Pilkoji žąsis | | | | 110 | 110 |
| | Rudagalvė kryklė | | | | 70 | 70 |
| | Smailiauodegė antis | | | | 12 | 12 |
| | Žąsys | | | 100 | 265 | 365 |
| | Želmeninė žąsis | | 95 | 65 | 2306 | 2466 |
| Iš viso (žąsiniai) | | | 122 | 246 | 9015 | 9383 |
| Žvirbliniai | Baltoji kielė | 10 | | | | 10 |
| | Didžioji zylė | | | | 5 | 5 |
| | Dirvinis vieversys | 100 | 400 | 674 | 5 | 1179 |
| | Dūminė raudonuodegė | | 1 | | | 1 |
| | Geltonoji starta | | | | 126 | 126 |
| | Juodagalvė sniegena | | | 12 | | 12 |
| | Juodoji meleta | | | | 1 | 1 |
| | Karklažvirblis | 35 | 8 | | 16 | 59 |
| | Kėkštas | | | 2 | 4 | 6 |
| | Keršulis | 126 | 54 | 3 | | 183 |
| | Kovas | | | | 40 | 40 |
| | Kranklys | 33 | 6 | 23 | 35 | 97 |
| | Kuosa | 51 | | | 22 | 73 |
| | Kurapka | | | | 4 | 4 |
| | Paprastasis čivylis | 25 | | 400 | 54 | 479 |
| | Paprastasis kikilis | 1700 | 2290 | 180 | 441 | 4611 |
| | Paprastasis varnėnas | 2220 | 2975 | 950 | 575 | 6720 |
| | Pietinis purplelis | | | 4 | | 4 |
| | Pievinis kalviukas | 130 | | | | 130 |
| | Pilkoji meleta | | | 1 | | 1 |
| | Pilkoji varna | 9 | 10 | 5 | 18 | 42 |
| | Plėšrioji medšarkė | | 2 | | 3 | 5 |
| | Šarka | 7 | 2 | 10 | 12 | 31 |
| | Šelmeninė kregždė | | 4 | | | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Šiaurinis kikilis | 420 | 120 | | 50 | 590 |
| | Uldukas | 35 | | | | 35 |
| | Uolinis karvelis | 6 | | 7 | | 13 |
| | Žaliukė | | | | 1 | 1 |
| Iš viso (žvirbliniai) | | 4907 | 5872 | 2271 | 1412 | 14462 |
| Iš viso | | 6551 | 8117 | 5118 | 12412 | 32198 |

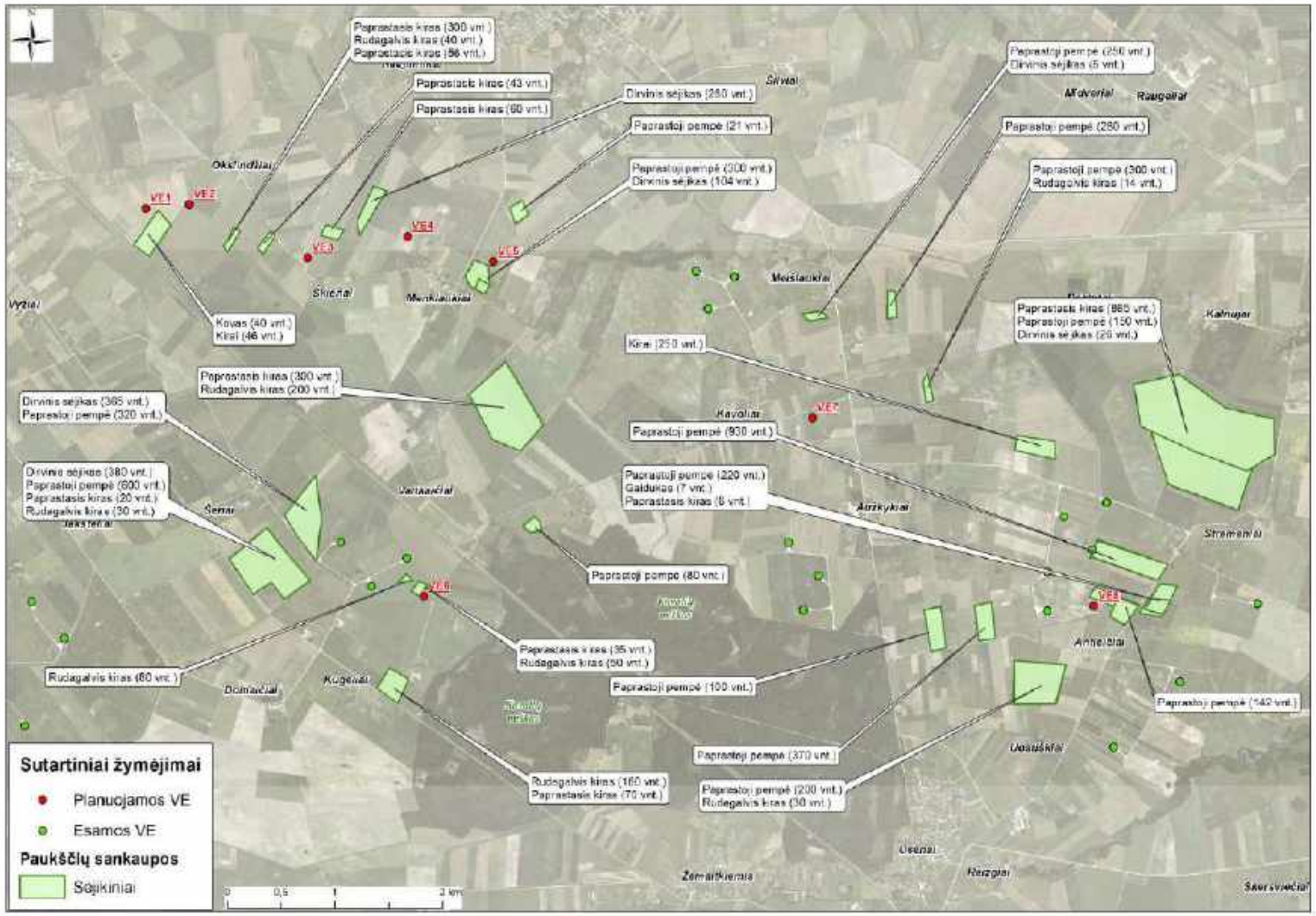
Pempės ir dirviniai sėjikai ilsėjosi sudygusiuose žiemkenčiuose, arimuose ir ganyklose, jų santalkos buvo aptinkamos visą stebėjimo laikotarpį, o gausiausios – spalio antrąjį dešimtadienį, pulkais atitinkamai iki 600 ir 350 individų, į šiaurės vakarus nuo planuojamos VE6 bei į šiaurę šalia VE8. Mišrūs būriai paprastųjų ir rudagalvių kirų klajojo maitindamiesi visoje planuojamo VE parko teritorijoje dirbamuose laukuose, pievose ir šlapesnėse vietose, sudarydami sankaupas iki 800 individų kelioms valandoms, dažniausiai šviežiuose arimuose (3.6.2. pav., 3.6.2. lentelė). Tinkamų buveinių gausa tiek šioje, tiek aplinkinėse teritorijose leidžia sėjikiniams paukščiams pasirinkti optimalias poilsio ir maitinimosi vietas, jų gausumas labiausiai priklauso nuo žemės ūkio darbų pobūdžio ir laiko, todėl neigiamas poveikis migruojantiems ir laikinai apsistojantiems dirviniams sėjikams, pempėms, kirams – nenumatomas. Šiems paukščiams tinkamos buveinės nebus sunaikintos ar pakeistos.

Gulbės giesmininkės (5-13 individų) reguliariai stebėtos spalio mėnesį dirbamoje žemėje su susiformavusiomis laukų balomis į šiaurės rytus nuo VE8. Čia spalio antrąjį dešimtadienį trumpam buvo apsistoję ir 6 mažosios gulbės. O spalio pabaigoje registruota gana gausi eurazinių cyplių (250 individų) su rugalavėmis kryklėmis (70 individų) ir didžiosiomis bei smailiauodegėmis antimis santalka (3.6.3 pav., 3.6.2. lentelė).

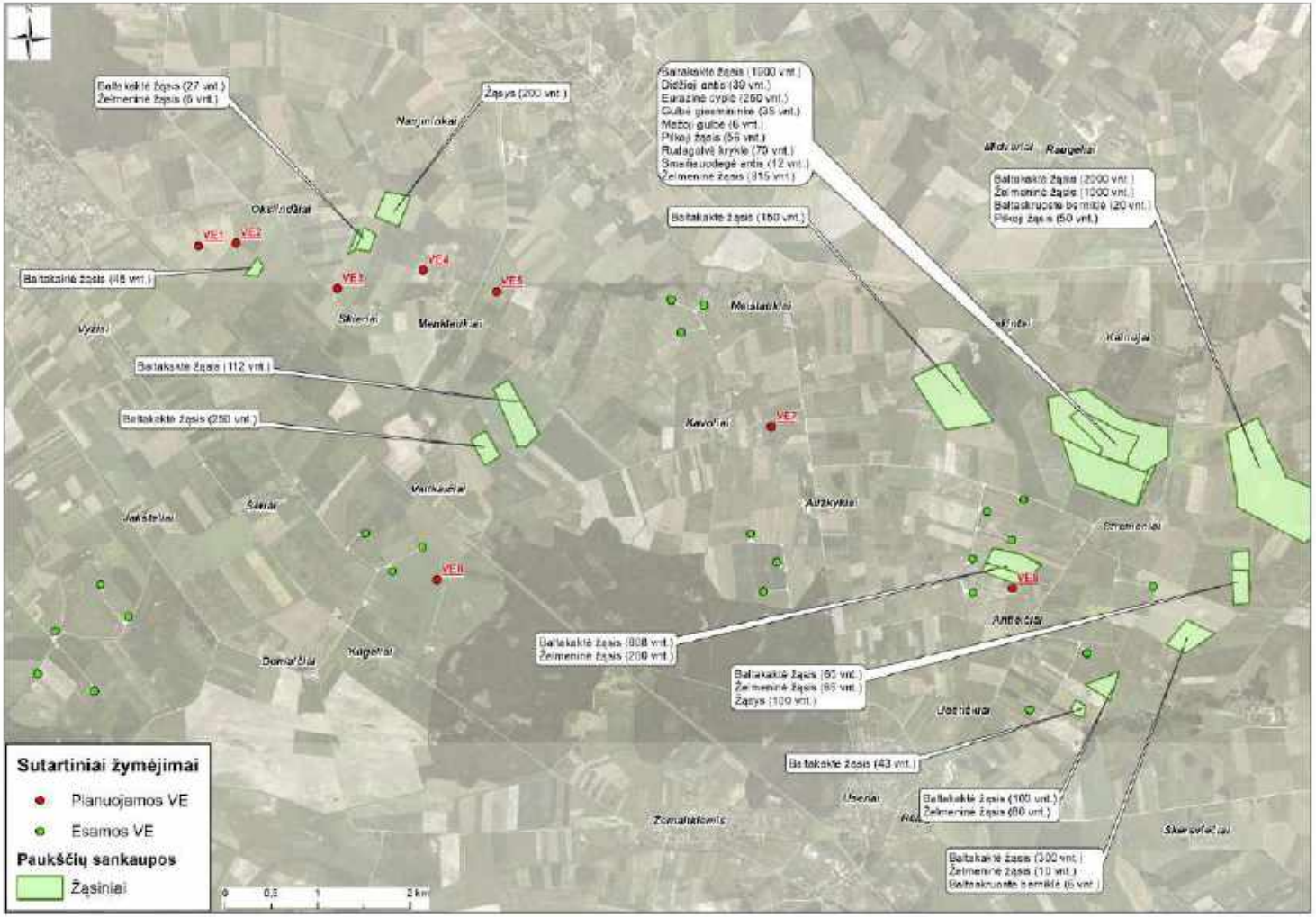
Trečiąjį spalio dešimtadienį skaitlingi žąsų, daugiausiai baltakakčių ir želmeninių, būriai maitinosi ir ilsėjosi kukurūzų ražienų, žiemkenčių ar rapsų laukuose ir ganyklose, esančiuose 180º spinduliu šiaurės vakarų – pietryčių kryptimi nuo VE8, tarp Dėkintėlių, Antšyšių ir Šlaunių gyvenviečių, taip pat visai prie pat planuojamos VE8. Paukščiai gana dažnai pabaidyti jūrinių erelių ar žmonių kilo, perskridinėjo į gretimus laukus, vienu metu minėtoje teritorijoe buvo keletas tūkstančių žąsų. Ne tokie gausūs būriai, iki 200 individų, stebėti tarp VE3 ir VE4 į šiaurę esančiuose žiemkenčių ir kukurūzų ražienų laukuose. (3.6.3 pav., 3.6.2. lentelė)




3.6.1 Paveikslas. Migruojančių paukščių (*žvirbliniai ir pempės*) sankaupų vietos planuojamo Šilutės VE parko teritorijoje 2021 m.




3.6.2. Paveikslas. Migruojančių paukščių (*sėjikiniai*) sankaupų vietos planuojamo Šilutės VE parko teritorijoje 2021 m.

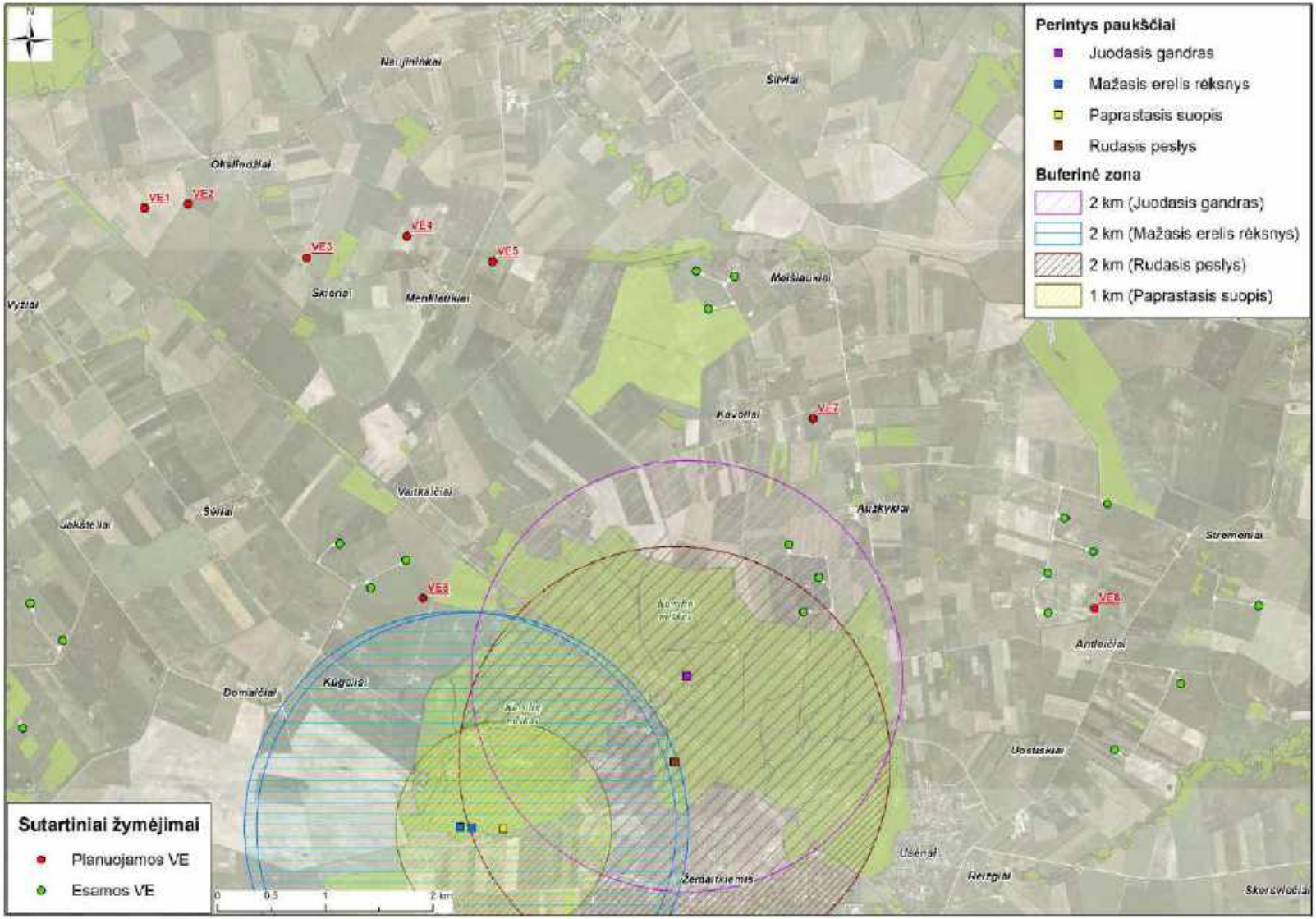



3.6.3. Paveikslas. Migruojančių paukščių (*žąsiniai*) sankaupų vietos planuojamo Šilutės VE parko teritorijoje 2021 m.

## 3.7. Gyvenančių ir perinčių paukščių tyrimai

Jautrių VE poveikiui perinčių paukščių apskaitos atliktos 2021 metų pavasarį ir vasarą. Buvo tikrinamos lizdavietės pavasario metu, o vasaros metu tikrinimas lizdų užimtumas. Kūlynų miške buvo identifikuotos 2 mažojo erelio rėksnio perimvietės, po vieną rudojo peslio, paprastojo suopio ir juodojo gandro lizdavietę. Aplink perinčių paukščių lizdus buvo apibrėžti intnsyviausiai naudojamo ploto poligonai (3.7.1. pav.). Arčiausiai jautrių VE poveikiui paukščių rūšių lizdaviečių yra VE Nr. 6. Taip pat aplinkinėse teritorijose, pievose ir dirbamuose laukuose peri įprastos paukščių rūšys kaip geltonosios startos, pieviniai kalviukai, vieversiai, pempės, karklinės nendrinukės, kiauliukės, karveliai keršuliai ir kt. Nejautrios VE poveikiui rūšys nebuvo specialiai žymimos ar ieškomos. Taip pat gretimose teritorijose buvo stebėtos dvi poros pilkųjų gervių su jaunikliais. Gervių lizdai nebuvo identifikuoti, nes jos jau vedžiojosi jauniklius ir nuo lizdinių teritorijų buvo nutolusios nežinomą atstumą.

Pagal perinčių paukščių pasiskirstymą pavojingiausia planuojama VE yra Nr. 6. Kitos VE yra panašiai nutolusios saugiu atstumu nuo Kūlynų miško.




3.7.1. Paveikslas. Jautrių VE poveikiui perinčių paukščių lizdaviečių ir lizdų vietos bei atstumai iki planuojamų VE.

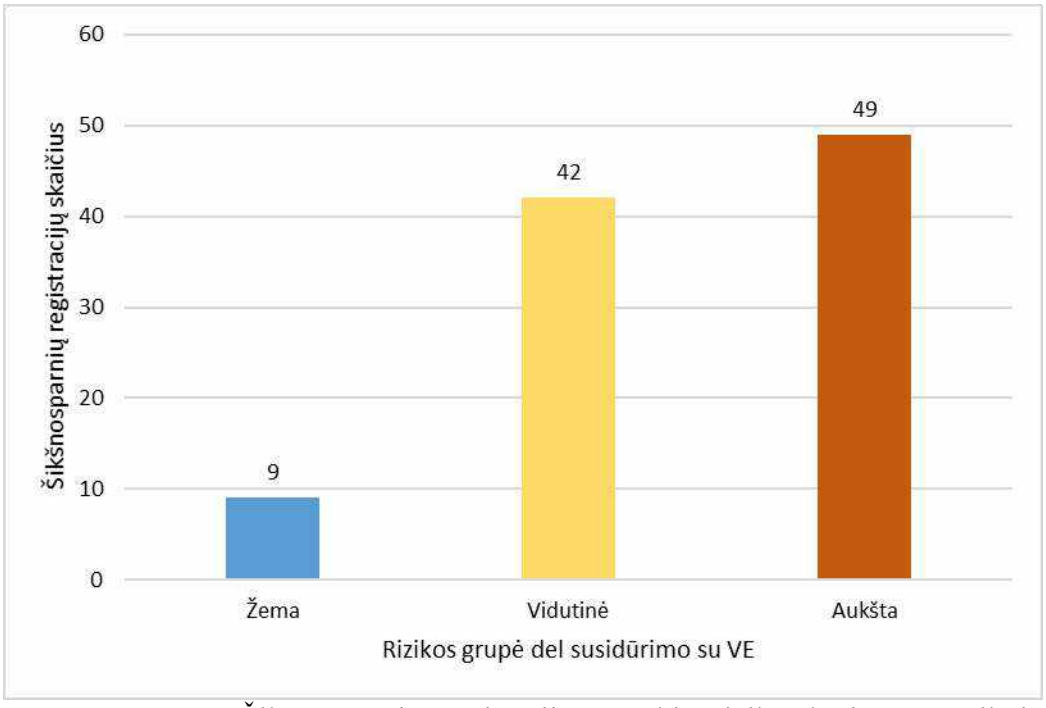
## 3.8. Besiveisiantys ir migruojantys šikšnosparniai

Kadangi aplinkinėse teritorijose jau veikia Juknaičių VE ir, iš atliktų tyrimų tose vietovėse, poveikio nebuvo nustatyta besiveisiantiems šikšnosparniams, o jų žūtys fiksuotos tik migracijos metu rugpjūčio ir rugsėjo mėnesiais. Todėl tyrimai buvo orientuoti į migruojančių rūšių įvairovę ir gausumą. Šikšnosparniai planuojamame VE parke buvo skaičiuojami mobiliaisiais šikšnosparnių ultragarso detektoriais (Wildlife Acoustics) jų migracijos metu, o analizė atlikta Wildlife Acoustics Kaleidoscope Pro programa. Maršrutinės apskaitos apėmė visų būsimą VE parko teritoriją ir ribas už jos. Stebėjimai buvo atlikti intensyviu šikšnosparnių migracijos periodu, rugsėjo - spalio mėnesio I pusėje. Buvo stebimas šikšnosparnių aktyvumas skirtingose planuojamo VE parko vietose. Apskaitos atliktos apvažiuojant ir stovint stebėjimo taškuose po 30 min, kuomet oro temperatūra buvo daugiau nei 10º C ir pūtė ne stipresnis nei 5m/s vėjas. Apskaitų metu buvo užfiksuotos 9 šikšnosparnių rūšys (3.8.1 lentelė.). Gausiausiai buvo registruotas Natuzijaus šikšniukas (41 registracija) ir vėlyvasis šikšnys (23 registracijos). Iš aukštos rizikos dėl susidūrimų su VE šikšnosparnių rūšių buvo užfiksuotos 4 rūšys (mažasis nakviša, rudasis nakviša, natuzijaus šikšniukas ir vėlyvasis šikšnys), kurios sudarė 49% visų registruotų rūšių. Vidutinės rizikos grupės šikšnosparniams buvo priskirtos šiaurinis ir vėlyvasis šikšniai, šikšniukai mažylis ir nykštukas, kurie sudarė 42% visų registracijų. O nejautrių VE poveikiui rūšių, žemos rizikos grupei buvo priskirta vienintelė saugoma rūšis – Europinis plačiaausis. Planuojamo VE parko teritorijos vyrauja aukštos ir vidutinės rizikos grupių šikšnosparnių rūšys, kurios abi sudarė 91% visų registracijų migracijos metu (3.8.1. pav.).

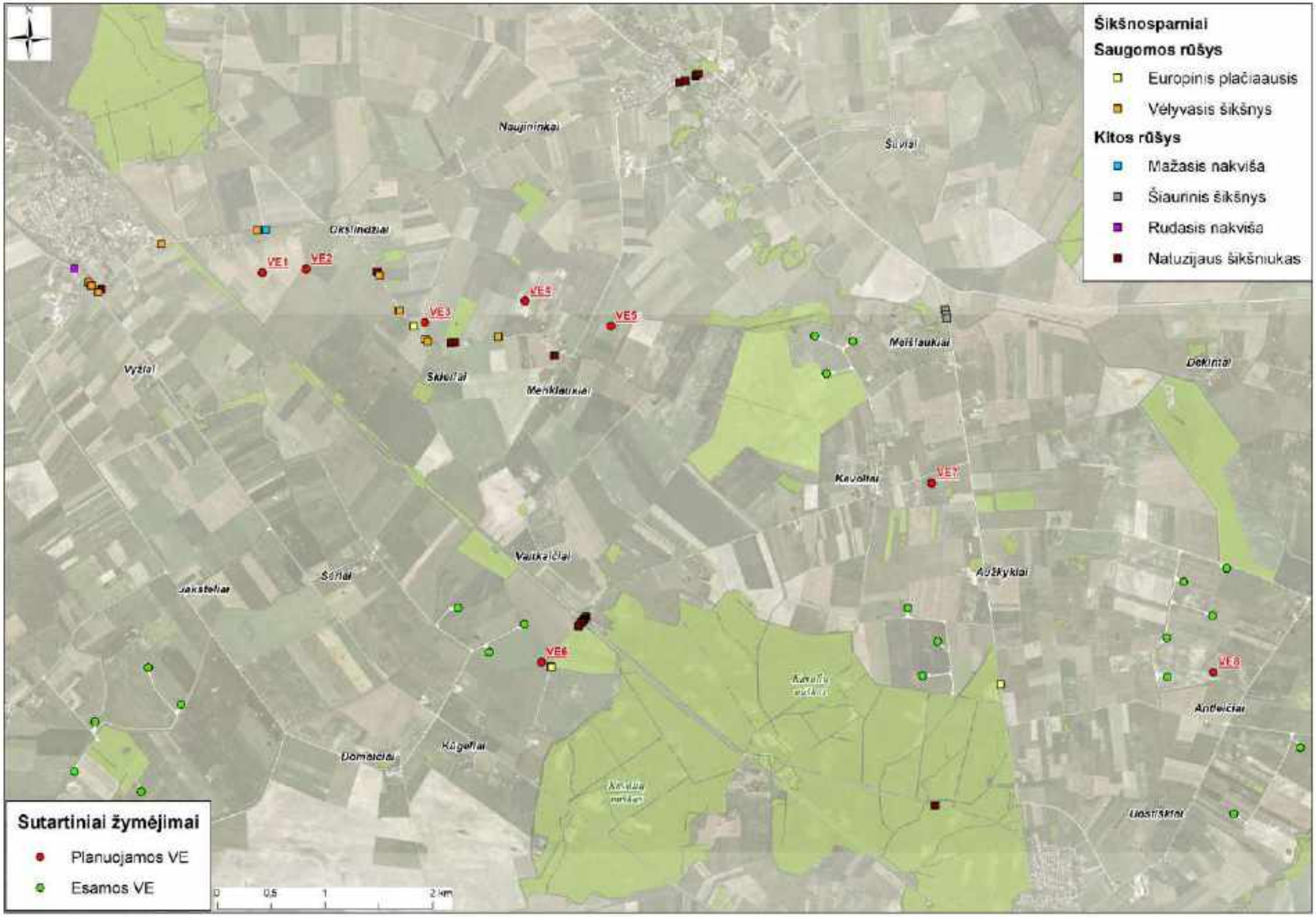
Iš atliktų tyrimų galima manyti, kad planuojamos VE gali daryti neigiamą poveikį šikšnosparniams jų migracijos metu. Planuojamos VE veikia visus metus, o šikšnosparnių migracijos intensyvumas yra du mėnesius (nuo rugpjūčio iki rugsėjo). Todėl migracijos metu reiktų taikyti poveikio mažinimo priemones planavimo ir VE veiklos metu. Pagal gretimame VE parke taikomą priemonę – startinio vėjo greičio didinimas šikšnosparnių migracijos metu – buvo sumažintas šikšnosparnių žūčių skaičius apie 60%. Todėl galima manyti apie panašios priemonės taikymą planuojamoms VE, kur reikėtų taikyti startinio vėjo didinimą šikšnosparnių migracijos metu iki 5,5 - 6 m/s.

3.8.1 lentelė. Šikšnosparnių rūšinė sudėtis ir registracijų skaičius, veisimosi metu planuojamame Usėnų ir Juknaičių sen. Šilutės r. VE parke ir už jo ribos. **LRK – Lietuvos raudonoji knyga*

| Nr. | **Rūšis Sutr.** | **Rūšis Lietuviškai** | **Rūšis Lotyniškai** | **Regsitracijų skaičius** | **Rizikos grupė** | **Buveinių direktyva** | **LRK*** |
|---|---|---|---|---|---|---|---|
| 1 | BARBAR | Europinis plačiaausis | Barbastella barbastellus | 9 | Žema | Taip, IV priedas | Taip |
| 2 | EPTNIL | Šiaurinis šikšnys | Eptesicus nilsonii | 9 | Vidutinė | | |
| 3 | EPTSER | Vėlyvasis šikšnys | Eptesicus serotiuns | 23 | Vidutinė | | Taip |
| 4 | NYCLEI | Mažasis nakviša | Nyctalus leisleri | 2 | Aukšta | | |
| 5 | NYCNOC | Rudasis nakviša | Nyctalus noctula | 5 | Aukšta | | |
| 6 | PIPNAT | Natuzijaus šikšniukas | Pipistrellus nathusii | 41 | Aukšta | | |
| 7 | PIPPYG | Šikšniukas mažylis | Pipistrellus pygmaeus | 1 | Vidutinė | | |
| 8 | PIPPIP | Šikšniukas nykštukas | Pipistrellus pipistrellus | 9 | Vidutinė | | |
| 9 | VESMUR | Dvispalvis plikšnys | Vespertilio murinus | 1 | Aukšta | | Taip |
| | NoID | Šikšnosparnis sp. | | 8 | | | |
| | Iš viso | | | 108 | | | |




3.8.1. Paveikslas. Šikšnosparnių regsitracijos pagal jų rizikos lygį VE poveikui.




3.8.1 Paveikslas. Šikšnosparnių pasiskirstymas planuojamo VE parko teritorijoje ir už jos ribų.

# 4. SUMINIO POVEIKIO VERTINIMAS

## 4.1. Paukščių ir šikšnosparnių tyrimai gretimose teritorijose

**Veikiančių VE poveikis paukščiams ir žinduoliams UAB „Šilutės vėjo projektai“ Juknaičių, Usėnų ir Katyčių seniūnijose esančiame VE parke**

Paukščių ir šikšnosparnių tyrimai 24 VE parke vykdyti nuo 2016 iki 2021 metų. Per visus tyrimų metus buvo nustatyti patys reikšmingiausi poveikiai ir taikytos įvairios priemonės poveikiui mažinti. Veikiančios VE nesudarė neigiamos įtakos perinčių paukščių gausumui, nesudarė barjero efekto migruojantiems paukščiams, nesukėlė buveinių pokyčių. Tačiau didžiausias neigiamas poveikis buvo užfiksuotas perintiems plėšriesiems paukščiams ir gandrams, bei migruojantiems šikšnosparniams.

UAB „Šilutės vėjo projektai“ žuvusių gyvūnų tyrimai po vėjo jėgainėmis buvo atliekami reguliariai tikrinant dešimt VE. Šešios iš tyrimo metu tikrintų VE pastatytos maždaug 400-2000 metrų, likusios keturios – apie 4000 metrų atstumu nuo numatytų įrengti VE, todėl duomenys gana gerai atspindi galimą būsimų VE poveikį paukščiams ir šikšnosparniams.

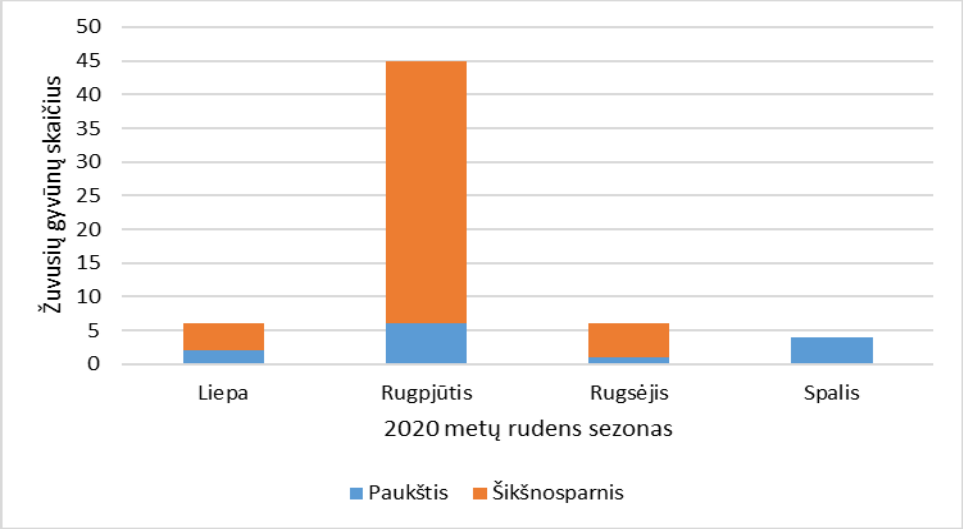
Atskirais metais žuvusių gyvūnų skaičius svyravo nuo 15 iki 27 paukščių arba nuo 6 iki 48 šikšnosparnių. Atskirais metais tendencijos išlikdavo tos pačios. Nereikšmingu poveikiu buvo laikomos įprastų, nesaugomų paukščių rūšių žūtys kaip nykštukai, dirviniai vieversiai ir kiti žvirbliniai paukščiai. Tačiau buvo nustatytos jautriausios gyvūnų grupės, kurios patirdavo tiesioginio susidūrimo su VE poveikį – plėšrieji paukščiai (mažasis erelis rėksnys, paprastasis suopis) ir baltieji gandrai. Dalis žuvusių gyvūnų buvo/yra įrašytos į Lietuvos raudonuoją knygą, kaip mažasis erelis rėksnys, kurapka, dvispalvis plikšnys ir vėlyvasis šikšnys. Taip pat buvo nustatytas reikšmingas neigiamas poveikis šikšnosparniams (Natuzijaus šikšniukams, rudiesiems nakvišoms, dvispalviams plikšniams, šikšniukams nykštukams ir kt.) (4.1.1 lentelė).

4.1.1 Lentelė. Paukščių ir šikšnosparnių žuvusių dėl VE poveikio rūšinė įvairovė (LSRS – Lietuvos saugomų rūšių sąrašas). *UAB „Šilutės vėjo projektai“, 2019 ir 2020 metų ataskaitų duomenys.*

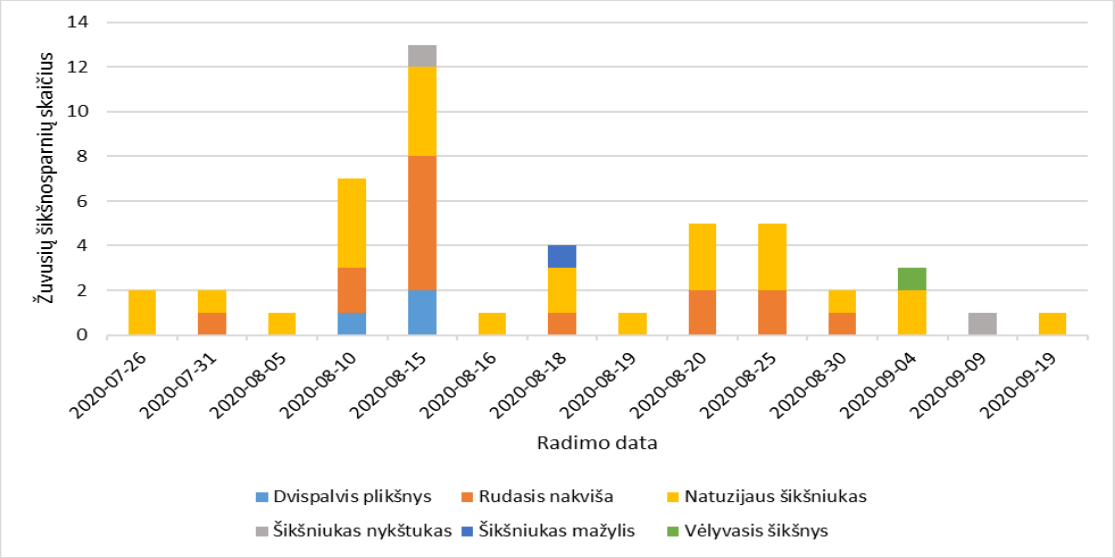
| Gyvūnas | Pavadinimas | 2016 RUD | 2017 PAV | 2017 RUD | 2018 PAV | 2018 RUD | 2019 PAV | 2020 RUD | Iš viso: | LRK |
|---|---|---|---|---|---|---|---|---|---|---|
| Paukščiai | Paprastasis nykštukas | 4 | 8 | 2 | | 1 | | 1 | 16 | |
| | Dirvinis vieversys | | 3 | 1 | 3 | | 2 | 2 | 11 | |
| | **Mažasis erelis rėksnys** | 1 | 1 | 1 | 1 | 1 | | 2 | 7 | LRK |
| | **Baltasis gandras** | | 1 | 1 | | 1 | 1 | | 4 | |
| | Liepsnelė | 3 | | | 1 | | | | 4 | |
| | Keršulis | 1 | | 1 | | 1 | | | 3 | |
| | **Paprastasis suopis** | | | | 2 | | 1 | 1 | 4 | |
| | Baltakaktė žąsis | | 1 | | | | 1 | | 2 | |
| | Juodasis čiurlys | | | 1 | | 1 | | | 2 | |
| | Nendrinė vištelė | | | | 2 | | | | 2 | |
| | Strazdas giesmininkas | | | | 2 | | | | 2 | |
| | Baltabruvis nykštukas | | 1 | | | | | | 1 | |
| | Baltabruvis strazdas | | 1 | | | | | | 1 | |
| | Didžioji antis | | 1 | | | | | | 1 | |
| | Didžioji zylė | 1 | | | | | | | 1 | |
| | Geltonoji starta | | | | 1 | | | | 1 | |
| | Giesmininkas strazdas | | 1 | | | | | | 1 | |
| | Gulbė nebylė | | | | 1 | | | | 1 | |
| | Kuoduotoji antis | | | | 1 | | | | 1 | |
| | Langinė kregždė | | | | | | | 1 | 1 | |
| | Paprastasis kikilis | | | | | 1 | | | 1 | |
| | Paprastasis varnėnas | | | 1 | | | | 2 | 3 | |
| | Perkūno oželis | | | 1 | | | | | 1 | |
| | Rudagalvis kiras | | | | | 1 | | | 1 | |
| | Pievinis kalviukas | | | | | | | 1 | 1 | |
| | Paprastoji pempė | | | | | | | 1 | 1 | |
| | Kurapka | | | | | | | 1 | 1 | LRK |
| | Mėlynoji zylė | | | | | | | 1 | 1 | |
| | Iš viso paukščių: | 10 | 18 | 9 | 14 | 7 | 5 | 12 | 76 | |
| Šikšnosparniai | Natuzijaus šikšniukas | 3 | | 11 | | 17 | 1 | 26 | 58 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Rudasis nakviša | 1 | | 8 | | 1 | | 15 | 25 | |
| | Šikšniukas nykštukas | 1 | | 2 | | 4 | | 2 | 9 | |
| | Dvispalvis plikšnys | | | 5 | | 1 | | 3 | 9 | LRK |
| | Šiaurinis šikšnys | 1 | | 1 | | 1 | | | 3 | |
| | Pipistrellus sp. | | | | | 2 | | | 2 | |
| | Velyvasis šikšnys | | | 1 | | 1 | | | 2 | LRK |
| | Sopraninis šikšniukas | | | 1 | | | | 1 | 2 | |
| | Iš viso šikšnosparnių: | 6 | | 29 | | 27 | 1 | 48 | 110 | |
| Iš viso per sezoną: | | 16 | 18 | 38 | 14 | 34 | 6 | 60 | 126 | |

Daugiausiai šikšnosparnių žūdavo rudeninės migracijos metu rugpjūtį-rugsėjį, paukščiai žūdavo tiek pavasario, tiek rudens metu. Jautrios VE poveikiui paukščių rūšys dažniausiai žūdavo po žemės ūkio darbų gretimuose plotuose nuo antros vasaros pusės ( 4.1.1. pav.). Šikšnosparnių žūtys buvo fiksuojamos nuo jų migracijos pradžios iki rugsėjo II dekados (4.1.2. pav.)




4.1.1. Paveikslas. Žuvusių gyvūnų klasių pasiskirstymas mėnesiais rudens sezono metu (*UAB „Šilutės vėjo projektai“ 2020 metų ataskaitos duomenys).*




4.1.2. Paveikslas. Šikšnosparnių žuvimo fenologija 2020 metų rudenį nuo liepos 26 iki spalio 26 dienos. (*UAB „Šilutės vėjo projektai“ 2020 metų ataskaitos duomenys).*

.

Iš jautrių VE poveikiui paukščių rūšių (plėšriųjų paukščių grupė) buvo nustatytas didelis mažųjų erelių rėksnių ir paprastųjų suopių žūčių skaičius. Mažieji ereliai rėksniai subręsta tik 4-5 metais gyvenimo metais, paprastai pora užaugina tik po vieną jauniklį, todėl kiekvieno suaugusio paukščio žuvimas yra didelis praradimas visai populiacijai, ypač jauniklių auginimo metu (dėl vieno dingusio poros nario jaunikliai taip pat galėjo neišgyventi).

Jautriausios paukščiams UAB „Šilutės vėjo projektai“ VE grupė buvo Nr. 10, 11, 12, kuri yra arčiausiai planuojamos VE Nr. 6. Šikšnosparniams jautriausios VE yra žemiau kelio Šilutė – Pagėgiai ir VE ties Kūgelių kaimu (Nr. 10, 11, 12), taip pat VE kurios yra arčiausiai Kūlynų miško. Todėl vertinant galimas rizikas dėl žūvančių gyvūnų pavojingiausia yra planuojama VE Nr. 6. Dėl kitų VE veiklos ir galimo jų poveikio reiktų atlikti poveikio vertinimą.

## 4.2. Suminio poveikio vertinimas

Jau veikiančiame UAB „Šilutės vėjo projektai“ VE parke yra nustatytas reikšmingas poveikis mažajam ereliui rėksniui ir migruojantiems šikšnosparniams. Dėl šių poveikių veikiantis VE parkas taiko prevencines ir kompensacines priemones. Įvertinus bendrą galimą poveikį VE parkų poveikį, poveikis paukščiams ir šikšnosparniams padidėtų tuo atveju jei nebūtų imtasi prevencinių ir poveikį mažinančių priemonių. Didžiausias poveikis gali būti tiesioginiam šikšnosparnių ir plėšriųjų paukščių žuvimui. Paukščiai ir šikšnosparniai galėtų žūti, jei nebus

taikomos poveikį mažinančios priemonės. Jei priemonės bus įgyvendintos tikėtina kad suminis poveikis nesikeis ir išliks nepakitęs, ir nebus didesnis nei dabar veikiančio VE parko sukuriamas poveikis.

4.2.1. lentelė. Suminio poveikio vertinimo lentelė jau veikiančio 24 VE parko ir planuojamo naujo 8 VE parko.

| **Poveikis** | **Esamas VE parkas UAB „Šilutės vėjo projektai“ 24 VE** | **Planuojamas 8 VE parkas** | **Abu parkai kartu** |
|---|---|---|---|
| Migracijos barjero, kliūties efektas | Nereikšmingas | Nereikšmingas | Nereikšmingas |
| Poveikis įprastiems saugomiems perintiems paukščiams | Nereikšmingas | Nereikšmingas | Nereikšmingas |
| Mitybos plotų praradimas | Poveikis fiksuojamas arčiausiai VE perintiems plėšriesiems paukščiams. Vengia naudoti teritorijas prie pat VE. | Gali vengti vengti plotų kur numatomos įrengti VE Nr. 1, 2, 3, 4, 5. | Galimas silpnas poveikis |
| Tiesioginis žuvimas jautrioms VE poveikiui paukščių rūšims | Reikšmingas. Mažiesiems ereliams rėksniams, vidutiniškai- suopiams ir nereikšmingas baltiesiems gandrams. Imtasi poveikio mažinimo priemonių. | Galimas vidutinis poveikis mažiesiems ereliams rėksniams, ir vidutiniškai paprastiems suopiams. Reikia imtis poveikio mažinimo priemonių. | Galimas reikšmingas poveikis, jei nebus imtasi poveikio mažinimo priemonių. |
| Tiesioginis žuvimas šikšnosparniams. | Reikšmingas. Imtasi priemonių poveikį sumažinti. Po priemonių pritaikymo poveikis laikomas vidutinis. | Reikšmingas. Reikia planuoti priemones poveikiui mažinti iki nereikšmingo. | Reikšmingas. Imantis priemonių poveikį galima sumažinti iki silpno ar nereikšmingo. |
| Sankaupų sudarymas, tirkdymas | Nereikšmingas | Nereikšmingas | Nereikšmingas |

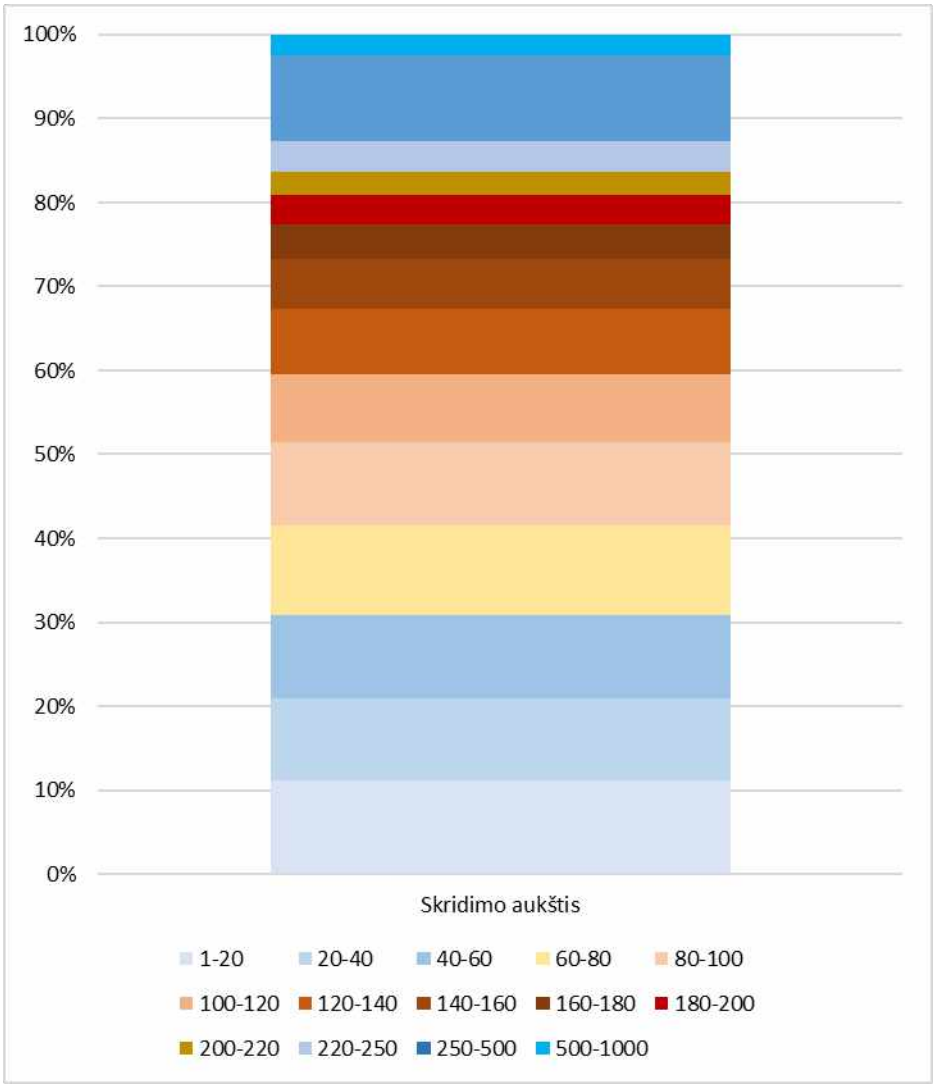
# 5. PAUKŠČIŲ ŽENKLINTŲ TELEMETRINĖMIS PRIEMONĖMIS SKRAIDYMO PARAMETRAI

Gretimai planuojamų VE 2021 metų perėjimo sezono antroje pusėje GPS prietaisais buvo suženklinti 3 mažieji ereliai rėksniai. Išanalizavus jų skrydžio parametrus aktyviausiu erelių paros

metu nuo 10 iki 19 val. buvo nustatyta, kad didžioji dalis skrydžių buvo jautriame aukštyje nuo 40 iki 200 metrų (5.1.1. lentelė, 5.1.1. pav.). Paukščiai nepavojingame iki 40 m aukštyje skrido 20,8 % savo laiko, o nuo 200 iki 1000 m aukštyje skrido – 19,2 % . Didžioji dalis skrydžių, 60 %, buvo atlikta jautriame aukštyje nuo 40 iki 200 m. Todėl ateityje galima prognozuoti neigiamą poveikį mažiesiems ereliams rėksniams, neišskiriant nė vienos VE.

5.1.1. lentelė. Trijų mažųjų erelių rėksnių skrydžio aukštis, veisimosi metu

| Skridimo aukštis, m | GPS pozicijų skaičius | % |
|---|---|---|
| 1-20 | 1155 | 11,1 |
| 20-40 | 1013 | 9,7 |
| 40-60 | 1033 | 9,9 |
| 60-80 | 1109 | 10,7 |
| 80-100 | 1030 | 9,9 |
| 100-120 | 851 | 8,2 |
| 120-140 | 801 | 7,7 |
| 140-160 | 616 | 5,9 |
| 160-180 | 434 | 4,2 |
| 180-200 | 368 | 3,5 |
| 200-220 | 286 | 2,8 |
| 220-250 | 373 | 3,6 |
| 250-500 | 1073 | 10,3 |
| 500-1000 | 251 | 2,4 |
| Iš viso | 10393 | 100 |




5.1.1. Paveikslas. Visų trijų mažųjų erelių rėksnių, perinčių greta planuojamo VE parko, skrydžių pasiskirstymas vasaros-rudens periodu.

# 6. ATSKIRŲ VĖJO ELEKTRINIŲ JAUTRUMO VERTINIMAS

Atliktas suminis visų galimų neigiamų poveikių vertinimas. Jo metu atskirai kiekviena VE buvo įvertinta pagal šiuos kriterijus:

- jautrių VE poveikiui paukščių grupių perskridimus ir migracijas;
- susidūrimo su vėjaračio zona rizika (paukščių skrydžių transektos, kurios patenka į 170 m vėjaračio diametrą, ir skridimas, atliktas nuo 40 iki 200 m aukštyje);

- perinčių paukščių atžvilgiu;
- sankaupas sudarančių paukščių poilsio vietose atžvilgiu;
- suminio vertinimo gyvūnų (paukščių ir šikšnosparnių) žuvimo rizika pagal gretimai veikiančias VE;
- šikšnosparnių veisimosi ir migracijos intensyvumą.

Visos planuojamos VE vertinamos individualiai, vertinama kiekviena planuojama elektrinė, skalėje nuo 1 iki 3, kai 1 – mažai pavojinga, 2 – vidutiniškai pavojinga, 3 – labiausiai pavojinga (6.1.1. lentelė). Susumavus atskirus balus kiekvienai elektrinei pagal poveikius, identifikuoti trys VE rizikos gyvūnijai lygiai:

mažai pavojingos, vidutiniškai pavojingos, labai pavojingos. Vidutiniškai pavojingos identifikuotos 3 VE (Nr. 2, 4, ir 7) ir labai pavojinga – viena VE Nr. 6. Likusios – kaip mažai pavojingos (jei bus taikoma šikšnosparnių žūties prevencija).

6.1.1. Lentelė. Suminis atliktų tyrimų vertinimas pagal planuojamas VE ir prognozuojamą jų poveikį paukščiams ir šikšnosparniams (kai 1 – mažai pavojinga, 2 – vidutiniškai pavojinga, 3 – labai pavojinga)

| VE Nr. | Paukščių perskirdimai | | Susidūrimo rizika vėjaračio zonoje | Perintys paukščiai | Paukščių sankaupos | Šikšnosparniai | | Suminis vertinimas | Bdndreas įvertinimas |
|---|---|---|---|---|---|---|---|---|---|
| | Plėšrieji paukščiai | Gervės ir gandriniai paukščiai | Gandrai ir plėšrieji paukščiai | Jautrių VE poveikiui paukščių atžvilgiu | Visų paukščių atžvilgiu | Besiveis-iantys | Migruo-jantys | Gyvūnų žuvimo rizika | |
| **1** | 1 | 1 | 2 | 1 | 0 | 0 | 3 | 1 | 9 |
| 2 | 1 | 1 | 3 | 1 | 0 | 0 | 3 | 1 | 10 |
| **3** | 2 | 1 | 1 | 1 | 0 | 0 | 3 | 1 | 9 |
| 4 | 2 | 1 | 3 | 1 | 0 | 0 | 3 | 1 | 11 |
| 5 | 1 | 1 | 1 | 1 | 0 | 0 | 3 | 1 | 8 |
| **6** | 1 | 1 | 3 | 3 | 0 | 0 | 3 | 3 | 14 |
| **7** | 2 | 1 | 2 | 2 | 0 | 0 | 1 | 2 | 10 |
| *8* | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 7 |

VE, kurios patenka vidutiniškai pavojingoms ir labai pavojingoms, greičiausiai, ateityje kils konfliktų su plėšriaisiais paukščiais ir šikšnosparniais. Atliekant paukščių ir šikšnosparnių monitoringą ir įvertinus galimus poveikius, ateityje reikės įgyvendinti poveikio mažinimo priemones prie labiausiai pavojingų VE dėl jautrių VE poveikiui paukščių rūšių ir šikšnosparnių.

Poveikio mažinimo priemonės turės būti įgyvendintos tiek planavimo, tiek veiklos vystymo etapuose. **Viena iš efektyviausių poveikio mažinimo priemonių planavimo etape yra planuojamų VE sumažinimas ar perkėlimas į kitas vietas. Todėl VE Nr. 6 atsisakymas sumažintų planuojamo VE parko neigiamą poveikį plėšriesiems paukščiams.**

Reiktų atkreipti dėmesį, kad tai yra tik prognozė apie pavojingiausias VE ir jų poveikį, realus poveikis gali būti tiksliai įvertintas tik jau įrengus VE parką ir atlikus monitoringinius stebėjimus. Bet jau planavimo etape turi būti žinoma apie galimas grėsmes ir galimas poveikio taikymo priemones mažinant neigiamą įtaką.

# 7. GALIMO NEIGIAMO POVEIKIO PREVENCIJOS, MAŽINIMO PRIEMONĖS

Pagal jau nustatytą neigiamą poveikį gretimai veikiančiose VE galima taikyti jau pritaikytas ir išbandytas poveikio mažinimo priemones.

Planuojama ūkinė veikla numatoma žemės sklypuose, kuriuose šiuo metu vykdoma žemės ūkio veikla. Todėl natūralios buveinės nebus užstatomos arba kitaip sunaikinamos, pažeidžiamos ar suskaldomos. Nėra numatomas miškų kirtimas ar natūralių buveinių tipų plotų sumažinimas.

VE parko statybų metu galimas poveikis smulkiesiems žinduoliams (kirstukams, pelėms, pelėnams), varliagyviams ir ropliams dėl trikdymo, nors žuvimo tikimybė išlieka labai maža ir nereikšminga. Statybos darbų metu gali būti lokaliai pažeidžiamos ir jų buveinės, tačiau eksploatacijos metu reikšminga įtaka nenumatoma.

VE įrengimo ir eksploatacijos metu galimas poveikis plėšriesiems paukščiams ir šikšnosparniams dėl galimo tiesioginio susidūrimo su VE ar buveinės praradimo dėl trikdymo. Todėl norint išvengti poveikio galima pritaikyti priemones, kurios gali panaikinti arba sumažinti neigiamą poveikį.

**Poveikio paukščiams ir šikšnosparniams mažinimo priemonės**

A) Siekiant sumažinti galima neigiamą poveikį plėšriesiems paukščiams ir šikšnosparniams, atsisakyti VE Nr. 6. Pagal gretimai veikiančio VE parko duomenis ši

planuojama VE gali būti labai pavojinga mažiesiems ereliams rėksniams ir migruojantiems šikšnosparniams.

B) Siekiant sumažinti prognozuojamas šikšnosparnių žūtis, VE veiklos pradžios minimalaus vėjo greičio (kuris daugumoje VE modelių yra 3,5 m/s) didinimas iki 5,5-6 m/s intensyviausiu migracijos periodu rugpjūčio–rugsėjo mėnesiais, taikant šią priemonę nuo saulės nusileidimo iki patekėjimo. Priemonė turi būti patikslinta atlikus migruojančių šikšnosparnių monitoringą.

C) Prisidėti prie retų ir jautrių VE poveikiui paukščių rūšių išsaugojimo vykdant jų monitoringą ir stebėseną nuotolinėmis telemetrinėmis priemonėmis. Gretimoje aplinkoje perintiems jautriems VE poveikiui paukščiams (gandrams ir plėšriesiems paukščiams) uždėti 2-3 telemetrinius įrenginius (siųstuvus) ir stebėti jautrių rūšių judėjimą, naudojamas teritorijas vietoje prieš statybas ir po VE statybos darbų. Taip surinkti žinių apie kylančių konfliktų dėl VE veiklos galimus valdymus ir sukauptas žinias pritaikyti praktiškai mažinant poveikį jautrioms VE poveikiui paukščių rūšims.

D) Siekiant pagerinti plėšriųjų paukščių (paprastųjų pelėsakalių) perėjimo sąlygas, numatyti naujų lizdaviečių (4 vnt.) įrengimą ir iškėlimą ant elektros stulpų atramų, pavienių medžių. Dirbtinių perėjimo vietų įrengimas už VE parko ribų Šilutės raj.

E) Siekiant pagerinti šikšnosparnių veisimosi ir migracijos dienojimo sąlygas bei išlaikyti jas vasaros metu saugiu atstumu nuo VE jėgainių, reikėtų iškelti specialius inkilus šikšnosparniams, už vėjo elektrinių parko ribų. Tikslinga iškelti ne mažiau kaip 10 inkilų, juos keliant po kelis į vieną medį pamario regione.

F) Numatoma paruošti ir suderinti paukščių ir šikšnosparnių monitoringo programą (1 metai iki VE veiklos pradžios ir 3 metai po VE veiklos pradžios). VE parko poveikiui migruojantiems, perintiems paukščiams ir besiveisiantiems ir migruojantiems šikšnosparniams įvertinti. Bus atliekamas žūvančių paukščių ir šikšnosparnių monitoringas po VE veiklos pradžios siekiant nustatyti konkrečių VE galimo poveikio reikšmingumą ir pasiūlyti efektyviausias priemones, leidžiančias poveikį sumažinti ar net jo išvengti. Programa turi apimti ne mažiau kaip metus iki VE statybos arba veiklos pradžios ir tris metus po VE veiklos pradžios. Vėliau monitoringo tyrimai kartojami kas 5 metai. Nustačius reikšmingus neigiamus poveikius yra atliekami poveikio mažinimo veiksmai arba kompensacinės priemonės.

G) Vienos iš VE menčių dažymas juoda spalva gali sumažinti plėšriųjų paukščių žūčių skaičių. Ši priemonė gali būti efektyvi, jei bus nustatytas reikšmingas poveikis plėšriesiems ir sklandantiems paukščiams.

H) Stabdyti VE nustatytais laikotarpiais, jei bus nustatytas reikšmingas neigiamas poveikis paukščiams arba šikšnosparniams. Pavyzdžiui, vykdant žemės ūkio darbus gretimuose iki 500 m nuo VE nutolusiose laukuose, VE darbas gali būti stabdomas dienos metu, aktyviausiu plėšriųjų paukščių skraidymo periodu nuo 10:00 iki 16:00 valandos, 2-3 dienas po žemės ūkio darbų.

I) Mitybinių buveinių keitimas prie VE, padarant jas mažiau patrauklias jautrioms VE paukščių ar šikšnosparnių rūšims.

# 8. IŠVADOS

1 Iš viso per pavasario stebėjimų sezoną buvo suskaičiuota 57480 individai praskrendančių, migruojančių paukščių, priklausančių 70 rūšių. Daugiausiai per teritorijas skrido žvirbliniai (56,7 %), žąsiniai (27,2 %) ir sėjikiniai (15,1 %) paukščiai. Plėšrieji paukščiai, kurie priskiriami jautrioms VE poveikiui rūšims sudarė vos 0,5 % , gerviniai ir gandriniai - 0,6%.

2 Paukščiai pro planuojamą VE parką perskrenda įvairiomis kryptimis ir nesudaro konkrečių migracijos ar perskridimo kelių. Didžiausias gandrinių ir gervinių paukščių suminis tankums nustatytas prie VE Nr. 7, plėšriųjų– prie VE Nr. 3, 4, 7, sėjikinių – prie VE Nr. 4-7, žąsinių – prie VE Nr. 8, žvirblinių paukščių – prie VE Nr. 4, 5, o bendrai visų grupių – prie VE Nr. 4 ir 5.

3 Jautriame aukštyje tarp 40 – 200 m skrido 93 % gandrinių-gervinių, 60 % žąsinių, 33 % sėjikinių, 14 % plėšriųjų ir 13 % žvirblinių paukščių.

4 Susidūrimams su VE jautrių paukščių (gandriniai-gerviniai, plėšrieji) pavojingame aukštyje skrido 56 %, todėl galima tiesioginio susidūrimo su planuojamomis VE rizika aukštai skraidančioms rūšims, ypač plėšriųjų paukščių, kaip jūrinis erelis, mažasis erelis rėksnys, paprastasis ir tūbuotasis suopis, rudasis peslys.

5 Pagal skrydžių vėjaračių zonose modeliavimą, dėl galimo teorinio susidūrimo išsiskyrė VE Nr. 2 (1081 paukščių) ir VE Nr. 4 (924 paukščiai), taip pat VE Nr. 7 (523 paukščiai).

6 Tyrimo metu suskaičiuoti 32198 paukščiai santalkose. Daugiausiai stebėta žvirblinių (44,9 %), žąsinių (29,1 %) ir sėjikinių (25,8 %) paukščių. Sankaupos buvo susijusios su žemės ūkio naudmenomis. Gausiausios paprastųjų pempių ir dirvinių sėjikų santalkos registruotos pasėlių ar dirbamuose laukuose prie VE Nr. 6 ir 8, žąsų, gulbių ir ančių – kukurūzų ražienose, pasėliuose ar ganyklose netoli VE Nr. 8, žąsys taip pat maitinosi kukurūzų ražienose prie VE Nr. 3, 4. Žąsys ir gervės turi aukštą VE išvengiamumą, o sėjikinių paukščių sankaupos susiję su suartais laukais ir žiemkenčiais, todėl yra laikinos ir gali būti plačiai lokalizuotos dėl tokių buveinių gausos planuojamame VE parke, todėl poveikis migruojantiems ir laikinai apsistojantiems dirviniams sėjikams, paprastosioms pempėms, kirams, pilkosioms gervėms ir žąsims – nenumatomas.

7 Planuojamoje VE vystymo teritorijoje vyksta intensyvi šikšnosparnių migracija. Vidutinės ir aukštos rizikos šikšnosparnių rūšys sudarė 91% visų registracijų. Todėl yra tikėtinas neigiamas VE poveikis migruojantiems šikšnosparniams. Poveikiui išvengti yra rekomenduojama taikyti startinio vėjo greičio didinimą iki 5,5–6 m/s rugpjūčio-rugsėjo mėnesiais.

8 Įvertinus gretimai veikiančio UAB „Šilutės vėjo projektai“ VE parko poveikį, kuris buvo tirtas nuo 2016 metų, nustatyta, kad yra didelė tikimybė, jog planuojamame parke bus stebimas panašus poveikis. Todėl rekomenduojama atsisakyti VE Nr. 6 ir taikyti poveikio mažinimo priemones.

9 Įvertinus abiejų planuojamų VE parkų poveikį, poveikis padidės tik tuo atveju, jei nebus taikomos papildomos apsaugos ir prevencijos priemonės plėšriesiems paukščiams ir šikšnosparniams. Yra rekomenduojama taikyti poveikio prevencines ir mažinimo priemones.

10 Mažieji ereliai rėksniai, paženklinti GPS siųstuvais, intensyviai naudoja rizikingą oro erdvę nuo 40 iki 200 m aukštyje. Todėl ateityje gali kilti konfliktų su jų praskridimais.

11 Įvertinus visus ankščiau analizuotus poveikius ir atskiras VE pagal jų galimą poveikį paukščiams ir šikšnosparniams, VE buvo suskirstytos į mažai, vidutiniškai ir labai pavojingas. Vidutiniškai pavojingos identifikuotos 3 VE – Nr. 2, 4, ir 7, o labai pavojinga – viena VE Nr. 6. Likusios – kaip mažai pavojingos (jei bus taikoma šikšnosparnių žūties prevencija).

# 9. REKOMENDACIJOS

1. **Poveikio mažinimo priemonė planavimo etapu.** Atsisakyti statyti VE Nr. 6, kaip didelės rizikos elektrinę plėšriesiems paukščiams ir šikšsnosparniams.
2. **Poveikio mažinimo priemonė.** Mažinant galimą neigiamą poveikį šikšnosparniams taikyti VE startinio greičio didinimą jų migracijos metu. Nuo gamykliškai nustatyto iki 5,5 -6 m/s nuo saulės laidos iki saulėtekio apimant laikotarpį nuo liepos 25 d. – rugsėjo pabaigos.
3. Paruošti paukščių ir šikšnosparnių monitoringo programą, kuri apimtų galimą VE poveikio vertinimą 1 metai iki VE veiklos pradžios ir 3 metai po VE veiklos, tyrimus kartojant kas 5 metai.
4. Atlikti detalesnius vietinių jautrių VE poveikiui ir saugomų perinčių rūšių tyrimus VE parko teritorijoje ir aplinkinėse teritorijose panaudojant telemetrinius prietaisus ir stebėjimus.
5. Reiktų įvertinti šikšnosparnių migracijos aktyvumą stacionariais detektoriais visoje planuojamo VE parko teritorijoje kiek galima arčiau planuojamų VE ir kiek galima aukščiau, kad būtų galima parinkti tinkamiausias poveikio mažinimo priemones.
6. Surasti ir identifikuoti plėšriųjų paukščių lizdus aplinkinėse teritorijose, paukščių perėjimo sėkmingumą stebėti iki VE parkas pradeda veiklą ir jau veikiant VE parkui.
7. Prisidėti prie jautrių VE paukščių ir šikšnosparnių rūšių išsaugojimo gerinant jiems perėjimo, mitybos sąlygas, tiriant jų elgsenos ypatybes (keliant inkilus pelėsakaliams ir šikšnosparniams, atkuriant buveines, tiriant paukščius telemetrinėmis priemonėmis ir t.t.).